

AFRC CE USERS GROUP MEETING FOR 1985  
HELD AT JOHN INNES INSTITUTE, NORWICH.  
OCTOBER 10th 1985

LIST OF PARTICIPANTS:

STATION

C.EAGLES	WPBS
P.TATHUM	MAFF, HARPENDEN
F.SANDWELL	MAFF, HARPENDEN
P.C.LONGDEN	BROOM'S BARN EXP.STA.
M.E.YEO	UNIV.OF SUSSEX
J.K.WELLING	UNIV.OF SUSSEX
A.R.SMITH	UNIV.COLL.OF WALES
D.EDWARDS	UNIV.COLL.OF WALES
R.F HUGHES	LARS
A.J.ABBOTT	LARS
P.TURNER	LARS
T.JOHNSTON	LARS
J.CASELEY	LARS
G.E.WILSON	FRI-BRISTOL
J.A.C.WEIR	ELECTRICITY COUNCIL
K.R.BAMBRIDGE	SUTTON BONINGTON
S.STOCKLEY	SUTTON BONINGTON
I.PEARMAN	RES
G.THORNE	RES
S.H.CROTHERS	DEPT.OF AGRIC., BELFAST
K.H.HIGGS	EMRS
C.R.HOLBOURN	GCRI
J.ROSS	GCRI
R.COX	GCRI
R.E.RANDALL	GCRI
T.C.CLARK	MAFF (ADAS)
J.R.BOLTON	NVRS
C.C.HOLE	NVRS
A.MORGAN	NVRS
D.DICKINSON	UNIV.OF READING
B.A.WILLIAMS	AGRI, HURLEY
J.W.HINE	AGRI, HURLEY
B.M.ROBERTS	EMRS
A.E.S.MACKLON	MISR
J.T.BURRELL	AFRC HQ
D.A.JONES	JII
A.NICHOLS	JII
C.L.HEDLEY	JII
D.M.HARVEY	JII
J.ALDOUS	JII
G.HUSSEY (CHAIRMAN)	JII

INVITED SPEAKERS;

T.LEE	FLOODLIGHTING AND GENERAL LAMPS LTD
H.R.INHELDER	WOTAN LAMPS LTD
R.WESTCOTT	DURHAM-BUSH LTD

Minutes of the 1985 AFRC CE Users Group meeting held on 10 October 1985 at the John Innes Institute, Colney Lane ,Norwich.

Chairman : G.Hussey (JII)

1. Minutes of the last meeting.

The following corrections were called for:

The last sentence in the 2nd paragraph of item 2(a) should be deleted. In item 3(a) ,1st paragraph, the 4th line should read ">90%".

The minutes were then taken to be a correct record.

2.Matters Arising.

The meeting agreed that there were no matters arising.

3. Management, maintenance and servicing.

G.Hussey pointed out that the last survey had been conducted in 1974 and was now out of date. The meeting was asked if a new survey should be made. G.Thorn (RES) said that the last survey had been done for a specific purpose, and had involved a lot of paper-work. She therefore would not advocate another survey since there was no urgent reason for one at present, despite the many changes that had occurred since 1974.

4. New CE facilities .

This agenda item was postponed until 13.45 hrs, when D.Harvey (JII) gave an explanatory talk on the construction and operation of the new walk-in growth-rooms as manufactured by Weiss Technik GmbH , followed by a tour of these rooms.

An extract from the JII Report for 1983/4 (pages 202-3) was circulated , which gave background information relating to the installation and the design specification of these rooms.

5. Running costs.

Many members were interested to have details of the anticipated electrical running costs of JII's new installation. They were informed that these costs needed to be seen as part of an overall energy policy within the Institute.

At present only theoretical costs were to hand. More data would become available as JII gained experience with the rooms.

J.Aldous (JII) pointed out that as the Institute had recently converted from oil to natural gas, the financial savings expected from the central refrigeration heat-reclaim (waste heat sent to glasshouses) system were therefore not now quite as attractive as when the project was initiated in 1982, when the Institute was dependant on oil. Nevertheless, an estimated 140kW of heat were potentially recoverable in terms of reduced glass-house heating costs.

D.Harvey (JII) added that the incorporation of heat reclamation would also be a pre-condition of any AFRC/DES acceptance of such an energy intensive project. He added that although the pay-back period was likely to be unrealistically long, at least some energy savings were now possible, as against the total energy-loss incurred with the old growth-rooms.

#### 6. Lighting; lamp wiring looms.

C.Hole (NVRS) reported a potentially serious fire in a wiring loom at the junction with the ballast frame-work of a Saxcil cabinet. The wiring was about 20 years old and he thought this may have been a factor.

J.Casely (LARS) said he had experienced a similar problem on three of their rooms.

J.Aldous (JII) thought that age of the wiring need not be the cause, since JII had just had a loom burn-out on a new installation. The fault had been traced to a loose connection on the secondary side of a ballast, that had arced causing this wire and adjacent wires to over-heat. Here the ballast had acted as a transformer. The fault was not detected by fuses on the primary side. There had been no fuse on the secondary side on grounds of installation cost arising from the number of lamps involved.

T.Lee (Flood Lighting and General Lamps Ltd) stated that the only reliable protection was to have primary and secondary side fuses. An RCCB (residual current circuit breaker) was recommended.

D.Dickinson (Reading) informed the meeting that he had a spare Saxcil wiring loom which was available for copying purposes should anyone need one.

#### 7. Instrumentation and sensors.

R.Cox (GCRI) requested information on solid-state CO2 detectors. D.Harvey (JII) said that D.A.Jones (JII) had a portable CO2 analyser (suitable for photosynthesis studies in CE rooms) manufactured by Analytical Development Co.Ltd, Pindar Road, Hoddesdon, Herts, EN11 0AQ. This instrument represented the state of the art in solid state detection of CO2 for equipment of UK manufacture.

R.Cox also needed information on the control of nutrient concentration by means of selective ion monitoring. J.Abbott (LARS) suggested that E.Watson of Biochemistry (LARS) should be consulted. LARS had had useful experience with nutrient film technique.

#### 8. Any other business.

G.Thorn (RES) asked if any stations had restrictions imposed with regard to electrical running costs. R.Randall (SCRI) said that in the past they had shut down CE's during the period of high maximum demand charges, but they had since been accused of not making full use of the facilities.

D.Harvey (JII) said that JII was restricted to using only five out of the eight new rooms within the current financial year in view of the high commissioning running costs incurred, He anticipated that the transfer of projects from the old to the new rooms would be completed before the end of November 1985 when the old rooms would be closed down.

R.Cox (GCRI) suggested that there should be liaison between AFRC units with regard to obtaining outside contracts that could defray costs, though he knew of no proposals received to date.

C.Eagles (WPBS) said that their CE electrical running costs were part of the overall budget for electricity at WPBS, and had not caused much concern at this stage.

G.Thorn said that their own survey had shown that CE facilities constituted at least 50% of the RES electrical running costs.

J.Weir (Electricity Council) clarified the 'off-peak' two tier metering system, emphasising the need to make full use of the cheap rate period.

J.Abbott (LARS) said that Electricity Boards may differ as to what savings were possible, but at LARS they ensured that photo- periods did not clash with times of peak demand for electricity. D.Harvey (JII) replied that this had been tried at JII but had met with objections from scientists who needed access to plants in the course of experiments.

J.Aldous (JII) said that it was important to remember that any heat reclaim system would be in phase with the demand for heat in the glasshouses if the CE lights were 'on' in the cheap rate period, since it was invariably colder at night.

J.Caseley (LARS) was concerned that CE workers were subsidised by others, unless CE costs were charged to respective projects. It was difficult to be fair. Other members also felt that bench fees were not realistic for projects that involved controlled environments.

G.Thorn suggested that in the near future, financial support for CE work may become entirely dependant on outside contracts. Would there be competition between AFRC units? G.Hussey (JII) thought that while AFRC cash limits were imposed, as at present, no formula could be evolved. Certainly CE workers were now forced to be more cost-conscious than ever before.

On monitoring electricity consumption, J.Abbott (LARS) reported that they had two ostensibly identical rooms which nevertheless showed a twofold difference in consumption. Differences were suspected in the extent to which heating and cooling were in competition.

Returning to R.Randall's point about switching rooms off, J.Burrell (AFRC-HQ) said that any stations unable to make full use of their CE facilities should contact either B.Staples or G.Frankland at HQ. Individual cases would be examined separately on a merit basis.

AGRI reported a serious contamination problem in the cooling water of a Saxcil cabinet. Various members suggested this was either oil from the compressor or bacterial growth in the glycol solution.

R.Randall (GCRI) said this needed attention now, before damage to refrigeration equipment resulted. If it was bacteria then a biocide should be used. J.Aldous (JII) recommended that AGRI should contact Deerborne Chemicals, or Rodol of Liverpool. He would forward the addresses on request. N. Farrow at FRI-Norwich could also be consulted.

C.Eagles (WPBS) requested a source of ballasts. T.Lee (F and G Ltd.) offered to help and would contact him.

9. Date and place of next meeting.

The meeting agreed that it should remain annual and be kept to the beginning of October. C.Hole (NVRs) volunteered that the next venue could be NVRs. The meeting accepted this suggestion. Confirmation would be announced in a later circular.

The meeting then closed.

D.Harvey (JII), minutes secretary.