



Energy, Mines and  
Resources Canada

Énergie, Mines et  
Ressources Canada

**CANMET**

Canada Centre  
for Mineral  
and Energy  
Technology

Centre canadien  
de la technologie  
des minéraux  
et de l'énergie



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SUMMARY MINUTES OF THE FIRST MEETING

OF THE ENERGY SUB-COMMITTEE:

NATIONAL ADVISORY COMMITTEE FOR MINING AND METALLURGICAL RESEARCH

D. K. FAURSCHOU

CANMET ENERGY RESEARCH PROGRAM

REPORT ERP 77-5

SUMMARY MINUTES OF THE FIRST MEETING  
OF THE NACMMR ENERGY SUPPLY SUB-COMMITTEE

OTTAWA, APRIL 15, 1977

9:15 to 16:30

Attendance:

NACMMR J.E. Morris (Chairman), Luscar Ltd.  
G. Alexander, Montreal Engineering  
W.G. Brissenden, Henry J. Kaiser (Canada) Ltd.  
N. Duncan, Alberta ERCB  
W.J. Riva, Kaiser Resources Ltd.  
O.H. Patrick, Century Coal  
J.G. Matthews, Pan Canadian Petroleum  
T.H. Patching, University of Alberta  
A. Ignatieff, Consultant  
A.R. MacLean, Devco

CANMET V.A. Haw, Deputy Director-General  
D.S. Montgomery, Senior Advisor Energy  
D.A. Reeve, Director, Energy Research Program (ERP)  
E. Smith, Energy Utilization (ERP)  
A.H. Hardin, Energy Processing (ERP)  
D.K. Faurschou, Energy Supply (ERP) (Secretary)  
K. Barron, Manager Western Office (MRL)  
R. Chakravorty, Project Leader (ES4)  
B.J. Whalley, Project Leader (ES1)  
H. Sawatzky, Project Leader (ES40)  
D. Dainty, Project Leader (ES5)  
R.J. Welwood, Project Leader (ES80)

Unable to Attend:

NACMMR H. Owen, Alberta ERCB  
E.R. Macgregor, B.C. Dept. of Economic Development  
R.D. Humphreys, Humphreys Engineering and Management

This meeting served the purpose of getting together for an overview of details of the CANMET Energy Supply Activity wherein "Supply" covers quality assessment and aspects of economic assessment of resource and reserves of coal and of uranium; mining of coal and oil sands; and, beneficiation of coal. It also served to establish contact between Project Leaders and designated NACMMR Sub-Committee Members for the purpose of a project-by-project study leading to analyses and recommendations of an advisory nature.

As background for the meeting the following documents were distributed:

- 76-6 CANMET Research and Development in Relation to Canada's Energy Commodity Resources.
- 76-10 CANMET Rationale for Energy Development Funding Projected to 1985.
- 77-3 Summarized Objectives and Outputs of the CANMET Energy Program for 1977/78.

The meeting was devoted primarily to presentations on each Supply Project by available Project Leaders or Laboratory Managers and by the Processing and Utilization Activity Leaders followed by discussion and follow-up action. The presentations presented details to supplement the background documents. There was too much material to be digested by the Sub-Committee in the time available. In fact, Agenda Item 10 - Discussion of Issues - was not covered. At the suggestion of W.G. Brissenden, the Chairman canvassed the membership and obtained commitments to study individual projects by direct contact with Project Leaders and then to offer a critique and advisory recommendations. This assignment was as follows:

Coal Resource and Reserve Quality Assessment

NACMMR J.G. Matthews (plus info re slurry transport)  
E.R. Macgregor

CANMET Project Leader - T.E. Tibbetts  
Ottawa (613-996-4570) Ext 141

Coal Mineability and Mining Methods

NACMMR G. Alexander  
O.H. Patrick

CANMET Project Leader - H.V. Bielenstein  
Calgary (403-284-0110)

Ground Control - Coal Mining

NACMMR A.R. MacLean  
T.H. Patching

CANMET Project Leader - Y.I. Fisekci  
Calgary (403-284-0387)

Underground Environment - Coal Mining

NACMMR J.W. Riva

CANMET Project Leader - R. Chakravorty  
Calgary (403-284-0110)

Equipment Safety Certification and R and D - Coal Mines

NACMMR N. Duncan (H. Owen)

CANMET Project Leader - D.E. Dainty  
Ottawa (613-996-4570)

Coal Beneficiation

NACMMR A. Ignatieff

CANMET Project Leader - B.J. Whalley  
Ottawa (613-996-4570)

It was agreed that the critiques should consider such factors as whether or not the available resources (\$ and MY) are being applied effectively and are adequate as a Federal contribution; and recommendations for application of resources to different areas so as to complement other federal, provincial or industrial efforts or to resolve other priority problems. It was emphasized that NACMMR advice and recommendations may not result in immediate program changes; however, they may influence the 1977/78 and later project planning, especially with respect to contracting out of research, development and demonstration (R,D & D) work. The existence of

matrix management and an overall EMR energy program structure provide a firmer basis for effecting change than in the past.

Rather than detail the discussion of this briefing meeting, a summary of the written Subcommittee comments received after the meeting are given in Appendix I.

No decision was reached regarding another meeting on the premise that the Subcommittee critiques and the EMR response should form the basis of a subsequent meeting to be scheduled at an appropriate time.

A handwritten signature in cursive script, reading "D.K. Faurschou". The signature is written in dark ink and is positioned above the printed name and title.

D.K. Faurschou

Secretary

APPENDIX I

Summary of Comments, Critiques and Suggestions received from NACMMR  
Energy Supply Sub-committee Members, following the meeting of  
15 April, 1977:

1. Coal Resource & Reserve Quality Assessment

J.G. Matthews:

Any involvement of CANMET & EMR should be determined by a consideration of whether or not the particular activity is a) in the national interest and b) beyond the financial and/or technical capability of the Provinces and Industry.

On these criteria, public funds should not be spent on coal exploration for purposes of preparing a national coal inventory. Drilling expenditures on the Dominion Coal Blocks would be excepted. All other resource and reserve data should be obtained via Provincial Agencies which have the responsibility of collecting such data from Industry. It is realized that there has been a problem in releasing confidential exploratory data from the Provinces. However, there should be no problems to the release of overall resource data sufficient for preparation of national inventories.

Utmost effort must be made by EMR to reach agreement with the Provinces on the standardization of the parameters used in the definition of resources and recoverable reserves.

Any expansion of in-house analytical services for analysis of coal quality should be questioned. There are numerous good industrial laboratories now in Alberta and British Columbia supplying data, on contract for Industry and Provincial Agencies.

Cost-sharing contracts are recommended for conversion of coal to liquid and gaseous fuels and to advance coal mining technology in the national interest, where Industry and the Provinces may not have sufficient technical capability, resources and incentive for independent research.

2. Coal Mineability and Mining Methods

A.R. MacLean:

Recommended research on the following specific problems because of importance to the existence of a long-term coal mining industry in Cape Breton.

- i) calculation of necessary pillar sizes between longwall panels
- ii) control of spontaneous combustion hazards at the Prince Mine
- iii) effective methane drainage and utilization
- iv) prediction of effects of mining a submarine seam over a lower flooded seam
- v) location, in advance of mining, of wash-outs, faults and other seam interruptions
- vi) serious assessment of the depth and distance at which submarine mining can be economic.

G.T. Alexander and O. Patrick

Commented in general, with reference to the 8-year R, D & D Forecast, that, excluding coal conversion, only 2% of the forecast funding relates to coal per se. This was deemed insufficient in consideration of the future role of coal.

Also, in a general vein but with reference to cost/sharing mining projects it was pointed out that the reasonableness of commitments will depend on intimate dialogue with Private Industry and the Provinces

Specifically:

- i) The Alberta Plains Longwall Trial is recommended and a five-stage approach was detailed
- ii) Work on DCB's should be staged, starting with reserve assessment and mineability studies as prerequisites to decision re development

- iii) Hat Creek pit slope studies were recommended
- iv) Gasification site selection should be done carefully and the \$2 million (p 17 of the 8-year Forecast) proposed for mineability studies does not seem out of line
- v) The \$5 million for Mineability and \$6 million for Coal Resource Evaluation proposed for the Nova Scotia/ St. Lawrence Basin seem disproportionate considering the size of the Maritime resources vs those of the West; if the special regional importance of Maritime coal is ignored
- vi) Consideration of the conventional mining of Yukon resources would be preferable to the proposed hydraulic mining trials at Carmacks.

### 3. Ground Control

#### T.H. Patching:

In the years to come there will be a need for substantial increases in underground production. A great variety of mining conditions are to be found in western Canada, ranging from flat lying seams in the prairie regions to steeply dipping and distorted seams in the foothills and mountain districts. Thick seams, weak rocks and multiple seams create more difficulties. It is important that research be done now to obtain all useful information possible for the planning and conduct of future mining operations.

The CANMET work at Kaiser and McIntyre is approved in three zones, i.e., in the vicinity of the mine workings, at the surface and in the intervening strata.

### 4. Underground Environment

#### W. Riva:

Complete agreement, considering the combined limitations on resources.



5. Coal Beneficiation

A. Ignatieff:

Complete agreement with current and proposed work, which later would include addition of two MY.

G.T. Alexander:

Allocations in the 8-year forecast, for beneficiation, coal transport and storage appear low in consideration of quality requirements for marketing.

6. Equipment Safety Certification and R & D

W.G. Brissenden:

The idea of developing engine fuel additives and experimenting with fuel combustion atmospheres is more appealing than research on improved catalytic and water (solution) scrubbers and dust collection systems. The latter could become cumbersome "add-ons" which would severely restrict diesel power usage underground.

T.H. Patching:

Approved the proposed research on diesels for U/G use, with the following reservations:

- i) definition of the problem and justification for the CANMET proposals should be clarified
- ii) it is questionable whether or not diesels would be approved by the Alberta mine inspectors. If the proposal should get support in principle from the Alberta inspectorate and operators, then the fledgling Alberta Coal Research Institute should become involved.

J.H. Ashburn:

The prohibition of diesel vehicles in U/G coal mines is not necessarily permanent. The specific objections related to use of flame retardent fluids applicable to surface as well as U/G working temperature

ranges, effectiveness of exhaust cleaners either catalytic or water, concern re morbidity of diesel particulates, skepticism re ability of coal mine operators to ensure efficient maintenance of diesels to ensure exhaust quality and concern re occurrence of hydraulic oil/diesel fires based on USA and Canadian statistics. Nevertheless, Alberta has initiated a study of diesels for U/G use, the CEAL work is relevant and the USA is conducting considerable research.

G.T. Alexander:

The CEAL 5-year proposal re diesels should be re-examined in consideration of:

- i) catalytic purifiers which convert  $\text{SO}_2$  to  $\text{H}_2\text{SO}_4$  pose the problem of how to avoid the harmful effects of  $\text{H}_2\text{SO}_4$  vapour on men and equipment. Low sulphur diesel fuel is therefore recommended. This would also simplify the design of water scrubbers.
- ii) cooling of water scrubbers may be a problem in high humidity mines
- iii) good engine maintenance is essential and will have a marked effect on filtration requirements
- iv) a preliminary extensive study of the use of water/oil emulsions for improving combustion is recommended.

A. Ignatieff:

Supported the CEAL 5-year program noting that some Canadian manufacturers have expressed interest in entering the domestic market for diesel engines in the mining industry.

7. Coal Slurry Transport

J.G. Matthews:

The Shelpac reports are confidential. However, concerned CANMET staff may consult with Mr. Horst Roth, Senior Advisor, Canadian Pacific Research Department, Montreal.

