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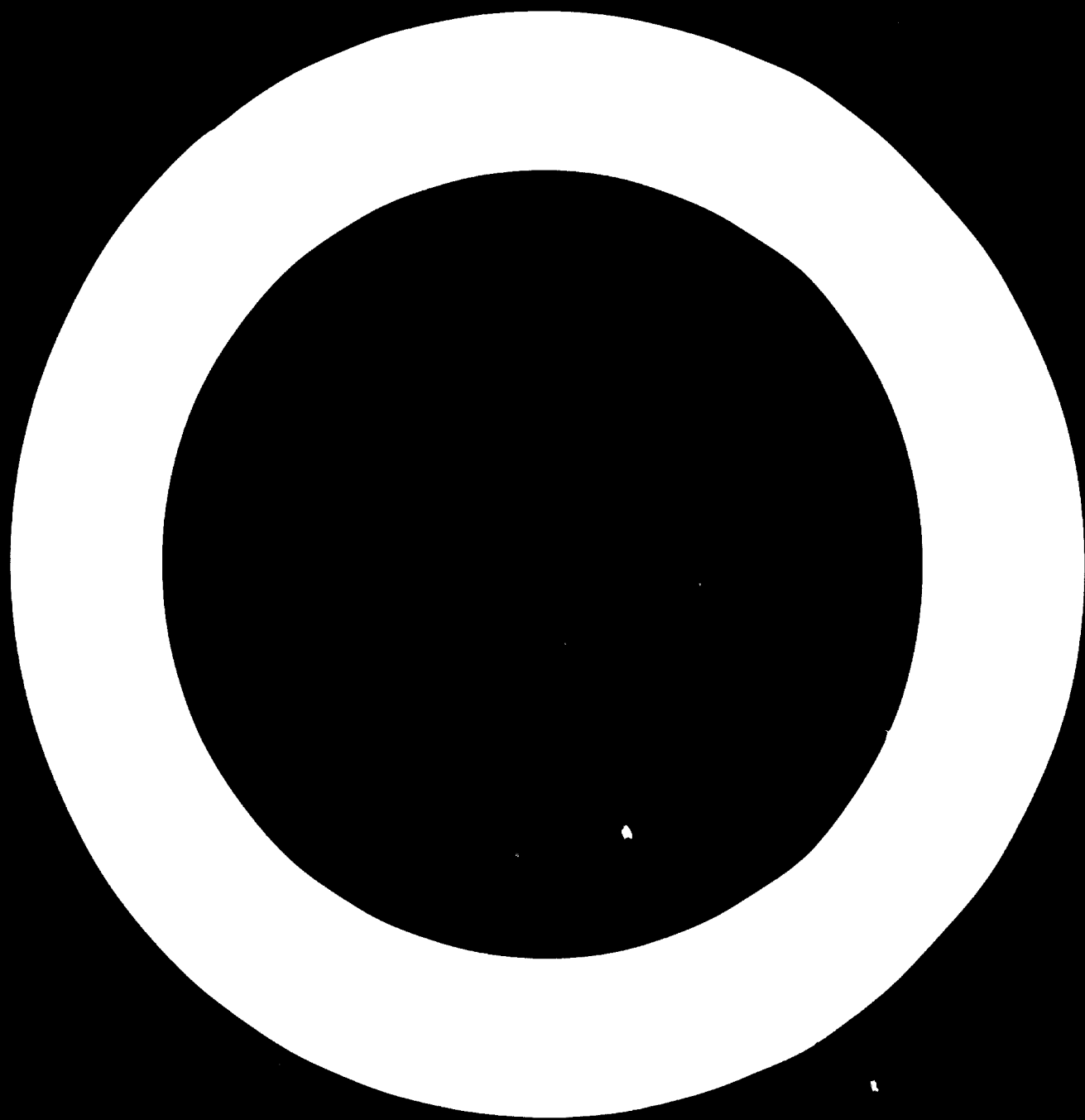
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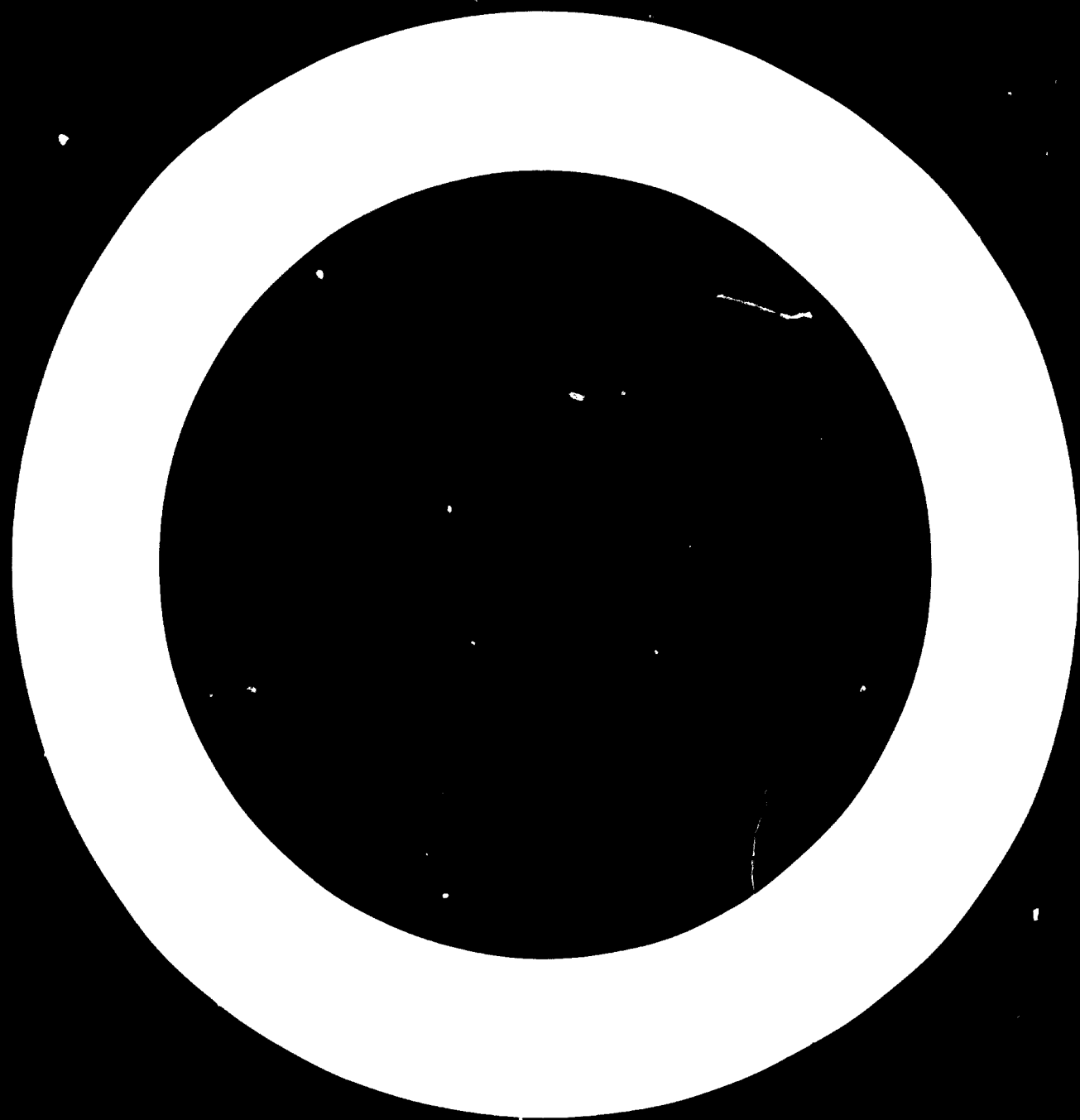
**SECOND
CONSULTATION
MEETING
ON THE
IRON AND STEEL
INDUSTRY**

New Delhi, India, 15-19 January 1979

REPORT.

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PREFACE

The Second General Conference of the United Nations Industrial Development Organization (UNIDO), held at Lima, Peru, in March 1975, recommended that UNIDO include among its activities a system of continuing consultations between developed and developing countries and among developing countries themselves with the object of raising the developing countries' share in world industrial output through increased international co-operation.^{1/}

At its seventh special session in September 1975, the General Assembly of the United Nations, by resolution 3362 (S-VII), decided that the system of consultations should be established at the global, regional, interregional and sectoral levels.^{2/} UNIDO, at the request of the countries concerned, should provide a forum for the negotiation of agreements in the field of industry between developed and developing countries and among developing countries themselves.

The Industrial Development Board at its tenth and eleventh sessions in 1976 and 1977 decided that consultations should be convened among member countries, the participants from interested countries to include officials of Governments, as well as of industry, labour, consumer groups etc.^{3/4/}

The First Consultation Meeting on the Iron and Steel Industry was convened at Vienna from 7 to 11 February 1977.^{5/} Its recommendations, and the follow-up action taken by the UNIDO secretariat, are contained in the Progress Report (ID/WG.286/1).

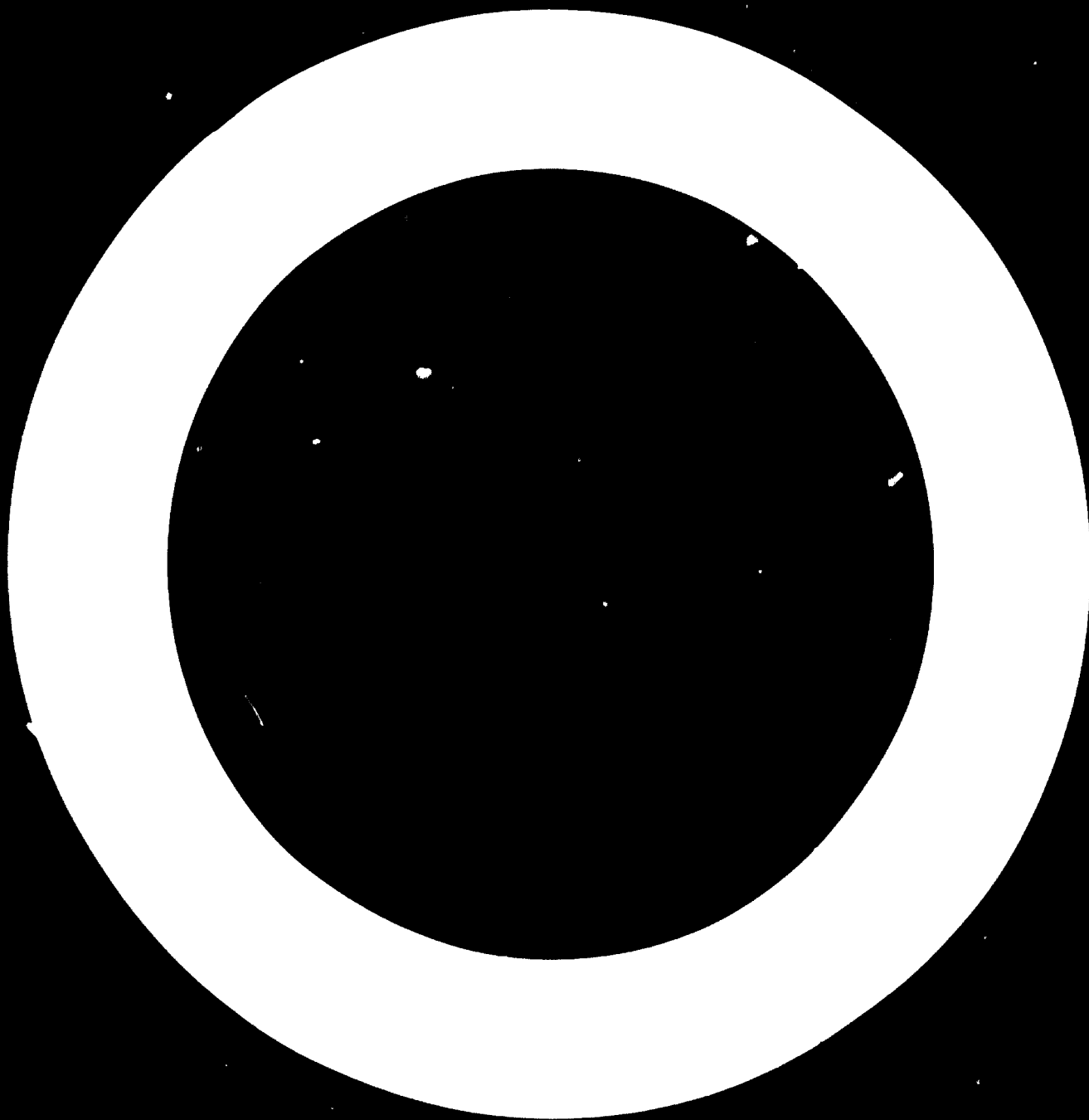
^{1/} "Report of the Second General Conference of the United Nations Industrial Development Organization" (ID/CONF.3/31), chapter IV, "The Lima Declaration and Plan of Action on Industrial Development and Co-operation", para. 66.

^{2/} Official Records of the General Assembly, Seventh Special Session, Supplement No. 1, para. 3.

^{3/} Official Records of the General Assembly, Thirty-first Session, Supplement No. 16, para. 60.

^{4/} Official Records of the General Assembly, Thirty-second Session, Supplement No. 16, para. 162.

^{5/} See "Report of the First Consultation Meeting on the Iron and Steel Industry" (ID/WG.243/6/Rev.1).



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INTRODUCTION

1. The Second Consultation Meeting on the Iron and Steel Industry was held at the Vigyan Bhavan at New Delhi, India, from 15 to 19 January 1979. The Consultation Meeting was attended by 174 participants (annex I) representing Governments, industry, labour and consumer groups from 52 countries and 12 international organizations.

AGREED CONCLUSIONS AND RECOMMENDATIONS

2. The Consultation Meeting came to the following conclusions and recommendations:

(1) Although the developing countries, despite difficulties, have made some progress in the development of their steel industry, the changes that have taken place in the world iron and steel industry need to be analysed in connection with the Lima objectives.

(2) The characteristics of the world iron and steel industry require an understanding of the preparations needed for the mobilization of substantial resources to obtain results in the medium term.

(3) The development of the iron and steel industry in the developing countries may have positive effects on the economies of the developed countries (in particular through the growth of the market for capital goods and services), it being understood that the projects of the developing countries will be oriented to the satisfaction of their own needs.

(4) Mutual interest exists between developing and developed countries in this sector.

(5) Given the uncertainty of the long-term development of the world steel industry up to the year 2000, it follows that intermediate scenarios, based on different possible alternatives, should be elaborated for the horizon 1990, using the best available economic data. These development alternatives should optimize the interests of the developed and developing countries in the iron and steel industry.

(6) In order to avoid any confusion from the outset of the principles, limitations and objectives of the scenarios, account should be taken of:

(a) Policies of national authorities or regional and subregional groupings of developed countries (particularly as regards current or future restructuring of the sector), and of developing countries;

- (b) Bilateral relations;
- (c) The independence and dynamism of economic operators;
- (d) Liaison with governments and financial institutions to seek their support;
- (e) Allowing the operators concerned to pursue development needs for the iron and steel industry with greater dynamism and effectiveness;
- (f) Providing concrete indications for possible international co-operation in the iron and steel sector in the common interest;
- (g) Indicative references for possible developments of the iron and steel industry in the period up to 1990;
- (h) Development aspects of:
 - Infrastructure
 - Manufacture of capital goods
 - Provision of services
 - Manpower needs
 - Manpower training and management
 - Maintenance
 - Health and safety
 - Social needs
 - Natural and financial resources

Medium-term development programme

(7) Set up a working group seeking the assistance and advice of appropriate experts from the developing and developed countries, and of the international organizations concerned, in order to pursue the proposals in conclusions (5) and (6) above.

Iron ore

(8) Arrange a working group or seminar composed of representatives of developing and developed countries interested in exporting and importing iron ore to help developing countries towards an understanding of the structure of the market and the nature and content of long-term contracts for the purchase of iron ore.

(9) Identify instances throughout the world for possible co-operation between neighbouring countries in the exploitation of shared ore deposits, and seek to promote constructive discussions.

(10) Review the experience of co-operative buying of iron ore nationally or internationally and formulate proposals for possible action by developing countries.

Coking coal

(11) Assist developing countries towards an understanding of the construction of use of long-term purchase contracts to ensure access to supplies of coking coal in combination with a similar activity proposed above for iron ore and for this purpose organize a working group or seminar for the benefit of buyers in the developing countries.

(12) Maintain contact with all organizations working on the classification and definition of coal qualities and on compiling information on reserves.

(13) Foster regional co-operation on research and development of all aspects of coal mine development and the utilization of coking coal, including the establishment of research and development centres in appropriate cases, and provide information and advice.

(14) Organize a working group or seminar for the benefit of developing and developed countries to assess the technologies available for economizing the use of coking coal and the use of other alternatives, taking advantage of the technical and economic information to be provided by organizations that have done research and development work in those fields. Subsequently, organize, with the help of the developed countries concerned, study tours for representatives of all developing countries to see practical examples of modern methods of economizing in the use of coking coal.

Plans and problems

(15) Organize meetings between groups of developing countries that are working through their steel industry development programmes together with other interested developing countries in order to set out the technical and economic criteria to be assessed in establishing a steel industry, including the exploitation of orefields, and expound the nature of the successive stages in the consideration of plans and projects.

(16) Study the marketing of finished and semi-finished products, and make the results of this study available to developed and developing countries.

Advisory service

(17) Establish an independent advisory service composed of experts to act at the request of countries in the early stages of the consideration of steel industry development projects; the services to be provided by those experts could be extended to up-stream and down-stream problems in the iron and steel industry.

Exchange of technical information

(18) Continue to promote contacts and co-operative arrangements and twinning arrangements between research and development institutes in developing and developed countries and provide such information as may be needed by developing countries from these institutes.

Training

(19) Set out a model constitution for national and regional steel industry management training colleges for developing countries, showing the working arrangements, facilities, course of study, staffing, and financing involved.

(20) Assist in setting up such colleges within the framework of UNIDO technical assistance and promotional activities.

(21) Seek the co-operation of more developed countries with established steel industries to provide training schemes including in-plant schemes for all categories of personnel from developing countries.

Social aspects

(22) Set up a working group in co-operation with other appropriate international organizations to examine the social and human aspects of the development of the iron and steel industry in developing countries.

3. The Consultation Meeting recommends to the Executive Director of UNIDO and to the Industrial Development Board:

(a) That the UNIDO secretariat should undertake the work relating to the above recommendations;

(b) That the UNIDO secretariat should convene the Third Consultation Meeting to examine, and to take the appropriate action on the work performed.

I. ORGANIZATION OF THE CONSULTATION MEETING

Opening of the Consultation Meeting

4. The Second Consultation Meeting on the Iron and Steel Industry was opened by the representative of the Executive Director of UNIDO, D.G. Butaev, who thanked the Government of India for hosting the Consultation Meeting. There followed a statement by Shri Riju Patnaik, Minister of Steel and Mines, Government of India.

Election of officers

5. Mantosh Sondhi, Secretary, Ministry of Steel and Mines, Department of Steel, was elected Chairman.

The following four Vice-Chairman were elected:

John Adebayo Adewumi (Nigeria), Head of Exploration,
Nigerian Steel Development Authority

Wilson Cramer (United States of America), Marketing Manager,
US Steel Corporation

Edward Firek (Poland), Head of Section,
Planning Commission at the Council of Ministers

Argenis José Gamboa (Venezuela), Chairman of the Board and
President of the Corporación Venezolana de Guayana.

Adoption of the Agenda

6. The Consultation Meeting adopted the following agenda:

1. Opening of the Meeting
2. Election of Officers
3. Consideration of the Progress Report (ID/WG.286/1)
4. Consideration of two principal issues:
 - (a) The changing pattern of world steel production - Progress Report and addendum ID/WG.286/1/Add.2
 - (b) Financing - Progress Report and addendum ID/WG.286/1/Add.1
5. Adoption of the report of the Consultation Meeting.

Establishment of a working group

7. An open-ended working group was established to draft the conclusions and recommendations. It met on 18 January 1979 under the chairmanship of S.Y. Khan (Pakistan) and on 19 January under the chairmanship of S.N. Acharya (India).

Adoption of the report

8. The report of the Consultation Meeting was unanimously adopted on 19 January 1979.

II. SUMMARY OF DISCUSSIONS

9. The Chairman made a statement on recent progress in the Indian iron and steel industry, on arrangements for the use of their indigenous raw materials, ore and fuel, and on the establishment of a steel plant equipment manufacturing industry. A copy of the full statement was circulated to participants. One of the Vice-Presidents, A. Gamboa, made a statement on progress in the steel industry in Latin America, taken from his paper "Latin America and the Lima Target" which was circulated to participants.

Agenda items 3 and 4 - the Progress Report (ID/WG.286/1)
with its two addenda

10. The documentation circulated to participants (annex II) was considered by them as a useful basis for the deliberations at the Consultation Meeting. The main points, made by one or more participants, were as summarized below.

The share of the developing countries in world steel production

11. Some developing countries had made substantial progress in increasing their share of world steel production towards the eventual achievement of the Lima target. The increase in that share during the past four years resulted partly from a rise in steel production in the developing countries themselves and partly from a decrease in the steel production in some of the developed countries.

12. Although some participants emphasized the importance of targets for future steel production in developing countries, others stressed the difficulties in making reliable forecasts. However, the difficulties might be eased when the results of a study on the current economic crisis, which was in progress, were available. Some participants asked whether the figures for the future production of iron and steel output in developing countries were to be considered as indicative or as targets; but the point was made that, however the figures were defined, progress in developing countries would continue to be related to good planning, co-ordinated within each country with industrial development as a whole.

Co-operation between developing and developed countries

13. Much assistance could be given by those developing countries that had already made substantial progress in the development of their steel industries in guiding other developing countries in the early stages of the planning and installation of new plants. In that connection, UNIDO had an important function in advising developing countries on the technical and economic criteria to be examined before decisions were taken on the establishment of new steel plants, their capacity and infrastructure.
14. Developing countries should be involved in the discussions within groups of developed countries on the current problems in the iron and steel industry.
15. Despite the current difficulties developed countries would continue to give substantial assistance to developing countries in the establishment of their steel industries and that assistance would include support from the trade unions.
16. There was great importance in a continued sharing of technical information, and in the need for developing countries to study appropriate technologies and establish design and consultancy services suitable to their own circumstances. UNIDO should assist in those activities.
17. Developing countries should seek complementarity in the utilization of their resources of raw materials, production efforts and transfer of technology. They should also undertake more frequent dialogues with the aim of strengthening economic, financial and other types of co-operation between them in order to establish a unified strategy in the steel industry.

Iron ore and coking coal

18. There appeared to be little risk of a shortage of iron ore. However, new orefield development was expensive, and the means of financing new projects ought to be examined in relation to the expected price levels in order to ensure adequate returns on the investments, having regard also to the linking of orefield development with the development of a country's steel industry and its general economic growth.

19. There had been a decline in some countries in the costs of iron ore winning because of large-scale open pit operations. On the other hand, there had been increased costs in underground mining of coking coal caused partly by new health and safety requirements. Those changing costs were reflected in market prices that affected both developing and developed countries. The envisaged study on market structure should include the possibility of linking prices of raw materials and fuel to those of steel products.

20. UNIDO should assist developing countries to draw up guidelines on the preparation and contents of long-term purchase contracts as that was considered to be the most appropriate way to ensure access to supplies of ore and coking coal. In addition to long-term contracts, joint ventures should be considered as forms of international co-operation in raw material, coal and orefield development.

21. The recommendation on co-operative buying of iron ore nationally and internationally merited further examination.

22. Exporters of iron ore were to be found in both developing and developed countries and their common interests were an important factor in the formation of long-term contract models.

23. UNIDO should consider collaborating with UNCTAD and the Organization for Iron-ore Exporting Countries (OIEC) in a survey of all aspects of iron ore markets, processing and prices that could be used both by producers and consumers of iron ore.

24. Regional co-operation in raw material development was supported.

25. The leader of the Polish delegation informed the Consultation Meeting that his country would host a fuel symposium to be held from 15 to 23 October 1979 at Katowice, which would be extended to include a study tour for experts nominated by UNIDO to examine modern methods of economizing in the use of coking coal.

26. It would also be helpful to organize an exchange of experts and trainees from developing and developed countries interested in the utilization of coking coal. UNIDO, in addition to its activities relating to coking coal, should study the usage of natural gas and other forms of energy in the production of iron and steel.

27. As resources of coking coal were limited there was a need for extensive research to develop new technologies, particularly those relating to the use of non-coking coal in metallurgical processes.

28. UNIDO should organize pilot or industrial tests of iron ores in developing countries in order to check their suitability for the direct reduction process.

Plans for development programmes

29. Developed countries should be involved in the UNIDO proposal that it should organize meetings between developing countries particularly those that are working through their steel industry development programmes in order to set out the technical and economic criteria for establishing a steel industry, including the exploitation of orefields, to elaborate the planning of projects and to improve their presentation. It would serve the interests of the developed as well as the developing countries to exchange information on achievements and difficulties.

30. UNIDO should consider helping to start up newly-established plants in developing countries by providing a nucleus of top-level managers, recognizing, however, the practical difficulty of detaching such managers from their regular career posts.

31. Social infrastructure, such as housing, schools, hospitals, safety, health and environmental amenities, as well as economic and technical factors, should be considered in the establishment of an iron and steel industry.

Provision of technical information

32. There was a need to establish an independent advisory service to act at the request of developing countries concerned to guide them through the early stages in the creation of a steel industry development project.

33. Such an advisory service might provide assistance on feasibility studies and the design, construction and operation of plant. It could also advise on appropriate technology. The service should not impinge on the services

offered by established commercial consultancy firms, including those in developing countries, but would offer a choice of approach and a guide to the more profound investigations needed at later stages.

34. The advisory service could offer important assistance in pre-feasibility studies before large sums of money were committed on consultancy agreements.

35. The promotion of contacts between research and development institutes in developing and developed countries should take full account of the existing range of activities in national and international institutions and the range of documents regularly produced.

36. The substantial volume of different types of published technical documentation provided by UNIDO and other regular sources was greatly appreciated. A summary guide to these sources would be helpful to developing countries in selecting appropriate material.

Training

37. UNIDO should set out a proposed model constitution for national and regional steel industry management training colleges for developing countries showing the working arrangements, facilities, courses of study, staffing and financing involved, taking account of the existence and operation of existing facilities.

38. It would be helpful also for UNIDO to arrange a course on the management of iron and steel plants in order that the developing countries would benefit from the advanced management techniques applied in the steelworks of developed countries.

39. There was a pressing need for intensive training of engineering and managerial staff at all levels for iron and steel works in developing countries. A greater number of developed countries with established steel industries should be encouraged to co-operate in providing in-plant training schemes for experienced engineers from developing countries.

40. The participant from Austria announced that his country was arranging an experimental training course for experienced engineers from steel industries in developing countries and was intending to allocate one million Austrian schillings to the project.

41. There was a continuing need for in-plant training in health and safety as well as in the technical aspects of production. Training within a developing country continued to be of paramount importance.

42. The representatives of ILO and UNESCO made statements on the training programmes of their organizations which were distributed to participants. Participants from a large number of countries also gave information on the opportunities for training at the different levels existing in their countries and relating to different aspects of the iron and steel industry.

The changing pattern of world steel production

43. The developed countries recognized the aspirations of the developing countries for the creation and expansion of their steel industries, and declared their continuing willingness to assist, working towards a mutuality of interests covering all aspects of development from feasibility studies to training and financing.

44. Since it was difficult to forecast accurately the trends in steel production up to the year 2000, UNIDO should examine possibilities for the medium term. UNIDO should then set up a programme of action for developing countries on the requirements of all related elements in the growth of the steel industry, including supplies of raw materials and fuel, technology, training of manpower, financing and marketing, and on proposals for assistance that might be provided by developed countries and UNIDO. All of the many international organizations that were associated in various ways with steel demand forecasts and the outlook for the steel industry should be asked to co-operate in that work.

45. The changing pattern of world steel production apparent during the previous five years had been associated with a fall in industrial investment. That, in turn, had reflected the high interest rates that resulted from inflation over the same period.

46. Difficulties had been encountered in developed countries as a result of the recession in their steel production, particularly in the social field because of the fall in employment.

47. The structural changes in the steel industry in some developed countries involving the closure of many works were being brought about by cost increases, particularly those relating to labour and fuel. The closure of works might have resulted in a fall in supplies of the steel available for the imports required by some developing countries, together with some hardening in the price.

48. Steel production in developing countries had not been affected by the difficulties encountered in the market economy countries, and indeed there was the opportunity for those countries to undertake a new drive towards self-sufficiency in steel production.

49. The continuing growth of steel capacity in developing countries might eventually provide a stimulus to the economies of the developed countries by virtue of the demand for consultancy and engineering services, capital goods and special types of steel. On the other hand, if the economic recession continued much longer in some of the developed countries, it might have an adverse effect on the steel industries in the developing countries.

50. There was a reasonable prospect that by the early 1980s world steel demand and production would have revived, in which case there might be a risk that shortages would again develop and prices increase in the international market. Estimates made by experienced economic research teams indicated that with presently known capacity trends the growth of steel demand in the market economy countries would need to exceed $4\frac{1}{2}$ per cent a year until 1985 before there was a risk of shortages.

51. There were references to the Second Study on the World Iron and Steel Industry, which, in spite of a number of inaccuracies, was accepted as a useful analysis and a basis for the discussion of the topic.

Financing

52. Adequate financing was likely to continue to be available for viable steel projects in developing countries, but it was considered that there was a need to examine the meaning of viability in the national economic circumstances of those countries. That also referred to the requirement for creating an infrastructure, sometimes from practically no existing basis. The cost of such infrastructure should not properly be charged to a steel development project since the facilities might serve a number of other industrial and social purposes.

53. Since financing was possibly the most critical aspect of the development of an iron and steel industry, there was every need to keep the costs of the installation and running of the plant as low as possible in order to ensure an adequate return on the investment. The financial problem could be minimized if developing countries considered modest rather than over-ambitious large-scale steelworks projects. However, the scope of the project depended primarily on the extent of the internal market.

54. The financing of steelworks projects had, in a number of cases, been arranged through joint ventures involving Governments and enterprises in developing and developed countries. Co-operation in that manner, on a barter or production compensation basis, could take the form of a supply of equipment for a steel plant on a soft credit basis with repayment made by deliveries of finished steel from the plant, or of other goods.

55. The provision of finance and related terms and conditions for financing loans for steel works should be presented for discussion at a meeting including government representatives and banking institutions. An appropriate opportunity would arise at a consultation meeting on industrial financing, if it was approved by the Industrial Development Board.

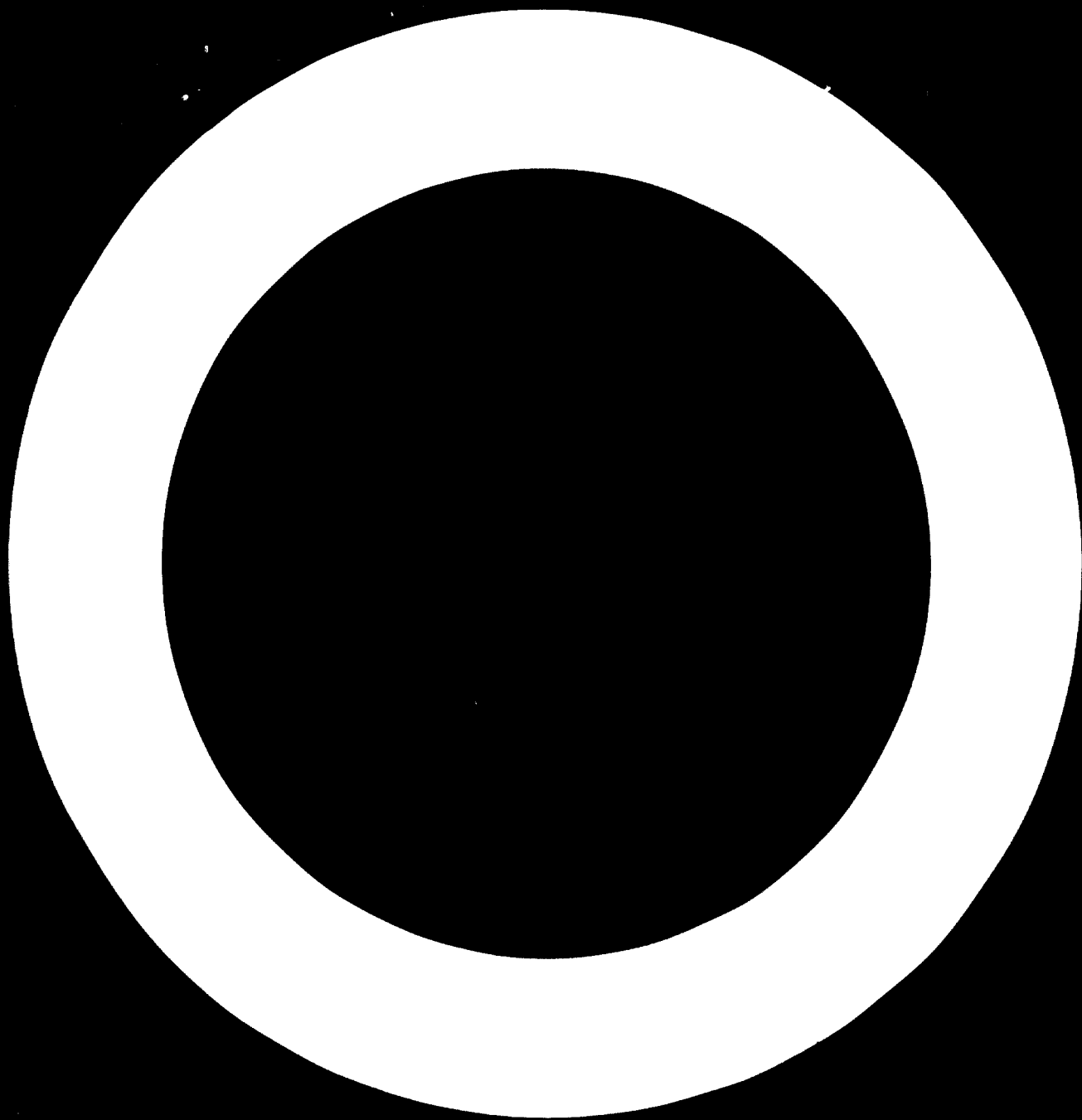
56. It was stated that while financial institutions insisted on an adequate financial return for their loans to steel industries in developing countries, it should be recognized that uneconomic projects continued to be subsidized by Governments in some developed countries.

Social aspects

57. The trade union representatives from the market economy countries informed the Consultation Meeting of the steps and measures that had been undertaken in their countries to provide employment opportunities to those who lost their jobs after closures of works.

58. There was a need for further participation of trade union representatives in a future consultation meeting.

59. UNIDO should continuously survey trends in world iron and steel production, bearing in mind the need for harmonious and balanced growth in the developing countries and particularly taking into account such social and human aspects as unemployment, wages, urbanization and the quality of life. A specialized working group should be established for the purpose, co-operating closely with other responsible international organizations and with trade unions at international, regional and national levels.



Annex I

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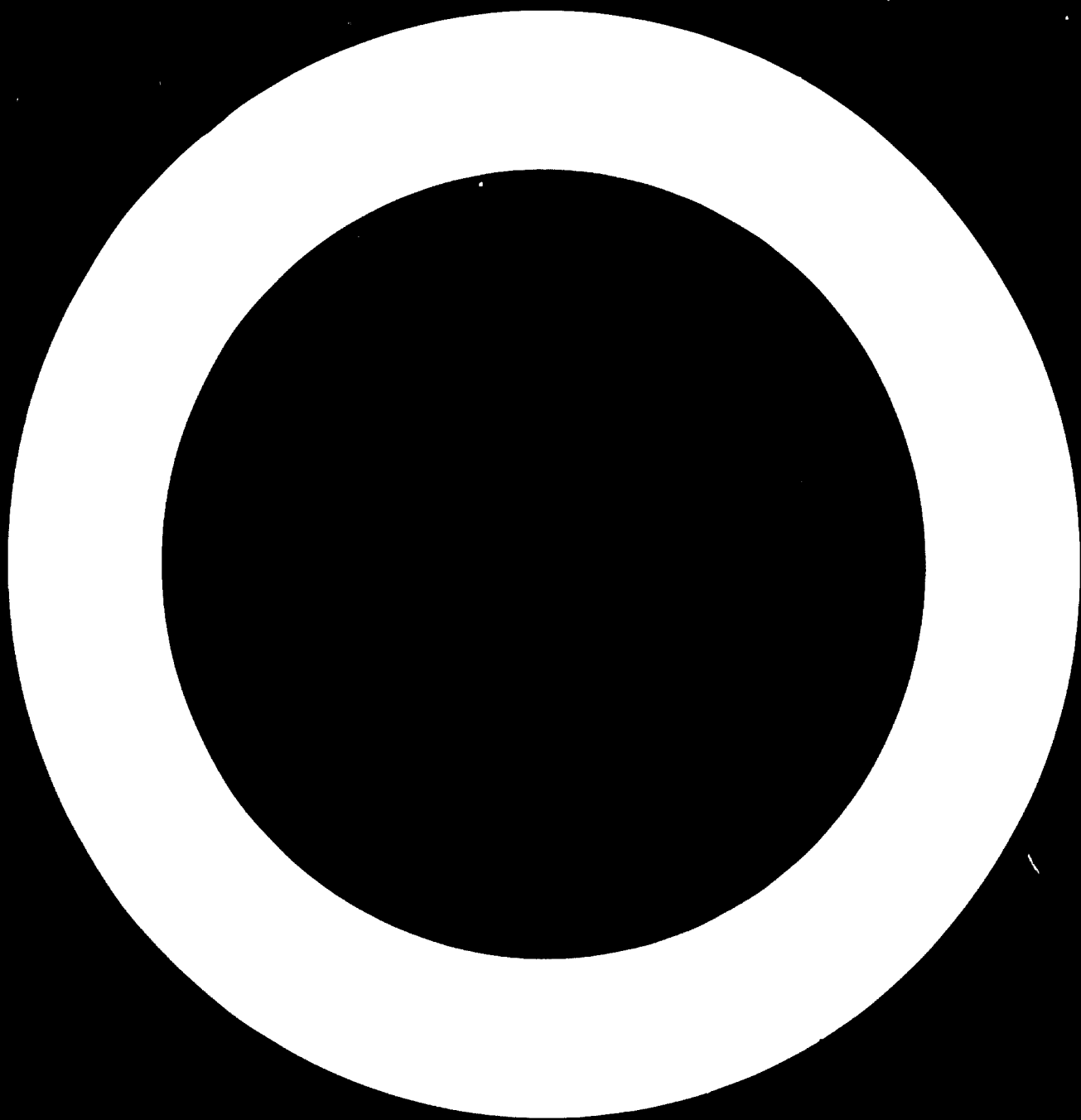
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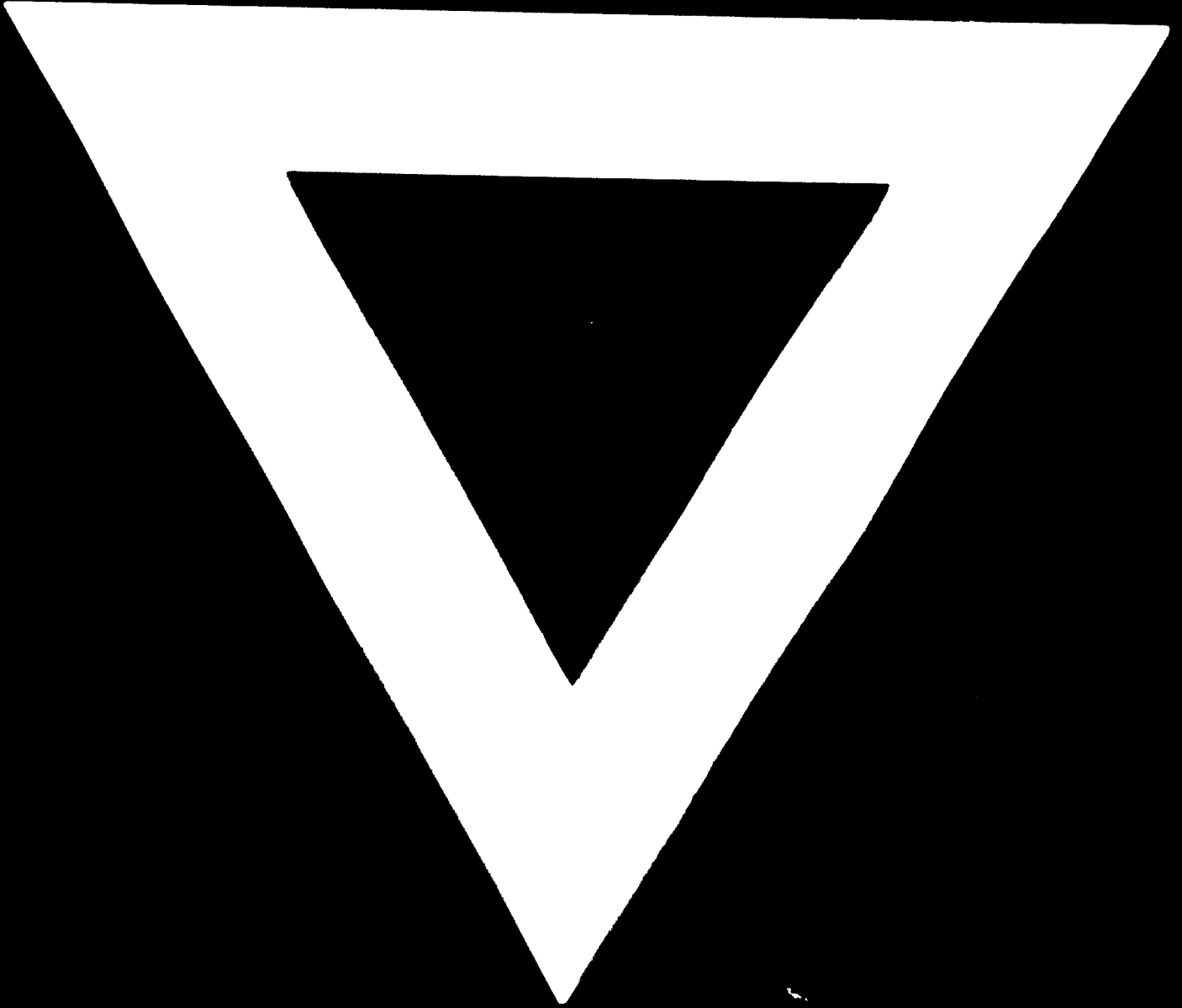
Annex II

LIST OF DOCUMENTS

<u>Issue papers</u>	<u>Document Number</u>	<u>Languages</u>
Progress Report	ID/WG.286/1	E, F, R, S
Note on aspects of financing steelworks and orefield development in developing countries	ID/WG.286/1/Add.1	E, F, R, S
Note on the changing pattern of world steel production	ID/WG.286/1/Add.2	E, F, R, S
<u>Background papers</u>		
The World Iron and Steel Industry (Second Study)	UNIDO/ICIS.89	E, F
Principles and topics (basic contents) to be included in long-term purchase contracts for coal	ID/WG.286/5	E, F, R, S
A note on the prospects of demand and supply of iron ores by ore types	UNIDO/IOD.236	E
<u>Reports of the Meetings</u>		
Report of the Preparatory Expert Group on Training (Vienna, 9-11 January 1978)	ID/WG.286/3	E
Report of the Working Group Meeting on Iron Ore (Vienna, 3-5 April 1978)	UNIDO/EX.38	E, F, R, S
Report of the Working Group Meeting on Coking Coal (Vienna, 6-8 April 1978)	UNIDO/EX.39	C, E, F, R, S
Report of the Expert Group on Training Problems (Vienna, 24-26 April 1978)	ID/WG.276/5	E, F, R, S
Report of the Meeting of the Representatives of Selected Research and Development Institutions Engaged in Adaptation of Iron and Steel Technology for Developing Countries (Jamshedpur, 28 Nov.-2 Dec. 1977)	UNIDO/EX.31	E

<u>Issue papers</u>	<u>Document Number</u>	<u>Languages</u>
<u>Organizational arrangements</u>		
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Provisional agenda	ID/WG.286/4	E, F, R, S
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