



ISO/TC 197  
Hydrogen technologies

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### **Final Meeting Minutes -Jan 2020**

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Background: Please find attached the final meeting minutes of the 2019 Plenary Meeting for ISO/TC 197, meeting held in Grenoble France.

Committee URL: <https://isotc.iso.org/livelink/livelink/open/tc197>

**Final Meeting Minutes:**  
**ISO/TC 197 – Hosted by AFNOR in Grenoble (France)**  
**Plenary held Dec 12<sup>th</sup>-13<sup>th</sup> 2019**

Agenda Item (N1112)	Comments and notes	Resolution Number (N1121)	Related N Doc Number
1	<p>Opening of the meeting</p> <p style="text-align: right;"><i>Meeting opens at 9:05 AM</i></p> <p>A special introductory thanks is given to Mr Pierre Serre-Combe who has been essential in organizing the location and the event.</p>		
2	<p>Introduction and roll call of the delegates and delegation. A sign-in sheet is circulated.</p>		N1124
3	<p>Adoption of the agenda. The Chair reads all items of the agenda.</p> <p>The Chair mentions the importance of item 7 and the opportunity to discuss liaisons.</p> <p>Known NWIPs to be presented on item 10 are summarized.</p> <p>The Chair comments on item 12.1 and the importance of the vote.</p> <p>The Chair emphasizes the importance of voting dispassionately and describes the mechanisms and consequences of voting.</p> <p>The Chair also reminds the TC to also consider the issues of timing and available resources.</p> <p>The Chair briefly reviews the announcement related to the 19884 document and the changes in votes.</p> <p>The Chair discusses that Japan would like to present in item 12.2, and invites other countries to see the committee manager with presentations if they would like to contribute.</p> <p>The Chair reminds the TC the importance of finishing at 13:30 on the 13<sup>th</sup> due to the site visit of the Air Liquide installation.</p> <p>No comments from the TC.</p>		<p>N1112</p> <p>N1085 N1087</p>
4	<p>Approval of the resolution drafting committee The TC agrees to establish a resolution drafting committee and appoints 4 members: Karen Quackenbush, Jim Ferrero, Frédéric Solbes, and Nick Hart.</p>	R.456	

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	<p>The Chair indicates to the TC that the resolutions will be voted on during the plenary and will be reviewed on-screen at the end of Day 2.</p>		
5	<p>Approval of the Vancouver meeting minutes. The TC approves the meeting minutes of the 2018 Vancouver meeting.</p> <p>Nick Hart raised the issue of editorial changes in the 2018 resolutions that were raised but never addressed, also that N1078 is inconsistent in stating that these resolutions were still “draft” and “final draft”, rather than “final”.</p>	R 457	N1078 N1080
6	Review of operational progress		
6.1	<p>Performance Evaluations.</p> <p>The Chair discusses the evaluation reviews. The reviews are subdivided as follows: The first reviews are for the 2018 Chair, TAB, and Committee Manager. The reviews of the 2019 Chair, TAB and Committee manager are discussed by the Chair. TAB visibility will increase with NWIPs.</p> <p>The Chair discusses the difficulties related to the WG15.</p> <p>The Chair comments on the discussions and exchanges held with the Committee Manager and the BNQ; the Chair indicates that he believes that the work and availability issues have been resolved.</p> <p>The Head of delegation for the UK emphasizes that the lack of communication on the part of the Secretary was significant, notably for the lack of circulation of the PWI 24078 ballot results.</p>		
6.2	<p>The reviews of the 2018 plenary and SPM meeting are also discussed. The Chair indicates the importance of the SPM as a “big picture” meeting. The SPM will have minutes posted as well.</p> <p>The Chair indicates that the CIB Ballot related to the 2019 Plenary and SPM meetings will be posted shortly and will close in February 2020.</p>		
6.3	<p>Report from the Vice-Chair for Developing countries.</p> <p>The Vice Chair exposes the adoption of hydrogen technologies in developing countries, notably, China, Brazil, India, Russia, Malaysia, and Thailand.</p> <p>The Chair thanks the Vice-Chair and emphasizes the importance of this work including the aspects of other international organizations, and the interactions</p>		N 1125

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	<p>with other developing countries in international conferences. This also helps streamline communications.</p> <p>The Vice-Chair also emphasizes that cooperation, sharing, and harmonization of standards is key.</p> <p>The Chair indicates the importance of getting India more involved, emphasizes the next meeting of WHEC in Istanbul July 5<sup>th</sup> to 9<sup>th</sup> 2020.</p>		
	<i>The TC breaks from 10:25 to 10:45.</i>		
7	Progress review of the technical program		
7.1	<p>Changes to ISO directives</p> <p>The Technical Program Manager (TPM) of ISO/TC 197, Andrew Dryden, makes 2 presentations.</p> <p>The ISO Code of Conduct is reviewed and shown to all delegates. The importance of respecting other individuals and organisations within the ISO system is highlighted, and that the ISO organisation is currently developing a mechanism for dealing with complaints of this nature.</p> <p>The TPM also reviews changes made to the ISO directives in 2019.</p> <p>These notably include:</p> <p>Guest experts for singular WG meetings are at the discretion of the convenor, but emphasises that official recognition is better for longer-term participation.</p> <p>Emphasises that formal discussions during meetings or distribution of Member Body positions via formal committee distribution channels DURING the voting process (while the ballot is still open) is not allowed.</p> <p>The position previously known as TC Secretary is now referred to as Committee Manager.</p> <p>Annex SR3 is clarified, and Form 8B is clarified for Minor revisions.</p> <p>The 48-month development track for standards will not be available after May 2020. After this date, the maximum time available for the development of a document will be 36 months.</p> <p>An <a href="#">ISO Training YouTube</a> channel is now available for training modules. (<i>Click to open link</i>).</p>		<p>N 1126</p> <p>N 1127</p>

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	<p>Furthermore, guidance on the language on codes, laws and regulations is clarified.</p> <p>A discussion related to the order in which NWIPs are presented before the establishment of a WG.</p> <p>The TPM proposes that the creation of an Ad Hoc group may permit to assist in the logistics prior to the approval of a NWIP.</p> <p>The Head of delegation for the UK indicates that the CEN process has a reverse logic and that a WG prepares the NWIP and pNWIP.</p> <p>The TPM indicates that there is flexibility in grandfathering WGs with no active projects.</p> <p>The clarity in WGs continuing vs stopping their work depends on if they have a clear pathway or not.</p> <p>The TPM explains that ISO is sensitive to the administrative step of disbanding a WG and the TPM can assist in trying to preserve the member list and the data.</p> <p>A question on the attendance is also raised concerning the ISO system: within the ISO platform, attendance can be confirmed, but delegates cannot confirm that they will <u>not</u> be in attendance. The TPM takes note of this and will follow-up on this comment.</p> <p>The TPM advises the TC to be mindful of when projects are on the clock.</p>		
7.2	<p>Craig Webster discusses active WGs as TPD.</p> <p>The TPD provides updates for the following groups:                      WG 5 “Gaseous hydrogen land vehicle refuelling connection devices”                      WG 18 “Gaseous hydrogen land vehicle tanks”                      WG 19 “Gaseous hydrogen fuelling station dispensers”                      WG 22 “Gaseous hydrogen fuelling station hoses”                      WG 23 “Gaseous hydrogen fuelling station fittings”</p> <p>For WG5 – the final ballot is currently open, publication is intended for Jan 2020.</p> <p>A comment from WG 18:</p> <p>19881 <i>Gaseous hydrogen — Land vehicle fuel containers</i>: The intent of the revision is to include type 3 vessels.</p>		<p>N 1128                      N 1130                      N 1129</p>

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	<p>There may be an issues related to the test procedure for rupture and test requirements. They will meet in Japan in Feb 2020 to deal with comments and harmonize with GTR.</p> <p>Mr de Réals from the French delegation makes a comment that the proposal should include inherent safe refuelling. The Chair agrees that yes, the intent is to include inherent safe refuelling. Mr Quong from the US delegation comments that expertise for this is in the GTR group. The Chair clarifies that there will be a consensus within the GTR before going to ISO.</p> <p>Mr Scheffler from the US delegation makes comments on the type of standard issued – GTR is moving to performance-based standards which are generally strongly supported by the US; indication that there are other technical issues.</p> <p>Mr de Réals comments on the intent to break the cycle: this may be an issue for ISO or SAE. The proposal is to expand the rationale.</p> <p>Mr Scheffler expands on the technical issues related to all test methods for different types of pressure vessels and argues that the document excluded more than it should have.</p> <p>The Chair explains that in 19881, Type 3 vessels are excluded.</p> <p>The TPD argues that the document may not be as restrictive as Mr Scheffler indicates.</p> <p>The discussion concludes that the NWIP is already in progress and will be presented by mid 2020.</p> <p>For WG 19, Mr Watanabe indicates that the intent is to harmonize with 19880-1 <i>Gaseous hydrogen — Fuelling stations — Part 1: General requirements</i> and to wait until the 19880-2 <i>Gaseous hydrogen — Fueling stations — Part 2: Dispensers</i> document is advanced.</p> <p>When these working items are addressed, WG 19 work will be to adjust the document. The clock will restart after a CIB ballot and the proposal is to move the document directly to an FDIS ballot.</p> <p>WG19 will hold a meeting by mid 2020 and late 2020, with the FDIS ballot to be launched by mid 2021.</p>		

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	<p>For WG 22, Mrs Quackenbush presents the advancement of the 19880-5 <i>Gaseous hydrogen — Fuelling stations — Part 5: Dispenser hoses and hose assemblies</i> document and indicates that there were some editorial clarifications that were not corrected prior to publication. To correct for these changes, an amendment is required and the TC can resolve to begin work on this amendment. Subsequently, the intent is to begin on a revision.</p> <p>The convenor of WG 23, Mrs Quackenbush, indicates that the work on the CD has begun and that edits and technical resolutions of items is ongoing. The WG expects that a CD ballot would be launched in early 2020.</p>		
7.3	<p>Jay Keller discusses items as TPD.</p> <p>WG24 “Gaseous hydrogen fueling stations – general requirements” now has a document, 19880-1, currently in FDIS-stage. Because of this upcoming expected publication, WG24 will be officially disbanded.</p> <p>There are no other active WGs to be discussed.</p> <p>The contributions of the convenors and secretary of WG24 are recognized.</p> <p>There are 2 new PWIs, including prenormative research from PRESLHY. Due to the nature of the research, the TC discusses keeping the deliverable document as a Technical Report rather than an international standard.</p> <p>Market needs are present, with several companies building and putting into service various industrial uses (e.g. Kawasaki, Shell, etc).</p> <p>There is also a positive CIB on vocabulary – for which results were not immediately posted but will be circulated.</p> <p>Delegates from the USA indicate that their vote against the CIB was based on misinterpretation of the mechanisms of agreement and representation.</p> <p>CSA Group is also coordinating efforts on pressure technology.</p> <p>TC 197 discusses that Hervé Barthélémy, as TPD, could work with TC 58 on the topic of terminology.</p>		N 1131
	<i>The TC breaks for lunch from 12:30 to 14:00.</i>		
	The TC meeting restarts with a resolution to highlight Jim Ferrero’s participation in the activities of hydrogen technology standardization.	R. 476	
7.4	Hervé Barthélémy discusses activities as TPD.		N 1133

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	<p>Karen Quackenbush (US) reported that work by WG21 “Gaseous hydrogen fuelling station compressors” is progressing now that compressor experts are available for the various forms/types of compression. Many manufacturers are now actively participating. An expert, however, is still needed for electrochemical compression. The intent is to hold a meeting in the US in April. The balloting process for the document is currently suspended, with the “ISO clock” to restart once the CD for ISO 19880-4 is out for ballot (not anticipated until later in 2020).</p> <p>WG 21 meetings had been held in Cleveland, Ohio on the 24 &amp; 25 October 2019, then subsequently in Grenoble on the 9th December 2019, prior to the ISO TC 197 Plenary Meeting. A further meeting is planned in April, in the US, to try to progress the document to CD stage. Working to identify expert on electrochemical compressor technology. CD to follow April 2020 meeting, at which point the project will officially be restarted.</p> <p>The Head of delegation for the UK asks about updating 16111 <i>Transportable gas storage devices — Hydrogen absorbed in reversible metal hydride</i> in the ADR (in the EU).</p> <p><u>ACTION ITEM: The TC requests that Hervé Barthélémy communicates to TC 58 that TC 197 has no opposition to them proposing the latest version of 16111 to the UN for their consideration – this is approved by Resolution 458.</u></p>	R. 458	
7.5	<p>Hidenori Tomioka presents ongoing work as TPD director.</p> <p>Mrs Martine Carré, representing JWG7 work also summarizes current events and next steps – notes the JWG7 is now disbanded.</p> <p>Mr Takagi also presents work for 14687 <i>Hydrogen fuel quality — Product specification document</i> – indicating the importance of preparing for a possible “bad guy” market.</p> <p>Document 14687 has a change of convenorship and a PWI will be made for the next revision.</p> <p>3 task groups are proposed:                      Task 1: Grade D – Mr Tomioka                      Task 2: Grade E – Mr Tajima                      Task 3: Grade A (incl. B) – Mr Murugan</p> <p>Mr Webster proposes some technical feedback with respect to the purity of the hydrogen used for testing according to 14687.</p>		N 1134



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	<p>There is technical discussion on the appropriate limits for use, testing and heating considering the commercial cost and availability for the various uses, and the topic of hydrogen in blends is also addressed.</p> <p>There is a discussion on the next steps for document 19880-8 <i>Gaseous hydrogen — Fuelling stations — Part 8: Fuel quality control</i>. An Amendment is proposed to harmonize with items published in document 14687.</p> <p>After publication of an amendment, as per Resolution 460, the WG will start the revision work for 19880-8.</p> <p>The TC confirms the change of convenorship of WG 27 and resolves unanimously to appreciate Mr Tagaki for his efforts.</p> <p>The TC confirms the importance of developing a liaison with CEN/TC 234 Gas Infrastructures.</p> <p>The TC resolves to develop an amendment for 19880-5 as discussed in item 7.2.</p>	<p>R. 460</p> <p>R. 461</p> <p>R. 462</p>	
8	<p>Documents published.</p> <p>The titles of the documents are read and the following documents are confirmed as published:</p> <p>ISO 14687:2019 <i>Hydrogen fuel quality — Product specification document</i> (Yasuo Takagi and Osamu Tajima)</p> <p>ISO 22734:2019 <i>Hydrogen generators using water electrolysis process — Part 1: Industrial and commercial applications</i> (Larry Moulthrop)</p> <p>ISO 19880-8:2019 <i>Gaseous hydrogen — Fuelling stations — Part 8: Fuel quality control</i> (Hidenori Tomioka)</p> <p>ISO 19880-5:2019 <i>Gaseous hydrogen — Fuelling stations — Part 5: Dispenser hoses and hose assemblies</i> (Karen Quackenbush)</p> <p>ISO 21087:2019 (JWG) <i>Gas analysis — Analytical methods for hydrogen fuel — Proton exchange membrane (PEM) fuel cell applications for road vehicles</i> (Martine Carré)</p> <p>The TC resolves to thank the convenors of all published documents.</p>	R. 463	
9	<p>Systematic reviews and documents more than 6 years old forth coming in 2020:</p> <p>5 documents are identified that will be reviewed during 2020.</p>		N 1132

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	<p>Jay Keller (TPD) proposes that there is an issue with document ISO/TR 15916 <i>Basic considerations for the safety of hydrogen systems</i>, specifically due to the quickly changing science behind materials compatibility.</p> <p>Mr Keller indicates that certain members from Germany, US, and Japan would be willing to clarify the materials table.</p> <p>The proposal is to convene to fix this table, possibly by replacing it with a reference to an updated database maintained by organization not directly within the ISO system.</p> <p>The TC discusses participants and representatives from DIN (Germany) propose to add Hervé Barthélémy from France.</p> <p>Jay Keller is proposed as project leader, with a six-month timeline. TC 197 also proposes to establish a new WG for this review. A call for experts will be launched for this project.</p> <p>The TC discusses the possibility of reviewing the entire document and concludes that if there are other items that need to be addressed, they shall be, but to date, Mr Keller indicates that only the materials compatibility table has been identified as problematic. Representatives from Australia propose that they can give input from their own adoption.</p> <p>The TC discusses a possible lack of interest to transition this document as an International Standard – the document may remain as a TR.</p> <p>The mechanisms for the review of ISO/TS 19883 <i>Safety of pressure swing adsorption systems for hydrogen separation and purification</i> are briefly discussed as the question was raised to the Committee Manager by SAC (China).</p> <p>Other documents for systematic review are simply listed.</p>	R. 464	
10	New Work Item Proposals.		
10.1	<p>Mr de Waart from Netherlands exposes the project of QualyGridS</p> <p style="text-align: center;"><i>[This item was presented out of sequence from the agenda due to time constraints – This was presented earlier in the afternoon of day 1]</i></p> <p>The TC discusses the importance of testing protocols for the technology of electrolysers and to unify the requirements for grid-access protocols and performances.</p>	R. 459	N 1135

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	<p>Discussions indicate that there would be a JWG coordinated through ISO TC 197 with IEC/TC 8 and IEC/TC 105.</p> <p>Mr Schmidtchen from DIN (Germany) brings up the issue of regulations present in various countries as possibly making this work unnecessary.</p> <p>The Chair indicates that he sees advantages including certification requirements and to influence other requirements.</p> <p>Mr de Réals (France) indicates that demonstrating the performance is a better approach.</p> <p>Mr Wolf from DIN (Germany) indicates that in IEC/TC 120, technologies that store energy, performance requirements have been discussed.</p> <p>The Chair recognizes that there is no desire to disrupt ongoing activities. Mrs de Jong (Netherlands) reiterates the importance of creating group synergies.</p> <p>Mr Hart (UK) indicates that there may be a need to expand this to include the safety issues raised by Korea in light of recent fatalities due to an accident.</p> <p>Mr Schmidtchen from DIN (Germany) indicates that it is not necessarily obvious that this work should be led by TC 197 due to the fact that hydrogen in the topic discussed could be considered as a by-product.</p> <p>The Chair agrees that hydrogen may not be a main aspect of the project but that it is a key aspect of the project.</p> <p>Dr Choi wishes to contact Mrs de Jong to ensure no project overlap.</p> <p>Mr Boyd (USA) indicates that some standardization related to technical elements of going from idling to full power of electrolysers may be needed.</p> <p>Mr Scheffler (USA) indicates that electrolysers can be important technology as capacitors on a power grid and helping power stability.</p> <p>Because of the discussions, a development track of 48 months is suggested, and therefore the NWIP ballot needs to begin before April 2020.</p> <p>The document title would be determined, but the document number is proposed to be 22734-2 (<i>to be confirmed</i>).</p>		
10.2	Mr Scheffler of the USA exposes the project of a communication protocol for heavy duty, high-flow applications.		N 1139

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	<p>The draft NWIP proposed is for one standard, prepared by one WG, with 3 parts:</p> <p>Part 1: Design and verification of dispenser control system</p> <p>Part 2: Definition of communications between the vehicle and dispenser control systems</p> <p>Part 3: High-flow hydrogen fueling for heavy duty applications.</p> <p>Mr Ruiz and Mr Karzel also present a vision for a HD HF fuelling communications protocol, indicates that SAE J2601 is inadequate. Mr Ruiz and Mr Karzel proposed as co-convenors.</p> <p>Mr Keller comments: This discussion has improved significantly on previous discussions, there is emphasis on newly acquired knowledge.</p> <p>Mr Webster comments: A detail on the scope needs to be clarified on the minimum and maximum speed of refuelling, proposing that the scope aim at fuelling in the 60-200g/sec range.</p> <p>The Chair appreciates the comments but indicates that this level of detail isn't appropriate for the current discussion.</p> <p>Mr de Réals comments: There is a key missing word in the proposed NWIP: validation, and this needs to be addressed. There is agreement from Mr Scheffler.</p> <p>The TC discusses about establishing the rules, how to test, and the quality, but a preference would be to leave it to industry to determine the exact filling method.</p> <p>The Chair is in agreement with a package approach, determining the general rules and the communications; the Chair also emphasises the variety of HD applications.</p> <p>Mr Quong comments that he supports part 3 especially. The SAE 2601 group is also interested in the topic and indicates that the vehicle could be responsible to control the refuelling rather than the station.</p> <p>The TC discusses the level of knowledge and indicates that for some applications, the level is currently in pre-normative research.</p> <p>Delegates from China indicate that they would like Type 3 and Type 4 tanks considered in this work.</p>		N 1140

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	<p>Mr Scheffler indicates that he would prefer the process to be non-restrictive and could be adapted to each country.</p> <p>Mr Keller comments that protocols would be tank specific.</p> <p>Mr Hart comments that refuelling protocols specifically for Type 3 tanks already exist in Europe, however these are not currently standardised.</p> <p>Mr Scheffler indicates that some time will be needed to absorb the Chair's comments.</p> <p>The Chair appreciates the proposal, and the TC invites the United States to formally resubmit a New Work Item Proposal <u>on a 3-part standard</u> to be developed (independently) from a single WG within the next three months, based on the need for standards for hydrogen fueling protocols for heavy-duty, high-flow applications.</p>	R. 465	
10.3	<p>Mrs. Doyle from Australia presents a project proposal on use of 100% hydrogen appliances.</p> <p>The TC discusses if TC 197 is the best group to lead a project focussed on appliances, even those that use 100% H2 as a fuel. CEN is identified as a plausible leading organization as work has already moved significantly. TC 291 on Natural Gas appliances work on similar standards.</p> <p>The Chair welcomes the proposal but recommends to investigate other avenues to develop this standard as TC 197 doesn't have any expertise in appliance design. However, TC 197 is happy to provide support to any other organization that wishes to lead this project.</p>	R. 466	N 1136
	<i>Day 1 of the plenary ends at 6:03 PM.</i>		
	<i>Day 2 of the plenary begins at 9:02 AM.</i>		
10.4	<p>Craig Webster presents a proposal from Canada on hydrogen vehicle fuel system components.</p> <p style="text-align: center;"><i>[This item was presented out of sequence from the agenda due to time constraints – this item was presented on day 2]</i></p> <p>The NWIP is forthcoming with the help of Mr Meadows. The NWIP would look at valves, filters, fittings, etc. Excluded in the NWIP are pressure relief valves.</p> <p>The document structure would somewhat mimic ISO 15500 <i>Road vehicles – Compressed natural gas (CNG) fuel system components</i> for CNG. The CSA Group's HGV 3.1 document would be used as a seed document.</p>		N 1138

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	<p>There is a question on seals and sealing materials.</p> <p>The Chair proposes that this comment be sent when the NWIP is formally submitted.</p> <p>There is a comment on compatibility with other standards and requirements and the Chair signals work made in GTR 13.</p> <p>The TC votes to welcome the NWIP within the next 3 months.</p>	R. 468	
10.5	<p>Mr Nishimura presents a proposal from Japan on O-Rings.</p> <p style="text-align: center;"><i>[This item was presented out of sequence from the agenda due to time constraints – this item was presented on day 2]</i></p> <p>The proposal discusses self-sealing mechanisms and work completed by TC 131 SC7 WG 3, referencing ISO 3601 <i>Fluid power systems – O-rings</i> which has 5 parts.</p> <p>The presentation includes images of O-Ring failures.</p> <p>The proposal includes a new WG and incorporate work in the 19880-X family of documents.</p> <p>Mr Barthélémy indicates that TC 58 has done a significant amount of work on O-rings to generate enough knowledge on the topic.</p> <p>Delegation from China indicates that there is interest to discuss O-Rings for HFCV, including guidance for the structure of O-Rings.</p> <p>The TC discusses again that there is a lot of information that we do have, including groove size and materials, but that due to the infinite number of combinations of materials and construction, this work may not help but is a good positive step.</p> <p>The Chair indicates that there is value in the work, and proposes that the scope of the work be clarified, but that the document would fit in the 19880-X family.</p> <p>Because the intent is to complete work within a 36-month track, the TC votes to accept the NWIP within 6 months.</p>	R. 469	N 1137
10.6	<p>Mr Hart and Mr Aarhaug present a previously discussed NWIP on the topic of hydrogen sampling of impurities.</p> <p style="text-align: center;"><i>[This item was presented out of sequence from the agenda due to time constraints – this item was presented on day 2]</i></p>		N 754

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	<p>The project was initially discussed in 2015.</p> <p>It was withdrawn due to the WG24 workload being too important.</p> <p>If approved, this NWIP would help reduce the weight of the 19880-1 document.</p> <p>The timeframe can be anticipated to be 36 months.</p> <p>A discussion on creating a joint Ad Hoc Group to help the NWIP, the NWIP would be presented in the second half of 2020.</p> <p>The TC resolves to welcome the NWIP and to establish a JWG between ISO/TC 158 and 197 under the responsibility of TC 197.</p>	R. 470	
11	Liaisons and report of liaisons		
11.1	<p>Existing liaisons</p> <p>Liaison with IEC/TC 105</p> <p style="text-align: center;"><i>[This item was presented out of sequence from the agenda due to time constraints – this item was presented on day 2]</i></p> <p>Mr Tomioka presents the liaison work, as well as the JWG. With IEC/TC 105. Laurent Antoni presents IEC/TC 105 – mimics the structure of TC 197.</p> <p>The TC discusses issues of interoperability, and refuelling, and the Chair responds by indicating that collaboration will happen naturally with these groups.</p> <p>Mr Hawksworth describes the liaison with HySafe</p> <p style="text-align: center;"><i>[This item was presented out of sequence from the agenda due to time constraints – this item was presented on day 2]</i></p> <p>The work completed by HySafe is presented.</p> <p>A reminder that Hysafe is a research organisation which promotes evidence-based results. Recent work has included HyTunnel and HySafety handbook.</p> <p>The next HySafe meeting will be in Edinburgh in Sept. 2021.</p> <p>Mr Barthélémy presents the liaison reports for: TC 58 SC 2 TC 58 SC 3</p>		<p>N 1144</p> <p>N 1143</p> <p>N 1113 N 1114</p>

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	<p>TC 220 CEN/TC 268</p> <p>Mr Barthélémy discusses applications using helium which in turn could be useful for LHG standards.</p> <p>M Bathélémy also discusses work on material compatibility done in TC 58.</p> <p style="text-align: center;"><i>[Please Note: Not discussed during the plenary meeting were the liaison reports filled as: N 1141 – CEN/CLC/JTC 6 N 1142 - ECMA N 1145 – TC 45 SC 1 N1146 – JWG 7 N 1147 – ISO TC 158]</i></p>		<p>N 1115 N 1116</p> <p>N 1141 N 1142 N 1145 N 1146 N 1147</p>
11.2	<p>Proposals for new liaisons and/or cancelling existing liaisons</p> <p>The Chair presents work with TC 22 SC 41 on fuel blends incorporating hydrogen under the responsibility of SC 41 to revise ISO 12619 <i>Road vehicles — Compressed gaseous hydrogen (CGH2) and hydrogen/natural gas blends fuel system components</i> series of documents.</p> <p>Blends between natural gas with hydrogen will vary from 2 to 9% H<sub>2</sub>, and later blends will vary and contain between 10 and 20% H<sub>2</sub>, and eventually it is proposed that blends are a 50%-50% mix between H<sub>2</sub> and natural gas.</p> <p>SC 41 is interested in looking at vehicle components.</p> <p>The TPM indicates that it is possible to determine a co-convenor from TC 197. The Chair indicates that this isn't preferred for now.</p> <p style="text-align: center;"><i>[Implicit is the establishment of a JWG with TC 158 as per discussed in Resolution R. 470]</i></p> <p style="text-align: center;"><i>[The establishment of a liaison with CEN 234 as per discussed in Resolution R. 461 was already unanimously approved]</i></p>	<p>R. 467</p> <p>R. 470</p> <p>R. 461</p>	
12	Business plan for TC 197		
12.1	<p>Mini Round Table discussion on 19884 Document</p> <p>The Chair summarizes the events related to the failed FDIS ballot for the 19884 <i>Gaseous hydrogen — Cylinders and tubes for stationary storage</i> document.</p>		



Agenda Item (N1112)	Comments and notes	Resolution Number (N1121)	Related N Doc Number
	<p>The Chair explores the history of the events as well as the options that are in front of us, as well as the issues. The Head of delegation for Norway wanted to make a comment, the Chair asks to defer until later.</p> <p>Mr Barthélémy, as TPD, comments in the situation, indicating that situations such as these are rare due to the fact that technical comments are usually raised at the DIS stage. Mr Barthélémy thanks those who helped push the document forward.</p> <p>The Head of delegation for the US indicates that several technical concerns were raised but were not taken into consideration.</p> <p>The Chair discusses that there are no mechanisms within ISO to control situations such as these. If required, a CIB can be requested if time permits, but the CIB is the only possible intermediary ballot between DIS and FDIS.</p> <p>The Head of delegation for Norway exposes the issues that lead to the difference in DIS and FDIS votes and indicates that there were 7 new pages and significant changes in 2 chapters.</p> <p>The DIN delegation (Germany) supports Norway in that the ISO rules do not prohibit changes in vote between DIS and FDIS.</p> <p>Mr Barthélémy indicates that changes made to the document were to address US concerns and that technical comments were considered. The situation with respect to the document at CEN is that it could be published as an IS, or resubmitted for a second vote. Currently, the first option is preferred by CEN. CEN will re-open the document but the need is urgent for Europe.</p> <p>Mr Barthélémy proposes that moving forward, ISO/TC 197 should wait until the decisions are made at CEN and wait until the 2020 Plenary to decide how to move forward.</p> <p>Mr Scheffler of the US recommends a different approach and proposes a call for new leadership and new experts, and to restart the project immediately.</p> <p>The Head of delegation for Norway indicates that the preference of the Member Body is to have an ISO Standard, and indicates that need for this document is not as urgent as is being portrayed. Mr Heggem proposes also an immediate restart of the project within the ISO system as there is a requirement for global consensus for this product.</p> <p>The Chair reminds the committee that ISO/TC 11 on pressure vessels is one of the oldest TCs in the ISO system and in the past 60 years has only published 2 standards, indicating the level of difficulty in obtaining consensus on this topic.</p>		

Agenda Item (N1112)	Comments and notes	Resolution Number (N1121)	Related N Doc Number
	<p>The Head of delegation for the UK concurs that preference is to have ISO continue the work.</p> <p>Mr Barthélemy disagrees with the interpretation of the representative of Norway and indicates that in his opinion, having no standard is less safe than having a standard.</p> <p>The Chair emphasises to the TC that the concept of Safe vs. Not Safe doesn't affect the ISO publication protocol and should therefore not be part of this discussion.</p> <p>The Chair reminds the TC that CEN publication is likely and voices his concern regarding possible confusion if there are 2 documents.</p> <p>Mr Schmidtchen indicates that the DIN preference is for an ISO Standard.</p> <p>The Head of delegation for the Czech Republic indicates that the preference is to see a CEN document as guidance for a future ISO standard.</p> <p>Mr Heggem opposes waiting for CEN to move forward as there is no guarantee that CEN will publish.</p> <p>The Chair summarizes the comments from the TC as a clear desire for TC 197 to resume work on the topic, but that the question of "when" has not been clarified.</p> <p>Mr Heggem proposes to reactivate WG15, and to keep the same document number, and will support a new call for experts.</p> <p>The TPM indicates that he can reactivate the WG but experts will need to re-register.</p> <p>The Head of delegation for Italy indicates that he supports waiting for CEN to work on the project but sees no incompatibility with restarting work on the 19884 project.</p> <p>Mr Scheffler (USA) proposes that the document is advanced and that there exists technical solutions to the problems.</p> <p>A discussion on the convenorship of the WG is stopped by the Chair.</p> <p>The TC resolves to restart by consensus, discusses the possibility of reactivating the project through a Vienna accord, but this is not a noted item.</p>		

Agenda Item (N1112)	Comments and notes	Resolution Number (N1121)	Related N Doc Number
	<p>The project is agreed to go through a NWIP Ballot, and will be proposed within the next 3 months.</p> <p>9 vote in Favour                      SCC / Canada                      UNMZ / Czech Republic                      DIN / Germany                      UNI / Italy                      JISC / Japan                      SN / Norway                      KATS/ Republic of Korea                      ANSI / United States                      BSI / United Kingdom</p> <p>3 abstain:                      SA / Australia                      AFNOR / France                      SAC / China</p> <p>0 vote against.</p>	R. 471	
12.2.1	Presentation from Japan on the market realities for hydrogen in Japan.		N 1148
12.2.2	Presentation from Dr Choi ( <i>this presentation is made out of sequence due to time constraints and combined with item 14</i> ).		N 1149
13	<p>Permanent editing committee</p> <p>The TC resolves to confirm the composition of the PEC:</p> <p>The members are Jonathan Lafontaine as Committee Manager of TC 197, Karen Quackenbush of the United States, and Frédéric Solbes of France.</p>	R. 472	
13.1	<p>Mr Lafontaine, as Committee Manager for TC 197, requests that the PEC be given a space on the ISO Platform for the following purposes:</p> <ul style="list-style-type: none"> <li>• Ensuring a continuity of editing decisions,</li> <li>• Facilitating follow-up of the documents as they are presented to the PEC,</li> <li>• Facilitating transfer of knowledge in adverse circumstances.</li> </ul> <p>The TC unanimously accepts this proposal.</p>	R. 473	
14	Future ISO TC 197 meetings		

