

**PROPOSED ORDER OF THE
DEPARTMENT OF COMMERCE**

CREATING RULES

The Wisconsin Department of Commerce proposes an order to amend Comm Table 2.43, 14.01 (2) Note, and 48.580 (2) (a) and Note;

to repeal and recreate Comm 10 and 47.015 (19) and Note;

and to create Comm 48.580 (1) (c), relating to flammable, combustible and hazardous liquids, and affecting small businesses.

Rule Summary

1. Statutes Interpreted

Sections 101.02 (15), 101.09 (3), 101.11 (2), 101.14 (1) (a) and (4) (a) and (g), 101.142, 101.19, 168.11 (1) (b) 1., and 168.16 (1) of the Statutes.

2. Statutory Authority

Sections 101.02 (15), 101.09 (3), 101.11, 101.14 (1) (a) and (4) (a), 101.142, 101.19, 168.16 (4) and 227.11 (2) (a) of the Statutes.

3. Explanation of Agency Authority

Under the statutes listed above, the Department has a responsibility to adopt and administer rules for safe storage, handling and use of flammable, combustible and hazardous liquids. The rules proposed in this order encompass fire safety, life safety and environmental safety aspects for flammable, combustible and hazardous liquids, and include registration requirements for tanks that contain these liquids. The Department also has authority under section 227.11 (2) (a) of the Statutes to promulgate rules interpreting any statute that is enforced or administered by the Department, if the rule is considered necessary to effectuate the purpose of the statute.

4. Related Statute or Rule

The rules proposed in this order are related to rules in chapter Comm 14, which addresses fire prevention; chapter Comm 47, which addresses Petroleum Environmental Cleanup Fund

Awards (PECFA); chapter Comm 48, which addresses grade specifications and inspection requirements for petroleum products; and chapters Comm 60 to 66, which address design and construction of public buildings and places of employment.

5. Plain Language Analysis

The rules contained in this proposal are primarily intended to establish or refine design, construction, operation and maintenance standards for public safety, and to protect the waters of the state from contamination by liquids that are flammable or combustible or are federally-regulated hazardous substances. Many of the changes from the current code requirements are intended to update adopted national standards, address advances in technology, remove obsolete deadline requirements, and streamline administrative processes. Some of the changes are designed to address current trends and practices, emphasize life safety requirements, clarify ambiguous requirements, provide consumer protection, and achieve compliance with recently enacted federal requirements. Several changes are included for more clearly showing which requirements apply to existing equipment, and why, rather than applying only to new equipment. Wherever possible, conflicting rules in chapter Comm 10 would be repealed so that the requirements will be as specified in the adopted, current national standards; and consent for that adoption will be obtained from the Attorney General and the Legislative Reference Bureau. New requirements have been added to focus environmental protection on the components of a tank system that have been shown to have the greatest potential for releases to the environment. Requirements have also been added to maintain consistency for re-commissioning of out-of-service corrosion protection systems. The changes would also allow certain types of fueling from movable tanks, which is generally prohibited under the current code and its adopted standards.

The proposed rules would also discontinue chapter Comm 10's regulation of small containers for flammable, combustible and hazardous liquids, and regulation of certain process containers for these liquids. This regulation will continue to occur instead under changes to chapter Comm 14 that became effective on March 1, 2008.

6. Summary of, and Comparison With, Existing or Proposed Federal Regulations

Federal regulations for aboveground storage tanks do not address fire and public safety issues or ground water pollution issues, except for protecting potable water supply sources. Federal regulations for underground storage tanks do not address fire and public safety issues or surface water pollution issues, except for protecting potable water supply sources. A summary and a comparison of the federal regulations that address topics in chapter Comm 10 are included in the following comparison with rules in adjacent states.

7. Comparison With Rules in Adjacent States

Administrative requirements

In Illinois and Minnesota, as in Wisconsin, ordinances or standards that are adopted locally can be more restrictive than the state rules. In Michigan, no municipality or fire protection district can be more restrictive than the state rules. Iowa allows municipal or fire protection district

requirements to be more restrictive for aboveground storage tank applications, however, those requirements cannot be more or less restrictive for underground storage tank applications.

Topical requirements

The following eight topics illustrate the most significant proposed changes to the current requirements in chapter Comm 10. A comparison of these proposed changes with federal regulations and with rules in adjacent states also follows.

A. Comm 10.100 (1) (a) 8. and (3) (a) 4. and 5. d., and 10.680 (3) (a) These sections would more specifically require plan review for new fueling systems using fuels with greater than 10 percent ethanol, and for converting an existing fueling system using fuels with less than 10 percent ethanol to a fueling system using up to 100 percent ethanol. These sections would also more specifically require cleaning of a tank during conversion of an existing system. The plan review requirement would also apply to new fueling systems using fuels with greater than 5 percent biodiesel, and to conversion of an existing system using fuels with less than 5 percent biodiesel to a fueling system using up to 100 percent biodiesel. The Department is currently requiring this plan review and tank cleaning through general criteria in chapter Comm 10.

A search of existing and proposed federal regulations, and existing rules in the adjacent states identified only Illinois as having a requirement for plan review for conversion of existing systems for both aboveground and underground storage systems. Michigan does not review changes to existing systems unless more than half of the system is changed – however, some local jurisdictions are more restrictive and may require a review. Iowa requires review for a conversion of an existing underground system only. Minnesota defers approval to the local jurisdiction; however, the Minnesota Weights and Measures program has authority to mandate changes that they believe impact consumer protection.

These proposed rule changes are needed to ensure that components used in a storage tank system are compatible with the increased ethanol content of these alternative motor fuels. Incompatibility could result in fuel contamination from these components, and could cause these components to fail and thereby result in a release to the environment. Not removing water and residues from a tank before it is filled with fuel having more than 10 percent ethanol can result in formation of compounds that subsequently cause engine malfunctions.

B. Comm 10.400 (3) and Comm 10.500 (1) and (5) These sections would expand current requirements for providing double-wall piping and tanks, to apply to all new underground tanks and pressurized piping, including underground piping that serves an aboveground tank. These requirements would also apply when replacing more than half of an existing single-wall underground piping system. This expansion is in response to the federal Energy Policy Act of 2005, which (1) addresses secondary containment for federally regulated tanks or piping installed within 1,000 feet of any existing community water system, or any existing potable drinking water well or other potable water source; and (2) requires interstitial monitoring for any associated double-wall tanks or piping.

Since the 1980's, Michigan has required installation of double-wall piping for all new pressurized systems or when more than half of the pressurized piping is replaced. Since May 1,

2003, Illinois has required installation of double-wall piping for all new systems or where 100 percent of product piping is replaced; and upcoming rule changes will require double-wall tanks – and double-wall, monitored piping when replacing either more than either 20 feet or 50 percent of an existing piping run. Minnesota requires double-wall piping for hazardous materials, and for secondary containment for underground piping from a diked area, or from a double-wall aboveground storage tank, to a dispenser. Minnesota also requires replacement of piping for a repair of more than 10 feet of a single piping run; and if a repair is due to a leak or corrosion, the entire run must be replaced. In either replacement, the new piping must be double-wall. Iowa requires double-wall systems for hazardous materials and active, contaminated sites only.

These new requirements are justified considering that the results of a study initiated with the US Environmental Protection Agency indicate that piping failures cause over 15 percent of all environmental releases associated with storage tanks, piping and dispensers. These proposed rule changes would (1) reduce environmental contamination from undetected piping failures; (2) simplify leak detection, because monitoring an interstitial space is the simplest leak detection method available; (3) reduce the potential for costs associated with environmental contamination, such as for cleanups, report writing, fines, lawsuits and business interruptions; and (4) satisfy the new federal regulations in the Energy Policy Act. Michigan, Illinois, Iowa and Minnesota either have been or soon will be modifying their rules, where needed, to include these same requirements (double-wall tank and piping for new and replacement systems) to satisfy the new federal regulations, which became effective on February 8, 2007.

C. Comm 10.400 (3), 10.500 (5) and Comm 10.615 (5) These sections would newly require liquid-tight containment sumps under and around all existing and new buried piping connections – including connections at fueling dispensers, transition sumps, and submersible pumps for tanks. A five-year period is proposed for upgrading existing equipment to meet this requirement. This requirement is in response to the federal Energy Policy Act of 2005.

Michigan has required installation of containment sumps since the early 1990's. Illinois requires installation of containment sumps when new piping systems are installed or when underground piping is replaced. Minnesota requires installation of containment sumps when new piping systems are installed, or when replacing an existing dispenser if work is performed on piping below the shear valve. Iowa does not have any specific rule for containment sump installation, but is currently evaluating a rule revision that includes this requirement.

This requirement is necessary considering that the results of a study initiated with the US Environmental Protection Agency indicate that over 34 percent of releases from components for underground storage tank systems occur where connections are made in piping and at dispensers. Because of widespread improvement in otherwise reducing leaks from tanks and piping, these connections are now the single-most susceptible portion of a tank and piping system, for having releases or spillage, other than at the spill buckets that are used during fuel deliveries. Site review staff in the Department's PECFA program believe that contamination levels which are increasing at current remediation sites or which are appearing in post-remediation monitoring at other sites is the result of migration of under-the-dispenser contamination. Installing containment sumps will allow for detection of leaks, and repair of piping- or component-connection failures before a significant environmental release occurs. These installations will also achieve compliance with

the federal regulations in the 2005 Energy Policy Act that became effective on February 8, 2007. Michigan, Illinois, Iowa and Minnesota either have adopted or are expected to soon adopt these same requirements, to satisfy the new federal regulations.

D. Comm 10.410 (9) This section would specifically require an overfill alarm when filling reaches 90 percent of full, and an automatic shutoff at 95 percent, for aboveground storage tanks that are not located within a dike.

These requirements are currently included indirectly in Comm 10, through adoption of an NFPA 30 standard. However, they have often been overlooked, so they are now being emphasized by inclusion directly in Comm 10.

During tank filling, federal spill prevention, control and countermeasure regulations in 40 CFR 112 require high-liquid-level alarms, with an audible or visual signal at a constantly attended operation or surveillance station. These federal regulations also require high-liquid-level, pump-cutoff devices that are set to stop flow at a predetermined container-content level. Michigan, Minnesota and Iowa have overfill-protection requirements for any tank not located within a dike, which are substantially the same as the federal regulations and these proposed Comm 10 requirements. Illinois does not have overfill-equipment requirements for aboveground storage tanks – however, during loading and unloading of tank trucks and tank wagons, a person must be present and in charge at all times, and overfill protection may be required by a local municipality or fire protection district.

These requirements are justified considering that the results of a study initiated with the US Environmental Protection Agency indicate that over 26 percent of releases from shop-fabricated aboveground storage tanks are caused by overfills, and the majority of tanks in service are shop-fabricated. In addition, the Petroleum Equipment Institute's *Recommended Practices for Overfill Prevention for Aboveground Shop-Fabricated Tanks* notes that "overfill incidents are the most common cause of releases to the environment from aboveground tanks;" and that "occasionally . . . the consequences are catastrophic, resulting in fatalities, large fires and extensive property damage." Emphasis on preventing overfills is necessary not only for protection of the environment but also for fire safety.

E. Comm 10.505 (2) (b) This section would specifically apply requirements in an NFPA standard for providing an overfill alarm or flow restriction when filling reaches 90 percent of full, and an automatic shutoff at 95 percent, for underground storage tanks.

These requirements are currently included indirectly in Comm 10, through an NFPA 30 standard that was adopted in 2002. However, they have often been overlooked, so they are now being emphasized by directly referencing the specific NFPA 30 section in Comm 10. They would retroactively apply only to tanks that were not previously equipped with this protection.

Federal regulations only require the owner or operator to (1) ensure that before a tank is filled, the volume available in the tank is greater than the volume of the product to be transferred to the tank; and (2) ensure that the transfer operation is constantly monitored. Michigan,

Minnesota, Illinois and Iowa have overfill protection requirements for underground storage tanks, that are substantially the same as these proposed Comm 10 requirements.

These requirements are justified considering that the results of a study initiated with the US Environmental Protection Agency indicate that 49 percent of underground storage tank discharges are associated with the spill buckets which are used during fuel deliveries. However, the most significant justification for dual overfill protection is that several major catastrophic incidents have occurred during the past few years because of failure of a single overfill method. In one incident, five occupants of three vehicles were killed when an overfill resulted in flowing fuel that ignited and impinged on the vehicles. Department staff have reported five incidents in Wisconsin in recent years in which overfilling resulted in dangerous quantities of spilled fuel. In addition, internal tank inspections have identified a significant number of tanks where the overfill-warning mechanism deteriorated to an unreliable state. Emphasis on preventing overfills is necessary not only for fire safety but also for protection of the environment.

F. Comm 10.515 (8) (d) 3. and 4. These sections would specifically require annual testing of mechanical line leak detection equipment and electronic line leak detection equipment. This change is primarily for clarification purposes and better expresses the intent of the current requirements. Michigan, Illinois, Iowa, Minnesota and the federal regulations all require annual testing of this leak detection equipment. The major electronic line leak detector manufacturers all have testing procedures that address introduction of a physical leak in order to test the operability of the leak detector. Michigan, Illinois and Iowa require performing the testing in accordance with the manufacturer's requirements. Minnesota specifically requires creating a physical leak in a piping segment to verify a 3.0 gallon-per-hour detection limit. Under the current Wisconsin rules, there has been some confusion as to what "testing" means; this section would clarify what the testing must include.

G. Comm 10.535 (1) This section would change the inspection frequency for an internal lining of an underground storage tank from an initial inspection period of 10 years and every 5 years thereafter, to an initial inspection period of 5 years and every 5 years thereafter.

Federal regulations have allowed lining of underground storage tanks as one of the upgrade methods during implementation of nationwide corrosion protection for underground tanks, beginning in the late 1980s. The initial lining inspection after the tank is lined was set at 10 years, to be followed by an inspection frequency of every 5 years thereafter. Michigan, Illinois, Iowa and Minnesota recognize the 10/5-year schedule for existing lined tanks – however, Michigan and Iowa do not allow new tank lining installations. Minnesota, Illinois and this proposed Comm 10 rule will continue to allow interior lining of tanks.

This proposed rule change in the initial internal inspection frequency is needed due to recent, increased evidence that many tank internal linings fail within the first five years of installation and subsequently do not maintain the expected corrosion protection.

H. Comm 10.700 (1) This section would expand current requirements for financial responsibility to apply to aboveground storage tanks – including tank wagons, fuel delivery barges and tanks on non-solid-fill piers.

Generally, there are no federal or adjacent-state financial responsibility requirements for aboveground storage tanks. Michigan, Illinois, Iowa and Minnesota do not address use of tank wagons or fuel delivery barges. The national standards adopted in Comm 10 do not recognize, as an acceptable practice, transportation and dispensing by tank wagons or barges.

This requirement is necessary considering that the proposed Comm 10 rule changes recognize and regulate use of tank wagons, barges, and tanks on non-solid-fill piers. The need for regulation of these types of tanks was determined based on the increasing number of instances, and trends, where these tanks are being used. Due to the increased use and industry practices, the Department believes that the number of releases from these types of tanks may also increase, thereby justifying a financial responsibility requirement for covering the cost of cleaning up a spill to the environment.

8. Summary of Factual Data and Analytical Methodologies

Surveys of Wisconsin PECFA claims, statistics from the US Environmental Protection Agency, and incidents of environmental contamination and personal injury and death were used to justify the proposed rules on sump containment, and spill and overfill protection. Since the most recent major update of chapter Comm 10 became effective in May of 1991, considerable experience has been gained at the federal level and in Wisconsin and the adjacent states relative to failures of tank linings, failures with overfill protection methods, and faulty leak detection methods or practices. As cited in the above comparison with federal regulations and rules in adjacent states, the Department has applied that experience extensively in developing the proposed rule changes.

The proposed changes to chapter Comm 10 were also developed with assistance from the Department's advisory committee for flammable, combustible and hazardous liquids. The members of that advisory committee are as follows:

<u>Name</u>	<u>Representing</u>
Randy Shervey	Wisconsin Fire Inspectors Association
Erin Roth	Wisconsin Petroleum Council
Tim Clay	Wisconsin Federation of Cooperatives
Tara Wetzel	Wisconsin Transportation Builders Association
Paul Knower	Wisconsin Petroleum Equipment Contractors Association
Scott Miller	Wisconsin Fire Chiefs Association
Steve Danner	Wisconsin Aviation Trades Association
Elizabeth Hellman	Wisconsin Utilities Association
Gary Pate	Wisconsin Insurance Alliance
John Reed	Wisconsin Airport Management Association
Dale Safer	Wisconsin Innkeepers
Bill Noel	Wisconsin Paper Council
Matt Hauser	Wisconsin Petroleum Marketers and Convenience Store Association

9. Analysis and Supporting Documents Used to Determine Effect on Small Business or in Preparation of Economic Impact Report

The Department derived the cost estimates in the following section from input from contractors.

10. Anticipated Costs Incurred by Private Sector

The following categories for new costs that are anticipated for the private sector correspond to the categories in section 7 above.

B. Comm 10.400 (3) and Comm 10.500 (1) and (5) – Double-wall piping for replacing repaired pipe and for new underground pipe of AST and UST systems: In the short term, the installation of double-wall piping may cost an additional \$4000 for a typical service station. In the long term, reduced insurance premiums may result.

C. Comm 10.400 (3), 10.500 (5) and Comm 10.615 (5) – Liquid-tight sumps under dispensers and around fittings: \$250 per dispenser, and upward to \$4900, depending upon the mechanism used to meet the requirement. Formed-in-place sumps for existing facilities may cost substantially less than other types of upgrades because of not having to shut down operations, remove dispensers, or break and replace concrete.

D. Comm 10.410 (9) – AST overflow alarms and auto-shutoff: \$1,000-2,000 (equipment and installation) per tank, depending upon the equipment and mechanism used to meet the requirement, and the size of the tank.

E. Comm 10.505 (2) (b) – UST overflow alarms and auto-shutoff: \$200-2,000 per tank depending upon the mechanism used to meet the requirement, and the size of the tank.

G. Comm 10.535 (1) – Changing the interior-lining inspection from 10 years and every 5 years thereafter, to every 5 years: Two 5-year camera inspections are approximately 7 percent higher than one 10-year entry inspection. However, out-of-service time is considerably less for the camera inspection method.

H. Comm 10.700 (1) – Financial responsibility for ASTs (tank wagons, barges, tanks on non-solid-fill piers): Insurance cost varies with jobbers and is typically an add-on to existing pollution liability coverage. Annual cost may range from \$800 and upward, depending on the type of system and risk.

11. Effect on Small Business

These proposed rule changes may have an economic effect on any small business with at least one storage tank containing a flammable, combustible or federally-regulated hazardous liquid. This includes any business that sells gasoline or other liquid motor fuel for use in any type

of internal combustion engine. These economic effects are not expected to be significant, except as summarized in section 10 above.

12. Agency Contact Information

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File reference: Comm 10/rules analysis LR2ac