

# COMMISSION OF THE EUROPEAN COMMUNITIES

SEC(74) 3588 final/2

Brussels, 8 October 1974

NEW PAGE 8 OF THE  
MEMORANDUM

## MEMORANDUM

Request for financial aid under item 2 c of Article 55  
of the E.C.S.C. Treaty for continuation of research into  
"Fires and Underground Combustion in Mines"

---

07 Conclusions

The Commission of the European Communities proposes to grant financial aid for the two research projects described above, under the terms of art. 55 (2c) of the E.C.S.C. Treaty.

Therefore in view of the favourable opinion given by the scientific industrial and governmental bodies concerned, financial aid of 60 % of the total cost, amounting to a maximum of

1,320,000 FF (research of the "Charbonnages de France")

460,000 DM (research of the "Versuchsgrubengesellschaft mbH")

is considered appropriate.

This aid represents 354,707.87 units of account which, together with the additional expenditure on publications and related matters entails a total grant of 365,349.11 units of account.

This expenditure is in keeping with the planned commitments laid down for the 1974 E.C.S.C. operating budget.

05 Research by the Versuchsgrubengesellschaft mbH

The research proposed is a continuation of the current research programme with particular emphasis on the prevention of spread of fire along lengthy items of equipment in roadways.

The following summarises the current research to date and indicates work which is to be done before the scheduled completion date.

(1) Transmission of fire along conveyor belts, laboratory and underground tests.

After the initial research contract had been agreed, the Institute asked that this subject of study be added. Several recent severe conveyor fires prompted the request and it was agreed.

Tests have been carried out on conveyor belting in the underground gallery and under the test conditions it has been shown that fire can be transmitted along the length of the belting. Further large scale fire tests on conveyor belting are to be done in the gallery.

Resulting from the research done a small model gallery has been made for testing conveyor belting and it is considered that the test used in this model gives results which allow the inflammability of conveyor beltings to be determined in a manner approaching reality.

(2) The effectiveness of and the requirements for security zones against spread of underground fires.

As indicated above the research has shown that conveyor belts can transmit fire through a zone. It has been shown also that in a zone having steel arch supports with a few untreated wooden struts between the arches fire is transmitted through the zone.

Tests have shown that treatment of wood surfaces with saline pastes and powders offers little protection against spread of fire but impregnation of the wood with salts may be of benefit. Gallery tests are to be done on a zone with arch girder supports and wooden struts which have been impregnated and also on a zone devoid of inflammable

material to see if a fire upwind can be transmitted through the zone to combustibles downwind of the zone.

(3) Conditions in which a secondary fire may start downwind of a primary fire.

To assess this tests have been conducted in the underground fire gallery by placing inflammable material at various distances downwind of primary fires. The results of these are being evaluated by a computer analysis.

(4) To study the efficiency of light foam in extinguishing fires.

This method of fighting fires inaccessible for attack by more conventional means consists of blowing foam from upwind of the fire. Foam making tests have been conducted underground but the machine used proved insufficiently powerful. A more powerful machine is to be used against fires with foam production taking place at varying distances from the fires.

(5) Effect of underground fires on ventilation.

During the gallery fire tests, which have been conducted with various ventilation velocities, it has been found that as regards backing of the smoke against the direction of ventilation a low airspeed plays a greater part than the magnitude of the fire and with conditions of low airspeed backflow tends to smother the flames.

Further Research.

In the further research it is proposed to continue the investigation into roadway fires on lines supplementary to the current programme as follows:

- (1) It is considered that experience has shown it is not possible to eliminate underground fires completely and therefore methods of fire prevention and control should be studied further. The risk of fire spreading along a roadway having wooden supports and housing long plant with inflammable material in its make up is

high and the research will be directed towards the prevention of fires spreading in such situations.

- (2) A further subject for study will be the prevention of fires caused by the conversion of mechanical energy to heat a situation arising, for example, when a conveyor belt becomes fast and the conveyor drive continues to rotate.
- (3) Fire tests conducted in the current research programme have produced dense smoke. The future research will examine further the effect of this on ventilation and also the possibility of precipitation of the smoke particles by the application of water.

06 Duration and cost of research and aid proposed.

- (1) The Centre d'Etudes et Recherches des Charbonnages de France :

Duration of research	: 2 years
Commencement	: 1 October 1974
Total cost of research	: 2,200,000 F.F. = 348,927.21 u.s.a.
Financial aid proposed, 60 %	: 1,320,000 F.F. = 209,356.32 u.s.a.

- (2) The Versuchsgrubengesellschaft mbH.

Duration of research	: 3 years
Commencement	: 1 April 1975
Total cost of research	: 730,000 D.M. = 242,252.58 u.s.a.
Financial aid proposed, 60 %	: 468,000 D.M. = 145,351.55 u.s.a.

- (3) Total of aid proposed to both institutes 354,707.87 u.s.a.

07 Conclusions

The Commission of the European Communities proposes to grant financial aid for the two research projects described above under the terms of art. 55 (2 c) of the E.C.S.C. Treaty.

Therefore in view of the favorable opinion given by the scientific industrial and governmental bodies concerned, a financial aid of 60 % of the total cost, amounting to a maximum of

1.320.000 FF (research of the "Charbonnages de France")

468.000 DM (research of the "Versuchsgrubengesellschaft mbH")

is considered appropriate.

This expenditure is in keeping with the planned commitment laid down for the 1974 E.C.S.C. operational budget.

This aid represents 354.707,87 units of account which, together with the additional expenditure on publications and related matters, entitles a total grant of 365.349,11 units of account.