

**SEMICON<sup>®</sup>**  
*West2006*

**SEMI<sup>®</sup> International Standards Program**



**STEP: Introduction to SEMI S2-0706,  
Environmental, Health, and Safety  
Guideline for Semiconductor  
Manufacturing Equipment**

**July 12, 2006  
San Francisco Marriott  
San Francisco, CA**



**SEMICON West 2006**  
**SEMI International Standards**  
**STEP: Introduction to SEMI S2-0706,**  
**Environmental, Health, and Safety Guideline for Semiconductor**  
**Manufacturing Equipment**  
**July 12, 2006**

**AGENDA**

<b>Welcome / Introduction</b>	<b>C. Greenberg</b>
<b>Short History of SEMI S2</b>	<b>L. Crane</b>
<b>Delayed Effectivity</b>	<b>J. Beasley</b>
<b>Laser-related changes to SEMI S2</b>	<b>J. O'Donnell (presented by A. Giles)</b>
<b>Lifting equipment changes to SEMI S2</b>	<b>R. Macklin</b>
<b>Short circuit current rating, SEMI S22</b>	<b>E. Karl</b>
<b>Break (10 min)</b>	
<b>S10-related changes to SEMI S2</b>	<b>B. Planting</b>
<b>Future revisions to SEMI S2</b>	<b>C. Evanston</b>
<b>Conforming to the Intent of SEMI S2</b>	<b>C. Greenberg</b>
<b>Questions from the Audience</b>	<b>moderated by C. Greenberg</b>
<b>Closing</b>	<b>J. Beasley</b>

# History and Overview of SEMI S2



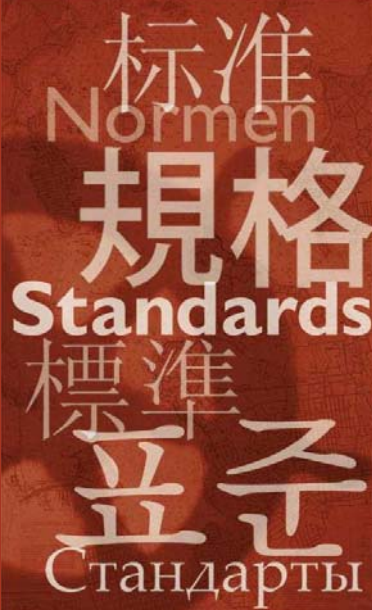
Lauren Crane  
Applied Materials

Rev 1



**Lauren Crane** received his bachelor's degree in electrical engineering from the University of Texas at Austin. Since his graduation in 1985 he has been working in the semiconductor industry. He began his career as an assembly language programmer and electrical/mechanical design engineer with an ion implanter manufacturing company. In 1995 he began his professional involvement with the European CE Marking directives and SEMI Standards. Since that time he has been involved with the SEMI EHS Committee contributing to a greater or lesser extent to the development of all SEMI safety guidelines. Lauren spent two and a half years working with TUV America as a product safety consultant, SEMI assessment third party and TUV-certified machinery evaluator, and currently works with Applied Materials on the safety technical staff of their Corporate Product EHS organization.

## SEMI TECHNICAL EDUCATION PROGRAM – *SEMI S2 and What is New For 2006*



SEMI S2 Revision Management  
SEMICON West 2006

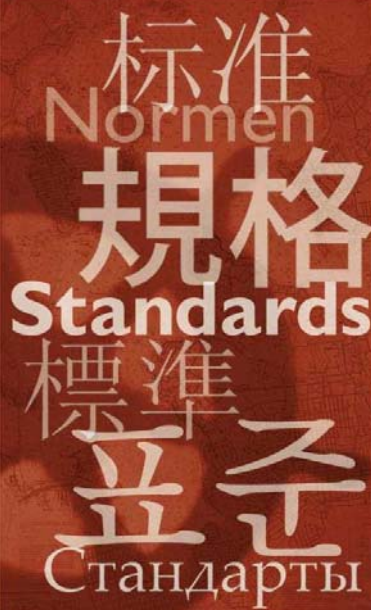
James Beasley  
Intel Assignee to International SEMATECH  
ESH Division



During his 24-year tenure with the Intel Corporation, **James Beasley** has held positions in facilities and equipment engineering, specialty gas and chemical management, and Environmental, Health, and Safety (EHS). James is a US Green Building Council LEED Accredited Professional, a Certified Hazardous Control Manager, and diplomate of the Institute of Safety and Systems Management at the University of Southern California. Currently, James is an Intel assignee to the International SEMATECH Manufacturing Initiative, responsible for Supplier ESH Leadership and Resource Conservation program management.

# SEMI S2

## Section 26 Laser Safety



## SEMI S2

### Section 26 Changes

### Laser Data Sheet

John O'Donnell  
Texas Instruments



**John O'Donnell** works in Environmental, Safety, and Health for Texas Instruments. He currently serves as the Radiation and Laser Safety Officer.

John has a Bachelors and Masters in Nuclear Engineering from Texas A&M University. He is the Convener of Working Group 8 for International Electrotechnical Commission (IEC) Technical Committee (TC) 76 on Laser Safety. He has served as a member of the Control Measures and Training Subcommittees for the ANSI laser safety standard. John contributed to the revision of the Texas Regulations for the Control of Laser Radiation. John served as the unofficial coordinator for the revision of the three radiation sections of SEMI S2.

John continues to provide technical support and guidance to other professionals in the safe use of ionizing and non-ionizing radiation and the control of radioactive materials.

**Andrew Giles**, a graduate of Texas A&M University, has been in the semiconductor safety industry since 1980. He started with Texas Instruments as a site industrial hygienist in Austin, then corporate industrial hygienist in Dallas until 1987. He has also worked for Advanced Micro Devices and Sony Microelectronics in San Antonio as the Safety Manager and Chemical Distribution Manager from 1987 to 1995. In 1995 he left to start up the EORM office in Austin, but switched to performing SEMI S2 evaluations and has been part of GS3 since its inception becoming Technical Manager. He has been active in SSA, now SESH, and the SEMI standards process.

## Changes to S2: Lifting Equipment



Changes to Section 18.5 —  
Lifting Equipment

Ron Macklin (Applied  
Materials) Lifting Equipment  
TF Chair



**Ron Macklin** has over twenty-seven years of Semiconductor Manufacturing Equipment design experience. Ron joined the Corporate EHS group within Applied Materials in 2000. Prior to Ron joining Corporate EHS, he spent 11 plus years working in Applied Material's Ion Implantation division as a Senior Mechanical Engineer. Today, Ron's primary responsibilities are in the areas of Product Ergonomics, Lifting Equipment Design, and Risk Assessment, with an emphasis on proactive ergonomic design. Ron also, co-chairs task forces in Ergonomics and Lifting Equipment within SEMI Standards.

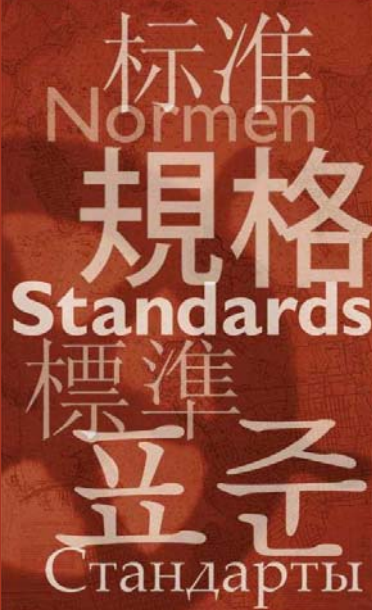
## SEMI STEP: Introduction to SEMI S2-0706

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Short Circuit Current Rating  
Edward Karl  
Program Manager  
Corporate Product EHS  
Applied Materials



**Edward Karl** is the leader of the AIC / Interrupt Ratings Requirements Task Force, which drafted the short circuit current rating-related changes to SEMI S2 addressed in this presentation. He is Program Manager, Corporate Product EHS at Applied Materials.



SEMI S10 Risk assesment  
changes and impact to SEMI S2

Bert Planting

ASML

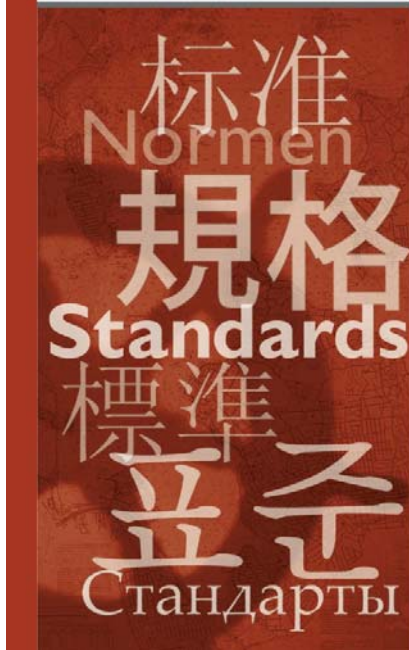
Taskforce leader SEMI S10



**Bert Planting** is the co-chair of the Europe Environmental Health and Safety Committee, and the leader of the S10 Task Force, which drafted the S10-related changes to SEMI S2 addressed in this presentation. He has been Product Safety Coordinator at ASML since 1996 and involved with the SEMI International Standards Program since 1997.



# SEMI STEP: Introduction to SEMI S2-0706



## The Future of SEMI S2

Chris Evanston, PE

Program Manager

Earth Tech Microelectronics

[Chris.evanston@earthtech.com](mailto:Chris.evanston@earthtech.com)



**Chris Evanston** is the co-chair of the North America Environmental Health and Safety Committee, and was the leader of the (now dissolved) S2 Strategic Planning Task Force, which was formed to “develop a strategic plan with concepts for future revision and maintenance of SEMI S2”. He is Program Manager at Earth Tech Microelectronics.

## SEMI STEP: Introduction to SEMI S2-0706

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Conforms to the Intent:  
who intended what?

Cliff Greenberg  
Safety Manager, Nikon Precision  
Co-chair, MESSC



**Cliff Greenberg** has been working in the hi-technology arena for almost 30 years. He gained front line knowledge installing and trouble shooting e-beam lithography systems around the world. Cliff has been with Nikon Precision for over 11 years and has responsibility for Environmental, Health and Safety and also supports Nikon's Corporate energy conservation efforts. He has been active in SEMI standards authorship for 15 years, involved with every rewrite of S2 after 1991 and currently co-chairs the sub committee that has stewardship for S2.