MINUTES OF THE ELEVENTH MEETING OF THE CANADIAN NATIONAL COMMITTEE OF THE CIE

Held at the W.P. Dobson Research Laboratories of the Ontario Hydro, Toronto, 28 October 1966.

PRESENT

Members:

Mr. W. Budde (Secretary)
Mr. J.M. Chorlton
Prof. M.S. Currie
Mr. G.E. Davidson
Mr. G.F. Dean
Mr. W.F. Elliott
Prof. P.J. Foley
Mr. D.W. Frick
Mr. M. Galbreath
Dr. C.L. Sanders
Mr. G.A. Watters

Guest:

Dr. Y. Kurioka

ABSENT

Mr. G.K. Brown
Mr. E.H. Brezina
Mr. R. Gingles
Mr. A.T. Orr
Mr. J.C. Wilson
Dr. G.W. Wyszecki

1. Call to Order

The President opened the meeting at 10:10 AM. Mr. H.C. Ross, Director of Research of Ontario Hydro, welcomed the members of the CNC on behalf of his organization and expressed his good wishes for a successful meeting. The President thanked Mr. Ross for the invitation to hold the meeting at the Dobson Research Laboratories and for the kind welcome.

The following members had given notice that they were unable to attend the meeting: Messrs. C. Wilson, G.K. Brown, R. Gingles and Dr. G.W. Wyszecki.

2. Minutes of the Last Meeting

The minutes of the tenth meeting were read by the Secretary. In Section 9, third paragraph, the date of the National Conference of the IES was corrected to read '...to be held at Montreal 10-15 September 1967'. A motion made by Mr. Frick and seconded by Mr. Watters that the minutes be approved was carried.

3. Secretary's Report

(a) The annual fee for 1966 for Canadian membership in the CIE in the amount of $396.00 (U.S.) was paid by the National Research Council.

(b) A letter was received from the Treasurer of the CIE with a proposal for a new budget and a new scheme for assessing the annual fees. The annual fee for the CNC according to the new proposal, which is preferred by the CIE Finance Committee, is $900.00 (U.S.). An alternative scheme would be the '50% increase' which would raise the Canadian fee to $594.00 (U.S.).

The National Research Council has asked for comments and a recommendation from the CNC.

(c) As mentioned in a previous circular letter the Chilean Committee on Illumination has asked for help in establishing a Library on Illumination. The four CSA-Standards on matters of illumination have been procured and will be shipped with other material. Contributions from the members of the CNC are still welcome.

(d) The 'Press Release' which was discussed at the last meeting was sent through the NRC Public Relations Office to about thirty journals which have an interest in illumination. The Public Relations Office has no information that this Press Release has been published. The Public Relations Office is prepared to give some help in formulating a new Press Release after this meeting.

A motion to approve the Secretary's Report was made by Mr. Dean and seconded by Mr. Watters. The motion was carried.

4. Business Arising from the Minutes and the Secretary's Report.

The sale of CIE publications by the CSA was discussed. The Secretary explained that certain difficulties concerning the price and sources of supply of the informal reports had to be overcome. The CSA will now be approached again in this matter.

It was suggested that an application be made to the CSA that all members of the CNC receive the quarterly CSA News Bulletin. The Secretary was asked to write to the CSA on this matter.

The President read a letter from Mr. C. Wilson discussing the cooperation between the CSA and the CNC/CIE. This cooperation, Mr. Wilson pointed out, is highly desirable - particularly in view of the differences between CSA and CIE, the CIE being an 'international forum for the promotion and exchange of results of very basic research on the source and art of illumination' and the CSA being 'an industrial and commercial non-profit organisation devoted to creating agreed industry-wide standards'. Further remarks are related to the CIE Standard Observer (not of immediate interest for the CSA but of importance for standardization laboratories), the summaries on photometry and colorimetry and the 'Lighting Vocabulary' (the adoption of which should be suggested to CSA).

In the discussion on this letter it was suggested that the drafts for the colorimetry and photometric summaries be sent to the members of the CSA Sectional Committee on Illumination for comments.

In a discussion on the status of the CNC between the CSA and the IES it was stated that Canadian members represent more than 10% of the total IES membership. In this context the Secretary was asked to write again to the U.S. National Committee requesting that the 'Lighting Presentation' or 'Lighting Spectacle' be expanded to assume an international character and be named to this effect. (A letter had been written by the Secretary in this matter according the minutes of the tenth meeting).

Item (b) of the Secretary's report: The letter from the CIE Treasurer was explained in more detail. The Secretary was asked to write a letter requesting information 'on the formula which was used by the Finance Committee in calculating the fees of the 'New Proposal''.

The discussion resulted in a motion by Prof. Currie, seconded by Mr. Chorlton, that the following recommendation be made to the National Research Council:

> The representatives of the Canadian National Committee of the CIE will vote in Washington in favour of the fifty percent increase in the annual fee. However, if the CIE accepts the new formula mentioned in the letter from the CIE Treasurer, then the CNC recommends that the fee, according to the new formula, be paid by the National Research Council'.

The motion was carried.

Item (c) of the Secretary's report: Mr. Dean promised to make about thirty back issues of 'Illuminating Engineering' available. It was further suggested that the Secretary contact Philips Appliances Ltd. (Mr. F. De Maat) for issues of their magazine.

Item (d) of the Secretary's report: It was agreed that the Secretary should contact the Public Relations Office of NRC for assistance in formulating a new press release. It was further agreed that thirty-five copies of the press release should be sent to Mr. Frick for distribution among Canadian officers of the IES.

The meeting was adjourned for lunch at 12:15 PM.

5. Discussion of the Reports from Experts and Corresponding Members of the CIE Committees.

Each of the members present gave a short oral review and provided additional information on the activities during the last year. Of particular interest was an account by Mr. D. Frick on the lighting of sports arenas for color TV and a discussion on terminology referring to 'Supplementary Lighting'. Mr. Chorlton suggested that the CNC approve a motion that more than one CIE Committee meet at the same time and place in order to provide stronger reasons for attending such meetings - particularly if long-distance travel is involved. This matter should be brought up at the next Executive Meeting. Mr. Watters emphasized again that mail across the Atlantic should be Air Mail. This matter should again be discussed at the Executive Meeting.

6. Appointment of New and Reappointment of Old Members

Mr. G. Watters was reappointed for another four-year term by a unanimous vote.

A motion to appoint Mr. Chorlton as Corresponding Member for Committee E-3.1.1.2, Causes of Discomfort in Lighting was made by Mr. Dean and seconded by Mr. Davidson. The motion was carried.

Mr. Davidson agreed to approach Mr. Ron Matthews of Crouse Hinds with a view to him becoming a Corresponding Member for Committee S-3.3.6 Exterior Lighting Practice.

Dr. Sanders agreed to again approach Mr. Boivin and invite him to become the Canadian Representative for Committee S-2.1.1, Sources of Visible Radiation.

7. Discussion on the Plenary Session of the CIE to be held at Washington.

Preliminary Enrollment Forms have been received from:

Prof. M. Currie	Mr. D. Frick
Mr. W. Budde	Dr. C.L. Sanders
Mr. G. Davidson	Mr. G. Watters
Mr. F. Dean	Mr. J.C. Wilson
Mr. W.F. Elliott	Dr. G. Wyszecki

The forms have been forwarded to the U.S. National Committee.

There was some discussion on the possibility of promoting Expo 67 among CIE members and delegates attending the Washington meeting. Mr. Frick mentioned that this matter could be connected with invitations to visit the TV studios of the National Film Board and the CBC at Montreal.

8. Other Business

It was agreed to hold the next annual meeting on 20 October 1967 at Montreal.

9. Adjournment

The meeting was adjourned at 3:10 PM.

Report on CIE Committee Activities for 1965

G.E. Davidson, P.Eng., FIES

Member CNC/CIE

Committee S-2.1.1 on Sources of Visible Radiation

In place of the normal type of report, it was suggested that reference should be made to the section dealing with light sources appearing as part of the Annual Progress Report of the Illuminating Engineering Society. This Report covers light source developments in North America for the current year, together with off-shore light sources appearing in either Canada or the United States.

Accordingly, a letter was sent to the Japanese Committee on Illumination, drawing their attention to these Progress Reports and asking that these Reports be considered as a Canadian Report.

Committee E-1.1 on Definitions and Vocabulary

The long-awaited Draft of the Third Edition of the International Lighting Vocabulary was circulated to the National Committees of both the CIE and the IEC. Although this document was prepared by the CIE, it is common to both the CIE and IEC.

The document was reviewed in considerable detail by several members of the CNC/CIE and by others and a considerable number of comments were prepared. These comments were sent to the Chairman with copies to Dr. Terrien (Chairman of CIE Committee E-1.1), the CNC/IEC and Mr. Barbrow (Chairman of IES Nomenclature Committee). A follow-up letter was prepared to amplify or modify some of our comments and to correct typing errors. On one or two items there were differences of opinion and it was suggested that these various opinions should be made known to the Committee.

A member of the staff of the CSA Testing Laboratories raised an objection to our suggestion for Low Voltage Lighting. In the C.E. Code, 'low voltage' is defined as any voltage between 30 and 700 volts. However, many segments of the electrical industry do not follow this definition and lighting is one of these. This difference of opinion is the agenda of the forthcoming joint meeting of the CSA Committee on Electrical Definitions and the CNC/IEC/SC on TC-1, Definitions and Nomenclature.

Committee E-2.3 on Photometric Requirements for Luminaires

Copies were received of the First Committee Draft on Recommendations on Photometric Requirements for Indoor Type Luminaires with Tubular Fluorescent Lamps, and these were circulated to interested photometric laboratories in Canada. The comments received were assembled and sent on to the Secretariat in Australia.

A meeting of the Committee is being held in London, England, (October 18 to 21) to discuss all the comments that have been received and to prepare a Second Committee Draft.

A round-robin test has been planned, based on the photometric testing of a more or less standard two-lamp, four-foot luminaire. Philips of Holland are providing the test luminaires and fluorescent lamps and also are co-ordinating the programme. The input voltage of 230 volts 50 cycles is a real problem for most photometric laboratories and this may limit the number of laboratories in Canada who can participate in the test. The Illumination Laboratory of Ontario Hydro will be participating.

It is hoped that some way may be found to utilize a 60 cycle supply so that other photometric laboratories may be able to participate.

ADRESSE TÉLÉGRAPHIQUE "RESEARCH"
NOTRE DOSSIER .....

CABLE ADDRESS "RESEARCH"
OUR FILE .....

NATIONAL RESEARCH COUNCIL
CONSEIL NATIONAL DE RECHERCHES
CANADA

DIVISION DE PHYSIQUE APPLIQUÉE
OTTAWA 2

DIVISION OF APPLIED PHYSICS
OTTAWA 2

REPORT ON MEASUREMENT OF LIGHT : E1.2

The committee has been very busy during the past year with the activity shared between the different expert members. The committee meeting in Moscow in September was well attended and included your representative.

The measurements of absolute reflectance of opal glass tiles by laboratories in four countries show a maximum difference in measurements of 2.4%. The possible causes will be studied.

The procedures to be followed for photometric measurements on fluorescent and H.P.M.V. lamps are still under study so no recommended method has yet been decided upon.

The comparison of the measurements of spectral sensitivity of photocells was delayed for four months because of slow delivery from the manufacture but two cells were sent to each of four laboratories in September. NRC measured all the cells, and also provided the photometer housing and cells for the comparison. They will be returned to NRC, remeasured, and then sent to another four laboratories.

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Two further drafts of the CIE Recommendations on Light Measurements were prepared by me and studied by the committee during the year. Some of the new recommendations included by your representative as being required for progress in photometry were not accepted by a sufficient number of the members. The next draft, being prepared by Dr. J. Terrien of France, will probably be published as an informal report rather than as recommendations. The question of adopting various points in the report as recommendations will be studied in Washington.

REPORT ON COLOUR RENDERING : E1.3.2

The committee met in Prague in September and, due to the fortunate timing just after the E1.2 meeting in Moscow, I was able to attend. The committee is studying the measurements which have been made using the CIE Recommendation 'Method of Measuring and Specifying Colour Rendering Properties of Light Sources'. In general it seems that the method gives very useful results and is widely used. In some cases it seems to be a disadvantage that a different reference illuminant must be used since the chromaticity of the test illuminant changes. The appropriate selection of the reference illuminant can increase the colour rendering index. It would be preferable if a method could be developed which would allow for chromatic adaptation of the observer's eye. Then the same reference illuminant could be used for all test illuminants. The committee will investigate this possibility.

C.L. Sanders

24 October, 1966

FOR PRESENTATION AT THE ANNUAL MEETING OF THE NATIONAL COMMITTEE, C.I.E.

TORONTO, October 28, 1966

Committees E 133 - Signal Colours

E 337 - Fundamentals of Signal Lights

There was a meeting of the two committees on consecutive days in July at Koblenz, West Germany, but I was not able to attend.

A report of the meeting of the Fundamentals of Signal Lights was received and the following topics were discussed:

Threshold values of signal lights to ensure certainty of recognition, taking into account background luminance, flashing character, location of signal, time available for identification, degree of concentration of the user, training and skill of the user, and other factors;

Range of signal lights for maritime purposes treated in the framework of IALA and IMCO;

Use of nomograph for determining range of signal lights and ship lights for IMCO and IALA;

Blondel-Rey formula application to rapidly flashing lights.

A further meeting is planned for December, in London, and another one just prior to the Congress in Washington.

No report of the Signal Colours meeting has been sent out to corresponding members but we were asked, prior to the meeting, to give our views on chromatic adaptation. These were given after consultation with our President and Dr. Wyszecki.

Committees E 333 - Airborne Lighting

E 3321 - Aviation Ground Lighting

Mr. Gingles of the Air Services Branch of the Department of Transport asked me to report that, since the last annual meeting of the National Committee, there has not been any activity referred to him as corresponding member.

W.F. Elliott.

ADRESSE TÉLÉGRAPHIQUE "RESEARCH"
NOTRE DOSSIER .....

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DIVISION OF APPLIED PHYSICS
OTTAWA 2

26 October, 1966

REPORT ON THE ACTIVITIES OF CIE COMMITTEE E-2.1.2
'SOURCES OF UV- AND IR-RADIATION AND MEASUREMENT'

One meeting was held at Hamburg in May 1966. The agenda included discussions on the following items:

1. Comments on the report 'Recommendations for the Spectral Distribution and the Integrated Irradiance of Artificial Extraterrestrial Solar Radiation for Testing Purposes'.

2. Comments on the report 'Recommendations for the Spectral Power Distribution and the Integrated Irradiance of Artificial Total Radiation for Testing Purposes'.

3. Report on the replies to the questionnaire concerning the Review of Progress of E-2.1.2.

The undersigned did not attend the meeting. The Minutes have not yet been received.

W. Budde

W. Budde
Corresponding Member : E-2.1.2

WB:dw

C.I.E. COMMITTEE E-3.1.1.1 PREDETERMINATION OF ILLUMINATION AND LUMINANCE 1965-1966

A meeting of the experts was held in Leicester, England in May 1966. Work is still progressing towards the goal of a C.I.E. method for calculating illumination, but there is obviously still some disagreement between countries on the details of the method. It would not seem likely that complete agreement will be reached in time for the Washington session.

M. G. Currie,
Corresponding Member.

C.I.E. COMMITTEE E-4.1.1 EDUCATION IN SCHOOLS 1965-1966

A meeting of the experts was held in Karlsruhe in September 1966. The second series of slides has been completed and will be available at the Washington session. The draft of the third series is prepared and will be shown at Washington. 75 slides have been collected, but these will be reduced to 50 after comments are received. If it seems desirable a fourth series may be added. A pamphlet on the teaching of lighting to architectural students has been prepared and will be available at Washington.

M. G. Currie,
Expert Member.

REPORT TO C.N.C. OF C.I.E.

FOR E3.1.9.2

STAGE & STUDIO COMMITTEE

REPORT 7:21:97

Prepared by
D.W. Frick
David W. Frick
Oct. 24, 1966.

The highlights of activity in Stage and Studio Lighting are in the following areas:

Solid state dimming equipment

Remote control of dimming

Color television studio lighting

Color television lighting for sports arenas.

The solid stage type of dimmer is coming into wide use. Manual types (autotransformer) are seldom used, because of small price difference. The solid state dimmer permits remote control, locating dimmers for minimum wiring and voltage drop, and away from critical areas. Control is flexible, dimmers may be gauged on the control side, programming may be readily preset. The control characteristic - either linear or logarithmic light control-may be readily obtained. Most new installations in recent months have used this type of dimmer. A number of T.V. studios have chosen to size dimmers to load, eliminating patching.

The remote control feature permits close association of lighting with the other aspects of the television production, bringing all program control into one central location.

Studios are now being constructed for color television. In the larger sizes wiring is being installed for lamps up to 5 Kw. size. In Studios of 4000 square feet or more all outlets are 5 Kw. Below 4000 square feet outlets may be mixed, both 2 Kw. and 5 Kw. sizes; the smallest studios remain at 2 Kw.

Cyclorama lighting for color requires the largest amount of light. In the larger studios it is required that color changes be provided. This calls for triplicate circuits on the perimeter of the studio. A search is on for color filter media to be used in cyclorama lighting. Present materials either do not withstand the heat of the higher wattage sources, or do not have satisfactory color characteristic.

Much work is being done in applying tungsten-halogen lamps to existing spotlights, floodlights etc. A member of new devices have been successfully completed and are now on the market. The requirement of color T.V. has accelerated work in this, because of the standardization on 3200 ^{o}K as the most desirable lamp.

The most successful of the tungsten-halogen applications has been for cyclorama lighting, where a very compact semi-parabolic light strip has been devised.

There has been an acceleration in the work on color television for sports lighting. The I.E.S. Theatre-Television-Cinema Committee is currently preparing a recommended practice for Baseball, Football, Basketball and Hockey. The Baseball and Football sections are well advanced, the section on Hockey will be completed as soon as an evaluation can be made on the installations in Montreal and Toronto.

Various types of pressure arc lamps are being used for sports color telecasting. Some baseball and football stadiums are now lighted with mercury lamps. A new pressure arc lamp, the multi-vapour type has been found very satisfactory for color television use. An outstanding advantage of this type is that the television camera can make the transition from daylight to this multi-vapour source without readjustment.

A symposium on lamps, luminaires, lighting control and lighting techniques was held in Chicago in May of this year. Over 300 attended from U.S. and Canada. It is intended to continue this event in future.

Report on Work of

Committee E3.2 Daylight

There has been limited activity in this committee during the past year. The Guide to Calculation of Daylight is undergoing minor refinements and it is expected that it will be published before the CIE meeting in Washington next June.

A standard for Luminance Distribution of Clear Skies has been prepared and a document is being prepared. Papers have been prepared by M. Dogniaux, Belguim, on the light transmission of window panes. These will be submitted at Washington.

Murdoch Galbreath,
Corresponding Member,
Committee E3.2 Daylight

CNC of CIE

Annual Report of E-3.3.1 Committee

1° All members CNC of CIE, CSA Sectional Committee on Illumination and Mr. Boereboom, President of the International Committee E-3.3.1 Public Lighting have received in June 1966 a report concerning the Canadian Campaign entitled "How To Shed Some Light On Your Community's Centennial Year" and in French "Expo 67: Pleins feux sur le visage de votre localité."

2° Same members as indicated in 1°, plus : Mr. E.L. Burnham, Chairman AMEU Street Lighting Canada; Mr. R.C. Hobson, Dept. of Highways, Ontario; Miss Ruby Redford, Editor IES New York; Mr. G. Cornish, Engineer City of Calgary, Alta,; Mr. F.A. Sweet, Gen. Mgr. Can. Standards Association Ottawa, have received a copy of our Public Lighting Progress Report, September 1966.

3o Both reports will be studied by the International Committee and presented at the CIE XVI International Session in Washington DC, June 20 to 28, 1966 at the Shoreham Hotel.

Georges A. Watters

Member CNC of CIE
Attached to E - 3.3.1

September 12, 1966.

UNITED STATES NATIONAL COMMITTEE
OF THE
COMMISSION INTERNATIONALE De L'ECLAIRAGE
(INTERNATIONAL COMMISSION ON ILLUMINATION)

EVERETT M. STRONG, President
Cornell University, Phillips Hall, Ithaca, New York

F. C. BRECKENRIDGE, Vice-President
c/o National Bureau of Standards, Washington 25, D. C.

December 19, 1966

LOUIS E. BARBROW, Secretary
c/o National Bureau of Standards, Washington 25, D. C.

THEODORE D. WAKEFIELD, Treasurer
Box 195, Vermilion, Ohio

Address writer at:
Illuminating Engineering Society
345 East 47th St., New York, N.Y. 10017

Mr. C.L. Sanders
President, Canadian National Committee, CIE
c/o National Research Council
Division of Applied Physics
Sussex Drive
Ottawa 2, Ontario, Canada

Dear Mr. Sanders:

Your letter to Mr. Chappat dated September 9 has been forwarded to me. As you may recall, the letter listed places of interest in Canada for visits by delegates to the 16th Session next June.

Your letter is received in time to incorporate the information into the list of laboratory and other tours being arranged by the U.S. National Committee. The four-page multilithed list of tours is being sent to enrolled delegates with the Registration Form; the mailing will go out next week. The Section on Canadian tours will be per the attached sheet.

Very truly yours,

(Miss) Ruby Redford

Ruby Redford
Chairman, Publicity Committee
U.S. National Committee

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cc J.J. Chappat
L.E. Barbrow
G.J. Taylor

Tours in Canada

The Canadian National Committee of CIE is pleased to welcome delegates to the 16th Session and to assist their visits to several interesting places in Canada. Delegates may write direct to the indivudual indicated below to make arrangements to visit the following:

1. Radiation Optics Section, Applied Physics Division,
   National Research Council, Montreal Road, Ottawa, Canada.

   Contact: Dr. G.W. Wyszecki - Section Head

2. Ontario Hydro Commission, W.P. Dobson Research Laboratory
   200 Kipling Street South, Toronto 18, Ontario, Canada

   Contact: Mr. G.E. Davidson

3. EXPO 67 - International Exhibition (Celebration of Canada's 100th Anniversary)
   Montreal, Quebec, Canada

   Contact: Mr. G.A. Watters, Quebec Power Co., P.O. Box 1607, Quebec, P.Q. Canada

4. Canadian Broadcasting Corporation
   P.O. Box 10, Snowdon, Montreal 29, Quebec, Canada

   Contact: Mr. D.W. Frick