



New Financial Responsibility Proposal Gets Thumbs Down from State Regulators

Among its many components, the federal Energy Policy Bill of 2005 redefined the future of the underground storage tank industry. The legislation said that a new layer of financial responsibility – from equipment manufacturers or installers for the lifetime of an underground storage system – would be required in February 2007, or new tank and piping systems would have to employ secondary containment when installed within 1,000 feet of potable water systems or wells.

While many underground storage tank (UST) system owners have balked in the past at the extra costs associated with secondary containment – typically, at least 35 percent more for an installed secondary contained system – it appears that new regulations will be developed in many state capitals to eliminate single-wall systems.

State regulators commented earlier this year on a guidance from the U.S. Environmental Protection Agency (EPA) that spelled out its expectations for rules that would meet the Energy Policy Act's intent. Many state regulators underscored how secondary containment would be favored over the financial-responsibility approach.

EPA on Nov. 15 released its guidelines that would govern state efforts to enact secondary containment mandates. The document can be viewed at <http://www.epa.gov/oust/fedlaws/Final%20Sec%20Cont%20GLs%2011-15-06.pdf>

Earlier in the year, regulators offered these thoughts on the EPA draft guidance for financial responsibility:

"Realistically, this guidance provides only one option to states and the regulated community, the 'tank and piping secondary containment' option," said Mark Hyland of the Maine Department of Environmental Protection.

Doug Miller of the South Dakota Department of Environment and Natural Resources noted that the two options from the Energy Policy Act provided very different approaches to protecting water and soil. "While the secondary containment option is intended to prevent a release to the environment, the other appears to be designed to ensure monetary resources are available to respond," Miller said. "One option being proactive while the other is being reactive."

Mike Blum of the Washington State Department of Ecology summed up the feelings of many state regulators: "The State of Washington has determined that it will be implementing the option of requiring secondary containment rather than the alternate option of financial responsibility and installer certification."

On Nov. 20, Minnesota officials conducted a workshop in which they discussed a proposal for all new tanks to employ secondary containment. All containment – and all sensors within containment – would require annual integrity testing.

The EPA Office of Underground Storage Tanks' financial responsibility guidelines had not been released at the time of Tank Talk's posting.

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UL Raises Questions on Dispensers for High-Alcohol Content Fuels

Underwriters Laboratories Inc. (UL) has waved some caution flags on short-term development of E85 infrastructure – by raising questions about materials compatibility in fuel dispensers.

Regulators in several states are taking note of the warning, though not all are prescribing the same course of action.

“As of Oct. 5, UL has suspended authorization to use UL markings (listing or recognition) on components for fuel-dispensing devices that specifically reference compatibility with alcohol-blended fuels that contain greater than 15-percent alcohol (i.e. ethanol, methanol or other alcohols),” the testing laboratory said in a prepared statement. “Dispenser components as they relate to use with traditional fuel blends (i.e., blended fuels containing 15 percent or less alcohols) are unaffected. In all cases, acceptability of fuel dispensers for using alcohol-blended fuels containing greater than 15-percent alcohol (e.g., E85) remains at the discretion of the authority having jurisdiction.

“Research indicates that the presence of high concentrations of ethanol or other alcohols within blended fuels makes these fuels significantly more corrosive,” the UL statement said. “This may result in the fuel chemically attacking the materials used in fuel dispenser components, and may ultimately degrade the dispenser’s ability to contain the fuel. While UL has no evidence of field issues related to this application, we are suspending authorization to use the UL mark on components used in dispensing devices that will dispense any alcohol-blended fuels containing over 15-percent alcohol until updated certification requirements are established and the affected components have been found to comply with them.

“Our engineers are actively reviewing current E85 research and meeting with industry and government experts to gather the information required to draft the revised certification requirements. UL anticipates that testing of E85 dispenser components will commence immediately following publication of UL’s E85 certification requirements.”

The UL statement concluded with a commitment “to undertaking in an expeditious manner the thorough and broad-based effort necessary to develop the appropriate requirements that will adequately address E85 compatibility.”

The only timetable for action by UL was mentioned in a separate web posting: “We will co-sponsor an E85 Compatibility Technical Forum on Nov. 1 and 2 with the U.S. Department of Energy to obtain additional advice pursuant to UL establishing performance criteria and offering a listing program for E85 dispensers.” [Click here](#) for a summary of the meeting. More information about UL’s action is available at the following links:

www.ul.com/gasandoil/ethanol.html
<http://www.ul.com/regulators/e85.cfm>
<http://www.ul.com/regulators/e85faq.cfm>

The reaction of underground storage system regulators has been mixed.

Despite the UL concern, Jerry Rosendahl, Minnesota state fire marshal, in late October issued a statement that recommended allowing E85 facilities to continue operations – provided that their unblemished record of performance continues. Minnesota leads the nation in the number of E85 fueling facilities with about 300 retail locations either offering the fuel or about to begin E85 service.

Part of Rosendahl’s concern was apparent in a comment that it could take two years for UL to develop E85 standards for dispensers.

“Our research has not indicated any failures connected to E85 fuel-dispensing systems in Minnesota or anywhere across the country,” Rosendahl said. “Because of these factors, it is our recommendation that local fire officials continue to monitor this situation while allowing the current E85 fuel-dispensing systems to operate, and new dispensers to be installed. If system failures occur in the future, this issue should be revisited.”

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Courses are posted at the above link as soon as dates & locations are confirmed. 2007 COURSE DATES ARE UNDER DEVELOPMENT NOW. [Check back frequently for new course postings.](#)

Brochures, course information, educational requirements and location information are available at our secure online registration link above.

[2007 AST Inspector Training Courses](#)

Contact Dana at 847/438-8265 x 246 to request a course for your company.

[2007 Cathodic Protection Tester Courses](#)

Contact: Lucy at 847/438-8265 x 248.

[2007 Water Storage Tank](#)

Rosendahl's complete statement is available at:
http://www.e85fuel.com/news/102706_ul_release/mn_ul_memo.pdf.

However, several E85 fueling sites in Ohio have been shut down as the state's fire code mandates the use of UL listed equipment, or products bearing an equivalent mark from a nationally recognized testing entity.

In Iowa, marketers have until July 1, 2009 to upgrade existing E85 dispensers with a dispenser that has a UL listing. A site that currently dispenses E85 must be able to document daily visual inspections of the dispenser to regulators.

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Shell Oil President Cites E85 Problems with Fiberglass Tanks

In an October speech before the National Press Club in Washington, D.C., the president of Shell Oil Co. attributed part of the difficulty in creating an E85 infrastructure in the United States to the usage of some previously installed fiberglass-reinforced plastic (FRP) underground storage tanks (USTs) and various piping systems incapable of handling ethanol with high alcohol content.

"We cannot put E85 ethanol into our regular gas station gas tank storage tank because the alcohol will eat right through the fiberglass storage tank or it will corrode the pipes that we currently have in the gas stations because they were never designed for ethanol," said John Hofmeister, who has served as Shell Oil's president since 2005.

The Hofmeister speech covered a wide range of issues related to future energy development and usage in the United States.

"The combination of conventional oil and gas, unconventional oil and gas, liquefied natural gas, coal gasification, alternative fuels, such as ethanol, wind, hydrogen and solar – which I didn't mention, but which Shell is investing in, in terms of a new technology called copper indium diselenide technology – coupled with greenhouse gas management, energy efficiency at the core of how we behave and how we think, and an education of our nation's population that are growing up and learning about this precious commodity, all those together, we believe, will deliver energy efficiency and energy security to this country," Hofmeister said.

However, Hofmeister's comment about Shell's service-station infrastructure represents the first acknowledgment by any major oil company executives to mainstream media about inadequacies of some previously installed fiberglass-reinforced plastic USTs in handling higher-alcohol-content ethanol fuel blends. Hofmeister also told the audience:

"So we need a whole new infrastructure if we're going to sell E85 ethanol. Shell is piloting E85 ethanol in Chicago. We hope to test the market to see if people like it. Procuring it is very difficult because supplies of ethanol are so tight. And then building the infrastructure is really just a matter of paying for it. But before we go invest millions or hundreds of millions in an infrastructure, we need to find out if the market will accept it."

Sullivan D. Curran, executive director of the Fiberglass Tank & Pipe Institute, said,

"Mr. Hofmeister's comments are inaccurate and misleading. For the past 40 years, underground fiberglass piping and fittings installed in service stations have been compatible with up to 100-percent ethanol. Further, some 23 years ago in 1983, Underwriters Laboratories (UL) began alcohol testing of single- and double-wall fiberglass tanks and in 1986, listed underground fiberglass piping and tanks for 100-

Seminars

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percent ethanol and methanol. Also, it should be recognized that UL did not include fiberglass piping or tanks in the recent suspension of UL markings on components for fuel-dispensing devices that reference compatibility with alcohol-blended fuels containing greater than 15-percent alcohol."

Shell Oil spokeswoman Anne Peebles offered a clarification on Hofmeister's remarks.

"Because tanks and pipe work installed for conventional fuels used in the past have not been required to be ethanol compatible, it is important that owners confirm the model of tanks and piping systems installed and consult with the manufacturer for suitability for use with E85," Peebles said. "Typically, storing high ethanol blends in tanks not compatible will soften the wall of the tank, which may result in failure."

The National Press Club hosts "an average of 70 luncheons each year (to) provide a national forum for the views of Presidents, Prime Ministers, business and cultural leaders, members of the Cabinet and Congress," according to the organization's web site.

The entire text of Hofmeister's remarks can be viewed at Shell Oil's web site:

http://www.shell.com/home/Framework?siteId=us-en&FC2=/us-en/html/iwgen/news_and_library/speeches/2006/zzz_lhn.html&FC3=/us-en/html/iwgen/news_and_library/speeches/2006/jdh_pressclub_102306.html

A few days before Hofmeister's speech, fuel-infrastructure compatibility concerns also surfaced in Washington as the U.S. House of Representatives approved H.R. 6203, the Alternative Energy Research and Development Act of 2006. Among its many provisions, the bill sponsored by U.S. Rep. Judy Biggert (R-Ill.) supports development of materials that can be added to bio-based fuels and ultra-low sulfur diesel fuels to make them more compatible with the existing storage and delivery infrastructure. The bill will next be considered by the U.S. Senate.

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How One Company's UST Warranty Evolved for Fuels

Xerxes Corporation, a leading manufacturer of fiberglass-reinforced plastic (FRP) tanks, has revised its limited warranties since October 1979 on several occasions to create distinctions in coverage, many of which were related to fuels with alcohol content, according to a company document.

The document, apparently developed in response to questions from underground storage tank (UST) buyers, said that "after July 1, 2005, E85 (85-percent ethanol) was included in the warranty for Xerxes standard single-wall tanks..."

The document cited this chronology for USTs manufactured by Xerxes and listed by Underwriters Laboratories (U.L.) installed prior to that date:

Xerxes U.L. listed tanks delivered from Oct. 1, 1979 through Jan. 31, 1981 carried a limited warranty that, among other things, stated "...provided the tank is used solely for gasoline, jet fuel, diesel fuel, or fuel oil, at temperatures not to exceed 150 degrees F."

Xerxes U.L. listed tanks delivered from Feb. 1, 1981 through July 14, 1985 carried a warranty that, among other things, stated "...provided the tank is used solely for gasoline, gasohol (10-percent ethanol and 90-percent gasoline mixture) jet fuel, diesel fuel or potable water at ambient temperature; or used for fuel oil at temperatures not to exceed 150 degrees F."

Xerxes U.L. listed single- and double-wall tanks delivered beginning July 15, 1985

carried a warranty that, among other things, stated: "...will not fail...with or without tank water bottoms, for gasoline, gasohol (90-percent gasoline/10-percent ethanol mixture), 90.5-percent gasoline and 9.5-percent Oxinol-50 (4.75-percent methanol and 4.75-percent GTBA mixture), jet fuel, av-gas, kerosene, diesel fuel, motor oil or potable water at ambient underground temperatures; or used for fuel oil at temperatures not to exceed 150 degrees F."

In June 1988 the single- and double-wall warranties were separated. Double-wall warranties began to carry all concentrations of the alcohol fuels (EPA approved). The single-wall tanks continued with the low concentration of alcohols until July 1, 2005.

Contacted by phone, Terry Jensen, a Xerxes spokeswoman, declined to comment on the chronology.

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A Side-By-Side Look at ASTM Standards Data for Diesel and Biodiesel

With the emergence of biodiesel as an increasingly popular fuel, questions about comparisons with standard petroleum-based diesel fuel have emerged. The following table provides a brief comparison of these fuels using their respective ASTM International standards as a basis.

If B100 meets ASTM D6751 and petroleum-based diesel meets ASTM D975, then the two fuels can be blended to form B20 (a basis behind the development of ASTM D6751.) ASTM is voting on a new stand-alone standard for biodiesel blends from B6 to B20. No ASTM efforts are underway for biodiesel blends above 20 percent as stand-alone fueling specifications, according to the National Biodiesel Board (NBB). More technical information on biodiesel is available from NBB at <http://www.nbb.org/askben/top10/>.

For those interested in more in-depth information on the ASTM documents, the complete standards are available for purchase at <http://www.astm.org>.

	ASTM D975 - Diesel Fuel	ASTM D6751 - Biodiesel (B100)
Flash Point	38° to 52° C (100° to 126° F)	130° C (266° F)
Cetane Number	40	47 minimum
Aromaticity	35 percent maximum by volume	Not included
Water and Sediment	0.05 percent maximum by volume	0.05 percent maximum by volume
Acid Number (free fatty acids)	Not applicable	0.80 maximum mg KOH/g
Glycerin	Not applicable	0.02 percent mass - 0.24 percent total

Long Term Storage	After 12 months, consult with fuel supplier	After six months, consult with fuel supplier
Stability	Normal diesel has adequate stability properties to withstand normal storage and use without formation of troublesome amounts of insoluble degradation products. Select fuel for prolonged storage to avoid formation of sediments or gums that can overload filters.	Normal biodiesel has adequate stability properties and use without formation of troublesome amounts of insoluble degradation products, although data suggests that some biodiesel may degrade faster than petroleum-based diesel fuel. Select biodiesel for prolonged storage to avoid formation of sediments, high acid numbers, and high viscosities that can clog filters. Test methods for estimating storage stability are being developed.
Fuel Additives	Can improve long-term storage thermal stability. Biocides can destroy or inhibit growth of fungi and bacteria, which can grow at fuel-water interface.	Improve long-term storage. Biocide destroy or inhibit growth of fungi and bacteria, which can grow at fuel-water interface.
Fuel Monitoring	Fuel contaminants and degradation will settle to tank bottom. Include bottom sample in fuel evaluation.	Fuel contaminants and degradation will settle to tank bottom. Include bottom sample in fuel evaluation.
Fuel Storage Conditions	Contamination fuel levels can be reduced in tanks kept free of water. Drain water from tank on a scheduled basis.	Contamination fuel levels can be reduced in tanks kept free of water. Drain water from tank on a scheduled basis.
Storage Location	Underground is preferred to avoid temperature extremes. Aboveground tanks should be sheltered or painted with reflective paint.	Underground is preferred to avoid temperature extremes. Aboveground tanks should be sheltered or painted with reflective paint.
Storage Exposure	High storage temperatures accelerate fuel degradation. Keep fixed tanks as full as possible to limit oxygen supply and tank breathing.	High storage temperatures accelerate fuel degradation. Keep fixed tanks as full as possible to limit oxygen supply and tank breathing.
Use of	Fuels with significant degradation, contaminants or	Insoluble degradation products formed after fuel is produced may combine with other fuel

Degraded Fuel	microbiological growth require special attention. Consult with fuel-quality experts.	contaminants to reinforce deleterious effects. Formation of degradation products may be catalyzed by contact with copper, tin and zinc.
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Biodiesel Gets a Boost from Musicians 'on the Road'

Maybe they can't agree on chord progressions, or which CDs get played on the tour buses. But biodiesel leads to harmony for musicians as diverse as country legend Willie Nelson, supergroup Crosby, Stills, Nash and Young and blueswoman Bonnie Raitt, or up-and-coming alternative rock acts such as Zebrahead and Septic Tank Disasters.

Nelson is perhaps the leading advocate within the music industry as he has attached his name to the BioWillie biodiesel blend available at 25 fuel locations from California to Texas to South Carolina.

Biodiesel has become America's fastest-growing alternative fuel, according to the U.S. Department of Energy. Production tripled in 2005, reaching 75 million gallons. The industry is on track to sell at least 150 million gallons of biodiesel this year. The industry is forecasting more than \$2 billion in capital spending on production facilities during the next two years, and has about 55 plants under development. More than 600 fleets use biodiesel, including government and military, commercial organizations and school bus fleets.

What roles do music-industry stars play in the growth of biodiesel?

Younger audiences are learning about the fuel's environmental benefits as they attend, or read about, major rock tours or music festivals. During 2006, for instance, the Bonnaroo Music and Arts Festival used more than 25,000 gallons of B100 biodiesel to replace diesel for non-music stage generators during its multi-day performance schedule on a 700-acre farm in Manchester, Tenn., 60 miles south of Nashville. Similarly, the Warped Tour, a music and extreme sports event featuring punk and alternative rock bands, committed to biodiesel for the tour's 18 buses and 14 production trucks.

Older music aficionados are hearing about biodiesel from artists such as Crosby, Stills, Nash and Young, who are part of a growing movement of musicians who lend their support to biodiesel by ensuring that their bus convoys run on the fuel. CSNY helped to promote the alternative fuel when they stopped earlier this year in Reynolds, Ind. to learn more about BioTown, USA – a state-funded initiative, part of which includes the provision of biodiesel and E85 fuels to residents of the rural community.

The BioTown USA project also includes research, development and implementation of plans to transform agricultural and municipal wastes into electricity.

The CSNY visit to BioTown included plans to film a documentary that would boost awareness of innovative efforts to protect the environment and boost America's capabilities to use home-grown energy sources.

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STI Teams with OSHA, API and NFPA in Safe Tank Alliance

Steel Tank Institute, a division of STI/SPFA, has joined forces with the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA), the American Petroleum Institute (API) and the National Fire Protection Association (NFPA) in the promotion and sustenance of best practices to promote safety at petroleum and petrochemical tank sites.

The Safe Tank Alliance will promote safe tank entry, cleaning, maintenance, and rescue operations for work within and around petroleum and petrochemical liquid storage tanks. Alliance members are committed to increasing awareness and understanding of safety issues through speaking engagements, publications, the Internet and other outreach efforts.

For more about the Safe Tank Alliance, visit:

http://www.osha.gov/dcsp/alliances/api_nfpa/api_nfpa.html

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UST Inspection Comments Deadline Set by EPA for Dec. 22

For those with insights to add to the debate about inspection programs for underground storage tank (UST) systems, a few weeks remain for public comment.

On Nov. 22, the U.S. Environmental Protection Agency (EPA) released draft grant guidelines for UST inspection. The agency will accept public comment until Dec. 22. The EPA, in consultation with states, developed grant guidelines to implement certain provisions within the Solid Waste Disposal Act (SWDA). That law was part of the Energy Policy Act of 2005.

The Energy Policy Act adds new mandates for UST system inspections for states receiving federal funding.

For uninspected USTs, the new law requires that tank systems that have not been inspected since Dec. 22, 1998 must be inspected on site no later than Aug. 8, 2007. Once all regulated UST systems have been inspected, each underground storage tank system must be inspected at least once every three years to determine compliance with state or federal regulations.

Title XV, Section B of the Energy Policy Act of 2005 amends Subtitle I of the Solid Waste Disposal Act, the original legislation that created the underground storage tank (UST) program. UST provisions within the Energy Policy Act focus on preventing releases and direct EPA to help states comply with new UST requirements. To implement this new law, EPA and states, in consultation with stakeholders, developed draft guidelines. After considering public comments, EPA will issue final grant guidelines that EPA regions will incorporate into states' grant agreements.

For more information about the draft grant guidelines, visit

http://www.epa.gov/OUST/fedlaws/draft_i.htm.

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STI/SPFA Launches New Web Site

Announcing the completion of a new web site for STI/SPFA, President Sonny Underwood praised the new look, navigation and capabilities of the site as a significant improvement. The new site is designed with simplified navigation, enhanced search features, and gives STI/SPFA the capability to present online learning courses and certification exams. Currently under development are a recertification exam for SP001 Certified Tank Inspectors, a Steel Water Pipe Design Webinar, and a Steel Water Storage Tank Seminar. Over the next year, many new features will be added, including a Total Cost of Ownership program for Steel Water Storage Tanks, and an online Recertification Exam for Cathodic Protection Testers.

Please visit the new site at www.steeltank.com or www.spfa.org. New features will be announced on the home page as they become available. STI/SPFA welcomes your comments on the new site, as well as any suggested additions or changes (send an email to ankiefer@steeltank.com).

Steel: A Recyclable Material that Creates Strength and Value

Designers and builders have long recognized and lauded steel for its strength, durability and functionality. Increasingly, however, architects and governmental specifiers are recognizing steel's important environmental attributes – especially its high recycled content and high reclamation rate.

For many years, there has been a strong economic motive to incorporate recycling into the process for making steel, but today's environmental concerns make recycling even more important, according to the Steel Recycling Institute.

For instance, the U.S. Environmental Protection Agency (EPA) has enacted provisions of the Resource Conservation and Recovery Act (RCRA) that call for federal agencies to give preference in procurement to products with recycled content.

“Once EPA designates an item, any procuring agency that uses appropriate federal funds to procure that item must purchase the item containing the highest percentage of recovered materials practicable,” according to RCRA and Executive Order 13101.

Recycling saves money while conserving energy and resources, as well as reducing solid, liquid, and gaseous wastes. Recycling also helps to spread the energy impact of the original extraction and manufacturing of the material over infinite generations of new steel. The efficiency with which a material is recycled can be measured by either its percentage of recycled content or its reclamation rate. Recycled content is a measure of how much recycled material is contained in a finished product. The reclamation rate is a measure of how often a product is actually recycled at the end of its useful life. Steel is an exceptional performer by both measurements.

In the construction industry, recent interest in recycling has been driven largely by the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system. The LEED rating system only promotes the use of materials with high levels of recycled content. The equally important reclamation rate of materials is not currently considered.

Scrap consumption in the United States is maximized between the two types of modern steel mills, each of which generates products with varying levels of recycled content. One type of mill produces much of the steel for light, flat-rolled steel products with about 30-percent recycled content. The other type of mill makes steel for a wide range of products, including flat-rolled, but is the only method used domestically for the production of structural shapes and has about 95 percent recycled content.

The amount of recycled content in steel products varies over time, both as a function of the cost of steel scrap and its availability. As the worldwide demand for steel increases, the available scrap will be stretched between more and more steel products, meaning that more raw steel will have to enter the production stream to meet the demand. Fortunately, steel is the country's most widely recycled material, and as more steel is used for construction and other products, more scrap is available for future recycling. About 88 percent of all steel products and nearly 100 percent of steel that is used in beams and plates in construction are recycled into new steel products at the end of their useful lives.

In addition to recycled content, steel can contribute toward several other LEED credits. Steel is dimensionally stable and, when properly designed, can provide an exceptionally tight building envelope, for less air loss and better heating, ventilation and air-conditioning (HVAC) performance over time.

Steel is made to exact specifications, so on-site waste is minimized. Material from demolition or construction can be easily recycled with the magnetic properties of steel greatly facilitating its separation from other materials. Thus, in addition to steel's outstanding recycled content

and an enviable reclamation rate, steel's other functional properties contribute to the material's solid environmental performance.

As with any building process or material, there are areas for improvement. A great benefit of LEED is that it can help the steel industry recover even more scrap as contractors improve their recycling collection methods at the job site, so less incidental iron and steel scrap escapes to landfills.

Similarly, commercial buildings and residential housing can have better disciplined recycling systems for increased recovery. As steel products reach the end of their useful lives, recycling can generate even more new steel products for future service to society.

More information about steel recycling is available at http://www.recycle-steel.org/PDFs/leed/LEEDv2_2.pdf.

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Facts of Steel

More than 70 percent of steel underground storage tanks (USTs) fabricated to Steel Tank Institute (STI) standards during 2006 have had a capacity exceeding 11,000 gallons (41,627 liters). More than a quarter of all USTs fabricated to STI standards in 2006 were larger than 20,000-gallon (75,686-liter) capacity. The numbers support the industry trend that service stations dispensing fuel to the motoring public continue to grow larger, which leads to demand for ever-larger USTs.

Transcontinental rail service in the United States is a given today. But despite the growth of the rail industry during the 1800s, the Mississippi River for decades posed an insurmountable hurdle for passenger and freight service. Using a pioneering approach that employed structural steel to create three major spans over the river, the Eads Bridge opened on July 4, 1874 and provided both a rail and roadway link for the eastern and western halves of America. Connecting St. Louis, Mo. and East St. Louis, Ill., it was at the time the world's longest bridge with an overall length of 6,442 feet (1,964 meters).

<http://www.mississippirivermuseum.com/fame/eads.cfm>

http://en.wikipedia.org/wiki/Eads_Bridge

During the four years of construction (1931 to 1935) at Hoover Dam, 18 million pounds of structural steel, 21 million pounds of steel gates and valves and 840 miles of pipe were hauled by rail to the dam site on the Colorado River in Nevada. The dam is widely considered one of the most difficult civil engineering and construction projects of the 20th century.

<http://www.wgint.com/project.php?id=11>

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Online Sources of UST & AST News and Information

Online Publications

2006 Biodiesel Handling and Use Guidelines

<http://www.nrel.gov/docs/fy06osti/40555.pdf>

Buncefield Fire <http://www.buncefieldinvestigation.gov.uk/>

Engineering News-Record Special Section on Steel

<http://www.enr.com/resources/special/archives/2005/steel.asp>

Fuel Oil News <http://www.fueloilnews.com/>

International Code Council <http://www.ecodes.biz/>

National Biodiesel Board Fuel Quality Policy
http://www.biodiesel.org/pdf_files/fuelfactsheets/20060621_TAB_11_Fuel_Quality_Policy.pdf

National Ethanol Vehicle Coalition E85 Compatible Products and Manufacturers List
http://www.e85fuel.com/pdf/E85_Equipment_and_manufacturers.xls

National Petroleum News <http://www.npnweb.com/>

Petroleum Equipment & Technology <http://www.pe-t.com>

Steel Tank Institute Water in Fuel Tanks Research
<http://www.steeltank.com/portals/0/pubs/waterinfuel tanks.pdf>

Transport Dangerous Goods
<http://www.tc.gc.ca/tdg/newsletter/menu.htm>

TulsaLetter <http://www.pei.org/TulsaLetter>

Underground Tank Technology Update <http://uttu.engr.wisc.edu>

NEW Wisconsin Department of Commerce Ethanol Storage and Dispensing Conversion Policy
http://commerce.wi.gov/ERpdf/bst/ProgramLetters_PL/ER-BST-PL-EthanolConversionPolicyMemo.pdf

Associations

American Automobile Manufacturers Association discussion on fuel compatibility standards
http://www.eere.energy.gov/afdc/e85toolkit/pdfs/aama_eth_standards.pdf

American Iron & Steel Institute <http://www.steel.org>

American Lung Association of the Upper Midwest <http://www.cleanairchoice.org/outdoor/>

American Petroleum Institute <http://api-ep.api.org/>

American Water Works Association <http://66.45.110.61>

Clean Diesel Fuel Alliance <http://www.clean-diesel.org/index.htm>

National Association of Convenience Stores <http://www.nacsonline.com/NACS/News/>

National Biodiesel Board <http://www.biodiesel.org>

National Ethanol Vehicle Coalition <http://www.e85fuel.com>

National Leak Prevention Association <http://www.nlpa-online.org/standards.html>

National Oilheat Research Alliance <http://www.nora-oilheat.org>

Petroleum Equipment Institute Learning Center <http://learn.pei.org/home.php>

Petroleum Marketers Association of America <http://www.pmaa.org/>

UPDATED: Safe Tank Alliance http://osha.gov/dcsp/alliances/api_nfpa/api_nfpa.html#api

Society of Independent Gasoline Marketers of America <http://www.sigma.org/>

Steel Plate Fabricators Association <http://www.spfa.org/>

Steel Tank Institute <http://www.steeltank.com>

Federal Regulatory Agencies (United States)

U.S. Department of Energy Alternative Fuels Data Center

<http://www.eere.energy.gov/afdc/index.html>

U.S. Department of Energy Alternative Fuels Data Center Related Industry Links

<http://www.eere.energy.gov/afdc/progs/related2.cgi?afdc||0>

U.S. Department of Energy E85 Fleet Toolkit Equipment Requirements and Specifications

<http://www.eere.energy.gov/afdc/e85toolkit/>

U.S. Department of Energy, Energy Information Administration Ethanol Compendium

<http://www.eia.doe.gov/oiaf/ethanol3.html>

U.S. Department of Energy Equipment Conversions

<http://www.eere.energy.gov/afdc/e85toolkit/conversions.html>

U.S. Environmental Protection Agency, Office of Underground Storage Tanks

<http://www.epa.gov/swerust1/>

U. S. Environmental Protection Agency, Office of Underground Storage Tanks, Draft & Final Grant Guidelines http://www.epa.gov/oust/fedlaws/epact_05.htm#

U.S. Environmental Protection Agency, Office of Underground Storage Tanks, MTBE and Underground Storage Tanks <http://www.epa.gov/swerust1/mtbe/index.htm>

U.S. Environmental Protection Agency, Oil Program, Spill Prevention Control and Countermeasure <http://www.epa.gov/oilspill/spcc.htm>

U. S. Environmental Protection Agency, Region III, UST Inspectors Workshop on Fuels and Material Compatibility http://www.epa.gov/reg3wcmd/inspector_workshop/Compatibility.pdf

State Regulatory Agencies (United States)

California Air Resources Control Board <http://www.arb.ca.gov/homepage.htm>

U.S. Environmental Protection Agency database of state UST program websites

<http://www.epa.gov/swerust1/states/stateurl.htm>

Regulatory Agencies (Australia)

Department of Environment and Conservation, New South Wales (new UST secondary containment requirements) <http://www.environment.nsw.gov.au/resources/upssris067.pdf>

NEW Department of Environment and Conservation (Liquid Chemical Storage Best Practices), <http://www.environment.nsw.gov.au/licensing/envcomplchemicals.htm>

Model Codes and Testing Organizations

American National Standards Institute <http://www.ansi.org>

ASTM International <http://www.astm.org/>

International Code Council <http://www.iccsafe.org/>

International Code Council jurisdictions

<http://www.iccsafe.org/government/jurisdictionadoptions.xls>

National Fire Protection Association <http://www.nfpa.org/>

Southwest Research Institute <http://www.swri.edu/>

Underwriters Laboratories <http://www.ul.com/>

Underwriters Laboratories Canada <http://www.ulc.ca>

Underwriters Laboratories Collaborative Standards Development System
<http://csds.ul.com/Home/Default.aspx>

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Upcoming Meetings & Conferences

Nov. 28 to 30, 2006

Power-Gen International Conference, Orlando, Fla.

<http://pgi06.events.pennnet.com/fl/index.cfm>

Jan. 30 to Feb. 1, 2007

Underground Construction Technology Conference, Houston, Texas

www.uctonline.com

Feb. 4 to 7, 2007

National Biodiesel Conference and Expo, National Biodiesel Board, San Antonio, Texas

<http://www.biodieselconference.org/2007/default.asp>

Feb. 7 to 10, 2007

API Inspector Summit, Galveston, Texas

<http://www.api.org/meetings/topics/inspection/index.cfm#register>

Feb. 20 to 22, 2007

Western Petroleum Marketers Association, Las Vegas, Nev.

http://www.wpma.com/convention_info/index.cfm?conv_uuid=B0012864-5C99-1AF2-92D5B905D1CE7812

Feb. 21 to 25, 2007

Pipe Line Contractors Association Convention, Aventura, Fla.

www.plca.org

Feb. 27 to March 1, 2007

Ranger Think Tank(s) AST Conference 2007, Ranger Inspection, Calgary, Alberta, Canada

For more information, [click here](#)

March 5 to 7, 2007

19th Annual National Tank Conference, San Antonio, Texas

<http://www.neiwpcc.org/tanks07/>

March 6 to 8, 2007

International Forecourt & Fuel Equipment Show, IFFE, Birmingham, U.K.

<http://www.forecourtshow.com/>

March 7 to 8, 2007

CARWACS, Toronto, Ontario

www.carwacs.com

March 11 to 15, 2007

Corrosion 2007 Conference and Expo, NACE International, Nashville, Tenn.

www.nace.org/c2007

March 18 to 20, 2007

EGSA Spring Convention, Electrical Generating Systems Association, Savannah, Ga.

<http://www.egsa.org/meetings/springconvention.htm>

March 19 to 22, 2007

NHA Annual Hydrogen Conference 2007, National Hydrogen Association, San Antonio,

Texas

www.hydrogenconference.org

April 17-18, 2007

Safe Tank Best Practices Conference, South Houston, Texas

April 22 to 26, 2007

2007 Global Congress on Process Safety, Houston, Texas

<http://www.aiche.org/Conferences/Specialty/GCPS.aspx>

May 9 to 11, 2007

International Conference on Aboveground Storage Tanks, NISTM, Orlando, Fla.

<http://www.nistm.org/>

June 12 to 13, 2007

North American Heating & Energy Expo, Boston, Mass.

<http://www.nefi.com/expo07/index.html>

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