



North America EHS Committee Meeting Summary and Minutes

NA Standards Meetings at SEMICON West 2014
10 July 2014, 0910 – 1530 Pacific Time
San Francisco Marriott Marquis Hotel in San Francisco, California

Next Committee Meeting

North America Standards Fall 2014 Meetings
Thursday 6 November 2014, 0900 – 1600 Pacific Time
SEMI Headquarters in San Jose, California

Table 1 Meeting Attendees

Italics indicate virtual participants

Co-Chairs: Chris Evanston (Salus Engineering), Sean Larsen (Lam Research AG), Bert Planting (ASML)

SEMI Staff: Paul Trio

<i>Company</i>	<i>Last</i>	<i>First</i>	<i>Company</i>	<i>Last</i>	<i>First</i>
AKT	Wong	Carl	Pilz GmbH	Pilz	Thomas
Applied Materials	Karl	Edward	Product EHS Consulting	Brody	Steven
ASML	Planting	Bert	Safe Techno	Nogawa	Kaoru
Cymer	Frankfurth	Mark	Safety Guru, LLC	Sklar	Eric
Cymer	Yakimow	Byron	Salus Engineering	Evanston	Chris
Dainippon Screen	Imamiya	Ryosuke	Salus Engineering	Visty	John
DECON Environmental Services	Belk	William	Seagate	Layman	Curt
Edwards	Pierce	Adrienne	Seagate	Narayanan	Hari Shankar
Edwards Vacuum	Gordon	Michael	Seagate	Hobbs	Duncan
EORM	Filipp	Nick	SEMATECH	Trammell	Steve
ESTEC Solutions	DeFrain	Steve	SEMATECH	Kwong	Hsi-An
GLOBALFOUNDRIES	McDaid	Raymond	SICK, Inc.	Gose	Nate
<i>IBM</i>	<i>Petry</i>	<i>Bill</i>	Texas Instruments	Graves	Rene (Leslie)
IBM	Timlin	Ernest	Tokyo Electron	Krov	Alan
KLA-Tencor	Crane	Lauren	Tokyo Electron	Mashiro	Supika
KLA-Tencor	Crockett	Alan	TUV Rheinland	Barsky	Joe
<i>Lam Research</i>	<i>Claes</i>	<i>Brian</i>	TUV Rheinland NA	Pochon	Stephan
Lam Research	Hughes	Stanley	TUV SUD	Ishikawa	Shigehisa
<i>Lam Research AG</i>	<i>Larsen</i>	<i>Sean</i>	TUV SUD America	Faust	Bruce
Macklin & Associates	Macklin	Ron	TUV SUD America	Holbrook	Glenn
Nikon Precision	Greenberg	Cliff	TUV SUD America	Kuwatani	Ken
Nordson	Choi	Joyce	SEMI	Trio	Paul

Table 2 Leadership Changes

<i>Group</i>	<i>Previous Leader</i>	<i>New Leader</i>
<i>New Task Force:</i> Energetic Materials EHS Task Force <i>Approved by the EHS Global Coordinating Subcommittee (GCS) in June 2014.</i>		Steve Trammell (SEMATECH), Andy McIntyre (EORM)
<i>New Task Force:</i> S7 Task Force <i>Approved by the EHS Global Coordinating Subcommittee (GCS) in June 2014.</i>		Chris Evanston (Salus)

Table 3 Ballot Results

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.

<i>Document #</i>	<i>Document Title</i>	<i>Committee Action</i>
	<i>Cycle 3, 2014 Ballots</i>	
4316K	Line Item Revision to SEMI S2-0712b, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment, and SEMI S22-0712a, Safety Guideline for the Electrical Design of Semiconductor Manufacturing Equipment. Delayed Revision on Multiple Topics	
Line Item 1	Improvements to the FECS criteria	Failed , to be reballoted
Line Item 2	Allowing additional flexibility to the UPS disconnect criteria	Failed , to be reballoted
Line Item 3	Allowing an alternate grounding methodology from IEC 60204-33 and has been found to be useful with larger equipment	Failed , to be reballoted
4683C	Line Item Revisions to SEMI S2-0712b, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment. Delayed Revisions Related to Chemical Exposure	
Line Item 1	Added explanatory materials for valid air sampling and measurement methods and accredited laboratories	Failed , to be reballoted
Line Item 2	Added suggested clarification on reporting of sampling related to 23.5	Failed , to be reballoted
5591	Line Item Revisions to SEMI S2-0712b, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment. Delayed revisions related to fire protection	
Line Item 1	Audibility and visibility of annunciators of fire detection systems	Failed , to be reballoted
Line Item 2	Location of manual activation devices of fire detection systems	Passed as balloted. Superclean
Line Item 3	Audibility and visibility of annunciators of fire suppression systems	Failed , to be reballoted
Line Item 4	Location of manual activation devices of fire suppression systems	Passed as balloted. Superclean
	<i>Cycle 4, 2014 Ballots</i>	
5009C	Line Item Revisions to SEMI S8-0712a, Safety Guidelines for Ergonomics Engineering of Semiconductor Manufacturing Equipment. Delayed Revisions on Multiple Topics	
Line Item 1	Ergonomic clearances clarification. These changes are intended to better define ergonomics-related clearances for equipment design and installation	Failed , to be reballoted
Line Item 2	Modifications to Appendix 1, SESC checklist, Section 6 enclosed handle design guidelines to allow for a wider range of acceptable handle shapes and sizes	Failed , to be reballoted

Table 3 Ballot Results

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.

Document #	Document Title	Committee Action
Line Item 3	Modifications to Appendix 1, SESC checklist, Section 7 to expand whole body clearance criteria to include equipment operation tasks and provide design criteria for a seated posture. Whole body clearance recommendations are separated into two categories: walking/crawling and working postures. Existing recommendations specific to maintenance and service tasks are moved to a new Section 11	Failed , to be reballoted
5718	Line Item Revisions to SEMI S10-0307E, Safety Guideline for Risk Assessment and Risk Evaluation Process	
Line Item 1	Addition of NOTE on product and equipment under consideration	Passed with editorial changes
Line Item 2	Change “loss” to “harm” (section 5.1.1)	Passed as balloted
Line Item 3	Remove Note 4	Failed , to be reballoted
Line Item 4	Clarification of the life cycle stages to be considered	Passed as balloted
Line Item 5	Clarification section 6.5 on risk estimation, remove the term benchmarking. Multiple changes in the section	Failed , to be reballoted
Line Item 6	Change “loss” to “harm” (Table A1-1)	Failed , to be reballoted
Line Item 7	Add pointer to ISO 12100	Failed , to be reballoted

Table 4 Authorized Activities

#	Type	SC/TF/WG	Details
5761 ¹	SNARF	Energetic Materials EHS TF	New Standard: EHS Guideline for Use of Energetic Materials in Semiconductor R&D and Manufacturing Processes Rationale: This SEMI Standards activity is intended to: <ul style="list-style-type: none"> Develop EHS guidance for the entire supply chain to assist in timely and accurate characterization of energetic processing materials. Propose design considerations for equipment, delivery system, pump and abatement manufacturers. Identify handling, use and disposal best practices, as well as, operation, maintenance and emergency response criteria for end users.
5760 ²	SNARF	S7 TF	Line Item Revisions to SEMI S7, Safety Guideline for Evaluating Personnel and Evaluating Company Qualifications Rationale: Revise and update SEMI S7 – in accordance with 5 year review cycle.

Note: SNARFs and TFOFs are available for review on the SEMI Web site at:

<http://downloads.semi.org/web/wstdsbal.nsf/TFOFSNARF>

Table 5 Authorized Ballots

#	When	SC/TF/WG	Details
5623	Cycle 5, 2014	S1 Revision TF	Revision to SEMI S1, <i>Safety Guideline for Equipment Safety Labels</i>

¹ SNARF #5761 is available at:

<http://downloads.semi.org/web/wstdsbal.nsf/b8865fa87d9e7b57882579fb005c3cd7/ba9702b7ccbd51c288257d1d006dd4cf!OpenDocument>

² SNARF #5760 is available at:

<http://downloads.semi.org/web/wstdsbal.nsf/b8865fa87d9e7b57882579fb005c3cd7/820d2d853540520488257d1d006d79f5!OpenDocument>

Table 5 Authorized Ballots

#	When	SC/TF/WG	Details
5760	Cycle 5, 2014	S7 TF	Line Item Revisions to SEMI S7, <i>Safety Guideline for Evaluating Personnel and Evaluating Company Qualifications</i>
5591A	Cycle 5 or 6, 2014	Fire Protection TF	Line Item Revisions to SEMI S2, <i>Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment</i> Delayed Revision related to Fire Protection
4316L	Cycle 6, 2014	S22 TF	Line Item Revisions to SEMI S2, <i>Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment</i> , and SEMI S22, <i>Safety Guideline for the Electrical Design of Semiconductor Manufacturing Equipment</i>
4683D	Cycle 6, 2014	S2 Chemical Exposure TF	Line Item Revisions to SEMI S2, <i>Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment</i> Delayed Revisions related to Chemical Exposure
5625	Cycle 6, 2014	S2 Non-ionizing Radiation TF	Line Item Revisions to SEMI S2, <i>Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment</i> Delayed Revisions related to non-ionizing radiation
5718A	Cycle 6, 2014	S10 TF	Line Item Revisions to SEMI S10-0307E, <i>Safety Guideline for Risk Assessment and Risk Evaluation Process</i>

1 Welcome, Reminders, and Introductions

Chris Evanston called the meeting to order at 9:10 AM. Attendees introduced themselves. The SEMI meeting reminders on Standards membership requirement, antitrust issues, intellectual property issues, and effective meeting guidelines were presented. Finally, the agenda was reviewed.

Attachment: 01, SEMI Standards Required Meeting Elements

2 Review of Previous Meeting Minutes

The committee reviewed the minutes of the previous meeting held April 3 in conjunction with the NA Standards Spring 2014 meetings.

Motion: NA EHS Committee approves to accept the NA EHS Spring 2014 Committee meeting minutes as written.

By / 2nd: Bert Planting (ASML) / Lauren Crane (KLA-Tencor)

Discussion: None

Vote: 12-0 in favor. Motion passed.

Attachment: 02, NA EHS Spring 2014 meeting (April 3) minutes

3 Leadership and Liaison Reports

3.1 Japan EHS Committee

Supika Mashiro reported for the Japan EHS Committee.

- Next meeting: July 24 in conjunction with the Japan Summer 2014 Meetings (SEMI Japan, Tokyo)
- Leadership Changes
 - FPD System Safety Task Force
 - Ikuo Goto (Murata Machinery) stepped down as TF co-leader.
- New SNARFs + Ballot for Cycle 4, 2014
 - FPD System Safety Task Force
 - Doc. 5719, Line Item Revision to SEMI S26-0811, *Environmental, Health, and Safety Guideline for FPD Manufacturing System*. Delayed Revisions Related to Limitations
 - Doc. 5720, Line Item Revisions to SEMI S26-0811, *Environmental, Health, and Safety Guideline for FPD Manufacturing System*. General Harmonization to SEMI S2
- Other Upcoming Ballots
 - S23 Revision Task Force – The earliest possible cycle (previously targeted Cycle 3 or 4 ballot submission)
 - Doc. 5513A, Line Item Revision to SEMI S23-0311, *Guide for Conservation of Energy, Utilities and Materials Used by Semiconductor Manufacturing Equipment*. (Line Item 1 only, expansion of RI 2)
 - Seismic Protection Task Force – Cycle 6, 2014
 - Doc. 5556, Line Item Revisions to SEMI S2-0712, *Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment*. Revisions Related to Section 19 Seismic Protection

- S23 Revision TF
 - Working on Doc. 5513A *{see above}*
 - The expansion of RI2 (Temperature Control Unit) is under preparation.
 - A new SNARF was proposed for a change to energy efficiency in Section 12. However, the SNARF was not approved as the proposed revision would also include a revision to the Purpose and Scope of S23. It was considered that this type of revision should not be addressed by a line item revision. A revised SNARF will be resubmitted after TF review.
- Greenhouse Gas (GHG) Emission Characterization Task Force
 - TF is asking to ISMI about compatibility with EPA and the promotion of this guide
- Seismic Protection Task Force
 - Working on Doc 5556 *{see Other Upcoming Ballots section above}*
 - NA Seismic Protection Liaison TF requested that a little more time to resolve many fundamental questions and comments from NA TF members will be needed, and the discussion should be made at SEMICON West in July prior to balloting.
 - In response to this request, the TF has decided to delay balloting until after SEMICON West.
- STEP Planning Working Group
 - STEP/ SEMI S2 will be held on October 17, 2014 at the SEMI Japan office in Tokyo.
- Other activities
 - Program for SEMICON Japan 2014
 - To hold the Energetics Workshop during SEMICON Japan 2014 was approved. The program contents will be discussed by the co-chairs and the other members.
- SEMI staff contact: Naoko Tejima (ntejima@semi.org)

Additional Discussion:

- Supika Mashiro clarified that the S23 revision activity will now be a major revision instead of line items.

Attachment: 03, Japan EHS Committee Report

3.2 RSC / Committee Leadership Report

Chris Evanston provided the co-chairs report.

- Regulations Updates Planned (Expected after NA Fall Meetings)
 - SNARF review period – SNARFs will need to go out to the committee for 2 weeks prior to approval
 - Can either be sent out prior to committee meeting and approved at committee meeting or sent to GCS for approval
 - Document development period – SNARFs for new document development activities will have a lifetime of 3 years
 - The TC can extend the life of a SNARF in 1 year extensions if it believes that adequate development activities are continuing
 - Modifications to allow Virtual Attendance of TC meetings, contingent on SEMI developing the infrastructure to support
 - Minority Report handling instructions for both GCS and ISC

- Clarifying Voting Interest
 - Wholly owned subsidiaries will not have a separate vote unless they separately register as SEMI members
- New guidance related to when a SNARF can be revised and when a new one is needed
 - For Line Item SNARFs, cannot be open ended
 - Once it is used, additional line items cannot be added, can only be used to address failed line items
 - If a draft document exceeds the scope of the SNARF, the SNARF must be revised or replaced and approved
 - Unclear who is the police for this and whether this is grounds for rejecting a ballot
- Clarification on what is a working group, when it can be formed and what it can do
- Clarification on the duties of the TF leader and who can be a member and how they become one
- Ongoing Developments
 - Modification of Adjudication process
 - If a ballot receives no negatives, the process is the same
 - If a ballot receives negatives, then after committee adjudication it goes out for a second up/down “Final Letter Ballot” voting cycle
 - Technical changes from the initial ballot are allowed in the “Final Letter Ballot” if they are reviewed and approved by 90% in the committee meeting
 - Final Letter Ballot is not adjudicated, simple criteria for approval (<10% Rejects, >25% Approval)
 - Many details are still to be resolved
 - What impact to the process occurs if the negatives are withdrawn or found insignificant
 - Guidance or limitations on amount of technical change can be made/approved in committee and submit for “Final Letter Ballot” versus a regular letter ballot
 - Review process for feedback from “Final Letter Ballot” both to determine validity of Rejects and as possible TF work after publication

Additional Discussion:

- Several committee members expressed concern with regard to the effort on clarifying voting interest. Based on the information provided thus far, the proposed change suggests that SEMI would be “selling the right to vote.” Members questioned the ramifications of companies having several SEMI memberships. Others did not see that using SEMI membership would address the voting interest issue. A request was also made for SEMI to consider the case of separately incorporated enterprises. As there were still several items to be addressed on the committee meeting agenda, Sean Larsen offered to schedule a separate meeting to discuss further the proposed Regulations change on voting interests as well as other changes. The committee agreed to schedule a teleconference on July 21, 2:00 PM (US Pacific Time). Paul Trio will send out the meeting invitation.

Motion: NA EHS Committee would like to communicate its concerns to the ISC Regulations Subcommittee regarding clarifications being made to voting interests in the Regulations.

By / 2nd: Lauren Crane (KLA-Tencor) / Cliff Greenberg (Nikon Precision)

Discussion: None

Vote: 17-0 in favor. Motion passed.

Action Item: 2014Jul #01, Paul Trio and Sean Larsen to schedule a teleconference to review upcoming Regulations changes.

Attachment: 04, Leadership Report

3.3 SEMI EHS Division/ International Compliance and Regulatory Committee (ICRC) Report

Mark Frankfurth reported that the ICRC met on July 9 with about 40 attendees. There was a presentation on OSHA lockout limitations and how members can impact that change. The committee also discussed the radio equipment directive as well as OSHA certified equipment. With regard to OSHA certified equipment, the committee considered this to be a minor risk so no immediate action was taken at this time {Editor's Note: OSHA does not certify equipment so during the meeting minutes review at the NA Standards Fall 2014 meetings (November 6), the North America EHS Committee was uncertain what was discussed at the ICRC}. The committee also reviewed the EHS Regulatory Dashboard which many found it to be overwhelming. The meeting also included ICRC WG updates on RoHS and REACH. Mark reported that, overall, the meeting was too short, but the discussions have value. Finally, Mark reported that the Sustainable Manufacturing Forum, scheduled July 7-10, provided 20 hours of content and had good representation.

Mark Frankfurth also informed the committee of the Basel Convention which regulates the shipment of waste across international boundaries. Discussion topics of interest include: how the parts taken out of equipment are addressed, replacement of broken parts, and waste reduction. {www.basel.int}

3.4 SEMI Staff Report

Paul Trio gave the SEMI Staff Report.

- 2014 Global Calendar of Events
 - SEMICON Taiwan (September 3-5, Taipei)
 - Strategic Materials Conference (September 30 – October 1, Santa Clara, California)
 - SEMICON Europa / Plastic Electronics (October 7-9, Grenoble, France)
 - SEMICON Japan (December 3-5, Tokyo)
- 2015 Global Calendar of Events
 - Industry Strategy Symposium (January 11-14, Half Moon Bay, California)
 - SEMICON Korea / LED Korea (February 4-6, Seoul)
 - SEMICON China / FPD China (March 17-19, Shanghai)
 - LED Taiwan (March 25-28, Taipei)
 - SEMICON Southeast Asia (April 22-24, Penang, Malaysia)
 - SEMICON West (July 14-16, San Francisco, California)

- SEMICON Taiwan (September 2-4, Taipei)
- SEMICON Europa (October 6-8, Dresden, Germany)
- SEMICON Japan (December 16-18, Tokyo)
- NA Standards Meetings at SEMICON West 2014 (July 6-10)
 - 3DS-IC | EHS | Facilities & Gases | HB-LED | Information & Control | Liquid Chemicals | MEMS/NEMS | Metrics | PV Materials | Physical Interfaces & Carriers | Silicon Wafer | Traceability
- Standards Workshop at SEMICON West 2014
 - Wafer Geometry Control for Advanced Semiconductor Manufacturing (Wednesday, July 9)
 - Important developments and future needs in wafer geometry for advanced semiconductor manufacturing.
 - Presenters from IBM, Intel as well as key equipment companies.
 - Proposals discussed during this workshop will be considered for standardization by the Advanced Wafer Geometry TF under the Silicon Wafer Committee.
- Standards Updates at SEMICON West 2014
 - Tuesday, July 8
 - [Semiconductor Technology Symposium (STS) Session] “Challenges, Innovations and Drivers in Metrology,” updates on Metrics activities
 - [STS Session] “Embracing What’s Next – Devices & Systems for Big Data, Cloud and IoT,” updates on 3DS-IC activities
 - Wednesday, July 9
 - [TechXPOT South] “Subcomponent Supply Chain for 10 nm and Beyond,” updates on Facilities & Gases activities
 - Thursday, July 10
 - [TechXPOT North] “Disruptive Compound Semiconductor Technologies,” updates on Compound Semiconductor Materials activities
- Standards Publications Report

Cycle	New	Revised	Reapproved	Withdrawn
April 2014	2	13	0	0
May 2014	3	4	0	0
Jun 2014	1	3	4	1

- Total in portfolio – 909 (includes 106 Inactive Standards)
- NA Standards Fall 2014 Meetings
 - November 3-6 at SEMI Headquarters (San Jose, California)
- Technical Ballot Critical Dates for NA Standards Fall 2014 Meetings
 - Cycle 5: due July 18 / Voting Period: July 25 – August 25
 - Cycle 6: due August 12 / Voting Period: August 26 – September 25
- Upcoming North America Meetings (2015)
 - NA Standards Spring 2015 Meetings (March 30 – April 2, San Jose, California)



- o NA Standards Meetings at SEMICON West 2015 (July 13-16, San Francisco, California)

Attachment: 05, SEMI Staff Report

4 Ballot Review

4.1 Document # 4316K, Line Item Revision to SEMI S2-0712b, *Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment*, and SEMI S22-0712a, *Safety Guideline for the Electrical Design of Semiconductor Manufacturing Equipment*. Delayed Revision on Multiple Topics

4.1.1 Line Item # 1 – *Improvements to the FECS criteria*

Tallies at Close of Voting

Voting Return Data		Acceptance Rate Data	
Voting Interest Returns	54	Voting Interest Accept Votes (VIAccept)	35
Total Voting Interests	85	Interest Reject Votes (IReject)	5
Voting Interest Return %	63.53%	Approval % [VIAccept / (VIAccept + IReject)]	87.50%
Other Returns (Intercommittee, etc.)		# of Interest Rejects that Need to be not found Valid for	
	32	Final Approval % >= 90%	2
Total Votes	86		
Total Votes with Comments	2		
Total Reject Votes	5		

Rejects/Negatives

Summary: 21 Total Items Submitted

Company: Submitter	ID	Negs	Disp	Company: Submitter	ID	Negs	Disp
KLA-Tencor: Lauren Crane	KT	6		Pilz, GmbH: Thomas Pilz	PILZ	1	
Lam Research: Brian Claes	LMRC	4		Safety Guru: Eric Sklar	SG	9	
Macklin & Associates: Ron Macklin	RM&A	1					

Negative from < KLA-Tencor: Lauren Crane >

W = Withdrawn, NR = Not Related, NP = Not Persuasive, RP = Related and Persuasive, NS = Not Significant, S = Significant

#	Ref.	Negative <u>including Justification</u>	TF Finding <u>and Reason</u>	Motion <u>and Reason</u> in Committee:	Final
KT-1	LI1 Part A 11.6.2 a)	<p>Negative</p> <p>Negative: Given the definition of “equipment supplier” it might not be they who put the governing program into the FECS. It might be put in, for example, by the equipment manufacturer.</p> <p>Ref 5.2.78 <i>supplier</i> — party that provides equipment to, and directly communicates with, the user. A supplier may be a manufacturer, an equipment distributor, or an equipment representative. See also the definition for <i>user</i>.</p> <p>Comment: “its” has an ambiguous antecedent. It could be the FECS or the SME.</p> <p>Comment: ensuring and “intended safety outcome” does not necessarily provide sufficient safety.</p> <p>Proposed Solution: Change to the effect of....</p> <p>“a) The program which governs the specific actions of the FECS inputs and outputs (as contrasted with the base programming provided by the FECS original manufacturer and reviewed as part of FECS certification) the equipment supplier programs onto the FECS should be reviewed, along with the way the FECS and the program added by the equipment-supplier manufacturer integrates into the overall semiconductor manufacturing equipment, to ensure the FECS its operates in a manner that sufficiently controls equipment risk (assessed per SEMI S10) in the context of the other equipment features control function has the intended safety outcome.”</p> <ul style="list-style-type: none"> • Use of SEMI S10 for risk assessment • Not stating a specific risk level • Use of S2 for acceptance criteria • How risk assessment of 13849 or 62061 play into this assessment? <p>Technical</p>	<p>X Related & persuasive</p> <p>Reason: Crane: Supplier vs Manufacturer 2nd Crockett 10-0</p>	<p>x Related & persuasive (ballot fails)</p> <p>By/2nd: Chris Evanston / Cliff Greenberg Disc: Vote: 13-0. Motion passed</p>	

Comments

Summary: 6 Total Items Submitted

Company: Submitter	ID	#	Company: Submitter	ID	#
KLA-Tencor: Lauren Crane	KT	3			
Lam Research AG: Sean Larsen	LMAG	3			



Followup Activity Authorization

Move to:

- Return ballot to the originating task force for rework
- and authorize a follow-up ballot

By/2nd: Chris Evanston / Carl Wong

Disc: None

Vote: 13-0. Motion passed

Attachment: 06, 4316K-LI1 Compiled Responses

4.1.2 Line Item # 2 – Allowing additional flexibility to the UPS disconnect criteria

Tallies at Close of Voting

Voting Return Data		Acceptance Rate Data	
Voting Interest Returns	54	Voting Interest Accept Votes (VIAccept)	37
Total Voting Interests	85	Interest Reject Votes (IReject)	2
Voting Interest Return %	63.53%	Approval % [VIAccept / (VIAccept + IReject)]	94.87%
Other Returns (Intercommittee, etc.)		# of Interest Rejects that Need to be not found Valid for	
	32	Final Approval % >= 90%	0
Total Votes	86		
Total Votes with Comments	1		
Total Reject Votes	2		

Rejects/Negatives

Summary: 4 Total Items Submitted

Company: Submitter	ID	Negs	Disp	Company: Submitter	ID	Negs	Disp
KLA-Tencor: Lauren Crane	KT	2		Safety Guru: Eric Sklar	SG	2	

Negative from < KLA-Tencor: Lauren Crane >

W = Withdrawn, NR = Not Related, NP = Not Persuasive, RP = Related and Persuasive, NS = Not Significant, S = Significant					
#	Ref.	Negative <u>including Justification</u>	TF Finding <u>and Reason</u>	Motion <u>and Reason</u> in Committee:	Final
KT-1	LI 2, Part A 13.5.3	<p>Negative</p> <p>Section 13.4.9 exception 1 allows that there could be several feed circuits (as does proposed 13.5.3 bullet 2). This makes the designation of a "main" disconnect ambiguous. One can properly assume, I think, that in this case each feed location should be treated as a main disconnect. The question then becomes: to which main disconnect must this criteria apply?</p> <p><u>Proposed Solution:</u> Change to the effect of</p> <p>"13.5.3 Power from the UPS should be interrupted when the main equipment disconnecting means <u>which supplies the UPS AC power</u> is opened."</p> <p>Technical</p>	<p><u>X</u> Related & persuasive</p> <p>Crane 2nd Cliff Ambiguity when equipment has multiple power feeds needs to be fixed 13-0</p>	<p><u>X</u> Related & persuasive (ballot fails)</p> <p>By/2nd: Chris Evanston / Carl Wong Disc: None Vote: 12-0. Motion passed</p>	

Comments

Summary: 4 Total Items Submitted

Company: Submitter	ID	#	Company: Submitter	ID	#
KLA-Tencor: Lauren Crane	KT	4			

Followup Activity Authorization

Move to:

X Return ballot to the originating task force for rework

X and authorize a follow-up ballot

By/2nd: Chris Evanston / Carl Wong

Disc: None

Vote: 13-0. Motion **passed**

Attachment: 07, 4316K-LI2 Compiled Responses



4.1.3 Line Item # 3 – *Allowing an alternate grounding methodology from IEC 60204-33 and has been found to be useful with larger equipment*

Tallies at Close of Voting

Voting Return Data		Acceptance Rate Data	
Voting Interest Returns	54	Voting Interest Accept Votes (VIAccept)	33
Total Voting Interests	85	Interest Reject Votes (IReject)	4
Voting Interest Return %	63.53%	Approval % [VIAccept / (VIAccept + IReject)]	89.19%
Other Returns (Intercommittee, etc.)		# of Interest Rejects that Need to be not found Valid for	
	32	Final Approval % >= 90%	1
Total Votes	86		
Total Votes with Comments	1		
Total Reject Votes	4		

Rejects/Negatives

Summary: 8 Total Items Submitted

Company: Submitter	ID	Negs	Disp	Company: Submitter	ID	Negs	Disp
Applied Materials: Edward Karl	AMAT	2		Lam Research: Brian Claes	LMRC	2	
KLA-Tencor: Lauren Crane	KT	2		Safety Guru: Eric Sklar	SG	2	



Negative from < Lam Research: Brian Claes >

W = Withdrawn, NR = Not Related, NP = Not Persuasive, RP = Related and Persuasive, NS = Not Significant, S = Significant

#	Ref.	Negative <u>including Justification</u>	TF Finding <u>and Reason</u>	Motion <u>and Reason</u> in Committee:	Final
LMRC-1	LI 3 Part A --- S2 13.6.2	<p>COMMENT</p> <p>The provision in Annex A of 60204-33 is specifically limited to TN-systems and we should be consistent. 60204-33 Annex B, for instance, addresses corresponding approaches for TT-systems.</p> <p>If this approach is going to be used in an assessment the report should clearly address key parameters rather making it optional.</p> <p>Suggestion / Justification Revise proposed text to read: "EXCEPTION: For T-N systems, a protective conductor impedance sufficiently low to ensure a disconnecting time to satisfy the requirements of Annex A or IEC 60204-33 is an acceptable alternative to "Earthing Continuity and Continuity of the Protective Bonding Circuit Test" in SEMI S22. It is recommended that the The assessment report should include a description of the disconnecting time method and specific criteria used.</p>	<p>X Related & persuasive</p> <p>Claes, 2nd Crane TN and TT need to be addressed differently</p> <p>12-0</p>	<p>X Related & persuasive (ballot fails)</p> <p>By/2nd: Chris Evanston / Carl Wong Disc: None Vote: 12-0. Motion passed</p>	

Comments

Summary: 2 Total Items Submitted

Company: Submitter	ID	#	Company: Submitter	ID	#
KLA-Tencor: Lauren Crane	KT	2			

Followup Activity Authorization

Move to:

- Return ballot to the originating task force for rework
- and authorize a follow-up ballot

By/2nd: Chris Evanston / Carl Wong

Disc: None

Vote: 13-0. Motion **passed**

Attachment: 08, 4316K-LI3 Compiled Responses



4.2 Document # 4683C, Line Item Revisions to SEMI S2-0712b, *Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment*. Delayed Revisions Related to Chemical Exposure

4.2.1 Line Item # 1 – *Added explanatory materials for valid air sampling and measurement methods and accredited laboratories*

Tallies at Close of Voting

Voting Return Data		Acceptance Rate Data	
Voting Interest Returns	54	Voting Interest Accept Votes (VIAccept)	29
Total Voting Interests	85	Interest Reject Votes (IReject)	4
Voting Interest Return %	63.53%	Approval % [VIAccept / (VIAccept + IReject)]	87.88%
Other Returns (Intercommittee, etc.)		# of Interest Rejects that Need to be not found Valid for	
	32	Final Approval % >= 90%	1
Total Votes	86		
Total Votes with Comments	2		
Total Reject Votes	4		

Rejects/Negatives

Summary: 17 Total Items Submitted

Company: Submitter	ID	Negs	Disp	Company: Submitter	ID	Negs	Disp
ASML: Bert Planting	ASML	4		Safety Guru: Eric Sklar	SG	10	
Lam Research: Brian Claes	LMRC	2		Lam Research AG: Sean Larsen	LMAG	1	

Negative from < Lam Research AG: Sean Larsen >

W = Withdrawn, NR = Not Related, NP = Not Persuasive, RP = Related and Persuasive, NS = Not Significant, S = Significant				
#	Ref.	Negative including Justification	Motion and Reason in Committee:	Final
LMAG-1	L1 23.5.1.3 & All of line item 1	<p>Reporting criteria and when a CSC versus a CPG finding are appropriate should be documented and agreed to for consistent application. A number of questions need to be resolved and aligned with customer acceptance (a.k.a. the fact that some large customers refuse the CPG finding).</p> <p>Suggestion / Justification Some questions to be considered:</p> <ul style="list-style-type: none"> • What are the interpretations of the third sentence of 23.5.1.3 and its use of the phrase “determine conformance to the stated criteria”. • If using the lower detection limit as the acceptable value, does this result in a CPG finding or a CSC finding? <ul style="list-style-type: none"> ○ Does it matter whether the lower detection limit is slightly over the desired target (e.g., 5% or 30% of the OEL) or even if it is above the applicable OEL? • Does the use of blank wafers versus real product wafers when material is being removed from the wafer affect the finding? • Are sections 23.5.1 and 23.5.2 reference paragraphs, or are compliance findings appropriate? 	<p>x Related & persuasive (ballot fails)</p> <p>By/2nd: John Visty / Bert Planting Disc: None Vote: 15-0. Motion passed</p>	



Comments

Summary: 2 Total Items Submitted

<i>Company: Submitter</i>	<i>ID</i>	<i>#</i>	<i>Company: Submitter</i>	<i>ID</i>	<i>#</i>
ASML: Bert Planting	ASML	1	TUV SUD: Glenn Holbrook	TUVS	1

Followup Activity Authorization

Move to:

Return ballot to the originating task force for rework

By/2nd: Eric Sklar / Lauren Crane

Disc: None

Vote: 16-0. Motion **passed**

Attachment: 09, 4683C-LI1 Compiled Responses

4.2.2 Line Item # 2 – *Added suggested clarification on reporting of sampling related to 23.5*

Tallies at Close of Voting

Voting Return Data		Acceptance Rate Data	
<i>Voting Interest Returns</i>	54	<i>Voting Interest Accept Votes (VIAccept)</i>	32
<i>Total Voting Interests</i>	85	<i>Interest Reject Votes (IReject)</i>	2
<i>Voting Interest Return %</i>	63.53%	<i>Approval % [VIAccept / (VIAccept + IReject)]</i>	94.12%
<i>Other Returns (Intercommittee, etc.)</i>	32	<i># of Interest Rejects that Need to be not found Valid for</i>	
		<i>Final Approval % >= 90%</i>	0
<i>Total Votes</i>	86		
<i>Total Votes with Comments</i>	1		
<i>Total Reject Votes</i>	2		

Rejects/Negatives

Summary: 12 Total Items Submitted

<i>Company: Submitter</i>	<i>ID</i>	<i>Negs</i>	<i>Disp</i>	<i>Company: Submitter</i>	<i>ID</i>	<i>Negs</i>	<i>Disp</i>
Lam Research: Brian Claes	LMRC	2		Safety Guru: Eric Sklar	SG	10	



Negative from < Lam Research: Brian Claes >

W = Withdrawn, NR = Not Related, NP = Not Persuasive, RP = Related and Persuasive, NS = Not Significant, S = Significant					
#	Ref.	Negative <u>including Justification</u>	TF Finding <u>and Reason</u>	Motion <u>and Reason in Committee:</u>	Final
LMRC-1	23.5.X	<p>COMMENT</p> <p>Regardless of the outcome of possible text revisions (or not) to 23.5.1.1 regarding selection guidance, the evaluator needs to address the rationale for the method selected versus the other options.</p> <p>Suggestion / Justification</p> <p>Add new bulleted text after existing first bullet (... "SOC(s) considered...):</p> <ul style="list-style-type: none"> • Rationale for the sampling method selected 	<p><u>X</u> Related & persuasive</p> <p>Claes – Holbrook</p> <p>Material is appropriate to add</p> <p>9-0</p>	<p><u>X</u> Related & persuasive (ballot fails)</p> <p>By/2nd: John Visty / Eric Sklar</p> <p>Disc: None</p> <p>Vote: 17-0. Motion passed</p>	

Comments

Summary: 1 Total Items Submitted

Company: Submitter	ID	#	Company: Submitter	ID	#
Lam Research AG: Sean Larsen	LMAG	1			

Followup Activity Authorization

Move to:

X Return ballot to the originating task force for rework

By/2nd: Eric Sklar / Lauren Crane

Disc: None

Vote: 16-0. Motion **passed**

Attachment: 10, 4683C-LI2 Compiled Responses



4.3 Document # 5591, Line Item Revisions to SEMI S2-0712b, *Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment*. Delayed revisions related to fire protection

4.3.1 Line Item # 1 – *Audibility and visibility of annunciators of fire detection systems*

Tallies at Close of Voting

Voting Return Data		Acceptance Rate Data	
Voting Interest Returns	54	Voting Interest Accept Votes (VIAccept)	36
Total Voting Interests	85	Interest Reject Votes (IReject)	2
Voting Interest Return %	63.53%	Approval % [VIAccept / (VIAccept + IReject)]	94.74%
Other Returns (Intercommittee, etc.)		# of Interest Rejects that Need to be not found Valid for	
	32	Final Approval % >= 90%	0
Total Votes	86		
Total Votes with Comments	3		
Total Reject Votes	2		

Rejects/Negatives

Summary: 4 Total Items Submitted

Company: Submitter	ID	Negs	Disp	Company: Submitter	ID	Negs	Disp
Applied Materials: Edward Karl	AMAT	3		Lam Research: Brian Claes	LMRC	1	

Negative from < Applied Materials: Edward Karl >

W = Withdrawn, NR = Not Related, NP = Not Persuasive, RP = Related and Persuasive, NS = Not Significant, S = Significant

#	Ref.	Negative <u>including Justification</u>	TF Finding <u>and Reason</u>	Motion <u>and Reason</u> in Committee:	Final
AMAT-1	LI1, 14.4.4.4.1.1	<p>Negative</p> <p>The proposal for fire detection alarm seems quite involved to demonstrate compliance and would involve sound level measurements at every operating, maintenance and service location. It does not seem reasonable to have audible alarm be capable of being heard from <u>each</u> operation or maintenance/service location, particularly in the case where maintenance location (e.g., electrical panel, peripheral units) could be several floors away from the system.</p> <p>Proposed Solution: "Compliance to §14.4.4.4.1 is considered to be satisfied when noise level measurements, taken at 1 meter from each side of the equipment where the detection device is located and at a height of 1.2 meters from the standing surface, are at least 90dB and 5dB over maximum noise level prior to the start of the alarm."</p>	<p>X Related & persuasive</p> <p>Reason: TF, 08jul: P: 8, NP: 1 For rebalot: a) exclude remote equipment locations b) keep each operation and maintenance/service location on portions of the system that include fire detectors. c) Specify representative sampling locations for level measurements: OPT1: Leave previous locations description and add explicit allowance of representative sampling: 11 OPT2: Leave previous locations description and do not add sampling: 1 OPT3: Prescribe sampling locations: 1.</p> <p>Sklar, 06jul14: The document does not capture the intent that the annunciators criteria were intended to pertain to the spaces in which there are detectors. There is no apparent way to fix this by an Editorial Change. The voter did not assert that it would be technologically infeasible, or even difficult, to perform the envisioned measurements. He asserted that it would be burdensome. He appears not to have considered that a person assessing conformance to this criterion has the option to select appropriate sample locations for performing the tests. Furthermore, there are anecdotal reports of personnel who were performing equipment maintenance not hearing even building fire annunciators and being found, therefore, by emergency personnel performing a building sweep.</p>	<p>X Related & persuasive (ballot fails)</p> <p>By/2nd: Eric Sklar / John Visty Disc: None Vote: 16-0. Motion passed</p>	

Comments

Summary: 4 Total Items Submitted

Company: Submitter	ID	#	Company: Submitter	ID	#
Safety Guru: Eric Sklar	SG	1	Lam Research AG: Sean Larsen	LMAG	2
BICSI: Jeff Silveira	BCSI	1			



Followup Activity Authorization

Move to:

- Return ballot to the originating task force for rework
- and authorize a follow-up ballot

By/2nd: Eric Sklar / Lauren Crane

Disc: None

Vote: 16-0. Motion passed

Attachment: 11, 5591-LI1 Compiled Responses

4.3.2 Line Item # 2 – Location of manual activation devices of fire detection systems

Tallies at Close of Voting

Voting Return Data		Acceptance Rate Data	
Voting Interest Returns	54	Voting Interest Accept Votes (VIAccept)	36
Total Voting Interests	85	Interest Reject Votes (IReject)	0
Voting Interest Return %	63.53%	Approval % [VIAccept / (VIAccept + IReject)]	100.00%
Other Returns (Intercommittee, etc.)	32	# of Interest Rejects that Need to be not found Valid for	
Total Votes	86	Final Approval % >= 90%	0
Total Votes with Comments	0		
Total Reject Votes	0		

Rejects/Negatives

Summary: 0 Total Items Submitted

Comments

Summary: 0 Total Items Submitted

Forwarding Motions

Safety Check

Move to find that this document:

- IS a safety document: when all safety-related information is removed, the document is not technically sound and complete.
- The Safety Checklist (Regulations 13.3) for this document is complete and has accompanied the document through the balloting process.

By/2nd: Eric Sklar / Lauren Crane

Disc: None

Vote: 15-0. Motion passed



Intellectual Property Check

The meeting chair asked those present in person or by electronic link, if they were aware of any patented or copyrighted material in the Standard or Guideline.
 (Note: Such material might have become known since the Standard or Safety Guideline was last reviewed, or might become relevant due to this ballot.)

No patented or copyrighted material is known to exist in the Standard or Guideline. (no motion needed)

Final Action

Move to:

Pass this document as balloted and forward to the A&R for procedural review.

By/2nd: Eric Sklar / Lauren Crane

Disc: None

Vote: 14-0. **Motion passed**

Attachment: 12, 5591-LI2 Compiled Responses

4.3.3 Line Item # 3 – *Audibility and visibility of annunciators of fire suppression systems*

Tallies at Close of Voting

Voting Return Data		Acceptance Rate Data	
Voting Interest Returns	54	Voting Interest Accept Votes (VIAccept)	36
Total Voting Interests	85	Interest Reject Votes (IReject)	2
Voting Interest Return %	63.53%	Approval % [VIAccept / (VIAccept + IReject)]	94.74%
Other Returns (Intercommittee, etc.)	32	# of Interest Rejects that Need to be not found Valid for	
Total Votes	86	Final Approval % >= 90%	0
Total Votes with Comments	2		
Total Reject Votes	2		

Rejects/Negatives

Summary: 3 Total Items Submitted

Company: Submitter	ID	Negs	Disp	Company: Submitter	ID	Negs	Disp
Applied Materials: Edward Karl	AMAT	2		Lam Research: Brian Claes	LMRC	1	

Negative from < Lam Research: Brian Claes >

W = Withdrawn, NR = Not Related, NP = Not Persuasive, RP = Related and Persuasive, NS = Not Significant, S = Significant

#	Ref.	Negative <u>including Justification</u>	TF Finding <u>and Reason</u>	Motion <u>and Reason</u> in Committee:	Final
LMRC-1	SEMI S2 14.5.5.1	Per 14.4.4.1.1, the equipment supplier is obligated to assure audible alarm level is loud enough relative to the equipment noise (+ 5 dB) as measured in the equipment supplier's test environment. Fair enough. However, in the end-user's environment, it's not clear really what the pass/fail margins are or what the responsibilities are for the equipment supplier or end-user to address deficiencies in audible alarm levels discovered by following the documentation provided to the end-user. Consequently, it's not clear what our intent is for the equipment supplier's documented communication to the end-user. If the experts believe that the minimum should be 90 dB or +5 dB over ambient noise then I suppose that the end-user should also be instructed to make changes to accomplish the same margins. Are we willing to use S2 to impose this on each end-user? Suggestion / Justification I'm not sure what to propose as revisions.	X Related & persuasive Reason: TF, 08jul: P: 7, NP: 0. TF, 08jul: OPT1: change from instructions to test to instructions <i>how</i> to test: 0 OPT2: remove 14.4.4.1.2: 3 OPT3: Change to a recommendation, in a NOTE, that end user do this testing <i>in situ</i> : 12 Do we want to address who is responsible for fixing if <i>in situ</i> testing finds alarm level is not high enough? Yes: 0 No: 6. Sklar, 07jul: Ballot does not specify who is obligated to do what if the levels are not met when the equipment is installed in the fab.	x Related & persuasive (ballot fails) By/2nd: Eric Sklar / Ed Karl Disc: None Vote: 16-0. Motion passed	

Comments

Summary: 3 Total Items Submitted

Company: Submitter	ID	#	Company: Submitter	ID	#
Safety Guru: Eric Sklar	SG	1	Lam Research AG: Sean Larsen	LMAG	2

Followup Activity Authorization

Move to:

- Return ballot to the originating task force for rework
- and authorize a follow-up ballot

By/2nd: Eric Sklar / Lauren Crane

Disc: None

Vote: 16-0. Motion **passed**

Attachment: 13, 5591-LI3 Compiled Responses



4.3.4 Line Item # 4 – Location of manual activation devices of fire suppression systems

Tallies at Close of Voting

Voting Return Data		Acceptance Rate Data	
Voting Interest Returns	54	Voting Interest Accept Votes (VIAccept)	37
Total Voting Interests	85	Interest Reject Votes (IReject)	0
Voting Interest Return %	63.53%	Approval % [VIAccept / (VIAccept + IReject)]	100.00%
Other Returns (Intercommittee, etc.)		# of Interest Rejects that Need to be not found Valid for	
	32	Final Approval % >= 90%	0
Total Votes	86		
Total Votes with Comments	0		
Total Reject Votes	0		

Rejects/Negatives

Summary: 0 Total Items Submitted

Comments

Summary: 0 Total Items Submitted

Forwarding Motions

Safety Check

Move to find that this document:

IS a safety document: when all safety-related information is removed, the document is not technically sound and complete.

The Safety Checklist (Regulations 13.3) for this document is complete and has accompanied the document through the balloting process.

By/2nd: Eric Sklar / Lauren Crane

Disc: None

Vote: 16-0. **Motion passed**

Intellectual Property Check

The meeting chair asked those present in person or by electronic link, if they were aware of any patented or copyrighted material in the Standard or Guideline.

(Note: Such material might have become known since the Standard or Safety Guideline was last reviewed, or might become relevant due to this ballot.)

No patented or copyrighted material is known to exist in the Standard or Guideline. (no motion needed)

Final Action

Move to:

Pass this document as balloted and forward to the A&R for procedural review.

By/2nd: Eric Sklar / Ron Macklin

Disc: None

Vote: 15-0. **Motion passed**



Attachment: 14, 5591-LI4 Compiled Responses

4.4 Document # 5009C, Line Item Revisions to SEMI S8-0712a, *Safety Guidelines for Ergonomics Engineering of Semiconductor Manufacturing Equipment*. Delayed Revisions on Multiple Topics

4.4.1 Line Item # 1 – *Ergonomic clearances clarification. These changes are intended to better define ergonomics-related clearances for equipment design and installation*

Tallies at Close of Voting

Voting Return Data		Acceptance Rate Data	
Voting Interest Returns	51	Voting Interest Accept Votes (VIAccept)	28
Total Voting Interests	83	Interest Reject Votes (IReject)	4
Voting Interest Return %	61.45%	Approval % [VIAccept / (VIAccept + IReject)]	87.50%
Other Returns (Intercommittee, etc.)	24	# of Interest Rejects that Need to be not found Valid for	
		Final Approval % >= 90%	1
Total Votes	75		
Total Votes with Comments	2		
Total Reject Votes	5		

Rejects/Negatives

Summary: 11 Total Items Submitted

Company: Submitter	ID	Negs	Disp	Company: Submitter	ID	Negs	Disp
KLA-Tencor: Lauren Crane	KT	1		Lam Research:			
Dainippon Screen: Ryosuke Imamiya	DNSA	1		Brian Claes	LRA	2	
Lam Research AG: Sean Larsen	LMAG	5		Stanley Hughes	LRB	2	

Negative from < Lam Research: Stanley Hughes (LRB) >

W = Withdrawn, NR = Not Related, NP = Not Persuasive, RP = Related and Persuasive, NS = Not Significant, S = Significant					
#	Ref.	Negative including Justification	TF Finding and Reason	Motion and Reason in Committee:	Final
LRB-1	LI 1 3.5 calling out 7.1	Need to provide risk assessment guidance Suggestion / Justification Remove reference to section 7.1 or provide risk assessment guidance	X Related & persuasive Reason: SEMI-S8 Task Force: Motion to find this related and persuasive. Motion – Lauren Crane Second – Sean Larsen 9 in favor, 2 opposed. Motion passes.	X Related & persuasive (ballot fails) Reason: ¶3.5, as stated denotes conformance to the criteria in Appendix 1 constitutes conformance to S8, but in fact there are other sections within the body of S8 that needs to be considered (e.g., §6, §7, and Appendix 2) as conformance to S8. It is unclear what the TF intends to mean by “conformance”, a completed Appendix 1 (SESC) or an SESC that fully complies with the criteria within. By/2nd: Ron Macklin / Lauren Crane Disc: None Vote: 16-0. Motion passed	



Comments

Summary: 2 Total Items Submitted

<i>Company: Submitter</i>	<i>ID</i>	<i>#</i>	<i>Company: Submitter</i>	<i>ID</i>	<i>#</i>
KLA-Tencor: Lauren Crane	KT	1	Dainippon Screen: Naokatsu Nishiguchi	DNSB	1

Followup Activity Authorization

Move to:

Return ballot to the originating task force for rework

and authorize a follow-up ballot

By/2nd: Eric Sklar / Lauren Crane

Disc: None

Vote: 14-0. Motion passed

Attachment: 15, 5009C-LI1 Compiled Responses

4.4.2 Line Item # 2 – Modifications to Appendix 1, SESC checklist, Section 6 enclosed handle design guidelines to allow for a wider range of acceptable handle shapes and sizes

Tallies at Close of Voting

Voting Return Data		Acceptance Rate Data	
Voting Interest Returns	51	Voting Interest Accept Votes (VIAccept)	27
Total Voting Interests	83	Interest Reject Votes (IReject)	2
Voting Interest Return %	61.45%	Approval % [VIAccept / (VIAccept + IReject)]	93.10%
Other Returns (Intercommittee, etc.)	24	# of Interest Rejects that Need to be not found Valid for	
Total Votes	75	Final Approval % >= 90%	0
Total Votes with Comments	1		
Total Reject Votes	2		

Rejects/Negatives

Summary: 3 Total Items Submitted

<i>Company: Submitter</i>	<i>ID</i>	<i>Negs</i>	<i>Disp</i>	<i>Company: Submitter</i>	<i>ID</i>	<i>Negs</i>	<i>Disp</i>
KLA-Tencor: Lauren Crane	KT	1		Lam Research AG: Sean Larsen	LMAG	2	



Negative from < Lam Research AG: Sean Larsen >

W = Withdrawn, NR = Not Related, NP = Not Persuasive, RP = Related and Persuasive, NS = Not Significant, S = Significant

#	Ref.	Negative <u>including Justification</u>	TF Finding <u>and Reason</u>	Motion <u>and Reason</u> in Committee:	Final
LMAG-2	LI2 6.7	Both clarity of criteria and reporting guidance needs some improvement. The last two sentences in 6 will be forgotten/ignored when evaluating to 6.7 so that reports will be inconsistent and some will indicate compliance when there are unsafe ergonomics issues. Suggestion / Justification 1) Move the last two sentences from 6 to the material of 6.7. 2) Modify the reporting guidance to explicitly include “maximum allowable forces” from the “appropriate analysis tool”.	SEMI-S8 Task Force: A straw poll was taken to determine whether the word “lesser” in Section 6, line 9 is sufficiently problematic to fail the line item. 7 in favor, 0 opposed. Task Force recommends to the EH&S committee fail this line item. P. Schwab Comment: The last 2 sentences in ¶6 apply to all handles, not just enclosed handles so these criteria should remain in ¶6. Duplicating the criteria may create problems for future revisions.	<u>X</u> Related & persuasive (ballot fails) Reason: In review of the suggestion to move several sentences from guidance in §6 to §6.7, it was determined that one of the sentences “The lesser of these values should be used when assessing, designing or specifying handles...” is problematic and technically should be “more conservative” of these values... <i>By/2nd:</i> Ron Macklin / Lauren Crane <i>Disc:</i> None <i>Vote:</i> 13-0. Motion passed	

Comments

Summary: 8 Total Items Submitted

<i>Company: Submitter</i>	<i>ID</i>	<i>#</i>	<i>Company: Submitter</i>	<i>ID</i>	<i>#</i>
KLA-Tencor: Lauren Crane	KT	6	Lam Research AG: Sean Larsen	LMAG	1
Dainippon Screen: Naokatsu Nishiguchi	DNSB	1			

Followup Activity Authorization

Move to:

X Return ballot to the originating task force for rework

X and authorize a follow-up ballot

By/2nd: Eric Sklar / Lauren Crane

Disc: None

Vote: 14-0. Motion **passed**

Attachment: 16, 5009C-LI2 Compiled Responses



4.4.3 Line Item # 3 – *Modifications to Appendix 1, SESC checklist, Section 7 to expand whole body clearance criteria to include equipment operation tasks and provide design criteria for a seated posture. Whole body clearance recommendations are separated into two categories: walking/crawling and working postures. Existing recommendations specific to maintenance and service tasks are moved to a new Section 11*

Tallies at Close of Voting

Voting Return Data		Acceptance Rate Data	
Voting Interest Returns	51	Voting Interest Accept Votes (VIAccept)	28
Total Voting Interests	83	Interest Reject Votes (IReject)	4
Voting Interest Return %	61.45%	Approval % [VIAccept / (VIAccept + IReject)]	87.50%
Other Returns (Intercommittee, etc.)		# of Interest Rejects that Need to be not found Valid for	
	24	Final Approval % >= 90%	1
Total Votes	75		
Total Votes with Comments	3		
Total Reject Votes	4		

Rejects/Negatives

Summary: 20 Total Items Submitted

Company: Submitter	ID	Negs	Disp	Company: Submitter	ID	Negs	Disp
Applied Materials: Edward Karl	AMAT	3		Lam Research: Stanley Hughes	LMRC	2	
KLA-Tencor: Lauren Crane	KT	11		Lam Research AG: Sean Larsen	LMAG	4	

Negative from < KLA-Tencor: Lauren Crane >

W = Withdrawn, NR = Not Related, NP = Not Persuasive, RP = Related and Persuasive, NS = Not Significant, S = Significant					
#	Ref.	Negative <u>including</u> Justification	TF Finding <u>and</u> Reason	Motion <u>and</u> Reason in Committee:	Final
KT-1	LI3 – 7.1.2	The metric value and English value are too different – 487mm is actually 19.2 inches. Proposed Solution: Correct one value or the other as appropriate. Technical	X Related & persuasive Reason: SEMI-S8 Task Force: Motion to find this related and persuasive. Motion -- Lauren Crane Seconded -- Ed Karl 10 in favor, 0 opposed. P. Schwab Comment: The metric dimension is a mistake. The correct dimension of 457 mm is shown in the background statement for the Cycle 4 ballot.	X Related & persuasive (ballot fails) Reason: As balloted the SI unit of 487mm is incorrect. It should be 457mm. By/2nd: Ron Macklin / Lauren Crane Disc: None Vote: 14-0. Motion passed	

Comments

Summary: 4 Total Items Submitted

Company: Submitter	ID	#	Company: Submitter	ID	#
KLA-Tencor: Lauren Crane	KT	1	Dainippon Screen: Naokatsu Nishiguchi	DNSB	1
Lam Research AG: Sean Larsen	LMAG	2			



Followup Activity Authorization

Move to:

- Return ballot to the originating task force for rework
- and authorize a follow-up ballot

By/2nd: Eric Sklar / Lauren Crane

Disc: None

Vote: 14-0. Motion passed

Attachment: 17, 5009C-LI3 Compiled Responses

4.5 Document # 5718, Line Item Revisions to SEMI S10-0307E, *Safety Guideline for Risk Assessment and Risk Evaluation Process*

4.5.1 Line Item # 1 – *Addition of NOTE on product and equipment under consideration*

Tallies at Close of Voting

Voting Return Data		Acceptance Rate Data	
Voting Interest Returns	51	Voting Interest Accept Votes (VIAccept)	30
Total Voting Interests	83	Interest Reject Votes (IReject)	4
Voting Interest Return %	61.45%	Approval % [VIAccept / (VIAccept + IReject)]	88.24%
Other Returns (Intercommittee, etc.)	24	# of Interest Rejects that Need to be not found Valid for	
		Final Approval % >= 90%	1
Total Votes	75		
Total Votes with Comments	0		
Total Reject Votes	4		

Rejects/Negatives

Summary: 4 Total Items Submitted

Company: Submitter	ID	Negs	Disp	Company: Submitter	ID	Negs	Disp
KLA-Tencor: Lauren Crane	KT	1		Lam Research: Brian Claes	LMRC	1	
Dainippon Screen: Ryosuke Imamiya	DNS	1		Lam Research AG: Sean Larsen	LMAG	1	

Negative from < KLA-Tencor: Lauren Crane >

W = Withdrawn, NR = Not Related, NP = Not Persuasive, RP = Related and Persuasive, NS = Not Significant, S = Significant

#	Ref.	Negative <u>including Justification</u>	TF Finding <u>and Reason</u>	Motion <u>and Reason in Committee:</u>	Final
KT-1	LI-1 Note XX	<p>Negative</p> <p>Risk assessment is often used in the industry to decide the risk presented by incidents in the field. Testing is not always used or possible in these cases. I believe testing is a rare basis for risk assessments.</p> <p>Furthermore, inspections or testing might be related to parts similar to those that comprise a single piece of equipment, but not to the single piece of equipment itself, per se.</p> <p><u>Proposed Solution:</u> Change to the effect of</p> <p>“NOTE xx: Risk assessments are usually performed based on documentation and on inspection or and testing <u>related to</u> of a single piece of equipment, but the result is usually considered to apply to the entire population of such equipment. phrase “with similar configurations, hazards and hazard control measures” or similar material to the end of the sentence.”</p> <p>Technical</p>	<p>Lauren, proposal to change</p> <p>And/or is clear</p> <p>Eric- leave “related to” out ,</p> <p>Change to Inspection or testing of representative equipment</p> <p>11.- 0</p>	<p><u>x</u> Withdrawn by Subm. (Date: <u>July 10, 2014</u>)</p>	
<p>Final disposition of this reject: <u>x</u> Not Valid (all negatives withdrawn, found not related, or found not significant)</p>					

Negative from < Dainippon Screen: Ryosuke Imamiya >

W = Withdrawn, NR = Not Related, NP = Not Persuasive, RP = Related and Persuasive, NS = Not Significant, S = Significant					
#	Ref.	Negative <u>including Justification</u>	TF Finding <u>and Reason</u>	Motion <u>and Reason</u> in Committee:	Final
DNS-1		I do not understand the necessity of the NOTE. Do not add the NOTE.	X Not persuasive (assumes related) Reason: Taskforce finds it value added to add this clarification for reader	x Not persuasive (requires reason) Reason: Taskforce finds it value added to add this clarification for reader. By/2nd: Lauren Crane / Ron Macklin Disc: None Vote: 10-0. Motion passed	
Final disposition of this reject: x Valid (includes at least one significant negative)					

Negatives from < Lam Research: Brian Claes >

W = Withdrawn, NR = Not Related, NP = Not Persuasive, RP = Related and Persuasive, NS = Not Significant, S = Significant					
#	Ref.	Negative <u>including Justification</u>	TF Finding <u>and Reason</u>	Motion <u>and Reason</u> in Committee:	Final
LMRC-1	SEMI S10 NOTE xx to Cl. 1.1	COMMENT This "tactical" information being addressed by the NOTE does not belong in a Purpose statement or section (Clause 1). The section in S10 addressing this is 6.5.1 where risk estimation is covered. Suggestion / Justification Delete the NOTE	Brian suggest this does not belong to this section, 3 options - Leave 5 - Move to scope 8 - Move to section 6.5 (1) - Move after 2.1 (note 2)	x Not persuasive (requires reason) Reason: The committee preferred to place the note in a different location. By/2nd: Lauren Crane / Bert Planting Disc: None Vote: 8-0. Motion passed	
Final disposition of this reject: x Valid (includes at least one significant negative)					



Negative from < Lam Research AG: Sean Larsen >

W = <i>Withdrawn</i> , NR = <i>Not Related</i> , NP = <i>Not Persuasive</i> , RP = <i>Related and Persuasive</i> , NS = <i>Not Significant</i> , S = <i>Significant</i>					
#	Ref.	Negative <u>including Justification</u>	TF Finding <u>and Reason</u>	Motion <u>and Reason in Committee:</u>	Final
LMAG-1	LI1 – Note for 1.1	While the note may be stating a common practice, it should be encouraging good practices in risk assessment rather than the over application of risk assessments to conditions that were never considered. Suggestion / Justification Add the phrase “with similar configurations, hazards and hazard control measures” or similar material to the end of the sentence.	Discussion: Taskforce already prose a change KT1. This change is not needed 10 -0	<u>x</u> Withdrawn by Subm. (Date: July 10, 2014)	
Final disposition of this reject: <u>x</u> Not Valid (all negatives withdrawn, found not related, or found not significant)					

Comments

Summary: 0 Total Items Submitted

Summary of Editorial Changes

NOTICE: TF leaders have the option of addressing editorial changes prior to addressing negatives, if they believe that their editorial changes will render some or all of the submitted negatives non-persuasive.

NOTICE: It is only necessary to approve each editorial change separately if someone objects to one or more of the suggested changes.

#	<i>Before</i>	<i>After</i>	<i>Motion to Approve: (if necessary)</i>
1	<u>NOTE xx: Risk assessments are usually performed based on documentation and on inspection and testing of a single piece of equipment, but the result is usually considered to apply to the entire population of such equipment.</u>	<u>NOTE xx: Risk assessments are usually performed based on documentation and on inspection and testing of representative (e.g., with similar hazards and hazard control measures) equipment of a single piece of equipment, but the result is usually considered to apply to the entire population of such equipment.</u>	<i>By/2nd:</i> Lauren Crane / Ron Macklin <i>Disc:</i> Sean Larsen commented that he was not comfortable about changing to “representative” Additional changes made to proposed changes. <i>Vote:</i> 14-0. Motion passed

2	Move NOTE xx (in EC #1), previously in Purpose section below section 1.1, to the Scope section, below Note 1 (as new Note 2)	<p>2 Scope</p> <p>2.1 This guideline is intended to apply to the assessment of risks considering the lifecycle of the equipment.</p> <p>NOTE 1: It can also be applied to processes or facilities.</p> <p>NOTE 2: <u>Risk assessments are usually performed based on documentation and on inspection or testing of representative (e.g., with similar hazards and hazard control measures) equipment, but the result is usually considered to apply to the entire population of such equipment.</u></p> <p>2.2 This guideline outlines a hazard identification, risk estimation, and risk evaluation process.</p>	<p><i>By/2nd:</i> Bert Planting / Laure Crane</p> <p><i>Disc:</i> None</p> <p><i>Vote:</i> 10-0. Motion passed</p>
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Forwarding Motions

Safety Check

Move to find that this document:

IS a safety document: when all safety-related information is removed, the document is not technically sound and complete.

The Safety Checklist (Regulations 13.3) for this document is complete and has accompanied the document through the balloting process.

By/2nd: Lauren Crane / Bert Planting

Disc: None

Vote: 9-0. **Motion passed**

Intellectual Property Check

The meeting chair asked those present in person or by electronic link, if they were aware of any patented or copyrighted material in the Standard or Guideline.

(Note: Such material might have become known since the Standard or Safety Guideline was last reviewed, or might become relevant due to this ballot.)

No patented or copyrighted material is known to exist in the Standard or Guideline. (no motion needed)

Final Action

Move to:

Pass this document with editorial changes and forward to the A&R for procedural review.

By/2nd: Lauren Crane / Cliff Greenberg

Disc: None

Vote: 8-0. **Motion passed**

Attachment: 18, 5718-LI1 Compiled Responses



2.2.1 Line Item # 2 – Change “loss” to “harm” (section 5.1.1)

Tallies at Close of Voting

Voting Return Data		Acceptance Rate Data	
Voting Interest Returns	51	Voting Interest Accept Votes (VIAccept)	31
Total Voting Interests	83	Interest Reject Votes (IReject)	1
Voting Interest Return %	61.45%	Approval % [VIAccept / (VIAccept + IReject)]	96.88%
Other Returns (Intercommittee, etc.)		# of Interest Rejects that Need to be not found Valid for	
	24	Final Approval % >= 90%	0
Total Votes	75		
Total Votes with Comments	1		
Total Reject Votes	1		

Rejects/Negatives

Summary: 1 Total Items Submitted

Company: Submitter	ID	Negs	Disp	Company: Submitter	ID	Negs	Disp
Tokyo Electron: Mitsuju Nambu	TEL	1					

Negative from < Tokyo Electron: Mitsuju Nambu >

W = Withdrawn, NR = Not Related, NP = Not Persuasive, RP = Related and Persuasive, NS = Not Significant, S = Significant

#	Ref.	Negative including Justification	TF Finding and Reason	Motion and Reason in Committee:	Final
TEL-1	LI-2, LI-6	<p>Negative/ These two line Items should be one Line Item rather than two separate ones, as both of them deal with usage of the same undefined term by replacing the term a defined term.</p> <p>Reason/Justification: Both the Line Items are in line with unifying the term that express physical injury or damage to people, or damage to equipment, buildings or environment to “harm”. If the change proposed in Line Item 6 is to be failed, it doesn’t make sense to implement the change proposed in Line Item 2, or even make the Table A1-1 difficult to be understood.</p> <p>Technical</p>	<p>X Not persuasive (assumes related)</p> <p>Reason: The use of “loss” in the 2 sections of the document is different. Loss is in LI-6 more appropriate (see voting on LI-6) 9-0</p>	<p>x Not persuasive (requires reason)</p> <p>Reason: The use of “loss” in the 2 sections of the document is different. Loss is in LI-6 more appropriate (see voting on LI-6)</p> <p>By/2nd: Lauren Crane / Eric Sklar Disc: None Vote: 9-0. Motion passed</p>	
<p>Final disposition of this reject: x Valid (includes at least one significant negative)</p>					



Comments

Summary: 1 Total Items Submitted

<i>Company: Submitter</i>	<i>ID</i>	<i>#</i>	<i>Company: Submitter</i>	<i>ID</i>	<i>#</i>
Lam Research AG: Sean Larsen	LMAG	1			

<i>#</i>	<i>Ref.</i>	<i>Comment</i>	<i>TF Response</i>	<i>Committee Action:</i>
LMAG-1	LI2	COMMENT While I can come up with no rhyme or reason for separating line item 2 and 6, if the change is only half implemented it is no worse than the current situation.	No action required	<input checked="" type="checkbox"/> No further action By/2nd: Eric Sklar / Lauren Crane Disc: None Vote: 10-0. Motion passed

Summary of Editorial Changes

There were no editorial changes for ballot 5718, line item 2.

Forwarding Motions

Safety Check

Move to find that this document:

IS a safety document: when all safety-related information is removed, the document is not technically sound and complete.

The Safety Checklist (Regulations 13.3) for this document is complete and has accompanied the document through the balloting process.

By/2nd: Lauren Crane / Bert Planting

Disc: None

Vote: 9-0. **Motion passed**

Intellectual Property Check

The meeting chair asked those present in person or by electronic link, if they were aware of any patented or copyrighted material in the Standard or Guideline.

(Note: Such material might have become known since the Standard or Safety Guideline was last reviewed, or might become relevant due to this ballot.)

No patented or copyrighted material is known to exist in the Standard or Guideline. (no motion needed)

Final Action

Move to:

Pass this document as balloted and forward to the A&R for procedural review.

By/2nd: Lauren Crane / Cliff Greenberg

Disc: None

Vote: 8-0. **Motion passed**

Attachment: 19, 5718-LI2 Compiled Responses



2.2.2 Line Item # 3 – Remove Note 4

Tallies at Close of Voting

Voting Return Data		Acceptance Rate Data	
Voting Interest Returns	51	Voting Interest Accept Votes (VIAccept)	28
Total Voting Interests	83	Interest Reject Votes (IReject)	2
Voting Interest Return %	61.45%	Approval % [VIAccept / (VIAccept + IReject)]	93.33%
Other Returns (Intercommittee, etc.)		# of Interest Rejects that Need to be not found Valid for	
	24	Final Approval % >= 90%	0
Total Votes	75		
Total Votes with Comments	0		
Total Reject Votes	2		

Rejects/Negatives

Summary: 2 Total Items Submitted

Company: Submitter	ID	Negs	Disp	Company: Submitter	ID	Negs	Disp
Dainippon Screen: Ryosuke Imamiya	DNS	1		Safety Guru, LLC: Eric Sklar	SG	1	

Negative from < Safety Guru: Eric Sklar >

W = Withdrawn, NR = Not Related, NP = Not Persuasive, RP = Related and Persuasive, NS = Not Significant, S = Significant					
#	Ref.	Negative including Justification	TF Finding and Reason	Motion and Reason in Committee:	Final
SG-1	Note 4	Negative: Do not delete Note 4. Reason/Justification: It is useful to have a pointer to the portion of the document where the Severity levels are defined..	X Related & persuasive Reason: Discussion. Note 3 has similar meaning. Removing note 4 should go together with note 3. Original negative was about the use of word define, while in the body it was meant recommended. Vote was based on the relation and general feeling of consistency 6-1 to keep the note Reconsider this note. Based on the wording in the 6.5.2.2 and 3.	x Related & persuasive (ballot fails) By/2nd: Bert Planting / John Visty Disc: None Vote: 6-0. Motion passed	

Comments

Summary: 0 Total Items Submitted



Followup Activity Authorization

Move to:

- Return ballot to the originating task force for rework
- and authorize a follow-up ballot

By/2nd: Eric Sklar / Lauren Crane

Disc: None

Vote: 6-0. Motion **passed**

Attachment: 20, 5718-LI3 Compiled Responses

2.2.3 Line Item # 4 – Clarification of the life cycle stages to be considered

Tallies at Close of Voting

Voting Return Data		Acceptance Rate Data	
Voting Interest Returns	51	Voting Interest Accept Votes (VIAccept)	31
Total Voting Interests	83	Interest Reject Votes (IReject)	1
Voting Interest Return %	61.45%	Approval % [VIAccept / (VIAccept + IReject)]	96.88%
Other Returns (Intercommittee, etc.)	24	# of Interest Rejects that Need to be not found Valid for	
		Final Approval % >= 90%	0
Total Votes	75		
Total Votes with Comments	0		
Total Reject Votes	1		

Rejects/Negatives

Summary: 2 Total Items Submitted

Company: Submitter	ID	Negs	Disp	Company: Submitter	ID	Negs	Disp
Dainippon Screen:							
Naokatsu Nishiguchi	DNSA	1					
Ryosuke Imamiya	DNSB	1					

Negatives from < Dainippon Screen: Naokatsu Nishiguchi (DNSA-), Ryosuke Imamiya (DNSB-) >

W = Withdrawn, NR = Not Related, NP = Not Persuasive, RP = Related and Persuasive, NS = Not Significant, S = Significant					
#	Ref.	Negative <u>including Justification</u>	TF Finding <u>and Reason</u>	Motion <u>and Reason</u> in Committee:	Final
DNSA-1	6.3.1	<p>6.3.1 All lifecycle stages should be considered during the hazard identification, for example. The lifecycle stages that are to be considered in the risk assessment should be decided, and may differ depending on the standard requiring the use of SEMI S10. They can include the following.</p> <p>Reject</p> <p>Please rewrite this criterion.</p> <p>Reason/justification The above sentence is unsuitable as a criterion of SEMI S10. The lifecycle stages that are to be considered in the risk assessment should be decided by SEMI S10 or other risk assessment standards. .</p>	<p>X Not persuasive (assumes related)</p> <p>Reason: Different standards are requiring different life cycles stages. 5-0</p>	<p>x Not persuasive (requires reason)</p> <p>Reason: Different standards are requiring different life cycles stages sometimes fewer in the document invoking S10.</p> <p>By/2nd: Lauren Crane / Alan Crockett Disc: None Vote: 9-0. Motion passed</p>	
DNSB-1		<p>Current sentence is better.</p> <p>Do not change.</p>	<p>X Not persuasive (assumes related)</p> <p>Reason: See above</p>	<p>x Not persuasive (requires reason)</p> <p>Reason: It is unclear what the concern is.</p> <p>By/2nd: Lauren Crane / Alan Crockett Disc: None Vote: 11-0. Motion passed</p>	
<p>Final disposition of this reject: x Valid (includes at least one significant negative)</p>					

Comments

Summary: 0 Total Items Submitted

Forwarding Motions

Safety Check

Move to find that this document:

X IS a safety document: when all safety-related information is removed, the document is not technically sound and complete.



X The Safety Checklist (Regulations 13.3) for this document is complete and has accompanied the document through the balloting process.

By/2nd: Lauren Crane / Bert Planting

Disc: None

Vote: 9-0. **Motion passed**

Intellectual Property Check

The meeting chair asked those present in person or by electronic link, if they were aware of any patented or copyrighted material in the Standard or Guideline.

(Note: Such material might have become known since the Standard or Safety Guideline was last reviewed, or might become relevant due to this ballot.)

x No patented or copyrighted material is known to exist in the Standard or Guideline. (no motion needed)

Final Action

Move to:

X Pass this document as balloted and forward to the A&R for procedural review.

By/2nd: Lauren Crane / Cliff Greenberg

Disc: None

Vote: 8-0. **Motion passed**

Attachment: 21, 5718-LI4 Compiled Responses

2.2.4 Line Item # 5 – Clarification section 6.5 on risk estimation, remove the term benchmarking. Multiple changes in the section

Tallies at Close of Voting

Voting Return Data		Acceptance Rate Data	
Voting Interest Returns	51	Voting Interest Accept Votes (VIAccept)	27
Total Voting Interests	83	Interest Reject Votes (IReject)	3
Voting Interest Return %	61.45%	Approval % [VIAccept / (VIAccept + IReject)]	90.00%
Other Returns (Intercommittee, etc.)		# of Interest Rejects that Need to be not found Valid for	
	24	Final Approval % >= 90%	0
Total Votes	75		
Total Votes with Comments	0		
Total Reject Votes	4		

Rejects/Negatives

Summary: 8 Total Items Submitted

Company: Submitter	ID	Negs	Disp	Company: Submitter	ID	Negs	Disp
Dainippon Screen:				KLA-Tencor: Lauren Crane	KT	1	
Naokatsu Nishiguchi	DNSA	1		Safety Guru, LLC: Eric Sklar	SG	5	
Ryosuke Imamiya	DNSB	1					



Negative from < KLA-Tencor: Lauren Crane >

W = Withdrawn, NR = Not Related, NP = Not Persuasive, RP = Related and Persuasive, NS = Not Significant, S = Significant

#	Ref.	Negative including Justification	TF Finding and Reason	Motion and Reason in Committee:	Final
KT-1	LI5 – Note XX	<p>Negative</p> <p>The note is written as a requirement.</p> <p>Proposed Solution: Change to the effect of</p> <p>“NOTE xx: A qualitative comparison is better. Comparing equipment should be used only if sufficient and reliable information is available on a similar model or situation, and The the basis of the finding of similarity between the different equipment should be <u>is</u> provided.”</p> <p>Technical</p>	<p>X Related & persuasive</p> <p>Reason: It written as a criteria, removal of should is recommended.</p> <p>8-0</p>	<p>x Related & persuasive (ballot fails)</p> <p>By/2nd: Lauren Crane / Alan Crockett Disc: None Vote: 10-1. Motion passed</p>	

Comments

Summary: 1 Total Items Submitted

Company: Submitter	ID	#	Company: Submitter	ID	#
KLA-Tencor: Lauren Crane	KT	1			

Followup Activity Authorization

Move to:

Return ballot to the originating task force for rework

and authorize a follow-up ballot

By/2nd: Lauren Crane / Eric Sklar

Disc: None

Vote: 11-0. Motion **passed**

Attachment: 22, 5718-LI5 Compiled Responses



2.2.5 Line Item # 6 – Change “loss” to “harm” (Table A1-1)

Tallies at Close of Voting

Voting Return Data		Acceptance Rate Data	
Voting Interest Returns	51	Voting Interest Accept Votes (VIAccept)	30
Total Voting Interests	83	Interest Reject Votes (IReject)	2
Voting Interest Return %	61.45%	Approval % [VIAccept / (VIAccept + IReject)]	93.75%
Other Returns (Intercommittee, etc.)		# of Interest Rejects that Need to be not found Valid for	
	24	Final Approval % >= 90%	0
Total Votes	75		
Total Votes with Comments	3		
Total Reject Votes	2		

Rejects/Negatives

Summary: 2 Total Items Submitted

Company: Submitter	ID	Negs	Disp	Company: Submitter	ID	Negs	Disp
Dainippon Screen: Ryosuke Imamiya	DNS	1		Safety Guru, LLC: Eric Sklar	SG	1	

Negative from < Dainippon Screen: Ryosuke Imamiya >

W = Withdrawn, NR = Not Related, NP = Not Persuasive, RP = Related and Persuasive, NS = Not Significant, S = Significant					
#	Ref.	Negative including Justification	TF Finding and Reason	Motion and Reason in Committee:	Final
DNS-1		Severity in the Catastrophic differs by “loss” or “harm”. “System or facility harm” may not be catastrophic. Do not change. Please keep “loss” for all severity group.	X Related & persuasive Reason: Loss is better, harm can be minor, See sg-1 Intent was loss of whole described item. For example, scuffing the paint on a wall in a building meets the definition of “harm”, but is not “Catastrophic”. Burning a building down is “Catastrophic”. 4-0	x Related & persuasive (ballot fails) By/2nd: Lauren Crane / Eric Sklar Disc: None Vote: 10-0. Motion passed	

Comments

Summary: 5 Total Items Submitted

Company: Submitter	ID	#	Company: Submitter	ID	#
Applied Materials: Edward Karl	AMAT	3	Lam Research AG: Sean Larsen	LMAG	1
TUV SUD: Glenn Holbrook	TUVS	1			



Followup Activity Authorization

Move to:

- Return ballot to the originating task force for rework
- and authorize a follow-up ballot

By/2nd: Lauren Crane / Eric Sklar

Disc: None

Vote: 9-0. Motion **passed**

Attachment: 23, 5718-LI6 Compiled Responses

2.2.6 Line Item # 7 – Add pointer to ISO 12100

Tallies at Close of Voting

Voting Return Data		Acceptance Rate Data	
Voting Interest Returns	51	Voting Interest Accept Votes (VIAccept)	33
Total Voting Interests	83	Interest Reject Votes (IReject)	2
Voting Interest Return %	61.45%	Approval % [VIAccept / (VIAccept + IReject)]	94.29%
Other Returns (Intercommittee, etc.)	24	# of Interest Rejects that Need to be not found Valid for	
		Final Approval % >= 90%	0
Total Votes	75		
Total Votes with Comments	2		
Total Reject Votes	2		

Rejects/Negatives

Summary: 2 Total Items Submitted

Company: Submitter	ID	Negs	Disp	Company: Submitter	ID	Negs	Disp
Lam Research: Brian Claes	LMRC	1		Safety Guru: Eric Sklar	SG	1	

Negative from < Safety Guru, LLC: Eric Sklar >

W = Withdrawn, NR = Not Related, NP = Not Persuasive, RP = Related and Persuasive, NS = Not Significant, S = Significant					
#	Ref.	Negative including Justification	TF Finding and Reason	Motion and Reason in Committee:	Final
SG-1		<p>Negative: Do NOT add R1-1.2</p> <p>Reason/Justification: .This appears to say go look in ISO12100 and ignore the table below. We should either get ISO's permission to reproduce their table verbatim or edit this table to include additional items from ISO12100 and other sources. That would result in a table that is not some other organization's intellectual property, freeing us from the burden of licensing.</p>	<p>X Related & persuasive</p> <p>Reason: Table should represent all hazards the industry wants to consider. Suggestion to update the table, but still need to refer to other sources (e.g., 12100) 7-0</p>	<p>X Related & persuasive (ballot fails)</p> <p>By/2nd: Lauren Crane / Bert Planting Disc: None Vote: 7-0. Motion passed</p>	



Comments

Summary: 2 Total Items Submitted

<i>Company: Submitter</i>	<i>ID</i>	<i>#</i>	<i>Company: Submitter</i>	<i>ID</i>	<i>#</i>
KLA-Tencor: Lauren Crane	KT	1	Dainippon Screen: Ryosuke Imamiya	DNS	1

Followup Activity Authorization

Move to:

Return ballot to the originating task force for rework

and authorize a follow-up ballot

By/2nd: Lauren Crane / Eric Sklar

Disc: None

Vote: 9-0. Motion **passed**

Attachment: 24, 5718-LI7 Compiled Responses

3 Subcommittee & Task Force Reports

3.1 Manufacturing Equipment Safety Subcommittee (MESSC)

Cliff Greenberg reported.

- Smoke.
 - Lauren Crane proposed the issue that the generation of smoke by SME in the fab is not adequately addressed in SEMI S14 or Section 14 of S2. Lauren proposed starting an Interest Group to discuss how to proceed. Eric Sklar proposed this issue is appropriate to be included in the Fire Protection Task Force. This issue is also related to the Energetics TF, but from a chemical source rather than from an electrical source.
- Energetics.
 - General discussion regarding the status of Energetics TF. TFOF submitted and approval given to start Energetics Task Force as a North America EHS TF, but with coordination and communication with Japan, Korea, and Taiwan EHS Committees. Intend to propose a revised scope that will be used to revise TFOF and SNARF and resubmit.
 - Andy McIntyre started presentation giving an overview of the agenda.
 - Steve Trammell presented SEMATECH results of study performed.
 - SNARF discussion:
 - SEMATECH's intent is to develop a document that would be evaluated line-by-line to verify conformance to the end user. Straw poll taken to determine if the SNARF should be a single document or to generate several documents or revise existing documents.
 - Vote was unanimous to have a single document.
 - Discussion of SNARF content and made revisions.
 - Vote taken to approve SNARF as corrected. Vote was unanimous.

The proposed energetics SNARF was presented to the committee:

- SNARF for: New Standard: *EHS Guideline for Use of Energetic Materials in Semiconductor R&D and Manufacturing Processes*
- Rationale: Based on international device manufacturing accident and incident experience over the last four (4) years (2011-2014) with new energetic compounds being used to support advanced semiconductor process, a total of 70+ incidents have been documented, causing loss of life, significant facility damage and production business interruption. Based on this experience, a majority of leading semiconductor device manufacturers (GLOBALFOUNDRIES, IBM, Intel, Samsung, SK Hynix, TI, tsmc) along with CNSE have determined the need to for a comprehensive international best known methods safety guideline for safe use, handling, processing and disposal of reactive hazardous materials which have or may exhibit energetic properties.

This SEMI Standards activity is intended to:

- Develop EHS guidance for the entire supply chain to assist in timely and accurate characterization of energetic processing materials.
- Propose design considerations for equipment, delivery system, pump and abatement manufacturers.
- Identify handling, use and disposal best practices, as well as, operation, maintenance and emergency response criteria for end users.

- Scope: This environmental, safety and health (ESH) guideline is intended to provide a supplemental set of ESH criteria for the procurement, storage, handling, and use of energetic materials in existing and new semiconductor R&D and Manufacturing processes from all phases of use: chemical supply to abatement.

This guideline will cover the handling, shipping and disposal of waste energetic materials and process byproducts as well as equipment and components containing residual energetic materials and process byproducts.

It will also set minimum characterization data to be provided before an energetic material is introduced into research and development, pilot line and high volume semiconductor manufacturing processes as well as define ESH design criteria for capital equipment suppliers designing chemical supply process and post process equipment for semiconductor processes using energetic materials.

Energetic materials that are within the proposed scope of this document are:

- Substances used in and generated from semiconductor R&D and Manufacturing Processes which exhibit one or more of the following properties
 - Is classified as a pyrophoric substance such as organic precursors (Diethyl Zinc, Tertiarybutyl arsine, Tertiarybutyl phosphine, Trimethyl Aluminum, Trimethyl Gallium and Trimethyl Indium)
 - Is classified as an unstable reactive (greater than or equal to 2) and/or water reactive material (greater than or equal to 2) by the National Fire Protection Association Standard NFPA 704 “Standard System for the Identification of the Hazards of Materials for Emergency Response”
- By-products anticipated having either unstable, water reactive and/or pyrophoric properties that are generated from semiconductor R&D and Manufacturing processes.

Note: The scope of this document is intended to complement and support other industry safety guidelines (e.g., SEMI S18). The intent is to prevent overlap with other SEMI safety standards.

The proposed outline of this Energetics ESH Guideline is as follows:

- Purpose
- Scope
- Limitations
- References
- Terminology
- Safety Philosophy
- General Provisions
- Best Known Method Guidelines
 - Integrated Hazard Analysis
 - Material Supplier Requirements Characterization
 - End User - Facility Receiving, Inspection, Storage, Transport and Emergency Response Requirements
 - Bulk (External) Delivery System(s) - Remote – Supplier
 - Bulk (Remote) Delivery System(s) – End User
 - Equipment Supplier Design Considerations – On Tool Ampoule Delivery

- Equipment Supplier Design Considerations – Process Chamber
- Equipment Supplier Design Considerations – Post Process Chamber through Vacuum Pump/Abatement System
- End User Design Considerations – Post Process Chamber through Vacuum Pump/Abatement System
- Appendices

Motion: NA EHS Committee approves SNARF for: *New Standard: EHS Guideline for Use of Energetic Materials in Semiconductor R&D and Manufacturing Processes*

By / 2nd: Cliff Greenberg (Nikon Precision) / Lauren Crane (KLA-Tencor)

Discussion: None

Vote: 16-0 in favor.

Attachment: 25, MESSC Report

3.2 Fire Protection Discussion

Eric Sklar reported. Current activities:

- Ballot 5591 Adjudication
 - LI1 & LI3 had negatives and comments.
 - TF Found Negative to be Related and Persuasive to Fail these items.
 - TF will revise these LI and rebalot on next cycle 2014.
 - LI2 & LI4 – no negatives or comments.
 - Passed to EHS Committee for approval.
- Future Plans / Timeline
 - Start Work on Tiered Approach for Fire Risk Assessment between S2 and S14.
 - Address Negatives from Document #5590.
 - S14 Re-Approval
 - Address Negatives from Document #4495B
 - Alignment of S14 with S10 Likelihood & Risk Tables

Attachment: 26, Fire Protection Task Force Report

3.3 NA Seismic Liaison Task Force

Lauren Crane reported.

- Reviewed recent decisions *{see attachment 28 for details}*
- Remaining big questions
 - What does the equipment have to survive? (“failing” = breakage, “yielding” = bendage)
 - Level 1 – Failing, but no failing that could result in medium or higher risk to personal or the environment

- Level 2 – No failing, but yielding is OK
- Level 3 – No failing or yielding, but perhaps recalibration, etc. (possible slip outs of adjustment)
- Level 4 – Immediately operable after quake (after restoration of utilities)
- Add statement to the effect of “Equipment installed where alternate seismic criteria apply are not expected to conform to that criteria in order to conform to SEMI S2”
- What “level” does/should S2 require? Level 1 – 11; Level 3 – 2
- Table of values or a single value? 2 – table 9-single (single >> as now – an HPM and non-HPM value)
- Now to pick the level and get consensus on what to provide for “what if different”
- Perhaps attempt to remove possible ambiguity of ‘survival criteria’
- Add table of flex/rigid and perhaps region S’s to RI.
- Triple check S’s for Taiwan. – Another report of 3.4 for Taichung not being correct.

Additional Discussion:

- Chris Evanston asked whether there were any discussions on short circuit rating. Lauren Crane confirmed that short circuit rating is part of the discussion, but no consensus at this time.

Motion: NA EHS Committee requests the Japan EHS Committee to once again delay submission of their ballot to change section 19 (Seismic issues) of SEMI S2 to at least after the NA Standards Fall 2014 meetings.

By / 2nd: Lauren Crane (KLA-Tencor) / Carl Wong (AKT)

Discussion: None

Vote: 14-0 in favor.

Attachment: 27, NA Seismic Liaison Task Force Report

3.4 S1 Revision Task Force

Ed Karl reported.

- Background
 - On July 11, 2013, SNARF and TFOF were submitted to the NA EHS Committee to:
 - Prepare revision ballot(s) to improve SEMI S1 as prompted by reject comments to the re-approval ballot.
 - Scope of the SEMI S1 TF is to review and, where feasible, address the negative and comments received during the ballot of SEMI Draft Document #5521. This may include changes to achieve more harmony with national and international hazard alert labeling standards (i.e., ANSI Z535, ISO 3864, etc.)
 - NA EHS Committee approved the SNARF and TFOF on July 11, 2013.
- SEMI S1 TF Leaders emailed Geoffrey Peckham (past co-chair of SEMI S1) to seek his assistance with the issuance of an updated copyright release to SEMI for the purpose of updating SEMI S1 to align with ANSI Z535.4.

- G. Peckham responded on August 8th, 2013, “I believe SEMI S1 should be retired and SEMI S2 should refer to the above standards to direct equipment manufacturers to regarding current best practices related to product safety labeling... It is my personal opinion that their time will be better spent working on SEMI standards that are relevant to specifically to semiconductor industry instead of putting time and effort into constantly revising SEMI S1.”
- Some of the basis outlined in G. Peckham’s letter included:
 - ISO 3864-2 and ANSI Z535.4 have now harmonized to a large degree. It would take SEMI S1 a lot to be brought up to date, and even then, it would be playing a constant game of catch-up.
 - ISO 7010 has become the global source for standardized safety symbols. ANSI Z535 committee made a major modification to the 2011 version of ANSI Z535.3 safety symbol standard by removing all symbol examples from the standards and instead, referencing ISO 7010 as the primary resources for safety symbols.
 - ISO 3864-3 is an excellent standard pertaining to the design of new symbols.
 - Referencing the ANSI and ISO standards will serve your industry better in the long run because they have been created by experts in visual safety communication.
- S1 Copyright Releases
 - Two from HCS – slightly different ways of releasing the same information - no described information – very open
 - One from ANSI – release for one symbol – focused on S1-0701E
- Based on input from Geoffrey Peckham, TF consensus: Keep SEMI S1 as-is and only address those ‘low-hanging-fruit’ negatives through line item ballots that do not involve copyright matters.
- Milestones
 1. TF Co-chairs reviewed negatives & comments to Ballot 5521
 2. TF Co-chairs redlined SEMI S1 based on negatives & comments
 3. Redlined SEMI S1 was emailed to SEMI S1 TF in 1/22/14 and again 3/24/14.
 4. Submitted redlined SEMI S1 to P. Trio on 3/24/14 and 4/2/14 requesting clarification from SEMI Legal whether any of the revisions would require copyright release.
 5. Reviewed redlined SEMI S1 with SEMI S1 TF on 4/2/14.
 6. Request approval from EHS Committee to submit line item ballot for Cycle 5, 2014.
 7. Draft ballot of SEMI S1 (Ballot 5623) emailed to SEMI S1 TF on 7/7/14.
 8. Reviewed draft ballot of SEMI S1 (Ballot 5623) with SEMI S1 TF on 7/8/14.
 9. Request approval from EHS Committee to submit line item ballot for Cycle 5, 2014 (Ballot submission date of 7/18/14, Voting Period between 7/25/14 and 8/25/14, Document to be adjudicated at NA Fall 2014 meeting on 11/6/2014).

Additional Discussion:

- Alan Crockett asked why the change from “safety labels” to “hazard alert labels.” Ed Karl responded that S2 uses “hazard alert labels” and it points to S1.
- Alan Crockett noted that “safety alert symbols” still exists in S1.

Attachment: 28, S1 Revision Task Force Report

3.5 S2 Ladders & Steps Task Force

Ron Macklin reported.

- The TF has not met since spring of 2013.
- Last Ballot was 4449D (Cycle 6 2012) which failed and returned to TF.
- Due to demands on TF leadership (day jobs), little to no work has been done on the material for ~15 months.
- Sought additional leadership at West 2013. EHS Committee acknowledged Lindy Austin (Salus) as a third co-chair to support ongoing effort.
- Back in 2011, after the 4449C ballot, the committee asked the TF to ballot the Document as an RI and minimize “hard criteria” in the body of the document.
 - It is [the TF’s] understanding that this remains the desired direction.
- Future Plans / Timeline
 - Continue to revise material based on responses to 4449D ballot
 - Hold task force teleconferences between now and Fall meetings to determine if document is ready to send to ballot, possibly by Cycle 2 of 2015.

Attachment: 29, S2 Ladders & Steps Task Force Report

3.6 S2 to Machinery Directive Mapping Task Force

SEMI Staff Note: Document 4966, New Auxiliary Information: “S2 Mapping into the Machinery Directive (2006/42/EC) Essential Health and Safety Requirements” was distributed to the Global EHS Technical Committee members on June 18, 2014 for review and feedback. Per section 13.3.3 of the SEMI Standards Regulations, Auxiliary Information may be authorized for publication as a separate Document by a two-thirds majority of persons voting on the action during a scheduled TC Chapter meeting, and subsequent approval by both the GCS and the ISC A&R SC.

Lauren Crane reported.

- All responses were in effect “accepts”
- Reviewed large set of editorial comments from Naokatsu Nishiguchi-san of DNS – (Thank you).
- TF accepted essentially all suggestions and would like to incorporate them prior to publication (if motion passes).
- TF voted 14 to 0 to bring a motion to committee to publish following the proposed editorial changes.
- It was noted that there may be benefit in reviewing the document to identify “gaps” in S2 that might be worth filling. If anyone is inclined to do this, it would probably be best to bring any resulting proposals up in MESCC first.

Motion: NA EHS Committee approves to publish the S2/MD mapping document as an Auxiliary Information document as distributed by SEMI staff with the addition of the editorial changes reviewed and accepted in the SEMICON West task force meeting.

By / 2nd: Lauren Crane (KLA-Tencor) / Steve Brody (Product EHS Consulting)

Discussion: None

Vote: 12-0 in favor.

Attachment: 30, S2 to Machinery Directive Mapping Task Force Report

3.7 S2 Non-Ionizing Task Force

John Visty reported. Current activities:

- The Tech Editor is long overdue in generating the ballot to add the background information from the ballot to the RI7 to better explain how the limit values were set.
- Future Plans / Timeline
 - The Tech Editor will generate the ballot to revise the RI7 explanations by cycle 6.
 - The Task Force will start discussions to review the new Worker Protection directive for EMF fields to determine if the S2 limit values should be adjusted to reflect the changes
 - Plan is to have a proposal(s) to discuss at the fall meetings

Attachment: 31, S2 Non-ionizing Task Force Report

3.8 S6 Revision Task Force

Glenn Holbrook reported. Current activities:

- Discussions
 - Realistic worst case release scenarios and release rate calculations
 - Gas detector approval/listing requirement
 - White Paper or related information development for Gas Panel design
- Future Plans / Timeline
 - Glenn Holbrook to develop wording/rational to worst case release rate in preparation of balloting line item in Cycle 1 (Dec 2014/Jan 2015). Proposed changes to be emailed to task force members by Aug 15, and conference calls to be held in September and October.

Attachment: 32, S6 Revision Task Force Report

3.9 S7 Revision Task Force

SEMI Staff Note: The S7 TFOF was approved via EHS GCS in early July 2014.

Chris Evanston presented the proposed S7 revision SNARF:

- SNARF for: Line Item Revisions to SEMI S7, *Safety Guideline for Evaluating Personnel and Evaluating Company Qualifications*
- Rationale: Revise and update SEMI S7 – in accordance with 5 year review cycle.

Motion: NA EHS Committee approves new SNARF for line item revisions to SEMI S7.

By / 2nd: Chris Evanston (Salus) / John Visty (Salus)

Discussion: Eric Sklar (Safety Guru, LLC) asked whether S7 is being used. Chris Evanston responded, “Yes.”

Vote: 11-0 in favor.

3.10 S10 Task Force

Bert Planting reported.

- TF Leaders: Bert Planting (ASML), Thomas Pilz (Pilz, GmbH)
- Planning
 - 5-year reapproval ballot was sent out and received several negatives
 - Action plan
 - First solve several small issues by using line item ballots
 - Major discussion on use of risk ranking tables
- Doc 5718 was balloted for Cycle 4, 2014 voting period and discussed at SEMICON West 2014 {see section 4.5 of these minutes}
- Next Steps
 - Send failed line items back to taskforce, and then rebalot.

Attachment: 33, S10 Task Force Report

3.11 S23 Task Force

Lauren Crane reported.

- Working on ballot to improve description of ‘efficiency improvement’ – total energy might not reduce but efficiency can improve.
- Canceled last minute due to lack of information on SNARF failure.
 - My apologies for the confusing way this was handled.
- Learned later from Mashiro-san that there was a concern over contrast of title and purpose statements about “Conservation” and the idea of “efficiency” in point 1, above.
- Plan to work with Japan TF members to resolve the concern, perhaps reword SNARF proposal to include, in essence, replacing ‘conservation’ with ‘increased efficiency’.
- Also heard of interest in adding an ECF for liquid nitrogen. Will add to TF proposal queue.
- Also heard that some Taiwan “LCD” (?) related companies find their ECFs are quite different. Offered to gather more information and introduce it to TF.
- There is a recommendation / idea from Mashiro-san that it would might be helpful to structure the TF as a Global TF. I will review this with co-leader and may have related motions at next committee meeting.

Attachment: 34, S23 Task Force Report

3.12 EMC Task Force (under the NA Metrics Committee)

Mark Frankfurth reported.

- Industry Activities
 - European EMC Directive Re-cast 2014/30/EU is published in the Official Journal in April 2014. Purpose of changes is alignment with New Legislative Framework (NLF)
 - ITRS roadmap newly includes EMI limit information – worthy of review.
 - ESD Symposium: September 7-12, 2014, Tucson, AZ
 - ESD Symposium on Factory Issues: October 30-31 Munich, Germany
 - IEEE EMC Symposium: August 3-8, Raleigh, NC
- Summary of the Meetings
 - 7 attendees (four on the phone)
 - Good representation of the industry: semiconductors (ST Micro); fiberoptics (Finisar); disk drive (Seagate); electronic assembly (Bose); education (National University of Taiwan); equipment manufacturer (Cymer); industry consultant (BestESD). Users' participation is most important.
 - Received and distributed examples of EMI occurrences in the manufacturing from different participants
 - Presented plan for the first step in creating EMI control document: EMI measurements guideline. Discussed and agreed by the group. Definite interest from participants in Asia.
 - The first ballot will not happen in April – quite a bit of work is ahead which is a good thing – actual users participate in creation of document
- [The TF also experienced technical issues with the meeting bridge]

Additional Discussion:

- Chris Evanston questioned whether the reported events were due to the lack of information or lack of knowledge.
- Mark Frankfurth explained that while E33 (*Guide for Semiconductor Manufacturing Equipment Electromagnetic Compatibility [EMC]*) focuses on the equipment; the concern here is on the environment.
- With regard to immunity testing, Alan Crockett expressed concern about facility characterization.

Attachment: 35, EMC Task Force Report

3.13 Energy Saving Equipment Communication Task Force (under the NA Information & Control Committee)

Paul Trio reported that the TF is now focusing on the energy savings mode communication between semiconductor equipment and auxiliary subsystems. The revised TFOF, which incorporates this second phase of work, was approved by the NA I&C TC Chapter at SEMICON West 2014.

Revised ESEC TF Charter:

This task force will:

- Maintain and propose enhancements to SEMI E167 standard that specify communications between the factory system and production equipment to move the equipment between power saving modes as defined in S23.
- Develop and propose standards for behavior, and communication of energy savings mode control between the production equipment and its auxiliary subsystems.
- EHS Committee will be informed and ask to be involved when any issue related to fundamental energy savings concepts or definitions are discussed.

Revised ESEC TF Scope:

- This Task Force will focus on communication protocol and message content for the purpose of reducing energy consumption for the factory from process equipment and auxiliary subsystems.
- The task force will identify requirements needed to communicate energy savings information from generic auxiliary subsystems (e.g., vacuum pumps, abatement systems, chillers, etc.).
- The Task Force will collaborate with the EHS Committee to avoid conflict with definitions in S23.

4 Old Business

None

5 New Business

5.1 Ballot Authorization

#	When	SC/TF/WG	Details
5623	Cycle 5, 2014	S1 Revision TF	Revision to SEMI S1, <i>Safety Guideline for Equipment Safety Labels</i>
5760	Cycle 5, 2014	S7 TF	Line Item Revisions to SEMI S7, <i>Safety Guideline for Evaluating Personnel and Evaluating Company Qualifications</i>
5591A	Cycle 5 or 6, 2014	Fire Protection TF	Line Item Revisions to SEMI S2, <i>Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment</i> Delayed Revision related to Fire Protection
4316L	Cycle 6, 2014	S22 TF	Line Item Revisions to SEMI S2, <i>Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment</i> , and SEMI S22, <i>Safety Guideline for the Electrical Design of Semiconductor Manufacturing Equipment</i>
4683D	Cycle 6, 2014	S2 Chemical Exposure TF	Line Item Revisions to SEMI S2, <i>Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment</i> Delayed Revisions related to Chemical Exposure
5625	Cycle 6, 2014	S2 Non-ionizing Radiation TF	Line Item Revisions to SEMI S2, <i>Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment</i> Delayed Revisions related to non-ionizing radiation
5718A	Cycle 6, 2014	S10 TF	Line Item Revisions to SEMI S10-0307E, <i>Safety Guideline for Risk Assessment and Risk Evaluation Process</i>



Motion: NA EHS TC approves distribution of ballots as shown above
By / 2nd: Eric Sklar (Safety Guru, LLC) / Ed Karl (Applied Materials)
Discussion: None
Vote: 14-0. Motion passed.

5.2 NA EHS Proposed Meeting Schedule at the NA Standards Fall 2014 Meetings

North America Standards Fall 2014 Meetings

November 3-6, 2014

SEMI Headquarters

3081 Zanker Road

San Jose, California 95134

U.S.A

Monday, November 3

- S22 (Electrical Safety) TF (9:00 AM to 10:30 AM)
- S7 Revision TF (10:30 PM to 12:00 Noon)
- EHS Process Meeting / Lunch Break (12:00 Noon to 1:00 PM)
- S2 Non-Ionizing Radiation TF (1:00 PM to 2:00 PM)
- S2 Chemical Exposure TF (2:00 PM to 3:30 PM)
- S6 Revision TF (3:30 PM to 5:00 PM)
- NA Seismic Liaison TF (5:00 PM to 6:00 PM)

Tuesday, November 4

- Fire Protection TF (9:00 AM to 10:30 AM)
- S10 TF (10:30 AM to 12:00 Noon)
- Energetic Materials EHS TF (1:00 PM to 2:00 PM)
- S1 Revision TF (2:00 PM to 3:30 PM)
- S8 Ergonomics TF (3:30 PM to 5:00 PM)
- S23 Revision Japan TF (5:00 PM to 6:00 PM)

Wednesday, November 5

- [ICRC (8:00 AM to 12:00 Noon)]
- EHS Leadership Meeting / Lunch Break (12:00 Noon to 1:00 PM)
- Hazardous Energy Control Isolation Devices TF (1:00 PM to 2:00 PM)
- Manufacturing Equipment Safety Subcommittee [MESSC] (2:00 PM to 4:00 PM)
- S2 Ladders & Steps TF (4:00 PM to 5:30 PM)

Thursday, November 6

- EHS Committee (9:00 AM to 6:00 PM)

For more information about the NA Standards Fall 2014 meetings, please visit: semi.org/standards

So that meeting attendees can plan their travel schedules accordingly, the committee agreed that the last day to make changes to the NA Standards Fall 2014 meetings is October 3, 2014.

Action Item: 2014Jul #02, Paul Trio to send reminders by mid-September to the NA EHS committee chairs and TF leaders about the NA Fall 2014 meeting schedule change deadline.



5.3 *New Action Items*

<i>Item #</i>	<i>Assigned to</i>	<i>Details</i>
2014Jul #01	Paul Trio, Sean Larsen	Schedule a teleconference to review upcoming Regulations changes.
2014Jul #02	Paul Trio	Send reminders by mid-September to the NA EHS committee chairs and TF leaders about the NA Fall 2014 meeting schedule change deadline.

6 Next Meeting and Adjournment

The next meeting of the North America Environmental, Health, and Safety committee is scheduled for November 6 in conjunction with the NA Standards Fall 2014 meetings in San Jose, California. Adjournment was at 3:30 PM.

Respectfully submitted by:

Paul Trio
Senior Manager, Standards Operations
SEMI North America
Phone: +1.408.943.7041
Email: ptrio@semi.org

Minutes approved by:

Chris Evanston (Salus Engineering), Co-chair	
Sean Larsen (Lam Research AG), Co-chair	
Bert Planting (ASML), Co-chair	

Table 6 Index of Available Attachments #1

#	Title	#	Title
01	SEMI Standards Required Meeting Elements	19	5718-LI2 Compiled Responses
02	NA EHS Spring 2014 Meeting (April 3) Minutes	20	5718-LI3 Compiled Responses
03	Japan EHS Committee Report	21	5718-LI4 Compiled Responses
04	Leadership Report	22	5718-LI5 Compiled Responses
05	SEMI Staff Report	23	5718-LI6 Compiled Responses
06	4316K-LI1 Compiled Responses	24	5718-LI7 Compiled Responses
07	4316K-LI2 Compiled Responses	25	MESSC Report
08	4316K-LI3 Compiled Responses	26	Fire Protection TF Report
09	4683C-LI1 Compiled Responses	27	NA Seismic Liaison TF Report
10	4683C-LI2 Compiled Responses	28	S1 Revision TF Report
11	5591-LI1 Compiled Responses	29	S2 Ladders & Steps TF Report
12	5591-LI2 Compiled Responses	30	S2 to Machinery Directive Mapping TF Report
13	5591-LI3 Compiled Responses	31	S2 Non-ionizing TF Report
14	5591-LI4 Compiled Responses	32	S6 Revision TF Report
15	5009C -LI1 Compiled Responses	33	S10 TF Report
16	5009C -LI2 Compiled Responses	34	S23 TF Report
17	5009C -LI3 Compiled Responses	35	EMC TF Report
18	5718-LI1 Compiled Responses		

#1 A .zip file containing all attachments for these minutes is available at:
<http://downloads.semi.org/standards/minutes.nsf/91eeb64567db378c88256dcf006a4252/1317c7dd210acc9288257d580005dc5a!OpenDocument>
 For additional information or to obtain individual attachments, please contact Paul Trio at the contact information above.