EPA Risk Management Program & TFI *myRMP* Guidance

An Overview of the EPA Risk Management Program and TFI *myRMP* Suite of Retail Guidance Materials

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U.S. Environmental Protection Agency

Risk Management Program Regulation

- Covers facilities with 140 hazardous substances above threshold quantities in a process.
- Requires facilities to:
  - Implement an accident prevention program
  - Implement an emergency response program
  - Conduct a hazard assessment
  - Submit a Risk Management Plan, or “RMP” to EPA
- RMPs available to government, limited public access

Accident Prevention Program Levels

- Covered processes are placed into one of 3 “Program Levels” depending on risk to public
- Program 1 – processes with no public receptors in worst case scenario zone and no five-year accidents
- Program 3 – processes not eligible for P1 that are already covered by OSHA PSM or fall into one of 10 specified NAICS codes
- Program 2 – processes not in Programs 1 or 3. Agricultural retailers are typically in Program 2.

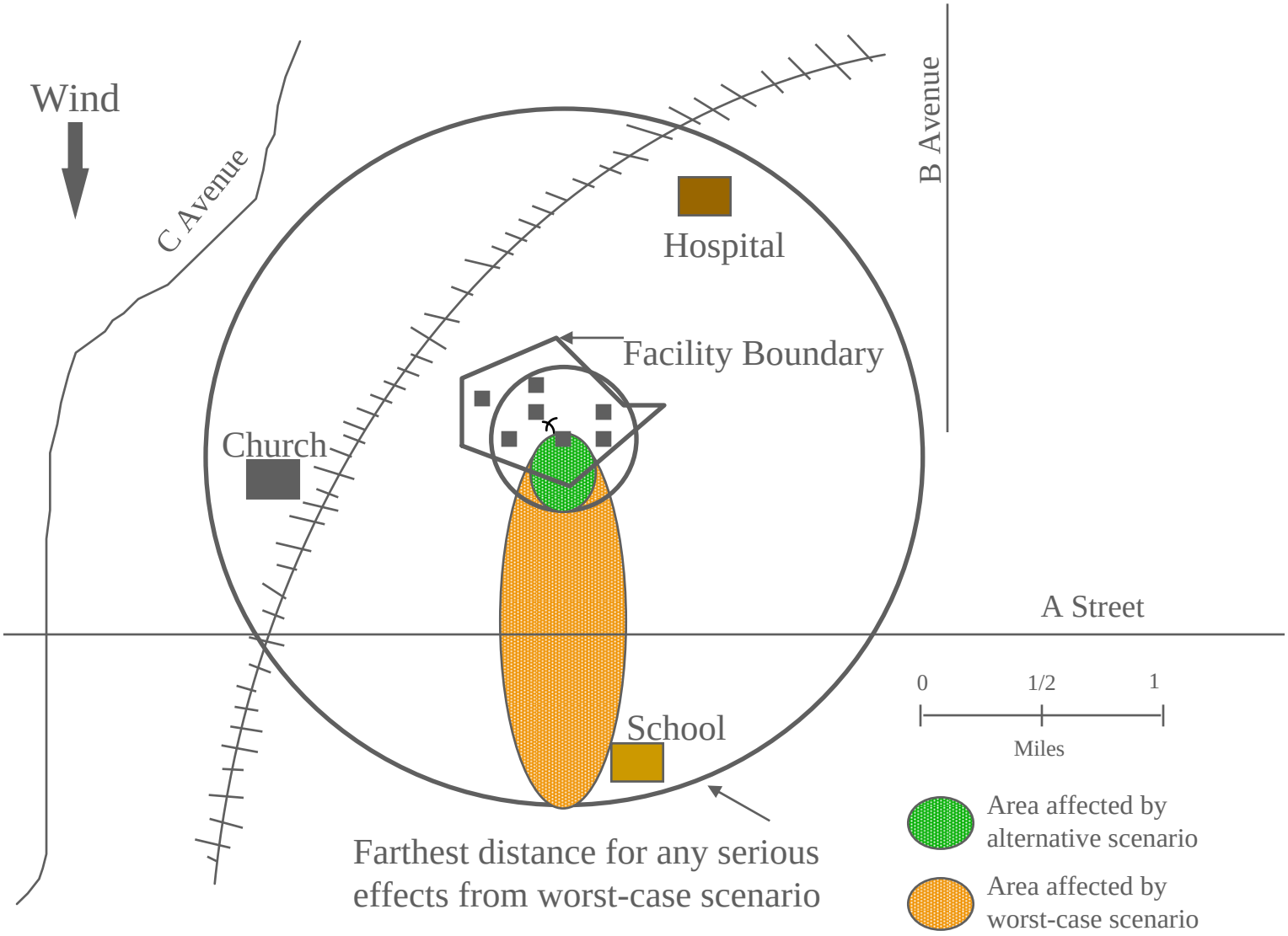
Accident Prevention - Program 2

- Safety Information
- Hazard Review
- Operating Procedures
- Training
- Maintenance
- Compliance Audits
- Incident Investigation

Hazard Assessment

- Five Year Accident History
- Offsite Consequence Analysis
  - Worst-Case Release Scenario
  - Alternative Scenario (except Program 1)
  - Defining Offsite Impacts

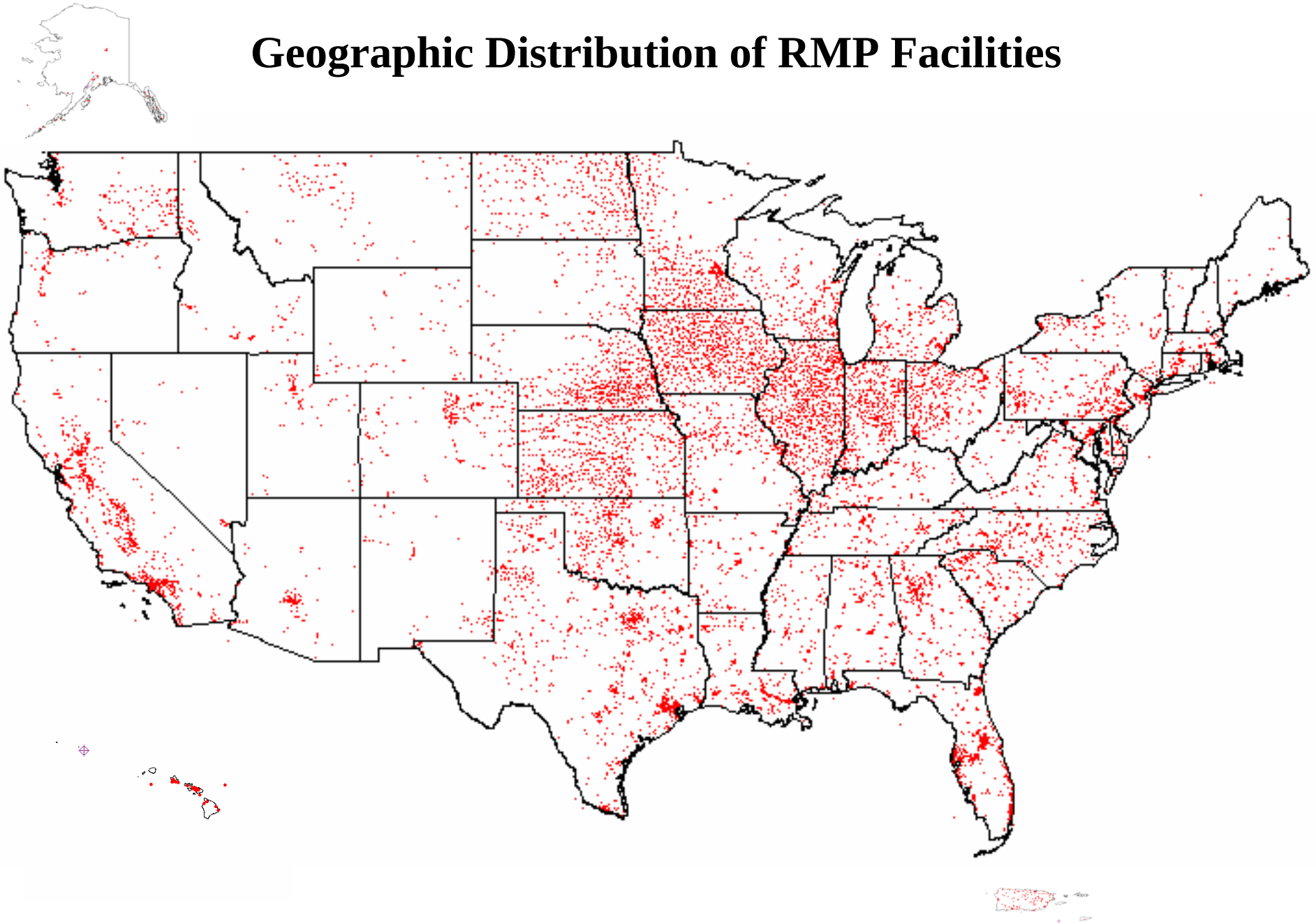
Simplified Illustration of Fictional Toxic Worst-Case and Alternative Release Scenarios on a Local Map



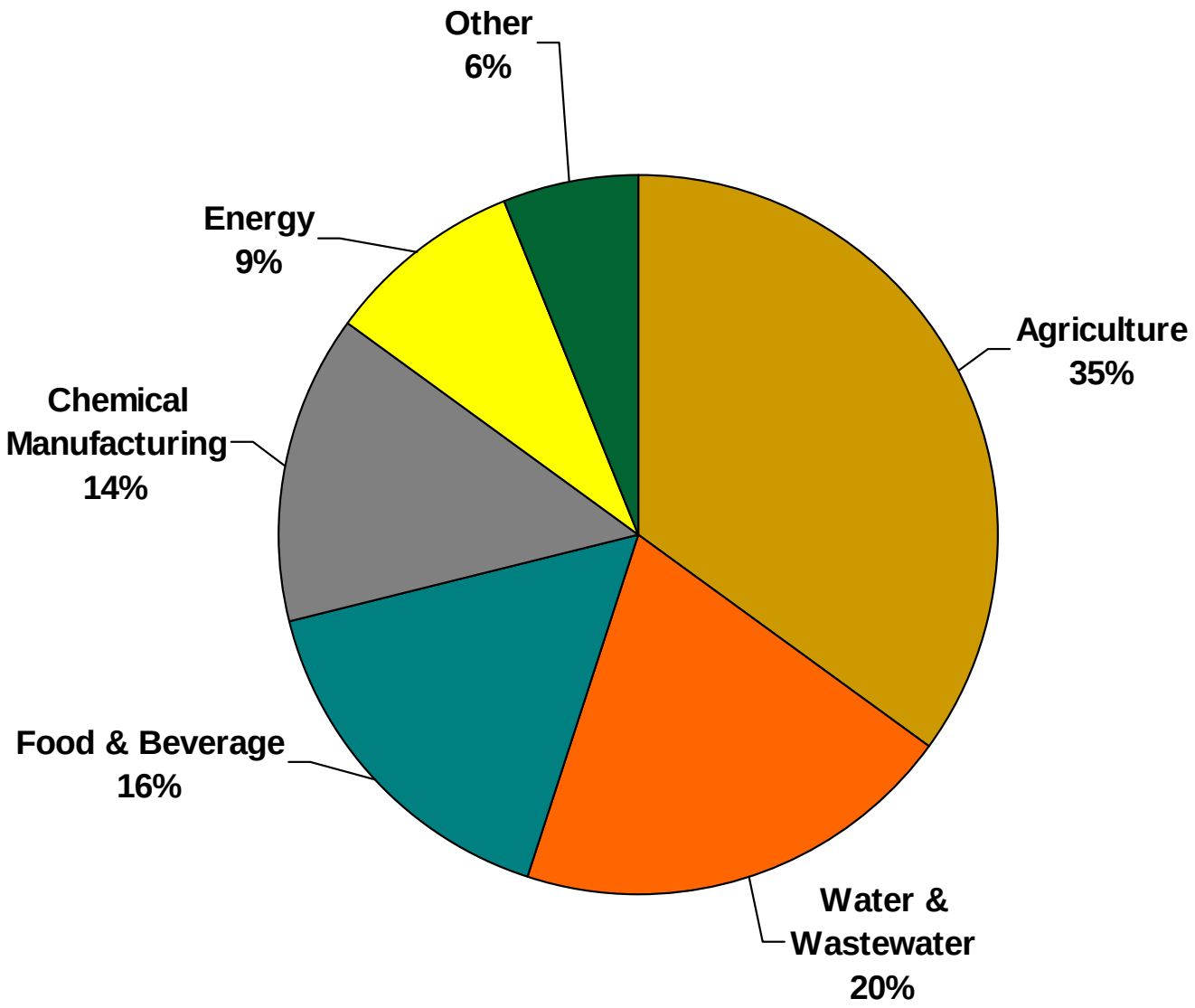
Contents of a Risk Management Plan

- Executive summary
- Registration info: Facility ID, location, lat/long, chemical process info (e.g., NAICS, chemical name, CAS #, quantity), etc.
- 5-year accident history
- Accident prevention program info: hazard analysis methods, mitigation measures, etc.
- Emergency response planning information
- Offsite consequence analysis: Worst-case & alternative release scenarios

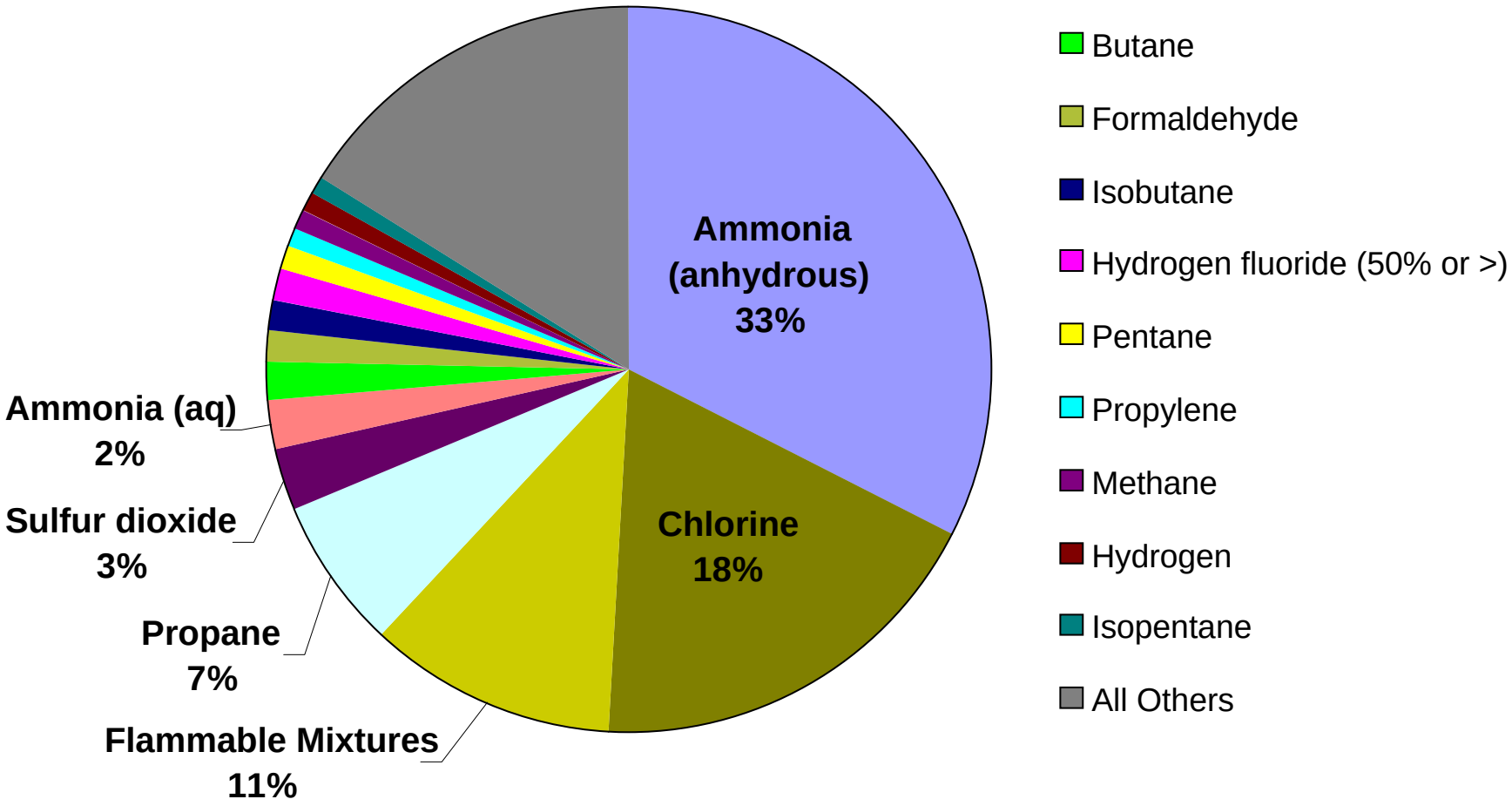
Geographic Distribution of RMP Facilities



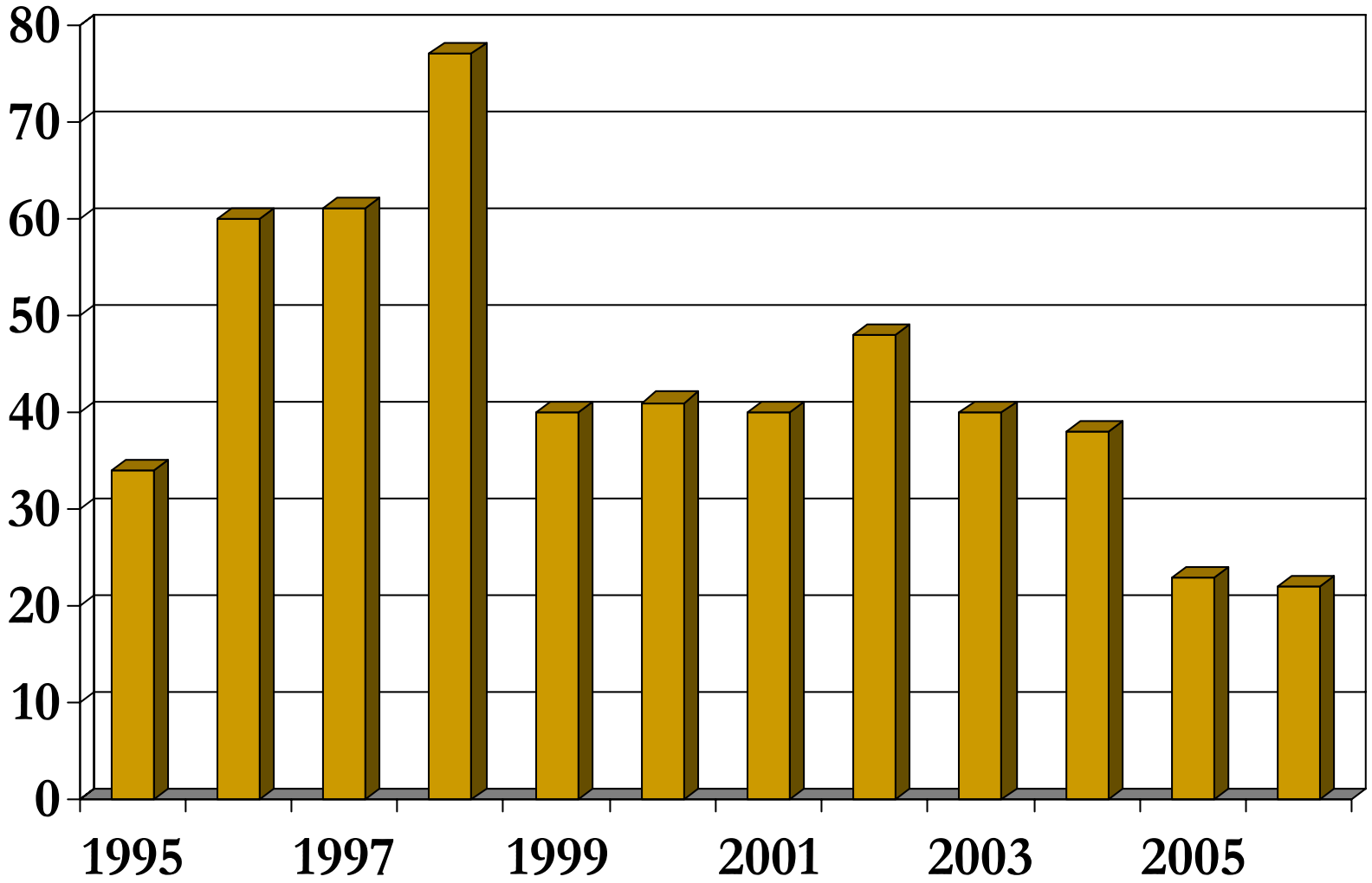
RMP Facility Industry Sectors



Most Prevalent RMP Facility Chemicals



Ammonia Releases at RMP Agriculture Sector Facilities

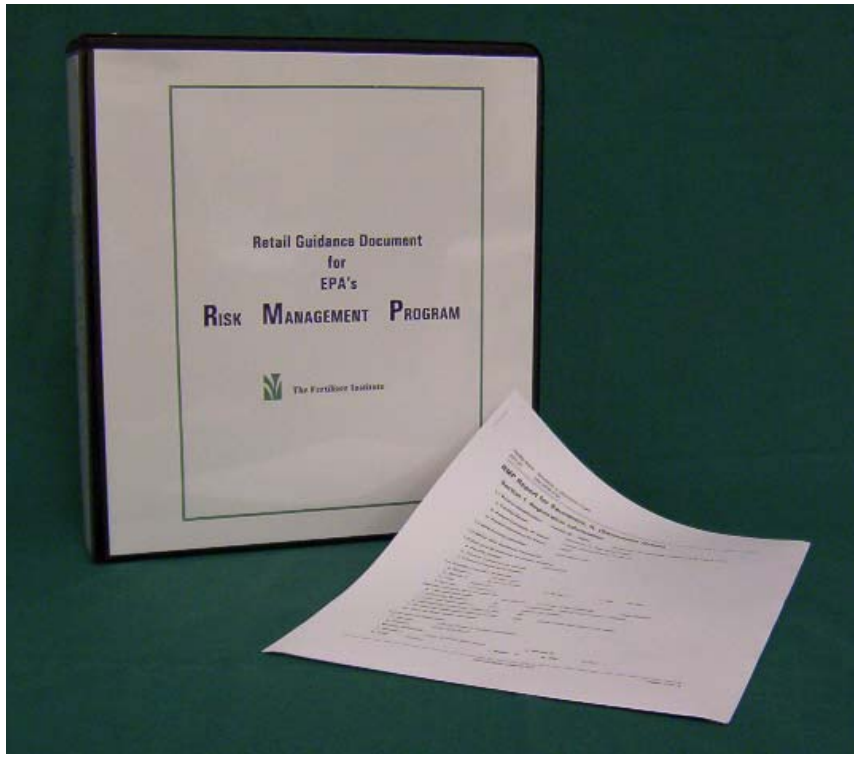


RMP Guidance

- Guidance clarifies regulatory requirements, but does not supersede regulations
- 1998: EPA published *General Guidance for Risk Management Programs*
- '98-99: EPA published industry-specific guidance:
  - Warehouses
  - Wastewater treatment facilities
  - Ammonia refrigeration facilities
  - Chemical distribution facilities
  - Propane storage facilities
- Guidance for other sectors was published by sector trade associations, including TFI, AWWA, API, etc.

TFI RMP Guidance Materials

- Guidance Document (1998)
- DEGADIS Model
- Workshops



Need for Updated Guidance for Agricultural Retail Facilities

- Early TFI guidance materials mainly focused on completing Risk Management Plan and Offsite Consequence Analysis
- Many regulated facilities submitted RMPs without properly implementing risk management program on site
- Inconsistent EPA enforcement at agricultural retail sector facilities

New RMP Guidance for Retail Agricultural Facilities

- 2004-'05: EPA Region 5 contracts with Illinois Department of Agriculture to conduct RMP inspections at 500 IL Ag sector facilities
- 2006: TFI develops *myRMP* guidance; EPA develops RMP Guidance for Retail Agricultural Facilities
- 2007: TFI & EPA merge efforts into updated *myRMP* guidance

New Features in *myRMP*

- More emphasis on safety information & hazard review
- Expanded tutorial
- Expanded, editable written operating procedures
- Contractor safety checklist
- New “Quick Start” Guide to RMP
- Expanded list of resources
- Revised forms for hazard review & incident investigation

Free Access to *myRMP* via Internet Websites

- U.S. EPA
- The Fertilizer Institute
- Asmark Institute
- Link is available to add to your website

myRMP

*my*RMP Suite of Retail Guidance Materials
Version 3.0

This exciting new suite of web-based tools is the third generation of guidance developed exclusively to assist agricultural retailers with implementing their Risk Management Program and in preparation of their Risk Management Plan (RMP). ***my*RMP** is an update based on the *Retail Guidance Manual for Program 2 Facilities* originally published by The Fertilizer Institute in 1998. Expanded to include several new components, ***my*RMP** incorporates the base of original information in the federal rule with the accumulated knowledge gained by industry over the past nine years and experiences with the different Regions of the Environmental Protection Agency.

The Fertilizer Institute

The ***my*RMP** Suite of Retail Guidance Materials is sponsored by The Fertilizer Institute and was developed cooperatively with the Asmark Institute. This innovative new approach to industry-specific guidance is supported by U.S. EPA. This suite of compliance assistance tools has been specifically developed to provide retailers with industry-standard information to assist in the preparation and maintenance of the Risk Management Program for their facility.

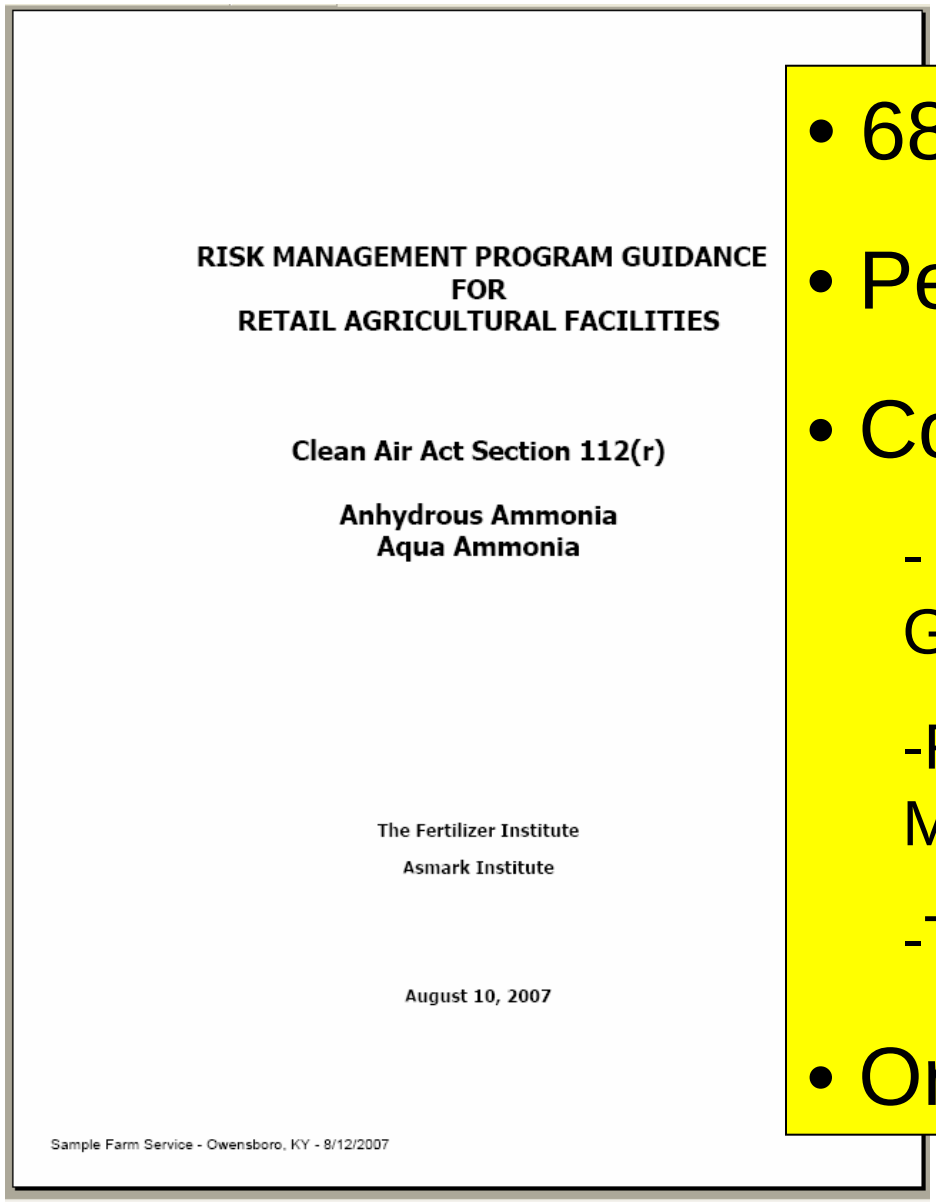
Based on the past nine years of experience with RMP compliance, the task force responsible for developing ***my*RMP** noticed one common deficiency that prevents genuine compliance at retail locations, which is a lack of understanding and basic knowledge of the Risk Management Program rule by the facility personnel. Any performance-oriented requirement is only as good as its implementation. Accordingly, ***my*RMP** has been developed with a special emphasis on education and personalizing the experience and materials to a specific facility.

EPA Letter of Support

***my*RMP Suite of Retail Guidance Materials** includes the following features for assisting with the compliance of Program 2 Risk Management Plans. Please select from the following links.

- **Risk Management Program Guidance for Retail Agricultural Facilities**
- **Tutorial and Personalized Written Operating Procedures**
- **RMP Maintenance Manual Online**
- **RMP Hazard Review Form and Instructions**
- **RMP Compliance Audit Form and Instructions**
- **Incident Investigation Form and Instructions**

Quick Link!
Master List of Resources



- 68 pages
- Personalized
- Consolidates guidance
  - U.S. EPA General Guidance Document
  - -RMP*Submit User's Manual
  - -TFI Ag Retail Guidance
- Order of data element

Tutorial

Step 1. Welcome to *my*RMP

This exciting new ***my*RMP** Suite of Retail Guidance Materials is made possible by The Fertilizer Institute and the Asmark Institute.

The Fertilizer Institute
Nourish, Replenish, Grow

This unique web-based educational program is designed to provide participants with the basic information on the Risk Management Program requirements. Our goal is to present this very complex rule in a way that will make sense. This new tutorial program presents the training in layman's terms and allows participants to proceed at their own pace. It also provides access to a complete offering of resources and information to further the participant's understanding of this complex rule.

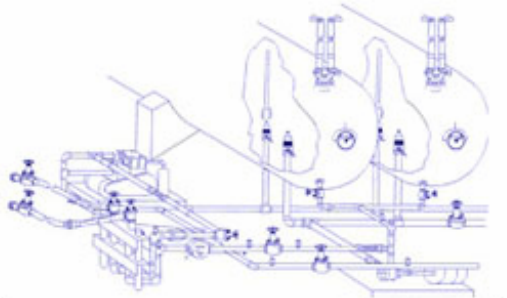
Please review the information closely and click on the "Continue" button when ready to proceed to the next screen. *Quick-Links* have been added to the resources that will help enhance the learning experience and result in a better overall understanding of how to develop and implement the RMP at your facility.

Back Continue

What is a Process?

"Process" is a term that is very important to understanding how the RMP rule affects your facility. The term "process" has been given a broad meaning in the RMP rule and basically includes any equipment and activities involving a regulated substance that could lead to an accidental release.

A process typically would include the storage tank, any plumbing or hose and equipment such as pumps, compressors, valves, fittings and riser loadouts. In most cases, EPA requires that nurse wagons be included as part of the process.



Artwork Courtesy of REGO Products

Nurse wagons should be included as part of the bulk storage process unless facility management determines that a catastrophic event at the largest storage tank would not impact the parked nurse wagons.

Filled nurse wagons parked in staging areas on the facility property may require a separate process if the amount stored exceeds 10,000 pounds.

Offsite staging areas may require a separate RMP if the amount stored exceeds 10,000 pounds.

Back Continue

Safety Information

Safety information is critical to the proper implementation of your Risk Management Program. Having current safety information about your process is the foundation of an effective prevention program.

The following safety information must be compiled and maintained on-site for the regulated substances and equipment used in a process:

- Material Safety Data Sheets (MSDS)
- Maximum Inventory
- Storage and Process Limits
- Equipment Specifications
- Codes and Standards

The purpose is to ensure that you understand the safety-related aspects of your equipment and processes. Since every facility is different, it is essential to know what the limitations are for the equipment utilized in your operations. EPA expects facilities to adopt accepted standards and codes for the construction and use of the equipment.

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Tutorial

Worst-Case Scenario

Facilities are required to analyze a "Worst-Case" scenario. A Worst-Case scenario estimates the potential consequences of the hypothetical catastrophic release of the largest container of anhydrous ammonia stored on site. This is typically the stationary storage tank unless the facility receives ammonia by rail. Rail cars used for anhydrous ammonia typically have larger capacities than stationary tanks used for storage.

PotashCorp's railcar designed for ammonia training travels the country helping train customers and community first responders.

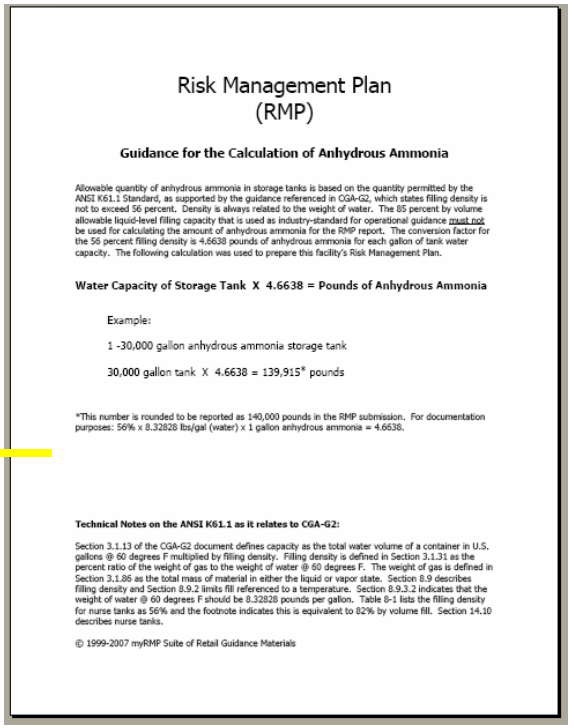
Before the Worst-Case scenario for your facility can be modeled, the amount of anhydrous ammonia in pounds must be calculated. The allowable quantity of anhydrous ammonia in storage tanks is based on the quantity permitted by the ANSI K61.1 Standard, which states filling density is not to exceed 85% volume fill.

The conversion factor for the 85% volume fill density is 4.6638 pounds of anhydrous ammonia for each gallon of tank water capacity. The following calculation will help illustrate how to convert gallons of ammonia to pounds. More detail on this conversion factor.

30,000	X	4.6638	=	139,915
Water Capacity of Tank		Conversion Factor		Pounds of Ammonia

Back Continue

Quick Links:
ANSI K61.1 Order Form



Risk Management Plan
(RMP)

Guidance for the Calculation of Anhydrous Ammonia

Allowable quantity of anhydrous ammonia in storage tanks is based on the quantity permitted by the ANSI K61.1 Standard, as supported by the guidance referenced in CGA-G2, which states filling density is not to exceed 56 percent. Density is always related to the weight of water. The 85 percent by volume allowable liquid-level filling capacity that is used as industry-standard for operational guidance must not be used for calculating the amount of anhydrous ammonia for the RMP report. The conversion factor for the 56 percent filling density is 4.6638 pounds of anhydrous ammonia for each gallon of tank water capacity. The following calculation was used to prepare this facility's Risk Management Plan.

Water Capacity of Storage Tank X 4.6638 = Pounds of Anhydrous Ammonia

Example:

1 -30,000 gallon anhydrous ammonia storage tank

30,000 gallon tank X 4.6638 = 139,915* pounds

*This number is rounded to be reported as 140,000 pounds in the RMP submission. For documentation purposes: 56% x 8.32828 lbs/gal (water) x 1 gallon anhydrous ammonia = 4.6638.

Technical Notes on the ANSI K61.1 as it relates to CGA-G2:

Section 3.1.13 of the CGA-G2 document defines capacity as the total water volume of a container in U.S. gallons @ 60 degrees F multiplied by filling density. Filling density is defined in Section 3.1.31 as the percent ratio of the weight of gas to the weight of water @ 60 degrees F. The weight of gas is defined in Section 3.1.06 as the total mass of material in either the liquid or vapor state. Section 8.9 describes filling density and Section 8.9.2 limits fill referenced to a temperature. Section 8.9.3.2 indicates that the weight of water @ 60 degrees F should be 8.32828 pounds per gallon. Table 8-1 lists the filling density for nurse tanks as 56% and the footnote indicates this is equivalent to 82% by volume fill. Section 14.10 describes nurse tanks.

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Hazard Review

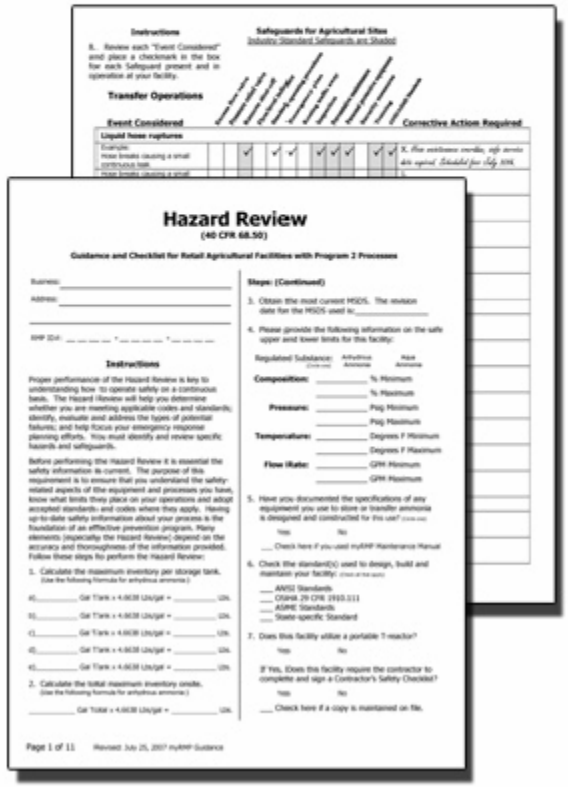
Owners or operators are responsible for performing a written review of the hazards associated with handling regulated substances such as ammonia. The Hazard Review will help determine whether or not your facility is:

- Meeting all applicable codes and standards
- Evaluating and addressing types of potential failures
- Helping to focus emergency response planning efforts

There are several accepted methods of conducting Hazard reviews. The method contained in the guidance manual is commonly referred to as a "What-if." Hazard Reviews are required to be conducted:

- When the facility is first subject to the rule, and
- With every five-year update, and
- Anytime a major change occurs in the process at the facility

All issues identified in the Hazard Review must be resolved before startup occurs. Hazard Review documentation should include a date, any findings or conclusions



Quick Links:
Hazard Review Form & Instructions

ASMARK INSTITUTE

Tutorial

Step 4. Create Written Operating Procedures

Written procedures are the guidance for instructing your employees how to work safely everyday. They provide a quick source of information that can prevent or mitigate the effects of an accidental release.

The following written operating procedures were first developed more than twenty years ago and have been revised and improved over the years. They are the result of the cooperation of a broad representation of the agricultural retail industry. EPA allows for the use of industry-specific procedures provided the owner or operator of the regulated facility ensures they are appropriate for their activities. ***my*RMP** will allow you to edit and further personalize the written procedures to better suit the needs of your specific operation.

This program will create written operating procedures personalized to the activities at your facility. Please provide the following information and follow the instructions to start the process.

A. Please Enter Your Facility Information:

Business Name:

Mailing Address: *(ex. PO Box 99)*

City:

State:

Zip Code:

Site Reference: *(ex. Atwood Satellite)*

Preparer's Name:

Preparer's Phone Number:

Preparer's Email Address: *(Required for Confirmation)*

B. Please provide the following information on **Facility Responsibilities**:

Name of the person responsible for the following activities: *(Enter name for each)*

Implementation of the RMP:	
Safety Information:	
Maintenance:	
Operating Procedures:	
Training:	
Hazard Review:	
Compliance Audit:	
Accident Investigation:	
Emergency Plan:	
5-Year Accident Report :	
Offsite Consequence Analysis:	

Click here if the same person is responsible for all activities.

Please Note!
Some facilities may have one person responsible for all activities.

C. Please provide the following information on use of **Temporary Operating Procedures**:

EPA defines "Temporary Operations" as short-term operations that will usually occur when your regular process is shut down, or possibly when additional capacity is needed for a limited amount of time. Examples of Temporary Operations include use of a mobile T-reactor for the production of liquid fertilizer or the use of a backup (spare) compressor or pump or the unexpected addition of a new substance or product that would replace ammonia or be incompatible. Temporary operating procedures are required if it is possible that you would operate your process in a way that is not covered under normal operations.

Does this facility utilize Temporary Operating Procedures? ○ Yes ○ No

If Yes, does this facility utilize a mobile T-reactor? ○ Yes ○ No

D. Please provide the following information on **Emergency Shutdown Procedures**:

EPA has issued guidance on Emergency Shutdown Procedures that states a regulated facility's procedures must cover the steps to shutdown the process quickly. EPA further states these procedures will be brief because shutting a process down will be little different in an emergency than under ordinary circumstances.

Does this facility utilize a cable or air-operated emergency shutoff valve installed in the fixed piping?	◯ Yes	◯ No
Does this facility utilize a pull-a-way protection at the loadout risers?	◯ Yes	◯ No
Does this facility utilize a pull-a-way protection at the bulkhead point of load-in?	◯ Yes	◯ No
Does this facility utilize excess flow valves in all storage tanks?	◯ Yes	◯ No

E. The following industry-standard operating procedures have been compiled for your use in developing written operating procedures for your facility. Please select the procedures utilized at your facility. Your selection(s) will print in the final document.

Transfer Operations and Procedures for Anhydrous Ammonia

- ☐ Basic Operations
- ☐ Filling Nurse Tanks by Compressor
- ☐ Filling Nurse Tanks by Liquid Pump
- ☐ Unloading Tank Cars by Compressor
- ☐ Recovering Tank Car Vapors
- ☐ Transfer Into Applicators (Vapor Transfer Method)
- ☐ Filling Applicator Tanks by Liquid Pump
- ☐ Unloading Transport Trucks by Compressor
- ☐ Unloading Transport Trucks by Liquid Pump
- ☐ Water Run Application Procedures
- ☐ General Emergency Procedures
- ☐ Safety & Emergency Shutdown Procedures
- ☐ Startup Procedures Following a Safety & Emergency Shutdown

Transfer Operations and Procedures for Aqua Ammonia

- ☐ Basic Operations
- ☐ Filling Nurse Tanks by Compressor

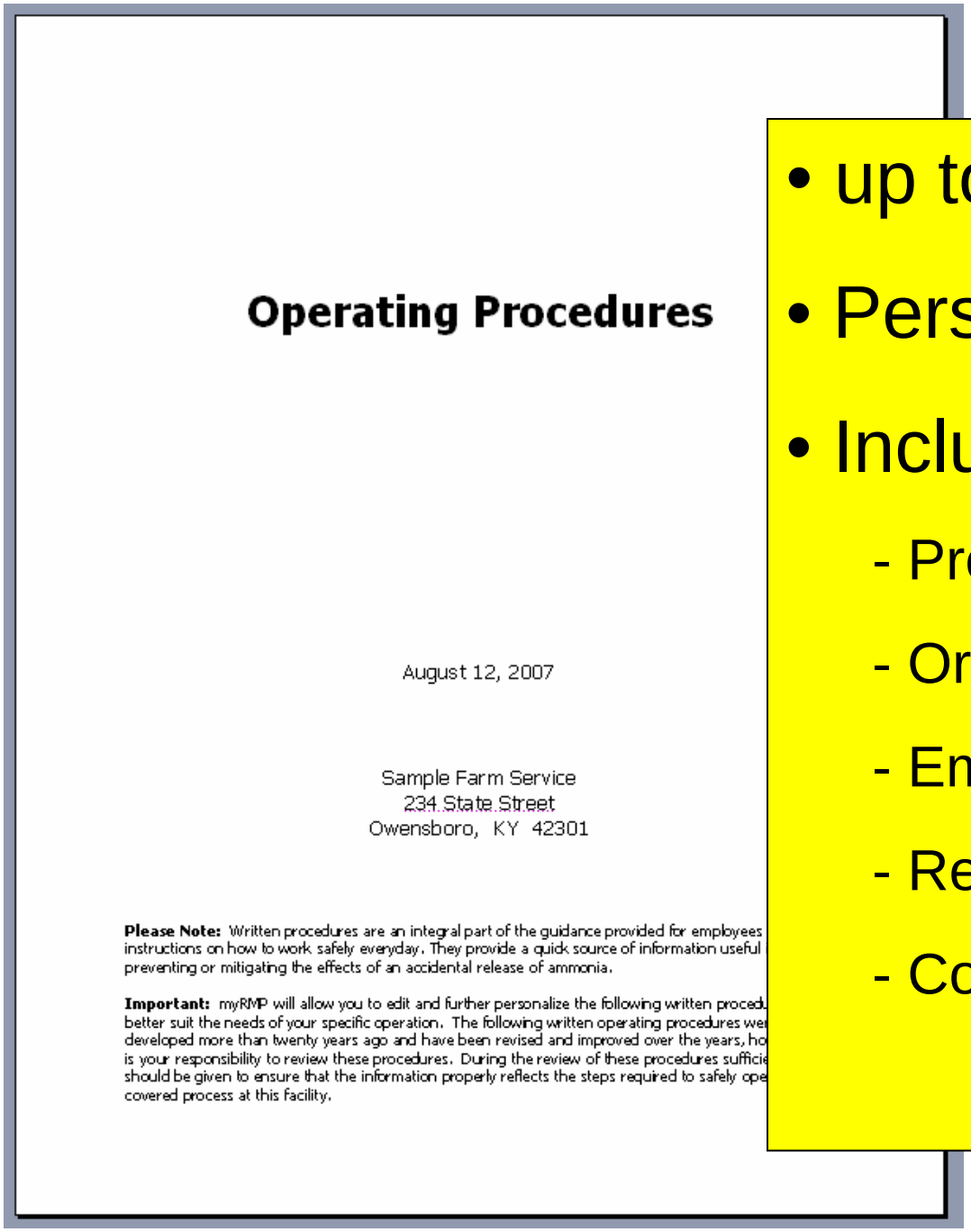
F. Please provide the Color Coding (if applicable) for this facility:

Vapor: None Liquid: None

Dropdown list with choice of colors.

Please click on Continue when finished making your final selections.

Continue



Operating Procedures

August 12, 2007

Sample Farm Service
234 State Street
Owensboro, KY 42301

Please Note: Written procedures are an integral part of the guidance provided for employees
instructions on how to work safely everyday. They provide a quick source of information useful
preventing or mitigating the effects of an accidental release of ammonia.

Important: myRMP will allow you to edit and further personalize the following written proced
better suit the needs of your specific operation. The following written operating procedures we
developed more than twenty years ago and have been revised and improved over the years, ho
is your responsibility to review these procedures. During the review of these procedures sufficie
should be given to ensure that the information properly reflects the steps required to safely ope
covered process at this facility.

- up to 42 pages
- Personalized
- Includes:
  - Procedures
  - Organizational chart
  - Emergency information
  - Release reporting info
  - Contractor's Checklist

*my*RMP Maintenance Manual

This feature of ***my*RMP** Suite of Retail Guidance Materials is designed to assist you in maintaining the mechanical integrity of equipment utilized in a Program 2 covered process at a retail facility. Certain information on the equipment used in your anhydrous ammonia installation is essential to providing for the proper preventative maintenance of the covered system.

***my*RMP** Maintenance Manual Online contains the available information from the manufacturer for the components used in the typical anhydrous ammonia installation. Each component has been compiled to include the available manufacturer-specific information such as product specifications and installation, operation, repair and maintenance information. Follow these steps to produce a RMP Maintenance Manual personalized to your facility.

Step 1.

Print a copy of the Master Equipment List. Use the list to identify all of the components used in your covered process.

Master Equipment List

Log off the website and follow the instructions printed on the Master Equipment List. Log on the website after completing the Master Equipment List and proceed to Step 2.

Step 2.

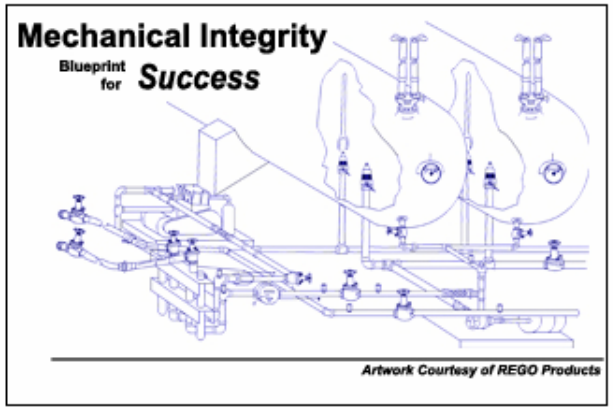
Verify or Enter your Facility Information.

Step 3.

Select the contents of your manual online.

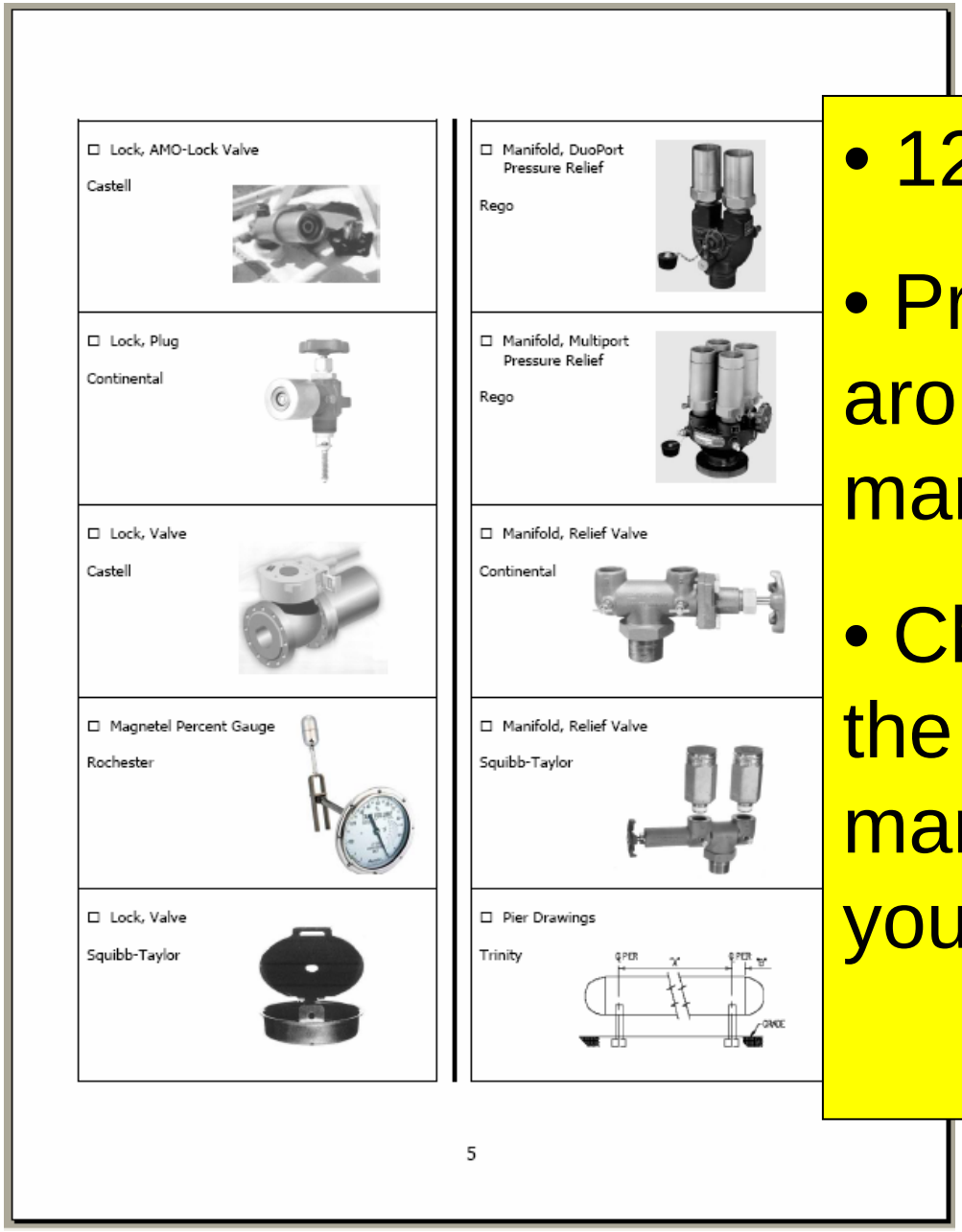
Step 4.

Select the method of delivery.



Request a Component be Added to *my*RMP

Notify us of revised information on *my*RMP



- 12 pages
- Printed off and carried around the facility while marking all components.
- Check off the list on the computer and print a manual personalized to your facility.

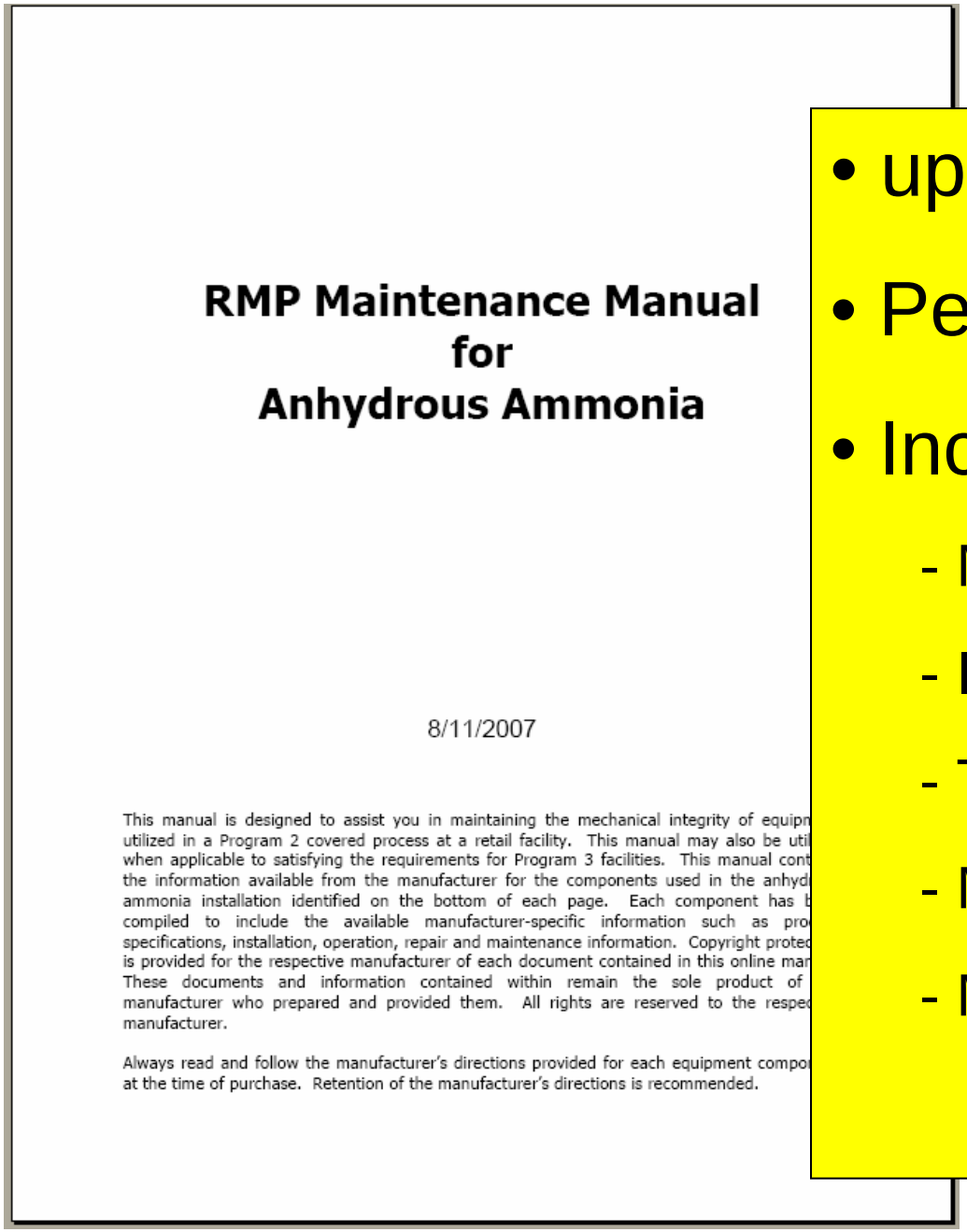
Step 3. Select the contents of your manual online.

Optional Sections / Forms: Please select any section or form you want to be included in your personalized manual.

- [ ] Contact List *(PDF: 12 KB / 1 pages)*
- [ ] General Equipment Standards *(PDF: 793 KB / 22 pages)*
- [ ] Markings, Ammonia Tank *(PDF: 58 KB / 3 pages)*
- [ ] General Inspection & Test Guidelines *(PDF: 53 KB / 17 pages)*
- [ ] Inspection Record, Storage Tank *(PDF: 24 KB / 2 pages)*
- [ ] Inspection Record, Components *(PDF: 18 KB / 2 pages)*
- [ ] Inspection Record, Railroad Tank Car *(PDF: 16 KB / 1 pages)*

Equipment / Components: Using the Master Equipment List previously completed, please select the specific component(s) (by manufacturer) you want to be included in your personalized manual. Some components may be called by several names.

- [ ] ACME Adaptors, Caps and Hose Hangers, Continental *(PDF: 756 KB / 4 pages)*
- [ ] ACME, Adaptors, Connectors and Fittings, Rego *(PDF: 144 KB / 1 pages)*
- [ ] ACME, Adaptors and Caps, Squibb-Taylor *(PDF: 110 KB / 1 pages)*
- [ ] ACME, Caps and Reducers, Rego *(PDF: 178 KB / 1 pages)*
- [ ] ACME, Spanner Wrench, Rego *(PDF: 36 KB / 1 pages)*
- [ ] Basket Strainer, Hayward *(PDF: 90 KB / 2 pages)*
- [ ] Compressor, Blackmer Bulletin, Blackmer *(PDF: 2371 KB / 16 pages)*
- [ ] Compressor, Blackmer Manual, Blackmer *(PDF: 306 KB / 4 pages)*
- [ ] Compressor, Corken Manual, Corken *(PDF: 303 KB / 37 pages)*
- [ ] Connector, Stainless Steel Hose, Goodall *(PDF: 85 KB / 1 pages)*
- [ ] Connector, Stainless Steel Hose, Squibb-Taylor *(PDF: 28 KB / 1 pages)*
- [ ] Coupling, ACME, Continental *(PDF: 836 KB / 3 pages)*
- [ ] Coupling, ACME, Rego *(PDF: 64 KB / 1 pages)*
- [ ] Coupling, Fill, Squibb-Taylor *(PDF: 57 KB / 1 pages)*
- [ ] Couplings, Reusable, Squibb-Taylor *(PDF: 248 KB / 2 pages)*
- [ ] Couplings, Reusable Clamp Type, Continental *(PDF: 921 KB / 2 pages)*
- [ ] Flow Indicator, Rochester *(PDF: 85 KB / 1 pages)*
- [ ] Flow Indicator, Sight, Rego *(PDF: 118 KB / 1 pages)*
- [ ] Flow Indicator, Sight, Squibb-Taylor *(PDF: 363 KB / 5 pages)*
- [ ] Gauge, Pressure, Rego *(PDF: 91 KB / 1 pages)*
- [ ] Gauge, Pressure, Squibb-Taylor *(PDF: 118 KB / 1 pages)*
- [ ] Gauge, Rotogages, Rego *(PDF: 176 KB / 1 pages)*
- [ ] Gauges, Float, Continental *(PDF: 1410 KB / 2 pages)*



RMP Maintenance Manual
for
Anhydrous Ammonia

8/11/2007

This manual is designed to assist you in maintaining the mechanical integrity of equipm
utilized in a Program 2 covered process at a retail facility. This manual may also be util
when applicable to satisfying the requirements for Program 3 facilities. This manual cont
the information available from the manufacturer for the components used in the anhyd
ammonia installation identified on the bottom of each page. Each component has b
compiled to include the available manufacturer-specific information such as pro
specifications, installation, operation, repair and maintenance information. Copyright protec
is provided for the respective manufacturer of each document contained in this online mar
These documents and information contained within remain the sole product of
manufacturer who prepared and provided them. All rights are reserved to the respec
manufacturer.

Always read and follow the manufacturer's directions provided for each equipment compo
at the time of purchase. Retention of the manufacturer's directions is recommended.

- up to 444 pages
- Personalized
- Includes:
  - Maintenance Procedures
  - Inspection Forms
  - Technical Spec Sheets
  - Maintenance information
  - Manufacturer's information

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Office of Emergency Management

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