



Documenting UST Compatibility with Blended Fuels

Effective 10/13/2018 at 41 IAC 175.415 in the revised Illinois UST regulations is the requirement to establish proof of compatibility of a UST system with the product it contains and dispenses. For affected UST owners/operators this will generally be limited to “blended fuels,” which are basically any gasoline/ethanol blends with concentrations of ethanol greater than 10%, and any diesel/biofuel blends with concentrations of biofuel (such as soy oil) over 20%. In other words, any fuels labelled as being over E10 or B20.

The requirement to demonstrate compatibility of fuels with concentrations of ethanol or biofuel over E10 or B20, based on Federal EPA requirements, is challenging, and will be more so in relation to how long the facility has been storing and dispensing those products. Compatibility certifications at new installations are being addressed at the permit application stage of the process now, but that won't help facilities where this was done prior to the new requirements.

- **First of all**, this demonstration of compatibility is not limited to just the blended fuel tank. These are the components, in addition to the tank itself, that require proof of compatibility:
 - The tank,
 - The piping carrying product from that tank,
 - The piping containment sumps entered by that piping,
 - The spill and overfill equipment on the blended fuel tank, including ball float valves, drop tube flapper valves and the spill bucket,
 - Release detection equipment, including ATG probes, sump sensors and line leak detectors,
 - The pumping equipment, including the submersible pump or the suction pump (depending on the type of system), and dispenser pumps, as well as the hoses and nozzles used to dispense the blended fuel [40 CFR 280.32(b)(1)].
 - In addition: For new UST installations, OSFM included seals, gaskets, pipe dopes and adhesives, since it makes no sense to require compatible equipment, and then allow failures at the cheapest part of the system.
- **Second**, compatibility must be demonstrated and documented using:
 - Certification or listing of UST system equipment or components by a nationally recognized, independent testing laboratory for use with the regulated substance stored; or
 - Equipment or component manufacturer approval. The manufacturer's approval must be in writing, indicate an affirmative statement of compatibility, specify the range of biofuel blends the equipment or component is compatible with, and be from the equipment or component manufacturer [40 CFR 280.32(b)(1)(i and ii)].
- **Finally**, this requirement is not just for new installations going forward. This covers new and old UST systems, regardless of how long ago they were installed [40 CFR 280.32(a)(b)].

A blend of gasoline/ethanol we are seeing increasingly in Illinois is E15. This fuel is often blended at the dispenser from a mixture of E10 regular unleaded (RUL) with E85, each coming from its own UST, and each traveling through its own piping, then arriving at a shared dispenser and dispenser sump. Another common arrangement would be a UST storing E85 and pumping that product to a dedicated dispenser through dedicated product lines.

Let's examine the latter example first. Compatibility will need to be demonstrated for all the UST components as listed above for the E85 tank, lines and components. This may be difficult to do for a station which has stored and dispensed E85 for years, but it will be limited to only that part of the entire UST system which comes into contact with the E85. If all components in contact with the blended fuel cannot demonstrate compatibility, one possible outcome will be that the UST will need to be emptied and cleaned for a change of product, and then allowed only to store E10 or B20 for dispensing.

Another scenario involves a station where E10 RUL and E85 are blended at the dispenser. When the E15 blended fuel is used as a substitute for 89 octane midgrade E10 gasoline, it is often made by blending the E10 RUL and E85 at the dispenser to produce E15 at the nozzle. In this case, while there may still be only one E85 UST, there will be multiple E85 product lines, and these will go to multiple dispenser sumps with sensors, and the E15 will be blended in the dispenser before being pumped through the hoses and nozzles. In this scenario, all the equipment that can come into contact with the E85 needs to demonstrate compatibility. The same will be true of blended diesel over B20, except that the blending is usually done closer to the USTs before reaching the dispensers.

The UST compatibility requirements went into effect 10/13/2018 in Illinois. When an OSFM inspector conducts an inspection at a facility where blended fuels over E10 and B20 are stored and dispensed, he or she will ask for documentation of proof of compatibility. If such is not completed and available, this Notice and the OSFM Compatibility Checklist will be given to the facility representative. The facility will need to work with their UST contractor to assemble all the required documentation. By the time of the next biennial UST inspection, if the Checklist is not completed, a Notice of Violation (NOV) will be issued. The Certification will then need to be completed within 60 days, or the blended fuel will need to be removed from the UST system.

Use OSFM's new ***Checklist for Documenting UST Compatibility*** to facilitate your task of assembling the proofs of compatibility for all the components listed on the Form. A copy is available from the OSFM inspector. You will also find the new form posted at our website at Applications and Forms.

We strongly recommend that you work with a licensed contractor to begin to assemble this information now, so as to avoid violations for not having the component compatibility proof in place. The completed checklist and the documentation will be sent to OSFM. We are working on producing a digital form, but for now the ***Checklist for Documenting UST Compatibility*** is only available as a paper form. For new installations with blended fuels, the ***Checklist*** and supporting documentation must accompany the INS permit application.

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