

# Safety Manual

## 16<sup>th</sup> Edition

### Index of Changes

#### **Key to notations:**

**(CC)** – Indicates Content Change

**(E)** – Indicates Editorial Change

**(New)** – Indicates a new Part or Section in the 16<sup>th</sup> Edition

#### **Contents**

**DEFINITIONS 1 (CC)**

**INTRODUCTION 25 (CC)**

#### **PART 1 GENERAL RULES 28**

101 Application 28 **(CC)**

102 Employees' Responsibility for Safety 28

103 Reporting Employee Injuries 28 **(CC)**

104 Reporting Hazardous Conditions 29

105 Taking Chances 29

106 Practical Jokes 29

107 Guards 29 **(CC)**

108 Warnings 30

109 Intoxicating Beverages and Drugs 30

110 Housekeeping 30 **(CC)**

111 Smoking 32

112 Welding and Cutting--General 33 **(CC)**

113 Wireless Electronic Devices 36 **(CC)**

114 Cardiopulmonary Resuscitation (CPR), First Aid, and Automated External Defibrillators (AEDs) 37 **(CC)**

114.1 Introduction 37

114.2 General 38 **(CC)**

114.3 Cardiopulmonary Resuscitation (CPR) – General 39 **(CC)**

114.4 Wounds and Control of Bleeding 40

114.5 Shock 41

114.6 Eye Injuries 42

114.7 Automated External Defibrillator (AED) 43

115 Training 43 **(CC)**

115.1 Employee Training 43 **(CC)**

115.2 Qualified Employee Training 44

115.3 Safety Compliance 44

115.4 Additional Training and Retraining 45

115.5 Job Briefings 45 **(CC)**

115.6 Rescue Methods 46

115.7 Pole Top Rescue 46

115.8 Bucket Truck/Aerial Lift Device Rescue 48 **(CC)**

115.9 After Rescue 49

115.10 Training in Rescue 50 **(CC)**

**PART 2 HEALTH AND ENVIRONMENTAL CONTROL 51 (CC)**

- 201 Confined or Enclosed Spaces 51 **(CC)**
- 202 Hazardous Energy Control (Lockout/Tagout) Procedures 53
  - 202.1 Hazardous Energy Control (Lockout/Tagout) De-energizing Lines and Equipment 56
  - 202.2 Hazardous Energy Control (Lockout/Tagout) Servicing and Maintenance of Machines and Equipment 58
  - 202.3 Hazardous Energy Control (Lockout/Tagout) Device Requirements 63
- 203 Fall Protection 64 **(CC)**
- 204 Lighting 66
- 205 Exhaust Ventilation 66
- 206 Hours of Service 66
- 207 Fire Protection 67
  - 207.1 Fire Protection and Emergency Plans 67
  - 207.2 Fire Extinguishers 67
  - 207.3 Hydrants, Standpipes, and Hose Stations 69
  - 207.4 Sprinkler Systems 69
- 208 Security 70 **(CC)**
  - 208.1 General 70 **(CC)**
  - 208.2 Personnel 72
  - 208.3 Generating Facilities 73
  - 208.4 Emergency 73

**PART 3 CHEMICAL AND PHYSICAL HAZARD CONTROL 75**

- 301 Material Handling and Storage 75
- 302 Explosives 76
- 303 Compressed Gases 79
- 304 Hazardous Materials 81 **(CC)**
- 305 Fuels and Lubricants 82
- 306 Noise 83 **(CC)**
- 307 Asbestos 84
- 308 Polychlorinated Biphenyls (PCBs) 86
- 309 Acids and Caustics--Storage 86 **(CC)**
- 310 Acids and Caustics--Handling 86 **(CC)**
- 311 Acids and Caustics--General 88 **(CC)**
- 312 Chlorine Gas 89 **(CC)**
- 313 Lead 90 **(CC)**
- 314 Use of Herbicides and Other Chemicals 90
- 315 Crystalline Silica 91 **(New)**

**PART 4 PERSONAL PROTECTIVE EQUIPMENT 95**

- 401 Personal Protective Equipment (PPE) 95
- 402 Eye and Face Protection 95 **(CC)**
- 403 Head Protection 96
- 404 Hearing Conservation 97
- 405 Wearing Apparel 97
- 406 Clothing 98 **(CC)**
- 407 Use and Care of Rubber Gloves 106 **(CC)**
- 408 Supplemental Breathing Equipment 112
- 409 Life Jackets 112
- 410 Respirators 112 **(CC)**

- PART 5 ELECTRIC UTILITY OPERATIONS 125**
- 501 Office Safety 125**
  - 501.1 General Office Safety 125
  - 501.2 Video Display Terminals 126
- 502 Warehouse Operations 126**
  - 502.1 General 126
  - 502.2 Shipping and Receiving 127
- 503 Vehicle Operations 128**
  - 503.1 General 128
  - 503.2 Inspection of Equipment 129
  - 503.3 Exhaust Gas 129
  - 503.4 Operation 129
  - 503.5 Parking 130 (CC)
  - 503.6 Backing 131
  - 503.7 Stopping on the Highway 131
  - 503.8 Hauling Poles or Ladders 132
  - 503.9 Industrial Trucks--Fork Lifts 132 (CC)
  - 503.10 Cranes, Derricks, Hoisting Equipment 134 (CC)
  - 503.11 Rigging Equipment 143
  - 503.12 Aerial Devices 143 (CC)
  - 503.13 Reporting Utility Vehicle Accidents 146 (CC)
  - 503.14 Portable and Vehicle Mounted Generators 147
- 504 Vehicle Maintenance 147**
  - 504.1 General 147
  - 504.2 Vehicle Batteries 147
  - 504.3 Hydraulic Systems 147 (CC)
  - 504.4 Spray Painting 148
  - 504.5 Servicing Multipiece and Single Piece Wheel Rims 148
  - 504.6 Maintenance and Inspection of Fleet Utility Vehicles 148
  - 504.7 Defective Vehicle Tagout 149
- 505 Work Zone Safety (Traffic Control) 150**
  - 505.1 General 150
  - 505.2 Equipment 150
  - 505.3 Flagmen 151 (CC)
- 506 Tools and Equipment 153**
  - 506.1 Hand Tools 153
  - 506.2 Portable Electric Tools 154
  - 506.3 Pneumatic Tools 155
  - 506.4 Hydraulic Tools 156
  - 506.5 Power Lawn Mowers, Edgers, etc. 157
  - 506.6 Powder-Actuated Tools 157
  - 506.7 Safe Supports and Scaffolds 158 (CC)
  - 506.8 Ladders--General 160 (CC)
  - 506.9 Straight Ladders 162
  - 506.10 Step Ladders 162
- 507 Overhead Distribution and Transmission 163**
  - 507.1 Working On or Near Exposed Energized Lines and Equipment 163 (CC)
  - 507.2 Flexible Protective Equipment 173 (CC)
  - 507.3 Climbing and Working on Poles 176 (CC)
  - 507.4 Working on Energized Lines with Live-Line Tools 178 (CC)
  - 507.5 Working on Energized Lines Barehanded 179 (CC)
  - 507.6 Working on De-energized Lines and Equipment 182 (CC)
  - 507.7 Series Street Lighting Circuits 183
  - 507.8 Working on Transformers 183
  - 507.9 Hoisting Cables--Conductive Material 183

- 507.10 Working on Capacitors 184
- 507.11 Stringing or Removing De-energized Conductors 184 (CC)
- 507.12 Stringing Adjacent to Energized Lines 185
- 507.13 Grounding--General 187 (CC)
- 507.14 Equipotential Grounding 189
- 507.15 Pole Storage - Temporary 190
- 507.16 Setting and Removing Poles 191 (CC)
- 507.17 Derrick Trucks, Cranes, etc. 198
- 507.18 Fuses 198 (CC)
- 507.19 Rope 198 (CC)
- 507.20 Substations 198
- 507.21 Metering 199 (CC)
- 507.22 Testing and Test Facilities 200
- 507.23 Hazardous Energy Control (Lockout/Tagout) 202
- 508 Tree Trimming 203
  - 508.1 General 203 (CC)
  - 508.2 Working Near Energized Conductors 205
  - 508.3 Tree Felling 206 (CC)
  - 508.4 Care and Use of Tools and Rope 207 (CC)
  - 508.5 Powered Trimming Equipment 208 (CC)
  - 508.6 Chippers 210
  - 508.7 Right-of-Way Clearing and Maintenance 211
- 509 Underground Lines and Equipment 211
  - 509.1 Opening and Guarding Holes 211
  - 509.2 Entering Underground Structures 212
  - 509.3 Work on Energized Cables 214 (CC)
  - 509.4 Work on Energized Equipment 217
  - 509.5 Work on De-energized Cables 218 (CC)
  - 509.6 Opening and Closing Circuits 219
  - 509.7 Grounding 220 (CC)
  - 509.8 Heating Materials 221
  - 509.9 Rubber Glove Use 221
  - 509.10 Excavations 222 (CC)
  - 509.11 Directional Boring Operations 227
  - 509.12 Pulling Cables 233
  - 509.13 Moving Energized Cables 234
  - 509.14 Hazardous Energy Control (Lockout/Tagout) 234
- 510 Generating Stations 234
  - 510.1 General 234 (CC)
  - 510.2 Entering Confined Spaces 237
  - 510.3 Boiler Plant 238 (CC)
  - 510.4 Boiler and Pressure Vessel Chemical Cleaning 241
  - 510.5 Turbine Generators 241 (CC)
  - 510.6 Gantry Cranes 242
  - 510.7 Process Safety 242
  - 510.8 Hydrogen Cooling Systems 243
  - 510.9 Coal Handling--Railway Operations 243
  - 510.10 Barges, Boats, and Docks 245
  - 510.11 Car Shakers and Dumpers 246
  - 510.12 Conveyors and Crushers 246
  - 510.13 Coal Storage 247
  - 510.14 Hydro Stations 248 (CC)
  - 510.15 Hazardous Energy Control (Lockout/Tagout) 249
- 511 Communication Facilities 249
  - 511.1 Fiber-Optic Systems 249 (CC)

511.2	Radio Frequency Radiation	251	(CC)
512	Substations	257	
512.1	General Rules	257	(CC)
512.2	Working in an Energized Substation	261	(CC)
512.3	Hazardous Energy Control (Lockout/Tagout)	264	
512.4	Batteries	264	(CC)
512.8	Circuit Breaker Maintenance and Repair	265	
512.9	Working in Transformer Tanks and Vessels	267	
512.10	Work in Manholes and Vaults	267	
512.11	Splicing and Terminating	269	
512.12	Vault/Manhole Rescue	270	
512.13	OSHA References	271	