

**DEPARTMENT OF FOOD AND AGRICULTURE  
PROPOSED AMENDMENT OF THE REGULATIONS  
Title 4, Division 9, Chapter 6, Article 8  
Specifications For Hydrogen Used In  
Internal Combustion Engines And Fuel Cells**

INITIAL STATEMENT OF REASONS/  
PLAIN ENGLISH POLICY STATEMENT OVERVIEW

**Background**

The overall mission of weights and measures is to preserve and maintain the standards of measurement essential in providing a basis of value comparison for the consumer and fair competition for industry. The principal task of the Petroleum Products Program is to regulate and enforce the advertising, labeling and quality specifications for motor oils, engine fuels, gear oils, brake fluids, automatic transmission fluids, engine coolant and alternative fuels.

The Legislature has charged the Department of Food and Agriculture (Department) with the responsibility of enforcing weights and measures law within California: Business and Professions Code (B&P Code), Division 5, Section 12103.5. The Secretary of the Department of Food and Agriculture (Secretary) is granted the authority to adopt such regulations as are reasonably necessary to carry out the provision of the B&P Code, Division 5, Sections 12027 and 13446.

**Description of the Public Problem, Administrative Requirements, or Other Conditions or Circumstances the Regulations are Intended to Address**

For sometime now work has been underway to develop vehicles powered by fuel cells. Fuel cells require high quality hydrogen to provide maximum performance and prevent premature failures. As the quality of hydrogen fuel increases so does the cost of production. In order to be a viable alternative fuel, hydrogen fuel must both provide the needed performance and be economically competitive with other fuels.

With the passage of Senate Bill 76 (Chapter 91, Statute of 2005) the Department with concurrence of the State Air Resources Board is required to adopt standards by regulation for hydrogen fuel used both in fuel cells and internal combustion engines. If a development organization accredited by the American National Standards Institute (ANSI) has completed such a standard; the Department is required to adopt them by reference. If that work has not been completed by January 1, 2008, then the Department is required to adopt interim standards.

The Society of Automotive Engineers (SAE) and the American Society of Testing and Materials (ASTM) are taking the lead in the development of standards and test procedures for hydrogen. Their work has not yet been completed. Therefore, the Department has determined that no development organization has completed or is likely to complete standards for hydrogen used in fuel cells or internal combustion engines by January 1, 2008.

The Department recognizes that not all of the requirements of fuel cells are fully understood. It is the desire of the Department to establish interim fuel standards which are based upon the best current technical information. The Department believes this can best be accomplished by relying upon current SAE work to write the regulations.

Work has not been completed by ASTM, SAE or any other standards development organization to measure the various constituents specified in the proposed interim standard. Therefore, specific sampling and test procedures have not been included. The Department will adopt by regulation sampling and test procedures as they are developed. The Department does not plan to begin enforcement until reliable procedures have been developed and adopted.

The latest SAE Technical Information Report, J2719 indicates a desire to have one standard to address hydrogen used for both fuel cells and internal combustion engines. However, the Department recognizes that the hydrogen fuel standards required for fuel cells may be significantly more stringent than would be required for internal combustion engine applications. If sufficient data becomes available which justifies a separate interim internal combustion engine hydrogen fuel standard, the Department will again seek to modify regulations.

The Department will continuously review both the technical and economic impact of the proposed interim standards. If deemed necessary, the Department will propose modifications to the interim standards. As required by law, once an ANSI accredited development organization has completed hydrogen fuel standards, the Department will begin the formal process to adopt them by reference.

### **Specific Purpose of the Regulation: Necessity**

On July 21, 2005, Governor Schwarzenegger signed into law Senate Bill 76 (Chapter 91, Statute of 2005). The goal of this new law is to support the development of a network of hydrogen refueling locations in California, thereby reducing California's dependency upon oil and supporting the use of alternative fuels. The new law also recognized the importance of a consistent high quality fuel to prevent the fouling or failure of fuel cells or internal combustion engines. The Department, in concurrence with the California Air Resources Board, is mandated by January 1, 2008 to establish standards for hydrogen for use in fuel cells and internal combustion engines.

The Department is required to adopt by reference the latest standards for hydrogen established by an American National Standards Institute (ANSI) accredited standards development organization. If such a standard has not been developed, the Department is required to develop interim standards. The Department has determined that no ANSI accredited standards development organization has established standards for hydrogen fuel used in fuel cell or internal combustion motor vehicles. Therefore, the Department proposes to establish interim standards for hydrogen fuel.

### **Estimated Cost or Savings to Public Agencies or Affected Private Individuals or Entities**

The Department has determined that this proposal does not impose a mandate on local agencies or school districts. The Department has also determined that no cost or savings to any other state agency, no reimbursable costs or savings under Part 7 (commencing with Section 17500) of Division 4 of the Government Code to local agencies or school districts, no nondiscretionary costs or savings to local agencies or school districts, and no cost or savings in Federal funding to the State will result from the proposed action.

The cost impact of the changes in the regulation on private persons or businesses is expected to be minor or insignificant.

The Department has also made an initial determination that the action will not have a significant statewide adverse economic impact on housing costs or California business, including the ability of California businesses to compete with businesses in other states.

### **Assessment Regarding Effect on Job/Businesses**

The Department has made an assessment that the proposed regulation may: (1) create jobs within California; (2) create new businesses with California; or (3) affect the expansion of businesses currently doing business in California.

### **Alternatives Considered**

The Department could seek legislative relief from the January 1, 2008 deadline to establish standards for hydrogen motor vehicle fuels. The date of implementation could be extended to January 1, 2011. This delay would provide time for a consensus standard to be developed. Such legislation should authorize the Department to monitor the interim hydrogen fuel quality in California and require the Department to work with ASTM, SAE and other consensus organizations in the development of a standard.

## **Technical, Theoretical, and/or Empirical Study, Reports or Documents**

The Division of Measurement Standards relied on the following documents in drafting the regulatory language of this proposal:

- SAE International Surface Vehicle Information Report J2719, dated November 2005.
- ISO Hydrogen Fuel – Product Specification – Part 2: PEM fuel cell applications for road vehicles, ISO/TC 197/WG 12 N 38 R 1 dated March 3, 2003.