Acronyms and Important Definitions

1%	10,000 PPM
40.68	EPA's RMP Standard 40 CFR Part 68
1910.119	OSHA's PSM Standard 29 CFR 1910.119
AA	Anhydrous Ammonia
AAD	OSHA's Assistant Area Director
ACC	Accumulator
ACGIH	American Conference of Government Industrial Hygienists
AD	OSHA's Area Director
ADB	Ammonia Data Book by IIAR
AEV	Automatic Expansion Valve
ANSI	American National Standards Institute

ANSI/ASHRAE Standard 15	Safety Code for Mechanical Refrigeration
ANSI/ASHRAE Standard 34	Designation and Safety Classifications of Refrigerants
ANSI/IIAR 2-2008a	American National Standard for Equipment, Design & Installation of Ammonia Mechanical Refrigerating Systems
ANSI/IIAR 3-2005	Ammonia Refrigeration Valves
ANSI/ISA - S5 – 1984	Instrumentation Symbols and Identification
ANSI/NFPA 70	National Electric Code
AO	OSHA's Area Office
API	American Petroleum Institute
ARM	IIAR's Ammonia Refrigeration Management Program was developed to assist smaller facilities under 10,000lbs of ammonia
ARTG	IIAR's Ammonia Refrigeration Training Guideline
ASHRAE	American Society of Heating, Refrigerating, and Air-conditioning Engineers
ASME	American Society of Mechanical Engineers
ASME/ANSI B31.5	Refrigeration Piping

B31.5	ASME/ANSI Refrigeration Piping
BD	Piping Identification for Booster Discharge Line
BHP	Brake Horse Power
BLEVE	Boiling Liquid Expanding Vapor Explosion
BPCS	Basic Process Control System
BTU	British Thermal Unit about equal to the heat put off by 1 wooden kitchen match
CA	Compliance Audit
CAA	Clean Air Act
CalARP	California Code of Regulation title 19. California Accidental Release Prevention Program
CARO	RETA Certification: Certified Assistant Refrigeration Operator
CAS Registry Number	A unique number having up to nine digits that is assigned to a chemical
CBI	Confidential Business Information
CC	Capacity Control
CCF	Common Cause Failure
CCPS	Center for Chemical Process Safety
CD	Piping Identification for Condensate Drain or Condenser Drain Line
CDX	Central Data Exchange

CEPPO	Chemical Emergency Preparedness and Prevention Office
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
Certification	29 CFR 1910 Definition is: Certification means a written, signed and dated statement confirming the performance of a requirement of this section. 1910.66
CFATS	Chemical Facilities Anti-Terrorism Standards
CFM	Cubic Feet per Minute
CFR	Code of Federal Regulation
CFR	Code of Federal Regulation
Chemical	29 CFR 1910 Definition is: Chemical means any element, chemical compound or mixture of elements and/or compounds. 1910.1200
CHEMNEP	Chemical National Emphasis Program
CHSO	Compliance Health and Safety Officer
CIRO	RETA Certification: Certified Industrial Refrigeration Operator
CMMS	Computerized Maintenance Management Systems
CO	Carbon Monoxide
CO2	Carbon Dioxide
Competent	29 CFR 1910 Definition is: Competent means possessing the skills, knowledge, experience, and judgment to perform assigned tasks or activities satisfactorily as determined by the employer. 1910.120
Cp	Specific Heat

CPL 02-00-148	OSHA's Field Operations Manual
CPL 02-02-073 Appendix A	OSHA discusses the difference between "incidental release and emergency response"
CPL 03-00-014	OSHA's New CHEMNEP Nationwide
CPL 2-2.45a	OSHA's Instruction of auditing PSM programs “PQV”. Started September 13, 1994.
CPR	Control Pressure Receiver
CQ	Contractor's Qualifications
CR	Compression Ratio
CSAT	Chemical Security Assessment Tool
CSB	United States Chemical Safety Board
CSHO	Compliance Safety and Health Officer
CVI	Department of Homeland Security's "Chemical-terrorism Vulnerability Information"
DC	Piping Identification for Defrost Condensate Line
Demonstration	29 CFR 1910 Definition is: Demonstration means the showing by actual use of equipment or procedures. 1910.120
DEP	Directorate of Enforcement Programs
DHS	Department of Homeland Security
DOT	US Department of Transportation
DQC	Document Quality Control

DX	Direct Expansion Evaporator
EAP	Emergency Action Plan 29 CFR 1910.38
EAS	Employee Alarm System
Education	29 CFR 1910 Definition is: Education means the process of imparting knowledge or skill through systematic instruction. It does not require formal classroom instruction. 1910.155
EE	Employee
EHHC	Extremely Highly Hazardous Chemical
EOP	Emergency Operational Procedure
EP	Employee Participation
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
EQ	Piping Identification for Equalizer Line
ER	Emergency Response
ER	Employer
ES	Piping Identification for Economizer Suction Line
ESP	Emergency Shutdown Procedure
EX	Exhaust Air
FAR	Fatal Accident Rate
FMEA	Failure Mode Effects Analysis

FOM	OSHA's Field Operations Manual
FR	Piping Identification for Flooded Return Line
FS	Piping Identification for Flooded Supply Line
FS	Float Switch
GCAP	Garden City Ammonia Program
Hands-on-Training	29 CFR 1910 Definition is: Hands-on-Training means training in a simulated work environment that permits each student to have experience performing tasks, making decisions, or using equipment appropriate to the job assignment for which the training is being conducted. 1910.120
HAZCOM	Hazard Communications 29 CFR 1910.1200
HazOp	Hazard and Operability Study
HAZWOPER	Hazardous Waste Operations and Emergency Response 29 CFR 1910.120
HEV	Hand Expansion Valve
HG	Piping Identification for Hot Gas Line
HGD	Piping Identification for Hot Gas Defrost Line
HHC	Highly Hazardous Chemical
Housekeeping	29 CFR 1910 Definition is: Storage areas shall be kept free from accumulation of materials that constitute hazards from tripping, fire, explosion, or pest harborage. Vegetation control will be exercised when necessary. 1910. 176
HPL	Piping Identification for High Pressure Liquid Line
HPR	High Pressure Receiver

HSD	Piping Identification for High Stage Discharge Line
HSS	Piping Identification for High Stage Suction Line
HTHM	High Toxic Hazardous Material
HTL	Piping Identification for High Temperature Liquid Line
HTRL	Piping Identification for High Temperature Recirculating Liquid Line
HTRS	Piping Identification for High Temperature Recirculating Suction Line
HTS	Piping Identification for High Temperature Suction Line
HV	Hand Shutoff Valve
HWP	Hot Work Permit
IAR	Industrial Ammonia Refrigeration Operators National Standard
IARW	International Association of Refrigerated Warehouses
IDLH	Immediately Dangerous to Life and Health set forth by OSHA at 300 PPM for ammonia
IEBC	International Existing Building Code
IECC	International Energy Conservation Code
IEEE	Institute of Electrical and Electronic Engineers
IFC	International Fire Code
IFGC	International Fuel Gas Code
IHI	Individual Hazard Index

II	Incident Investigation
IIAR	International Institute of Ammonia Refrigeration
IIAR Bulletin 107	Suggested Safety and Operating Procedures when making Ammonia Refrigeration Tie-Ins
IIAR Bulletin 108	Water Contamination in Ammonia Refrigeration Systems
IIAR Bulletin 109	IIAR Minimum Safety Criteria for Ammonia Refrigeration Systems
IIAR Bulletin 110	IIAR Guidelines for: Startup, Inspection, and Maintenance of Ammonia Mechanical Refrigeration Systems
IIAR Bulletin 111	Guidelines for: Ammonia Machinery Room Ventilation
IIAR Bulletin 112	Ammonia Machinery Room Design
IIAR Bulletin 114	Guidelines for: Identification of Ammonia Refrigeration Piping and System Components
IIAR Bulletin 116	Guidelines for: Avoiding Component Failure in Industrial Refrigeration Systems Caused by Abnormal Pressure or Shock
IIR	International Institute of Refrigeration
IMC	International Mechanical Code
IOMs	Installation, Operation, and Maintenance Manuals
ISA	Instrument Society of America

ISO	International Standards Organization
ISO 14000	Standards published by the International Organization for Standardization for establishing environmental management systems
ISO 9000	Standards published by the International Organization for Standardization for quality management systems
ISP	Initial Startup Procedure
Kaizan	A quality system using lessons learned
L	Likelihood Column of a What If/ Checklist of a PHA
L/T	Lockout/Tagout
L2F	Letter to File
L3RMP	Level 3 Risk Management Plan Checklist Audit
LEL	Lower Explosive Limit: For ammonia 15% or 150,000 PPM
LEPC	Local Emergency Planning Commission
Lessons Learned	Applying knowledge gained from past incidents in current practices
LFL	Lower Flammability Limit: For ammonia 15% or 150,000 PPM
LIC	Piping Identification for Liquid Injection Cooling Line
LOPA	Layer of Protection Analysis
LPR	Low Pressure Receiver
LSD	Piping Identification for Low Stage Discharge Line

LSS	Piping Identification for Low Stage Suction Line
LT	Piping Identification for Liquid Transfer Line
LTL	Piping Identification for Low Temperature Liquid Line
LTRL	Piping Identification for Low Temperature Recirculating Liquid Line
LTRS	Piping Identification for Low Temperature Recirculating Suction Line
LTS	Piping Identification for Low Temperature Suction Line
MAWP	Maximum Allowable Working Pressure
MDMT	Material Design Minimum Temperature
MI	Mechanical Integrity
MII	Maximum Intended Inventory
MOC	Management of Change
MRTL	Piping Identification for Medium Temperature Recirculated Liquid Line
MRTS	Piping Identification for Medium Temperature Recirculated Suction Line
MSDS	Material Safety Data Sheet
MTL	Piping Identification for Medium Temperature Liquid Line
MTS	Piping Identification for Medium Temperature Suction Line
N.C.	Normally Closed
N.O.	Normally Open

NAICS	North American Industrial Classification System
NBIC	Nation Board Inspection Code
NDT	Non Destructive Testing of thickness of Material
NEP	National Emphasis Program Audit
NFPA	National Fire Protection Association
NFPA 471	Recommended Practice for Responding to Hazardous Material Incidents
NFPA 472	Standard for Professional Competence of Responders to Hazardous Material Incidents
NH3	Ammonia
NIOSH	National Institute for Occupational Safety and Health
NO	OSHA's National Office
NOP	Normal Operational Procedure
NRC	National Report Center
NSP	Normal Shutdown Procedure
OC	Piping Identification for Oil Charge Line
OCWR	Piping Identification for Oil Cooling Water Return
OCWS	Piping Identification for Oil Cooling Water Supply
OD	Piping Identification for Oil Drain Line
OP	Operating Procedures

Operator	An individual responsible for monitoring, controlling, and performing tasks as necessary to accomplish the productive activities of a system. Often used in generic sense to include people who perform all kinds of tasks (e.g., reading, calibration, maintenance).
OSHA	Occupations Safety and Health Administration
P&IDs	Piping and Instrument Diagrams
PD	Pressure Difference
PEL	Permissible Exposure Limit set forth by OSHA at 50 PPM for ammonia
PFD	Probability of Failure on Demand
PFD	Process Flow Diagram
PFFM	Process Flow Failure Mode
PHA	Process Hazard Analysis
PLC	Programmable Controller System
PM	Preventive Maintenance
PO	Piping Identification for Pump Out Line
PPB	Parts Per Billion
PPE	Personal Protective Equipment
PPM	Parts Per Million
PQV	Program Quality Verification Audit
PRCS	Permit Required Confined Space
PRG	Piping Identification for Purge Line

PRV	Pressure Relief Valve
PSI	Process Safety Information
PSIA	Pounds Per Square Inch Absolute Pressure
PSIG	Pounds Per Square Inch Gauge Pressure
PSM	OSHA's Process Safety Management Program required under 1910.119
PSM/RMP	Process Safety Management and Risk Management Programs combined as a Unified Program
PSS	Process Safety System
PSSR	Pre-Startup Safety Review
QA	Quality Assurance
Qualified Person	29 CFR 1910 Definition is: Qualified person means a person with specific training, knowledge, and experience in the area for which the person has the responsibility and authority to control. 1910.120
R	Risk Column of a What If / Checklist of a PHA
R717	Ammonia
RA	OSHA's Regional Administrator
RAGAGEP	Recognized and Generally Accepted Good Engineering Practices or Principles
RC	Piping Identification for Receiver Charge Line
Redo	To conduct a new PHA
RESOP	Refrigerating Equipment Standard Operating Procedure

RETA	Refrigerating Engineers and Technicians Association
RMP	Risk Management Plan
RMP	Risk Management Program
RMT	Refrigeration Management Team
RO	OSHA's Regional Office
ROSOP	Refrigerating Operations Standard Operating Procedure
RP	Respiratory Protection
RQ	Reportable Quantity
RR	Recirculation Ratio
RSM	Refrigeration Safety Management Program
RTK	Right to Know
RV	Piping Identification for Relief Vent
S	Severity Column of a What IF/ Checklist of a PHA
SAF	Supply Air Fan
SAT	Saturated
SAT	Saturated Refrigerant
SAT Charts	Saturation Table or Charts
SC	Sub-Cooled Liquid Refrigerant

SCBA	Self-Contained Breathing Apparatus
SCL	Piping Identification for Sub Cooled Liquid Line
SERC	State Emergency Response Commission
SH	Superheated Refrigerant
SOP	Standard Operating Procedure
SST	Site-Specific Targeting Plan
Standard	29 CFR 1910 Definition is: Standard means a standard which requires conditions, or the adoption or use of one or more practices, means, methods, operations, or processes, reasonably necessary or appropriate to provide safe or healthful employment and places of employment.
STEL	Short Term Exposure Limit
TD	Temperature Difference
TOP	Temporary Operational Procedure
TRI	Toxic Release Inventory
TSR	Piping Identification for Thermosyphon Return Line
TSS	Piping Identification for Thermosyphon Supply Line
TWA	Time Weighted Average
TXV	Thermostatic Expansion Valve
U1-A's	Manufacture's Data Report for Pressure Vessels
UEL	Upper Explosive Limit: for ammonia 28% or 280,000 PPM

UFL	Upper Flammability Limit: for Ammonia 28% or 280,000 PPM
UMC	Uniform Mechanical Code
UP	Unified Program
VE	Volumetric Efficiency
WCS	Worst Case Scenario
WFLO	World Food Logistics Organization
WO	Work Orders