EH&S NA TC Chapter

Meeting Summary and Minutes

SEMICON West Standards Meeting

Thursday, December 09, 2021

9:00 AM – 3:00 PM Pacific

Moscone Center, San Francisco CA.

**TC Chapter Announcements**

Next TC Chapter Meeting

Thursday, March 31, 2022 in conjunction with NA Spring Meetings at SEMI HQ. Check [www.semi.org/en/standards](http://www.semi.org/en/standards) for the latest update.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Meeting Attendees  **Co-Chairs:** Chris Evanston (Salus Engineering International), Sean Larsen (Lam Research), Bert Planting (ASML)  **SEMI Staff:** Kevin Nguyen (SEMI) | | | | | |
| Company | Last | First | Company | Last | First |
| *KLA* | *Brick* | *Clifton* | Tokyo Electron | Mashiro | Supika |
| *Tokyo Electron* | *Crane* | *Lauren* | *TUV Sud* | *Mendolla* | *Melinda* |
| *Mattson Technology* | *Cue* | *Jeff* | *Tokyo Electron* | *Petraszak* | *Andrew* |
| *Salus Engineering* | *Evanston* | *Chris* | ASML | Planting | Bert |
| *Cymer, ASML* | *Frankfurt* | *Mark* | *Texas Instruments* | *Schwab* | *Paul* |
| *Intel* | *Geoghegan* | *Kevin* | *Safety Guru* | *Sklar* | *Eric* |
| *Nikon Precision* | *Girlea* | *Lucian* | *Intel* | *Swanson* | *Scott* |
| *Safety Maven* | *Greenberg* | *Cliff* | *GlobalFoundries* | *Tinc* | *Lyman* |
| *Tokyo Electron* | *Hayashi* | *Haruna* | *Kateeva* | *Trout* | *Steve* |
| *Lam Research* | *Larsen* | *Sean* | *Salus Engineering* | *Visty* | *John* |

*Italic* indicates online participant

| Leadership Changes | | |
| --- | --- | --- |
| WG/TF/SC/TC Name | Previous Leader | New Leader |
| Control of Hazardous Energy (CoHE) Task Force | Sean Larsen (Lam Research)  Mark Fessler (ASM)  Andrew Giles (ESTEC) | Sean Larsen (Lam Research)  Eric Sklar (Safety Guru)  Lucian Girlea (Nikon) |

Committee Structure Changes

| New WG/TF/SC Name or Status Change |
| --- |
| * S12 (Equipment Decon) Task Force (New !) |

Ballot Results

|  |  |  |
| --- | --- | --- |
| *Document #* | *Document Title* | *Committee Action#1,#2* |
| 6651B | Line Item Revision to SEMI S2, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing |  |
| Line Item 1 - Addition of Pressure section | Failed |
| 6822 | Reapproval of SEMI S12, Environmental, Health and Safety Guideline for Manufacturing Equipment Decontamination | Failed |
| 6823 | Reapproval of SEMI S7, Safety Guideline for Evaluating Personnel and Evaluating Company Qualifications | Failed |
| 6831 | Revision of SEMI S1, Safety Guideline for Equipment Safety Labels | Failed |
| SEMI S23-1023 (1) | Guide for Conservation of Energy, Utilities and Materials Used by Semiconductor Manufacturing Equipment  (Unballoted editorial changes - Correction of table A1-3 and Table A1-4) | Passed |
| SEMI S23-1023 (2) | Guide for Conservation of Energy, Utilities and Materials Used by Semiconductor Manufacturing Equipment  (Unballoted editorial changes - Addition of new note 19 and its figure) | Passed |
| SEMI S23-1023 (3) | Guide for Conservation of Energy, Utilities and Materials Used by Semiconductor Manufacturing Equipment  (Unballoted editorial changes - Addition of new notes to table A1-3 and Table A1-4 to inform users there were errors in the calculations that produced values in these tables) | Passed |

#1 **Passed** ballots and line items will be submitted to the ISC Audit & Review Subcommittee for procedural review.

#2 **Failed** ballots and line items were returned to the originating task forces for re-work and re-balloting or abandoning.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | Activities Approved by the GCS between meetings of the TC Chapter | | | | | --- | --- | --- | --- | | # | Type | SC/TF/WG | Details | | None |  |  |  |   Authorized Activity |

| *#* | *Type* | *SC/TF/WG* | *Details#1* |
| --- | --- | --- | --- |
| 6884 | SNARF | S2 Mechanical TF | Line Item Revision to SEMI S2-0821, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (Mechanical) |
| 6885 | SNARF | S12 Revision TF | Line Item Revision to SEMI S2-0821, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (Invocation of S12) |
| 6886 | SNARF | S2 Chemical Exposure TF | Line Item Revision to SEMI S2-0821, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (Chemical Exposure) |
| 6887 | SNARF | S10 Revision TF | Revision to SEMI S10-1119, Safety Guideline for Risk Assessment and Risk Evaluation Process |
| 6888 | SNARF | S12 Revision TF | Revision of SEMI S12-0211e, Environmental, Health and Safety Guideline for Manufacturing Equipment Decontamination |

#1 SNARFs and TFOFs are available for review on the SEMI web site at: [http://downloads.semi.org/web/wstdsbal.nsf/tfofsnarf](http://downloads.semi.org/web/wstdsbal.nsf/TFOFSNARF)

Authorized Ballots

| *#* | *When* | *TF* | *Details* |
| --- | --- | --- | --- |
| 6651C | cycle 1, 2, or 3 -2022 | S2 Pressure Guideline | Line Item Revision to SEMI S2, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (Re: Addition of Pressure section) |
| 6830 | cycle 1, 2, or 3 -2022 | S3 Revision TF | Revision of SEMI S3, Safety Guideline for Process Liquid Heating Systems |
| 6831A | cycle 1, 2, or 3 -2022 | S1 Revision TF | Revision of SEMI S1, Safety Guideline for Equipment Safety Labels |
| 6784 | cycle 1, 2, or 3 -2022 | Fire Protection TF | Line Item Revision to SEMI S2, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (Changes to materials of construction criterion in fire and smoke risk for pre-evaluation figure) |
| 6884 | cycle 1, 2, or 3 -2022 | S2 Mechanical TF | Line Item Revision to SEMI S2, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (Mechanical) |
| 6885 | cycle 1, 2, or 3 -2022 | S12 Revision TF | Line Item Revision to SEMI S2, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (invocation of S12) |
| 6886 | cycle 1, 2, or 3 -2022 | S2 Chemical Exposure TF | Line Item Revision to SEMI S2, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (Chemical Exposure) |
| 6887 | cycle 1, 2, or 3 -2022 | S10 Revision TF | Revision to SEMI S10, Safety Guideline for Risk Assessment and Risk Evaluation Process |
| 6889 | cycle 1, 2, or 3 -2022 | S23 Revision TF | Line Item Revision of S23, Guide for Conservation of Energy, Utilities and Materials Used by Semiconductor Manufacturing Equipment |
| 6907 | cycle 1, 2, or 3 -2022 | S7 Revision TF | Revision of SEMI S7, Safety Guideline for Evaluating Personnel and Evaluating Company Qualifications |

Granted a One-Year Extension

| # | TF | Title | Expiration Date |
| --- | --- | --- | --- |
| None |  |  |  |

SNARF(s) Abolished

| # | TF | Title |
| --- | --- | --- |
| None |  |  |

| Standard(s) to receive Inactive Status | |
| --- | --- |
| Standard Designation | Title |
| None |  |

| New Action Items | | |
| --- | --- | --- |
| Item # | Assigned to | Details |
| Dec09-2021#1 | Kevin Nguyen  (SEMI Staff) | Kevin Nguyen to ask Shannon Austin (SEMI Publication staff) to include total # of standards vs # of inactive for each committee. |
| Dec09-2021#2 | Kevin Nguyen  (SEMI Staff) | Kevin Nguyen to distribute S7 SNARF for global EH&S members for two weeks review and request for GCS approval. |
| Dec09-2021#3 | Sean Larsen  (Lam Research) | Sean Larsen to email EH&S TF leaders for confirmation of NA Spring Meeting schedule confirmation by early February 2022. |

| Previous Meeting Action Items | | |  |
| --- | --- | --- | --- |
| Item # | Assigned to | Details | Status |
| July22-2021#1 | Kevin Nguyen  (SEMI Staff) | Kevin Nguyen to ask Sean Larsen to email TF leaders for EH&S SEMICON West schedule confirmation by early November, 2021. | Completed |
| July22-2021#2 | Kevin Nguyen  (SEMI Staff) | Kevin Nguyen to ask SEMI IT to look into SVM. In custom motion, it appears the discussion box was not displayed and captured. | Completed |

1. **Welcome, Reminders, and Introductions**
   1. Sean Larsen called the meeting to order at 9:00 AM. The meeting reminders on antitrust issues, intellectual property issues and holding meetings with international attendance were reviewed. Attendees introduced themselves.
2. **Review of Previous Meeting Minutes**
   1. The TC Chapter reviewed the minutes of the previous meeting. Several typographical changes were suggested by Eric Sklar who sent a markup MS Word file to Kevin Nguyen.

|  |  |
| --- | --- |
| **Motion:** | Accept the minutes as amended. |
| **By / 2nd:** | Eric Sklar/Bert Planting |
| **Discussion:** | None |
| **Vote:** | 12-0. Motion passed. |

Attachment: EHS NA TC Minutes 07222021\_es09dec21b

1. **Ballot Review**

**Passed** ballots and line items will be submitted to the ISC Audit & Review Subcommittee for procedural review.

**Failed** ballots and line items were returned to the originating task forces for re-work and re-balloting.

* 1. TC Chapter adjudication on ballots reviewed is detailed in the Audits & Review (A&R) Subcommittee Forms for procedural review. The A&R forms are available as attachments to these minutes. The attachment file name for each balloted document is provided under each ballot review section below.
  2. ***Doc. 6822,*** ***Reapproval of SEMI S12, Environmental, Health and Safety Guideline for Manufacturing Equipment Decontamination***
* Ballot failed.
  + **Attachment: 6822\_S12ReApp\_\_CompiledResponses\_es04dec21b**
* Eric Sklar presented a new S12 TFOF
  + Motion: Approve the S12 TFOF  
    By: Eric Sklar / Safety Guru, LLC  
    Second: Clifton Brick / KLA  
    Discussion: None  
    Result: 14-Y 0-N Voting Result: Pass - 100.00%
  + **Attachment: TFOF\_es09dec21a**
* Eric Sklar presented the S12 SNARF that was circulated to EH&S members for two weeks review.
  + Motion: Approve the S12 SNARF as circulated for review on Nov 16  
    By: Eric Sklar / Safety Guru, LLC  
    Second: Lauren Crane / TEL  
    Discussion: None  
    Result: 13-Y 0-N Voting Result: Pass - 100.00%
  + **Attachment: S12Rev\_DraftSNARF\_\_es16nov21a**
* Eric Sklar also presented the SNARF for Line Item Revision to SEMI S2-0821, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (invocation of S12)
  + Motion: To approve Line Item S2 Ballot regarding invocation of S12 SNARF  
    By: Eric Sklar / Safety Guru, LLC  
    Second: Lauren Crane / TEL  
    Discussion: None  
    Result: 14-Y 0-N Voting Result: Pass - 100.00%
  + **Attachment: SNARF\_S2LI(S12Decon)\_lc08dec21\_es09dec21a**
* **Attachment: S12report\_es09dec21a**
  1. ***Doc. 6831, Revision of SEMI S1, Safety Guideline for Equipment Safety Labels***
* Ballot failed.
  + **Attachment: 6831(S1rev)\_CompiledResponses\_tf07dec21b**
* **Attachment: S1report\_es09dec21a**

* 1. ***Doc. 6823, Reapproval of SEMI S7, Safety Guideline for Evaluating Personnel and Evaluating Company Qualifications***
* Motion: To find Eric Sklar (Safety Guru)- (SG01)’s negative is related and persuasive. (Needs > 1/3 votes to pass.)  
  By: Chris Evanston / Salus Engineering International  
  Second: Bert Planting / ASML Netherlands BV  
  Result: 11-Y 0-N Voting Result: Pass - 100.00%
* Motion: Move to send S7 back to TF for rework and reballot  
  Motion Amended: Move to send S7 back to TF for rework ~~and reballot~~
* By: Chris Evanston / Salus Engineering International  
  Second: Bert Planting / ASML Netherlands BV  
  Discussion: Supika Mashiro: My reject and Eric’s negatives appear not to be significant. Considering the required workload, Supika recommended of letting S7 go inactive.   
  Supika Mashiro: Reballot is not an option, a new SNARF is necessary.
* Result: 10-Y 1-N Voting Result: Pass - 90.91%
* Ballot failed.
  1. ***Doc. 6651B, Line Item Revision to SEMI S2, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (Re: Addition of Pressure section)***
* Line Item 1 – Delayed revision related to ***Addition of Pressure section***
  + Ballot failed.

Attachment: 6651B ballot report rev3

Attachment: SEMI S2 pressure addition SEMI-con West 2021

1. **Subcommittee & Task Force Reports**
   1. ***S23 Global TF***
      1. Eric Sklar reported.

* Reviewed an error in Appendix 1 tables 3 and 4 identified by a TF member’s review of the newly published S23.
* Developed a strategy for correcting the error, as well as adding an informative graphic that came out of the error ‘investigation’.
  + Publication Change Request (PCR) was presented to make editorial changes to correct Tables A1-3 and A1-4 in Appendix 1.
    - Proposal was endorsed by the TC Chapter.
    - **Attachment: S23\_ProceduralReview-EditorialChangeType2**
    - **Attachment: PCR\_S23\_es09dec21a**
  + In the course of investigating the table error, a graph was made that demonstrates   
    PCW-D ECFs vs. PCW-C ECFs. This is a nice addition to the General Concepts ¶6.4 which strives to express the value of a PCW-D system.
    - Propose to insert the note with graphic after Note 18 ¶6.4 as an editorial change to S23-1021
    - Proposal was endorsed by the TC Chapter.
    - **Attachment: S23\_ProceduralReview-EditorialChangeType2 - 2**
  + SNARF for a line item ballot to S23 as ‘back up’ was presented. This is a back up plan in case the two proposed editorial changes above does not pass A&R.
    - Motion: Approve Line Item Revision of S23 SNARF  
      By: Eric Sklar / Safety Guru, LLC  
      Second: Andrew Petraszak / TEL Technology Center America  
      Discussion:  
      Result: 9-Y 0-N Voting Result: Pass - 100.00%
    - **Attachment: S23 2021dec SNARF\_Feb2020\_lc09dec21\_es09dec21a**
  + Propose editorial Change to Alert Readers to Error. These notes are to add on current S23 until S23 are corrected either by the PCR or Line Item Ballot.
    - Proposal was endorsed by the TC Chapter.
    - **Attachment: S23\_ProceduralReview-EditorialChangeType2 - 3**
* **Attachment: 2021 West-Dec S23 Report Crane r1\_lc08dec21\_es09dec21b**
* **Attachment: S23 TF mtg 2021dec08 notes r1**
  1. ***S10 Revision TF***
     1. Eric Sklar reported.
* S10 SNARF for major revision was reviewed.
  + Motion: Approve the S10 SNARF as circulated for review on Nov 16  
    By: Eric Sklar / Safety Guru, LLC  
    Second: Lauren Crane / TEL  
    Result: 13-Y 0-N Voting Result: Pass - 100.00%
* Old Business
  + Environmental Risk — Severity Groups
  + Environmental Risk — Method
  + Environmental Risk — Supporting Changes
* New Business
  + Presentation by Steve Jumper (Applied Materials) of the Severity Groups that Applied Materials uses.

**Attachment: S10maj\_tf28oct21a\_es16nov21a**

**Attachment: S10report\_es09dec21a**

* 1. ***Fire Protection TF***
     1. Eric Sklar reported.
* Old Business
  + Document 6784: Line Item Changes to SEMI S2 (S14 Applicability Flowchart)
    - Sean Larsen will provide first draft of ballot by Early January 2022
  + Topics Discussed at previous TF Meetings
* New Business
  + Proposal from Matt Wyman (KFPI) regarding fire detection systems
  + NFPA 318-2022 just published

**Attachment: FPreport\_es09dec21a**

* 1. ***Energetic Materials TF***
     1. Eric Sklar reported.
* Old Business
  + Topics Discussed at previous TF Meetings
    - Topics TF is still discussing (no updates)
      * Addition of guidance, by function (such as pump line heater blanket undertemperature), as to what interlocks should be considered
      * Unreacted byproducts, such as in pump lines
    - Topics TF believes should be addressed by a training program
      * Improper adoption of S30 (no update)
      * Cold traps accumulate material, creating a hazard that needs to be addressed. (no update)
      * 07dec21: Danny Newman reported that he attended a webinar ~1 year ago about energetic materials.
        + Eric Sklar: whoever owns it could provide it, either independently or via SEMI.

**Attachment: EMreport\_es09dec21a**

* 1. ***Manufacturing Equipment Safety Subcommittee (MESSC)***
     1. Lucian Girlea reported.
* SEMI S2 Seismic Protection
  + Salus Engineering: There is a lack of clarity in S2 seismic as adopted in 1016a (and then fully in 2018) which could result in misapplication with serious consequences.
  + Prior to 0818, Related Information R4-2 was explicit in how it got to 94% etc. by using UBC Equation 32-2 for loading for comparison with Ultimate Strength, then dividing by 1.4 to get to 94% for comparison with yield strength.  And allowable stress levels being a fraction <1 of yield strength.
  + The adoption in 1016a and integrated in S2-0818, does not clarify/elaborate on distinction between Ultimate Strength equation and then how it ends up being 94% etc.  There should be added back in for clarity.
  + The minimum factor for application between ultimate & yield for “ductile” materials (defined as steel, aluminum, copper) is 1.33, so 1.4 which is what was used in S2 is a smidge more conservative
  + Actions:
    - Lauren Crane will lead the efforts to coordinate with Japan and then for correcting the issue(s). TFOF: Several people volunteered to be part of an eventual TF (Sean Larsen, Eric Sklar, Andrew Petraszak, Bert Planting, Mel Mendolla, Clif Brick, Lucian Girlea, …).
    - Sean Larsen forwarded the TFOF, but Kevin Nguyen reported there is an existing Seismic Liaison TF, so there is no need to approve a new one. No further action needed.
* CoHE TF Leader Changes
  + New TF Leaders reported: Sean Larsen, Eric Sklar, Lucian Girlea

**Attachment: MESSC Fall 2021 Notes rev1**

* 1. ***S2 Interlocks Design TF***
     1. Lucian Girlea reported. Of note:
* Item discussed during MESSC meetings in 2020 & 2021
  + Triggered by concerns with S2 definitions for “fail safe” and “fault tolerant”
* Additional concerns:
  + Interpretation difficulties, lack of consistency, increased risk deemed unacceptable by default
  + Situations where reliability vs failure mode are compared
  + Situations where an S2 compliant interlock system could not meet safety requirements
  + interlock requirements during maintenance modes, with equipment capable of running wafers
* No specific reports of equipment failing S2 assessments or proven unsafe
* Made no progress on any interlock-specific design topics or items

**Attachment: SEMI 2021 Fall - S2 Interlocks Design TF - NOTES**

* 1. ***S2 Chemical Exposure TF***
     1. John Visty reported.
* Task Force is reconvening now that S2-0821 has been published.
* Next steps
  + Better align paragraphs of Sections 18.6 and 18.7
  + Review and update, if necessary, criteria within these sections
  + Review and update, if necessary, definitions
* The SNARF for S2 line item revision was presented.
  + Motion: Approve the SNARF for S2   
    By: John Visty / Salus  
    Second: Lucian Girlea / Nikon Precision Inc.  
    Result: 9-Y 0-N Voting Result: Pass - 100.00%
* **Attachment: Chem Exposure TF SNARF\_Nov2021**
  1. ***S3 Revision TF***
     1. Andy Petraszak reported.
* TF Progress
  + SNARF 6830 was approved for major revision of S3
  + TF continues to hold telecons and work through the topic list.
* TF Next Steps
  + Complete work on the process liquid heating system tables
  + Review of the S3 revision topic list
  + Prepare a draft ballot
* **Attachment: S3report Fall2021\_Final**
  1. ***S2 Mechanical TF***
     1. Andy Petraszak reported.
* Task Force is reconvening now that S2-0821 has been published
  + This was per plan to allow for the incorporation of previous line item and ratification ballots to be incorporate into the body of S2
* TF Next Steps
  + Begin to hold weekly teleconferences
  + Work Program
    - Better align paragraphs of Sections 18.6 and 18.7
    - Review and update, if necessary, criteria within these sections
    - Review and update, if necessary, definitions
  + Prepare a draft ballot
* The SNARF for S2 Line Item Revision was presented.
* Motion: Approve the SNARF for Line Item Revision of S2 Mechanical  
  By: Andrew Petraszak / TEL Technology Center America  
  Second: Eric Sklar / Safety Guru, LLC  
  Result: 10-Y 0-N Voting Result: Pass - 100.00%
* **Attachment: SNARF for SEMI S2 Mechanical 09DEC21r**
* **Attachment: S2 Mech report Fall2021**
  1. ***S2/S22 TF***
     1. Sean Larsen reported.
* The TF will have teleconferences starting in January 2022.
  1. ***S8 Ergonomics TF***
     1. Paul Schwab reported.
* Reviewed open SNARF and prioritized list (preliminary).
  + Note: participants were asked to vote for items that were within their “top-5 list.
* Task force will have meetings once SEMI RingCentral schedule is established
* **Attachment: SEMI\_S8\_08DEC2021\_TF\_summary**
  1. ***Other Interest Documents***
     1. Power Harmonic.
* Sean Larsen reported Power Harmonic TF under supervision of the NA Facilities, but it is dormant at the moment. Sean also mentioned there is activity in I&C for sleep mode.
  + 1. F47 TF
* Sean Larsen mentioned an ongoing effort for three-phase or multiphase voltage sags undertaken by the Voltage Sag Immunity Task Force under the Facilities NA TC Chapter. The TF is evaluating current issue with voltage sags.
  + 1. BIM TF
* Sean Larsen also shared the Building Information Modeling (BIM) activity in facilities. Not sure of the progress, but the intent is putting together a software specification. If anyone is responsible for the equipment manual, they may want to get involved.

1. **Liaison Reports**
   1. *ICRC Liaison*
      1. No report, but Sean Larsen mentioned there are lot of discussions on restriction of hazardous materials for various EH&S division activities they are monitoring or influencing. Bert Planting also added the following points:

* A new co-leader (Bert Planting) was nominated.
* Reviewed and proposed revision to the current charter.
* A presentation from Intel on EPA regulations on various chemicals was made. They are struggling how to deal the chemical regulations going in the world.
* Sean Larsen also mentioned a regulatory change which may be a concern to everyone. The EU is looking to replace machinery directive with the machinery product regulation.
* Supika Mashiro also added that the EU Machinery Directive is adding AI requirements, which is a big challenge. The EU Machinery Directive WG is planning to address 5 big concerns by the industry. If anyone is interested in participating, please contact Supika Mashiro. Or if anyone can share the concern, please let her know even if you are not participating in the WG.
  1. *Japan EH&S TC Chapter*
     1. Supika Mashiro reported.
* Last meeting
  + August 26, 2021
  + Web
* Next meeting
  + January 26, 2022
  + SEMI Japan, Tokyo, Japan / WEB
* Ballot Results
  + Doc. 6776, Reapproval of SEMI S19-0311 (Reapproved 0816): Safety Guideline for Training of Manufacturing Equipment Installation, Maintenance and Service Personnel
  + Doc. 6777, Reapproval of SEMI S26-0516: Environmental, Health, and Safety Guideline for FPD Manufacturing System
  + Both ballots failed.
* SEMI S2 tutorial seminar completed in August 2021.
  + Web on-demand seminar in Japanese
* **Attachment: JA\_EHS\_Liaison\_20210917\_v1\_r2**
  + 1. *RSC/Co-chairs report*
    2. Chris Evanston reported.
* Forbidden Words
  + SEMI Standard Regulations
    - “4.6 Bias-Free Language – Whenever possible, Standards Documents shall use bias-free language terms to describe technical capabilities and relationships. Whenever possible, Standards Documents shall avoid the use of biased language terms, which may be non-inclusive, insensitive, or archaic. Bias-free language terms mean terminology perceived or likely to be perceived as neutral or welcoming by everyone, regardless of their age, disability, gender, national origin, race/color, religion, sexual orientation, etc.”
  + SEMI Standards Procedure Manual
    - “3.3.2 Any Standard or Safety Guideline shall not contain restricted biased terms (refer to Regulations 4.6) Refer to Style Manual Appendix 5 for a list of these terms and approved, alternative, bias-free terms.”
  + SEMI Style Manual
    - Table A5-1 Restricted Biased Terms with Approved, Alternative, Bias-Free Terms
    - Table A5-2 Biased Terms to Avoid with Approved, Alternative, Bias-Free Terms
* The justification was given that other SDOs are taking similar actions.
* However, no information was provided on these other SDOs and the words they have prohibited from use.
* A concern was expressed that the list of term could grow in the long term.
* At present it appears only the words in table A5-1 will be enforced.
* **Attachment: Dec 2021 Co-Chairs Report**
  1. **SEMI Staff Report**
     1. Kevin Nguyen (SEMI) reported.
* SEMI upcoming event
  + SEMICON Japan
    - December 15-17, 2021
    - Tokyo, Japan San Francisco, CA
  + SEMICON Taiwan
    - December 28-30, 2021
    - Taipei, Taiwan
  + NA Standards Spring Meetings
    - March 28-31, 2022
    - SEMI HQ in Milpitas, California
* Regulations (November 1, 2021)
  + Bias-free terminology - provide alternative, bias-free terms or option to rewrite and eliminate sensitive terms
  + Clarification of Inactive Status
  + Procedures for revising global Technical Committee charter and scope
* Procedure Manual (November 1, 2021)
  + Ballot procedures for Primary and Subordinate Standards
  + Ratification ballot improvement
* Style Manual (November 1, 2021)
  + New Table A5-1 Restricted Biased Terms with Approved, Alternative, Bias-Free Terms
  + New Table A5-2 Biased Terms to Avoid with Approved, Alternative, Bias-Free Terms
* 2022 Critical Dates for SEMI Standards Ballots
  + <https://www.semi.org/en/collaborate/standards/ballots>
* SEMI Standards Publications
  + Total SEMI Standards in portfolio: 1,056
    - Includes 273 Inactive Standards
    - Eric Sklar suggested it would be helpful to include total of standards vs inactive for each volume.
    - Action Item # 1 - Kevin Nguyen will follow up with Shannon Austin for future staff report.
* **Attachment: Staff Report Dec 2021 v3**

1. **Old Business**
   1. None
2. **New Business**
   1. Upcoming Ballot Authorization
      1. The following ballots are authorized for the before next meeting.

| *#* | *When* | *TF* | *Details* |
| --- | --- | --- | --- |
| 6651C | cycle 1, 2, or 3 -2022 | S2 Pressure Guideline | Line Item Revision to SEMI S2, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (Re: Addition of Pressure section) |
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| 6831A | cycle 1, 2, or 3 -2022 | S1 Revision TF | Revision of SEMI S1, Safety Guideline for Equipment Safety Labels |
| 6784 | cycle 1, 2, or 3 -2022 | Fire Protection TF | Line Item Revision to SEMI S2, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (Changes to materials of construction criterion in fire and smoke risk for pre-evaluation figure) |
| 6884 | cycle 1, 2, or 3 -2022 | S2 Mechanical TF | Line Item Revision to SEMI S2, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (Mechanical) |
| 6885 | cycle 1, 2, or 3 -2022 | S12 Revision TF | Line Item Revision to SEMI S2, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (invocation of S12) |
| 6886 | cycle 1, 2, or 3 -2022 | S2 Chemical Exposure TF | Line Item Revision to SEMI S2, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (Chemical Exposure) |
| 6887 | cycle 1, 2, or 3 -2022 | S10 Revision TF | Revision to SEMI S2, Safety Guideline for Risk Assessment and Risk Evaluation Process |
| 6889 | cycle 1, 2, or 3 -2022 | S23 Revision TF | Line Item Revision of S23, Guide for Conservation of Energy, Utilities and Materials Used by Semiconductor Manufacturing Equipment |
| tbd | cycle 1, 2, or 3 -2022 | S7 Revision TF | Revision of SEMI S7, Safety Guideline for Evaluating Personnel and Evaluating Company Qualifications |

**Motion:**  To authorize above documents for letter ballot in cycle 1, 2, or 3 of 2022.

**By:** Eric Sklar / Safety Guru, LLC

**Second:** Andrew Petraszak / TEL Technology Center America

**Discussion:** None.

**Result:** 6-Y 0-N

**Voting Result:** Pass - 100.00%

* 1. **Teleconferences**
* The following TF teleconferences are planned below. All are in Pacific time zone.
  + 9-10 AM on Monday for S2 mechanical (starts on Jan 10)
  + 10-11 AM on Monday for S1 Labels (starts on Jan)
  + 10-11 AM on Tuesday for S3 (starts next week)
  + 9-10 AM on Wed for S2 interlock (starts next week)
  + 8-9 AM on Thursday s2/s22 (starts on Jan)
  + 9-10 AM on Thursday for S2 Pressure (starts next week)
  + 10-Noon on Thursday for S10 (starts next week)
  + 9-10 AM on Friday for S12 (starts 2nd week of Jan)
  + 10-11 AM on Friday for FP (starts on Jan 14)
  + Tbd on Friday for S8
  1. **S7 Revision SNARF**
* Sean Larsen presented the SNARF for S7 Revision. However, since this is a major revision effort, two weeks distribution to global EH&S members for review is required.
* Motion: Move to recommend S7 SNARF to GCS pending members review  
  By: Eric Sklar / Safety Guru, LLC  
  Second: Andrew Petraszak / TEL Technology Center America  
  Result: 6-Y 0-N Voting Result: Pass - 100.00%
* **Attachment: SNARF\_S7\_Dec2021**
* Action Item # 2 – Kevin Nguyen to distribute S7 SNARF for members to review.
  1. **NA Spring Meeting Schedule.**
     1. The schedule for March 28-31, 2022 in conjunction with NA Spring Meetings was reviewed and modified.

Action Item # 3 – Sean Larsen to confirm with the TF leaders by early February.

Attachment: EHS Spring 2022 Schedule Draft

1. **Next Meeting and Adjournment**
   1. The next meeting is scheduled for Thursday, March 31, 2022. Refer to <http://www.semi.org/standards> for the current list of meeting schedules.

There being no further business, a motion was made to adjourn. Adjournment was at 4:30 PM.

Respectfully submitted by:

Kevin Nguyen,

SEMI Standards Operations Manager

Phone: 408-943-7997

Email: [knguyen@semi.org](mailto:knguyen@semi.org)

Minutes tentatively approved by:

|  |  |
| --- | --- |
| Sean Larsen (Lam Research) | <Date approved> |
| Chris Evanston (Salus Engineering International) | <Date approved> |
| Bert Planting (ASML) | <Date approved> |

| Index of Available Attachments#1 | | |
| --- | --- | --- |
| Title | Title |
| EHS NA TC Minutes 07222021\_es09dec21b | S10maj\_tf28oct21a\_es16nov21a |
| 6822\_S12ReApp\_\_CompiledResponses\_es04dec21b | S10report\_es09dec21a |
| TFOF\_es09dec21a | FPreport\_es09dec21a |
| S12Rev\_DraftSNARF\_\_es16nov21a | EMreport\_es09dec21a |
| SNARF\_S2LI(S12Decon)\_lc08dec21\_es09dec21a | MESSC Fall 2021 Notes rev1 |
| S12report\_es09dec21a | SEMI 2021 Fall - S2 Interlocks Design TF - NOTES |
| 6831(S1rev)\_CompiledResponses\_tf07dec21b | S2 Mech report Fall2021 |
| S1report\_es09dec21a | Chem Exposure TF SNARF\_Nov2021 |
| 6651B ballot report rev3 | S3report Fall2021\_Final |
| SEMI S2 pressure addition SEMI-con West 2021 | SNARF for SEMI S2 Mechanical 09DEC21r |
| S23\_ProceduralReview-EditorialChangeType2 | S2 Mech report Fall2021 |
| PCR\_S23\_es09dec21a | SEMI\_S8\_08DEC2021\_TF\_summary |
| S23\_ProceduralReview-EditorialChangeType2 - 2 | JA\_EHS\_Liaison\_20210917\_v1\_r2 |
| S23\_ProceduralReview-EditorialChangeType2 - 3 | Dec 2021 Co-Chairs Report |
| S23 2021dec SNARF\_Feb2020\_lc09dec21\_es09dec21a | Staff Report Dec 2021 v3 |
| 2021 West-Dec S23 Report Crane r1\_lc08dec21\_es09dec21b | SNARF\_S7\_Dec2021 |
| S23 TF mtg 2021dec08 notes r1 | EHS Spring 2022 Schedule Draft |

1. Due to file size and delivery issues, attachments must be downloaded separately. A .zip file containing all attachments for these minutes is available at www.semi.org. For additional information or to obtain individual attachments, please contact Kevin Nguyen at the contact information above.