



SURFACE VEHICLE INFORMATION REPORT

J2719™/1

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Application Guideline for Use of Hydrogen Quality Specification

RATIONALE

SAE J2719 was generated to identify impurities that could occur with various hydrogen generation methods and within filling station systems and to define limits for these impurities based on acceptable long-term fuel cell performance for PEM fuel cell vehicles. While SAE J2719 provides a comprehensive listing of such impurities and their limits, testing of the complete specification (particularly on a routine basis to monitor filling station performance) is unnecessarily extensive, as not all impurities within the specification are possible at any given site.

The objective of this SAE Information Report is to identify the point where a contaminant is most likely to enter the hydrogen fuel in the fuel generation and distribution process. Depending on the hydrogen fuel generation method, the number of contaminants found in the fuel at the dispensing nozzle in the fueling station may be reduced as compared to those found in the list provided by SAE J2719. By so doing, test requirements can be more reduced and the use of SAE J2719 becomes more practical.

FOREWORD

According to SAE J2719, hydrogen fuel quality is defined as the quality measured at the dispenser nozzle in commercial hydrogen fueling stations. Depending on the feedstock and process method used to generate fuel, the likelihood of contaminants found in the fuel at the dispenser nozzle varies. Process system faults were considered for each of the hydrogen sources listed in 1.1, and the likely resultant impurities were identified as being necessary for monitoring. Likely contamination sources were also considered and the associated impurities were also identified for monitoring. This document attempts to identify those contaminants with the presumption that only those contaminants known to be prevalent in that production method will be investigated as part of routine or periodic monitoring of hydrogen quality.

In many cases, contamination resulting from maintenance actions will be depleted, so routine or periodic measurements are not likely to identify such incidents. For these cases, owners/operators may elect to perform special measurements after maintenance activities to ensure that such events do not occur. Ultimately, the frequency and magnitude of fuel quality testing should be established by the station owners/operators and regulatory authorities to meet their needs.

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