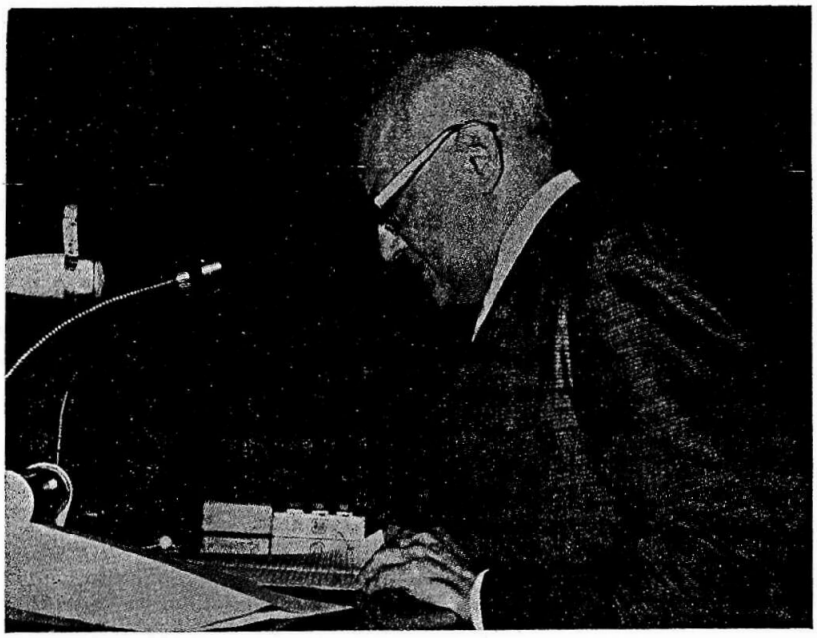
Welcome Address

Professor V. A. ALTEKAR

Director
National Metallurgical Laboratory



Hon'ble Sri Salve, Mr. Mody, Dr. Dastur, Mr. Samarapungavan, Dr. Irani, distinguished guests, delegates, ladies and gentlemen.

It is indeed a great privilege for me to extend to the Hon'ble Minister of Steel & Mines, Sri Salve a very warm and affectionate welcome on behalf of us all, who have assembled at this National Seminar on "Problems & Prospects of Ferro-Alloy Industry in India" organised jointly by the National Metallurgical Laboratory (NML) and the Iron & Steel Division of the Indian Institute of Metals (IIM). We are indeed very happy to have the Minister amongst us inspite of his very busy schedule. This is his first visit to this steel town after he has assumed the charge of the Ministry of Steel & Mines. We all hope that it will be an enjoyable and memorable visit for him.

I also take this opportunity to extend a very warm welcome to Mr. Russi Mody, Vice-Chairman & Managing Director of the Tata Iron and Steel Company Limited (TISCO). Mr. Mody had to specially reschedule his programme of visits abroad and Bombay to be able to be with us today. The TISCO, under his able leadership, has not only continued to move forward with its modernisation and expansion programmes but also continued to increasingly support professional activities, such as, this amongst many other seminars. We all look forward to his scintillating and thought provoking ex-tempore Address.

We are indeed fortunate in having amongst us Dr. Minoo Dastur, a doyen amongst the metallurgical engineers, who by dint of his extraordinarily brilliant academic career followed by an equally brilliant Metallurgical and Design Engineering expertise nurtured not only the first ever professional consultancy organization in the Country but also, through this organisation, many a metallurgical plants in general and most of the ferro alloy units in particular. We are thankful to Dr. Dastur for having agreed to deliver the Special Address of this Session. We have an unexpected bonus in the person form of Shri Samarapungavan, who although originally had expressed his inability to come due to pre-occupation, has finally managed to squeeze a few hours with us. Friends, join me in welcoming Shri Samarapungavan.

Dr. Irani, as the senior-most Vice-President of the Indian Institute of Metals and Chairman of the Iron & Steel Division, has been instrumental in promoting the idea of holding this Seminar and he has taken keen interest in the organisational activities and has placed at the disposal of the Seminar the almost unlimited resources of the TISCO to make the Seminar a success in every way. It gives me great pleasure to welcome Dr. Irani amongst us.

The idea of holding a National Seminar on Ferro-Alloy Industry was mooted in one of the meetings of the ferro-alloys supporting group of the Iron & Steel Division of the IIM. The NML, who had organised the first symposium on Ferro-Alloys at Jamshedpur over 2 decades ago was the natural choice for taking up the responsibility for holding the Seminar, which is being supported in cash and kind by numerous industries and Governmental agencies throughout the country.

The ferro-alloy industry in the country is almost three decades old. The first decade was characterised by establishment of a large number of units at several places in the country. The second decade saw the consolidation and estab lishment of pattern of processing and production. The third decade on the other hand has brought up a number of problems, which oblige us to review our present status, probe into our problems and to examine the prospects and possibilities for maintaining a healthy growth of this important sector of the iron and steel industry.

I do not wish to go into the detailed aspects of these problems but some can bear a passing mention. These are :

a) non availability of high grade lumpy ores of the chemical and physical specifications, which were originally readily available and have now given way to medium and low grade reserves often comprising of finer sizes;

b) the increasing necessity to reduce and contain the high cost of production;

c) the increasing awareness of the society for cleaner environment necessitating efficient pollution control;

d) better utilization of by-products, such as, slags, furnace gases and fines of ore, coke and ferro-alloys; and

e) the power famine against which we appear to be quite helpless.

India has been lucky to have enviable deposits of manganese, chrome ore and quartzite. India enjoyed the pride of place amongst the manganese ore exporting countries and subsequently a major exporter of ferro-manganese. Of late many of the deposits have revealed exhaustion of high quality lump grades yielding to medium quality ore fines. There are several constraints in the country's climate to reconcile to the necessity for pre-processing the God given raw-materials to make them suitable to the already established smelting techniques. An unending debate, therefore, ensues and continues between the mine owners and ore suppliers on one hand and the user industry on the other as to who should or would put up units to cater to the specifications of the ferro-alloy smelters. More than a decade ago, the NML undertook the responsibility to prove and demonstrate ways and means of not only beneficiating low grade materials, such as manganese ores and chromites but also to agglomerate the same either by sintering or by pelletising to make them suitable for electrothermal smelting. Predictably, the sinters performed better during the smelting for production of ferro-chrome. It must, however, be conceded that there are many efforts in the R & D field, which unfortunately get done much before their time. It is gratifying today to note that several ferro-alloy manufacturers have now reconciled to the necessity and have already put up or are putting up facilities for sintering of their raw-materials. I can only assure that they would be happy with the better operating results.

Apart from the grade and fine size of the raw-materials, certain chemical impurities, particularly high phosphorus content in many of our ores have been a big bottleneck for the ready acceptance of our ferro-alloys in the world market.

We also have the problem of non-availability of raw-materials of some critical and strategic ferro-alloys, such as, ferro-molybdenum, ferro-tungsten, ferro-niobium, ferro-nickel, etc. However, it is gratifying to note that all those major companies where any of these elements occur even as trace elements in their ores, are potential producers of sizable quantities. An example must be cited of the Uranium Corporation of India Limited (UCIL) where the NML demonstrated the method of recovery of molybdenum along with nickel and copper from the uranium ores. It is a matter of satisfaction to us that UCIL happens to be the first and only supplier of molybdenite concentrates in the country. NML had successfully demonstrated similarly the recovery of molybdenite from the copper tailings in Ghatsila area and we do look forward to the day when the management will take a decision to recover this very valuable and much needed raw-material from out of their present tailings which are going as waste.

What an R & D laboratory like the NML can do to the status of a country with respect to a critical and strategic ferro-alloy is well demonstrated by the case of ferro-vanadium. Not many years ago India was importing vanadium pentoxide or ferro-vanadium from abroad.

With the growth of alumina industry, the recovery of vanadium as a sludge from the Bayers Process gave an opportunity to obtain pure vanadium pentoxide which is the basic raw-material for manufacture of ferro-vanadium. Within a short period, NML was able not only to develop an efficient process for recovery of V_2O_5 but also to promote industries in the small scale sector which started supplying this urgently needed raw-material to the ferro-alloy manufacturers. The NML went a step further and identified the facilities at Visvesvaraya Iron & Steel Limited (VISL) as being appropriate for demonstrating and implementing the technology for extraction of vanadium from low vanadium magnetites. It did not take long time for the management to decide on the merit of our process and to quickly implement the same with the help of Metallurgical & Engineering Consultants (India) Limited (MECON) once they could assess its potentiality. Production of 18-24% V_2O_5 grade of slag is now a routine feature at VISL, who have also developed a technique to obtain ferro-vanadium from these rich vanadiferous slags.

Since the ferro-alloy industry is highly power intensive, the poor power supply position is bound to adversely affect the healthy growth of this industry. The power cuts are varied from 15 to 100% in different States and only a few have exceeded the 50% mark of their rated capacity. 40% of our power production comes out of hydel systems and we have to perforce depend upon the nature - the monsoon. Karnataka is a glaring example, which is almost totally dependent upon hydel electric schemes and had to solely depend upon the vagaries of the monsoon.

But whereas the power famine in hydel systems is a phenomenon of the nature, the poor power efficiency of our thermal power systems is definitely man-made and the case becomes all the more glaring as we shift from West to East where the outrages are so frequent and so prolonged that many a thermal power units barely give more than 4000 kWH of energy out of every MW of installed capacity. However, it must also be mentioned that there are in the country such power producers as the Tata Hydro-electric Power Supply Company Limited, the Tata Power Company Limited, the Andhra Valley Power Supply Company Limited and the captive thermal power units of some of the aluminium smelters, which are operating much above the national average and the prescribed

target levels. At NML we have now been conducting short courses on preventive maintenance and better appreciation of materials.

Different tariff rates for power in different States also create anomalies in production costs and in many cases several industrial units are in a position of considerable disadvantage. It might be readily conceded that power, perhaps, is the costliest single item of cost in the production of many ferro-alloys.

The review and adjustment of Government policies particularly with respect to production of power from waste gases, which also would lead to better environment seem to be necessary. For the next 2 days experts from various ferro-alloy industries, R & D organizations, Government Departments and others will be pooling their experiences, their expertise, their ideas and their suggestions to crystalise some basic approaches to these and many other problems that the ferro-alloy industry is facing today.

It gives me great pleasure to welcome these experts and delegates in this Steel City once again and hope that their deliberations will result in identifying better ways for quicker progress of this important industry.

I will now request Dr. Irani to give his Opening Address.

Thank you.