

Minutes
Technical Standards Committee
Wednesday, March 24, 1999
Royal York Hotel
Toronto, ON

Chairman: Bill Groener, PRG/Production Arts

Recording secretary: Karl G. Ruling, ESTA

Members in attendance: Colin Waters; TMB Associates
Edward Paget; Jones & Phillips Associates, Inc.
Jay O. Glerum; Jay O. Glerum & Associates, Inc.
Ken Vannice; NSI Corporation
Larry Schoeneman; Interesting Products, Inc.
Lori Rubinstein; ESTA (ex officio)
Mike Garl; James Thomas Engineering, Inc.
Mike Wood; High End Systems
Mitch Heffer; Rosco/Entertainment Technology
Rodney F. Kaiser; USITT (J.R. Clancy Inc.)
Steve Carlson; Rosco/Entertainment Technology
Steve Terry; PRG/Production Arts
Tim Cox; PLASA

Visitors: Bob Luther; Lex Products
Ed Clare; PERA
Eddie Kramer; IATSE Local 1
Roger L. Lattin, IATSE Local 728

1 Opening remarks

Bill Groener called the meeting to order at 1:09 p.m.

2 Attendance and membership (Five required for quorum.)

2.1 Attendance

An orange attendance sheet was handed around the table. Groener noted, "We are only missing Frank and Anne. We have a quorum."

2.2 Welcome to visitors

Bill Groener welcomed Eddie Kramer, Bob Luther, and Ed Clare. (Roger Lattin arrived after the introductions.)

Groener announced that to accommodate Ed Clare's schedule we would have the report from the Camera Cranes Working Group and discuss the power working group early in the report section of the agenda.

3 Approval of minutes from the previous meeting

Ted Paget moved that the minutes of the previous meeting be accepted. Larry Schoeneman seconded. Unanimous approval by show of hands.

4 Call for patents and anti-trust statement

Groener directed the group to read the call for patents and the anti-trust statement, which were printed in the agenda and are reproduced below. Groener gave the group a couple of minutes to do so.

"ESTA intends to publish no standard that contains protected intellectual property, unless that property can be licensed by anyone for a reasonable fee. ESTA uses a process of open patent disclosures to implement this intent. ESTA does not conduct patent searches and does not warrant that its standards contain no protected intellectual property.

"In keeping with the open disclosure policy, I ask if anyone present wishes to notify the Technical Standards Committee of the existence of a patent or copyright that might protect material in a standard being developed by a working group. You need not be the holder of the patent or copyright in order to notify the TSC of its existence."

"The ESTA Board of Directors and the leadership of this Technical Standards Committee will reject or nullify any actions that restrain trade. Anyone who feels that an action restraining trade is being or has been taken is requested to bring the matter to the attention of the chair immediately. Anyone who feels that actions in restraint of trade have been taken and not properly annulled is requested to notify the TSC chair or ESTA president immediately.

"ESTA legal counsel has informed us that any member of this committee may be found individually liable for any action that restrains trade taken by this committee. An individual convicted of a violation of the Sherman Act may be fined as much as \$100,000 and be imprisoned for up to three years. An easy to read pamphlet describing restraint of trade is available from the Technical Standards Committee."

Steve Carlson offered a comment he said came from Anne Valentino, which was that these are serious paragraphs and should be taken seriously. Carlson said his attorney advises that if you are mum about a patent you have that might bear on the work of the group, you have forfeited some rights. Carlson urged people to talk to their corporate attorneys to make sure that the company is comfortable with this.

5 Approval of agenda

Groener asked to add to the financial section of the agenda an item where we discuss Colin Water's request for additional financial info. We will discuss the brochure in the public relations section 6.3. Under other business will discuss Protocol and TSP matters.

Mitch Hefter moved that the agenda be approved with the above changes. Steve Terry seconded. Unanimous approval by show of hands.

6 Old business

6.1 Financial reports

6.1.1 Treasurer's report

Frank Stewart was not present, but his report had been distributed to the group before the meeting. [Please see the end of the minutes for the two-page report.]

Groener asked for the consensus of the group as to the form of the presentation of the information. Colin Waters moved that the following statement be put into the minutes:

"The committee thanks Frank for his substantial effort in producing financial information in this format, and agrees that this is the acceptable format for this committee."

Ted Paget seconded. Unanimous approval by show of hands.

6.1.2 Status of contributions and pledges

Bill Groener and Lori Rubinstein gave a report on the status of the contributions and pledges. Rubinstein said that she had no reason to believe that all the pledges save one would be honored.

Bill Groener reported that a fundraising committee for ESTA had been formed, and that the committee had had one meeting in New York.

Colin Waters asked how much of the ESTA general funds could go to support the TSP. Mike Wood reported that he had brought this question to the Board, and from that discussion the fundraising committee was formed. It will fund the TSP and other projects. The exact specifics of how much might be available are not known at this time. Wood pointed out that the existence of a fundraising committee does not absolve the TSC members from the responsibility of soliciting contributions.

The consensus of the TSC was that that the fundraising campaign needs revitalization. There was a discussion of ongoing funding of ESTA in general. Wood reported that the new committee, headed by John McGraw, exists to define the problem and identify effective fundraising strategies. Money raising is an ESTA-wide problem, not a TSP-wide problem.

Mike Wood reported that the Board had voted to delegate to the TSC the responsibility of reimbursing TSP participants for meeting-related expenses on a case-by-case basis, within the guidelines of the current budget. This was approved by the Board with one abstention.

6.1.3 Accounting of TSP documents sold and on-hand

Lori Rubinstein reported on the TSP documents sold and on-hand.

Where They Went	Ethernet	Ethernet Supp	Wire Rope	Fog
USITT Starting Qty. 5/98	25		25	2000
Sent to ESTA				-150
May 1998			-1	-76
June 1998	-1		-3	-102
July 1998	-2			-2
August 1998	-1		-2	-27
September 1998	-16			-3
October 1998				-3
November 1998				
December 1998	-6			-9
Shipped to ESTA	-4		-4	-75
New Printings	(12/98) 100	(3/99) 250		
January 1999	-2			-1
February 1999	-5		-2	-5
Totals Remaining	88	250	13	1547

6.2 Working group reports

6.2.1 Photometrics

Ruling reported that the draft E1.9 standard is in public review. The next meeting to discuss the review results and the information projects will be in July.

Bill Groener reported on his attendance at the last Photometrics meeting. Tom Tyler is an inexperienced chair, but the meeting went well. Tyler and Larry Leiberman should be included in any training sessions for new working group chairs.

6.2.2 Control Protocols

6.2.2.1 E1.3

Ruling reported that the public review of E1.3 had been held up because the task group had forwarded neither the approved comment resolutions nor the revised document to him.

6.2.2.2 E1.11 matters

Hefter said that the first draft of the document should be presented to the working group in July.

Ruling reported that on March 22 Mike Stein had sent a new work proposal to make DMX512 an IEC standard to the Secretary of the US National Committee with the note to submit the proposal to the IEC central office for submittal to the national committees of TC34. TC34 is expecting a working draft of the standard from the CPWG in July.

Ruling reported that Stein requested a suggested panel of experts and a project leader. Ruling reported he had submitted the following list:

Project leader: Mitch Hefter

Panel of experts:

Canada	Dave Higgins	USA	Tim Bachman
Germany	Eckart Steffens		Steve Carlson
UK	Tim Cox		Milton Davis
	Tony Douglas-Beveridge		Doug Fleenor
	Wayne Howell		Bob Goddard
	Paul Mardon		Ted Paget
	Steve Unwin		Steve Terry
	Peter Willis		

Regarding USITT's efforts to defend the existing DMX standard, Mike Wood offered the following resolution:

"The Technical Standards Committee fully supports the efforts of USITT to enforce the integrity of the DMX512 standard in the international entertainment equipment market."

Jay Glerum seconded the motion. Unanimous by show of hands.

6.2.2.3 Report of ACN Task Group

Steve Carlson reported that Richard Lawrence did a 2-hour presentation at the last task group meeting. The proposal looked pretty good, so the task group is to study it in detail. Carlson also described JINI, a promising protocol that might work for ACN. Dallas Semiconductor will have a complete chip set soon, and the ACN task group is listed as an earlier adopter.

6.2.3 Fog and Smoke

6.2.3.1 E1.5, glycol/glycerin fog - The Stink Test.

Larry Schoeneman moved that the TSC approve the additional expenditure of up to \$2,000 for adding PEG 200 to the stink test. Ted Paget seconded. Unanimous.

Schoeneman reported increasing problems in getting fog fluid materials, particularly in England, Brazil, and Canada.

6.2.3.2 Fog book, third edition

Schoeneman reported that the plan was to edit it this summer, and finish it at the November meeting. We will sell off the second edition then.

6.2.3.3 Standard for fog machine manuals

Schoeneman reported that we have a draft.

6.2.3.4 Other atmospheric effects issues

Schoeneman reported that the NFPA panel dealing with 160 has been merged with 1126, so Larry is now working on two standards. Randy Davidson wants four standards to go under one committee. The panel will meet next some time this summer or early fall in New York.

6.2.4 Rigging

Mike Garl reported that the three meeting rule is working well. (Miss three in a role and become an observer.)

6.2.4.1 E1.1 – Wire Rope Ladder Standard

Garl reported that Rocky Paulson has resolved the comments and those have been sent to the group. The proposed resolutions would not result in substantive changes, so the document may be recommended for adoption.

6.2.4.2 E1.2 – Aluminum Truss Standard

Ruling reported that it is in public review.

Garl reported that Peter Hind has submitted the English version to BSI, and he has made progress in getting the truss standard separated from the rigging standard.

6.2.4.3 E1.4 – Manual Counterweight Flying Systems Standard

Garl reported that it is back from review. Rodney Kaiser said the task group will continue to work on resolving the comments after the Rigging Working Group meeting.

6.2.4.4 E1.6 – Powered Flying Systems

Garl reported that there is no effective task group. That problem would be resolved at that night's meeting.

6.2.4.5 E1.7 – Recommended Practice for Flying Performers

No report.

6.2.4.6 E1.8 – Speaker Enclosures Rigging Standard

Ruling reported that the vote to send it to public review had passed in the working group. It is now up to the TSC to accept the motion.

6.2.4.7 E1.10 – Building Structural Requirements Standard

Garl reported that the comments had been resolved and the resolutions accepted. The revised document has been sent to working group.

6.2.4.8 British Standards – update – [Tim Cox]

Tim Cox said he had no report.

6.2.4.9 E1.13 – Arena Scoreboards and Speakers

Garl reported that Wally Blount had presented a draft of a vision statement at the last meeting.

6.2.5 Camera Cranes

Ed Clare gave a history of the project. Kent Jorgensen is the man leading E1.12 task group and the operators' handbook task group.

6.3 Public relations/marketing [Lori Rubinstein and Karl Ruling]

Lori Rubinstein reported that CITT is publishing material about our program. It's all been pulled from our website, so it's all information that has already been vetted.

The recent Olaf Sööt letter to the editor in ED was discussed. The letter decries the lack of rigging standards and makes no mention of ESTA's work to create them. It was agreed that Bill Groener and Lori Rubinstein will talk to Jackie about us running an article in ED or LD to counter the ignorance about ESTA's standards program.

Rubinstein reported that the TSC PR brochure had been held up for the addition of a new working group. There was a discussion of the quotes we have for use as pull quotes in promotional material and a discussion of additional people who might be able to give additional quotes.

7 Old Business

Ken Vannice reported on the EMC workshop. (Report attached.) The next meeting will be May 6 & 7 at Sheraton and Baltimore Washington International Airport. The meeting will be to draft a response to the issue.

Vannice asked for guidance and noted the options listed at the end of his report. Steve Terry suggested that TSC allow Ken Vannice wide latitude until the Electrical Power Working Group gets geared up and can perhaps give a directed vote.

Terry moved that the TSC authorize Ken Vannice to represent our interests to the harmonics task group in the manner he feels would best serve our interests, while continuing to report back to the TSC. Rodney Kaiser seconded. Unanimous.

8 New Business

8.1 Formation of power working group

There was a consensus that one power working group would suffice for cabling matters and for power quality matters.

Bob Luther identified these issues:

- The use of Cam-Lok connectors, (reversed genders on neutral and ground)
- The issue of ballast cables with non-standardized pin-outs.

Luther says he thinks funding is available for work in this area.

Vannice spoke about the need to deal with power harmonics.

Mike Garl moved that we form an Electrical Power Working Group with Bob Luther and Ken Vannice as co-chairs. Ted Paget second. Approved by a unanimous show of hands.

Steve Terry asked the new working group chairs to develop a vision statement within sixty days, plus a list of potential projects and required resources. The group felt it was not felt that a formal motion was necessary on this. Bill and I will get together with them and discuss what is needed of a working group chair.

8.2 Challenge to work more efficiently and faster

Bill Groener, who had suggested this agenda item, asked that it be tabled until the next meeting. There were no objections.

9 Other business

A discussion was held about working group and task group business being written about in detail in *Protocol*: After much discussion the consensus was that no articles dealing with working group matters other than Ruling's bullet-point laundry lists of projects and milestones will appear in *Protocol*.

10 Schedule for future meetings

Rubinstein announced the following meetings, which will be held at the Dallas/Ft. Worth Marriott:

Control Protocols

Saturday, July 17, 9am - 6pm

DMX Task Group

Saturday, July 17, 1pm - 11pm

Electrical Power

Friday, July 16, 8am - 12pm

Fog and Smoke

Saturday, July 17, 5pm - 11pm

Photometrics

Saturday, July 17, 1pm - 5pm

Rigging
Friday, July 16, 7pm - 11pm

Technical Standards Committee
Friday, July 16, 1pm - 5pm

The Camera Cranes Working Group will meet June 24, 1999 in the Los Angeles area. The time and place are to be announced.

The following Working Group and Technical Standards Committee meetings will be held November 17-20, 1999 in conjunction at the Lighting Dimensions International Trade Show. All meetings will be held at the Peabody Hotel.

Control Protocols
Thursday, November 18, 9am - 6pm

DMX Task Group
Wednesday, November 17, 8am - 12pm and 7pm - 11pm
Thursday, November 18, 1pm - 6pm

Electrical Power
Friday, November 19, 7pm - 11pm

Fog and Smoke
Saturday, November 20, 6:30pm - 11pm

Photometrics
Saturday, November 20, 9am - 12pm

Rigging
Wednesday, November 17, 7pm - 11pm

Technical Standards Committee
Wednesday, November 17, 1pm - 5pm

11 Adjournment

Steve Carlson moved the meeting adjourn. Steve Terry seconded. Unanimous. The meeting was adjourned at 5:18 p.m.

**Technical Standards Program
Financial Report by Month**

1999 TSC Expenditures	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Administrative Expenses	\$ 10,314.29	\$ 1,482.68										
Working Group Expenses												
Committed Funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Monthly Totals	\$ 10,314.29	\$ 1,482.68	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cumulative Totals	\$ 10,314.29	\$ 11,796.97	\$ 11,796.97	\$ 11,796.97	\$ 11,796.97	\$ 11,796.97	\$ 11,796.97	\$ 11,796.97	\$ 11,796.97	\$ 11,796.97	\$ 11,796.97	\$ 11,796.97
Working Balance	\$ 69,285.71	\$ 67,803.03	\$ 67,803.03	\$ 67,803.03	\$ 67,803.03	\$ 67,803.03	\$ 67,803.03	\$ 67,803.03	\$ 67,803.03	\$ 67,803.03	\$ 67,803.03	\$ 67,803.03
1999 TSP Budget		\$ 79,600.00										
1999 Expenses to date		\$ 11,796.97										
Percentage Spent			14.82%									
TSC Contributions Recap												
Received to Date												
1994	\$100,606.00											
1995	\$ 76,065.00											
1996	\$ 50,000.00											
1997	\$ 68,409.00											
1998	\$ 77,000.00											
1999 YTD	\$ 24,320.00											
	\$396,400.00											
Expenses to Date												
1994	\$ 9,000.00											

1995	\$ 69,258.50											
1996	\$ 82,573.87											
1997	\$ 97,124.27											
1998	\$106,805.1 4											
1999 YTD	\$ 11,796.97											
	\$376,558.7 5											

TSP Operations
Period Ending February 28, 1999
Committed and Actual Expense

Account	Name	Actual 1997	%	Actual 1998	%	Budgeted 1999	% OF TOTAL	Committed 1999 YTD	% OF LINE	Actual 1999 YTD	% OF TOTAL	Available 1999 YTD	% OF LINE	Budgeted 2000	% OF TOTAL	Budgeted 2001	% OF TOTAL
	TSP OPERATIONS																
536.10	Meetings	10,134.03	22%	11,970.68	28%	14,200.00	17.8%	0.00	0.0%	2,796.97	23.7%	11,403.03	80.3%	16,500.00	18.3%	18,150.00	18.3%
0.11	Transportation	2,840.85	6%	2,825.87	7%	5,000.00	6.3%	0.00	0.0%	1,607.50	13.6%	3,392.50	67.9%	6,000.00	6.6%	6,600.00	6.6%
0.12	AV Equipment	320.51	1%	759.24	2%	1,000.00	1.3%	0.00	0.0%	353.33	3.0%	646.67	64.7%	1,000.00	1.1%	1,100.00	1.1%
0.14	Hotels/Meals	2,596.20	6%	4,751.07	11%	4,000.00	5.0%	0.00	0.0%	94.79	0.8%	3,905.21	97.6%	4,500.00	5.0%	4,950.00	5.0%
0.15	Miscellaneous	58.10	0%	126.82	0%	200.00	0.3%	0.00	0.0%	47.09	0.4%	152.91	76.5%	250.00	0.3%	275.00	0.3%
0.17	Refreshments	4,000.37	9%	3,348.68	8%	3,000.00	3.8%	0.00	0.0%	376.26	3.2%	2,623.74	87.5%	3,500.00	3.9%	3,850.00	3.9%
0.18	Room Rental	318.00	1%	159.00	0%	1,000.00	1.3%	0.00	0.0%	318.00	2.7%	682.00	68.2%	1,250.00	1.4%	1,375.00	1.4%
536.20	Legal TSP	7,747.06	17%	689.02	2%	3,000.00	3.8%	0.00	0.0%	0.00	0.0%	3,000.00	100.0%	8,000.00	8.9%	8,800.00	8.9%
536.30	ANSI	1,995.00	4%	1,995.00	5%	3,000.00	3.8%	1,995.00	66.5%	0.00	0.0%	1,005.00	33.5%	4,000.00	4.4%	4,400.00	4.4%
536.40	Miscellaneous	165.00	0%	0.00	0%	500.00	0.6%	0.00	0.0%	0.00	0.0%	500.00	100.0%	250.00	0.3%	275.00	0.3%
536.50	Prof. Fees (PR)	7,584.60	17%	1,000.00	2%	10,000.00	12.6%	0.00	0.0%	0.00	0.0%	10,000.00	100.0%	12,000.00	13.3%	13,200.00	13.3%
536.60	Insurance	6,000.00	13%	6,000.00	14%	7,000.00	8.8%	0.00	0.0%	7,000.00	59.3%	0.00	0.0%	8,000.00	8.9%	8,800.00	8.9%
536.80	Pub/Sub	594.55	1%	425.93	1%	1,000.00	1.3%	0.00	0.0%	0.00	0.0%	1,000.00	100.0%	1,000.00	1.1%	1,100.00	1.1%
536.90	Office TSP	10,227.38	23%	9,954.33	23%	16,600.00	20.9%	0.00	0.0%	2,000.00	17.0%	14,600.00	88.0%	21,000.00	23.3%	23,100.00	23.3%
0.92	Phone	0.00	0%	0.00	0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	100.0%	0.00	0.0%	-	0.0%
0.94	Data Services	240.00	1%	60.00	0%	500.00	0.6%	0.00	0.0%	0.00	0.0%	500.00	100.0%	500.00	0.6%	550.00	0.6%
0.95	Postage	5,226.72	12%	8,506.00	20%	12,000.00	15.1%	0.00	0.0%	2,000.00	17.0%	10,000.00	83.3%	14,000.00	15.5%	15,400.00	15.5%
0.96	Office Equipment	0.00	0%	824.45	2%	2,500.00	3.1%	0.00	0.0%	0.00	0.0%	2,500.00	100.0%	1,000.00	1.1%	1,100.00	1.1%
0.97	Printing	4,576.79	10%	563.88	1%	1,000.00	1.3%	0.00	0.0%	0.00	0.0%	1,000.00	100.0%	5,000.00	5.5%	5,500.00	5.5%
0.99	Office Misc.	183.87	0%	0.00	0%	600.00	0.8%	0.00	0.0%	0.00	0.0%	600.00	100.0%	500.00	0.6%	550.00	0.6%
537.00	TSP WG	799.68	2%	10,390.18	24%	24,300.00	30.5%	10,000.00	41.2%	0.00	0.0%	14,300.00	58.8%	19,500.00	21.6%	21,450.00	21.6%
0.10	Control Protocols	0.00	0%	1,876.20	4%	5,000.00	6.3%	0.00	0.0%	0.00	0.0%	5,000.00	100.0%	5,000.00	5.5%	5,500.00	5.5%
0.20	Cranes	0.00	0%	2,578.03	6%	2,000.00	2.5%	0.00	0.0%	0.00	0.0%	2,000.00	100.0%	5,000.00	5.5%	5,500.00	5.5%
0.30	Fog & Smoke - NFPA	799.68	2%	2,599.28	6%	15,000.00	18.8%	10,000.00	66.7%	0.00	0.0%	5,000.00	33.3%	6,000.00	6.6%	6,600.00	6.6%
0.50	Photometrics	0.00	0%	1,726.48	4%	800.00	1.0%	0.00	0.0%	0.00	0.0%	800.00	100.0%	1,000.00	1.1%	1,100.00	1.1%
0.90	Truss & Rigging	0.00	0%	1,610.19	4%	1,500.00	1.9%	0.00	0.0%	0.01	0.0%	1,499.99	100.0%	2,500.00	2.8%	2,750.00	2.8%
536.00	TSP Totals	45,247.30	100%	42,425.14	100%	79,600.00	100%	11,995.00	108%	11,796.97	100%	55,808.03	70.1%	90,250.00	100%	99,275.00	100.0%

Report
on
Harmonics Workshop
by
Kenneth Vannice
March 1999

I attended the Powerline Harmonics Workshop held on January 28 – 29, 1999, at the Sheraton BWI in Linthicum, MD. It was sponsored by the Executive Committee of the US National Committee of the International Electrotechnical Committee (IEC) and its US Coordinating Committee on Electromagnetic Compatibility (USCCEMC). There were 80 people, including speakers, from major corporations in attendance. Below is a summary of what I believe occurred and what is occurring, and what we might want to do about it.

I. What is going on!

1. The European Community, in order to pull itself together, is heavily involved in regulation. The EC is accomplishing this by creating IEC (“international”) standards and then adopting them. The EC can accomplish this because of the one country, one vote policy of the IEC giving them many of the votes. According to Mr. Woodgate, PLASA’s representative, the IEC route was taken so the US would not claim restraint of trade.
2. The current issue causing concern is over the standard IEC (6)1000-3-2, Electromagnetic Compatibility, Part 3 Limits, Section 2 Limits for Harmonic Current Emissions (equipment input current \leq 16A per phase). The standard currently has stringent limits on harmonic input currents for Class A (balanced three-phase and all other equipment not listed below), Class B (portable tools), Class C (lighting equipment including dimming devices, both independent and built-in), and Class D (equipment with special wave shapes that gulp current in pulses). The standard currently has an exemption for “high-power” “professional” equipment above 1 kW. This standard becomes mandatory on January 1, 2000.
3. IEC Technical Committee TC77, Sub Committee SC77A, Working Group WG1, Task Force TF5a is working on revisions to IEC 61000-3-2. Proposed changes in the form of documents such as 77A/219/CD, 77A/242/NP and 77A/262/CDV are in the works. There was to be a meeting in Paris on February 9, 1999, but it was postponed. The people who did not get exemptions are upset at the people who did and are lobbying for their own exemptions. The task force currently believes that a standard full of exemptions is not a standard and is thinking about an “equal rights” amendment (no exemptions for anyone for any reason). The task force also believes that this standard is universal over all other “product” standards, an opinion not held by those writing the “product” standards. One of the problems with this whole process is that there appears to be no workable interpretation/appeals process. One has to talk to several knowledgeable people, form an opinion, and hope for the best. This standard was written around “240V” equipment. The task force is about to start on a “120V” version using the same (non-North American) concepts.
4. IEC 61000-3-4 is the “limits” standard for equipment greater than 16A. It apparently is actually a recommended practice. TF6 is in the process of rewriting it as a real standard to be known as 61000-3-12. Adam Bennette, I am told, represents PLASA on this TF.
5. European regulation philosophy differs from North American philosophy.

Europe	Japan	United States
Mandated	Quasi-voluntary	Voluntary/Contractual
Government Driven	Government Driven	Market Driven
Product Oriented	Product Oriented	Facility Oriented
Universal	Targeted?	Targeted
Stringent Limits Imposed Step-wise (IEC 61000-3-2, etc.)	Limits Imposed Gradually (IEC 61000-3-2 based)	Stringent Limits at Med. V (transmission) Level (IEEE 519)
Anticipatory	Reactive & Gradualist	Reactive

6. The European process is heavily controlled by academicians and the power utilities. The manufacturers, in general, appear to be somewhat fragmented, disorganized and ineffectual.
7. The indicated standards are just a start. A whole body of standards is planned as well as upgrades to many others.

II. North American concerns about what is going on.

1. Using the European philosophy there is a potential for \$50 Billion in imposed costs annually. These costs are ultimately paid by the consumer and effects the quality of life. It is estimated that the North American consumer will soon be paying in excess of a 2% "tax" due to these stringent regulations. As large manufacturers gear up for worldwide markets the stringent European standards force these costs on the North American community.

2. In general the North American power utilities do not have a problem serving the existing load. They believe that the effect of televisions (the original cause of the European concern) and computers have peaked and are not a significant problem. The only problem they have is with some single-point loads such as MW arc furnaces and the like. These problems can be negotiated with the user. They do have some concern about the upcoming trend to include solid-state motor controls in most residential refrigerators, washing machines, and the like. They would like to either reduce the harmonics or charge extra for high harmonic loads because these harmonics, like inductive loads, cause them to provide extra generating power. It is not clear, however, if trading harmonics for the real power required by the additional mitigation equipment will actually save them generating capacity.

3. Requiring every load to draw clean power no matter what is not a very cost effective approach when much of the mitigation can be accomplished more cost effectively in the design of the total system. The only thing that should matter is the conditions at the point of common coupling between the private owner and the public utility. It is an abridgement of freedom to dictate whether the private owner should employ "clean" equipment only, or clean up any harmonics at the service entrance. There is already equipment designed and installed to deal with harmonics on a system basis. This equipment would be of little use in a load-based mitigation philosophy.

4. Some of the side effects of the European regulatory practices are:

- A. Extra low emissions levels force the use of expensive active power factor correction in most products.
- B. Regulations may be addressing problems that don't exist or disappear in normal system topography.
- C. Non-product compliance costs may exceed product costs for low volume products and small manufacturers.
- D. CE marking requirements related to harmonics constitute defacto trade barriers for products designed for markets not having similar regulations.
- E. Excessive burdensome regulation in a single market disrupts the trend towards common world products.

III. What is North America going to do about it?

“Americans and American Businesses tend to ignore looming dangers until there is blood on the floor, usually their own.” – An American Colleague

“You Americans are really effective and dangerous when you are mobilized to action, but most of the time you seem to be asleep.” – A European Colleague

1. I believe this meeting produced some mobilization to action. In the short term some ideas were pulled together in the short remaining time because of the IEEE meeting the following week and the cancelled February 9 meeting. The executive committee was to flesh out a temporary response until we could do a more detailed job. May 6 and 7, 1999, was set aside to meet again and begin to work out a strategy. The problem is going to be to keep the mobilization in action given this is a voluntary, non-government operation.

2. The feeling I got from the attendees was the following:

- A. The European-style regulations were excessive, unnecessary, restrictive trade-wise, and did not produce the best cost/benefit trade-off for society.
- B. European-style regulations were not in the best interest of the 120V countries.
- C. Harmonics, in general, were not causing significant problems. Where there were some, appropriate action should be considered. The situation should be continued to be monitored.
- D. The North American philosophy as stated above is still the preferred approach.

IV. What should ESTA be doing?

1. The various IEC groups are small country-balanced organizations essentially by appointment. They would be hard for us to penetrate directly. PLASA has engaged a consultant who is on various TF's of SC77A. There are similar consultants from the US that might be able to be engaged. Currently I have been working with Ed Yandek, the person responsible for lighting on several of these TF's. He seems to be very reasonable and effective. Working with Ed seems to be going well. He is employed by GE so he probably could not be engaged directly.

2. For every IEC TC/SC there is a matching Technical Advisory Group (TAG) under the US National Committee (USNC). These are the groups that formulate the US position and recommend the US vote. TAG membership is \$250 per Tag. Anyone can join. The workshop such as this one I attended is a way to minimally be a part of the work of the TAG without paying the \$250. The coordinating committee meeting I attended in December organizes all of this. We can probably be a part of the coordinating committee by just asking. Even though the USNC works through ANSI none of this is the national standards work in these areas such as the ANSI/IEEE C63 on EMC (similar to ANSI/ESTA E1).

3. The general plan seems to be to push the IEC for the type and level of standards that exist in the USA. The first level push will be to make sure the “120V” standard is a North American-type standard and not a European-type standard. The second level push will be to try to move the “240V” standard towards a more reasonable approach so to reduce the “tax” North Americans pay for multi-national goods and the pseudo trade barrier that the more stringent standards create. The plan is not to attack the existing position but rather to suggest an alternative. New issues have been raised and need to be addressed in order for a suggested alternative to be plausible. We may be asked and may need to provide the following:

- A. On a system basis what is the typical harmonic content of the current drawn at the service entrance of our theatres, TV studios, etc. employing existing dimming (and motor control) equipment?
- B. How big is the entertainment industry, dollar wise, with respect to industry in general?
- C. How much power is used in the entertainment industry with respect to industry in general?
- D. How much is it going to cost the entertainment industry (one-time and per-unit) to meet standards as stringent as those in the current IEC standard? What will be its effect on the entertainment industry?
- E. What is a compromise we can live with?

The research of these are all subjects appropriate for task groups of a working group. A task group for writing a recommended practice for the installation of power distribution to entertainment industry electrical equipment might also be appropriate.

TSC Membership as of the End of the March 24, 1999 Meeting

Name	Company	Vote Stat.
Anne Valentino	Vari-Lite, Inc.	P
Bill Groener	PRG/Production Arts	P
Colin Waters	TMB Associates	P
Edward Paget	Jones & Phillips Associates, Inc.	P
Frank Stewart	Specialty Tech Services	P
Jay O. Glerum	Jay O. Glerum & Associates, Inc. (USITT rep.)	P
Ken Vannice	NSI Corporation	P
Larry Schoeneman	Interesting Products, Inc.	P
Mike Garl	James Thomas Engineering, Inc.	P
Mike Wood	High End Systems	P
Mitch Hefter	Rosco/Entertainment Technology	P
Rodney F. Kaiser	J.R. Clancy Inc. (USITT rep.)	A
Steve Carlson	Rosco/Entertainment Technology	P
Steve Terry	PRG/Production Arts	P
Tim Cox	PLASA	P
Tony Douglas-Beveridge	PLASA Standards Office	A