ISO/TC 197
Hydrogen technologies

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ISO TC 197 Plenary 2016 - WG 24 report

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Background: Document from the 2016 plenary.

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ISO TC 197, WG 24

Gaseous Hydrogen - Fueling Stations – Part 1: General Requirements

Jay Keller, ZCES Inc
Guy de Réals, Air Liquide
Glenn Scheffler, GWS Solutions of Tolland LLC
Nick Hart, ITM Power

ISO TC 197 - Egmond aan Zee, Netherlands - 8th Dec 2016

Status update WG 24

- ISO TC 197 WG24 Structure
- Progress report:
  - ISO TC 197 WG24: 2016 activity
  - Publication of ISO TS 19880-1
  - Development of ISO 19880-1
  - Proposal for development of ISO 19880-7
  - Interaction with other working groups

ISO TC 197 WG 24
Team Structure with subteams

WG 24 Management

TPD: Keller (US)

Previous: Schneider (US), Dang Nhu (FR)

Acting / Current: Scheffler (US), De Réals (FR)

Sec: Hart (UK),

Hydrogen Station Acceptance

Elliger (DE), Moulthrop / Johnson (US)

Safety Distance Methodology

Flynn (FR), Groth (US)

Hydrogen Sampling (for Quality Analysis)

Dr. Aarhaug (NO), Dr. Hsu (US)

Hydrogen Quality Control (now WG28)

Tomioka (JP)

Fueling Process: Risk Assessment

Zimmermann (DE)

Fueling Process: Site Validation

Karzel (DE), Mortensen, (DK)

ISO TC 197 WG24: 2016 activity

- December 2015: Finished DTR(S) 19880-1 (sent to ISO TC 197 Management)

- April 2016: Release of ISO CD 19880-1 Ballot

- WG 24 meetings (including subteams / doc review team)
  - 23-25 February 2016:, Fukuoka, Japan (HyTReC)
  - 19-22 April 2016: California, USA (CaFCP / CARB)
  - 20-24 June 2016: Munich, Germany (TÜV SÜD)
  - 07-09 September 2016: Munich, Germany (BMW)
  - 30 November – 02 December 2016: Amsterdam, Netherlands (Shell)

Publication of ISO TS 19880-1

- As presented in December 2015, ISO DTR 19880-1 passed ballot for publication
  (Vote results: ISO TC 197 N706)
- December 2015 : Finished DTR 19880-1 sent to ISO Management
- ISO/TS 20100 withdrawn
- Published 01/07/2016 as ISO/TS 19880-1.
  (Press release: ISO TC 197 N767 & ISO TC 197 N768)

TECHNICAL SPECIFICATION

ISO/TS 19880-1

First edition
2016-07-01

Gaseous hydrogen — Fuelling stations —

Part 1:
General requirements

Carburant d'hydrogène gazeux — Stations-service —
Partie 1: Exigences générales

ISO

Reference number
ISO/TS 19880-1:2016(E)

Development of ISO 19880-1

- ISO CD 19880-1 passed ballot in June 2016

  (Vote results: ISO TC 197 N794)

- However, due to 2 negative votes, CD2 to be prepared for ballot

- ISO CD 19880-1.2 (CD2) expected to be circulated for ballot Q1 2017

ISO TC 197

Date: 2016-04-06

DRAFT ISO/CD 19880-1

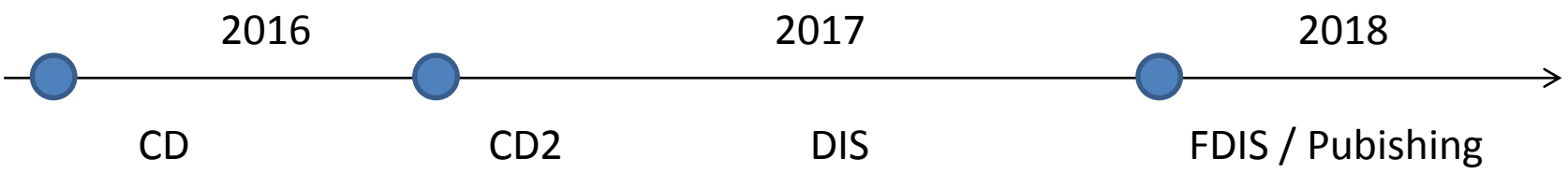
ISO TC 197/WG 24

Secretariat: SCC

Gaseous hydrogen — Fueling stations — Part 1: General requirements

Hydrogène gazeux — Stations de remplissage— Partie 1: Exigences générales

ISO 19880-1: Development Timeline



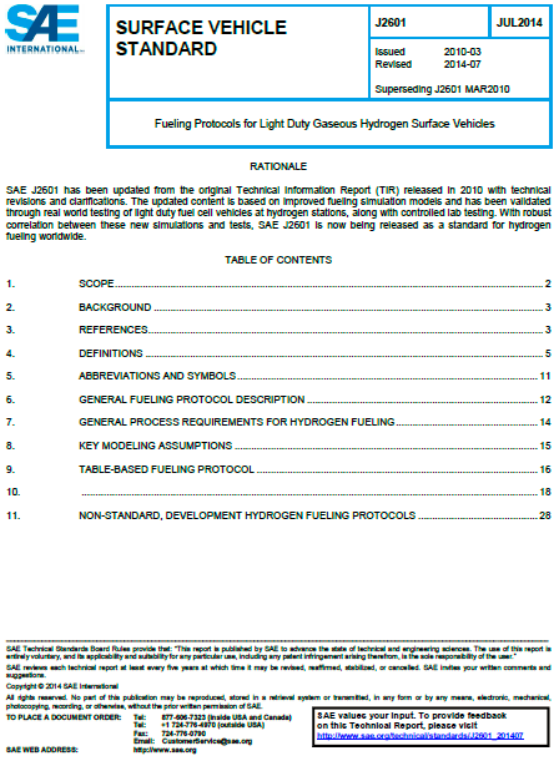
- **December 2016: WG24 meeting:**
  - **30 Nov – 02 Dec 2016: Amsterdam, Netherlands (venue: Shell)**
- **Feb/March 2017: Release of ISO CD 19880-1.2 Ballot (6 weeks */ 2 months*)**
- **WG24 meetings to review CD2 ballot results:**
  - **Seoul, Korea, 12-16th June 2017 (venue TBC)**
  - **U.S., w/c 18th or w/c 25 Sept 2017 (TBC) (venue TBC) + WG19**

    (WG19 to review DIS ballot results)
- **End Sept / Oct 2017: DIS to be released for translation and ballot (5 months)**
- **Q1 2018: FDIS to be released for ballot / IS to be submitted for publication**

Open points: What to do with refuelling protocols?

- Proposal for development of ISO 19880-7
- Options for route forward:
  - Part of WG24 / New WG?
  - Co-convenorship by OEM and H2 infrastructure representatives
- Areas to cover:
  - Requirements for protocols covering:
    - Light duty vehicle fuelling

    (align with SAE J2601, JPEC-S0003, HyTransfer, etc.)
    - Heavy duty vehicle fuelling
    - Small vehicle fuelling (scooters, motorbike etc.)
    - CryoCompressed
  - Addition of protocol qualification requirements
  - Addition of protocol specific acceptance tests
- Draft proposal to be prepared for discussion in June WG24 meeting by Paul Karzell (Shell) & US OEM (TBC)
- NWIP to be put forward following discussion within WG24 in May



SAE INTERNATIONAL

SURFACE VEHICLE STANDARD

J2601 JUL2014

Issued 2010-03
Revised 2014-07

Superseding J2601 MAR2010

Fueling Protocols for Light Duty Gaseous Hydrogen Surface Vehicles

RATIONALE

SAE J2601 has been updated from the original Technical Information Report (TIR) released in 2010 with technical revisions and clarifications. The updated content is based on improved fueling simulation models and has been validated through real world testing of light duty fuel cell vehicles at hydrogen stations, along with controlled lab testing. With robust correlation between these new simulations and tests, SAE J2601 is now being released as a standard for hydrogen fueling worldwide.

TABLE OF CONTENTS

HyTransfer

Issues relevant to other WGs

- Dispenser component pressure ratings (138% vs 125%) – WG05, WG19, WG20, WG22
- Justification for why a dispenser PRV set at 138% sufficiently protects a vehicle – WG05, WG18, ISO TC 22, SC41 (also SAE & GTR#13)
- Scope – Duplication / conflicting information
  - how much of the component information is included in the general requirements of ISO 19880-1,
  - how much is left to the component standards (prior to publication of these documents) – WG19, WG20, WG21, WG22