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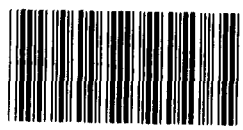
The Honorable Philip R. Sharp
Chairman, Subcommittee on Energy
and Power
Committee on Energy and Commerce
House of Representatives

The Honorable John D. Rockefeller IV
United States Senate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On May 5, 1992, we briefed your representatives on our review of the experiences of alternative-fueled vehicle users and providers of alternative fuels. After the briefing and at a subsequent meeting, your representatives asked us to follow up on the following three additional issues: (1) the status of efforts to eliminate tunnel restrictions for gaseous-fueled vehicles in Baltimore, Boston, and New York; (2) the implications of Department of Transportation (DOT) regulations that require compressed natural gas (CNG) cylinders to be recertified; and (3) the consistency of alternative-fuel tax benefits contained in section 1913 of H.R. 776 with other alternative-fuel provisions of the bill. This letter summarizes the information we obtained on these three issues.

TUNNEL ACCESS RESTRICTIONS

We are aware of no restrictions that prohibit gaseous-fueled vehicles from using tunnels in any areas of the country except for Baltimore, Boston, and New York City. Two years ago, New York City allowed CNG vehicles to use its four tunnels and two enclosed bridges, but it does not allow vehicles fueled by liquefied petroleum gas (LPG or propane) to use these tunnels and bridges. Boston and Baltimore, with four and two tunnels respectively, prohibit both CNG- and LPG-fueled vehicles from using the tunnels.

The agencies with regulatory authority over the tunnels and bridges in these three locations have recently supported relaxing their regulations that block access for gaseous-fueled vehicles. The agencies and CNG and LPG industry

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representatives have been working to resolve potential safety issues associated with gaseous fuels. On the other hand, fire safety officials in the three locations had concerns about changing the regulations. These concerns include safety hazards, including the possibility of an explosion and the uncertainties of fighting fires involving unfamiliar fuels. While the tunnel authorities in each location told us that they could theoretically change the regulations without the consent of the fire safety officials, they have been reluctant to do so because the fire departments are responsible for fighting fires in the tunnels and on the bridges.

In the past 3 years, progress has been made in allowing CNG vehicles to use the tunnels. For example, since March 1990, New York City has allowed CNG vehicles in its tunnels and on its enclosed bridges as a result of a 1989 study conducted by a consulting firm. Sponsored by local utilities and the state of New York, the study found that CNG was safer than gasoline as a vehicle fuel, even in tunnels. These results convinced local fire safety officials and the two agencies that operate New York City's tunnels and bridges that it was safe to lift the CNG restrictions.

In Boston, fire safety officials are aware of the New York study but still have some reservations about CNG. They are considering endorsing the fuel for use in tunnels if certain conditions are met. Specifically, the Boston fire chief wants the tunnels' antiquated lighting and electrical systems upgraded to meet higher safety standards. He feels the current systems are a threat to safety because the lights may spark under certain conditions, and this could ignite a gas leak and cause an explosion.

After a February 1992 briefing on the results of the New York City CNG study, Baltimore fire safety officials became willing to approve CNG. However, in contrast to New York, Baltimore tunnel authorities are reluctant to approve CNG without also approving LPG. Officials told us they want to make a decision on both fuels simultaneously.

The decision to approve LPG has been more difficult for fire safety officials; the best chance of approval appears to be in Baltimore. Representatives from the LPG industry met with state and local fire safety officials in Baltimore on June 26, 1992, to present their case for the safety of LPG in tunnels. While no final decision on access was made at the meeting, the fire safety officials agreed to make such a decision by the end of July. According to the Maryland state fire marshall, who attended the meeting, it appears

that fire safety officials may approve LPG-powered vehicles, but they are still reluctant to endorse recreational vehicles that have LPG tanks attached to their exterior.

In New York and Boston, LPG is less likely to be permitted in tunnels and bridges. New York tunnel officials have no plans to lift the ban without a study of LPG safety that would be comparable to the aforementioned CNG study, which cost approximately $150,000. According to New York tunnel and fire safety officials, an LPG study would also be expensive, and funding is uncertain because of the low interest in LPG in New York City. Moreover, an LPG trade association official told us that his organization cannot afford to sponsor such a study. In Boston, the fire chief said he will not even consider relaxing the regulation for LPG because of the safety risks involved. LPG is potentially dangerous because it is heavier than air and tends to pool near the ground following a leak, whereas CNG is lighter than air and tends to disperse more rapidly than LPG after it is released.

While our discussions focused on CNG and LPG, New York City officials mentioned that liquefied natural gas (LNG) is also under consideration for approved use in tunnels and on bridges. LNG is being considered because a major package delivery company would like to use the fuel in certain fleet vehicles that routinely use one of the New York tunnels. A study on LNG safety was completed in May 1992 and presented to local tunnel and fire safety officials. An official of the engineering firm that conducted the study told us that no decision has been made yet, nor has a deadline for making such a decision been established.

CNG CYLINDER RECERTIFICATION

The second issue, cylinder recertification, was raised by CNG vehicle users, who told us that DOT regulations required them to remove the fuel storage cylinders from their vehicles every 3 to 5 years for retesting and recertification. The required testing procedure cannot be done while a cylinder remains attached to a vehicle. The users complained that this process is inconvenient, time-consuming, and expensive, and poses a barrier to more widespread use of CNG vehicles.

Our work revealed that CNG cylinders are currently governed by regulations issued by DOT's Research and Special Programs Administration, Office of Hazardous Materials Safety (OHMS). According to OHMS officials, these rules are intended to regulate cylinders that are used to transport hazardous

materials that are shipped in commerce. Cylinders that meet strict manufacturing standards are permitted to display DOT certification markings. To maintain this certification, cylinders must be periodically retested.

According to officials at OHMS, the regulations do not govern cylinders that are attached to vehicles and store propellant except when those vehicles are transported as articles of commerce. For example, the regulations apply when a CNG vehicle is shipped from a manufacturer to an end user. With this one exception, OHMS does not regulate CNG cylinders after they are permanently installed on vehicles, and OHMS does not require that cylinders used on CNG vehicles be retested and recertified. However, we learned that some state and local governments and insurance companies require CNG vehicle users to maintain DOT certification for such cylinders. To do so, users must comply with the OHMS regulations, which require retesting.

Both DOT and private industry are currently developing related safety standards. In 1990, DOT's National Highway Traffic Safety Administration (NHTSA) recognized that new safety regulations governing the fuel systems of gaseous-fueled vehicles may be necessary. Since then, NHTSA has been working on proposed regulations. If issued, these regulations would be specifically designed to address cylinders used on vehicles to store gaseous fuels such as CNG. NHTSA officials would not comment on when they anticipate issuing a Notice of Proposed Rulemaking or on the specific provisions to be included in the proposed regulations. However, they told us that the rulemaking authority that permits NHTSA to issue federal motor vehicle safety standards extends only to regulating the manufacture of new vehicles and vehicle equipment and not to the regulation of the on-the-road vehicle fleet. Thus NHTSA will not, through the safety standards it is now considering, require periodic retesting and recertification of CNG fuel system cylinders in that fleet.

Meanwhile, private industry has been working to develop both comprehensive new standards for CNG vehicles and refueling facilities. As part of this effort, the Natural Gas Vehicle Coalition has developed NGV2, a detailed standard for CNG cylinders in vehicle applications. A key provision of NGV2 specifies that after passing stringent initial tests, CNG cylinders on vehicles would not be subject to retesting. Instead, they would have a maximum life cycle of 15 years, after which they would have to be removed and discarded. NGV2 has been reviewed and approved by several standards-sanctioning organizations, including the National Fire

Protection Association (NFPA). This fall, the NFPA plans to revise its standard for natural gas vehicles, NFPA 52, citing NGV2 as an acceptable standard for CNG cylinders attached to vehicles. NHTSA officials have indicated that they are aware of both NGV2 and NFPA 52, but they remain noncommittal as to whether they will incorporate any provisions of these two standards in their new regulations.

It is unclear whether state and local governments or insurance companies will change their recertification requirements as a result of NHTSA and private industry efforts to develop additional safety standards.

TAX BENEFITS FOR ALTERNATIVE-FUELED VEHICLES

Our review of the alternative-fueled vehicle tax deductions included in section 1913 of H.R. 776 raised a concern over that section's consistency with other sections of the bill dealing with alternative fuels. Section 1913 defines the fuels for which a tax deduction can be taken more narrowly than does section 301, which pertains to the rest of the bill. For example, section 301 permits the Secretary of Energy in the future to add additional fuels to the list of eligible alternative fuels, whereas section 1913 does not contain similar language. Thus, some alternative fuels could be identified as acceptable under section 301, but alternative-fueled vehicles and refueling property related to these fuels could be precluded from receiving the tax benefits of section 1913. This could create a disincentive to using those particular fuels that do not qualify for the tax deduction.

The enclosure contains the scope and methodology for the issues we reviewed. If you have additional questions regarding these issues, please contact me at (202) 275-1441.

Victor S. Rezendes
Director, Energy and
Science Issues

Enclosure

SCOPE AND METHODOLOGY

To address the issue of tunnel restrictions, we interviewed tunnel authorities and fire safety officials in the three cities where restrictions had been reported--Baltimore, Boston, and New York. We also spoke to representatives of natural gas utilities in the three locations. In addition, we discussed the matter with officials from two engineering firms that conducted studies of natural gas safety in tunnels, and we reviewed copies of the studies. Finally, we spoke to representatives of trade associations representing the natural gas and LPG industries.

Our primary sources of information on the CNG cylinder issue were DOT officials involved in the regulation of these cylinders. Officials of several natural gas utilities and a natural gas trade association also provided information on this issue. In addition, we interviewed an official of the National Fire Protection Association involved in that organization's effort to issue revised safety standards for CNG vehicles.

In reviewing the tax provisions of H.R. 776, we compared section 1913 with the other alternative fuels sections of H.R. 776 to identify and assess the effects of any areas of inconsistency.

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