

Record of Line-item Letter Ballot Review by TC Chapter for Procedural Review

Region/Locale: **North America**

Global Technical Committee: **EHS**

TC Chapter Cochairs: **Bert Planting (ASML), Chris Evanston (Salus Engineering), Sean Larsen (Lam Research)**

Standards Staff: **Kevin Nguyen**

| | Scheduled in Background Statement | Actual |
|--|-----------------------------------|------------------------------|
| Date | 4/7/2016 | 4/7/2016 |
| Location | SEMI HQ, San Jose, CA | SEMI HQ, San Jose, CA |
| Reason for Change of Date and/or Location (if changed) | | |

Note: See *Regulations* ¶ 9.5 Exception for allowable reason to change.

Document Information

I. Document Number, Title, Lists of Line Items

| | | |
|---------------------------------------|--------------------|--|
| Document Number 5970 | | Document Title Line Item Revisions to SEMI S14, Safety Guidelines for Fire Risk Assessment and Mitigation for Semiconductor Manufacturing Equipment |
| List of Line Items | Line Item 1 | Line Item Title Changes to Terminology to Align with SEMI S10. |
| | Line Item 2 | Change “Grouping” to “Group” to Align with SEMI S10. |
| | Line Item 3 | Changes to Risk Categories to Align with SEMI S10. |

Line Item 1 Adjudication

II. Tally

Standards staff to fill in.

Voting Tally: As-cast tally after close of voting period

Note: A minimum of 60% of the Voting Interests that have TC Members within the global technical committee that issued the Letter Ballot must return Votes. (Regulations ¶ 9.7.1.1)

Voting Tally:

| Voting Interest: | Returned Vote | | Distributio | = | Return Rate | |
|---------------------------|---------------|---|---------------------------|---|-------------|------|
| Letter Ballot | 55 | ÷ | 87 | = | 63.2% | ≥60% |
| Intercommittee Ballot | 15 | | | | | |
| Voting Interest Reject(s) | 0 | | Total Voters with Rejects | | 0 | |
| Voting Interest Accept(s) | 44 | | | | | |
| | | | | | | |

Note: See Regulations § 3.2.1 for definition of Voting Interest.

III. Rejects

None

IV. Other Technical Issues

None

V. Comments

V- (i) Voters' Comments

Commenter 1 (Larry Hartsough (UA Associates))- Comment 1

| | | | |
|-------------------|---|--|--|
| | | <p>Abstain with comment</p> <p>The Title of SEMI S14 needs to be corrected. See latest (Feb 2016) version of the Procedure Manual, Appendix 4, Table A4 1 20. S14 was not listed in prior version. Otherwise, this ballot would have failed.</p> <p>TF Response:</p> <p>The entry to which the submitter refers asserts that "Guidelines" must be changed to "Guideline" because the former is "Not a Subtype" and refers to Regulations ¶ 4.2.5. That paragraph defines "Safety Guideline" as "A Type of Document that is advisory in nature and meets all of the requirements for approval for a Standard (see §§9, 10, 11, and 16) as well as the additional requirements of §15.". It therefore appears that "Not a Subtype" is not a valid "Reason Nonconforming", as Safety Guideline is a Type, and only Standards have Subtypes. Furthermore, ¶A4-1.3 of the Procedure Manual, which prescribes the "correction" of titles, explicitly permits title changes to "provide grammatical correctness" to be part of the LI "correcting" a title. Therefore, if the EHS Committee agrees that there is more than one "guideline" in S14, the EHS Committee could issue a Letter Ballot Line Item to change the title to "Safety Guidelines..." on the grounds that it is grammatically incorrect to have a singular name for a plural entity. However, that is the present title, so it would be a ballot to change nothing.</p> <p>If, however, the EHS Comm believes there is only one "guideline" in S14, then it should issue a Line Item, in the next S14 Letter Ballot, to change the title to "Safety Guideline...".</p> <p>Alternatively, the EHS Comm can, as part of this ballot review, make an editorial change to the title from "Guidelines" to "Guideline".</p> | |
| | | <p>The TC Chapter agreed to do one of the following actions.</p> | |
| | | <p>*No motion is required in this step.</p> | |
| Action | | Already addressed by Commenter #, Comment # | |
| | | No further action was taken by the TC Chapter. | |
| | | Refer to the TF for more consideration. | |
| | | New Business | |
| | x | Editorial Change | |
| | | Options for editorial change (check one) | |
| Editorial Changes | 1 | <p>FROM: Remove "s" from Guidelines in the Title of S14</p> <p>SEMI S14, Safety Guidelines for Fire Risk Assessment and Mitigation for Semiconductor Manufacturing Equipment</p> | |
| | | <p>TO:</p> <p>SEMI S14, Safety Guidelines for Fire Risk Assessment and Mitigation for Semiconductor Manufacturing Equipment</p> | |

| | |
|------------------------------------|---|
| | Justification (if necessary) |
| Motion | To approve above editorial change |
| Motion by/2nd by | Eric Sklar (Safety Guru)/Ed Karl (Applied Materials) |
| Discussion | Supika Mashiro: Making change to the title is not considered editorial. Sean Larsen: Proposed change is requested by Procedure Manual for title conformance. There is no technical change. |
| Vote | 11 Y-1 N; Motion passed |

Commenter 1 (Brian Claes (Lam Research)) - Comment 2

| | | | | | | | | | | |
|----------------|--|--|---|---|--|--|---|--|--------------|--|
| Comment | <p>Abstain with comment COMMENT</p> <p>The severity groupings and categories are presently under revision by the S10 TF. How tightly coupled is this S14 effort with the S10 work (if the objective is alignment with S10 how quickly are we willing to let these proposed changes to become obsolete?)?</p> <p>Suggestion / Justification Update assessment of coordination plans and project risks and communicate to EHS Standards Committee for validation.</p> <p>TF response: The two efforts are closely coupled: The Fire Protection and S10 TFs share a co-leader, pass documents back and forth, and meet sequentially to facilitate member participation in both efforts. I'm not aware of objection, among the participants in these efforts, to obsolescence at any particular date. The status of this work has been communicated to the EHS Comm in TF reports at its meetings.</p> | | | | | | | | | |
| | <p>The TC Chapter agreed to do one of the following actions.</p> <p>*No motion is required in this step.</p> <table border="1"> <tr> <td></td> <td>Already addressed by Commenter #, Comment #</td> </tr> <tr> <td>x</td> <td>No further action was taken by the TC Chapter.</td> </tr> <tr> <td></td> <td>Refer to the TF for more consideration.</td> </tr> <tr> <td></td> <td>New Business</td> </tr> <tr> <td></td> <td>Editorial Change</td> </tr> </table> | | Already addressed by Commenter #, Comment # | x | No further action was taken by the TC Chapter. | | Refer to the TF for more consideration. | | New Business | |
| | Already addressed by Commenter #, Comment # | | | | | | | | | |
| x | No further action was taken by the TC Chapter. | | | | | | | | | |
| | Refer to the TF for more consideration. | | | | | | | | | |
| | New Business | | | | | | | | | |
| | Editorial Change | | | | | | | | | |
| Action | | | | | | | | | | |

**V-(ii) Comments Created by Handling Negative
None**

VI. Editorial Changes Other than Those Voted on in § V

See section V-(i) above.

VII. Approval Conditions Check

VII. - (i). Approval Rate

APPROVAL CONDITION 1: All Negatives have been discussed and were withdrawn, found not related, found not persuasive, or addressed by a technical change. (*Regulations ¶ 9.7.1.2*)

APPROVAL CONDITION 2: At least 90% of the sum of valid Voting Interest Accept and Voting Interest Reject Votes must be Accept. (*Regulations ¶ 9.7.1.3*)

Note: If both approval conditions are not satisfied, the Document fails.

| | | | | | | | | | |
|---------------|---|---------|---|---------------------------------|---|--------|--|---|-----|
| | | | | | | | | | |
| | | Accepts | | (Accepts + Valid Rejects) | | | | | |
| Approval Rate | = | 44 | / | 44 | = | 100.0% | | ≥ | 90% |
| | | | | | | | | | |

VII. – (ii) Approval Level (check one)

Note: See *Regulations § 9.7.2* for further information.

Globally Approved (No Ratification Ballot needed):

Line Item 1 meets the Letter Ballot approval conditions for the global technical committee.

Need a Ratification Ballot:

Line Item 1 meets the Letter Ballot approval conditions for the TC Chapter and a Ratification Ballot will be issued to validate technical changes.

Line Item 2 Adjudication

II. Tally

Standards staff to fill in.

Voting Tally: As-cast tally after close of voting period

Note: A minimum of 60% of the Voting Interests that have TC Members within the global technical committee that issued the Letter Ballot must return Votes. (Regulations ¶ 9.7.1.1)

Voting Tally:

| Voting Interest: | Returned Vote | | Distributio | = | Return Rate | |
|---------------------------|---------------|---|---------------------------|---|-------------|------|
| Letter Ballot | 55 | ÷ | 87 | = | 63.2% | ≥60% |
| Intercommittee Ballot | 15 | | | | | |
| Voting Interest Reject(s) | 0 | | Total Voters with Rejects | | | 0 |
| Voting Interest Accept(s) | 43 | | | | | |
| | | | | | | |

Note: See Regulations § 3.2.1 for definition of Voting Interest.

III. Rejects

None

IV. Other Technical Issues

None

V. Comments

None

VI. Editorial Changes Other than Those Voted on in § V

None

VII. Approval Conditions Check

VII. - (i). Approval Rate

APPROVAL CONDITION 1: All Negatives have been discussed and were withdrawn, found not related, found not persuasive, or addressed by a technical change. (Regulations ¶ 9.7.1.2)

APPROVAL CONDITION 2: At least 90% of the sum of valid Voting Interest Accept and Voting Interest Reject Votes must be Accept. (Regulations ¶ 9.7.1.3)

Note: If both approval conditions are not satisfied, the Document fails.

| | | | | | | | | |
|---------------|---|---------|---|---------------------------|---|--------|--|------|
| | | | | | | | | |
| | | Accepts | | (Accepts + Valid Rejects) | | | | |
| Approval Rate | = | 43 | / | 43 | = | 100.0% | | ≥90% |
| | | | | | | | | |
| | | | | | | | | |

VII. – (ii) Approval Level (check one)

Note: See Regulations § 9.7.2 for further information.

Globally Approved (No Ratification Ballot needed):

Line Item 2 meets the Letter Ballot approval conditions for the global technical committee.

Need a Ratification Ballot:

Line Item 2 meets the Letter Ballot approval conditions for the TC Chapter and a Ratification Ballot will be issued to validate technical changes.



Line Item 3 Adjudication

II. Tally

Standards staff to fill in.

Voting Tally: As-cast tally after close of voting period

Note: A minimum of 60% of the Voting Interests that have TC Members within the global technical committee that issued the Letter Ballot must return Votes. (Regulations ¶ 9.7.1.1)

Voting Tally:

| Voting Interest: | Returned Vote | | Distributio | = | Return Rate | |
|---------------------------|---------------|---|---------------------------|---|-------------|------|
| Letter Ballot | 55 | ÷ | 87 | = | 63.2% | ≥60% |
| Intercommittee Ballot | 15 | | | | | |
| Voting Interest Reject(s) | 1 | | Total Voters with Rejects | | 1 | |
| Voting Interest Accept(s) | 42 | | | | | |

Note: See Regulations § 3.2.1 for definition of Voting Interest.

III. Rejects

Voting Interest Reject 1 (Lam Research)

Voter Reject 1 (Voter: Brian Claes: Lam Research)

Negative 1

| | | |
|----------|-------------------------------|---|
| Negative | Referenced Section/ Paragraph | *TF/TC Chapter to fill in, including text in the ballot if necessary. |
| | Negative Text | <p>*Original complete Negative text (e.g., issue, justification, suggestion) should be copied.</p> <p>NEGATIVE The alignment with S10 stopped short of adding the 6th Likelihood column (column F) from S10 to Table A1-3. Historically, this would not be an issue for actual application of S14, but with the proposed changes to S2 Section 14 under DOC 5969 the dramatically lower proposed thresholds for requiring S14 assessments will likely require a reasonable lowest likelihood category resulting in “very low” risk” findings.</p> <p>Suggestion / Justification It all depends on what happens to DOC 5969; it’s too early to tell what should be done to Table A1-3.</p> |
| | TF input (optional) | <p>The premise that “DOC 5969 the dramatically lower[s] proposed thresholds for requiring S14 assessments” is incorrect. The currently-published S2 directs the use of S14 for everything. The proposal in Doc 5969 provides for S14 assessment to be waived for some equipment. Therefore, nothing additional is to be assessed. The changed proposed in Doc 5970 does not eliminate a Likelihood category from S14, it just doesn’t add one that is in S10. I don’t find this a persuasive argument for failing this proposal and recommend finding this NP. Adding the “Not Reasonably Foreseeable” column should be discussed in the next phase of this work.</p> |

| | | | | | | |
|-------------------------------------|---|---|---|--|--------------------------------|--|
| | Withdrawal (check one) | <input checked="" type="checkbox"/> | No Negative withdrawal made by Voter. | | GO TO "Related" subsection | |
| | | <input type="checkbox"/> | Withdrawal document received by Standards staff on MM/DD/YYYY. | | GO TO "Final" subsection → (A) | |
| Related | Motion and Reason (check one) | <input checked="" type="checkbox"/> | 'Related' is mutually agreed upon. (Needs no motion.) | | GO TO "Persuasive" subsection | |
| | | <input type="checkbox"/> | Negative is not related. (Needs ≥2/3 votes to pass.) | | | |
| | | Reason | XXXX | | | |
| | Motion by/ 2nd by | Name (Company)/Name (Company) | | | | |
| | Discussion | | | | | |
| | Result of Vote (check one) | XX Y-XX N; Motion passed/failed. | | | | |
| <input type="checkbox"/> | | [Negative is not related.] < 2/3 | | GO TO "Persuasive" subsection | | |
| <input type="checkbox"/> | | 2/3 ≤ [Negative is not related.] | | GO TO "Final" subsection → (B) | | |
| Persuasive | Motion and Reason (check one) | <input type="checkbox"/> | Negative is related and persuasive. (Needs >1/3 votes to pass.) | | | |
| | | <input checked="" type="checkbox"/> | Negative is related and not persuasive. (Needs ≥2/3 votes to pass.) | | | |
| | | Reason | Negative appears based on misinterpretation of 5969, Line Item Revisions to SEMI S2-0715, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (Re: Fire Protection) | | | |
| | Motion by/ 2nd by | Eric Sklar(Safety Guru)/Cliff Greenberg (Nikon) | | | | |
| | Discussion | None | | | | |
| | Result of Vote (check one) | 4 Y-1 N; Motion passed | | | | |
| | | <input type="checkbox"/> | [Negative is related and persuasive.] > 1/3 | Is a technical change recommended? (check one) | <input type="checkbox"/> | Y GO TO "Address by Technical Change Option" subsection |
| | | <input type="checkbox"/> | [Negative is related and not persuasive.] < 2/3 | | <input type="checkbox"/> | N GO TO "Final" subsection → (E) |
| <input checked="" type="checkbox"/> | | 2/3 ≤ [Negative is related and not persuasive.] < 90% | GO TO "Final" subsection → (C) | | | |
| <input type="checkbox"/> | 90% ≤ [Negative is related and not persuasive.] | GO TO "Not Significant Finding Option" subsection | | | | |
| Final | (check if applicable) | <input type="checkbox"/> | (A) | Withdrawn (counted under h in disposition) | | |
| | | <input type="checkbox"/> | (B) | Not related (counted under i in disposition) | | |
| | | <input checked="" type="checkbox"/> | (C) | Related and not persuasive (significant) | | |
| | | <input type="checkbox"/> | (D) | Not significant (counted under j in disposition) | | |
| | | <input type="checkbox"/> | (E) | Related and persuasive and not addressed by technical change | DOCUMENT FAILS | |
| | | <input type="checkbox"/> | (F) | Addressed by technical change (counted under k disposition) | | |
| | (check if applicable) | <input type="checkbox"/> | Comment generated. See Section V-(ii) Comment # X. | | | |

This table is needed for each Negative.

Disposition of Voting Interest Reject 1

Check only when the Document has not been failed.

| | | | |
|-------|---|---------------------------|---|
| 1 | Original number (#) of Negatives | (g) | |
| # | Number of Negatives withdrawn | (h) | |
| # | Number of Negatives found not related | (i) | |
| # | Number of Negatives found not significant | (j) | |
| # | Number of Negatives addressed by technical change (Negative becomes not significant) | (k) | |
| Final | | $g - (h + i + j + k) = 0$ | Reject is Not Valid and is not included in the denominator of § VI. Approval Conditions Check |
| | x | $g - (h + i + j + k) > 0$ | Reject is included in the denominator of § VI. Approval Conditions Check |
| | | Reject without a Negative | Not Valid |

Note: If all of the Negatives included with a Reject Vote are withdrawn, determined to be not related, or determined to be not significant, the Reject Vote is not valid. (Regulations ¶ 9.4.3.3)

Note: A Negative addressed by a technical change is automatically considered to be not significant. (Regulations ¶ 9.6.4.4.2)

IV. Other Technical Issues

None

V. Comments

V- (i) Voters' Comments

Commenter 1 (Bert Planting (ASML))- Comment 1

| | |
|---------|---|
| Comment | <p>Comment. Why is unforeseen not taken in account when updating the tables of likelihood and overall risk?</p> <p>TF Response: See Lam 1. Recommend referral to TF for future consideration.</p> |
| | <p>The TC Chapter agreed to do one of the following actions.</p> <p>*No motion is required in this step.</p> |
| Action | <p>Already addressed by Commenter #, Comment #</p> |
| | <p>No further action was taken by the TC Chapter.</p> |
| | <p>x Refer to the TF for more consideration.</p> |
| | <p>New Business</p> |
| | <p>Editorial Change</p> |

**V-(ii) Comments Created by Handling Negative
None**

VI. Editorial Changes Other than Those Voted on in § V

See section V-(i) above.

VII. Approval Conditions Check

VII. - (i). Approval Rate

APPROVAL CONDITION 1: All Negatives have been discussed and were withdrawn, found not related, found not persuasive, or addressed by a technical change. (Regulations ¶ 9.7.1.2)

APPROVAL CONDITION 2: At least 90% of the sum of valid Voting Interest Accept and Voting Interest Reject Votes must be Accept. (Regulations ¶ 9.7.1.3)

Note: If both approval conditions are not satisfied, the Document fails.

| | | | | | | | | | |
|---------------|---|---------|---|---------------------------------|---|-------|--|------|--|
| | | | | | | | | | |
| | | Accepts | | (Accepts + Valid Rejects) | | | | | |
| Approval Rate | = | 42 | / | 43 | = | 97.7% | | ≥90% | |
| | | | | | | | | | |
| | | | | | | | | | |

VII. – (ii) Approval Level (check one)

Note: See Regulations § 9.7.2 for further information.

Globally Approved (No Ratification Ballot needed):
Line Item 3 meets the Letter Ballot approval conditions for the global technical committee.

Need a Ratification Ballot:
Line Item 3 meets the Letter Ballot approval conditions for the TC Chapter and a Ratification Ballot will be issued to validate technical changes.



Checks for Entire Document Including All Approved Line Items

VIII. Safety Check

Note: This Safety check applies to the entire Standard or Safety Guideline including all the approved Line Items. See § 15 of the *Regulations* for further information.

| | | |
|------------------------------------|-------------------------------------|--|
| Motion | <input type="checkbox"/> | This is not a Safety Document , when all safety-related information is removed, the Document is still technically sound and complete. (<i>Regulations</i> ¶ 8.7.1) |
| | <input checked="" type="checkbox"/> | This is a Safety Document , when all safety-related information is removed, the Document is not technically sound and complete. (<i>Regulations</i> ¶ 8.7.2) |
| | <input checked="" type="checkbox"/> | Safety Checklist (<i>Regulations</i> ¶ 15.3) is complete and has been included with the Document throughout the balloting process. (<i>Regulations</i> ¶ 15.1.2) |
| Motion by/2nd by | | Eric Sklar (Safety Guru)/Bert Planting (ASML) |
| Discussion | | None |
| Vote | | 8 Y-0 N; Motion passed |

IX. Intellectual Property (IP) Check

Note: This IP check applies to the entire Standard or Safety Guideline including all the approved Line Items. See § 16 of the *Regulations* for further information.

| | | |
|-------------------------------------|---|---|
| <input checked="" type="checkbox"/> | The TC Chapter meeting chair asked those participating, if they were aware of any potentially material patented technology or copyrighted items* in the Standard or Guideline. (<i>Regulations</i> ¶ 8.8.1) | |
| <input checked="" type="checkbox"/> | No potentially material patented technology or reproduction of copyrighted items is known. | GO TO SECTION X. |
| <input type="checkbox"/> | Potentially material patented technology or reproduction of copyrighted items is known, but a Letter of Assurance (LOA) or copyright release letter for such items has been obtained or presented to the TC Chapter. | GO TO SECTION X. |
| <input type="checkbox"/> | Potentially material patented technology or reproduction of copyrighted items is known and use of such materials is technically justified by the TC Chapter, but an LOA or copyright release letter for some of the item(s) has NOT been obtained or presented to the TC Chapter. | |
| Motion | <input type="checkbox"/> | Ask ISC for special permission to publish. |
| | <input type="checkbox"/> | Quit activity. |
| | <input type="checkbox"/> | Wait for LOA for patented technology or release of copyrighted items. |
| Motion by/2nd by | | Name (Company)/Name (Company) |
| Discussion | | XXXX |
| Vote | | XX Y-XX N |
| Final Action | <input type="checkbox"/> | Motion passed |
| | <input type="checkbox"/> | Motion failed |

* **Note:** Such potentially material patented technology or copyrighted items might have become known since the Standard or Safety Guideline was last reviewed, or might become relevant due to this Letter Ballot.

X. Action for This Document

| | | |
|--|---|--|
| Motion (Check all applicable items) | <input checked="" type="checkbox"/> | Line item(s) [2] and [3] passed TC Chapter review as balloted and will be forwarded to the ISC A&R SC for procedural review. |
| | <input checked="" type="checkbox"/> | Line item(s) [1] passed TC Chapter review with editorial changes and will be forwarded to the ISC A&R SC for procedural review. |
| | <input type="checkbox"/> | Line item(s) [X], [X] and [X] passed TC Chapter review with technical changes and with or without editorial changes and will be forwarded to the ISC A&R SC for procedural review. A Ratification Ballot will be issued to verify the technical changes. |
| | <input type="checkbox"/> | Line item(s) [X], [X] and [X] failed TC Chapter review and will be returned to the TF for rework. |
| | <input type="checkbox"/> | Line item(s) [X], [X] and [X] failed TC Chapter review and work will be discontinued. |
| Motion by/ 2nd by | Eric Sklar (Safety Guru)/Bert Planting (ASML) | |
| Discussion | None | |
| Vote | 7 Y - 0 N | |
| Final Action | <input checked="" type="checkbox"/> | Motion passed |
| | <input type="checkbox"/> | Motion failed |

Standards staff to record the result of the A&R procedural review here:

| | | |
|-----|---------|--|
| A&R | | Line item(s) [X], [X] and [X] are Approved for publication |
| | | Line item(s) [X], [X] and [X] are Approved pending acceptance of the Ratification Ballot |
| | | Line item(s) [X], [X] and [X] are Not approved |
| | Reason: | |