
Acronyms and Abbreviations

ACR	Advanced control room
AECL	Atomic Energy of Canada Limited
AHP	Analytic hierarchy process
AI	Analog input
AOI	Area of interest
APR-1400	Advanced power reactor 1400
ATHEANA	A Technique for Human Event Analysis
AV	Audio/video
BARS	Behaviorally anchored rating scale
BBN	Bayesian belief network
BGA	Ball grid array
BP	Bistable processor
CBDTM	Cause-based decision tree methodology
CBHRA	Condition-based human reliability analysis
CCF	Common-cause failure
CCS	Calculus of communicating systems
CDF	Cumulative distribution function
CFP	Cognitive failure probabilities
CFR	Code of federal regulations
CNS	Compact nuclear simulator
COCOM	Contextual control model
COM	Consensus operator model
COSS	Computerized operator support system
COTS	Commercial-off-the-shelf
CP	Coincidence processor
CPC	Common performance condition
CPN	Colored petri nets
CPS	Computerized procedure system
CPT	Conditional probability table
CR	Control room
CREAM	Cognitive reliability and error analysis method
CRT	Cathode-ray tube
CSF	Critical safety function
DI	Digital input

DO	Digital output
DPPS	Digital plant protection system
DRAM	Dynamic random access memory
DSS	Decision support system
DURESS	Dual reservoir system
EEG	Electroencephalogram
EFC	Error forcing context
EID	Ecological interface design
EOC	Error of commission
EOO	Error of omission
EOP	Emergency operation procedure
EP	Evoked potential
EPC	Error-producing condition
EPROM	Erasable programmable read-only memory
ERP	Event-related potential
ESDE	Excessive steam demand event
ESDT	Extended structured decision tables
ESF	Engineered safety feature
ESFAS	Engineered safety feature actuation system
ETS	Eye-tracking system
FBD	Function block diagram
FDA	Food and drug administration
FIT	Failures-in-time
FLIM	Failure likelihood index methodology
FMEA	Failure mode and effect analysis
FOD	Function overview diagram
FPGA	Field programmable gate array
FTA	Fault tree analysis
GMTA	Goals–means task analysis
GTT	Generic task type
HAZOP	Hazard and operability studies
HCR	Human cognitive reliability
HCSS	High-capacity storage station
HE	Human error
HEART	Human error assessment and reduction technique
HEP	Human error probability
HFE PRM	Human factors engineering program review model
HFE	Human factors engineering
*HFE	Human failure event
HMI	Human–machine interface
HOL	Higher order logic
HR	Heart rate
HRA	Human reliability analysis
HRP	Halden reactor project
HRV	Heart rate variability
HS	HUPESS server
HTA	Hierarchical task analysis

HUPESS	Human performance evaluation support system
I&C	Instrumentation and control
IE	Integrated environment
IF	Instrumentation failure
INDESCO	Integrated decision support system to aid cognitive activities of operators
ISV	Integrated system validation
KAERI	Korea Atomic Energy Research Institute
KAIST	Korea Advanced Institute of Science and Technology
KSAX	Korean situation awareness index
LCD	Liquid crystal display
LDP	Large display panel
LOCA	Loss of coolant accident
LOTOS	Language of temporal ordering specification
LPSIS	Low-pressure safety injection system
MABA-MABA	Men are better at—machines are better at
MBU	Multi-bit upset
MCH	Modified Cooper–Harper
MCR	Main control room
MCS	Minimal cut sets
MDTA	Misdiagnosis tree analysis
MES	Mobile evaluation station
MIC	Methyl isocyanate
MRTF	Manual reactor trip failure
MTTF	Mean time to failure
NASA-TLX	National Aeronautic and Space Administration task load index
NEP	Nominal error probability
NFF	No fault found
NHPP	Non-homogeneous Poisson process
NPP	Nuclear power plant
NRC	Nuclear Regulatory Commission
NuFDS	N FBD-style design specification
NuSCM	Nuclear software configuration management
NuSCR	Nuclear software cost reduction
NuSDS	N software design specification and analysis
NuSEE	Nuclear software engineering environment
NuSISRT	Nuclear software inspection support and requirements traceability
NuSRS	Nuclear software requirements specification and analysis
OE	Operator error
OPAS	Operator performance assessment system
OTΔT	Over-temperature delta-T
OW	Overall workload
OVS	Operation validation system
PD	Plant dynamics
PDF	Probability density function

PDL	Primary heat transport low core differential pressure
PFS	Program functional specification
PLC	Programmable logic controller
PoF	Physics of failure
PORV	Pressure-operated relief valve
PPAS	Plant performance assessment system
PPS	Plant protection system
PRA	Probabilistic risk assessment
PSF	Performance shaping factor
PT	Post test
PVS	Prototype verification system
PWR	Pressurized water reactor
RBD	Reliability block diagram
RCS	Reactor coolant system
RGGG	Reliability graph with general gates
RIAC	Reliability information analysis center
ROM	Read-only memory
RPS	Reactor protection system
RTM	Requirements traceability matrix
S/W	Software
SA	Situation awareness
*SA	Software architecture
SACRI	Situation awareness control room inventory
SAGAT	Situational awareness global assessment technique
SART	Situational awareness rating technique
SBU	Single-bit upset
SC	Stacked capacitors
SCM	Software configuration management
SCR	Software cost reduction
SDS	Software design specification
SDT	Structured decision table
SEC	Single-error-correcting
SEFI	Single-event interrupt functional interrupt
SER	Soft-error rate
SES	Stationary evaluation station
SET	Single-event transient
SEU	Single-event upset
SFTA	Software fault tree analysis
SG	Steam generator
SGTR	Steam generator tube rupture
SI	Safety injection
SIAS	Safety injection actuation signal
SLB	Steam line break
SLI	Success likelihood index
SLIM	Success likelihood index methodology
SLOCA	Small loss of coolant accident
SME	Subject matter expert

SMoC	Simple model of cognition
SMV	Symbolic model verifier
SPDS	Safety parameter display system
SRAM	Static random access memory
SRK	Skills, rules, and knowledge
SRS	Software requirements specification
STA	Safety technical advisor
SWAT	Subjective workload assessment technique
TCP/IP	Transmission control protocol/internet protocol
TEC	Trenches with external charge
THERP	Technique for human error rate prediction
TIC	Trenches with internal charge
TMI	Three Mile Island
TSC	Technical support center
UA	Unsafe action
V&V	Verification and validation
VDM	Vienna development method
VDU	Visual display unit
VISA	Visual indicator of situation awareness
XML	Extensible markup language

Index

A

abstraction hierarchy, 177
ACR (advanced control room),
179, 194, 197, 198, 199,
200, 201, 209, 211, 213,
216, 217, 221, 222, 223,
224, 229, 289
activity approach, 242
adequacy of HMI, 144, 255,
256, 259, 262
adequacy of organization, 144,
255, 259, 260
adequacy of training, 144, 258
advanced MCR, 174, 185, 225,
266, 267, 273
AECL (Atomic Energy of
Canada Limited), 103,
120, 127, 128, 289
AEOD (analysis and
evaluation of operational
data), 236, 240
AHP (analytic hierarchy
process), 205, 208, 220,
222, 289
alarm system, 172, 178, 184,
185, 186, 194, 197, 209,
225, 227, 250, 270, 273,
286
anthropometric and
physiological factors,
198, 199, 200, 202, 203,
217, 220

APR-1400 (advanced power
reactor 1400), 197, 209,
211, 215, 216, 217, 218,
224, 225, 289
ASEP, 237, 238, 249
ATHEANA (a technique for
human event analysis),
78, 140, 148, 149, 150,
151, 158, 159, 160, 225,
236, 237, 240, 264, 268,
275, 286, 289
attention, 38, 159, 167, 170,
173, 179, 197, 198, 200,
201, 203, 211, 212, 215,
217, 223, 224, 235, 236,
242, 267
automation, 37, 109, 165, 174,
180, 181, 182, 183, 185,
193, 197, 199, 223, 225,
226, 229, 266, 267, 286
availability verification, 187
available time, 141, 144, 146,
150, 158, 237, 258, 259,
261, 263, 265

B

BARS (behaviorally anchored
rating scale), 216, 220,
222, 289
bathtub curve, 7, 8, 9
Bayesian approach, 89
Bayesian inference, 245, 247,
263, 264

BBN (Bayesian belief network), 37, 84, 252, 253, 276, 278, 279, 282, 283, 284, 289
 Bhopal accident, 237
 block recovery, 106, 117, 118

C

CBDTM (cause-based decision tree methodology), 154, 155, 158, 289
 CBHRA (condition-based human reliability analysis), 73, 75, 289
 circadian rhythm, 144, 256, 259, 262
 CNS (compact nuclear simulator), 249, 250, 251, 282, 289
 COCOM (contextual control model), 143, 145, 289
 cognitive activity, 143, 144, 145, 146, 183, 184, 185, 199, 202, 206, 209, 214, 215, 268, 271, 272, 275, 279, 283, 286, 291
 cognitive failure probability, 146, 289
 cognitive function, 143, 145, 146, 147, 154, 155, 185
 cognitive model, 161, 275
 cognitive task analysis, 166
 common-cause failure, 26, 27, 33, 44, 45, 62, 64, 67, 68, 69, 70, 76, 154, 155, 249, 250, 251, 253, 282, 283, 289
 communication errors, 258, 263
 configural display, 175, 176
 containment radiation, 212, 242, 243, 245, 250, 251, 252, 253, 254, 256, 257, 279
 context factors, 237, 255, 259, 263

control flow, 52, 57, 58
 control mode, 143, 146, 147, 148, 159, 289
 Cooper–Harper scale, 189, 201, 214
 COSS (computerized operator support system), 172, 174, 180, 183, 184, 185, 186, 187, 266, 289
 coverage factor, 39, 40, 41, 70
 CPC (common performance condition), 143, 144, 146, 147, 289
 CPS (computerized procedure system), 179, 180, 185, 197, 209, 270, 271, 272, 275, 276, 280, 282, 283, 289
 CREAM (cognitive reliability and error analysis method), 140, 143, 144, 146, 159, 160, 237, 289
 crew collaboration quality, 144, 146, 258, 261
 critical safety function, 154, 158, 289
 cutset, 64, 67, 68, 73

D

data-driven monitoring, 246, 251
 decision ladder, 167, 168
 DEPEND gate, 54, 56
 deterministic rules, 244, 247
 diversity, 38, 62, 64, 68, 69, 71, 72, 81, 106, 116, 117
 diversity of software, 38, 72
 DRAM (dynamic random access memory), 8, 11, 15, 16, 17, 18, 24, 290
 DSS (decision support system), 265, 266, 267, 268, 271, 272, 275, 276, 277, 279, 282, 283, 284, 286, 290, 291

E

ecological approach, 242
 ecological interface design,
 177, 193, 270, 290
 EEG (electroencephalogram),
 190, 214, 227, 228, 290
 EFC (error forcing context),
 63, 73, 74, 76, 148, 150,
 159, 290
 EOC (error of commission),
 42, 43, 45, 74, 82, 140,
 148, 149, 290
 EOO (error of omission), 42,
 43, 45, 74, 82, 149, 290
 EOP (emergency operation
 procedure), 144, 156,
 250, 274, 290
 EP (evoked potential), 42, 142,
 214, 290
 EPROM (erasable
 programmable read-only
 memory), 59, 290
 ERP (event-related potential),
 214, 290
 error-producing condition,
 140, 142, 290
 ETS (eye-tracking system),
 201, 211, 214, 218, 219,
 220, 290
 evaluation criteria, 113, 200,
 206, 224
 event tree, 35, 84, 92, 140,
 141, 233, 234, 275, 276,
 277, 279, 283, 285
 expert system, 174, 184

F

failure rate, 5, 6, 7, 8, 9, 10,
 11, 20, 37, 50, 51, 59, 64,
 65, 69, 87, 90, 101, 156
 fault avoidance, 105, 106, 109,
 119
 fault coverage, 40, 45, 53, 54,
 57, 69, 70, 71, 72
 fault diagnosis system, 185,
 268, 270, 272, 273, 274,

275, 276, 277, 278, 279,
 281, 282, 283
 fault removal, 36, 105, 106,
 111, 115, 119
 fault tolerance, 27, 38, 76, 105,
 106, 116, 117, 118, 119
 fault tree, 28, 29, 30, 31, 32,
 33, 34, 35, 39, 40, 44, 63,
 67, 69, 73, 74, 84, 92, 93,
 94, 95, 96, 97, 98, 99,
 103, 192, 226, 227, 233,
 234, 249, 290, 292
 FBD (function block diagram),
 114, 115, 131, 290, 291
 feedback, 37, 45, 46, 48, 112,
 166, 167, 170, 182, 183,
 217
 first-generation HRA, 140,
 148, 159
 first-order approximation, 243
 FIT (failures-in-time), 11, 17,
 18, 290
 FLIM (failure likelihood index
 methodology), 142, 290
 FMEA (failure mode and
 effect analysis), 98, 99,
 100, 290
 FOD (function overview
 diagram), 127, 128, 290
 formal method, 37, 46, 94,
 100, 106, 107, 108, 109,
 114, 127, 128, 134
 formal specification, 37, 106,
 107, 108, 109, 114, 122,
 123, 127, 128, 133, 134
 formal verification, 106, 108,
 109
 FPGA (field programmable
 gate array), 15, 16, 17,
 290
 function allocation, 165, 166,
 181, 191
 function analysis, 164, 181

G

generator power, 252, 263
 generic failure type, 147

GMTA (goals–means task analysis), 145, 290

H

hardware–software interaction, 38, 81

hazard rate, 5, 9, 27

HAZOP (hazard and operability studies), 99, 100, 101, 103, 149, 290

HCR (human cognitive reliability), 140, 141, 237, 249, 290

HEART (human error assessment and reduction technique), 140, 142, 151, 290

HEP (human error probability), 42, 73, 74, 75, 140, 141, 142, 145, 155, 158, 160, 276, 279, 280, 281, 290

HFE (human factors engineering), 148, 149, 150, 158, 159, 163, 164, 166, 167, 173, 187, 188, 190, 191, 197, 217, 290

HMI (human–machine interface), 139, 141, 144, 163, 164, 166, 169, 170, 171, 172, 173, 174, 178, 179, 187, 188, 190, 191, 199, 200, 201, 203, 211, 212, 218, 221, 223, 255, 256, 259, 262, 266, 267, 269, 270, 271, 290

HRA (human reliability analysis), 46, 73, 77, 139, 140, 142, 143, 148, 151, 158, 159, 160, 161, 166, 199, 223, 224, 236, 237, 238, 239, 240, 249, 250, 265, 275, 276, 277, 279, 283, 285, 287, 290

HRA event tree, 140, 275, 276, 277, 279, 283, 285

HRV (heart rate variability), 214, 290

HTA (hierarchical task analysis), 145, 166, 167, 290

human error, 42, 45, 62, 69, 73, 75, 83, 109, 118, 134, 139, 140, 142, 143, 158, 159, 160, 163, 166, 173, 183, 191, 200, 213, 223, 265, 266, 267, 268, 274, 285, 286, 290, 293

human error probability, 42, 140, 141, 158, 160, 290

human failure event, 148, 290

human operator, 35, 42, 43, 63, 67, 68, 73, 76, 139, 153, 160, 170, 180, 181, 182, 184, 185, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 245, 247, 248, 250, 251, 252, 253, 254, 255, 256, 258, 259, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 284, 285

human reliability, 73, 139, 160, 161, 163, 191, 192, 226, 228, 240, 287, 289, 290

HUPESS (human performance evaluation support system), 197, 198, 199, 201, 202, 203, 210, 211, 212, 215, 216, 217, 218, 219, 220, 221, 222, 224, 290, 291

I

I&C (instrumentation and control), 3, 26, 27, 45, 46, 47, 51, 63, 76, 122, 123, 160, 197, 225, 227, 233, 234, 235, 236, 238, 239, 240, 241, 248, 249, 259,

263, 264, 267, 269, 271,
286, 287, 291

ideal operators, 247

INDESCO (integrated decision
support system to aid
cognitive activities of
operators), 265, 266, 268,
271, 275, 285, 291

indirect support, 270, 271, 272

information flow model, 166,
168, 169

information overload, 178,
193, 268

inspection view, 123, 124, 125

instrument faults, 236, 239,
259, 263

instrumentation failure, 148,
152, 154, 155, 159, 291

integral display, 176, 177

integrated environment (IE)
approach, 113, 114, 115,
121, 123, 127, 133

integrated model, 233, 238,
239, 240, 241, 259, 263,
264

interface management task,
171, 178, 179

intermittent failure, 5, 6, 13,
14, 15, 20

ISV (integrated system
validation), 197, 198,
199, 200, 201, 206, 209,
211, 213, 214, 215, 217,
220, 222, 224, 291

J

Jelinski–Moranda model, 90,
91

K

KAERI (Korea Atomic Energy
Research Institute), 45,
46, 64, 161, 225, 249, 291

keyhole effect, 177, 179

knowledge-based system, 184,
287

knowledge-driven monitoring,
227, 246, 251

KSAX (Korean situation
awareness index), 210,
211, 220, 222, 291

L

level 1 SA, 172, 212, 242

level 2 SA, 172, 212, 243

level 3 SA, 172, 212, 243, 245

lifecycle, 4, 9, 38, 81, 85, 86,
91, 93, 99, 101, 109, 110,
112, 114, 115, 121, 122,
123, 132, 133, 134

LOCA, 157, 185, 202, 204,
212, 242, 243, 245, 247,
248, 249, 250, 251, 252,
253, 254, 255, 256, 259,
263, 273, 279, 291

M

Markov model, 27, 28, 30, 31

MBU (multi-bit upset), 16, 19,
291

MCH (modified Cooper–
Harper), 189, 214, 215,
291

MCR (main control room),
163, 168, 174, 179, 186,
225, 242, 266, 269, 270,
273, 286, 291

MCS (minimal cut sets), 73,
74, 291

MDTA (misdiagnosis tree
analysis), 140, 151, 152,
154, 155, 158, 159, 161,
291

MDTA-based method, 140,
159, 161

mental model, 149, 169, 171,
172, 211, 229

mental workload, 169, 173,
188, 190, 192, 194, 210,
214, 216, 227, 228, 229,
268

MIC (methyl isocyanate), 237, 291
 MIL-HDBK-217, 8, 9, 11, 21, 51
 model checking, 96, 97, 108, 131, 133, 134
 monitoring/detection, 184, 185, 212, 268, 270, 271, 272, 273
 MTTF (mean time to failure), 6, 7, 11, 291
 multi-tasking, 27, 32, 35, 42, 62, 63, 68, 76, 170, 181

N

NASA-TLX (National Aeronautic and Space Administration task load index), 189, 190, 200, 214, 215, 220, 222, 227, 229, 291
 NFF (no fault found), 14, 23, 291
 NHPP (non-homogeneous Poisson process), 85, 90, 91, 291
 NuFDS (nuclear FBD-style design specification), 114, 115, 120, 131, 291
 NuSCM (nuclear software configuration management), 115, 123, 132, 133, 134, 291
 NuSCR (nuclear software cost reduction), 109, 114, 128, 129, 130, 134, 291
 NuSDS (nuclear software design specification and analysis), 115, 123, 128, 130, 131, 132, 133, 134, 291
 NuSEE (nuclear software engineering environment), 115, 121, 122, 123, 133, 134, 291
 NuSISRT (nuclear software inspection support and

requirements traceability), 115, 123, 124, 125, 126, 127, 133, 134, 291

NuSRS (nuclear software requirements specification and analysis), 115, 123, 127, 128, 129, 133, 134, 291

O

OPAS (operator performance assessment system), 208, 225, 291
 operational limits, 203
 operational profile, 52, 57, 58, 59, 60, 62, 87, 88
 operator error, 4, 152, 154, 155, 159, 169, 291
 OVS (operation validation system), 291
 OW (overall workload), 189, 190, 200, 214, 291

P

part stress method, 8, 51
 permanent failure, 5, 6, 7, 8, 14, 20, 21
 personnel task, 166, 198, 199, 200, 201, 202, 203, 206, 207, 208, 212, 217, 220, 221, 224
 PFS (program functional specification), 95, 98, 103, 292
 plant dynamics, 152, 153, 154, 159, 187, 243, 244, 291
 plant performance, 198, 199, 200, 202, 203, 204, 206, 217, 220, 221, 223, 225, 292
 PLC (programmable logic controller), 49, 51, 65, 113, 114, 115, 120, 131, 133, 134, 135, 292

population stereotype, 171, 175
 PORV (pressure operated relief valve), 238, 292
 PPAS (plant performance assessment system), 204, 225, 292
 PRA (probabilistic risk assessment), 26, 27, 37, 42, 43, 44, 45, 47, 62, 63, 64, 65, 67, 69, 70, 73, 74, 77, 81, 84, 92, 102, 139, 140, 148, 151, 156, 157, 158, 160, 161, 233, 234, 236, 237, 238, 239, 240, 243, 250, 292
 primary task, 171, 179, 188, 189, 206, 214
 proof checking, 107, 108
 PSF (performance shaping factor), 141, 142, 292

R

RBD (reliability block diagram), 27, 292
 reactor power, 251, 252, 253, 263, 279
 redundancy, 32, 41, 43, 44, 64, 67, 68, 70, 116
 reliability quantification, 36, 86, 87
 requirements traceability, 111, 114, 123, 125, 291, 292
 response implementation, 184, 268, 274, 278, 279
 response planning, 170, 183, 184, 185, 268
 RGGG (reliability graph with general gates), 249, 292
 RIAC-HDBK-217Plus, 9
 risk concentration, 32, 33, 63, 235, 239
 RPS (reactor protection system), 49, 64, 65, 66, 70, 75, 128, 129, 130, 249, 250, 292

RTM (requirements traceability matrix), 111, 114, 125, 292

S

SA (situation awareness), 77, 85, 131, 169, 170, 172, 179, 182, 183, 190, 192, 193, 195, 198, 199, 200, 201, 202, 203, 209, 210, 211, 212, 215, 217, 221, 222, 224, 225, 226, 227, 242, 243, 245, 264, 266, 268, 287, 291, 292, 293
 SACRI (situation awareness control room inventory), 190, 200, 210, 226, 292
 safety culture, 255, 259, 260
 safety-critical applications, 32, 33, 45, 68, 76, 77, 187
 safety-critical networks, 41
 safety-critical systems, 25, 26, 36, 41, 43, 70, 105, 113, 114, 115, 116, 121, 122, 123, 127, 134, 266
 SAGAT (situational awareness global assessment technique), 190, 200, 209, 226, 292
 SART (situational awareness rating technique), 210, 226, 227, 292
 SBU (single-bit upset), 16, 19, 292
 SDS (software design specification), 130, 131, 133, 291, 292
 SDT (structured decision table), 128, 292
 SEC (single-error-correcting), 19, 292
 secondary radiation, 242, 243, 245, 252, 279
 secondary task, 171, 178, 179, 188, 189, 206, 214
 second-generation HRA, 140, 143, 159, 160

- SEFI (single-event interrupt functional interrupt), 16, 17, 24, 292
 - selective attention, 211
 - self-diagnostic, 49
 - self-monitoring, 25, 33, 63
 - SER (soft-error rate), 17, 18, 20, 21, 24, 292
 - SET (single-event transient), 16, 17, 292
 - SEU (single-event upset), 15, 292
 - SFTA (software fault tree analysis), 92
 - SGTR (steam generator tube rupture), 167, 242, 243, 245, 247, 252, 254, 255, 256, 263, 273, 279, 282, 283, 292
 - situation assessment, 159, 185, 195, 236, 237, 242, 243, 247, 255, 256, 259, 263, 268, 269, 271, 272, 273, 274, 275, 276, 278, 283
 - situation model, 211, 236, 246, 248, 273, 274
 - SLB (steam line break), 252, 254, 255, 256, 263, 279, 292
 - SLIM (success likelihood index methodology), 140, 142, 151, 160, 292
 - SME (subject matter expert), 292
 - SMoC (simple model of cognition), 143, 293
 - software architecture, 131, 292
 - software failure, 26, 27, 36, 37, 62, 63, 64, 68, 69, 70, 71, 72, 76, 82, 83, 84, 90, 92, 102, 106, 118
 - software failure probability, 27, 36, 62, 68, 69, 70, 71, 72
 - software fault, 19, 36, 38, 81, 82, 83, 84, 90, 91, 92, 93, 100, 105, 116, 117, 118, 119, 292
 - software reliability, 36, 37, 38, 71, 81, 84, 85, 86, 87, 88, 89, 90, 91, 93, 94, 100, 101, 102, 103, 105, 119, 139
 - software reliability growth model, 36, 85, 90, 91
 - software/hardware interactions, 52
 - SPDS (safety parameter display system), 176, 184, 293
 - SPICE, 19
 - SRAM (static random access memory), 15, 16, 17, 18, 24, 293
 - SRS (software requirements specification), 95, 120, 128, 132, 133, 135, 291, 293
 - steam/feedwater deviation, 252, 279
 - strategy, 32, 44, 167, 169, 171, 172, 186, 207, 223
 - stress of human operators, 258
 - structure view, 123, 127
 - suitability verification, 187, 188
 - SWAT (subjective workload assessment technique), 189, 214, 227, 293
 - symptom-based procedure, 273
- T**
- task analysis, 145, 146, 159, 161, 166, 167, 173, 187, 189, 191, 213, 290
 - teamwork, 198, 199, 200, 202, 203, 216, 217, 220, 221, 222, 224, 225

Telecordia, 9
 test stopping rule, 37
 test-based evaluation, 37
 THERP (technique for human error rate prediction), 140, 237, 238, 249, 280, 281, 293
 time of day, 144, 256, 259, 262
 TMI (Three Mile Island), 152, 174, 183, 197, 209, 236, 238, 265
 traceability view, 123, 125, 126
 transient failure, 5, 6, 15, 19, 20, 21
 transient faults, 26, 116, 118

U

U.S. NRC, 197, 215, 236
 UA (unsafe action), 73, 148, 149, 150, 151, 158, 159, 236, 293
 unavailability, 26, 33, 39, 40, 44, 48, 50, 65, 67, 69, 70, 71, 72, 73, 76, 90, 139, 154, 279
 UPPAAL, 94, 96, 97, 98, 103

V

V&V (verification and validation), 37, 45, 62, 68, 101, 106, 108, 110, 111, 112, 113, 114, 115, 121, 122, 123, 125, 127, 131, 132, 133, 134, 163, 164, 187, 190, 191, 217, 293
 VHDL, 19
 VISA (visual indicator of situation awareness), 190, 210, 293
 voting logic, 33, 64, 74

W

watchdog, 19, 38, 39, 40, 51, 64, 66, 68, 69, 70, 71
 working conditions, 144, 146, 255, 261
 working memory, 170, 173, 212
 workload, 166, 169, 173, 175, 179, 180, 187, 188, 189, 190, 191, 192, 193, 194, 195, 198, 199, 200, 201, 202, 203, 210, 213, 214, 215, 217, 221, 222, 224, 225, 227, 228, 229, 268, 291, 293