

# COMMISSION OF THE EUROPEAN COMMUNITIES

COM(82) 765 final

Brussels, 25 November 1982

## MEMORANDUM

Preparation of the first Community research programme on occupational safety in the steel industry (steel industry)

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I. INTRODUCTION

Article 55 of the Treaty establishing the ECSC stipulates that "the High Authority shall promote technical and economic research relating to the production and increased use of coal and steel and to occupational safety in the coal and steel industries".

Several programmes for social measures are currently in progress or under preparation; these cover the following topics :

- "Safety in Mines ", a 5-year programme, approved on 5 July 1982 with total funds of 12.5 million ECU.
- "Health in Mines" (4th programme), a 5-year programme, approved on 13 June 1978 with funds of 7 million ECU. A new 5-year programme is being prepared.
- " Technical Control of Nuisances and Pollution at the place of work and in the environment of Iron and Steel Work" (4th programme), 5 years, approved on 22 May 1979, with funds of 15 million ECU.
- "Ergonomic Research" (4th programme), 5 years, approved on 3 September 1980, with funds of 13 million ECU.
- "Medical Research", approved on 9 October 1981, for 5 years, with funds of 9 million ECU.

As can be seen, no research on occupational safety in the iron and steel sector has been proposed as yet, and it is to remedy this omission that the Steel Industry Safety and Health Commission (which organises exchanges of practical experience) has suggested launching this programme on occupational safety in the Steel industry and has selected the theme (steel casting) and the guidelines.

This programme should be regarded as a pilot programme in that it should help to define the most suitable methods for subsequent research in other technological sectors of the steel industry.

## II. ORIENTATION OF THE PILOT PROGRAMME ON SAFETY AND STEEL INDUSTRY

This is a Community programme in which eight companies in six Community countries are participating, each of which will carry out some identical activities studying the causes of accidents in depth, and some specific research activities; it is hoped that the programme will yield comprehensive information, including statistics, on the causes of accidents and also, from the combined results of the specific activities, on all problems connected with occupational accidents, and proposals for organizing accident prevention in this branch.

The theme of this pilot programme was chosen to reflect important technological changes in recent years in steelmaking and covers both production methods which, whilst on the decline, are far from being totally obsolete, and those which are in the process of being developed technologically.

This is the case with steel casting, where continuous casting is progressively replacing traditional ingot casting at a rate which is currently accelerating. In 1975, of the total ECSC production of crude steel of 125.560.000 tonnes, 20.722.000 were produced by the continuous casting process, i.e. 16.5%. But in 1980, of the ECSC production of 127.736.000 tonnes, the figure for continuous casting was 50.022.000 tonnes, i.e. 43%.

With respect to occupational safety it should be borne in mind that this change from one process to another not only affects production operations as such, which are most often mechanized, but also other activities such as mechanical or electrical maintenance, and work on refractory linings or travelling crane lines when using new, heavier, faster or larger equipment.

These modifications would appear to alleviate safety problems, as fewer men are required and improved techniques are adopted. But they are also accompanied by new risks, unfamiliar or little known hazards and new harmful effects, and without careful study it will be impossible to assess

the impact on occupational safety of this new technology.

This is the aim of the pilot programme on occupational safety in the steel industry.

### III. PROGRAMME CONTENT

The programme, which has a scheduled duration of 2,5 years, involves seven steel companies in the Community and one research body working in conjunction with several steel companies.

The companies are as follows :

- in Germany : Mannesmann Röhren-Werke AG  
Krupp Südwestfalen AG  
REWA Sozialwissenschaftliche Forschungsgesellschaft  
(in conjunction with Thyssen AG., Krupp Stahl AG.,  
Salzgitter AG and Klöckner AG).
- in Belgium : Cockerill-Sambre (Liege and Charleroi plants)
- in France : SOLMER
- in Italy : DALMINE S.p.A.
- in the Grand Duchy  
of Luxembourg : ARBED S.A.
- in the Netherlands: ESTEL Hoogovens BV

A) All the steelmakers have both continuous and ingot casting plant. Each one will have to carry out an in-depth study, based on the same questionnaire, of the causes and circumstances of occupational accidents in the (traditional or continuous) casting plants so that all the data on causes and circumstances can be analysed collectively at the end of the programme in accordance with the casting method used, in order to detect the most frequent causal factors. The study questionnaire will be designed to record the different parameters which can contribute to an accident.

B) In addition, each one of these companies has been entrusted with specific research activities which are indicated in the table attached. These activities were selected in conjunction with the companies and reflect both the experience already gained by the companies and the the research methods they have already applied. The combined results of the specific research activities will give overall coverage of work safety problems in steel casting plants.

#### IV. IMPLEMENTATION OF THE RESEARCH PROGRAMME

During the research period of 2.5 years, a committee bringing together all the parties involved in the research will facilitate exchanges of the latest information obtained, both in the common research activities (causality of accidents) and the specific research activities for each participant. An expert will act as a technical coordinator.

#### V. PROCEDURE

This research programme was proposed at the request of the Steel Industry Safety and Health Commission and has already been approved by the Producers' and Workers' Sub-committee for occupational safety medicine at its meeting on 22 June 1982 and by the Committee of government experts at the meeting on 24 June 1982.

Contracts will be concluded with the participating companies and will define the conditions under which the research is to be carried out, funding by the Commission, and the time schedule for submission of interim technical reports and final reports.

#### VI. FINANCIAL ASPECTS AND DURATION OF THE PROGRAMME

This Community research programme, the first on occupational safety in steel casting, has been assessed to establish the funds necessary for it to be carried out over a period of 2.5 years.

The financial aid to be provided by the Commission has been fixed at 60% of the total research costs and amounts to 972.600 ECU. The attached table (Doc. 5773/1/82) gives a breakdown of the research costs. A sum of 27.400 ECU has been allocated for management of this research project which brings the total of the funds requested to 1.000.000 ECU.

## VII. CONCLUSION

The Commission of the European Communities,

- considering the need to promote occupational safety in the iron and steel industry;
- in view of the uniformly favourable response received from the professional and governmental advisory committees and the goodwill shown by the companies which are to participate in the research programme;
- having regard to Article 55 of the ECSC Treaty

propose

- to allocate 1.000.000 ECU to the implementation of the Community research programme on occupational safety in steel casting, including a sum of 27.400 ECU for programme management, for a duration of 2.5 years starting in 1983.

Community Research :

First research programme on occupational safety in the iron and steel industry (steel casting)

1	2	3	4	5		6	7
				Total Cost of Research	National Currency		
Institute	Documents	Specific research topic (other than seeking the causes of accidents)	Duration (years)		ECU	60 % Aid	ECU
ARBED Esch/Alzette	5608/82	Effects on work safety of the development of overall loads and stress at work	2.5	FB 8.364.584	201.000		126.000
COCKERILL Sambre	5607/82	Comparison of human and technological reliability in the traditional casting and continuous casting processes at Cockerill Sambre (various malfunctions and critical points)	2.5	FB 14.670.000	324.700		194.800
MANNESMANN Düsseldorf	5605/82	Worker and managerial training to promote safety awareness, particularly when changing over from ingot to continuous casting.	2.5	DM 477.300	195.500		117.300
KRUPP Sambre	5604/82	Technical sequences and human behaviour in critical situations and their effects on worker safety during continuous and ingot casting	2.5	DM 477.700	195.500		117.300

1	2	3	4	5	6	7
DALMINE Milano	5610/82	Effects of environmental factors (noise, climate, etc.) on work and safety conditions and on absenteeism, and worker opinion poll on the influence of such factors in the two different casting methods	2.5	Lit 260.000.000	119.500	119.700
REWA Konz	5603/82	Causes of accidents in maintenance work, and ways of preventing them in chill casting and continuous casting plant.	2.5	DM 500.000	204.500	122.700
ESTEL, HOOGOVENS Ijmuiden	5611/82	Application of 92 occupational physiology medical criteria in order to compare workers' tasks in traditional and continuous casting	2.5	FL 112.680	43.500	26.300
SOLMER Fos-sur-Mer	5767/82	Detailed study of the causes of all accidents which have occurred since 1975	2.5	FF 670.800	108.500	65.100
SOLMER Fos-sur-Mer	5768/82	Improvement of the working conditions and safety of continuous casting workers.	2.5	FF 858.240	139.000	83.400

Total aid

1.612.000

972.600

Estimated additional costs

27.400

TOTAL

1.000.000

ECU

17