



EH&S NA TC Chapter Meeting Summary and Minutes

SEMICON West Standards Meeting
Thursday, July 13, 2023
9:00 AM – 3:00 PM Pacific
Moscone Center, San Francisco, CA

TC Chapter Announcements

Next TC Chapter Meeting
Thursday, November 9, 2023 in conjunction with NA Fall Meetings at the SEMI HQ, Milpitas, CA. Check www.semi.org/en/standards for the latest update.

Table 1 Meeting Attendees

Co-Chairs: Chris Evanston (Salus Engineering International), Sean Larsen (Lam Research), Bert Planting (ASML)
SEMI Staff: Kevin Nguyen (SEMI)

<i>Company</i>	<i>Last</i>	<i>First</i>	<i>Company</i>	<i>Last</i>	<i>First</i>
<i>Axcelis Technologies</i>	<i>Brick</i>	<i>Clifton</i>	<i>Tokyo Electron</i>	<i>Kwok</i>	<i>Jasen</i>
<i>TUV</i>	<i>Chan</i>	<i>Lennard</i>	<i>Lam Research</i>	<i>Larsen</i>	<i>Sean</i>
<i>Lam Research</i>	<i>Crane</i>	<i>Lauren</i>	<i>Tokyo Electron</i>	<i>Mashiro</i>	<i>Supika</i>
<i>Salus Engineering</i>	<i>Evanston</i>	<i>Chris</i>	Tokyo Electron	Petraszak	Andrew
<i>VAD Consulting</i>	<i>DeGiorgio</i>	<i>Vincent</i>	ASML	Planting	Bert
<i>Applied Materials</i>	<i>Faust</i>	<i>Bruce</i>	<i>Texas Instruments</i>	<i>Schwab</i>	<i>Paul</i>
Cymer, ASML	Frankfurth	Mark	Shermco	Skadberg	Nick
<i>Nikon Precision</i>	<i>Girlea</i>	<i>Lucian</i>	<i>Safety Guru</i>	<i>Sklar</i>	<i>Eric</i>
<i>Applied Materials</i>	<i>Gross</i>	<i>Ben</i>	<i>GlobalFoundries</i>	<i>Tinc</i>	<i>Lyman</i>
Nikon Precision	Kelly	Padraig			

Italic indicates online participant. **Bold** indicates in person participant.

Table 2 Leadership Changes

<i>WG/TF/SC/TC Name</i>	<i>Previous Leader</i>	<i>New Leaders</i>

Table 3 Committee Structure Changes

<i>Previous WG/TF/SC Name</i>	<i>New WG/TF/SC Name or Status Change</i>



Table 4 Ballot Results

<i>Document #</i>	<i>Document Title</i>	<i>TC Chapter Action^{#1,#2}</i>
6884A	Line Item Revision to SEMI S2-0821, Environmental, Health, And Safety Guideline For Semiconductor Manufacturing Equipment	Refer below
	Line Item 1 - Delayed Revisions related to lifting equipment and hinged loads (§§ 5.2, 18.6, and 18.7)	Failed and returned to TF for rework and rebalot
7022	Line Item Revisions to SEMI S30-0719E Safety Guideline For Use Of Energetic Materials In Semiconductor R&D And Manufacturing Processes (regarding heating of piping)	Refer below
	Line Item 1 - Enhancing guidance on overtemperature and undertemperature risk management.	Passed as balloted
	Line Item 2 - Adding, as ¶17.8.8, criteria specific to managing the risks of loss of heating downstream of process chambers.	Passed as balloted
	Line Item 3 - Improving the alignment of the Safety Guideline’s text with the Energetic Materials TF’s understanding of what criteria apply to which substances	Passed as balloted
7023	Reapproval of SEMI S6-0618, Environmental, Health, and Safety Guideline for Exhaust Ventilation of Semiconductor Manufacturing Equipment	Failed and returned to TF for rework and rebalot
SEMI S10-0423	Safety Guideline for Risk Assessment and Risk Evaluation Process (Unballoted editorial changes)	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.

Table 5 Ratification Ballot Results

<i>Document #</i>	<i>Document Title</i>	<i>ISC A&R Action^{#1,#2}</i>
R6831C	Revision to SEMI S1-1015 Safety Guideline for Equipment Safety Labels	Passed

#1 **Passed** Ratification ballots will be submitted to SEMI publication for final processing.

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

Table 6 Activities Approved by the GCS between meetings of the TC Chapter

<i>#</i>	<i>Type</i>	<i>SC/TF/WG</i>	<i>Details</i>
None			

Table 7 Authorized Activity

<i>#</i>	<i>Type</i>	<i>SC/TF/WG</i>	<i>Details^{#1}</i>
7108	SNARF	S1 Revision TF	Line Item Revision to SEMI S2, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (labels)
7109	SNARF	S10 Revision TF	Line Item Revisions to SEMI S1, S2, S10, S14, and S30 (regarding risk to buildings/facilities)

#1 SNARFs and TFOFs are available for review on the SEMI web site at: <http://downloads.semi.org/web/wstdsbal.nsf/tfofsnarf>



Table 8 Authorized Ballots

#	When	TF	Details
6884B	Cycle 6 or 7-2023	S2 Mechanical TF	Line Item Revision to SEMI S2, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (Mechanical)
6888A	Cycle 6 or 7-2023	S12 (Equipment Decon) Review TF	Revision of SEMI S12, Environmental, Health and Safety Guideline for Manufacturing Equipment Decontamination
6907	Cycle 6 or 7-2023	S7 Revision TF	Revision to SEMI S7, Safety Guideline for Evaluating Personnel and Evaluating Company Qualifications
7021	Cycle 6 or 7-2023	S2/S22 Revision TF	Line Items Revisions of S2 Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment, and S22 Safety Guideline for the Electrical Design of Semiconductor Manufacturing Equipment
7108	Cycle 6 or 7-2023	S1 Revision TF	Line Item Revision to SEMI S2, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (labels)
7109	Cycle 6 or 7-2023	S10 Revision TF	Line Item Revisions to SEMI S1, S2, S10, S14, and S30 (regarding risk to buildings/facilities)
7134	Cycle 6 or 7-2023	Ergonomics TF	Revision to SEMI S8, Safety Guideline for Ergonomics Engineering of Semiconductor Manufacturing Equipment
7135	Cycle 6 or 7-2023	S23 Global TF	Revision to SEMI S23, Guide for Conservation of Energy, Utilities and Materials Used by Semiconductor Manufacturing Equipment

Table 9 Granted a One-Year Extension

#	TF	Title	Expiration Date
None			

Table 10 SNARF(s) Abolished

#	TF	Title
6309	Ergonomics TF	Line Item Revision to S8, Safety Guideline for Ergonomics Engineering of Semiconductor Manufacturing Equipment
6943	Ergonomics TF	Line Item Revisions to SEMI S8, Safety Guideline for Ergonomics Engineering of Semiconductor Manufacturing Equipment
6981	Ergonomics TF	Line Item Revision to S8, Safety Guideline for Ergonomics Engineering of
6595	Fire Protection TF	Line Item Revision to SEMI S2, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (Adding Guidance for Materials of Construction Evaluation Related to Fire Risk Assessment)

Table 11 Standard(s) to receive Inactive Status

Standard Designation	Title
None	



Table 12 New Action Items

<i>Item #</i>	<i>Assigned to</i>	<i>Details</i>
Nov10-2022#1	Sean Larsen (LAM)	To inform Liquid Chemicals co-chairs regarding 5 year review of SEMI S25-0319 Safety Guideline for Hydrogen Peroxide Storage & Handling Systems

Table 13 Previous Meeting Action Items

<i>Item #</i>	<i>Assigned to</i>	<i>Details</i>	<i>Status</i>
None			

1 Welcome, Reminders, and Introductions

1.1 Bert Planting called the meeting to order at 9:00 AM. The meeting reminders on antitrust, intellectual property, and holding meetings with international attendance were reviewed. Attendees introduced themselves.

2 Review of Previous Meeting Minutes

2.1 The TC Chapter reviewed the minutes of the previous meeting.

- Motion:** Accept the minutes as written.
By / 2nd: By: Eric Sklar / Safety Guru, LLC
 Second: Lauren Crane / Lam Research
Discussion: None
Vote: 14-0. Motion passed.

Attachment: EHS NA TC Minutes 04062023r1.docx

3 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.

NOTE 1: TC Chapter adjudication of ballots 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.

3.1 Doc. 7022, Line Item Revisions to SEMI S30-0719E Safety Guideline For Use Of Energetic Materials In Semiconductor R&D And Manufacturing Processes (regarding heating of piping)

3.1.1 Line Item 1 - Enhancing guidance on overtemperature and undertemperature risk management.

- **Passed** the TC Chapter review as balloted. Refer to attachment below for full details.

3.1.2 Line Item 2 - Adding, as ¶17.8.8, criteria specific to managing the risks of loss of heating downstream of process chambers.

- **Passed** the TC Chapter review as balloted. Refer to attachment below for full details.

3.1.3 Line Item 3 - Improving the alignment of the Safety Guideline’s text with the Energetic Materials TF’s understanding of what criteria apply to which substances

- **Passed** the TC Chapter review with editorial changes. Refer to attachment below for full details.

Attachment: 7022 AR



3.2 Doc. 7023, Reapproval of SEMI S6-0618 Environmental, Health, and Safety Guideline for Exhaust Ventilation of Semiconductor Manufacturing Equipment

- Motion: To find LC-4 Negative is related and persuasive. (Needs > 1/3 votes to pass.)
Reason:
By: Eric Sklar / Safety Guru, LLC
Second: Lauren Crane / Lam Research
Discussion:
Result: 11-Y 0-N Voting Result: Pass - 100%
- Final Action
Motion: This document **failed** TC Chapter review and will be returned to the TF for rework.
Reason: None.
By: Eric Sklar / Safety Guru, LLC
Second: Lauren Crane / Lam Research Corporation
Discussion:
Result: 12-Y 0-N Voting Result: Pass - 100.00%
- This document **failed** and returned to TF for rework and rebalot. Refer to attachment below for a summary of all negatives.

Attachment: EHS Cycle 4-23 rev3

3.3 Doc. 6884A, Line Item Revision to Line Item Revision to SEMI S2-0821, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (Delayed Revisions related to lifting equipment and hinged loads (§§ 5.2, 18.6, and 18.7))

3.3.1 Line Item 1 - Delayed Revisions related to lifting equipment and hinged loads (§§ 5.2, 18.6, and 18.7)

- Motion: To find SG1-3 Negative is related and persuasive. (Needs > 1/3 votes to pass.)
Reason:
By: Andrew Petraszak / TEL Technology Center America
Second: Lauren Crane / Lam Research
Discussion:
Result: 12-Y 0-N Voting Result: Pass – 100 %
- Final Action
Motion: Line item 1 **failed** TC Chapter review and will be returned to the TF for rework.
Reason:
By: Andrew Petraszak / TEL Technology Center America
Second: Lauren Crane / Lam Research Corporation
Discussion:
Result: 12-Y 0-N Voting Result: Pass - 100.00%
- **Line Item 1 failed** and returned to TF for rework and rebalot. Refer to attachment below for details of the negative and the TF report.

Attachment: S2 Mech Report Summer 2023

4 Subcommittee & Task Force Reports

4.1 S3 Revision TF

4.1.1 Andy Petraszak reported.

- TF continues working on doc. 6830, Revision to SEMI S3-1211 (Reapproved 1017)E Safety Guideline for Process Liquid Heating Systems.
 - Held a meeting this week.



- Discussed next steps.
- Current Projected Path Forward:
 - Evaluate ballot authorization during the Fall Meeting.

Attachment: S3 Report Summer 2023

4.2 S2 Mechanical TF

4.2.1 Andy Petraszak reported.

- Doc. 6884A, Line Item Revision to SEMI S2-0821, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (Subject: Delayed Revisions related to lifting equipment and hinged loads (§§ 5, 18.6, and 18.7))
 - **Failed** TC Chapter review.
 - Will ask for ballot authorization for balloting in Cycle 6 or Cycle 7 for adjudication at the Fall meeting.

Attachment: S2 Mech Report Summer 2023

4.3 Environmental Performance Rating (EPR) TF

4.3.1 Ben Gross reported:

- Work in progress
- Efficiency Rating for Components to Drive Selection
 - Similar concept to consumer product ratings (DOE, EPA, FTC)
- Focus now is on defining multiple standard test conditions
- Definition of Pumping Speed
- Requirements for defining our score
- Pump Categorization
- Potential Set of Standardized Test Conditions
- Everyone is invited to the task force. Please contact Ben Gross or SEMI staff for addition to the invitation.

Attachment: 20230601 Environmental Performance Metric

4.4 S10 Risk Assessment TF

4.4.1 Eric Sklar reported:

- The NA EHS TCC's usual practice is to point out, in NOTES in the affected documents, when a Supplementary file is provided. It appears, however, that this was not done for the Excel workbook that was developed by the S10 TF and made available for use in performing the calculations for the recently-published SEMI S10-0423. The TF has prepared a Publication Change Request (PCR) to add such a NOTE to SEMI S10.
 - Motion: Endorse the PCR to add a new NOTE in S10 as shown
By: Eric Sklar / Safety Guru, LLC
Second: Lauren Crane / Lam Research
Result: 11-Y 0-N Voting Result: Pass - 100.00%.
- Modification of several documents



- Modification of several documents in the SEMI S series to remove damage to facilities from the definition of “harm” and from the scope of things to be assessed by use of SEMI S10.
- This is necessary to enable removal of assessing damage to buildings from the normative parts of SEMI S10, which is motivated, to a large extent, by the inability of people assessing risk posed by equipment to know much, if anything, about the buildings in which the equipment will be located.
- This documents to be included are:
 - SEMI S1 (Labels)
 - SEMI S2 (SME)
 - SEMI S10 (Risk)?
 - SEMI S14 (Fire)
 - SEMI S30 (Energetic Materials)
- The TF decided to propose, in a single Line Item, changes to all five of those documents.
 - Enables synchronization of the changes
 - Considered by the TF to be necessary to allow some of the other modifications to SEMI S10 that the TF is developing.
 - TF decided to ballot these changes to the five documents as Line Item revisions with immediate effect (i.e., not as Delayed Revisions) because other work depends on these changes and to ensure synchrony of the changes.
 - Discussions:
 - Pros and cons of immediate effect may impact SEMI S2 as the official version will be in effect July 2024. If immediate effect takes place for S2, it may add confusion.
 - Andrew Petraszak said SEMI S1 was recently ratified, the new S1 version may not be available for a while.
 - A straw poll was conducted: Should the ballot consist of delayed revisions of S1, S2, S10, S14 and S30 in cycle 7 if the rules allow?
 - 12 in favor
 - 0 opposed
 - Motion: Approve the SNARF for Line Item Revisions of S1, S2, S10, S14, S30
By: Eric Sklar / Safety Guru, LLC
Second: Lauren Crane / Lam Research
Discussion: Title of the SNARF was modified for clarification
Result: 11-Y 0-N Voting Result: Pass - 100.00%.

Attachment: SNARF_MultidocRisk_tf12jul23b_es12jul23c

Attachment: S10_Report_es13jul23a

Attachment: S10_WkbkNOTE_PCR_tf10may23a_tf12jul23a

4.5 Flammable Gas TF

4.5.1 Bert Planting reported:

- Drafting doc. 6980, Line Item Revisions to SEMI S2-0821, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (Re: Sections 13.7 and 23.5.5)
 - 2 Additions in Main text SEMI S2: §§13.7 & 21.5.5
 - Prepare an RI with information on:
 - Select the design strategy
 - Legislation and standards information
 - Testing criteria
 - Completed flow chart to guide to safe design
 - Provide guidance for each step
 - Discuss how to deal with a “safe gas mixture” containing a flammable substance
 - Next activities
 - Make overview of legislation
 - Certification requirements of components
 - How to test
 - Next steps
 - Will resume teleconferences in coming weeks.

Attachment: Hydrogen addition SEMI-West 2023

4.6 Manufacturing Equipment Safety Subcommittee (MESSC)

4.6.1 Lucian Girlea reported no meeting was held. If there is any topic, please email Lucian in advance.

4.7 S2 Major Revision TF

4.7.1 Lucian Girlea reported:

- Activity:
 - Very good participation in (mostly) weekly TF meetings.
 - Several changes affecting the entire S2; this is still work in progress with many items in the stack.
 - Other EHS TFs (e.g., S1, S8) are routing new items for this S2 TF as the more appropriate forum to address the respective topics.
 - Since 15-Dec-22, we have a Japan S2 major revision liaison TF (JA-S2 revision LTF) led by Mashiro-san.
- Next steps
 - Continue TF work in the current format.
 - Consider issuing an Informational Ballot to increase visibility and gather additional input.
 - The Informational Ballot can be issued outside the standard ballot cycle.
 - Submit a SNARF when anticipating a ballot ready in 6 months.



- Will require close coordination with other TF working on items affecting S2.
 - Acknowledged concerns with possible conflicts, checked current SNARFs linked to S2, and reiterated the need to plan and coordinate efforts with other TFs when working on the ballot.
- 7/12 continued S2 draft:
 - Worked on clarifying documentation and personnel skills requirements to establish S2 limitations on harmful actions and disregarding instructions.
 - Worked on making a clear statement that for equipment to be S2 compliant doesn't mean the equipment should comply with all existing standards.

Attachment: S2 Major Revision SEMI 2023 West notes

4.8 S6 Ventilation TF

4.8.1 Eric Sklar reported:

- Doc. 7023, Reapproval for SEMI S6-0618, Environmental, Health, and Safety Guideline for Exhaust Ventilation of Semiconductor Manufacturing Equipment, **failed** TC Chapter review.
- Presented the SNARF for a Major Revision of SEMI S6
- Motion: To ask the GCS to approve the S6 SNARF if there is no comment or rejection during the review period
By: Eric Sklar / Safety Guru, LLC
Second: Lauren Crane / Lam Research
Discussion:
Result: 13-Y 0-N Voting Result: Pass - 100.00%.

Attachment: SNARFdraft_S6major_es09jul23a_tf11jun23b

Attachment: S6_Report_es12jul23a

4.9 S23 Global TF

4.9.1 Lauren Crane reported.

- An editorial error was identified by Carlo Luijten. Eric has drafted a PCR (Publication Change Request) that was approved in a past US-TC chapter meeting. The revised S23 was published as S23-1021E2.
- Because of the challenges of transitioning to two documents (an S23 Test Method & a new Guide), the TF has decided to turn S23 into a Test Method with guidance in an Appendix.
 - A SNARF for S23 Major Revision was presented.
 - Motion: To ask the GCS to approve the S23 SNARF if there is no comment or rejection during the review period
By: Lauren Crane / Lam Research
Second: Eric Sklar / Safety Guru, LLC
Discussion:
Result: 13-Y 0-N Voting Result: Pass - 100.00%.
- The guidance portions of S23 (now an Appendix) have largely been finished. The TF has been working mainly on the Test Method aspects in the main body of the document.
- The TF spent several meetings reviewing S23 state transitions and made a recommendation to E167 TF (email Crane to Andreas Neuber and Gerald Shelly May 25, 2023) to incorporate a representation of the Rest state into their state diagram. There was a little email dialogue about the proposal, but no firm acceptance or rejection of the idea.



- The TF has decided to support a more generic application of S23 concepts by changing the object of assessment from “SME” to a Device Under Consideration (DUC).
- A large section of homework has been assigned to L. Crane. The TF’s routine Thursday morning (US) meetings will be suspended until a reviewable chunk of that homework is available. Most likely in mid-August.
- Near Term Plans
 - Start weekly meetings again August 17th.
 - Meet weekly for 1 hour to work on the ballot.

Attachment: SNARF_S23 Guide to TM conv. r3

Attachment: 2023 S23 US West TF mtg & rpt Crane r1

4.10 *S2 Seismic Liaison TF*

4.10.1 Lauren Crane reported.

- No meeting during West 2023.
- Previous meeting - Discussed retaining the “anticipated seismic forces” as they are now, justified by the lack of reports in the awareness of vocal task force members that equipment is not surviving seismic events sufficiently; and adjust the RI to better explain the genesis of the values.

4.11 *Fire Protection TF*

4.11.1 Eric Sklar reported.

- Old Business
 - Adding performance criteria (Such as effectiveness, fire size to be considered) for detection and protection systems.
 - Adding design criteria (such as treatment of pyrophoric materials) for detection and protection systems.
 - Should exhaust ventilation be reduced or stopped if a fire is detected?
- New Business
 - LC: Interested, in informing work on regulation of substances, in what suppression agents are being used in our industry.
 - Process and process support tools: Primarily CO₂, secondarily water mist/fog
 - There are suppression agents of concern, including.
 - Some “clean agents” that are of ozone depletion and global warming concern (“clean agents” require that the equipment be “airtight”, so these aren’t used in equipment)
 - PFAS-containing foams (not used in equipment)

Attachment: FireProt_Report_es13jul23a

4.12 *S1 Labels TF*

4.12.1 Eric Sklar reported.

- Doc. R6831C, Ratification Ballot - Revision to SEMI S1-1015 Safety Guideline for Equipment Safety Labels
 - Technical Changes were ratified, so SEMI S1-xx23 is awaiting publication.
- S1 TF Work on SEMI S2 since the Spring Meetings
 - Circumstances in which safety labels should be used.
 - Risk-based criteria for using safety labels.
 - Whether to replace or supplement non-S1-conforming labels, such as those provided to the SME supplier on subsystems, components, or parts that are included in the scope of an S2 assessment
 - Translation to language of location of use is also not included in S1 or S2. (TF chose to remain silent on this point.)
 - How conformance to the S1 criteria is to be assessed as part of an S2 assessment.
 - TF has prepared a markup of SEMI S2 showing the changes to be proposed. The substance of the changes are shown in an MSWord file.
 - TF has drafted a SNARF, for consideration in this meeting, for balloting the changes to SEMI S2.
 - Motion: Approve the SNARF for Line Item revision of S2 (labels)
By: Eric Sklar / Safety Guru, LLC
Second: Lauren Crane / Lam Research
Discussion:
Result: 12-Y 0-N Voting Result: Pass - 100.00%.

Attachment: SNARF_S2reLabels_tf11jul23a_es13jul23a

Attachment: S1_Report_es12jul23a

4.13 *Energetic Materials TF*

4.13.1 Eric Sklar reported.

- Doc. 7022, Line Item Revisions to SEMI S30-0719E Safety Guideline For Use Of Energetic Materials In Semiconductor R&D And Manufacturing Processes (regarding heating of piping), passed TC Chapter review.
- Old Business
 - Topics Discussed at Previous TF Meetings (No new discussion April 2023):
 - Topics TF believes should be addressed by a training program.
 - Improper adoption of S30.
 - Cold traps accumulate material, creating a hazard that needs to be addressed.
 - Still no report of an integrated risk assessment having been done.
 - Some S30 related questions have been raised by 1 or 2 device manufacturers.

Attachment: EnergeticMatls_Report_es12jul23a

4.14 *S2 Control of Hazardous Energy (CoHE) TF*

4.14.1 Eric Sklar reported:



- Topics the TF has discussed since the Spring Meetings
 - Situation in which both the EID and the foreseen point of hazard are behind a lock or other mechanism that requires the same key or tool to access.
 - Whether to use the term “lockout” at all, or just provide an informative remark to connect it to whatever we call what it is we are advocating with Section 17.
 - Salvage of material from the Withdrawn SEMI S20, a Safety Guideline on HEI documentation
 - Definitions of key terms, including:
 - “hazardous energy”
 - “hazardous energy isolation (HEI)”
 - “control of hazardous energy (CoHE)”
 - Which terms to use
 - How to address difference between:
 - blocking energy paths solely to prevent “unexpected startup” and
 - blocking energy paths to prevent “unexpected startup” and to prevent exposure to/contact with/release of hazardous energy and hazardous material.
- TF Discussion 10 July 2023
 - Which terms to use, including in the title of Section 17
 - How to address difference between:
 - blocking energy paths solely to prevent “unexpected startup” and
 - blocking energy paths to prevent “unexpected startup” and to prevent exposure to/contact with/release of hazardous energy and hazardous material.
 - RM pointed out:
 - 29 CFR 1910.147(a)(1)(i) This standard covers the servicing and maintenance of machines and equipment in which the unexpected energization or start up of the machines or equipment, or release of stored energy could cause injury to employees. This standard establishes minimum performance requirements for the control of such hazardous energy.
 - Does the TF believe that the SNARF (6942) for this activity, which was approved in the NA EHS TCC meeting at SEMICon West 2022 need to be amended or replaced?
 - Whether the TF feels ready to request ballot authorization for a cycle before the Fall Meetings.
- Task Force Plans & Requests
 - Continue developing (in weekly telecons) proposed revisions to SEMI S2
 - Current target is to ballot between the Fall 2023 and Spring 2024 Meetings
 - Foresee requesting ballot authorization and, perhaps, a revision or replacement of our current SNARF, at the Fall Meeting.

Attachment: S2_CoHE_Report_es12_jul23a

4.15 S12 Decontamination TF

4.15.1 Eric Sklar reported.



- Continue to work on Doc. 6888A, Revision of SEMI S12-0211e, Environmental, Health and Safety Guideline for Manufacturing Equipment Decontamination
 - Do we foresee being ready to ballot by 30 August, the Cycle 7 submission date?
 - Try for Cycle 7.

Attachment: S12(decon)_Report_es13jul23a

4.16 S8 Ergonomics TF

4.16.1 Paul Schwab reported.

- Task Force has been meeting regularly since January 2022 to work on changes to SEMI S8.
- Reviewed the proposed Line Item ballot.
 - Members agreed that due to its complexity, it should be a Major Revision ballot instead so a new SNARF is needed.
- A draft SNARF has been created and is ready for review.
 - Motion: To ask the GCS to approve the S8 SNARF if there is no comment or rejection during the review period
By: Eric Sklar / Safety Guru, LLC
Second: Paul Schwab / Texas Instruments, Inc
Discussion:
Result: 11-Y 0-N Voting Result: Pass - 100.00%.
- Old SNARFS should be sunset.
 - 6309: 11/14/2017
 - 6943: 07/14/2022
 - 6981: 11/10/2022
 - Motion: Close SNARFs 6309, 6943, 6981:
By: Paul Schwab / Texas Instruments, Inc
Second: Eric Sklar / Safety Guru, LLC
Discussion:
Result: 12-Y 0-N Voting Result: Pass - 100.00%.
- S8 TF Document Storage at SEMI
 - <https://connect.semi.org/communities/community-home?CommunityKey=c1526656-40a4-4245-af86-34d3ecc68624>

Attachment: SNARF_SEMI-S8_ps12JUL2022_V2

Attachment: SEMI-S8_TF_summary_13JUL2023

4.17 S7 TF

4.17.1 Sean Larsen reported.

- Reviewing current draft ballot
 - TF Chair has been negligent in scheduling meetings and cleaning up the ballot
- Plans
 - Chair/TE to clean up existing draft and distribute for discussion in TF.

- Request to committee
 - Request ballot for cycle 6 or 7
- The TF will work on preparing the ballot. The TF will aim for cycle 6 or 7 of 2023.

Attachment: S7 TF Report

4.18 S2/S22 TF

4.18.1 Chris Evanston reported.

- No meeting this week
 - 4 draft line item changes were discussed in spring and fall meeting
- Plan
 - Edit draft document.
 - Send draft to TF for review.
 - A question was raised on the TF roster list. Sean Larsen showed the current TF roster, which appears to be outdated. The list was edited.
 - Hold Teleconferences to Discuss
 - Prep Ballot for Cycle 7

Attachment: S22 Report

4.19 Other Documents of Interest

4.19.1 F47 TF

- Sean Larsen mentioned F47 is continuing to have discussion on voltage sags on 3 phases vs 1 phase. Discussion for different waveforms for the sag was reported. There seems to be a push to change for what can be tested or whether the current IPC will meet those requirements.

4.19.2 BIM TF

- Sean Larsen reported the Building Information Modeling (BIM) activity. The progress is slow. Eric Sklar also chimed in and said he is the TF member, but he has not seen any recent draft and does not know its ballot status.

5 Liaison Reports

5.1 ICRC Liaison

5.1.1 Bert Planting presented. The following topics were discussed:

- Overview of taskforce activities (James Amano)
 - PFAS (EU, US, Multiple states)
 - TSCA, PIP 3:1 reporting on chemicals 3 year
 - BPA
 - Greenhouse Gas (US, EU)
 - MD MR: Published
 - REACH

- CRA
- Request for a second co-chair (preferred with knowledge what is on-going in the US)
 - Mark Frankfurth is considering.
- Discussed Charter of ICRC
- Overview of standards: Added 3 new:
 - PFAS: States of Maine, Minnesota,
 - US Federal Laser standards 21 CFR 1040.10 & related sections
 - California energy efficiency of Fans & Blowers

Attachment: ICRC SEMI-con west 2023 Report

5.2 Japan EH&S TC Chapter

5.2.1 Kevin Nguyen reported.

- Last meeting
 - April 12, 2023
 - SEMI Japan Office + OVTCCM (Hybrid)
- Next meeting
 - Thursday, September 7, 2023
 - SEMI Japan Office + OVTCCM (Hybrid)
- Authorized Ballots
 - Doc. 7028 Reapproval of SEMI S21-0818, Safety Guideline for Worker Protection
- S23 Revision Global Task Force
 - The TF has been working mainly on the wording of the guide and most currently the equipment state definitions and transitions.
 - There is a draft road-mapping template queued for review by the Task Force
 - The IRDS roadmap is planning to use S23 concepts to characterize the energy efficiency of factories
- S18 Revision Task Force
 - Called for participation in S18 Revision activities.
 - The TF is now considering whether to recruit additional members since the result of recruitment was slow.
- Japan S2 Major Revision Liaison TF (JA-S2 revision LTF) (New!)
 - JA-S2 revision LTF is now recruiting members.
- Seismic Protection Global Task Force
 - No update

Attachment: EHS JA TC Chapter Liaison Report_July 2023_R1

5.3 Taiwan EH&S TC Chapter

5.3.1 Kevin Nguyen reported.

- No new update since NA Fall 2022 meeting.
- Last meeting
 - July 7, 2022
- Next meeting
 - TBD

Attachment: EHS Taiwan TC Liaison report_2022_Sep_v2

5.3.2 RSC/Co-chairs report

5.3.3 Sean Larsen reported.

- SEMICON West will be July in San Francisco in 2024, but in 2025 it will move to AZ and be held in October
- Redline standards will be available Q4 23 – to track changes
- Flexible Hybrid Electronics (FHE) TC formed in NA

Attachment: RSC - Co-Chairs Report

5.4 SEMI Staff Report

5.4.1 Kevin Nguyen (SEMI) reported.

- SEMI upcoming event
 - Upcoming NA Meetings
 - NA Standards Fall Meetings
 - Nov 6-9, 2023
 - SEMI HQ in Milpitas, California
 - SEMICON Europa
 - Nov 14-17
 - Munich, Germany
 - SEMICON Japan
 - Dec 13-15
 - Tokyo, Japan
- Celebrating SEMI Standards 50th Year Anniversary
- 2023 Critical Dates for SEMI Standards Ballots
 - <https://www.semi.org/en/collaborate/standards/ballots>
- SNARF 3-Year Status
 - Doc. 6595, Line Item Revision to SEMI S2 Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (Adding Guidance for Materials of Construction Evaluation Related to Fire Risk Assessment)
 - The TF has no interest in renewing the SNARF. Effort was abandoned.
- SEMI Standards Publications
 - Total SEMI Standards in portfolio: 1,079
 - Includes 327 Inactive Standards
 - New Publications Staff



- Vivian Hoang – Sr. Specialist, Standards Publications
- Joined SEMI May 17, 2023.
- Will focus on processing ballots to reduce backlog and improve publishing time.

Attachment: Staff Report July 2023 v3

6 Old Business

6.1 None

7 New Business

7.1 5 year review

7.1.1 SEMI S25-0319 - Safety Guideline for Hydrogen Peroxide Storage & Handling Systems

- Sean Larsen said it is not due until March of 2024, Eric Sklar suggested sending out for reapproval ballot as we do not have to wait until then. Liquid Chemicals committee may have an interest on this document. Intercommittee ballot should be considered if this ballot is issued for reapproval.
- Action Item – Kevin Nguyen to send email addresses of Liquid Chemicals NA Co-chairs to Sean Larsen, so he could start the conversation.

7.2 Upcoming Ballot Authorization

7.2.1 The following ballots are authorized for the next meeting.

#	When	TF	Details
6884B	Cycle 6 or 7-2023	S2 Mechanical TF	Line Item Revision to SEMI S2, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (Mechanical)
6888A	Cycle 6 or 7-2023	S12 (Equipment Decon) Review TF	Revision of SEMI S12, Environmental, Health and Safety Guideline for Manufacturing Equipment Decontamination
6907	Cycle 6 or 7-2023	S7 Revision TF	Revision to SEMI S7, Safety Guideline for Evaluating Personnel and Evaluating Company Qualifications
7021	Cycle 6 or 7-2023	S2/S22 Revision TF	Line Items Revisions of S2 Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment, and S22 Safety Guideline for the Electrical Design of Semiconductor Manufacturing Equipment
7108	Cycle 6 or 7-2023	S1 Revision TF	Line Item Revision to SEMI S2, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (labels)
7109	Cycle 6 or 7-2023	S10 Revision TF	Line Item Revisions to SEMI S1, S2, S10, S14, and S30 (regarding risk to buildings/facilities)
7134	Cycle 6 or 7-2023	Ergonomics TF	Revision to SEMI S8, Safety Guideline for Ergonomics Engineering of Semiconductor Manufacturing Equipment
7135	Cycle 6 or 7-2023	S23 Global TF	Revision to SEMI S23, Guide for Conservation of Energy, Utilities and Materials Used by Semiconductor Manufacturing Equipment

Motion: Authorize the Documents in the table above for Letter Ballot in cycle 6 or 7 of 2023

By: Eric Sklar / Safety Guru, LLC

Second: Lauren Crane / Lam Research Corporation

Discussion: None

Result: 10-Y 0-N Voting Result: Pass - 100.00%

7.3 Teleconferences

- Eric Sklar presented the Google calendar for all EH&S TF teleconferences.



- o <https://calendar.google.com/calendar/u/0/embed?src=0dblgh8j8j0im0e8bt4jkbocs4@group.calendar.google.com>

8 Next Meeting and Adjournment

8.1 The next meeting is scheduled for Thursday, November 9, 2023 in conjunction with NA Fall Standards Meetings, SEMI HQ, Milpitas CA. 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 3:00 PM.

Respectfully submitted by:

Kevin Nguyen,
SEMI Standards Operations Manager
Phone: 408-943-7997
Email: 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>

Table 14 Index of Available Attachments^{#1}

<i>Title</i>	<i>Title</i>
EHS NA TC Minutes 04062023r1.docx	FireProt_Report_es13jul23a
7022 AR	SNARF_S2reLabels_tf11jul23a_es13jul23a
EHS Cycle 4-23 rev3	S1_Report_es12jul23a
S3 Report Summer 2023	EnergeticMatls_Report_es12jul23a
S2 Report Summer 2023	S2_CoHE_Report_es12jul23a
20230601 Environmental Performance Metric	S12(decon)_Report_es13jul23a
SNARF_MultidocRisk_tf12jul23b_es12jul23c	SNARF_SEMI-S8_ps12JUL2022_V2
S10_Report_es13jul23a	SEMI-S8_TF_summary_13JUL2023
S10_WkbkNOTE_PCR_tf10may23a_tf12jul23a	S7 TF Report
Hydrogen addition SEMI-West 2023	S22 Report
S2 Major Revision SEMI 2023 West notes	ICRC SEMI-con west 2023 Report
SNARFdraft_S6major_es09jul23a_tf11jun23b	EHS JA TC Chapter Liaison Report_July 2023_R1
S6_Report_es12jul23a	EHS Taiwan TC Liaison report_2022_Sep_v2
SNARF_S23 Guide to TM conv. r3	RSC - Co-Chairs Report
2023 S23 US West TF mtg & rpt Crane r1	Staff Report July 2023 v3

#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.