

Minutes of the IEEE SURGE PROTECTIVE DEVICES COMMITTEE

**May 18, 2000
 St. Pete Beach , Florida**

The meeting was called to order at 3:05 PM by chairperson Dennis Lenk.

1.0 Introductions: All in attendance were self-introduced. In attendance were:

Dee Unterweger	Texas Instruments	M		Richard Odenberg	Transtector	M
Andrew Hileman	Consultant	M		Steve Hensley	Joslyn Mfg. Co	M
Richard Cohen	Panamax	M		Ken Nolan	Alabama Power Co.	M
Chrysanthos Crysanthou	Telcordia Technologies	M		Richard Bentinger	Ericsson Radio Systems	IP
Ray Hill	GA Tech/Neetrac	G		Frank Waterer	Square D. Company	M
Dennis Lenk	Ohio Brass Co	Chr		Franois Martzloff	NIST	M
Don Worden	MGC Electronics, Inc	M		H. Wolfgang Ortel	Joslyn Electronics	M
Gerald Lee	BPA			Tom Conrad	LEA International	G
Carl Lindquist	San-O Industrial	IP		Phil Jones	ERICO	G
Jeff Williams	Duke Energy	IP				
Jon Woodworth	Cooper Power Systems	M				
Tom Hartman	Cooper Power Systems	G				
Joe Koepfinger	Duquesne Light Co.	M				
Phil George	Virginia Power	G				
Gary Goedde	Cooper Power Systems	Sec				
Jim Wilson	Ameren Services	M				
Dave Jackson	R.W. Beck	M		M= Member	G=Guest	
Tom Rozek	Detroit Edison	G		IP= Interested Party	Sec=Secretary	
Patrick Howard	Lucent Technologies	M		Chr=Chair		
Hans Steinoff	Joslyn Electronics	M				

2.0 Acceptance of Costa Mesa Meeting Minutes:

The minutes were accepted as written.

3.0 Subcommittee Reports

3.1 A & S Subcommittee - D. Lenk

1. I am pleased to report that Gerald Lee has recently been awarded Fellow status by the IEEE for “ contributions to the electric power industry through the development of innovative designs, surge protection, and testing methods for series capacitor facilities.” The A&S is reactivating the SPDC Fellow Committee to try to identify other SPDC members who would be good candidates for Fellow nomination.

2. For those SPDC members who have an interest in PDH (Professional Development Hours), a PDH registration form will be placed on the SPDC website.
3. Tom Hartman, SPDC website coordinator, reports that the SPDC website is running very well. Tom reported that the HV working groups have been using the website extensively for the storage of working group minutes, meeting agendas, and related documents. Tom indicated that the LV working groups need to be encouraged take greater advantage of this site.
4. There was extensive discussion in the A&S meeting regarding IEEE 1547 draft which was developed by the Standards Coordinating Committee (SCC) #21. This document discusses interconnection concerns for dispersed storage. Specifically, Section 3.1.3.5 of this document relates to surge protection. The SPDC Secretary was requested by A&S to obtain copies of Section 3.1.3.5 and to forward to the chairmen of WG 3.4.14 and WG 3.6.9 for review of the surge protection item.
5. The SPDC Operations Manual is being updated by Jon Woodworth to include the new SPDC positions of Website Coordinator and SPDC Editorial Board Member. The revised document will be posted on the SPDC website after the Fall 2000 SPDC meeting.
6. Joe Koepfinger, chairman of the ANSI C62 committee, announced that he has a vacancy to fill in the IEEE High Voltage delegation to this committee. Please contact Joe if you are interested in filling this vacancy.
7. John Posey and Rao Thallam have asked that the A&S Subcommittee find replacements for them as Standards Coordinator and Bibliography Subcommittee chair, respectively. John Posey provided a detailed summary of the standards Coordinators job responsibilities as defined in the Operations Manual PLUS a very detailed estimate of the time per month spent on his duties. The LV and HV Subcommittee chairs have been asked to identify candidates for these two important positions before the Fall SPDC meeting.
8. The A&S Subcommittee has been requested by the LV Subcommittee chair to help determine the future status of WG 3.6.8, which has completed work on two standards, C62.38 and C62.47. Should this work be forwarded to another group outside SPDC for future activity? This item will be discussed further at the Fall SPDC meeting in Cincinnati.
9. The A&S Subcommittee extensively discussed the proposed PES reorganization. It was the consensus of A&S that the proposed reorganization could jeopardize the future effectiveness and functionality of the SPDC. Accordingly, it is the A&S recommendation that the SPDC reply to PES that we DO NOT support the proposed reorganization. With the approval of the SPDC membership, the A&S will prepare a white paper response and forward it to the PES chair and the PES TC chair.
10. Regarding the PES requested SPDC article for the November issue of the PE Review, the SPDC chair, with the assistance of the subcommittee chairs, will write an article describing the LV and HV activities of the SPDC. The intent of this article is to tell the story of the SPDC to the PES general membership:
 - What are we currently working on in standards writing?
 - What are current and possible future special interest topics?
 - Describe recent and future planned special activities.Hopefully, this article will be of sufficient interest to encourage new attendees at future SPDC meetings.

3.1.1 Standards Coordinator - John Posey

Project status is shown by the STD-Stat.xls file. Three projects remain for revision or reaffirmation in 2000. Negatives have been cast on three ballots and resolution is needed so these can be submitted to the Standards Board soon. Four PAR's expire in 2000.

There are now over 5000 members of IEEE-SA with over 25% from Power Engineering Society.

The *Standards Board Operations Manual* has been revised for 2000. It is available in hard copy and at <http://standards.ieee.org/guides/opman/index/html>. A revised *Standards Companion* will be published in a few months. Working Group chairmen will find helpful information on development of standards, balloting and submission to the Standards Board in both publications.

The PAR form has been revised. Download the type of PAR you wish to submit, and instructions for use, at <http://standardsiieee.org/guides/par/index/html>. You can submit either html or a text file.

A PAR has a four-year life. An extension can be requested if progress has been made—such as a ballot has been issued with negative issues under resolution. Extensions are requested by submitting a “Target Extensions Request Form” available at <http://standardsiieee.org/guides/par/extension/html>.

Conventions used by NesCom and requirements for PAR submittal and PAR extension requests are posted at <http://standardsiieee.org/board/nes/nescomv99.html>.

Standards that require over four years to develop may no longer be industry relevant. Yet, the average standard approved in 1999 required six years from PAR approval to standards approval. The Standards Board is considering adoption of “project monitoring” to identify authorized projects that may not be submitted by the target date promised by the Sponsor. A mentor may be offered to assist the Working Group; or an IEEE staff Editor may be assigned, to achieve completion by the agreed target date.

Draft standards are submitted to the Standards Review Committee (RevCom) of the Standards Board. For RevCom conventions see <http://standardsiieee.org/board/rev/revconventions/pdf>. For the Guide for Submittal of Proposed Standards see <http://standardsiieee.org/guides/revguide/html>. For the Form for Submittal of Proposed Standards, see <http://standardsiieee.org/rev/submitform.doc> or <http://standardsiieee.org/rev/submitform.pdf> depending on your choice of a doc or pdf submission.

Useful training modules in Microsoft PowerPoint can be obtained at <http://standardsiieee.org/training>. See <http://standardsiieee.org/faqs/tpres.html> for more information. Working Group chairmen and members will find one or more modules of interest.

Electronic distribution of standards may erode the income stream that supports the IEEE Standards Department that employs the editorial and publishing personnel needed to bring your draft standards to publication and sale. A revised economic model may be needed to provide funding for publishing standards in printed and electronic form for those who need them—the writers of the standards and the users of the standards.

3.1.2 Awards – Gerald Lee

At the SPDC Luncheon the following award was presented.

The following outstanding member that has helped create and manage the website has been awarded The IEEE Medallion Award: Tom Hartman

Thank You again for all your help

3.2 Bibliography - Rao Thallam

No Report.

3.3/4/5 High Voltage Surge Protective Devices

Minutes of HVSPD Subcommittee Meeting
St. Petersburg Beach, FL
May 18, 2000
Steve Hensley, Chairman

Attendance at the meeting:

Members: M. Comber, T. Hartman, S. Hensley, R. Hileman, V. Hinrichsen, D. Jackson, G. Lee, D. Lenk, K. Nolan, J. Posey, T. Rozek, R. Thallam, J. Williams, J. Wilson, J. Woodworth

Guests: Ray Hill

1. Meeting called to order Thursday 5-18-00 at 1:45
2. 15 members & 1 guest
3. Fall 1999 meeting minutes corrected and approved
4. Working group meetings were held for:
 - 3.3.11 continuous revision of C62.11 Tom Hartman
 - 3.3.13 High Voltage Characterization & Testing Ken Noland
 - 3.4.8 Protection & Insulation Coord. of Transformers Eva Tarasiewicz
 - 3.4.9 Surge Protection of AC Machines C62.21 Dave Jackson
 - 3.4.14 High Voltage Application Guide C62.22 Reigh Walling
 - 3.4.16 Separation Effects Jim Wilson
5. Key Points from review of working group minutes include:

3.3.11 - Standard PC62.11-1999 has been published. By next fall this Working Group will have a PAR proposing an amendment to the current Standard.

Task Force #1 - Proposal of Energy Based Arrester Rating Standard - Chairman - Mike Comber

Mike Comber will provide a written outline for the overall philosophy of this Task Force for the Working Group.

Task Force #2 - Review of Insulation Withstand Tests - Chairman - Joe Osterhout

This task force now is active as TF – 7 in W.G. 3.3.13 but will be moved to 3.3.11 for October’s meeting.

Task Force #3 – Disconnecter Operation, TCC Review -This task force now is active as TF – 8 in W.G. 3.3.13.

Task Force #4 - Statement of Purpose for Each Design Test - Chairman - Jon Woodworth

Jon Woodworth presented draft 2 of this proposal. Draft 3 will be presented at the next meeting. Jon also added any Task Force currently adding or revising a test should include a Statement of Purpose opening paragraph and a brief statement explaining the test.

Task Force #5 - Creation of a “Hot” HTML Version of C62.11 - Chairwoman - Jody Levine

Jody advised the Working Group to check the web site in the near future and critique and play with her examples of the current Standard. Jody needs feedback from the Working Group. She hopes then to have a presentation ready for our next meeting.

Task Force #6 – Short Circuit Tests – Chairman- Bengt Johnnerfelt to present IEC version in our Fall meeting. Note, this Task Force moved from W.G. 3.3.13.

Task Force #7 – Partial Discharge Proposal - This proposal was approved in W.G. 3.3.13 and is now transmitted into W.G. 3.3.11 for editing and inclusion into the next revision of C62.11.

Task Force #8 – Chairman – Michael Fortin-Scope, to clarify number of samples, ratings required, or any other such information needed to clarify or increase understanding of test descriptions and requirements for Design Tests.

3.3.13

Task Force #1 - Short Circuit Tests - Chair: Bengt Johnnerfelt was absent from this meeting. Joe Osterhout reported that “fragment 7” of the current IEC CDV pertaining to Short Circuit Tests had passed. The Task Force will need to obtain a copy of the approved CDV for review.

Task Force #2 - Energy Capability - This Task Force is set aside until the activity of TF#1 of WG 3.3.11 is defined.

Task Force #3 - Transmission Line Arresters - Chair: Jeff Williams presented comments recommending this TF becomes inactive until new issues arise. However reminded everyone to keep transmission perspectives when reviewing any new test proposals.

Task Force #4 - Partial Discharge Proposal - Chair: Mike Comber See 3.3.11

Task Force #5 - Moisture Ingress - Chair: Ken Nolan -Mike Comber recommended combining MDLC Static Test (IEEE, C-62.11, Section 8.19 and current Moisture Ingress test proposal as they are now both very similar. Gerald Lee to draft statements effecting multicolumn arresters. Denny Lenk stated this test proposal must also include wording allowing the 80 °C immersion test for those situations where the bracket is an integral part of the sealing system. The working group agreed and such wording will be added back to the next revision of this draft

Task force #6 - Polymer Aging - Chair: Steve Hensley- No major changes made to the current draft. A suggestion was made that we might use one or more of these tests to replace the current tracking wheel test. The Chairman will request direction from W.G. 3.3.11. This Task Force adjourned with a request for comments on the different cycle’s advantages and disadvantages. These should be sent to Steve Hensley who will compile and present them at the next meeting. Note - these test cycles will be posted in the “Members Only” area of our Web Page.

Task Force #7 - Insulation Withstand Tests – Chair: Joe Osterhout. Is there a logical power frequency test? If a TOV value is used as a basis, what point on the curve should be chosen? After further discussion it was determined to use a multiplier of 1.3 which corresponds to a 20% safety margin + 8% altitude correction factor multiplied by the 0.1 second point on the TOV curve of the arrester. Joe Osterhout will submit the next (and hopefully final) draft prior to the next meeting of W.G. 3.3.11.

Task Force #8- Disconnecter Operation, TCC review Chair – Open Ken Nolan will send originator an e-mail requesting him to explain his position. Jeff Williams stated he has had many problems with disconnectors and can provide examples for input if desired.

3.4.8 The WG submitted a PAR to create a new amendment to C62.22 including an insulation withstand curve for oil filled transformers.

- The group worked on the issued draft 6. The revised draft will be E-mailed to the WG members.
- The WG will submit comments by the fall 00 meeting.

3.4.9 C62.21 Guide for the Application of Surge Voltage Protection of AC Rotating Machinery 100 volts and Greater.

- Attendees were provided a hard copy and disk of the draft text material. Gerry Lee volunteered to help clean up the document, and to convert the figures into an editable electronic form. D. Jackson and G. Lee to put the document into good order, for W.G use to consider at fall 2000 meeting.
- D. Jackson will prepare a reduced, summarized section for input to C62.22, and distribute to W.G. for review and comment.

- D. Jackson will circulate a partial draft of the document to Power Conversion Committee and Relaying Committee.
- The PAR will be withdrawn because the expiration time cannot be met. This will occur at the Standards Board meeting in December 2000. With guidance from HVSPD it was decided to request action by SPDC to dissolve 3.4.9 as of 31 Dec. 2000, and to form a new W.G. by 10 Jan 2001 with the same scope. The new W.G. will review and approve a new PAR request at the spring 2001 meeting.
- D. Jackson will prepare a schedule of events leading to W.G. review at fall 2001 meeting (Niagara Falls), for approval to circulate for ballot.

3.4.14 C62.22 Guide for the Application of Metal-Oxide Surge Arresters for Alternating-Current Systems

- The proposed timeline for the completion of C62.22-2002 was discussed. The goal is to have the standard out for ballot 12/1/01.
- The remainder of the working group meeting was devoted to efforts of TF 12 – 43.

3.4.16 C62.22-1997 Annex C Separation Effects

- The WG considered draft 6 of the rev. to Annex C of C62.22 on Separation Effects.
- Bob Hielman presented his submittal "Effect of Lines Located Between the Arrester and Transformer" and will send to the working group chairman, calculations using the methods in this submittal for the various examples given in draft 6 by 7/1/00.
- Jeff Williams will submit suggested changes on mean time between failure as it would apply to stations and various pieces of equipment and also on applying different protective ratios for different pieces of equipment to the chairman by 7/1/00.
- Jim Wilson will obtain a copy of the IEC separation effects method.
- Jim Wilson will obtain a copy of the original thesis that was used for the reduction method used in the current version of C62.22-1997 Annex C.
- The working group will also see what changes will need to be made to clause 5.7.1 and Table 6 in C62.22-1997 for the next revision based on the revision of Annex C.
- The Chairman will compile changes made by the group by 7/1/00 and issue a rev. 7.
- The goal of this WG is to complete their task by January 1, 2001.

3.5.1 Doug Dawson chairman. This WG did not meet. C62.92 PT. 1 & 2 are in ballot or are resolving ballots.

- PC62.92.1, Revision of C62.92-1987 (R1993), Part I Introduction- Balloting was completed on 12/31/99 with 37 affirmative & 1 negative vote. The negative ballot has been resolved without substantive change. Doug Dawson will be sending out letters to the affirmative commenters and negative ballot resolution documentation and editorially revised draft to John Posey.
- Reaffirmation of C62.92.2-1989 (R1994)-Part II, Grounding of Synchronous Generators: Reaffirmation balloting was completed 9/1/99 with 25 affirmative and 2 negative ballots. Recirculation balloting was completed 2/28/2000 and C62.92 Part 2 was reaffirmed by the Standards Board on March 30, 2000.
- PC62.91, Revision of IEEE Std. 32-1972 (R1997): PAR will expire 12/2000. Reaffirmation of existing IEEE-32 will expire in 2002. This is a difficult project as there are really only Ed Taylor doing the editing, with technical input from the Transformers Committee, and Doug Dawson doing the typing. The revision is progressing, but part time. The PAR has been extended at least once before. If they can get another PAR extension, they would like to finish the revision before the current standard expires. This is a significant standard, setting forth design and testing requirements for neutral grounding devices.

Organizational

1. There will not be a separate WG on Distributed Resources instead this will be covered by TF 44 in WG 3.4.14.
2. New corresponding WG 3.4.18 with Chairman G. Lee for maintenance of: Standard 1312-'93, Standard 1313.1-'96, and Standard 1313.2
3. We are looking for a new standards coordinator to replace John Posey.

A&S Issues

1. It was decided to reaffirm Joint Standard ICC/SPD C62.22.1-1996 "Guide for the Connection of Surge Arresters to Protect Insulated, Shielded Electric Power Cable Systems"
7. Meeting Time Requirements:

Tom Hartman	3.3.11	4 Hours
Ken Nolan	3.3.13	4 Hours
Eva Tarasiewicz	3.4.8	2 Hours
Dave Jackson	3.4.9	3 Hours
Tom Rozak	3.4.14	4 Hours
Jim Wilson	3.4.16	2 Hours
11. Adjournment: The meeting adjourned at 2:50

3.6 Low Voltage Surge Protective Devices - Don Worden

IEEE-SPD 3.6 Sub-Committee Meeting

Meeting held on Thursday, May 18, 2000 at 1330 at the Tradewinds Resort Hotel in St Petersburg, Florida

Members:

Warren Boxleitner*	Boxleitner Group
Chrys Chrysanthou	Telcordia Technology
Richard Cohen	PANAMAX
Bill Curry	Tyco Electronics
Bob Davidson*	UL
Doug Dorr*	EPRI
James Funke	Cutler-Hammer
Ernie Gallo*	Bellcore
Gary Goedde	Cooper Power
Jim Harrison*	Liebert
David Hutchins*	PROTEK Devices
Willy Kapp*	Joslyn (Retired)
Joe Koepfinger	DLC (Retired)
Phil Jones	ERICO
Benny Lee	World Products
Carl Lindquist	San-O Industrial Corporation
Al Martin*	Raychem

Francois Martzloff		NIST
Mick Maytum		Power Innovations
Richard Odenburg		Transtector Systems
Wolfgang Oertel		Joslyn Electronic Systems
Mike Parente		MP Technologies
Hans Steinhoff		Joslyn Electronic Systems (Retired)
Don Turner*		SEICOR
Dee Unterweger		Texas Instruments
Matt Wakeham*		Leviton
Frank Waterer	Secretary	Schneider Electric
Don Worden	Chairman	MCG (Consultant)

*Not in attendance.

Interested Parties:

Tom Conrad	CIRCA Telecom
Mike Hopkins	Key Tek

1. Call to Order, Chair's Remarks
 - Introduction of members and Guests.
 - Chair encourages active participation and membership in SC3.6
 - All members of SC3.6 should also be a member of IEEE, IEEE/SA, and IEEE SPDC.
 - To become a member of SC3.6 each candidate should be an active member of a 3.6 Working Group and participate in SC3.6 meetings for one year.
2. Minutes from last meeting in Costa Mesa, California on September 30, 1999 were circulated. Motion made to accept the minutes from the last meeting. Motion seconded. There were no Negative votes.
3. Working Group Reports

WG 3.6.1 Low-Voltage Gap Type Protective Devices - H.Wolfgang Oertel, Chair

- No meeting of Working Group occurred in St. Petersburg.
 - The Working Group will be reformed and will correspond via E-MAIL to address comments received from the reaffirmation balloting committee regarding C62.31. Potential members would include GDT manufacturers, members from UL, Telcordia, and communication companies.
 - A new PAR will be recommended for paragraphs affected in C62.31 by suggestions received from previous reaffirmation. Document will be prepared for C62.31 that will incorporate all comments received from the Balloting Committee. This new PAR will ready for review at the next meeting in October, 2000.
 - A discussion arose to change the title of C62.31 during the next revision cycle. Proposed title would change to *IEEE Standard Test Method for Gas-Discharge-Tube Surge Protective Devices/Components*. SC3.6 Chair is asked for advise on this matter and preparing a PAR that will only address specific sections of the document.

- It is the intent to submit C62.32 for reaffirmation without any changes.
- Working Group will require four hours of meeting time during Fall, 2000 meeting.

WG 3.6.2 Low-Voltage Solid State Protective Devices - Mick Maytum, Chair

- Working Group met for a total of four hours. Nine members and twenty-one interested parties were present.
- Mick Maytum replaces Richard Odenberg as Chair
- Reviewed the latest revision of C62.35. Decision to review and combine, when applicable, portions of IEC and JEDEC Standards. The purpose is to provide coordination of technical details and shorten the time to complete the document.
- Reviewed and completed the contents for PAR on C62.33 and plan to submit to John Posey (IEEE Coordinator) by May 31, 2000.
- Two out of three negatives have been resolved after the balloting for the reaffirmation of C62.33. There is a verbal resolution of third negative. Written confirmation is forthcoming.
- C62.37.1 has completed balloting with style changes.
- Working Group will require eight hours of meeting time during the Fall, 2000 meeting. It is requested that four of the hours be assigned to a morning and four to an afternoon session on difference days.

WG 3.6.3 Low-Voltage SPD Application Guide Don Turner, Chair

- There was no new material for the Working Group to review and no meeting was held.

WG 3.6.4 Surge Characterization on L-V Circuits H. Steinhoff, Chair

- Working Group met for a total of 9.5 hours on Tuesday, May 16th and Wednesday, May 17th. There were two meeting on Wednesday, May 17th. On May 16th there were eleven members and thirty-five interested parties present. During the first meeting on May 17th there were fifteen members and twenty-nine interested parties present. During the second meeting on May 17th there were eleven members and eight interested parties present.
- After general introductions, the Chair introduced James Funke as the new Vice Chair and Ray Hill as the new Secretary of Working Group 3.6.4.

- Chair informed the Working Group that C62.48 would go forward for reaffirmation. Work will begin at the next meeting on a new PAR to revise this standard. James Funke will begin a draft of the new PAR.
- Agenda for meeting was distributed and approved.
- Minutes from last meeting were read and accepted with minor revision to include Richard Bentinger is a member.
- The first hour of the May 16 meeting was delegated to a question and answer period with the lightning experts from the May 15 presentation.
- Editor of Trilogy noted that the objective of meeting was to have all three documents ready for balloting by end of Summer, 2000.
- Most of meeting was used to review the latest drafts to C62.41.1, C62.41.2, and C62.45
- Joe Koepfinger requested that all documents in the trilogy be balloted at the same time.
- Reviewed the latest Draft 3 of C62.41.1
 - Vladimir Rakov's paper will be added as a reference.
 - Triggered lightning tests and current dispersion measurements were discussed.
 - It was noted that triggered lightning does not have the first component. A note on this and one or two figures will be added to clarify.
 - There was general discussion on rise times of direct strokes and triggered lightning. It was agreed to modify the numerical values to reflect the faster rise, 0.5X100 us, of subsequent strokes.
 - A synopsis of Gary Goedde's paper, which will be presented at the Summer Power meeting, will be added.
 - Last call was given for Bibliography additions. There were none.
- Review the latest Draft of C62.41.2
 - There were concerns over turning this into an application guide.
 - There was much discussion on multipulse vs. single impulse testing. Peter Hasse stated that the 10/350 represents the first stroke in a direct stroke scenario.
 - More discussion of 8/20 vs. 10/350 ensued.
 - Alain Rousseau recommended using a 5:1 amplitude ratio when comparing 8/20 and 10/350 for energy.
 - It was commented that we cannot replicate every possible wave. The 8/20 has been working well in the past, why change to 10/350?
 - Peter Hasse reminded the working group that the 10/350 is for first stroke of a direct stroke. Testing MOVs for a direct stroke could be performed by using the 10/350 and also used to check the coordination of SPDs.
 - The Chair gave out a questionnaire on acceptance of the Scenario II direct stroke to determine the group's feelings and to help build consensus on the Scenario II direct lightning stroke.
 - Scenario II resistively coupled lightning surge and inductively coupled lightning surge, the direct strike to a building or very nearby object, will be added to the document.

- A chart comparing 8/20 and 10/350 will be added utilizing a comparison factor of 10.
 - A straw vote was made using the questionnaire handed out earlier. Results from 33 respondents were: 21 for the 8/20 wave with an average peak of 40kA, 7 for the 10/350 with peak values ranging from 10kA to 150kA (the average was 40.7kA and the 50th percentile was 20kA).
 - A motion was made that the 7.4.1 handout, which included the 10X350 waveform, be accepted. There was a second. An unofficial vote by the whole group was made first. The result was 11 for and 15 against. Then an official vote by the members of the Working Group was made. The result was 4 for and 7 against. The motion failed. Don Wordon discussed the reasonableness of the 7.4.1 proposal, and that with more discussion we could reach a consensus. He also stated that this input came from the input of several lightning experts.
 - The requirement for testing with a combination wave generator was dropped. Instead two separate generators / waveforms for cat.C, meant for SPDs, were included. If someone makes a combo generator to produce these waves, this is okay. An additional column for the combo wave in Table 1 will be added.
 - Two exposure levels were accepted for Scenario I, high and low exposures for load side and supply side. Low Exposure 6kV / 3kA was accepted. High Exposure 10kV / 10kA was accepted.
 - The 10/350 was accepted as a “typical waveform” for Scenario II. The equivalency factor for the 8X20 to the 10X350 will be 10. This was accepted unanimously.
 - A Table for Scenario II describing single shot tests for individual SPDs was proposed. A motion was made to not accept the table in its present form and was seconded. A motion to call the Question was made. The vote was 5 to call and 3 not to call. The vote on the motion was 7 for and 0 opposed.
 - A motion was made to accept an alternate table and was seconded.
Alternate Table 5 Proposal
Exposure 1: 2kA 10/350 20kA 8/20
Exposure 2: 5kA 10/350 50kA 8/20
Exposure 3: 10kA 10/350 100kA 8/20
 - A recommendation was made which would allow higher or lower levels to be left up to agreement between the customer and manufacturer. The recommendation was accepted by mutual agreement of the group. A motion was made to amend the current motion to add one row: Exposure Level “X” per agreement between manufacturer and customer. The motion carried with a vote of 8 for and 1 opposed.
 - The Chair gave a handout on “Proposed Glossary Items for C62.41.1 Trilogy Definition/Glossary Task Force May, 2000”. It was agreed by the group that it needed a rework considering the updated trilogy drafts.
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- Reviewed the latest Draft of C62.45
 - A handout of amendments for C62.45 was passed out. A motion was made to accept the handout of amendments. The motion was seconded. The vote was 7 for and 0 opposed.
 - Working Group will require four hours of meeting time during Fall, 2000 meeting.

- Working Group met for four hours on May 16th. There were eight members, ten interested parties, and two guests present.
- Due to scheduling conflicts, Doug Dorr was not able to attend meeting. Frank Waterer functioned as acting Chair for the meeting.
- General comments from the Chair:
 1. During the meeting all comments will be received by any Working Group Member or any SA Member will be given priority.
 2. A review of participation and Working Group Membership requirements was presented.
 3. The IEEE Standards Board approved C62.62 on January 2000.
 4. Chairman has applied for an extension to the PAR for C62.72.
 5. Chair asked member to consider the creation of a PAR at the next meeting to revise C62.62.
 6. All Working Group Members are strongly urged to join IEEE SA.
- Review of previous minutes from Costa Mesa, California in September 1999. Motion made to accept minutes. There were no negative votes.
- C62.72 Task Force Chairman began review of Draft No. 6.

Action Items

1. Add definition TVSS (see SPD)
 2. Line: 562 Fault Current : Add definition from NEC\
 3. All definition to have source of definition added in parenthesis after each definition
 4. Motion: Relocate entire Section 9 to an Annex (D).
three votes "for",
one vote "against"
three votes "abstained"
Motion passes
 5. Motion: New Section 9 to be added in body of document in a simplified form with a more detailed description alluded to in appendix.
Five votes "for"
One vote "against",
Motion passes
- The document was not completely reviewed during meeting due to time constraints. Addition comments will be accepted in a written format via E-MAIL, US Mail, or FAX on or before July 31, 2000.
 - C62.72 will be forwarded to John Posey before July 31, 2000 so that he can begin the balloting process.

The Working Group will require a four hours at the Fall, 2000 meeting.

- Meeting held on May 16th. There were nine members, nine interested parties, and two guests present.
- PC62.36 has been balloted and has been recirculated with twenty-nine votes affirmative and one negative vote received. PC62.36 has been sent on to the Revision Committee.
- Working Group will request a PAR to begin revision of C62.43-1999, *Guide for the Application of SPDs used in Low-Voltage Data, Communications, and Signaling Circuits*. Thirteen principle authors have agreed to take part in the effort.
- Working Group will review C62.64-1997, *Standard Specification for Surge Protectors Used in Low-Voltage Data, Communications, and Signaling Circuits*, to determine if the standard should be revised or reaffirmed.

WG 3.6.8 Electrostatic Discharge W. Boxleitner, Chair

- Working group did not meet in St. Petersburg, Florida.
- Working Group 3.6.8 was formed in May of 1985 because no other organizations were developing ESD standards at that time. The working group developed and presently provides maintenance on two ESD standards as well as coordination with the Relay Committee on PC 37.90.3.
- C62.38 (R 6/26/99) IEEE Guide on Electrostatic Discharge (ESD): ESD Withstand Capability Evaluation Methods (for Electronic Equipment Subassemblies)
- C62.47 (R 3/20/97) IEEE Guide on Electrostatic Discharge (ESD): Characterization of the ESD Environment.
- Mike Hopkins is providing coordination with the Relay Committee on PC 37.90.3
- Now that ANSI C63, the EMC Society and others are actively developing ESD/EMC standards, the chairs of 3.6 and 3.6.8 recommend that WG 3.6.8 be dissolved when another sponsor has been found to take over C62.38 and C62.47 or when these standards expire.
- Mike Hopkins agreed to help search for another sponsor and to serve as the chair of WG 3.6.8 since Warren Boxleitner has expressed a desire to relinquish the chair due to a change in job focus.

WG 3.6.9 Performance Standard for L-V SPD (Secondary Arresters) G. Goedde, Chair

- Working met for four hours on May 17th. There were seven members, nine interested parties, and one guest present.
- Chairman distributed minutes from last meeting, and presented a draft (IEEE PC62.44- Draft 4, May 2000) of document for review by the committee. Attendees reviewed minutes from previous meeting held in Costa Mesa, California on September 27, 1999. Motion to accept minute. Motion seconded. No negative votes.
- Began review of IEEE PC.44, Draft 4)

- Comments from the Chair for the use of common graphic with WG3.6.4.
- Comments from the Chair on definitions. Comments from the secretary on the work from a WG3.6.4 Task Force on Definition. Chair requested a copy of the WG3.6.4 Task Force on Definitions for inclusion into PC62.44
- Deborah Jennings-Connor made comments that UL may lag behind on a listing of definitions, but plans to review the definitions in UL 1449 within the next six months. She will submit comments in writing to editor
- Don Worden will submit information on the CBEMA Curve for an Informative Annex.
- Phil Jones will submit comments and additions to Section 4.2.
- Frank Waterer will rewrite 5.2.1. Respective tables and diagrams will be relocated to an Informative Annex.
- All submissions are to be forwarded to Chair by July 1, 2000
- Chair plans to locate Section 8 (Risk Analysis) to an Informative Annex.
- Frank Waterer to submit comments on the additional of I_{sc} Rating of SPDs relative to 5.2.5.
- Chair distributed copies of a document titled, *Test Protocol For Failure Modes Of Meter-Base Adapter Surge-Protective Devices, Second Edition, October, 1998*, for review by the Working Group for part of a PAR for a revision of C62.34.
- Chair distributed copies of a comparison of IEC 61643 Class II Test and ANSI C62.34
- Chair will submit a PAR for updating C62.34.
- Working Group will require four hours at the Fall, 2000 meeting.

WG 3.6.10 Combined Multi-Port SPDs R. Cohen, Chair

- Review of the minutes from the last meeting. Motion made to accept the minutes. Motion seconded. There were no negative votes.
- Comments from the Chair
 1. Purpose of the new Working Group is to write an application guide.
 2. PAR and Scope have been filed and accepted by IEEE in December 1999.
 3. Chair provided a list of purposes for the guide and its intended audience to the attendees via overhead presentations.

4. Chair suggested that Application Guide consist primarily of graphics and pictures. The chair, via overhead presentations, offered some models of the graphics for potential inclusion within the guide.
 5. All members of the Working Group will communicate primarily via E-MAIL. Cascade will be the repository for draft text. Text drafts will also be sent (redundantly) to all members. Either fax or E-MAIL attachments will pass around figures.
 6. Chair provided a preliminary table of contents of the guide. Each section has the names of Working Group Members responsible for the development of each section.
 7. Chair will investigate the use of color copies of all graphics
 8. Chair will generate a new time line for the development of the guide.
 9. Chair mentioned that the membership list might change.
- Input and suggestions from the attendees.
 1. Maintain a short bibliography section
 2. Incorporate comments in the guide relative to the use of SPDs in a structure when UPSs are also used.
 3. Incorporate a section into the guide to discuss the interaction of a GFCI with a SPD.
 4. Incorporate comments into the guide relative to the grounding of trailers.
 5. Incorporate comments into the guide relative to protection of yard lights and alarm systems.
 6. Discussions from the floor as to whether or not the guide needs to be directed for the “sophisticated consumer”. Direction from the chair was no.
 - James Funke will forward to the secretary an IEEE/Cascade URL Address for inclusion into the minutes.
 - Secretary will forward a copy of member’s E-MAIL Address to each all members and interested parties.
 - Chair reiterated that all correspondence, drafts, and submittals are openly circulated via E-MAIL to all members.
 - Minutes and draft of document can be found on the IEEE Website. Some members voiced concerned that they were having difficulties accessing IEEE/Cascade.
 - Working Group will require four hour at the Fall, 2000 Meeting.
4. Closing comments from the Chair

- Replacement needed for John Posey who plans to retire within the next 12 months. Attendees asked to submit names of viable candidates for IEEE Standards Coordinator to Chair as soon as possible.
 - Replacement needed for the Chair of SC3.6 (Don Worden) who plans to retire in the next 12 months.
5. Old Business
 - Chair reminded members and guests to update their e-mail addresses and memberships.
 6. Next Meeting
 - The next meeting will be held at the WESTIN Hotel in Cincinnati, Ohio between October 2-6, 2000.
 7. Meeting concluded at 1615.

4.0 Special Activities - Jon Woodworth

At the Spring 2000 meeting of the SPDC in St. Pete Beach, Florida, there were two special activities. On Monday, May 15th, a lightning environment forum was held. Speakers were:

Dr. -Ing. Peter Hasse, Managing Director of Dehn & Sohne,

Professor Validmire Rakov, Professor University of Florida, Department of Electrical and Computer Engineering.

Mr. Alain Rousseau, ERICO

Dr.-Ing, Wolfgang Zischank, Senior Scientific Assistant, University of the Federal Armed Forces Munich (UAFM)

Frank Waterer, Staff Engineer Square D.

The session was well received and greatly appreciated by the SPD.

On Thursday, May 18th, a special presentation by John Posey was made on how to be an effective working group chair. His presentation can be found on the SPDC Web site. Other similar presentations on how to write standards effectively are also on the IEEE PES web site.

For the Fall 2000 meeting, one or two programs are in the works. The first objective is to set up a panel discussion on the protection of distributed resources and their interfaces. The second objective will be to have several recently presented papers presented by SPDC members. If possible both objectives will be met.

5.0 IEC Activities - J.L. Koepfinger

REPORT ON IEC SC 37A ACTIVITIES

SC 37A has three working groups. Working Group 3, 4 and 5. Working Group 5 developed and published IEC 61643-1 First Edition 1998-02 titled "Surge protective devices connected to low-voltage power distribution

system-Part1: Performance requirements and testing methods”. Following a meeting in Vienna in the fall of 1999 the working group completed an amendment to IEC 61643-1. This document is IEC 37A/94/CDV “Amendment 1 to IEC 61643-11” which is now out for ballot by the National Committees. For balloting purposes the 37A/94/CDV was separated into two fragments. 37A/95/CDV Fragment 1: Miscellaneous changes and 37A/96/CDV Fragment 2, Proposal to integrate a TOV-Characteristic test into the standard. The balloting period on the first CDV ends 15 May 2000. The comments on both documents were collated and sent to the USNC last week.

Working Group 3 is meeting in Vienna and reviewed a draft of the proposed new standard, which is circulated to the NC as 37A/97CDV”IEC 61643-12 titled “Surge protective devices connected to low-voltage power distribution circuits, Part 2: Selection and application principles”. This ballot closes officially early in June 2000, but it is hoped that sufficient comments will be available for consideration it Paris on 9 June 2000.

Working Group 4 is working on IEC 61644-2, Surge protection connected to telecommunication and signaling networks - Part 2: Selection and application principles. They hope to issue a new CDV vert shortly. The Convenor is Mr. Bonnessen of the US.

Change in the assembly of document to be balloted as the CDV stage

The ability to separate an IEC document at the CDV stage into balloting parts is the result of a complaint filed with the IEC Committee of Action (COA) by TC 37 following the Houston meeting. The COA after some deliberation agreed with TC37 that the requirement that several CD had to be combined into one CDV could result in a delay in the processing of a standard if only one part of the CDV was not acceptable. They instructed the Central Office to accommodate TC37’s concern. Thus, the Central Office has introduced fragment voting of a CDV. It is the duty Secretary of the technical committee to identify the fragment. This action by TC37 and SC37A was not popular with the Central Office, but the action was given strong support from the USNC.

Liaison Category D for IEC SC 37B

Mr. Benny Lee has been appointed by the IEEE SPDC to be the liaison representative from IEEE to IEC SC37B. SC37B is responsible in the IEC for components use in Surge Protective Devices.

REPORT ON IEC SC 37B ACTIVITIES

IEC SC 37 B met in Houston and a review was conducted of the following documents

Project #	WG #	Ref No.	Title	Action	New Doc. #	Status	Comment
61647-1	1	37B/38/C D	GDT-SPD	Go to CDV	37B/46/CD V	Ballot closes 15 May 99	Only one US comment received
61647-2	2	37B/25/C D	ABD-SPD	Go to CDV	37B/48/CD V	Ballot closes 15 June 99	No US comments
61647-3	1	37B/27/C D	MOV-SPD	Go to CDV	37B/43/CD V	Ballot closed 1 April	US voted negative

61647-4	2	37B/ 28/C D	TSS- SPD	Go to CDV	37B/47/CD V	99 Ballot closes 15 May 99	No US comments
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The next meeting of SC 37B will take place in Kristainsand, Norway on 13-14 June 2000.

TC 64 Joint Working Group 31

Following much discussion and procedural actions, the Advisory Joint Working Group that was formed several years ago in an attempt to coordinate the application of Low-voltage Surge Protective Devices was formally constituted in 1997 as Working Group 31 of TC 64. The members of this working group are largely composed of the members of the former AJWG64. These members are representatives of five IEC Technical Committees that have different interests in the application of surge protective devices. The committees are SC 28A, SC 37A, TC 64/WG3, TC 77A, and TC 81. WG 31 of TC 64 produced a technical report that was edited by Mr. Martzloff. He did an excellent job of catching the essence of about two feet of reports and papers that were considered in the development of 64/1034/CD Technical Report EC 62066: General basic information regarding surge overvoltages and surge protection in low-voltage a.c. power systems. The information in this report is to be used as reference material by all of the technical committees having liaison with TC 64/WG31. Following a meeting of the Working Group, additional changes are to be made and then the document will be submitted to the National Committees as a CDV. Since this is a Technical Report, it will not be circulated as a Draft International Standard. The document has been accepted by the National Committee.

IEC TC 37 ACTIVITIES

The following is a short list of the most current IEC TC 37 documents:

DOC ID	TITLE	REFERENCE DOC	DUE DATE CENTRAL OFFICE
37/228/CD	Amendment to IEC 60099-4: Test procedure to determine the lightning impulse energy capability of MOSA used on transmission and distribution line	37/185/NP	Jul-1999
37/229/RVD	Report of Voting on 37/223/FDIS (approved)	37/224/FDIS	Sep-1999
37/230/RVD	Report of Voting on 37/224/FDIS (approved)	37/224/FDIS	Sep-1999
37/231/CVD	Amendment 2 to IEC 60099-4	37/199/CDV, 37/201/CC, 37/201/CD, 37/213/CC, 37/189/CD, 37/204/CC	Nov-1999
37/231A/CDV	Adds Annex M to 37/231/CDV (Guide for voltage distribution calculations)		Jan-2000
37/232/CC	Compilation of Comments on 37/228/CD	37/228/CD	Dec-1999
37/233/CDV to 37/248/CDV	Voting documents dividing 37/231A/CDV into parts for separate voting- Fragments 1 to 16	37/231/CDV, 37/231A/CDV	Jan-2000
37/249/CD	IEC60099-6: Surge Arresters-Part 6: Surge Arresters containing both series and parallel gapped structures – Rated 52kV or less	37/205/CD, 37/214/CC, 37/214A/CC	Mar-2000

37/250/INF	Draft Strattegic Policy		Mar-2000
37/251/DA	Preliminary Draft Agenda for TC37 meeting, Norway, 15-16 June		Mar-2000
37/252/WG	Revised membership of WG4: Metal Oxide Surge Arresters		Mar-2000
37/253/PW	Program of the work of the Committee as recorded by the IEC Central Office in the database		Apr-2000

1. 37/197/CDV - Amendment 60 60099-1 Surge Arresters Part 1: Non-linear resistor type gapped surge arrester for a.c. systems. This covers additions and changes to the following topics:
 - 1.1. pressure relief
 - 1.2. switching impulses
 - 1.3. Long-duration current withstand
 - 1.4. Short-circuit tests

37/195/CDV - Amendment 1 to IEC 60099-5, Diagnostic indicators of metal-oxide surge arresters in service
2. 37/231/CDV including 37/231A/CDV and all of the associate fragments has been approved for publication as a FDIS. The comments of the National Committees were correlated and sent to Geneva last week. The next step is to review the comments at the 15-16 June meeting of SC37 in Kristiansand, Norway. This will be followed by the formation of the Editing Committee to review the editorial comments and prepare the document for circulation as a FDIS. The goal is to have this done by 15 August 2000.
3. EMC considerations for IEC 60099-1 and 60099-4 a new CD is to be issued.
 - 3.1. 37/219/CD-Proposed amendment to IEC 60099-1 Part 1: Non-linear resistor type-gapped surge arresters, EMC considerations.
 - 3.2 37/220/CD – Proposed amendment to IEC 60099-4 Part 4: Non-linear resistor type-gapped surge
4. 37/249CDV IEC 60099-6: Surge Arresters – Part 6: Surge Arresters containing both series and parrellel gapped structures – rated 52kV or less” was circulated to the NC and comments are due just before the TC37 meeting in 15-16 June 2000.

6.0 ASC C62 Activities - J.L. Koepfinger

REPORT ON ASC C62 ACTIVITIES

A year ago I gave the following report on the ASC C62 activities. In the meantime there has been little improvement in the IEEE understanding of the problems that they cause with the procession of ASC C62 ballots for IEEE documents.

Within the last two years there has been a deterioration of the balloting mechanism used to process standards produced by IEEE through ASC C62 for status as American National Standard. The process, which worked fine for over 25 years, was changed by agreement between the two Secretariats, IEEE and NEMA on 12/15/94. This change was made without an opportunity for the members of ASC 62 to have any input to the process. The reason given for the exchanges was a concern by IEEE that its documents were not being processed for American National Standard Status in a timely manner. The documents of particular concern were those that were being processed by ASC C37, and C57. At the time of this concern, it was stated numerous times by Mr.

Salem, Managing Director of the IEEE, that there was no problem with the processing of standards in ASC C62. However, when the Memorandum of Understanding (MOU) was presented to the IEEE Standards Board it included ASC C62. Koepfinger voiced a strong objection to this arbitrary action. Prior to the new MOU, NEMA provided all balloting services and administrative services. The changes that occurred in the MOU were:

1. Each Secretariat would be responsible for the balloting and processing of standards that it developed.
2. Standards not developed by either Secretariat but processed by ASC C62 would be balloted and processed by NEMA.
3. Each party, NEMA and the IEEE, has equal responsibilities as Co-secretariat. Each Co-Secretariat is to provide administrative services. These services are to be shared as follows: NEMA shall provide administrative services to the Committee and for standards developed by NEMA and the Committee NEMA is to provide the membership for the ballot.
4. There is to be a Co-Secretariat member present at each Committee meeting and the meetings are to be scheduled by mutual consent of the Co-Secretariats.
5. Each Co-Secretariat retains the right to submit its standards directly to ANSI for recognition as American National Standards.

Not discussed in the MOU is the procedure for balloting the standards. Prior to the latest MOU, ASC C62 did not ballot an IEEE Standard until it had been circulated to the Power Engineering Society's committee or Balloting Body and until the Body had approved the Standard. This procedure prevented the condition of having ASC C62 vote to approve a standard that might be disapproved by IEEE's balloting body. IEEE, in 1994 initiated a new procedure where their draft standard is submitted to ASC C62 at the same time it is submitted to the balloting body. This presents a condition where it is possible for the ASC C62 to approve the standard and have the IEEE balloting body reject the standard. A further complication is that the IEEE delegation like, the NEMA and EL&P delegation, is supposed to be an instructed delegation, not an individual vote. According to the rules of the IEEE Operation Manual Clause 8.4.1 Source of Instructions:

"IEEE representatives and their alternates shall utilize the expertise of the members of their sponsoring group or TC to develop an IEEE position on proposed standards being considered by their ASC. They shall report at meetings of their Sponsor on the activities of their ASC, either in person or by written report to be included in the minutes of the meeting, to inform the members of the work of the standards committee. They shall solicit comments and suggestions from interested members of their Sponsors in order to establish their position on projects under consideration, and to identify substantially interested members to whom they can turn for advice and recommendations on short notice. They shall work with the Chair and the IEEE Standards Board liaison representative of their Sponsor to ensure that they act in accordance with the consensus within the Sponsor. In the absence of instruction, they shall use their best judgement based on their experience as a member of their Sponsor to support the position with which they believe the membership would agree. All Ballot action taken by IEEE representatives shall be reported to the sponsoring committee. On all policy matters coming before this committee, the representative shall solicit instruction from the IEEE Standards Board."

The present balloting arrangement does not allow the IEEE delegation to seek the guidance of the Sponsor since this cannot be established before the draft standard has been approved or disapproved by the IEEE balloting body. It is time consuming and an unnecessary use of the resources of the members of ASC C62 to ask them to ballot a document before the IEEE balloting body has approved it. The procedure that was followed prior to the latest MOU was to ballot the draft standard in ASC C62 at the same time as it was being balloted by the IEEE Standards Board. The chance of the standard not being approved on its technical merit at the Standards Board

Ballot is, and probably will continue to be, very rare. This procedure allows ASC C62 to make a decision on whether or not an IEEE Standard is suitable to be considered as an American National Standard in a manner that is not influenced by the delegation acting as individuals, but as instructed delegates from their respective organizations. The results of the ASC C62 ballot should be available to the IEEE Standards Board when they make their formal decision regarding the approval or disapproval of the IEEE draft standard as an IEEE Standard. The IEEE Standard Board is not and should not consider they are approving a standard as an American National Standard. The two processes, the approval of the standard as an IEEE Standard and as an American National Standard, must be independent of each other, although it is in the mutual benefit of each organization not to have published Standards with the contents not being in sync. Since IEEE owns the copyright of the draft standard, it is not possible for a standard developed within their organization to be published as an American National Standard without their permission.

If the ASC C62 ballot rejects the IEEE Standard it can be published as an IEEE standard if the IEEE Standard Board approves the draft standard. Therefore, there is no need to tie the ASC C62 approval or rejection of the document as an American National Standard. Any delay in this process would be to extend a courtesy to ASC C62 to assist the IEEE in solving differences that would, if not changed, prevent the standard from being accepted as an American National Standard.

The process of having an IEEE Standard adopted as an American National Standard should be no different than a process that would have to be followed to have an IEEE Standard adopted by another country or regional representatives of countries, like Cenelec. In these cases, the IEEE would process the draft standard to be an IEEE standard. Then a request would be made either by IEEE to the other country or regional body to have them adopt the IEEE Standard. Conversely, the country or the regional standard body could request that IEEE submit their standard for adoption. In either case, the IEEE standard would be subjected to an evaluation procedure that is independent of the IEEE procedure.

If the IEEE wishes to avoid the possibility that a National Standard Body would not accept their document, they should follow their own rules of coordination during the development of the standard. One of the methods that can be used is the circulation of drafts with a request for comments. This is very much equivalent to the IEC Committee Draft process. Although most IEEE PARs indicate that drafts related to the field of surge protection are to be coordinated with ASC C62 it is indeed rare that this has ever occurred in a formal manner, where-in all members of ASC C62 have had the opportunity to review drafts and make comments.

Thus, the problem that needs to be addressed is not the coupling of the ASC C62 ballots with the voting by the IEEE Sponsors Ballot, but for the establishment of a continuing dialog between ASC C62 and the sponsor of the IEEE document. This needs to be done on a regular and formal bases during the development of the standards that fall within the scope of ASC C62.

Document	Ballot Type	Ballot Opened	Approved
C62.33	Reaff	7/15/99	
C62.35	Reaff	7/27/99	
PC62.36/D1	Rev/Recirc	3/10/00	
PC62.37.1/D6	New	8/5/99	
C62.38	Reaff	2/18/99	
PC62.42/D9	Rev	5/12/99	
PC62.43/D3	Recirc	5/18/99	
PC62.43/D3a	Recirc/Recirc	8/4/99	
C62.48	Reaff	1/20/00	
PC62.62/D16	Recirc	6/4/99	
PC62.92.1	Rev	11/17/99	

C62.92.2	Reaff	7/19/99	
C62.92.2	Reaff/Recirc	2/9/00	
C62.92.3	Reaff	1/18/99	

Help is needed from IEEE SPDC and from NEMA to address the concerns expressed here.

7.0 Liaison Reports

7.1 ASC C84 Preferred Voltage Ratings for AC Systems and Equipment- D. Jackson

7.2 Insulation Coordination Projects IEEE 1312 & 1313 (C92.1 & 92.2)- A.R. Hileman

The Standards Board has approved the Insulation Coordination Guide, 1313.2. The guide will now be reviewed by the editors and is expected to be available by the end of the year.

7.3 USNC-IEC Advisory Group to SC28A OPEN No Report

7.4 Transformers Committee- Eva Tarasiewicz No Report

7.5 T&D Committee on Insulator Contamination - M. Comber

The Working Group met in July, 1999, during the IEEE PES Summer Meeting in Edmonton, Alberta.

The task force working on development of a procedure for surface resistance measurements of polymer insulators has concluded its testing work and has prepared a paper for future publication. It has been proposed that surface resistance provides a better measure of contamination than ESDD for *non-ceramic* insulators. The paper is currently in the Working group review/comment stage.

“Case Study” Reports

Much of the Working Group session is typically taken up by reports from members on field performance and laboratory investigations in areas related to contamination of insulators. At this WF meeting:

- A summary report was presented on system outages caused by “bird streamers” across insulators. Several US utilities have experienced such problems on lines and in substations. It was suggested that a panel session on bird/animal related outages be scheduled for the 2000 Summer Power Meeting.
- NGK reported results of studies performed with EPRI on contamination performance of polymer insulators with various shed profiles. Different test procedures were used, with significantly different results being obtained for the same ESDD (up to 2 to 1 difference in flashover voltage). Designs using alternating shed diameters performed better than uniform shed designs for the same total leakage distance and shed pitch.

- FP&L reported recent outage problems on 230kV lines 20 miles from the coast and near an open pit mine. Three lines sustained a total of nine outages, all due to flashover of porcelain insulator strings. Silicone rubber insulators installed in the same general location have suffered no flashovers in 10 years.
- PG&E reported that porcelain insulators on 500kV lines near Moss Landing have to be washed every 4-5 weeks to minimize contamination-related outages. Polymer insulators used at 230kV and 115kV in the same vicinity perform well with no need to wash.

7.6 T&D Committee WG on Lightning Performance of Distribution Lines - S. Brewer No Report

7.8 Substations Committee WG E-5 Direct Stroke Shielding of Substation- Open No Report

7.9 T&D Committee: DC & Flexible AC Transmission Subcommittee - Rao Thallam

The "DC and Flexible AC Transmission Subcommittee" meeting was held on Wednesday, July 21, 1999 from 9:00 a.m. – 12:00 noon at the PES Summer Meeting in Edmonton, Alberta, Canada.

A panel session on "Y2K Concerns and HVDC" was held during the subcommittee meeting. Five speakers made presentations on Y2K preparedness for several HVDC converter stations and on general Y2K perspective on HVDC was discussed.

The 1999 Uno Lamm HVDC award was presented to dr. Chandra Krishnayya. The new FACTS award instituted this year was presented to Dr. Laslo Guigi of Westinghouse.

Finally, a presentation on "AEP-EPRI Unified Power Flow Controller Performance" was made A. S. Mehraban of AEP. Unified Power Flow Controller is a power electronics based controller, a prototype unit is installed at an AEP substation.

7.10 T&D Committee Capacitor Subcommittee- C. Erven

IEEE SPDC 2000 Spring Meeting, St. Petes, FL

The capacitor subcommittee and working groups normally meet twice each year, at the Winter and Summer Meetings of the IEEE Power Engineering Society. Although I do not normally attend their meetings, I obtain regular mailings of minutes and participate as a corresponding member in some of the Working Group activities, relating to both shunt and series capacitors. This brief report is based on correspondence from Working Group chairs.

Series Capacitor Working Group

Chair: Stan Miske, General Electric Company

Tel: 518-385-5447 Fax: 518-385-5703

IEEE Std. 824-1994 – IEEE Standard for Series Capacitors in Power systems

IEEE P824/D4 (revision Nov 24, 1999) was circulated to the WG prior to the last meeting Jan 12, in San Diego. This document contains a number of significant changes, including revision of protective levels, insulation levels for platform-ground insulators, fault duty cycle, number of discharge tests for fuses, and varistor tests. A new PAR has been approved. Working group will begin working a "Guide for specification of series capacitor banks". A new Thyristor Controlled Series Capacitor Working Group has been formed.

Shunt Capacitor Standard Working group

Chair: Ignacio Ares, Florida Power & Light

Tel: 407-845-4843 Fax: 407-845-4844 e-mail: ignacioares@email.fpl.com

IEEE Std. 18-1992 – Standard for Shunt Power Capacitors

This standard was revised in response to the need to include internally fused and fuseless capacitors, and to move capacitor application information in this standard to IEEE Std-1036, Guide for the Application of Shunt Power Capacitors, and to coordinate wherever possible with other pertinent National and International Standards. A letter ballot on IEEE P18/D7 November 30, 1999 has been circulated to members of the balloting group with a return date of April 27, 2000. I am pleased to see that a "Short Circuit Discharge Test (Design Test) has been added in response to my submitted comments on Draft 4.

Shunt Capacitor Application Guide Working Group

Chair: Antone Bonner, Cooper Power Systems

Tel: 262-835-1520 Fax: 262-835-1544 e-mail: abonner@cooperpower.com

IEEE Std. 1036-1992 – IEEE Guide for Application of Shunt Power Capacitors

Draft 6 has been circulated for comment. As noted in the above, most of the capacitor application information previously included in Std 18 has been moved to the latest revision to Std 1036. I am not able to comment further because my computer didn't appreciate the format of the attachment including a zipped file of unknown format. Probably Office 2000 which is a couple of leaps ahead of the software used by us folks on our in-house office setup!

7.11 Substations Committee Gas Insulated Substations - G. Lee No Report

7.12 PSI&M Committee High Voltage Testing Techniques Subcommittee - D. Lenk

The HVTT Subcommittee was scheduled to meet in Toronto on April 29 and 30, but that meeting was postponed. The committee is reviewing the final draft of IEC270, "Partial Discharge Measurements". The committee is also in the process of performing a round robin test on impulse measurements. This will include both domestic and international laboratories. Gary Schneider is the HVTT contact person on this project. They are also pursuing the option of performing AC Round Robin test. Jim McBride is the HVTT contact person on this project.

7.13 PES Awards Committee- R. Odenberg

The PES Wards committee met for approximately two hours in Edmonton, Canada. The following major issues were discussed:

1. The multitude of IEEE/PES Awards to be giving.
 - a. Problem with filling out the paper work – Solution: Set up a task force to concentrate on the activity.
 - b. Scheduling and Process to IEEE and TC. Odenberg to provide outline used by PC/SPDC to R. Dent – Chairman
2. A detailed discussion of the administrative personal and contacts for processing the awards at PES and IEEE.

7.14 T.C. Technical Sessions Improvement Committee - D Lenk

Chairman: Bal Gupta

The Technical Session Improvement Committee met during the 1999 SPM in Edmonton. After reviewing the pros and cons of upgrading to computerized presentation equipment for paper presentation, the committee has decided to continue to use the existing presentation equipment (eg, overhead and slide projectors) for future paper and panel sessions. Computerized equipment is still too expensive.

The chairman reported that the IEEE author's guide on the WEB has been upgraded to include information on slide formats as part of the presentation guide.

At the technical presentation sessions, the session chair, or his designated person, will grade the presentation. This information will be used to assist the presenter on how to improve future presentations.

The chairman reminded attendees that the author of a technical paper can request whether he prefers to make a presentation or to have a poster session, but the committee will ultimately determine which type of presentation will be used. He noted that the author's preference will be considered.

7.15 IEEE/PES Publication Committee - D Lenk

The Publication Committee met at the 1999 SPM in Edmonton. It was noted that, as of June 1, 1999, all IEEE Transactions papers must be submitted in electronic form.

The following summarizes the time tables for technical session proceedings papers and technical sessions.

Time table for Proceedings papers to be presented at:	WPM	SPM
• Authors submit abstracts to PES Executive Office	July 1	Dec 1
• Authors notified by PES Executive Office of Conditional acceptance (or rejection) based on a review of the abstract		Aug 15 Feb 1
• Authors submit completed Proceedings paper to PES Executive Office	Oct 1	Mar 15

- Authors notified of final acceptance or rejection based on a review of the final paper Nov 12 Apr 27

Time table for Panel Session Presentations at:	WPM	SPM
• Summary of 2-6 page presentation submitted to Panel Session Chair (Panel Session Chair selected by TCPC, who is the Technical Committee Program Chair)		Sept 1 Mar 1
• Panelist notified by Panel session chair of acceptance (or required changes to the summary	Oct 1	Mar 15
• Panelist submits revised summary to Session Chair, if required change was requested	Nov 1	Apr 15
• Panel session Chair submits complete session information to TCPC and PES Executive Office	Nov 12	Apr 27

7.16 T.C. Organization and Procedures Committee - D. Lenk

Chairman: Bruce Wollenberg

The Organization and Procedures Committee met at the 1999 SPM in Edmonton. A majority of the meeting time was spent updating the "Technical Council Organization and Procedures Manual".

7.17 SCC 18 National Electric Code - C. Chrysanthou No Report

7.18 SCC 23 Dispersed Storage and Generation - Doug Dawson No Report

7.19 SCC 22 Power Quality - S. Whisenant

SCC-22 met during the PES Summer Meeting in Edmonton, Canada on July 21, 1999. Noted below is the status of significant projects:

	<u>Project</u>	<u>Status</u>
P1159	Monitoring Electric Power Quality	Document to be reaffirmed
P1250	Distribution Voltage Quality	First draft expected by July, 1999.
P1159.1	Data Sampling	Draft expected 1/00
P1159.2	Event Characterization	Ballot Group forming.
P1159.3	Output Format	Using EPRI's PQDIF. Comments on draft until

		9/30. Ballot Group forming.
P1433	Glossary of Power Quality Technology	Ballot Group forming.
P519A	Harmonic Applications Guide	Final draft posted to web for comments by 7/30/99. Ballot to start in October.

7.20 IEEE Working Group on Estimating Lightning Performance of Transmission Lines - D. Lenk

The IEEE Working Group on Estimating the Lightning Performance of Transmission Lines met at the 1999 SPM in Edmonton. Minutes from this meeting are not yet available.

7.21 IEC TC 81 - François Martzloff

Comments from François Martzloff
In support of a recommendation **not to** accept the document

Re: 81/120/CDV - To become IEC 61312-3 “protection against lightning electromagnetic impulse (LEMP) - Part 3: Requirements of surge protective devices (SPDs)

Substantive Comments

The introduction (page 4) describes the document as a “technical report” but the title uses the word “requirement” — is this not a contradiction?

Clause 4, “SPD performance requirements” makes reference to annex B (informative) for computing the current-carrying capacity of candidate SPDs: again, the same commingling of informative and normative stipulation.

The proposed approach of creating physical barrier in a building to establish “zones” might be useful for high-security installation but is not practical for the vast majority of installations. The report should make a clear distinction between categories of installation. As written, the document could be misconstrued and lead to mandates for protection that would be poor economics. Protecting a high-security installation against a direct strike makes sense, but the expense of such protection to a residential installation for a one-in-every-200-year probability (ref IEC64/1034/CD) is unlikely to be accepted by the consumer. Experience in the US with SPDs having much lower capability has been successful and clearly demonstrates that for typical residential and commercial installations, these high SPD ratings are unwarranted.

Clause 2 makes reference to a 10/350 microsecond waveform as “appropriate impulse current proofing...SPDs.” Work in SC37A takes exception of this single waveform and proposes to specify a charge transfer, regardless of waveform. That approach is also questionable.

References to a “Lightning Protection System” infer that there are two types of installations, one with an LPS, one without. Such distinction is a fallacy that should not be perpetuated. All buildings which contain an electrical installation have a de facto “lightning protection system” that is, the system of earthed conductors from

which the “winning” streamer will connect to the descending stepped leader, acting as the “point of strike” of the lightning discharge. Thus, except for a wooden barn and other unpowered back-yard shacks, every building has some earthed extraneous or active conductors which eventually call for bonding to the incoming power system by direct bond or through an SPD, allowing part of the lightning current to “seek earth” by exiting toward nearby earthing electrodes via the service drop. Such lightning collectors — not intentional air terminals, but de facto terminals — include roof-mounted air-conditioning equipment, sewer vent pipes (perhaps plastics by now, but still many metallic), the lighting circuit in the attic, etc. etc.

Editorial Comments

The English text has not been sufficiently edited for clarity, syntax, and typos. Providing a bi-lingual document, the general practice for a CDV, generally flushes out these deficiencies.

8.0 PES Technical Council Activities - Dennis Lenk

Technical Council Report to SPDC-Spring, 2000, Meeting

- **Summer 1999 Edmonton PES Meeting**

Approximately 1400 people attended the SPM in Edmonton.

- **Winter 2000 Singapore PES Meeting**

Estimated attendance at the 2000 WPM was 900.

- **Summer 2000 Seattle PES Meeting**

Anjan Bose is the Technical Committee Chair for the 2000 SPM. Over 320 abstracts have been submitted for presentation at this meeting.

- **Winter 2001 Columbus PES Meeting**

Stan Horowitz has been named the Technical Meeting Chair for the 2001 WPM. No input has been provided from the PES Advisory Council regarding preferred technical tracks. This will be determined at future meetings of the Technical Committee Program Chairs (TCPCs).

- **PES Meetings after 2002**

Technical Council noted that there will be a transition away from the traditional Winter and Summer General PES Meetings beginning in 2003. Details are still being worked out.

- **Proposed Reorganization of the IEEE Power Engineering Society**

The PES Technical Council has introduced the possibility of reorganizing the Power Engineering Society. The motivation for this reorganization is to address the recent decline in PES membership and reduced attendance at recent PES meetings. Two task forces were formed to examine the PES and the Technical Council structures and determine whether they should be changed to meet the corporate restructuring of the power industry. The task force recommendation at the Singapore Meeting was that the PES, which

presently consists of 13 technical committees under the Technical Council, be structured into 4 Departments:

- Generation & Storage Plant Departments
- Power Delivery Department
- Distribution Department
- Policy and Markets Department

Each technical committee would fit into one of the 4 departments. The individual technical committees have been requested to respond to this proposed reorganization. This item was extensively discussed at the A&S meeting. (The results of this discussion will be presented in the Chairman's A&S Subcommittee report.) The Technical Council has scheduled this restructuring proposal as a major agenda item at the SPM in Seattle.

- **Electronic Review of Transactions Papers**

For the last year, the IEEE Transactions review process has been using e-mail to obtain reviews of submitted papers, replacing the previous snail-mail process. This process has worked well and will soon be taken to a web review process, where the paper will be placed on a web site. Selected reviewers will be given a password so that they can gain access to these papers so that they can perform their review.

- **PES Senior Member Promotion**

The PES membership committee is sponsoring an initiative to encourage current IEEE Fellow and Senior members to encourage current IEEE Members to upgrade their professional status to Senior Member Grade.

- **NERC/PES Partnership for Standards Development**

The PES has initiated preliminary discussion with NERC regarding the possibility of forming a partnership to publish the Operations and Planning Policies as IEEE Standards. The benefit to NERC is that their policies attain status as IEEE Standards. The PES will have a greater opportunity to provide technical input into these documents.

- **Special Publication on 20th Century Papers**

The PES is in the process of collecting, reviewing, and balloting 20th Century PES technical papers that have defined our industry over the last century.

- **PE Review Article on the SPDC**

The SPDC has been requested by the Technical Council to write an informative article describing the activities of the SPDC. The article will appear in the September, 2000, issue of the PE Review. (The SPDC chairman's A&S Subcommittee report describes the planned action for this item).

9.0 PES Technical Sessions - Jon Woodworth

At the 2000 Summer Power Meeting, there will no special paper presentation sponsored by the SPDC. Only one paper was submitted for presentation and will be presented as part of the T&D committee session.

10.0 Old Business

11.0 New Business

12.0 SPDC Meeting Schedule - J Woodworth

	Spring Meeting	Fall Meeting
2000	May 15-19, The Tradewinds St. Pete Beach Florida, (\$131 + tax)	October 2-6, Westin Cincinnati Cincinnati OH
2001	May 14-18, The Tradewinds, St. St. Pete Beach Florida, (\$131 + tax)	October 1-5, Marriott Niagara Falls, Ontario
2002	May 13-17, The Tradewinds, St. Pete Beach Florida, (\$131 + tax)	Sept 30- October 4, Hilton (not confirmed) Albuquerque, New Mexico
2003	May 10-16, The Tradewinds, St. Pete Beach Florida, (\$131 + tax)	

The SPDC meeting was adjourned at 5:10 pm

Gary L Goedde
Secretary, SPDC