



CONFÉRENCE INTERNATIONALE DES GRANDS RÉSEAUX ÉLECTRIQUES A HAUTE TENSION
INTERNATIONAL CONFERENCE ON LARGE HIGH VOLTAGE ELECTRIC SYSTEMS

COMITÉ D'ETUDES N° 13:
STUDY COMMITTEE NO. 13:

APPAREILLAGE DE COUPURE
SWITCHING EQUIPMENT

13-00 (SC) 26
Berlin, October 4th, 2000

Minutes of meeting

held in Paris, France
on August 29th, 2000

Participants

Chairman	J. H. Brunke	United States
Secretary	E. Kynast	Germany
Members	F. J. Amon	Brazil
	I. Bonfanti	Italy, Convener WG 13.04
	M. Borrás	Spain
	C. Cabrera-Rueda	Mexico
	Y. Doin	France
	A. Even	Belgium
	C. Guilloux	France
	P. Högg	Switzerland
	D. Johnson	USA
	S. Jones	Australia
	P. Kirchesch	Germany
	D. Kopejtkova	Czech Republic
	W. Lanz	Switzerland, representing A. Janssen
	I. Lungu	Romania
	K-Y. Park	Korea
	J. Patel	India
	D. Peelo	Canada
	E. Schreurs	Sweden
	V. Varivodov	Russia
	Z. Vostracky	Czech Republic
M. Waldron	United Kingdom	
T. Yoshizumi	Japan	
Observers	K. Mestrovic	Croatia
	M. Runde	Norway
Conveners	C. Jones	WG 13.09, UK;
	K. Fröhlich	WG 13.07, Switzerland;
	A. Greenwood	WG 13.10, USA
	H. Schmitt	WG 13.10, Germany
	H.H. Schramm	WG 13.11; IEC TC 17, SC 17A
Guests	L. Van der Sluis	WG CC 03, Netherlands
	A. Bosma	IEC TC 17, SC 17A, Sweden
	G. Desquilbet	JTF 23/13/14/21/22-16, Italy
	A. Giboulet	Session Secretary, France
	K. Möller	Current Zero Club, Germany
	O. Völcker	former SC 13-Secretary, Germany
	M. Yamamoto	Secretary of Japanese SC 13, Japan
Absent Members	A. Hyrczak	Poland
	A.L.J. Janssen	Netherlands, WG 13.08
	M. Kapetanovic	Bosnia
	H. Said	Egypt
Absent Observers	D. Wang	China
	S. Behloul	Algeria
Absent Convener	J. Goldstein	Israel
	J.F. Reid	TF 13.00.2, United Kingdom

**Agenda of SC 13 Meeting
August 29th, 2000 in Paris, France**

1. Welcome
2. Minutes of meeting held in Washington D.C. (USA),
September 28th / 29th, 1999; doc13-99 (SC) 27
3. Information given by the Chairman on subjects of current interest
- Meeting of the Technical Committee
- Miscellaneous
4. Working Groups and Task Forces activities
- membership, - meetings, - activity since last meeting, - future program, - reports
 - 4.1. WG 13.04 Switching test methods
 - 4.2. WG 13.07 Controlled switching
 - 4.3. WG 13.08 Life management of circuit-breakers
 - 4.4. WG 13.09 Monitoring and diagnostic techniques for switching equipment
 - 4.5. WG 13.10 Specifications for short circuit current limiters
 - 4.6. WG 13.11 Application Guide for IEC 60056 and 60694
 - 4.7. WG CC03 TRV stresses in MV systems / Test circuit topology
 - 4.8. TF 13.00.2 Revision of IEC standards relevant to switching devices
 - 4.9. JTF 23/13/14/21/22-16 Preparation of guidelines for collection and handling of reliability data (E. di Bartolomeo)
 - 4.10. JTF 23/34/13 Co-ordination Committee on electronic control systems (D. Johnson)
 - 4.11. JTF 23/13/33/34/36 Withstand and test requirements for substation secondary circuits subjected to EMI (A. Ametani, L-R. Jaenicke)
 - 4.12. JTF 12/13/23.21 Electrical Environment of Transformers (M. Glinkowski)
 - 4.13. Liaison with WG 23.02 Gas insulated substations (F. Heil)
5. Activity of the Current Zero Club (K. Möller)
6. Cooperation with other bodies
 - 6.1. Cooperation CIGRE SC 13/CIREC Session 1 (v.d.Sluis)
 - 6.2. Cooperation CIGRE SC 13/IEEE Switchgear Committee (D. Johnson)
 - 6.3. Cooperation CIGRE SC 13/IEC TC 17 and SC 17A (J. Brunke/H-H. Schramm)

7. CIGRE SC 13 Sessions
 - 7.1. Session 2000: General information, special reporter, session secretary
 - 7.2. Session 2002: Preferential subjects
8. New strategies for SC 13
 - 8.1. Proposals by Study Committee members
 - 8.2. New areas of activity?
 - Dynamic Loading of Electric Power Transmission Equipment
 - Breaker controls WG
 - Reliability survey of circuit-breakers
 - Disconnecter reliability
 - Test procedures for high-voltage switchgear combinations
 - Economics of transformers and connected equipment
 - 8.3. New internal organization (subcommittees for special work?)
 - 8.4. Preparation of a colloquium and/or tutorials
9. Next Study Committee Meeting 2001
10. Colloquium 2001
11. Miscellaneous

1. Welcome

The Chairman J.H. Brunke welcomed the regular and observer members, conveners, representatives of liaisons and guests to this meeting of CIGRE Study Committee 13 in Paris. Especially he welcomed the new nominated members. The Study Committee 13 has now 24 regular and 4 observer members.

For the representation of regular and observer members and conveners who were not able to attend see the list of participants.

A. Janssen regretted he cannot attend due to a death in his family. The Chairman offers him the Study Committees condolences.

The Draft Agenda dated June 16th, 2000 and distributed with the invitation to the SC 13 meeting was approved without changes.

2. Minutes of meeting held in Washington D.C., USA

The minutes of the last meeting held in Washington D.C., USA, September 28th / 29th, 1999 (document 13-99 (SC) 27) were approved without changes.

3. Information given by the Chairman on subjects of current interest

The meeting of the CIGRE Technical Committee was held in Venice on March 30-31, 2000.

The Chairman and K. Fröhlich informed about the new policy of SC-papers within CIGRE: Papers published in ELECTRA will have a maximum length of 6 pages.

Longer papers will be published on the web in members only area. A short summary (less than 1 page) is additionally necessary for the web.

For non-members it will be possible to buy the papers.

Note of the Secretary: Additional information concerning the handling of access (password, web-areas for SC- and/or all CIGRE-members) to the different web-areas is still under consideration.

A web-page of SC 13 has been created by the chairman. As a first step it contains a membership list, the Strategic Plan and the Action Plan. The Chairman asked for support to get some links for example to WG-pages.

all

“Controlled switching” will be the subject of a future workshop with SC 11, 12 and 33.

All Study Committee Members have to be CIGRE individual members, collective membership is not sufficient.

A CIGRE Symposium concerning tropical environment will be held in Cairns, Australia. All are invited to contribute their experience to this specific subject (see topic 10).

The CIGRE Regional Meeting -Black Sea Rom 2001- in Suceava, Rumania; 10-15 June 2001 was announced: “Large regional networks within the black sea basin and the european interconnection in the third millenium”.

4. Working Groups and Task Forces activities

4.1 WG 13.04: Switching test methods

The Convener I. Bonfanti commented on his activity report 13-00 (SC) 11 IWD.

Membership:

Retiring member: A.R. Penfold

Meeting:

September 2-3, 1999 Letherhead, United Kingdom

Activities:

I. Bonfanti reported about the state of the work. He lined out the topics of the draft of the document "Asymmetrical current duties for switching devices". At present there is a very rough draft, dated Nov. 1999, that still needs discussion and completion; it cannot be distributed within the SC due to its immature stage.

The draft has not been finalized due to insufficient support of the WG-members (other priorities of work and/or low interest). The situation in the WG does not allow any progress. Therefore I. Bonfanti asked for a decision concerning the future of the Working Group 13.04.

The discussion upon this was carried out after the presentations of all WG- and TF-activities (see topic 4.7)

4.2 WG 13.07: Controlled switching

The Convener K. Fröhlich commented on his activity report 13-00 (SC) 12 IWD.

Membership:

Retiring members: A. Carvalho, B. Avent, G.C. Schoonberg, N. Poupardin

New members approved by the Study Committee:

Mark Blundell, Australia

Michael Stanek, Switzerland

Fabrice Martin, France

Meetings:

September 8-9, 1999 Rio, Brazil

March 15-16, 2000 Lyon, France

May 2-3, 2000 Montreal, Canada

planned meeting:

September 28-29, 2000 Osaka, Japan

Activities:

The working group has finished the document titled:

"Controlled Switching of HVAC Circuit breakers,
Planning, Specification and Testing Of Controlled Switching Systems "

The following items (as an application guide for users and manufacturers) are introduced:

- how to carry out preparing studies in order to make the proper decision on controlled switching.
- How to specify a controller-breaker system
- Recommendations on design, type and routine tests

The document (13-00 (SC) 08 IWD) was forwarded to the study committee members with circular letter dated July 21, 2000.

In the meeting it was proposed to add a specification-part, to make it more easy for manufacturers and users to specify their requirements.

The future program of the Working Group will be the investigation of the subjects:

Economics, enhancement of breaker performance by controlled switching; until Mid 2002

Future switching cases (Transformer, fault, load); until End 2002

4.3 WG 13.08: Life management of circuit-breakers

Since the Convener A. Janssen could not attend the meeting W. Lanz commented on the activity report 13-99 (SC) 13 IWD:

Membership:

No change in membership

Meetings:

September 30- October 1, 1999 Montreal, Canada
February 21-22, 2000 Paris, France

Activities:

The WG completed its work by Mid 2000. The results are presented in a final report which is CIGRE Technical Brochure No. 165 "Life management of circuit-breakers", available on the current session. The draft was circulated before among SC 13 members for comments and approval (13-00 (SC) 03 IWD). A summary of the studies was presented in CIGRE Report 13-104 in the Session 2000. W. Lanz lined out shortly the main results and the publications and papers of the WG 13.08 studies.

WG 13.08 completed its work according to the given scope and proposed to discharge and disband. The Study Committee raised no objections and thanked the Convener and the members for their work.

4.4 WG 13.09: Monitoring and diagnostic techniques for switching equipment

The Convener C. Jones commented on his activity report 13-00 (SC) 14 IWD.

Membership:

No change in membership

Meetings:

None since last SC 13 meeting
planned meeting
September, 2000 Paris, France

Activities:

The WG completed its work on monitoring and diagnostic techniques for switching equipment. The results as final report are presented in a CIGRE Technical Brochure No. 167 "User guide for the application of monitoring and diagnostic techniques for switching equipment for rated voltages of 72,5 kV and above". The draft (13-00 (SC) 02 IWD) was circulated before in SC 13 for comments and approval.

A summary of the studies will be published in ELECTRA in the August-edition. C. Jones lined out shortly the main topics of the Technical Brochure content.

WG 13.08 completed its work according to the given scope. There has been no proposals for further work and therefore the WG 13.09 was disbanded. The Study Committee thanked the Convener and the members for their work.

4.5 WG 13.10: Specifications for short circuit current limiters

The Convener A. Greenwood commented on his activity report (13-00 (SC) 15 IWD).

Membership:

Retiring Convener: A. Greenwood
Retiring Member: K. Kaltenecker, L. Lijstrand, P. Bertrand

New Convener approved by the Study Committee:
Heino Schmitt, Germany

New Members approved by the Study Committee:
Dr. Michael Mendik, Switzerland
F. Gil Garcia, France

Meetings:

September 1999 Washington D.C., USA
May 2000 Erlangen, Germany
planned meeting
August 29, 2000 Paris, France

Activities:

The report "Functional Specification for Fault Current Limiter" has been completed and submitted to ELECTRA for publication. Due to the new publication policy of Electra the report cannot be printed in its full length. It can be published on the CIGRE web-pages, for this a short introduction of ½ page is additionally necessary. A further way is to publish a 6-page summary in ELECTRA. In the next WG 13.10 meeting decisions will be made upon the publication possibilities.

For the future work three sub groups have been established to study for the next two years different aspects of FCL's: Testing, State of the art and System demands.

4.6 WG 13.11: Application Guide for IEC 60056 and 60694

The Convener H.-H. Schramm commented on his activity report (13-00 (SC) 16 IWD).

Membership:

Retiring Members: J. Amon Filho, J.Y. Blanc

New members approved by the Study Committee:

Sergio de A. Morais, Brazil (corresponding member)
Serge Théoleyre, France

Meetings:

October 23-25, 1999 Kyoto, Japan
March 28-30, 2000 Vancouver, Canada
planned meeting
September 14-15, 2000 Stockholm, Sweden

Activities:

The revised Draft 01 of "Application guide for IEC 60056 and IEC 60694 – Part I" has been distributed for comments (13-00 (SC) 21 IWD, the before distributed 13-00 (SC) 07 IWD is the superseded version).

Comments upon the draft are requested as soon as possible, latest end of 2000. The draft contains the following chapters:

- Introduction
 - Classification of circuit-breakers
 - Short-line fault
 - Terminal fault
- Short-circuit current and arcing time TRV

The final guide has been suggested to be published as a double-logo brochure of CIGRE and IEC.

4.7 WG CC03: TRV stresses in MV systems / Test circuit topology

The Convener L. van der Sluis reported about the situation in the group (13-00 (SC) 17 IWD). The progress made with respect to the two open topics "Test circuit topology" and "TRV-requirements for the second and third pole to clear" is rather poor due to the problem of finding active members.

L. van der Sluis proposed to lay the subjects into the hand of a new working group. Some remaining experts are willing to participate in the new group.

The Chairman proposed to disband WG CC 03 as well as WG 13.04 and to set up an Advisory Group with I. Bonfanti as Convener instead of new working groups with long periods of establishing and working. Out of this group with SC members and Liaison men new tasks can be clearly defined and task forces with active periods of one or two years can be fast established.

The suggestion to set up an Advisory Group was approved by the Study Committee.

A. Bosma, H.H. Schramm, E. Schreurs and M. Waldron pronounced themselves to join this group. P. Kirchesch additionally offered his support. The Chairman will clarify the formal way of establishing such a group within CIGRE.

Chairman

4.8 TF 13.00.2: Revision of IEC standards relevant to switching devices

Upon TF 13.00.2 was not reported.

For information see the distributed Status Report 13-00 (SC) 18 IWD.

The Study Committee decided to integrate the Task Force into the activities of the Advisory Group.

4.9 JTF 23/13/14/21/22-16: Preparation of guidelines for collection and handling of reliability data

The Convener G. Desquilbet reported about the activities of the Joint Task Force.

The SC 13-representative E. di Bartolomeo has been replaced by I. Colombo, Italy.

4.10 JTF 23/34/13: Co-ordination Committee on electronic control systems

D. Johnson as representative of SC 13 in JTF 23/34/13 reported about the purpose, the organization and the action plan of the co-ordination group. The group will coordinate the activities of the originating Study Committees in the area of protection and control and suggest the formation of TF's and WG's and other joint activities.

Chairman of JTF 23/34/13 is A. Wiersma (SC 23), Secretary is C. Koreman (SC 34). One member from each SC is involved.

For the Progress Report of Co-ordination Group 13/23/34 including Action Plan, Technical Plan and Administrative Plan see 13-00 (SC) 20 IWD.

4.11 JTF 23/13/33/34/36: Withstand and test requirements for substation secondary circuits subjected to EMI

The Secretary informed about the activity of the JTF (see Progress Report 13-00 (SC) 19 IWD):

The JTF held the first meeting in Helsinki on May 29-30, 2000. The main subjects has been: Review on the existing and coming recommendations and standards concerning the scope and organisation of JTF-work and required time.

The SC 13 representatives in the JTF are A. Ametani, Japan and L-R. Jaenicke, Germany.

4.12 JTF 12/13/23.21: Electrical Environment of Transformers

Upon JTF 12/13/23.21 was not reported.

For information see 13-00 (SC) 10 IWD: Minutes of meeting held on March 10, 2000 in Paris, France.

4.13 Liaison with WG 23.02: Gas insulated substations

C. Jones reported on the behalf of the Convener F. Heil about the activities of WG 23.02: Four Task Forces are active in the following fields.

TF 01: SF6 Gas

with observing the discussions and gathering of data concerning Global Balance. The "Guide for SF6 Gas Mixtures (Application and handling in electrical power equipment)" is finished and will be published as a brochure. A website is going to be established for information about SF6 recycling.

TF 02: Service Experience with GIS

A paper describing the GIS-service experience was published in Electra No. 188 and is also available as brochure. The next questionnaire will be in 2005 making use of internet.

TF 03: Standardised Specification for GIS:

The work has now started to write a User Guide for Specification of GIS with the aim to offer a standardised structure for all information necessary to specify a GIS clearly and unambiguously.

TF 04: Evaluation GIS into 21st century

The TF is now preparing a draft concerning future principals and needs for GIS.

5. Activity of the Current Zero Club

K. Möller reported upon the Activity Report 13-00 (SC) 24 IWD (distributed during the meeting):

The next general meeting of the Current Zero Club will be held in Newcastle, UK in September 2001.

A meeting of the Vacuum Switch Circle took place in Ratingen, Germany on May 8-9, 2000.

Four groups of subjects have been discussed:

- Capacitive switching and late restrikes
- Current zero phenomena
- Current chopping and associated phenomena
- Low voltage applications

The group CFD studies on SF6 circuit-breakers has been established aiming at the definition of standard interruptor geometries and standard boundary conditions based on available experimental material to be used in a benchmarking procedure for different modules of CFD tools. The co-operation of further experts in this field is welcome.

6. Cooperation with other bodies

6.1 Cooperation CIGRE SC 13/CIREC Session

No activities

6.2 Cooperation CIGRE SC 13/IEEE Switchgear Committee

D. Johnson reported about IEEE issues concerning switching equipment:

A reorganization of the Power Engineering Society (PES) was proposed to match the new Industry Structure.

Proposal was made in the last HVCB meeting to abandon ANSI-Standards and adopt IEC 60056 with in-country clauses. Agreement was made to consider the proposal with interested parties to make presentations at the next meeting.

A Joint Working Group IEC/IEEE is recommending revisions to IEC 60056 regarding TRV's for 100 kV and higher with the aim of finally harmonized TRV's.

A Common Clause Standard (similar to IEC 60694) is underway, with initial completion by end of 2001. An issue is altitude correction factors, which will be reconsidered by IEEE.

A Task Force is considering adoption of the new IEC capacitive switching requirements by IEEE.

A Task Force is reviewing the generator breaker standard C37.013 for extension to smaller generators. The present standard covers 15.8 kV, 6300 A, 63 kA.

6.3 Cooperation CIGRE SC 13 / IEC TC 17 and SC 17A

H.H. Schramm, Chairman of TC 17 and SC 17A, reported about the main items of activities in IEC TC 17/SC 17A. They will be discussed during the IEC-meeting in the beginning of September 2000 in Stockholm, Sweden).

- The drafts of IEC 60056 and IEC 60129 will go into the next step (FDIS resp. CDV) before publishing as a standard latest in the beginning of next year.
- The revision of IEC 60427 has been started.
- Revision of IEC 60694 will be a task for the near future.
- A new numbering system for high-voltage-equipment standards, in which all standards will be gathered under one standard-number, will be discussed.
- The cooperation between IEC and IEEE/ANSI is still going on and will lead to further harmonization concerning the high-voltage standards.

7. CIGRE SC 13 Sessions

7.1 Session 2000: General information, special reporter, session secretary

The Chairman gave some general information concerning time and location of the session of Group 13 (August 31st, 2000). Dealing with the Preferential Subjects 1 and 2 it has been published 6 respectively 19 papers.

D. Peelo took over the task as Special Reporter from A. Janssen. A. Giboullet acted again as Session Secretary.

During the Joint Session 36/13/14 on "Power Quality" the Chairman gave an introduction concerning the activities of SC 13.

7.2 Session 2002: Preferential subjects

The draft of preferential subjects, distributed together with the invitation to the SC 13 meeting, has been discussed and modified. The main modifications are:

- Item 2 "combined switching devices" has been added
- Item 3 has been renamed to "asset management" and "switchgear" which opens now the subject to circuit-breakers and disconnectors
- Item 4 has been deleted and will be used for a colloquium

The final version of the Preferential Subjects for the Session 2002 are added as Appendix A to the minutes of meeting.

8. New strategies for SC 13

The Chairman informed about putting the slightly modified Strategic Plan on the SC 13 web-page.

8.1 Proposals by Study Committee members

During the last year some proposals came in (see 8.2). No new proposals for activities has been made during the meeting.

The Chairman remarked that it would be helpful to get for new subjects a paper like a preliminary draft of a scope as base for further discussions and decisions. The author will not automatically have to take over a work on that subject.

8.2 New areas of activity

Circuit-breaker controls (WG 13.12)

A new Working Group 13.12 has been approved by the Technical Committee under the convenership of P. Högg, Switzerland. The task of WG 13.12 is to investigate the recent developments in circuit-breaker control technology, as change from conventional to electronic control. The integration into substation control in respect on the requirements of circuit-breakers and systems and the future trends in this area will be lined out (Copy of the Scope see Appendix B).

It was stated that a cooperation with SC 34 (Substation protection and control) will not been started in this early stage, because at first the demand for circuit-breakers will be stated. Disconnectors and earthing switches will be included in the investigations later.

A request for WG-members will be send out to the SC 13 representatives of the countries. Within two month experts have to be nominated.

Secretary

Dynamic Loading of Electric Power Transmission Equipment (JTF 23/12/22.xx)

The new Joint Task Force, initiated by Study Committee 23 under the convenership of P. Fletcher, held the first meeting in parallel to the SC 13 meeting (Scope and background information see documents 13-00 (SC) 22a and 22b).

As representative of Study Committee 13 in this JTF H. Peters, Germany has been approved.

Note of the Secretary: Via H. Peters we got the information from the meeting in Stockholm (September 2000) that the new designation of the group will be JTF 23.19 "Dynamic Loading"

Proposal upon a new survey on circuit-breaker reliability

Since the last survey has been carried out in 1988 it was commonly agreed to carry out a new one. The suggestion to combine it with a survey upon GIS from SC 23 to avoid two questionnaires for the utilities was considered as difficult because of the analysis in comparison to the old surveys. To include disconnectors into this survey was agreed.

The only announcement to contribute to this work came from D. Kopejtkova, Czech Republic. The convenership for this task remained open. The Chairman will contact some members personally.

Chairman

Proposal upon "Test Procedures for High-Voltage Switchgear Combinations"

It was stated that this is already a topic of IEC and it should remain to the relevant IEC committees.

Economics of transformers and connected equipment

This new task will be initiated by Study Committee 12. D. Peelo will follow the recent development as SC 13 liaison.

Seismic design of substations

A Joint Working Group CIGRE/IEEE has been proposed by SC 23. The subject will be handled with the IEEE Substation Committee because of the amount of experience with seismic conditions in IEEE-dominated countries. A two year old standard, mainly developed by US west-coast utilities, can be base of the work. A Task Force from SC 13 can later gather the relevant data for to give an input to IEC. The Task Force can be started by the new established Advisory Group (see x.xx).

As SC 13 representative Dr. L. Kempner from BPA, USA was suggested and approved.

TRV in present high-voltage networks

For IEC 17A it is necessary to gather information about the transient behaviour of present high-voltage networks in order to know whether the standardised TRV requirements can be maintained or need to be modified. Not much information is available on the TRV in case on a fault on the secondary side of a transformer if it is switched on the high-voltage side.

This work will be done by a Task Force. To gather some more data the Chairman will approach SC 12.

Chairman

8.3 New internal organization (subcommittees for special work?)

This topic was settled after the reports of the Working Groups (see 4.7)

8.4 Preparation of a colloquium and/or tutorials

The Chairman informed about the SC 13 Colloquium:

The plan to have a meeting in combination with a colloquium in Sarajevo in 2001, according to the invitation of the National Committee of Bosnia/Herzegovina last year, has been postponed to 2003. By correspondence it was agreed with M. Kapetanovic that it is necessary to establish an organization team for to have a successful colloquium.

M. Kapetanovic will chair this team.

As first member in this team K. Fröhlich offered his support.

9. Next Study Committee Meeting 2001

SC 13 got an invitation for the SC 13-Meeting in June 2001 in Arnhem, Netherlands from KEMA.

To meet there was approved. The exact date will be fixed and distributed to the prospective participants as soon as possible.

Chairman
Secretary

10. Colloquium 2001

SC 13 Colloquium was settled under topic 8.4

D. Kopejtková informed about the planned Colloquium of Study Committee 23

“Trends in Substation Technology and Environmental Conditions; Their Scope and Impact on Functionally and Operation”

October 24-26, 2001 in Venezuela, Ciudad Guayana

On behalf of the Australian National Committee S. Jones informed about the planned Symposium in Australia and invited to support the Symposium by contributions to this specific subject:

“Behaviour of electrical equipment and components in tropical environments”

September 3-7, 2001 in Cairns, Australia .

For contributions the dead lines for a Synopsis is October 6, 2000 and for the papers March 1, 2001.

Further events has been mentioned:

Fourth South Africa, Regional Conference “Innovative Engineering for todays environment”; Cape Town, South Africa; October 1-5, 2001

Symposium “Gas and Electricity networks, Complementarity or competition”; Iguazu, Brazil, October 3-6, 2001

11. Miscellaneous

F. Amon informed about several Seminars and Workshops organized by the Brazilian National Committee in 1999 and thanked the involved WG’s of SC 13 for their support.

Concerning the inactivity of some WG and TF members and the problems to get in contact with them it was in common consent decided to delete them simply from the membership lists.

For convenience and to speed up progress of work it was commonly agreed to use e-mail for correspondence. It was highly recommended that the few members without e-mail address should try to get an electronic mailing connection.

Note of the Secretary: Changes of e-mail addresses, as well as phone-, fax-numbers and postal addresses should be always send at least to the Secretary.

A. Greenwood, Convener of Working Group 13.10, participated the last time in a SC 13 meeting after 40 active years in CIGRE and 20 years activity for Study Committee 13. On behalf of the Study Committee the Chairman thanked him for his engagement and cooperation and wished him all the best for the future.

- Appendix A: Preferential subjects 2002**
- Appendix B: Scope of WG 13.12**
- Appendix C: List of SC 13 Documents 2000**
- Appendix D: Members of SC and WG's**

Study Committee 13
Preferential Subjects
2002 Session

1. Future power systems
 - Stresses on circuit breakers
 - Transient recovery voltages in future power systems
 - Transformer secondary faults and testing for its secondary fault recovery frequencies
 - Series compensation of long lines
 - Severe duties
 - Other future duties, stresses, and requirements including short-current levels
 - UHV systems, experience and design
 - Current limiting devices
 - Re-qualification and retrofit of switchgear for more severe duties

2. Future circuit breaker technologies
 - Circuit breaker controls
 - Reliability and failure modes
 - Recent developments in circuit breaker control technology
 - Integration in substation control
 - Controlled switching
 - Development in control technologies
 - New drive technologies
 - New interrupter technologies
 - Combined function devices

3. Asset management of switchgear
 - Management of life and life extension
 - Diagnostics, monitoring and maintenance
 - Information technologies

CIGRE Study Committee N° 13

13-00 (SC) 25 IWD

PROPOSAL FOR CREATION OF A NEW WORKING GROUP *

WG* N° 13.12	Name of Convenor : HÖGG, Peter (CH)
Title of the Group : Circuit Breaker Controls Working Group	
<p>Scope, deliverables and proposed time schedule of the Group :</p> <p>Background : Circuit breaker controls have a major impact on the reliability of circuit breakers. In the 2nd International Enquiry on High Voltage Circuit Breaker Failures and Defects in Service (CIGRE Technical Brochure #83) control systems were identified as the cause of 24% of all major failures. Circuit breaker controls have typically become more complicated in recent years and have many special requirements for each utility customer. Also in recent years circuit breaker control system functions have been expanding to include controlled switching, monitoring and diagnostics, etc.</p> <p>Scope :</p> <ol style="list-style-type: none"> 1. Circuit breaker control systems which are included as a part of the circuit breaker or as an optional accessory from the circuit breaker manufacturer. These control the operation of the circuit breaker and provide protection for the circuit breaker. This includes auxiliary equipment such as heaters which are associated with the circuit breaker. 2. The function, performance, reliability, failure modes, design and specification of these control systems. 3. Recent developments in circuit breaker control technology. Technology trends towards micro-processor based systems, integration of circuit breaker controls with substation control and protection systems. The functional changes in circuit breaker controls which can result. 4. Integration of special functions into control systems including gas density monitors, circuit breaker diagnostic monitoring systems, and elements to perform controlling switching. 5. Changes in standards to improve circuit breaker control system reliability. 6. Testing of circuit breaker control systems <p>Deliverables : Report to be published in Electra or technical brochure with summary in Electra</p> <p>Time Schedule : start : January 2001 Final report : 2003</p>	
Comments from Chairmen of SCs concerned :	
Approval by Technical Committee Chairman :	Date 11 JUL 2000

* or Joint Working Group (JWG), of Task Force (TF), of Joint Task Force (JTF), or Advisory Group (AG)

CIGRE SC 13
List of documents 2000

13-00 (SC) 01 IWD	Information upon JTF 23/33/36: "Withstand and test requirements for substation secondary circuits subjected to EMI" a: Working Group b: Progress Report September 1, 1999 c: Insulation co-ordination of secondary circuits in HV substations
13-00 (SC) 02 IWD	WG 13.09 - Draft Technical Brochure: User guide for the application of monitoring and diagnostic techniques for switching equipment for rated voltages of 72,5 kV and above
13-00 (SC) 03 IWD	WG 13.09 - Draft Technical Brochure: Life management of circuit-breakers
13-00 (SC) 04 IWD	WG 13.08: Minutes of Meeting No. 10 February 21 and 22, 2000 in Paris, France
13-00 (SC) 05 IWD	WG 13.07: Minutes of Meeting No. 9 March 15 and 16, 2000 in Lyon, France
13-00 (SC) 06 IWD	WG 13.11: Minutes of Meeting No. 4 March 28 to 30, 2000 in Vancouver, Canada
13-00 (SC) 07 IWD	Guide for application of IEC 60056 and IEC 60894 – Part I Draft 01 prepared by WG 13.11
13-00 (SC) 08 IWD	Controlled Switching of HV AC Circuit Breakers - Planning, Specification and Testing Draft prepared by WG 13.07
13-00 (SC) 09 IWD	JTF 23/13/33/34/36: Minutes of Meeting May 29 to 30, 2000 in Helsinki, Finland
13-00 (SC) 10 IWD	JWG 12/13/23.21: Minutes of Meeting March 10 th , 2000 in Paris , France
13-00 (SC) 11 IWD	Activity report of WG 13.04
13-00 (SC) 12 IWD	Activity report of WG 13.07
13-00 (SC) 13 IWD	Activity report of WG 13.08
13-00 (SC) 14 IWD	Activity report of WG 13.09
13-00 (SC) 15 IWD	Activity report of WG 13.10
13-00 (SC) 16 IWD	Activity report of WG 13.11
13-00 (SC) 17 IWD	Progress of WG CC 03 Letter from L.v.d. Sluis to SC 13 Chairman, dated 2000-06-07

13-00 (SC) 18 IWD	Activity report of TF 13.00.2
13-00 (SC) 19 IWD	Progress report – JTF 23/13/33/34/36 (Requirements for secondary circuits subjected to EMI)
13-00 (SC) 20 IWD	Progress report of Co-operation Group 23/34/13
13-00 (SC) 21 IWD	Guide for application of IEC 60056 and IEC 60894 – Part I revised Draft 01 prepared by WG 13.11
13-00 (SC) 22a, b IWD	Information upon JTF 23/12/22.xx Dynamic Loading of Electric Power Transmission Equipment
13-00 (SC) 23 IWD	New areas of activity of SC 13 Information for next SC 13 meeting
13-00 (SC) 24 IWD	Report on activities of the Current Zero Club
13-00 (SC) 25 IWD	WG 13.12, Approved Proposal for Creation of a New Working Group
13-00 (SC) 26	Minutes of Meeting SC 13, Paris, France, August 29, 2000

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Working Group 13.07

Controlled Switching

Scope: Identify the conditions for controlled switching for the various possible applications, the system and circuit-breaker requirements, and the system and load response, taking into account the characteristics of the circuit-breaker

- Tasks:**
- Permissible tolerances and influence on system behaviour and load response
 - Service experience and the influences of environmental and operating conditions on the switchgear and system/load with respect to controlled switching
 - Effect on switching practices of utilities, layout and design of networks, reliability and life expectancy of switchgear and load elements

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Working Group 13.10

Specifications for Short Circuit Current Limiters

Scope: Determine the degree of current limiting needed and the operational conditions for current limiters used to uprate the load carrying capacity of medium and high voltage distribution systems up to 145 kV

- Tasks:**
- Requirements from protection and control schemes in distribution systems (e.g. degree of current limitation permitted, short circuit current carrying capability, response time, voltage withstand, etc.)
 - Most effective locations for current limiters within the system

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Working Group 13.11

Application Guide for IEC 60056 and 60694

Scope: Application guide to provide background information for the requirements of Publications IEC 60056 „High-voltage alternating-current circuit-breakers“ and IEC 60694 „Common specifications for high-voltage switchgear and controlgear standards“ and to give guidance to users of these publications.

- Tasks:**
- TRV for terminal faults
 - DC components
 - Short-line fault
 - Test Duty No. 1
 - Rated insulation level
 - High voltage tests

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