Petroleum price increases, federal and state legislative action, and desires to reduce America’s dependence upon overseas energy supplies are redefining demand for ethanol in the United States.

The growing strength of this alternative fuel, an alcohol most often derived from corn, is creating new awareness among marketers and regulators about the infrastructure that would store and handle the flammable and combustible liquid.

For instance, in late June, the U.S. Senate voted 85 to 12 to pass new energy legislation that included incentives for ethanol development, including establishment of a tax credit for the cost of installing clean fuel refueling equipment.

In this edition of Tank Talk, we present several articles that examine aspects of ethanol that will be important to successful storage of the fuel.

Growing use of E85 prompts tank-system compatibility concerns

The growing acceptance of E85 as an oxygenated fuel is prompting concerns among petroleum marketers and ethanol advocates about how to prepare the infrastructure for product compatibility issues.

The National Renewable Energy Laboratory in 2004 estimated that ethanol production in the United States would rise from 2.5 billion gallons per year in 2003 to between 20 and 30 billion gallons annually by 2020, according to the California Energy Commission. The growth stems from requirements for petroleum marketers to provide cleaner-burning fuels to minimize air pollution from tailpipe emissions.

Such growth in ethanol production and usage can be managed with steel underground storage tanks (USTs) and aboveground storage tanks (ASTs), which are renowned for compatibility with high concentrations of alcohol – in this case, a motor fuel that is 85-percent ethanol.

However, older plastic tanks that have not been prepared with a special resin are raising concerns.

The American Coalition for Ethanol states on its web site that:

“In many cases, existing gasoline, diesel, or other hydrocarbon fueling systems may also be used to store and dispense fuel ethanol. Most metal underground storage tanks that meet EPA December 1998 codes can be used to store E85. Many underground fiberglass tanks that meet EPA standards may also be used to store E85. However, fiberglass storage tanks manufactured prior to 1992 MAY NOT be able to handle E85.”

Fiberglass-reinforced plastic (FRP) tank manufacturers for years have said that tanks they have fabricated since the 1980s have been compatible with alcohol blends.

The ACE website recommends that tank owners contact the National Ethanol Vehicle Coalition if they are considering conversion of an existing fiberglass UST manufactured prior to 1992 to store E85.

For the complete caution from ACE, click on http://www.ethanol.org/e85storage.html
Growing use of E85 prompts tank-system compatibility concerns (continued)

The ACE concerns are echoed by the U.S. Department of Energy on its Efficiency and Renewable Energy website:

“Double-walled and post-1992 single-walled fiberglass USTs may be used with E85 when approved by Underwriters Laboratories, Inc.”

http://www.eere.energy.gov/afdc/e85toolkit/equip_options.html

Similarly, greater attention to compatibility issues from regulators and insurers has emerged in Iowa, an ethanol hotbed.

The May 13 newsletter of the Petroleum Marketers and Convenience Stores of Iowa reported:

“During the Iowa Marketers’ Expo, attendees learned of issues relating to tank and equipment compatibility issues with E85. The DNR (Department of Natural Resources) and PMMIC Insurance communicated federal requirements and likewise insurance requirements that all tanks and equipment must be certified as compatible with 85-percent alcohol in order to be approved to dispense E85 and in order for insurance to be valid. At this time, there are no laws or rules addressing neither biodiesel nor E85 requirements other than ‘compatibility’ requirements.”

The compatibility concerns take on added significance in light of federal and state initiatives to expand the ethanol fueling infrastructure.

In late April, U.S. Sen. Barack Obama (D-Ill.) proposed legislation to provide a tax credit that will benefit the construction of E85 ethanol fueling stations throughout the country. The proposal would encourage the use of more ethanol and help to provide motorists who drive flexible fuel vehicles (FFVs) with a cheaper gas, according to RenewableEnergyAccess.com

The legislation would provide a 50-percent tax credit for the cost of building a new E85 vehicle refueling facility, with a credit limit up to $30,000. Funds from penalties on auto manufacturers that violate fuel mileage standards would pay for the tax credit.

For more information, click on http://www.renewableenergyaccess.com/rea/news/story?id=27700

Wisconsin UST Inspectors Learn All About Ethanol and Tank-System Issues

As petroleum marketers in Wisconsin continue to convert underground storage tanks (USTs) to ethanol fuel blends, inspectors increasingly have confronted a series of tank-system concerns.

To help inspectors statewide manage the issue, the Bureau of Petroleum Products and Tanks of the Wisconsin Department of Commerce on June 22 conducted a seminar at the Fort McCoy Military Training Academy.

Topics included an overview of ethanol as a motor fuel, case studies in which inspectors described challenging situations that they encountered in the field, an introduction to the Optic Fuel Clean

Articles excerpted from Tank Talk, Volume 20, Number 2 July 2005.
Wisconsin UST Inspectors Learn All About Ethanol and Tank-System Issues (continued)

technology, an examination of inventory control records, an exploration of ethanol compatibility issues for various tank-system components and a recap of regulatory proposals that may apply to ethanol.

During his case-study presentation, Inspector Marv Thiel said he has seen the conversion of tanks to ethanol occurring without UST owners and managers fully understanding operational impacts.

“There’s a large number of station owners who have switched to ethanol and don’t know what’s in their tank,” Thiel said.

“If a station’s going to switch to ethanol, you’ve got to wash out the tank,” said Inspector Jim Zorn, who presented another of the case studies.

Ethanol can loosen internal tank residue when it is first introduced to a petroleum storage tank that has held other product.

Petroleum marketers throughout Wisconsin are making the conversion in large part because of pricing pressures that have made ethanol-blended fuels more cost-competitive than in the past.

Prior to the last year, ethanol blends were offered to motorists primarily in eastern Wisconsin where Clean Air Act requirements dictated that cleaner-burning fuels be marketed.

Special Section: The New Emphasis on Ethanol

Minnesota Raises the Ante on Ethanol Use

Minnesota leaders are looking for some gains from grains.

On May 10, Gov. Tim Pawlenty signed a law (S.R. 4) that will require all gasoline sold in Minnesota to contain at least 20-percent ethanol within the next eight years. The current standard throughout the state is a 10-percent ethanol blend.

The gains for Minnesota would be greater use of cleaner-burning fuel in many vehicles, reduction of dependence upon foreign oil sources, and agricultural market development for grain farmers.

Minnesota will apply for a federal waiver to allow the 20-percent ethanol-gasoline blend. The new legislation will not take effect unless the state secures federal approval for ethanol requirements by 2010.

The bill also calls for the state to aim for a target of 20 percent of all liquid fuel generated from renewable resources by 2015.

At the same time, Minnesota is trying to encourage development of the E85 (85-percent ethanol) market. Formed to promote greater use of the 105-octane fuel was the Minnesota E85 Team, which has launched a grant program for service stations and fleet operations installing equipment or converting existing storage and handling systems for dispensing E85 fuel to flexible fuel vehicles (FFVs).

An FFV has the capability to burn standard gasoline formulations or newer high-alcohol blends such as E85. About 4 million FFVs are operating in the United States – bearing nameplates such as Daimler Chrysler, Ford, General Motors, Isuzu, Mercedes Benz and Mercury.
Minnesota Raises the Ante on Ethanol Use (continued)

Minnesota tank owners who are interested in the incentive program can contact the American Lung Association of Minnesota at 1(800) LUNG-USA or 651-227-8014.

In addition to the lung association, the Minnesota E85 team for 2005 includes the Minnesota Corn Growers Association, Minnesota Coalition for Ethanol, Minnesota Department of Commerce Energy Division, Minnesota Office of Environmental Assistance, Minnesota Department of Agriculture, Ford Motor Co., National Ethanol Vehicle Coalition and U.S. Department of Energy Clean Cities.

Special Section: The New Emphasis on Ethanol

Several States Consider What 22 Have Done - Ban or Restrict MTBE Sales

As of May, six states – Maryland, Mississippi, New Jersey, Pennsylvania, Rhode Island and Vermont – were considering a restriction on, or elimination of, selling fuel blended with methyl tertiary butyl ether (MTBE), according to the Renewable Fuels Association.

Among those states, Rhode Island has just taken action – as the governor in July signed legislation that will prohibit adding MTBE to gasoline for sale in the state, effective in 2007. Rhode Island is the 22nd state to make the legislative change.

Elected officials in those six states were looking at ways to follow the lead of states, including Missouri and Ohio, where prohibitions against the use of MTBE took effect on July 1.

MTBE has been hailed as a gasoline additive that helps engines burn cleaner. However, numerous instances have been reported of how MTBE leaked from underground storage systems to pollute local groundwater supplies. The incidents have led to severe restrictions or prohibitions on the additive’s use.

In addition to Rhode Island, Missouri and Ohio, states such as Kentucky and Montana (effective Jan. 1, 2006) or Maine and New Hampshire (effective Jan. 1, 2007) have passed legislation in recent years that will phase out future MTBE sales.

For more information on states where MTBE is prohibited, click on http://www.steeltank.com/library/pubs/mtbechart2.pdf.

Also, the Energy Information Administration of the U.S. Department of Energy periodically updates a map of states that have banned MTBE. http://www.eia.doe.gov/oiaf/ethanol_map.html

Despite the banning of MTBE, residual problems with the fuel additive will create an expensive legacy, researchers say.

A new study by ENSR International, scheduled for release this summer, will peg the national cost of MTBE remediation during the next 30 years in the range of $1 to $3 billion, according to the Association for Environmental Health and Sciences.

In similar news, the American Petroleum Institute released a study in July that forecast cleanup costs at or below $1.5 billion. The study estimated cleanup costs, not funded by currently identifiable sources such as insurance and state or federal monies, to be $100 to $300 million for USTs, $200 to $900 million for public wells, and $200 to $300 million for private wells.