

# Diesel Fuel Gelling

## *Quality Flexibility Needed in Diesel Fuel Contracts*

During January 1994, diesel fuel gelled frequently in all manner of diesel-powered equipment. Clogging fuel lines and filters, gelling made snow plowing even more difficult than usual, and added costs to already extended snow removal budgets.

In response to several queries, we examined how and why gelling occurred much more last winter than in past ones. We concluded that several factors, acting together, caused the unavailability of adequate diesel fuel across much of New Hampshire. Each factor -- *economics, temperature, and reduced fuel storage flexibility* -- are discussed in turn.

**The Economic Factor.** To sell to consumers, companies must provide fuel which is both of adequate quality to perform, and competitively priced. Higher quality fuels cost more to produce than lower quality fuels; fuels that operate at a lower temperature cost more than fuels that flow at a higher temperature.

The economic factor, in other words, influences decision makers to provide the lowest quality fuel which will be adequate for operating conditions. If suppliers have higher quality fuel than needed for local conditions, they will have low sales or must sell at very low margins or even at a loss. Sometimes, suppliers have fuel of inadequate quality for the conditions.

**The Temperature Factor.** A major factor in oil company decisions about fuel quality is the expected low temperature. It appears that decisions for 1994 were based on the previous three winters, which were unusually mild. Not only were temperatures for many days in January 1994 colder than the three year average, they were colder than the thirty-year average. In short, on many mornings snow removal equipment, and other diesel-powered vehicles, needed higher quality fuel than during 1991-1993 and other above average years.

**The Fuel Storage Factor.** Economic and temperature factors were more important in January 1994 than in past years because suppliers had less flexibility in fuel storage. When able to store several grades of diesel fuel, they could provide low cost fuel during average periods and higher quality fuel during periods of unusually low temperatures.

Beginning in the fall of 1993, they could store less grades of diesel fuel because they had to reserve tanks for two sets of mandated fuel classifications: low-sulphur vs. high-sulphur fuel by the Environmental Protection Agency (EPA) regulations and taxable vs. non-taxable by the Internal Revenue Service (IRS) regulations. For example, a fuel dispensing terminal which had for years provided four grades of diesel fuel from four tanks needed six tanks to have the same number of grades in January 1994. With only four tanks, the fuel companies' economic decision-making became even more important. They could store only one grade of diesel fuel for municipalities.

**Suggestions for 1995.** When municipalities contract for 1994-1995 fuel purchases, they should request at least two fuel prices: one for diesel which will operate during "normal" temperatures and one for below average temperatures. Requests for only one price could force suppliers to bid based on fuel suitable for lower than average temperatures, which costs more than fuel needed for average temperatures.

Because the EPA and IRS regulations will remain in affect this winter, fuel terminals will still have less flexible storage than in past years. They should, however, be better prepared to mix kerosene with diesel fuel when low temperatures are forecast. Administrators should compare the cost of a supplier who has such capability against a supplier who does not.

*Editor's Note: This article is drawn from an internal UNH T<sup>2</sup>Center report. That report is available upon request, by letter or telephone.*

# Metric Conversion

## *Effects on Local Road Managers and Crews Remain Uncertain*

Federal and state governments are using metric units in designs for all federally funded highway projects to be awarded after September 30, 1996. AASHTO and other standards-setting organizations have established metric dimensions for roads and their components.

It is not clear when these standards and associated practices will affect local road managers and crews. Until last month, the federal government's policies for metric conversion of signs seemed to be the likely initial affect. Last August the Federal Highway Administration (FHWA) solicited comments from the public on three options:

- Option 1 -- Extend conversion over a 4-7 year period through routine maintenance replacement;
- Option 2 -- A quick, coordinated conversion effort over 6 months to a year;
- Option 3 -- A two-phased conversion process using dual posting of both metric and English.

On June 27 FHWA announced they would delay implementation of any metric sign conversion until after 1996, or until Congress acts. With this decision, there appears little immediate need for a significant educational effort aimed at local road managers and crews.

Because design engineers will be affected by metric conversion before local road managers, the UNH T<sup>2</sup>Center plans to conduct a workshop for that audience. Tentatively scheduled for January 1995, it will be open to non-engineers as well. In the meantime, individuals desiring information, such as those in communities involved with a federally funded highway project, can call or write the UNH T<sup>2</sup>Center.