GOVERNMENT OF INDIA

TARIFF COMMISSION

REPORT

ON

The Fixation of Fair Retention Price of Ammonium Sulphate

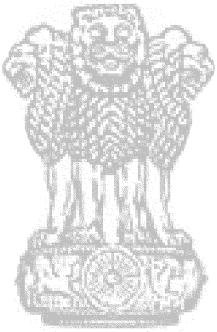
PRODUCED BY

Sindri Fertilizers and Chemicals Ltd.

BOMBAY
1959

MANAGER GOVT OF INDIA PRESS
AND PUBLISHED BY THE MANAGER OF PUBLICATIONS
DELHI-8 1961

Price : *Rs.* 8·50 *or* 13*s.* 6*d.*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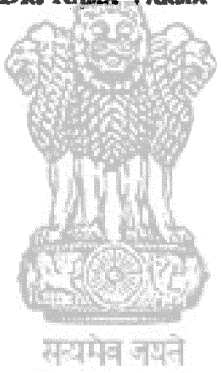

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REPORT ON RETENTION PRICE OF AMMONIUM SULPHATE

Origin of the present inquiry and terms of reference.

1. In their letter No. Ferts. 1(15)/58, dated 16th March 1959 the Government of India, Ministry of Commerce and Industry have asked the Commission to undertake an inquiry into the production costs at Sindri Fertilizer Factory under section 12(d) of the Tariff Commission Act, 1951, and, *inter alia*, to include in the report a specific recommendation in regard to a reasonable retention price to be allowed to Sindri Fertilizers & Chemicals Ltd., for its ammonium sulphate by the Central Fertilizer Pool. A copy of Government's letter with its annexures indicating the terms of reference and its background is given in Appendix I.

Method of inquiry

2.1. Letters were issued in June 1959 to Sindri Fertilizers and Chemicals Ltd. (referred to hereafter as Sindri) and Secretary, Ministry of Food and Agriculture (Department of Agriculture) asking for the necessary memoranda on the subject and also for information as regards Government purchases of imported ammonium sulphate and the prices paid during the period from 1956-57 to 1959-60. The Indian High Commissions in the U. K. and Canada and the Embassies of India in U. S. A., Japan, West Germany and Italy were also addressed for information regarding internal prices and export prices of ammonium sulphate in those countries.

2.2. Shri K. R. P. Aiyangar, Chairman, Dr. S. K. Muranjan, Shri J. N. Dutta and Shri R. S. Bhatt, Members visited the factory of Sindri on 7th and 8th November 1959. Dr. Rama Varma, Secretary, had visited the factory earlier from 27th to 29th July 1959. Shri U. R. Padmanabhan, Cost Accounts Officer, visited the factory from 20th July to 1st August 1959 and examined the cost of production of ammonium sulphate.

2.3. The Commission held discussions at Bombay with the representatives of Ministry of Food and Agriculture (Department of Agriculture), Development Wing (Ministry of Commerce and Industry) and Sindri Fertilizers on 23rd November 1959.

Brief history of factory.

3.1. The fertilizer factory at Sindri owes its origin to the recommendations of the Food Grains Policy Committee of 1943. In the light of the Bengal Famine, the Committee expressed the view that low productivity of agricultural land in India and scarcity of food in relation to a fast growing population—chronic conditions which whenever a natural calamity overtook any part of the country brought on neat famine conditions—could be remedied only by enriching the nitrogen and phosphorus content of the soil. The Committee estimated that India would require between 2 and 3 million tons of artificial fertilizer per annum

and recommended that, as a first step, immediate action should be taken to establish production of nitrogenous fertilizers to the extent of 350,000 tons per annum. In view of the national importance of the industry, not only its direct importance, but also its importance as the basis of a heavy chemical industry and a defence potential for the production of munitions and the heavy capital outlay involved in its establishment, Government decided to set up a state-owned factory. A Technical Mission consisting of three experts was invited from the United Kingdom to advise on the best methods of establishing the industry in India and following its recommendation as well as on balance of advantages, the location was decided in favour of Sindri, a village in Bihar. Thereafter a mission was sent from India to the United Kingdom to investigate the supply of plant and machinery. On the recommendation of this Mission, the Chemical Construction Corporation (C. C. C.) of New York, a subsidiary of the well known American Cynamid Co., was entrusted with the designing, construction and supervision of the project till it went into production. The Power Gas Corporation (P. G. C.), a consortium of U.K. Chemical Manufacturers, was appointed for the supply of certain speciality plant of their own manufacture and also to act as Agents to the Government of India for the procurement of other plant and machinery. Structural steel and considerable tonnage of simpler items were made in India. The major construction was started at Sindri in 1947.

3.2. The factory went into production in October 1951, that is, four years after construction started and ever since, the entire production of ammonium sulphate in the factory is being distributed through the Central Fertilizer Pool administered by the Ministry of Food and Agriculture. The fertilizer factory at Sindri is worked by Sindri Fertilizers and Chemicals Ltd. It is a Government company formed in January 1952 of which all the shares are held by the President of India. The Technical Mission's estimate for the project, if located at Sindri, was Rs. 1,053 lakhs while the actual cost debited by Government at the time of handing over the project to the company was Rs. 2,077 lakhs to which capitalised interest of Rs. 176 lakhs was later added.

Financial structure of Sindri — an appraisal.

4.1. The accounts of Sindri are closed on 31st March and for purposes of our investigation the audited accounts for the year ending 31st March 1959 which have not yet been published were made available. The financial position of the company at the end of 1958-59 and since its inception has been set out in Appendix II to this Report which contains the following statements :—

I—(a) Balance sheet analysis—liabilities for 1952-53 to 1958-59;
(b) Balance sheet analysis—assets for 1952-53 to 1958-59;

II—Profit and loss accounts—analysis for 1952-53 to 1958-59.

III—Fixed capital expenditure for 1952-53 to 1958-59.

4.2. The authorised capital of Sindri is Rs. 3,000 lakhs which is made up of 3 lakh shares of Rs. 1,000 each of which 1·7 lakh ordinary shares were issued as fully paid up in favour of the President. We are informed that when the Government of India handed over the assets of the original departmentally run project to Sindri, it was decided that of the total expenditure on fixed assets as well as on current operations, the consideration should be Rs. 1,700 lakhs in the form of share capital and the balance of Rs. 749·58 lakhs as on 31st March 1953 as a loan from the Government of India bearing an interest rate of 4½ per cent per annum and secured by a floating charge on all the assets of the company.

4.3. From the beginning Sindri made arrangements with the State Bank of India for cash credit up to the limit of Rs. 300 lakhs secured by the hypothecation of stocks, stores and book debts of the company to meet its needs for working capital. In the initial years the company pursued a policy of reducing its capital liabilities by arranging for repayment of part of the secured loans from Government. By 1957-58 this liability had been brought down from Rs. 749·6 lakhs to Rs. 292 lakhs. During the same period the company had also written off development expenditure to the extent of Rs. 113·39 lakhs. After the company started functioning its gross block of Rs. 2,077 lakhs was revised upwards by Rs. 168 lakhs on account of (a) capitalised interest during construction period amounting to Rs. 176 lakhs and (b) certain adjustments resulting in a reduction of the value of assets by Rs. 8 lakhs. After the plant was commissioned, in order to overcome teething troubles and rectify certain imbalances in the plant, capital expenditure had to be augmented. Additional provision for housing and welfare of workers also became necessary. Further capital outlay was incurred on the original ammonium sulphate plant itself to the extent of Rs. 330 lakhs on expansion of its original plant and machinery, Rs. 350 lakhs for colony, water and electricity services and Rs. 53 lakhs for railway sidings and the gross block for ammonium sulphate now stands at Rs. 3,076 lakhs inclusive of coke ovens but exclusive of assets pertaining to the expansion schemes which have been commissioned. The largest single item of addition to capital during this period has been the investment of Rs. 283 lakhs in establishing a coke oven plant so as to avoid market purchases of coke which was contemplated when the factory was designed. Certain economies had been envisaged from this expenditure in the cost of coke as well as from recoveries from the sale of processed by-products. Later, the company, in implementation of Government's policy of producing different kinds of fertilizers, initiated a scheme for utilising 10 million cu. ft. of coke oven gas in the production of 70 tons of urea and 400 tons of ammonium sulphate-nitrate per day. On this project alone (described as the expansion scheme) so far over Rs. 800 lakhs has been spent. It also required additional expenditure on ancillary services in the main sulphate plant. The resources for this purpose have been found by the company by obtaining an unsecured loan from Government to the extent of Rs. 686 lakhs and by ploughing back part of its reserves and the amounts set aside for depreciation provision. The expansion scheme has been completed and the gross block of the company will then stand at over Rs. 4,000 lakhs.

4.4. This pattern of expansion and diversification of production was rendered possible by (a) the special facilities afforded by Government in the matter of cheap loan finance, and (b) the fair margin in the prices paid by the Fertilizer Pool from time to time in the past without reference to meticulous calculation of actual cost of production. Sindri has adopted the method of straightline depreciation on fixed assets which is calculated on the basis of the estimated life of each type of asset and makes annual provision of more or less equal amounts so as to write off the value of the asset concerned within its estimated life. As a concomitant it has also built up a reserve for special repairs to even out the incidence on that account. The total profits (before depreciation and interest) earned by the company up to the end of 1958-59 amounted to Rs. 2533·41 lakhs which have been distributed as follows :—

	Rupees in lakhs.
Depreciation	1270·64
Payment of interest	180·76
Development expenditure written off	113·39
Reserves for repairs less expenditure	255·85
General and other reserves	168·00
Reserve for taxation including wealth tax	134·40
Development rebate reserve	37·80
Dividend paid	357·00
Balance	15·57

The company has provided in the aggregate a sum of Rs. 1270·64 lakhs as depreciation up to 1958-59. This provision is lower by about Rs. 230 lakhs than the figure of depreciation computed for the first and second shift allowances under income tax rates. Even after repayment of the loans, the reserves created by Sindri and payment of a moderate dividend were made possible by the liberal margin in the prices paid by the Pool and the lower provision for depreciation under the straightline method.

4.5. Although the amount of depreciation actually provided under the straightline method was about Rs. 1,270 lakhs at the end of 1958-59 when the gross block of the sulphate plant (exclusive of assets pertaining to the expansion schemes which have been commissioned) stood at Rs. 3,076 lakhs and the net block at Rs. 1,806 lakhs, the company, we are informed has so far claimed for income tax purposes Rs. 2505 lakhs by way of depreciation (on the basis of the written down value method) and development rebate and can still carry over a claim of Rs. 152 lakhs before its tax liability begins on the old plant. We understand that as the expansion plant has been commissioned from 1st October, 1959 the expenditure incurred on it has been added to the capital block and on its new capital expenditure the company will be entitled to depreciation including the development rebate.

The Sindri Fertilizer Plant and process of manufacture.

5.1. Because of its location and having been designed before the D. V. C. power supply could be commissioned, Sindri was from the start provided with a self-contained power plant. Its installed capacity is 80,000 k.w. and the power house plant comprises seven boilers and six turbines. Some of the boilers are fitted with burners to burn coke oven gas.

5.2.1. Besides the power house, the Sindri plant has the following main sections :—

1. Coke oven plant;
2. Gas plant;
3. Ammonia synthesis plant;
4. Sulphate plant; and
5. Sulphate packing plant.

The process for the manufacture of ammonium sulphate consists of reacting finely ground gypsum with a solution of ammonium carbonate when ammonium sulphate solution and chalk are produced. After separation of chalk by filtration, the ammonium sulphate solution is concentrated and crystallised. The ammonia required for producing ammonium carbonate solution is obtained by synthesizing a proportionate mixture of nitrogen and hydrogen in the presence of a catalyst under moderately high pressure. The synthesis gas mixture is obtained by gasification of coke in semi-water gas generators and subsequent conversion of carbon monoxide in the gas to carbon dioxide and purification of the gases to the required specifications. The carbon dioxide gas produced is later used in the manufacture of sulphate.

5.2.2 Water for the boiler feed and for sanitary and other uses in the large and growing colony is drawn from the Damodar river and is treated in the water treatment plant. The pump house on the river is designed during dry season to avail of water trapped in an infiltration gallery in the river bed. There is also a dam built by the company at Gawai providing a reservoir to feed water into the Damodar during the dry season. The large capital expenditure on these works which were designed without co-ordinating with the programme of D. V. C. project has no doubt added to the company's current capital at charge.

5.3. *Coke oven plant.*—Originally when the factory was designed it was expected to buy its coke for gasification. In order to meet the factory's requirements of the quality and quantity of coke suited to its need, it was later decided to set up a coke oven plant at Sindri itself which would make use of non-metallurgical coking coal to the maximum possible extent. For this purpose the Carl Still coke oven plant was selected. It was commissioned in 1954 and consists of a battery of 60 ovens with a rated capacity of 600 tons per day and is designed to use the conventional top charge of filling process as well as the stamping

process which would enable lower grades of coal to be blended and utilised. Coke from the plant is conveyed to the water gas plant by a system of belt conveyors. Coke oven gas (about 10 million cu. ft. per day) passes through two coolers for tar removal and subsequently a water scrubber to remove ammonia and finally wash oil scrubbers for removal of benzol and tar. The benzolised wash oil passes countercurrent in a system of heat exchangers and gets progressively distilled to different fractions in a series of stills. Benzol, Toluol and Xylol are obtained as by-products. The residual gas, which is at present used as fuel for heating coke ovens and also for firing the boilers, can be more profitably utilized in the manufacture of fertilisers, such as double salt and urea. Indeed, the company has, as stated in paragraph 4.3, implemented an expansion programme at a projected capital cost of Rs. 1,320 lakhs. These include plant for (a) augmenting its production of ammonia from the original level of 270 to 459 tons per day; (b) producing the new fertiliser, double salt at 400 tons per day (a mixture of ammonium sulphate and nitrate); (c) the production per day of 70 tons of urea; (d) installing a plant for production of nitric acid necessary for production of double salt, and (e) a lean gas plant to substitute the rich coke oven gas for fuel uses.

5.4. *Producer gas plant.*—The gas plant is designed to produce a gas mixture suitable for amonia synthesis, the generators used being semi-water gas generators fitted with jacket boilers and hydraulically operated control valves. For making the gas, steam from the Power House is blown through an ignited coke bed to give blue water gas (H_2 *plus* CO) and some quantities of carbon dioxide. A carefully proportioned supply of air in the ratio of 1:3 for nitrogen and hydrogen after conversion and purification is passed through the bed to give the required nitrogen content for the synthesis of ammonia. Raw gas from the generators is washed in lymn washers with soda solution and subsequently passed over iron oxide beds for removing traces of hydrogen sulphide. Gas is then reacted with steam in a gas conversion plant. The conversion plant consists of primary and secondary heat exchangers and convertors holding a catalyst which consists of iron oxide and chromium oxide. Carbon monoxide is converted into carbon dioxide with the liberation of hydrogen and the converted gas is passed on through a gas holder to the compressor house in the ammonia plant.

5.5. *Ammonia plant.*—In the ammonia synthesis plant the converted gas is compressed to about 5,200 lbs. per sq. inch in a battery of 6 stage compressors. Carbon dioxide and carbon monoxide are removed at intermediate pressures by washing with water, cuprous ammonium formate solution and caustic soda solution. The purified gas consisting of hydrogen and nitrogen in the ratio of 3:1 and under pressure of 5,200 lbs. is sent to the synthesis convertors. These are maintained at reaction temperatures of 500° C. and reaction proceeds in the presence of a catalyst. A portion of the gas, usually about 16 per cent, gets converted into ammonia. The outlet gas from the convertor containing ammonia is cooled in a water cooled condenser and subsequently in an ammonia cooler condenser where amonia is liquified and separated. Liquid ammonia is either sent to sulphate plant or is stored in horton spheres. The unconverted gases along with fresh synthesis gas.

mixture is recycled through the circulator to a convertor and ammonia is continuously recovered. The capacity of the original plant was designed to yield 270 tons of ammonia per day.

5.6. *Sulphate plant.*—The sulphate plant consists of a gypsum crushing and grinding unit where gypsum is reduced to fine powder, a carbonation unit where ammonia and carbon dioxide are reacted to form ammonium carbonate, a reaction unit where gypsum is treated with ammonium carbonate to form ammonium sulphate, a filtration unit for filtering the reacted liquor, an evaporation section and a drying and cooling section. Finely ground gypsum is reacted with a solution of ammonium carbonate to produce ammonium sulphate and calcium carbonate precipitate. The two are separated in rotary vacuum filters in two stages, the chalk is slurried with water and pumped out to the nearby cement works of the Associated Cement Companies Ltd., to which it is sold. Ammonium sulphate solution is concentrated and crystallised. The crystals are separated in the triple effect evaporators and rotary drum filters and after drying and cooling are conveyed through a system of product conveyors to the storage silo or the sulphate packing plant.

5.7. *Packing plant.*—The sulphate packing plant provides for automatic filling, weighing and stitching of 20,000 to 30,000 bags per day and the air conditioned silo of concrete has a capacity to hold 90,000 tons of salt.

5.8. *Maintenance and technical laboratories.*—In addition, the company has well-equipped mechanical and electrical shops to undertake major works of maintenance. Most of the running and routine maintenance is attended to on site at the plants. There is an instrument shop to carry out periodical check and calibration of the several instruments installed. The company also maintains well-equipped laboratories to test all incoming raw materials and finished products. There is a separate Technological Department whose main function is to attend to all problems referred to it from the main plant and also to undertake developmental investigations and research. Indeed, amongst the important work done by this Department, mention may be made of (a) the development of a catalyst from indigenous raw materials which the factory has been using since 1953, (b) a synthetic iron oxide product which is used for removing hydrogen sulphide gas from coke oven gases, and (c) tar distillation plant with a daily capacity of 6 tons of road tar and about 200 gallons of wash oil for debonzolisation of gases, etc. This Department has also undertaken the design of the nitric acid and nitro-limestone plant of the Rourkela Fertilizer factory. We are informed that it is the intention of Government to develop it in course of time into a Central Technological Institute for the fertilizer industry in India.

Fertilizer Pool.

6.1. The Fertilizer Pool referred to in paragraph 3.2 started functioning in 1944-45 and has been set up under the Ministry of Food and Agriculture. Its supplies are now obtained from indigenous units as well as from imports and pooled for distribution throughout the country at a uniform selling price, on the basis of f.o.r. despatching station *plus*

freight prepaid up to nearest rail-head destination. The pool issue price is fixed by the Ministry of Food and Agriculture taking account, *inter alia*, of the following factors :—

(1) purchase prices of (a) indigenous products from various units and (b) of imported material including ocean freight ;

(2) inland transport from source of supply in the case of indigenous product and port of landing in the case of imported product, up to rail-head destinations and an element of equated freight charge being included in the pool issue price ;

(3) handling, storing and clearing charges at ports of imported fertilizers ;

(4) departmental charges of purchasing organisations overseas ;

(5) sales tax on indigenous sulphate of ammonia ;

(6) interest on capital at the prevailing government rates for six months on the imported material ; and

(7) incidentals including expenditure for the staff employed, shortages and rebagging etc.

6.2. The Pool supplies are despatched to the State Governments' allottees in accordance with the allocations given by respective State Governments. The latter employ generally for retail distribution of fertilizers (i) co-operatives, (ii) private dealers, and (iii) departmental agencies, that is, field officers of Agriculture Departments or Collectorates. The State Governments are allowed normally a margin of Rs. 30 per ton, which is added to the pool price, for meeting their handling cost, including freight charges for moving the material from rail-heads to consuming centres, storage charges, shortages in handling, commission for retailers, etc. The price payable by the cultivators, therefore, works up to the pool issue price with the addtion of Rs. 30 per ton. The prices charged to plantations and to manure mixers are fixed on a slightly different basis and are somewhat higher.

6.3. The Pool was constituted with the intention of running it on 'no profit no loss' basis. However, an amount of profit or loss accrued to the Pool every year on account of marginal adjustments of the Pool prices. The extent of the profit or loss made in the purchases of chemical fertilizers for the budget years 1944-45 to 1956-57 is given below :—

Year	Net profit/loss (—)
1	2
	Rs.
1944-45	6,71,583
1945-46	25,64,061
1946-47	(—)4,40,316

1	2
1947-48	14,29,857
1948-49	1,42,639
1949-50	19,63,799
1950-51	11,43,466
1951-52	4,44,627
1952-53	3,40,158
1953-54	68,70,760
1954-55	(—)45,47,472
1955-56	8,75,985
1956-57	22,58,216
TOTAL	1,37,17,363

The profits of the Pool are usually utilised to (a) subsidise the pool issue price when it works out to a figure higher than the economic price to the cultivators and (b) for granting rebate to State Governments on stocks held by them on a date when the pool price undergoes a downward revision, so as to enable them to sell the stocks, old as well as new supplies, at the revised lower prices. The Ministry of Agriculture have stated that, in recent years the pool price is fixed having regard to the level at which it would be economical to the cultivator. At one time the Ministry were of the view that only a price return from crop outturn of thrice the amount spent on fertilizer would attract the cultivator. With the progress of the Grow More Food Scheme, increased use of fertilizers and growing demand for it and obviously also on account of higher prices now obtaining for food grains, the cultivator appears to be attracted even by a prospect of increased return of 2 or 2½ times the investment in future. To keep up this tempo it is considered that the final price of fertilizer to the agriculturist should be kept as low as possible.

6.4. *Price of Sindri ammonium sulphate paid by the Pool.*—The price paid by the Ministry of Food and Agriculture as the monopoly procurers to the respective indigenous producers of fertilizers is described as the 'retention price'. The statement below indicates the pool price and the retention price for the ammonium sulphate produced in Sindri :—

Year	Retention price of Sindri		Pool price	
1	2		3	
		Rs. per ton	Rs. per ton	
1952	(*i*) Till Sept., 1952 . . .	350	380	f. o. r. despatching station.
	(*ii*) From 1-10-1952 till end of 1952.	350	365	Ditto.

1	2	3		
		Rs. per ton	Rs. per ton	
1953		285	290	f.o.r. Sindri.
1954	Equalised freight price from 19-1-1954.	275	315	f.o.r. rail-head destinations. (The arrangement was to facilitate the availability of fertilizer to cultivators at prices not exceeding Rs. 345 per ton.)
1955		270	315	Ditto.
1956		270	315	Ditto.
1957	From 15-1-57 onwards . .	280	315	Ditto.
1957	From 26-3-57 onwards . .	280	350	f.o.r. rail-head destinations. (This will enable State Governments to distribute fertilizer to cultivators at prices not exceeding Rs. 380 per ton.)
1958	From 1-4-1958 to 31-3-1959	290	350	Ditto.
1959	From 1-4-1959 onwards	280 (Provisional)	350	Ditto.

6.5. *Prices to other producers and import prices.*—The basis on which prices were paid to the other producers of ammonium sulphate in the country by the Fertilizer Pool is indicated below :—

Name of the manufacturer	Price paid up to 1958-59	Basis on which this price was fixed
	Rs.	
A. Manufacturers producing ammonium sulphate as a by-product—		
1. M/s. Tata Iron and Steel Co. Ltd., Calcutta.	250	The price of Rs. 250 per ton f.o.r. works/Calcutta payable to manufacturers was fixed in the year 1953 and has been continued since then. The price fixed was a negotiated one.
2. M/s. Indian Iron and Steel Co. Ltd., Calcutta.	250	
3. M/s. Barrakur Coal Co., Calcutta .	250	
4. M/s. Bararee Coke Co., Calcutta. .	250	
B. M/s. Fertilizers and Chemicals Travancore Ltd., (hereinafter referred to as FACT).	365	The price of Rs. 365 per ton f.o.r. Alwaye was fixed as a result of examination of the cost of production of sulphate of ammonia of FACT, Alwaye, by the Chief Cost Accounts Officer of the Ministry of Finance conducted in 1958.

The following statement gives the purchase rates per ton and the approximate quantities purchased from various sources of indigenous supply as well as the average landed cost of imported supplies during the six years commencing 1954-55 :—

Year	Source of Supply	Purchase rate (per ton) Rs.	Qty. purchased (approx.) Tons
1954-55	Sindri	275	336,800
	FACT, Alwaye	353	19,800
	By product	250	14,900
	Imported	300 (landed)	67,000
1955-56	Sindri	270	316,800
	FACT, Alwaye	353	37,000
	By product	250	27,800
	Imported	305 (landed)	197,900
1956-57	Sindri	270	160,800
	FACT, Alwaye	353	26,900
	By product	250	20,100
	Imported	305 (landed)	230,100
1957-58	Sindri	*280	331,500
	FACT, Alwaye	365	20,200
	By product	250	15,100
	Imported	320 (landed)	341,600
1958-59	Sindri	290	315,000
	FACT, Alwaye	365	22,000
	By product	250	20,000
	Imported	255 to 260 (landed)	160,000
1959-60	Sindri	280 (Provisional)	
	FACT, Alwaye	Under consideration	
	By product	250	
	Imported	230 (C. & F.)	

(*effective from 15-1-1957.)

7.1. The rated capacity of Sindri is 1,000 tons of ammonium sulphate per day which works out to 350,000 tons per annum. Its actual production since 1952-53 has been as follows :—

Rated capacity and production of Sindri

	(In tons)	
1952-53	239,000	(for 14 months)
1953-54	250,000	
1954-55	300,000	
1955-56	326,000	
1956-57	334,000	
1957-58	332,000	
1958-59	330,000	
1959-60 (up to October, 1959)	164,000	

The above level of production near ceiling is likely to be maintained for ammonium sulphate.

7.2. The new expansions meant for urea and ammonium sulphate nitrate have just been commissioned. For our costing in order to distribute overheads we have assumed a progressive increase in their production.

8.1. While the extended use of fertilizers can demonstrably step up the output of food and commercial crops, it is the price stimuli of low cost manure successfully used to obtain increased crop yields which weigh with agriculturists. Hence the need to produce and to make available fertilizers at the lowest cost to ensure success of the Plan. The First Plan envisaged expansion of capacity for nitrogenous fertilizers from 78,670 tons in 1950-51 to 481,270 tons in 1955-56 per year in terms of ammonium sulphate to be achieved mainly by Sindri reaching full production and by expanding the output of FACT (Fertilizers and Chemicals, Travancore Ltd.) and Mysore Fertilizer factories. The expansion in the last two units did not, however, materialise during the First Plan period. The higher targets for agricultural production set in the Second Plan take into account the fact that the scope for increasing the area under cultivation is limited, and accordingly emphasised the need for stepping up output by intensive cultivation through increased use of suitable fertilizers.

Availability of and demand for ammonium sulphate

8.2.1. The statement below shows the estimates made by the Ministry of Food and Agriculture of the demand for various types of fertilizers during 1959-60 and 1960-61 and the steps contemplated to meet it. Our enquiry concerns only one type of nitrogenous fertilizers, namely, ammonium sulphate, but phosphatic and potassium based manures are also

important for balanced agricultural development. The overall assessment of demand is important to indicate the insufficiency of available supplies and the need to make the best use of them and to stimulate internal production of fertilizers as we cannot without straining our scarce foreign exchange resources continue to depend on imports.

Estimated supply and demand position of nitrogenous fertilizers for the year 1959-60

(In tons)

	Sul. of ammonia	Urea	Cal. Amm. nitrate	Amm. sul. nitrate
Demand	1,280,000	138,000	80,000	184,500
Indigenous production	415,000	10,000	..	50,000
Deficit	865,000	128,000	80,000	134,500
Imports:				
Already arranged	125,000	57,000	39,000	32,000
Further imports likely to be arranged	108,000 123,000	39,800 12,000	41,000 ..	41,800 ..
	356,000	108,800	80,000	73,800

Estimated supply and demand position of nitrogenous fertilizers for 1960-61

(In tons)

	Demand	Indigenous production	Deficit to be met by imports
Sulphate of ammonia	1,473,063	456,000	1,017,068
Urea	193,347	14,400	178,947
Ammonium sulphate nitrate	225,500	82,800	142,700
Calcium ammonium nitrate	110,237	60,000	50,237
Total in terms of sulphate of ammonia	2,311,485	656,040	1,655,445

The Ministry of Food and Agriculture have stated that the short-fall in supply in 1959-60 and 1960-61 would be covered to the extent possible by means of imports.

8.2.2. In the present foreign exchange shortage the Ministry have expressed themselves unable to envisage the supply position in respect of fertilizers during the Third Five Year Plan period, as that will depend largely on the progress of implementation of the various fertilizer projects which are on hand. They have expressed the view that if the present trend of increased demand continues, the deficit will persist and

imports may have to be arranged. The targets of expected consumption of various kinds of fertilizers during the Third Plan period have been given by the Ministry as follows :—

(In tons)

Year	Nitrogen	P_2O_5 (Phosphorus pentoxide)	K_2O (Potassium Oxide)
1961-62	650,000	100,000	80,000
1962-63	800,000	175,000	100,000
1963-64	950,000	206,000	130,000
1964-65	1,100,000	281,000	160,000
1965-66	1,250,000	358,000	200,000

8.3. The programme of development of fertilizer in 1956-61 covers the following:—

Availability

I.—Public Sector :

(*a*) *Scheme under implementation :*

Increase in output of Sindri in terms of nitrogen content from 70,000 to 117,000 tons. The expansion plant was commissioned in October 1959.

(*b*) *New Projects :*

(i) *Nangal Fertilizers.*—Ammonia 90,000 tons, ammonium nitrate 200,000 tons, *i.e.*, nitrolimestone as end-product 340,000 tons. The scheme may be implemented by 1960-61 ;

(ii) *Neyveli Fertilizers.*—70,000 tons fixed nitrogen in urea 155,600 tons. The project may be completed in 1962-63 ;

(iii) *Rourkela Fertilizers to produce* 80,000 *tons* fixed nitrogen in 442,000 tons nitro-limestone ; this project for which Sindri are also consultants may be in production by 1962 ;

(iv) *By-products in Bhilai and Durgapur Steel Plants.*—7,200 tons fixed nitrogen in 35,300 tons of ammonium sulphate ;

(v) *Trombay Fertilizer Factory of Nangal Fertilizers with Petroleum Refinery gas or fuel oil.*—90,000 tons fixed nitrogen of which half each will be in urea and nitro-phosphate ;

(vi) *Fertilizer Factory at Kothagudam in Andhra.*—80,000 tons Nitrogen of which 45,000 tons will be in urea and 35,000 tons in Nitro-phosphate.

(*c*) *Factory in Assam with Naharkopye gas ;*

32,500 tons nitrogen of which 22,000 tons will be in urea and 10,000 tons in ammonium sulphate.

II. Private Sector

Scheme under implementation :

(a) *FACT.*—Increase in ammonium sulphate from 48,000 to 60,000 tons in 1958-59, 50,000 tons of superphosphate and 33,000 tons ammonium phosphate.

(b) *Sahu Chemicals.*—40,000 tons ammonium chloride in conjunction with soda ash ;

(c) *TISCO & IISCO.*—By-product—ammonium sulphate increase by 15,000 tons.

On the basis of the progress of the above development schemes the availability of nitrogenous fertilizers from domestic sources including estimated production for 1959-60 and 1960-61 is as follows :—

Year	Annual capacity tons in terms of fixed nitrogen			Production
	Public sector	Private sector	Total	
1956-57	70,000	15,000	85,000	85,000
1957-58	70,000	15,000	85,000	85,000
1958-59	70,000	25,000	95,000	85,000
1959-60	117,000	38,000	155,000	100,000
1960-61	187,000	38,000	225,000	180,000

Raw materials, power and fuel

9.1. The principal raw materials used in the manufacture of ammonium sulphate at Sindri are coke and gypsum. The U.K. Technical Mission advised that "to obtain the best and most efficient results the coke used for the production of semi-water gas should be metallurgical coke or gas works coke of good quality. In either case the coke should possess the following properties :—

(i) The ash of the coke should have a melting point above 1200°C and preferably not lower than 1300°C since an ash of low melting point gives clinkering trouble with consequent serious reduction in output and efficiency.

(ii) Physically the coke should be sufficiently hard to withstand disintegration during handling and storage and also to resist being crushed in the deep bed employed in the semi-water-gas generator.

(iii) The volatile content of the coke should be low to avoid the formation of excessive quantities of hydro-carbons in the gases produced. Without additional expensive equipment, hydrocarbons are extremely difficult to remove completely in the

final purification of the gas for ammonia synthesis, and if not removed they accumulate in the system and have to be purged with consequent loss of hydrogen and nitrogen resulting in a higher consumption of coke.

(iv) The sulphur content of the coke should be low in order to reduce the cost of its subsequent removal and to avoid corrosion."

Although the Technical Mission recommended the use of metallurgical coke, Sindri, in accordance with approved policy and in order to reduce the drain on our limited resources of high grade metallurgical coke, installed in 1954 a Carl Still Coke Oven Plant designed to make use of blends of non-metallurgical coking coal to the maximum possible extent. The intention was that instead of depending on only one variety of coal, the company will use a blend of different varieties of coal and the best blend was obtained from Dissergarh and Poniatti coals which are good quality non-metallurgical coking coals with high ash fusion and low iron content. Till recently Sindri was obtaining its supplies of coal from the nearby Lodna and Loyabad collieries, but these sources were suddenly diverted, during 1958-59, to the Steel Plants, Railways and other consumers, and coal of inferior coking grade with low ash fusion from distant collieries involving longer leads has been allotted to it by the Coal Controller. This has reduced plant efficiency and increased the percentage of breeze. There has been a significant drop in the production of ammonia with consequent reduction in the output of ammonium sulphate during 1959-60. The normal monthly requirements of the Ammonium Sulphate plant of Sindri are :

12,000 tons of Dissergarh coal

8,000 tons of Loyabad coal

6,000 tons of Lodna coal.

The fertiliser industry is, in our view, no less vital to our economy than the steel industry. Use of coal with low ash fusion and/or with iron and sulphur content involves increased operational difficulties, these difficulties becoming more and more pronounced with lower fusion point until a stage is reached where for technical reasons operation of the semi-water gas plant becomes difficult. The gravity of the situation will be realised from the fact that during 1959-60, the production of ammonium sulphate is not expected to be higher than 300,000 tons against the installed capacity of 350,000 tons per annum. We recommend, therefore, that Government should ask the Coal Controller to take immediate steps to make available to Sindri such grades of coal as would enable it to obtain the right blend for its coke regularly and in adequate quantities from nearby collieries.

9.2. *Gypsum.*—This is obtained from the factory's own mines at Kavas in Rajasthan as well as from the mines of Bikaner Gypsums Ltd., in that locality, the latter accounting for about 64 per cent of the supplies. It was represented to us that the quality of gypsum both from

the factory's mines and from outside purchases has been steadily deteriorating. Gypsum is used by several industries such as cement, plaster of paris, etc., where high grade quality is not essential. The fertilizer industry, on the other hand, requires superior grades of gypsum (86 per cent and above of calcium sulphate) and deterioration in quality affects plant efficiency and output. In the interests of conserving our resources of gypsum and also of avoiding the use of high grade gypsum (above 86 per cent calcium sulphate) in undertakings where inferior grades are suitable, it appears that the industries consuming gypsum should be classified according to the grades normally required by them and measures will have to be devised to ensure that high grade gypsum is not used where a slightly lower grade can be used without any appreciable loss of efficiency. It may be recalled that the factory was designed to use Pakistan gypsum of above 92 per cent purity. It was claimed that even a blend of that quality with Bikaner gypsum improved the efficiency factors. As such, a boosting of gypsum quality by having such a blend as a permanent feature may be considered. The average rate per ton of gypsum worked out during 1958-59 to be Rs. 42·72 as indicated below :—

Ratio of consumption	Departmentally operated mines 36%	Purchases 64%
	Rs. per ton	Rs. per ton
Basic rate	5.97	7.77
Railway freight	35.45	34.63
Handling charges	0.31	0.32
TOTAL .	42.73	42.72

Weighted average rate—Rs. 42.72 per ton

It will be seen from the above table that the railway freight on gypsum which falls in category 32.5 of the General classification is very high in comparison with the ex-mines cost and royalty. Indeed, the incidence of this freight per ton of ammonium sulphate produced during 1958-59 was Rs. 60 approximately (nearly 26 per cent of the works cost of production). Sindri has also lost a small freight concession allowed to it in the past by the Railways. The representative of the Ministry of Food and Agriculture (Department of Agriculture) informed us that railway freight on gypsum when it is used for agricultural purposes has been reduced. Paragraph 177 of the Report of the Railway Freight Structure Enquiry Committee in fact recommends grant of station-to-station rate for gypsum used as fertilizers for Usur lands, to lower the heavy incidence of ordinary wagon rates. In the wider interests of the country's economy, freight on gypsum despatched to Sindri as a raw material for production of fertilizers needs to be reduced and we recommend that this matter should be vigorously pursued by Sindri with the Ministry of Railways.

9.3. *Power and fuel—*

9.3.1. As stated in paragraph 5.1, Sindri has a self-contained Power House with 7 boilers and 6 turbines. It generates electricity both with condensing turbines and back pressure turbines. The installed capacity of the plant is 80,000 k.w., but it was hitherto maintaining a level of production of 40,000 k.w., only due to the fact that there was not enough steam available for generating power. The seventh boiler was added recently to increase the supply of steam for the generation of addtional power of 15,000 k.w., but this, we are informed, will not be adequate for the expansion plant that has been commissioned. The cost per K.W.H. of power generated during 1958-59 worked out to 2.24 nP. (exclusive of depreciation allocable to the Power House proper). It was represented to us that at present Sindri is obliged to buy its additional requirements of power from D.V.C., but that it would be cheaper to produce that power in the company's Power House itself. It has not, however, been possible for us to examine the company's representation in detail. We therefore suggest that Government should take steps, in consultation with the D.V.C. to consider the matter further and that if as a result of such examination Government is satisfied that the production of power in the company's power house will be cheaper and will bring in appreciable economy in the cost of production of ammonium sulphate, necessary measures should be taken to exempt the company from its obligation to buy additional power from D.V.C., and also to enable it to generate that power itself.

9.3.2. The average price of coal used in the production of coke during 1958-59 was Rs. 23·12 per ton inclusive of railway freight which was Rs. 5·55 per ton. The boilers also used coke breeze and residual coke oven gases. Coal is also used for locos of the company for its internal transport and yard.

10.1. It is observed from the statement in paragraph ... that during 1952 when the pool price ranged round Rs. 380 per ton f.o.r. despatching station, the retention price allowed for Sindri ammonium sulphate was Rs. 350 per ton. In 1953 in order to step up consumption of fertilizers the pool price was brought down to Rs. 290 per ton f.o.r. Sindri, and the retention price of Sindri ammonium Sulphate was also reduced to Rs. 285 per ton. The price of imported ammonium sulphate at that time was about Rs. 310 per ton and the retention price allowed to FACT at Alwaye was Rs. 360 per ton. Subsequently the retention price of Sindri was brought down further to Rs. 270 per ton in 1955. The following year the company approached Government for an increase in the retention price to enable it to discharge its current and future commitments. It was stated that a higher price had become necessary on account of number of additional items of expenditure such as, return on capital invested by Government in the company for its further expansion, the payment of an *ad hoc* monetary award to its workers for the first time in 1956, increases in wages, coal prices, freight and terminal charges as well as to build up a taxation reserve. On these considerations Government allowed an

Representation of Sindri for price increase

ad hoc increase in the retention price from Rs. 270 to Rs. 280 per ton with effect from 15th January, 1957. In February 1958 Sindri again approached Government for further increase in the retention price on the ground of substantial increased expenditure which had occurred in circumstances beyond its control. (A copy of the company's letter to Government dated 15th February 1958 is given in Appendix I).

10.2. The company instanced a number of items that were factors beyond its control, such as the higher royalty levied by the Rajasthan Government on gypsum which is one of the main raw materials, increase in freight charges on gypsum and coal, higher prices of coal ex-collieries due to enhancement of coal prices over a period, etc. It also urged that it should not only be enabled to maintain the present level of dividends on its share capital and be in a position to pay the specified interest on the loan from Government, but should have sufficient resources to pay it back and also build up reserves of about Rs. 30 lakhs a year as it was from such reserves and depreciation that it was able to finance its current expansion. Sindri has also pleaded that the price of imported fertilizer should not enter into the fixation of its retention price as throughout in the past it was less than import prices.

10.3. On the other hand, in their reference to us Government have observed that while there might be some explanation for an increase in price of the order of Rs. 20 to Rs. 22 per ton over the price fixed in January 1955 on account of rise in costs of a number of known items, there were a large number of items whose costs were continuously going up and which could be attributed either to a drop in efficiency or undue increase in the number of personnel and labour employed. In the context of the sharp decline during the last two years of the price of imported fertilizers, which fell to Rs. 229 per ton c.i.f. in 1958-59, the large price increase asked for required detailed examination. With the possibility of fertilizer units springing up in the private sector an enterprise in the public sector should be governed strictly by commercial and business considerations. It was also stated that in fixing retention prices of fertilizers 'norms of performance' for a plant of this type and the cost of imported fertilizer could fairly be considered. A fair return on Government investment and the need for the company to build up adequate reserves are also relevant considerations. In the past the fixation of retention price of Sindri had been done purely on *ad hoc* considerations after discussions with the parties concerned, namely, the company and the Ministries of Commerce and Industry, Food and Agriculture and Finance. It is in this background that the Government have directed that a cost examination should be done by the Commission.

10.4. We would like to mention that while the matter was under reference to us, and the company had been furnished for elucidation the results of our Cost Accounts Officer's appraisal of works cost (excluding profit) of ammonium sulphate for 1958-59, Government announced in August 1959 [*vide* the Ministry of Food and Agriculture (Department of Agriculture) letter No. 329/59-M, dated 19th August 1959], their decision to raise the retention price to Rs. 290 per ton f.o.r.

Sindri for the quantities of ammonium sulphate supplied by Sindri during 1958-59 (1st April 1958 to 31st March 1959). As regards 1959-60, the price has been fixed provisionally at Rs. 280 per ton pending the advice of the Commission.

Our approach to the problem of fixing ex-works prices of Sindri

11.1. In the context of the present cost examination for fixing a fair retention price and making provision for a fair return on capital after detailed assessment of works cost, some factors will have to receive special consideration under the terms of reference to us by Government, *vide* also paragraph 10.3 *supra*. Sindri is a fully Government owned company, and is the largest producer of ammonium sulphate in the country. The assessment of a fair return on capital for such a company and the fixing of a fair price for a commodity like fertilizer which is a raw material for agriculture raise many general issues. In the case of a Government company should the pattern of return on capital follow the same line as in the case of private concerns ? To what extent should the reasonable price fixed carry an element for rehabilitation and expansion of the plant and assist in building up reserves though the resultant increase in price is likely to fall on the consumer rather than on the investor of equity capital ? Would a price increase be justified which would constitute a burden on the agriculturist, who is the ultimate user of fertilizer, particularly when internal demand has to be met to a considerable extent from imports and the import prices have become either competitive or lower than that of the Sindri product ? How far should the objective of keeping low the ultimate price for the agriculturist regulate the enforcement of economy and performance norms on the one hand in the working of the plant and entail scaling down the company's demands for general welfare expenditure or the demands from employees for a recurring bonus on the other?

11.2. The fertilizer industry is in the category listed in Schedule B of the Industrial Policy Resolution of 1956. In the context of rapid economic development and objectives of the national plan it has been declared that the State would increasingly establish new industrial undertakings in this category of industries while the private sector either on its own or with State participation would have the opportunity to develop in this field and that where there exist in the same industry both privately and publicly owned units, it would continue to be the policy of the State to give fair and non-discriminatory treatment to both of them. Indeed, it has also been the declared policy of Government when setting up commercial enterprices to function under the organizational pattern of the Companies' Act that such enterprises in the public sector will not receive any more favourable treatment than those in the private sector. It might, therefore, follow as a corollary that Government companies should not be denied any of the privileges and facilities, fiscal or otherwise, that are open to other corporate organisations. A similar view is expressed in Government's reference to us, where it is mentioned that 'with the considerable expansion of the activities in the public sector and with the possibilities of similar fertilizer units coming up in the private sector in the future, a stage has been reached

when the operation of industrial enterprises in the public sector through Government companies set up under the Companies' Act of 1956 should be regulated strictly on commercial and business lines'. We have, therefore, in the matter of costing of Sindri products—it is the first case of costing a 100 per cent Government owned company in a line of production which offers scope for private enterprise—applied the same principles as regards determination of costs and overheads as well as allowing a fair return on capital that generally govern our investigation into fair prices of a private enterprise. The fact that a Government company is subjected to tax liability and is also entitled to fiscal privileges in the matter of depreciation and development rebate confirms our view that it is Government's intention to apply alike the same standards of business principles to both enterprises in the public and private sectors. The danger to which a public enterprise is exposed are from two sources which contend for a share in the profit, namely, the consumer who seeks lower prices and the workers who desire wage increases *pro rata* with profits. Consumer's claims can only be met up to a point as the users of a particular commodity cannot become a privileged class. As for claims of labour, barring incentive schemes which let a worker earn extra for additional output to which he has contributed it is unjustifiable to claim that the gains of an enterprise arise from labour of workers only. The formation and successful working of a public enterprise depends on the energy and initiative of the community at large.

11.3. There are also some special features to be examined in the context of the present costing of the Sindri Company. Firstly, the factory was designed originally to produce only ammonium sulphate but now has expanded its capacity to produce other nitrogenous fertilizers. The capital expenditure in this connection as well as expenditure on internal services, general as well as specialised for the new plant have risen steeply. It will be some time before the new expansion plants go into full production and the resultant recoveries or economies, whether proforma or otherwise, can be reckoned. It is also not possible at this stage to assess fairly accurately the incidence of such economies on the cost of production of ammonium sulphate during the next three years if it is notionally separated from other sections. Secondly, part of the expansion of the integrated plant and general services is of a balancing nature which has also added to the capacity of the sulphate plant, for example, additions to power house and ammonia plant. The full effect on sulphate price of overall economies on the above two accounts will be realised only in course of time. In this context the alternatives before us are (a) to determine the ex-works cost as well as the fair retention price for 1959-60 and to undertake a fresh examination of cost in July or August 1960 when a fair estimate of the economies achievable may become possible, *or* (b) to allocate, between the several products, on the basis of their nitrogen content or on the output price basis, the expenditure on overheads and maintenance and determine the ex-works cost and fair retention prices for the next three year period from 1959-60 to 1961-62. The first alternative brings in a measure of uncertainty as regards future prices and will not be fair to either the industry or the consumer. In the matter of prices of fertilizers, a certain amount of stability over a period is not only desirable but essential. The success

of the Plan to step up agricultural production by increasing the use of fertilizers depends on helping to convince the agriculturists that by its use he gets a worthwhile increase in output at a price for his crop which will more than meet his outlay on fertilizers. The Food and Agriculture Ministry desire stable price over a period. Sindri has asked for a price which may be stable for 3 to 5 years. We have, therefore, preferred the course of fixing prices over a three year period, subject to certain conditions and qualifications being obtained. It is desirable to have a review before the end of this period so that the prices of different fertilizers can be re-assessed so as not to cast an undue burden on the consumer of sulphate or the Company.

11.4. At this stage we consider it necessary to comment on certain disconcerting factors. One is the large inventory carried by the company year after year. At the end of 1958-59, it amounted to nearly Rs. 450 lakhs worth of stores of which only a quarter would represent the principal raw materials required for the production of fertilizers. The balance of over Rs. 330 lakhs which represented the value of stores and spares was much in excess of requirements as will be clear from the statement below :—

Year	Stocks	Consumption	Stock as percentage of consumption	Stock in terms of months' consumption
	Rs.	Rs.	%	
1952-53	93,03,853	53,73,174	173.2	21
1953-54	1,21,20,918	58,49,729	207.2	2
1954-55	1,51,80,756	77,42,686	196.1	2
1955-56	2,06,22,782	96,72,944	213.2	2
1956-57	2,59,80,134	1,03,26,244	251.6	3
1957-58	3,06,51,687	95,74,475	320.1	3
1958-59	3,29,59,929	95,12,958	346.5	42

A large number of items have hardly been utilised over a period of years. Although consumption has remained more or less steady at about Rs. 96 lakhs since 1955-56, Sindri has been adding to its inventory at the rate of about Rs. 50 lakhs a year. Since this affects the liquid resources of the company, steps should be taken to review the stores inventories properly and effect possible economies. The second is the considerable increase in general labour cost due to very large increase in the number of personnel employed since 1954-55 although the level of sulphate production is more or less maintained at an even level near the rated capacity. There has been in particular a considerable increase in expenditure on welfare, colony and administration services. Though a good

portion of the expenditure on housing, medical, sanitary and educational facilities provided may be attributable to a Government undertaking having to fulfil its responsibility as a model employer, it still leaves unjustified the scale of increases in the matter of colony and welfare etc., and the increased cost on account of a general bonus or *ad hoc* payment to labour which are considered in detail later.

11.5. We have, however, taken account of such factors as are beyond the control of Sindri, such as cost of raw materials and freight. The company has also explained some of the drop in 'norms' of performance as due to poor quality of raw materials like coal and gypsum. We have recommended that the Coal Controller should take steps to keep the plant in steady supply with suitable grades of coking coal. We have also suggested that industries consuming gypsum should be classified with regard to the calcium sulphate content required and that steps should be taken to ensure that the fertiliser industry is supplied with the right type of gypsum. Apart from this, there is no justification at all for falling off in production efficiency and we have, therefore, set the target of production for the price period on the basis of the output achieved with ordinary norms. This may involve some cut in profit if efficiency falls. Both for stepping up the performance of the company in future by increasing its efficiency as well as in the interest of the consumer, this cut is justified on business considerations applicable to any production unit in the public or private sector.

Costing

12.1. The company maintains a system of cost accounting which is related to and co-ordinated with the financial accounts. Though from the beginning monthly data relating to costs of production of ammonium sulphate have been kept, the fixation of retention prices of Sindri has from the beginning been done, as stated in paragraph 10.3, purely on *ad hoc* considerations and after discussions amongst the parties concerned, namely, Sindri, the administrative Ministry of the Union Government (the Ministry of Production or the Ministry of Commerce and Industry), the Ministry of Food and Agriculture (who administers the Fertilizer Pool) and the Ministry of Finance. *Ad hoc* increases have been allowed from time to time on the basis of rise in cost of raw material, freight, etc., without any detailed evaluation, the last increase raising the retention price from Rs. 280 to Rs. 290 having been allowed for one year with effect from 1st April 1958, as against the increase from Rs. 25 to Rs. 40 per ton asked for by the company in its letter of 15th February, 1958. Our present inquiry is therefore the first attempt by an outside agency to correlate a fair retention price with the actual cost of production of Sindri.

12.2. The question of introducing standard costing was considered by Sindri but not implemented on the ground that cost control of consumption factors was difficult on account of the principal raw materials like gypsum and coke not conforming to standard specifications. It was explained that variations shown in the efficiency charts from time to time are sometimes distorted due to instrument errors. Variations in

consumption of a variety of chemicals and stores have also been explained as not capable of being strictly regulated by norms. This was stated to be difficult particularly in regard to consumption on spare parts in each plant where replacements are due to wear and tear, corrosion and other unpredictable factors. The company, therefore, stated that the only worthwhile control that the management can exercise is by way of comparing the performance of various sections of the plant from month to month making due allowance for any special factors and by the counterchecking of cost statements maintained on the basis of efficiency and performance by its internal efficiency department. This, in our view, is not proper cost control. It is now recognised that financial control is a basic instrument of control by management. This can be exercised only with a good system of accounts. The main "management accounting function", however, is not a mere classification of financial transactions and compilation of accounts, but a systematic calculation and organisation of costs and related data for the management's use, so as to correct inefficiencies or improve performance. In a plant which is highly mechanised, whose process of manufacture is systematic and uniform, where plant performance specifications have been prescribed by the manufacturers, and where efficiency depends on output and economy in consumption of raw materials, fuel, etc., it is essential that standards or norms should be set for proper process costing at each stage. The management should not merely try to remove slackness and inefficiency in different sections of the plant at the end of a month or other convenient period, but should continuously keep an eye on the operational efficiency of each section while the cost accountant should furnish all necessary cost data and process data for the purpose. For the facility of company management in India, the management accounting team of the Institute of Chartered Accountants had visited the U.S.A. under the sponsorship of the Ford Foundation, and made a study of the approach to this subject. We understand that implementation of their suggestions is under consideration by Government. A company like Sindri should be one of the first to which the results of such a study should be applied as we feel that it will yield large economies which only efficient internal control by a cost conscious management can bring about.

Cost of production during 1958-59

13.1. Our Cost Accounts Officer has examined the data relating to costs for 1958-59 and has worked out the fair ex-works cost of ammonium sulphate produced by Sindri during that year. For this purpose each process department has been treated as a separate cost centre and the aggregate works cost of production (exclusive of depreciation, etc.) has been computed. Before tabulating under group heads the process costs of production have been worked out for each raw material and stage of production, so that the incidence on raw materials, labour and establishment, repairs and consumable stores, maintenance services which are common and overheads is duly computed. The Report of the Cost Accounts Officer is forwarded as a confidential enclosure. The following statement contains the break-up of the

works cost of production of ammonium sulphate during 1958-59 on an output of 330,122 tons

		Rs. per ton
1. *Raw materials including packing materials*		
(*a*) Coal	22.00	
(*b*) Gypsum	72.19	
(*c*) Bags	12.34	
Total Raw materials		106.53
2. *Power and Fuel*		
(*a*) Steam	16.25	
(*b*) Electricity	17.60	
(*c*) Others	2.02	35.87
3. Labour and Establishment		12.27
4. Consumable stores		3.90
5. Repairs and stores		6.20
6. Maintenance service		5.41
7. Overheads		25.84
8. Total		196.06
9. *Less* credit		21.39
10. Net Total		174.67
11. Depreciation on written down value basis		48.63
12. Works cost of production		223.30

13.2 The following is an analysis of the several items of expenditure referred to above :—

13.2.1. *Coal.*—The consumption of coal per ton of coke produced was 1·38 tons as against standard specification of 1·34 tons. The higher consumption has been attributed to the inferior grades of coal allotted to the company. The resultant price of coke was Rs. 36·82 per ton without depreciation and profit. When these two elements are added the cost of production becomes higher than the control price of coke, in other words, Sindri could not secure the economy which was expected from having its own coke oven plant.

13.2.2. *Gypsum.*—Consumption of gypsum per ton of ammonium sulphate amounted to 1·69 tons against C.C.C's. specification of 1·64 tons. The company has urged that the higher consumption was due to the use of gypsum of about 82/84 per cent purity against 93/94 per cent purity assumed by the suppliers of machinery. The higher consumption of gypsum was also reflected in the higher consumption of ammonia gas 0·29 ton against the suppliers' specification of 0·274 ton per ton of ammonium sulphate

13.2.3. *Depreciation.*—In the table given in paragraph 13.1., depreciation has been calculated on the written down value of the block as on 1st April 1958, at normal income-tax rates together with second shift allowance where admissible. The company has, however, adopted the straightline method of depreciation in its accounts (*vide* paragraph 4.4) and according to this method, the amount of depreciation worked out during 1958-59 to a higher figure of Rs. 58·11. The question as to what method of depreciation should be adopted for estimating the retention prices is discussed further in paragraph 14.3.

Overheads and depreciation

14.1. Before discussing the details of our estimates of future costs, it would be useful to examine two items which have appreciable effect on costs. These are 'overheads' and 'depreciation'. They are dealt with in the following paragraphs :—

14.2. *Overheads*—

14.2.1. Sindri has developed a very extensive and well laid out colony with a network of asphalted roads and has laid down water, electricity services and modern conveniences for a big staff colony. Over 80 per cent of the permanent monthly rated staff has been properly housed and we were informed that the policy was to provide accommodation for up to 80 per cent of the permanent daily rated staff as well, a large percentage of whom has already been provided with some kind of roofed accommodation as available. Naturally, in implementing such a big housing programme, which is on a scale not usually carried out by employers in the private sector, Sindri, as a Government company, has doubtless been trying to set up a standard for labour housing and welfare. The township has been provided with a large 100 bed hospital providing surgical and medical treatment on a comprehensive scale and equipped with up-to-date appliances. Besides a number of primary schools, there are two high schools providing education up to the S.S.L.C. and also fully catering for the education of girls. Staff amenities provided include a subsidised air-conditioned canteen, an officers' club, a kalyan kendra for employees, markets, playgrounds and patches of garden on a generous scale for all types of houses. All this accounts for a very heavy capital expenditure on the colony for which at present no separate capital or revenue accounts are being maintained. On a rough computation, in a gross block (undepreciated) of over Rs. 4,000 lakhs including the new expansion plant, the capital expenditure on colony and auxiliary services will account for about one-eighth of the expenditure. The net expenditure on colony and welfare services after providing for recoveries totalling Rs. 15·3 lakhs in the shape of rent for houses, water charges, income of subsidised canteens, etc., and education fees (primary education is free and hospital treatment is free including free diet for employees drawing below Rs. 150 per mensem) amounts to Rs. 32·3 lakhs a year. Of these, over Rs. 9 lakhs a year on hospital *i.e.* medical attendance is provided and the scale of expenditure, we understand, is much in excess of the employer's liability under the Employee's State Insurance Scheme. The expenditure for the township less an equivalent amount of about Rs. 12

lakhs recovered as rent, etc., amounts to a net Rs. 11:4 lakhs a year. Both the yearly depreciation on the capital cost of township as well as the recurring expenditure on staff for maintenance services of the colony aggregate to a substantial amount which could be placed at about Rs. 15 per ton of ammonium sulphate. The social cost if the incidence of profit is also distributed between the factory and the colony will be higher by Rs. 10 at least. It will be desirable if Sindri maintains separate accounts of its colony expenditure so that the full implications of these social cost on the company's annual output will be known.

14.2.2. Further, the expansion plant has just had its trial runs and can at best work at an initially low level of production for 3 to 4 months during the current year. For the production of ammonium sulphate, the normal direct costs would in no way be affected by the level of efficiency of new units for producing the new fertilizers. But to the extent that there are common services, for example, power, water, common maintenance services, overheads like administration, colony, etc., and depreciation, the common overheads expenditure will have to be rateably borne by ammonium sulphate as well as the other fertilizers. The latter cannot strictly be regarded as by-products of sulphate having regard to the size of the output and the separate process of manufacture. As the price of nitrogenous fertilizers is linked to the nitrogen content of the fertilizer we have assumed that the price, that can be realised for double salt which contains 25 to 26 per cent nitrogen and urea which contains 45 to 46 per cent nitrogen, will be more or less proportionately higher per ton than the price of ammonium sulphate which contains 20 to 21 per cent nitrogen. This, we understand, is the usual market practice and is also a technically fair basis. To the extent that these fertilizers are new, they may have initially to be priced proportionately lower to command a market. As far as the output of the new plant is concerned, the figures mentioned are target figures which can only be reached gradually. We had asked the representatives of Sindri to give us their estimates of production of urea and double salt in the next three years. In the light of this information we have assumed a rate of efficiency of 40, 60 and 90 per cent for the years 1959-60, 1960-61 and 1961-62. For the first year, as the period for working is only 3 to 4 months of the year, the effect would be as if the output level was only 10 per cent. On the above computation the average production of the new fertilizers for three years may be estimated at 60 per cent of the target of 600 tons equated ammonium sulphate at 90 per cent efficiency. For ammonium sulphate we have in view of the fall in production this year due to factors beyond the control of Sindri computed the production at 3,00,000 tons for 1959-60 and 3,30,000 tons for the next two years. The production of the new fertilizers spread over the three year period and equated in terms of ammonium sulphate will be roughly in the ratio of 25 : 75 per cent for the other fertilizers and ammonium sulphate. We have, therefore, decided to allocate overheads, depreciation and other common expenditure to be shared on the basis of this ratio and made the necessary reduction from the price of ammonium sulphate in the expectation that the performance of the expansion plant would not fall below this level.

14.3. *Depreciation—*

14.3.1. The element of depreciation to be allowed in the cost of ammonium sulphate produced at Sindri has raised a problem. As explained in paragraph 4.4, the company has from the start been following the straightline depreciation method and its financial accounts up to the end of 1958-59 show an aggregate provision for depreciation of Rs. 1,270·64 lakhs. The Commission has in the past normally allowed depreciation under the diminishing balance method limited to normal and second shift allowances, where necessary. On this basis a short-fall in the actual depreciation provision made by the company is computed to be of the order of Rs. 230 lakhs though it has other reserves.

14.3.2. In any approach to the question of depreciation as an element of cost, we take note of the fact that a departure is being made for the first time in the Companies Act (Amendment) Bill, 1959 now before Parliament, making the provision of depreciation a statutory obligation before any dividend can be paid. Whatever the method of depreciation a company may follow for its financial accounts it will have to by and large adhere to it and make provision on the adopted basis regularly in its financial accounts. For purposes of claiming fiscal relief, the income-tax law provides only for the diminishing balance method but does not insist on the actual provision in the financial accounts as a prior condition. For purposes of costing, however, it will be necessary that this should be done particularly in the context of depreciation becoming a legal obligation.

14.3.3. The company represented that for purposes of costing it should be allowed to continue the same basis of depreciation as it has adopted for the purpose of financial accounts and pleaded that any switch over at this stage would upset its financial planning and dividend policy. While for costing purposes this does not appear to be a valid argument in itself for adopting the method followed by the company, we have considered the merits of the case having regard to the needs of an industrial unit like Sindri as well as the need to keep a flexible and dynamic approach on the question of depreciation as a problem of industry.

14.3.4. In view of the advantages of uniformity and certainty in the quantum of depreciation to be provided and the facility it offers for proper budgetary forecasting and cost control the straightline method is preferred by some large-sized capital intensive industrial units. With the emergence of more large sized units in the public sector the scope for extension of this method of providing depreciation would grow. Sindri is a unit in the public sector and it appears to us probable that few units in the fertilizer industry are likely to come up in future outside the public sector. In the light of conditions that are likely to prevail with a large and growing unsatisfied demand for fertilizers and the continuance of the Fertilizer Pool for an indefinite duration it would seem that the fixing of fair prices for fertilizers is likely to be a long term requirement. A method of depreciation which, as stated before,

offers all the facilities of budgetary forecasting and cost control, also extends the same advantages in the matter of maintaining price stability. This is achieved by distributing a uniform burden on the average output over the price period. Such stability is essential on the one hand in regard to profitable working of a highly capital intensive industry and on the other is essential for affording for a proper stimulus to the agriculturist who uses fertilizer which is a raw material for stepping up production. In the case of Sindri a switch-over from the straightline to the diminishing balance method would not be possible at this stage even if we gave our approval to the latter for purposes of costing. The company having chosen the straightline method for depreciation will have to continue to keep to that system and provide during the price period a higher quantum at Rs. 213 lakhs (gross) per year as against the average contribution at Rs. 145 lakhs (gross) which would be the figure under the diminishing balance method in order that its objective of fully recouping the original cost of the assets within the period of their economic life can be achieved. If the provision of depreciation as an element of cost is admitted only on the basis of the diminishing balance method the result will be that the difference between this allowance and the actual provision during the price period will have to be met to the extent of Rs. 203 lakhs by making inroads into profit, which in other words, would mean that the return on capital allowed by us would, to that extent, be curtailed. This would indeed prove difficult for the company.

14.3.5. Apart from providing depreciation there should be throughout the economic life of the plant adequate provision for maintenance and repairs on the basis of actual costs incurred under this head. Sindri has set aside a separate provision for maintenance and repairs at the rate of 5 per cent per annum less actual expenses incurred. The balance under this head at the end of 1958-59 was Rs. 255 lakhs. However, for the present price period we have allowed only the actual cost on the basis of repairs in previous years which aggregated to only about 2½ per cent. In the next three years the quantum of repairs and maintenance expenditure is likely to be much higher and will progressively rise in succeeding periods. Therefore, this provision may turn out to be inadequate if the lower element of depreciation under the diminishing balance method were allowed. This would impose a further burden on the company.

14.3.6. The straightline method as we have pointed out is a method which offers several advantages for cost control as well as for maintaining stable prices for an essential product like the fertilizer. After careful consideration of the various aspects of this issue we have decided, in the interests of the producer company and the agriculturist alike, to accede to the company's request to admit the element of depreciation in future estimates of cost on the basis of the straightline method adopted by the company.

14.3.7. Incidentally we observe that though the company follows the straightline method of depreciation, it does not maintain proper history sheets of plant and machinery which would show, in particular,

the date of purchase, cost, period of working, depreciation provided, etc. Such a record is essential to obviate excessive claims for depreciation. We recommend, therefore, that Sindri should take immediate steps to compile a proper plant register and to maintain it regularly.

Application of norms for future prices

15. In the light of efficiency charts maintained by Sindri which have been shown to us we have considered it necessary to make some readjustments when projecting the price for the future years, having regard to 'norms' of performance which could be expected from a plant of this type. This is as contemplated in the reference to us. Thus the average consumption of coal per ton of coke was taken at 1·34 which is a proper norm as against the figure of 1·38 to which in recent months the plant has been working. The average net consumption of coke per ton of sulphate ranged between 0·408 to 0·527. The plant has also shown in the past a consumption even below 0·450 over a period. We have adopted an average of 0·471. As the average consumption of gypsum per ton of sulphate has ranged between 1·45 to 1·84 we have adopted the C.C.C.'s specification of 1.64. We have deemed it fair to accept the specifications for the coke oven plant for its capacity and coal utilisation. For higher consumption of coal in the production of coke and of coke for gasification and of ammonia for sulphate, Sindri has explained that the poor quality of the raw materials is responsible for higher consumption or relatively lower output as the case may be. It has also suggested that instrumentation defects had contributed to distortion of consumption figures. We have, however, thought it fit to make suitable adjustments for moderating future prices based on consumption norms fixed by the designers and manufacturers because we are not satisfied with the reasons given for not laying down or working to standard costs. We cannot accept the contention in the case of a plant which has been working at near-full level of production for a period of four years, that *normal* production in the *normal* conditions which is a pre-requisite for laying down performance standards has not yet been reached. We have, however, advisedly kept in view in making these adjustments the standard specifications set by the designers of the plant as well as the best performance of the plant in particular sections over considerable periods. The management assured us that it would surely maintain the level of plant efficiency and output if raw materials of required quality are made available to them. We agree that any hardship caused by lack of supply of good grade raw materials, *e.g.* coal, should be removed. In respect of the year 1959-60, since production has already fallen we have assumed an output of 300,000 tons only as against 330,000 tons each for 1960-61 and 1961-62.

Future costs

16.1. Based on the actuals worked out by our Cost Accounts Officer and with due regard to the considerations urged in paragraphs 14 and 15, we have made the following estimate for future cost of production of ammounium sulphate at Sindri.

Average production in Tons per annum	320,000 Rs. per ton
1. *Raw materials*—	
(*a*) Coal	22.00
(*b*) Gypsum	72.73
(*c*) Bags	12.34
2. *Power and Fuel* —	
(*a*) Steam	15.45
(*b*) Electricity	15.74
(*c*) Others	1.94
3. Labour and Establishment	12.97
4. Consumable Stores	4.29
5. Repairs and Maintenance	6.91
6. Miscellaneous services	5.87
7. Overheads	22.57
8. Total	192.81
9. *Less* Recoveries and credits	29.11
10. Net total cost without depreciation	163.70
11. Margin for contingencies at 5% on item 10	8.18
12. Depreciation on straight line method	60.22
Net works cost	232.10

16.2. In constructing the above estimate, the following factors have been taken into account.

16.2.1. *Labour and establishment* :

16.2.1.1. The total strength of supervisory establishment and labour including monthly rated, daily rated and casual labour and their cost for the years 1954-55, 1957-58 and 1958-59 are given below :—

	1954-55		1957-58		1958-59	
	Staff as on 31-3-55	Amount paid in lakhs	Staff as on 31-3-58	Amount paid in lakhs	Staff as on 31-3-59	Amount paid in lakhs
	Nos.	Rs.	Nos.	Rs.	Nos.	Rs.
Factory	5065	81.26	6092	109.68	6083	117.44
Administration	592	12.92	742	15.73	763	18.16
Town and Welfare	1295	13.29	1527	19.56	1669	19.26
Expansion plants	..	..	299	7.74	1161	19.74
Grand Total	6952	107.47	8660	152.71	9676	174.60

There was during 1958-59 an overall increase of 12 per cent in establishment strength over the 1957-58 level and 40 per cent over the 1954-55 level. Since 1956-57 when work on the expansion schemes commenced there has been a steady increase in the labour force from year to year. At present the staff for the new expansion plant stands at 1161 in a total of 9676 and the expenditure at Rs. 19·74 lakhs against an overall figure of Rs. 174·6 lakhs. For a highly technical chemical factory, the overall labour strength should be considered very high. Despite this view which was shared by the factory management in the course of discussion there has been no effective curb on the growth of establishments. In a highly mechanised plant a limited increase in the size of the technical supervisory and operating staff as well as technical employees would not be a matter for serious concern as much as the expansion of non-technical establishment. Some of the large changes in the deployment of labour in different departments have been noticed as due to re-adjustments arising from organisation of a common materials handling department and to decasualisation of labour. Even so, the net increase in staff for materials handling, common mechanical and electrical maintenance services, administration including accounts and stores and above all in town welfare services is on the high side. With the growing use of mechanical and labour saving devices the staff for general administration services could be brought down if a lot of red tape and rigid secretariat practices are eschewed. As for the possibility of overstaffing, since we have neither had time nor the facility to properly assess it, we recommend that in the interest of overall economy in the working of the factory, a proper time study should be made to determine the fair strength for continuous operation of the plant, and eschewing all factors affecting efficiency such as the conventional pyramidical set up of labour for assisting each skilled worker, or organisational defaults in administrative procedures which are out of place in a highly mechanised factory and opposed to business methods. For projecting the cost of sulphate in the future we have assumed a fair allocation of labour cost as between the production of ammonium sulphate at established targets and production of other types of fertilizers at fair estimated levels of plant performance, and on a *pro-rata* basis in respect of indirect labour cost on common maintenance and other service departments as well as on general administration, colony and welfare.

16.2.1.2. We understand that the staff and labour have already been allowed interim increases in two instalments of Rs. 5 each towards dearness allowance and this has been included in wage costs for 1958-59. Though there is no regular system of annual bonus to the workers and the introduction of a proper system of incentive bonus in cases where such incentive would really step up outturn has not yet come into being, the company has been paying Rs. 16 lakhs per year in the last few years as *ad hoc* payment to labour. In the case of a capital intensive industry like the production of fertilizers and for a fairly automatic chemical plant the scope for incentive bonus is itself limited. We consider that in the case of a government company where conditions of service, particularly those relating to wages and related matters, are

equal to the best that is afforded to workers in departmental government undertaking the payment of an *ad hoc* bonus to workers as distinguished from incentive bonuses as a regular method of augmenting wages is not justified.

16.2.3. *Recoveries and credits.*—In regard to the coke oven plant The expenditure under this head has been growing from year to year even after the plant has reached the full level of production. For the future we have taken into account an increase of 10% over the level of expenditure in 1958-59 to take care of price increase as well as greater consumption on account of the aging of the plant.

16.2.3. *Recoveries and credits.*—In regard to the coke oven plant by-products a net credit of Rs. 39·6 lakhs based on actuals was adopted for 1958-59. At present about 40 per cent of the fuel gas which does not go into by-product production is consumed for heating the coke ovens and a part of the balance is used for under-firing the boilers. When the entire coke oven gas is used in the production of ammonia for urea and double salt and the by-products plant work nearer to full capacity, the total credits due to the ammonium sulphate plant on those accounts will have to be pitched at a higher figure. This has been done in estimating future costs with suitable adjustments. Coke fines are also usable in the boiler house which is designed to take 30 per cent of the total charge in the form of coke fines and these are charged at thermal value like coal and not at low statutory price for breeze. For surplus coke also a suitable credit is taken. The sulphate plant by the disposal of its calcium carbonate (chalk) to the adjoining A.C.C. factory gets a credit of Rs. 9 per ton as sludge. In costing for the price period no increased credits other than on gas and sale of ammonia to certain standing consumers have been assumed. The latter credits for a full year will be higher than in 1958-59. This would still leave a margin to the company on account of higher recoveries in future which will arise from fuller exploitation of by-products.

16.2.4. *Contingencies.*—The allowance for contingency should include provisions for possible increases in the costs of raw materials and stores as well as in salaries and wages. Taking into consideration these factors and as we are not accepting the company's request for escalation we have provided a contingency allowance of 5 per cent on works costs exclusive of depreciation.

Development reserve

17. The company has asked for an additional reserve for cost of replacement which is likely to be heavy in the future and also putting it in funds (as it had ample in the past), so that it could have internal resources for meeting future expansion needs. We do not see any special necessity to provide for it other than what is allowed already as a fiscal concession to the company. After proper provision for depreciation has

been made, the appropriation for this must come only from the profit margin and not from the price as a cost element.

Return on capital

18.1. The company has asked for provision of a dividend of not less than 5 per cent on Government capital which is only slightly in excess of the interest paid to Government on the secured loans. In comparison, the return allowed on the investment in a commercial undertaking of Government which has not assumed the company form, as for instance the Railways or P. & T. would represent nothing higher than the fair contribution to the general revenue of 1 to 1½ per cent in excess of the bank rate or average rate of Government borrowing. Being a Government company, Sindri will have to pay taxes on the distribution of the dividends and gross up the dividend of 5 per cent to a higher figure of 9·1 per cent before taxation to give the requisite dividend to Government. Government-owned enterprises cannot ordinarily consistently with the objective of keeping low the cost of production, give a net margin of profit much in excess of the interest on capital at charge.

18.2. As we have stated earlier the policy relating to Government companies seems to be that in any competitive field where they function along with companies in the private sector, they should neither have any special privileges nor be subject any disabilities. For legal and fiscal measures they are treated alike. In the matter of costing their output and affording a fair return on capital also, we consider there should be uniformity of treatment. We have in recent inquiries allowed a return on employed capital in preference to a return on block and interest on working capital. In the case of high capital cost industries where the proportion of paid up capital is low in relation to capital block, the latter method is apt to give more advantage—even if the rate is scaled down below that for the capital employed method. In the case of the steel industry we have allowed a return of 8 per cent on block. In the case of cement 12 per cent on employed capital has been allowed for low cost units and 10 per cent and 8 per cent for high cost units. In the case of paper and sugar which are chemical industries where the plant is liable to rapid corrosion a rate of 12 per cent on employed capital has been considered as adequate even to provide incentives for building up reserves for rehabilitation. As a producer of an essential raw material for agricultural development we consider that a fertilizer factory should by and large receive a lower return on capital. With a high cost block built up to a large extent out of cheap borrowed capital (as Government loans were obtained at low rates), the return on block will in the case of a concern like Sindri spell a high dividend on share capital investment. Even a rate of 8 per cent on block will be excessive in the circumstances. Instead of 12 per cent allowed for low cost cement units a rate of 10 per cent will moderate the incidence of cost to the agriculturist who is the ultimate consumer of sulphate. On this basis the per ton incidence will be Rs. 56·42 for 1958-59 and Rs. 49·96 for the future. For this purpose the element of working capital has been assessed as equivalent to four months' cost of production.

19.1. *Price for* 1958-59.—We have stated in paragraph 13 that the net works cost of ammonium sulphate manufactured by Sindri during 1958-59 as calculated by our Cost Accounts Officer amounted to Rs. 223·30 per ton if depreciation was allowed on the written down value method. On the basis of depreciation on the straight line method the net works cost came to Rs. 232·78 per ton. Return of 10 per cent on capital employed referred to in paragraph 18 comes to Rs. 56·42 per ton and when this is added to the net works cost of Rs. 232·78 per ton, the fair ex-works price or the retention price for 1958-59 works out to Rs. 289·20 per ton or Rs. 290 per ton in round figures. The retention price allowed by Government was also Rs. 290 per ton.

Fair ex-works price or retention price

19.2. *Price for the future* :

19.2.1. It will be seen from paragraph 16.1 that the net works cost for the future amounted to Rs. 232·10 per ton. Adding Rs. 49·96 being the return on capital employed at 10 per cent, the fair ex-works price or the retention price comes to Rs. 282·06 per ton or say Rs. 282 per ton. We recommend, therefore, that the retention price payable to Sindri from the Fertilizer Pool should be Rs. 282 per ton. It is exclusive of local taxes, if any. We also recommend that this price should hold good from 1st April 1959 to 31st March 1962.

19.2.2. It is observed that the pool selling price is at present about Rs. 70 per ton higher than the retention price for Sindri and although the Pool is intended to be worked on 'no profit, no loss' basis, the operation of the Pool has, by and large, been profitable and the total net profit at the end of 1956-57 amounted to Rs. 137 lakhs. The State Governments have also been permitted to add Rs. 30 per ton to the pool selling price for meeting their handling costs, etc. We are informed that this amount was fixed some years ago when there was large accumulation of stocks at Sindri and the demand was not as large as it is now. We have recommended a lower return for Sindri with a view to cheapening its fertilizers, but the obligation of making fertilizers cheaper does not rest with producers alone. It has not been possible for us to examine how far the existing margin between the pool selling prices and the retention price for Sindri or the margin allowed to State Governments is justified. But we have no doubt that where economy and sacrifice are called for, they should be enforced right through the stages of intermediaries for handling, procurement and distribution of fertilizers, so that the objective of keeping the ultimate price to the consumer as low as possible is achieved. We recommend that the Ministry of Food and Agriculture should, in concert with State Governments, take urgent steps in this behalf.

20. In referring this case to us for investigation a statement has been made that "the determination of the fair retention price should take into account the estimated cost of production having regard to 'norms' of performance which could be expected from a plant of this type and the cost of imported fertilizers." In estimating the future cost

Comparison with import prices

of production we have made necessary adjustments where actual performance fell short of the ratings of suppliers owing to circumstances *not* beyond the control of Sindri. As regards imports, it may be stated that because of lack of indigenous production, fertilizer imports have been quite heavy in the past. We have looked into the price of fertilizers as they have been imported on Government account details of which have been given to us by the Ministry of Food and Agriculture. The average prices of imports of fertilizers from different countries even on the pool account have not been uniform during the last four years and have varied from year to year. A Statement showing the details is appended to this Report (Appendix III). The average import prices for ammonium sulphate from the principal sources of supply as on Government account have fluctuated as follows :—

	1956-57	1957-58	1958-59	1959-60 (April-July)
	Rs.	Rs.	Rs.	Rs.
Italy	252 FOB	302 C& F	247 C&F	202 C&F
Canada	..	186 FOB	..	209 FAS
Japan	..	..	252 C&F	229 C&F
U.S.A.	230 FOB	186 FOB	..	..
Germany (West)	..	307 C&F	..	202 C&F
Germany (East)	243 FOB	228 FOB	213 FOB	210 FOB
U.S.S.R.	..	219 CIF	..	205 CIF

Taking one big exporting country, Japan, we are informed that the retail or consumer price in that country was Rs. 300, Rs. 296 and Rs. 186 per ton for 1956, 1957 and 1958 respectively while manufacturers' or ex-factory prices were generally lower by about Rs. 20 per ton. Export price (f.o.b.) varied for different years and for 1958 it fluctuated between Rs. 231 and Rs. 285 per ton while despatches during December 1958 to India were at about Rs. 247·62 per ton C. I. F. We have not been able to obtain representative prices of ammonium sulphate produced in other countries, but from the statistics of fertilizer prices contained in the publication of Fertilizers' Association, namely 'Fertilizer Statistics of India, 1958'—(Pages 86-87), it is seen that in September 1958, the wholesale price of ammonium sulphate was Rs. 207·92 per ton in West Germany; in December 1958 it was Rs. 168·97 per ton in the U.S.A., and Rs. 150·97 per ton in the U.K. after allowing for a subsidy of Rs. 134 per long ton. On the ex-works cost basis, the Sindri output compares favourably with the domestic price of producers in the U.K. and Japan as well as with the average import prices for other sources of supply except U.S.S.R. in 1959 and U.S.A. The reason for the fall in prices of sulphate in those two countries is not apparent as a continuing trend, as freight fluctuations cannot

wholly explain the variation. It may be conjectured as due to a subsidy element in the price as is the position in U.K. or to diversification of production of new fertilizers, rendering it possible to bring down the price of ammonium sulphate in the event of its being found surplus to domestic needs or the low pricing being due to its manufacture as a by-product. The representative of the Ministry of Food and Agriculture informed us that last year the entire quantity of ammonium sulphate was imported from Japan at a low price of Rs. 229 per ton. This year the competition of West European countries has brought prices down to Rs. 202 per ton. As monopoly purchasers with special facilities for foreign exchange made available to them and being able to get the T.C.M. aid and goodwill of supplying countries, the 'Fertilizer Pool' cannot ask that the import price paid by them be regarded as a truly representative market price. Whatever be the position, there is at present no import duty on fertilizers and if the usual revenue duty for residual items of the tariff is levied, the retention price of Rs. 282 per ton for ammonium sulphate will be lower than the c.i.f. price *cum* duty of sulphate obtained from the cheaper sources of supply mentioned. The point has therefore been discussed not so much as a relevant consideration for fixing the quantum of Sindri price for the future, but because due to fluctuations in world prices, import prices in certain instances may be found to compare more favourably than Sindri prices, while the company may rightly claim, as it has done, that it was not allowed the benefit of charging the equivalent of import prices even without advantage of a duty differential in the past and had been allowed a lower price by the pool. We, therefore, do not consider that the possibility of cheaper imports should be taken into account, at this stage, for determining the retention price of Sindri Fertilizers which has to be done *sui generis* having regard to a fair return for a growing indigenous industry.

21. Our conclusions and recommendations are summarised below :—

Summary of conclusions and recommendations

1. Government should ask the Coal Controller to take immediate steps to make available to Sindri Fertilizers & Chemicals Ltd., such grades of coal as would enable it to obtain the right blend for its coke production, regularly and in adequate quantities from nearby collieries.

[Paragraph 9.1]

2. In the wider interests of the country's economy the question regarding reduction of freight on gypsum despatched to Sindri as a raw material for production of fertilizers should be vigorously pursued by Sindri Fertilizers & Chemicals Ltd., with the Ministry of Railways.

[Paragraph 9.2]

3. It is essential that standards or norms should be set for proper process costing at each stage, and Sindri should adopt a suitable system of management accounting.

[Paragraph 11.2]

4. Sindri should take immediate steps to compile a proper plant register and to maintain it regularly.

[Paragraph 14.3.7]

5. In the interest of overall economy in the working of the factory, a proper time study should be made to determine the fair strength of staff for continuous operation of the plant.

[Paragraph 16.2.1.1]

6. The retention price payable to Sindri from the Fertilizer Pool for the future should be Rs. 282 per ton. It is exclusive of local taxes, if any. This price should hold good from 1st April 1959 to 31st March 1962.

[Paragraph 19.2.1]

7. The Ministry of Food and Agriculture should, in concert with State Governments, take urgent steps to enforce economy and sacrifice where they are called for, right through the stages of intermediaries for handling, procurement and distribution of fertilizers, so that the objective of keeping the ultimate price to the consumer as low as possible is achieved.

[Paragraph 19.2.2]

Acknowledgments 22. We wish to convey our thanks to the representatives of Sindri Fertilizers and Chemicals Ltd., who furnished us with detailed information and gave evidence before us in connection with this inquiry.

K. R. P. AIYANGAR,
Chairman.

S. K. MURANJAN,
Member.

J. N. DUTTA,
Member.

R. S. BHATT,
Member.

RAMA VARMA,
Secretary.

BOMBAY;
Dated 19th December, 1959.

APPENDIX I

(*Vide* paragraph 1)

GOVERNMENT OF INDIA

MINISTRY OF COMMERCE AND INDUSTRY

No. Ferts. 1(15/(58.

New Delhi, the 16*th March*, 1959. / 25th Phalguna, 1880.

FROM

Shri K. V. Venkatachalam,
Joint Secretary to the Government of India.

To

The Secretary,
Tariff Commission,
Central Government Office Building,
101, Queen's Road,
BOMBAY—1.

SUBJECT :—*Inquiry into the cost of production of Ammonium Sulphate at the Sindri Fertiliser Factory.*

SIR,

I am directed to say that Government desire that an inquiry should be undertaken into the production costs of ammonium sulphate at the Sindri Fertilizer Factory with a view to enable Government to determine a fair retention price to be allowed to the Sindri Fertilizers and Chemicals Private Ltd.

2. As you may be aware, the Fertilizer Factory at Sindri is managed by the Sindri Fertilizers and Chemicals Private Ltd. which is a Government Company of which all the shares are held by the President of India. The Factory went into production in October 1951 and ever since then the entire production of ammonium sulphate in the factory is being distributed through the Central Fertilizer Pool administered by the Ministry of Food and Agriculture. The object of the Pool is to ensure equitable distribution of the available supplies in the country at the minimum possible cost to the consumer and thus increase the use of fertilizers so vital for increased agricultural production. Almost the entire production of ammonium sulphate in the country is purchased by the Pool ; imports to bridge the gap between the demand and the indigenous production are also made on Government account and distributed through the Pool. The entire quantity of ammonium sulphate procured from the various sources at different prices is pooled to-gether and distributed to the ultimate cosumers at a uniform selling price which is arrived at on the basis of the average cost.

3. A statement showing the Pool price and the retention price for the ammonium sulphate produced at Sindri during the last few years is attached (Annexure I). It will be seen that during 1952 the Pool price ranged between Rs. 365/- and Rs. 380/- per ton f.o.r. despatching station and the retention price for Sindri ammonium sulphate was Rs. 350/- per ton. In the beginning of the year 1953, it was considered essential to reduce the Pool price substantially in order to step up the consumption of the fertilizer. Accordingly, the pool price was reduced to Rs. 290/- f.o.r. Sindri and the retention price of Sindri ammonium sulphate was reduced to Rs. 285/- per ton, Sindri being the largest supplier to the Pool. The price of imported ammonium sulphate at that time was Rs. 310/- per ton and the retention price allowed to the factory at Alwaye was Rs. 365/- per ton. In subsequent years the retention price of Sindri was gradually reduced further until in 1955 it was brought down to Rs. 270/- per ton. In the year 1956, the Sindri Company approached Government with a request for suitable increase in the retention price to enable them to discharge their current and future commitments. It was urged that an increase in the retention price was necessitated on account of a number of additional items of expenditure, such as return on the capital invested by the Government in the Company, the payment of an *ad-hoc* monetary award to the workers for the first time in 1956, increase in the price of coal consequent on the awared of the Collieries Tribunal, raising of the wages of some of the Sindri workers as a result of an Arbitrator's award, increased freight and terminal charges on coal, need to build up a Taxation Reserve to meet the first impact of income-tax due to be paid from 1960-61 onwards

and need to build up an adequate General Reserve to meet future contingencies and for further expansion. After considering all aspects of the question it was decided to raise the retention price to Rs. 280/- per ton with effect from the 15th January, 1957.

4. Early in 1958 the Sindri Company again approached Government for a further increase in the retention price on the ground that substantial increases had occurred in the annual expenditure of the Company owing to reasons beyond their control. A copy of the Company's letter No. Sectt. G.II (I)/Vol.II, dated the 15th February 1958 together with its enclosures setting out the case for increase, is attached. (Annexure II).

5. It will be seen that the present request for an increase in price is based on the fact that there has been increase in the incidence of a number of items owing to factors beyond the control of the Sindri Management, such as higher royalty levied by the Rajasthan Government on gypsum, increase in the freight charges on gypsum and coal, higher price on coal ex-collieries etc. In examining the case for a price increase, it was felt that there were a number of items whose costs were continuously going up and which could be attributed either to drop in efficiency or increase in the number of personnel and labour employed to an extent which may be considered more than actually necessary. After going over all these issues, it was generally felt that there was a case for some increase in price of the order of Rs. 20/- to Rs. 22/- per ton over the price fixed in January 1957, on account of the additional incidence on a number of known items. On the other hand, the prices of imported fertilizers have registered a sharp decline during the last two years. The price of ammonium sulphate purchased in 1957-58 averaged Rs. 253/- per ton c.i.f. landed and in 1958-59 Rs. 229/- per ton c.i.f. landed.

The question, however, came up whether the basic price over which the increase is now being sought on account of the higher incidence of expenditure had at any time been determined on the basis of fair costs. It should be explained in this connection that the fixation of the retention price of Sindri during all these years has been done purely on *ad hoc* considerations and after discussions amongst the parties concerned, namely the Sindri Company the Administrative Ministry of the Union Government, the Ministry of Food and Agriculture and the Ministry of Finance. There has been no serious attempt at any time to closely correlate a fair retention price with the actual cost of production at Sindri.

6. Government consider that, with the considerable expansion in the activities in the public sector, and with the possibilities of similar fertilizer units coming up in the private sector in future, a stage has been reached when the operation of industrial enterprises in the public sector through Government Companies set up under the Companies Act 1956 should be regulated on strictly commercial and business lines. It might be argued that, the Sindri Company being a fully Government-owned Company, Government is free to fix the retention price of the Factory's products taking into consideration all the relevant factors such as return on Government's investment, need for the Company to build up adequate reserves, need to make the fertilizer available to the ultimate consumer at as cheap a price as possible, subsidising the sale if necessary, etc. It is, however, felt that the determination of a fair retention price should take into account the estimated cost of production having regard to "norms" of performance which could be expected from a plant of this type and the cost of imported fertilizers.

7. In the circumstances, I am to request that the Tariff Commission may kindly be moved to undertake an inquiry into the production costs at the Sindri Fertilizer Factory under Section 12(d) of the Tariff Commission Act 1951 and furnish a report to Government as soon as possible which may, *inter alia* include specific recommendation in regard to a reasonable retention price to be allowed to the Company for its ammonium sulphate by the Central Fertilizer Pool.

8. A number of statements and publications which will provide background information about the working of the Sindri Company are enclosed together with a list thereof (Annexure III). Any additional information that the Commission may require may kindly be obtained direct from the Managing Director, Sindri Fertilizers and Chemicals Private Ltd., P.O. Sindri, Distt. Dhanbad, Bihar.

ANNEXURE I

Statement Showing the "Poolprice" and "Retention price" for the Ammonium Sulphate produced in Sindri

Rs. per Ton

Year	Retention price of Sindri		Pool price
1952			
	(i) till Sept. 1952 . . .	350	380 F.O.R. despatching station.
	(ii) from 1-10-1952 till end of 1952.	350	365 Do.
1953		285	290 F. O.R. Sindri.
1954			
	Equalised freight price from 19-1-54	275	315 F.O.R. railhead destinations. (The arrangement was to facilitate the availability of the fertilizer to cultivators at prices not exceeding Rs. 345/- per ton.)
1955		270	,, ,, ,,
1956		270	,, ,, ,,
1957			
	From 15-1-1957 onwards	280	Do.
	From 26-3-57 onwards	280	350 F.O.R. railhead destinations This will enable State Governments to distribute the fertilizer to cultivators at prices *not* exceeding Rs. 380/-per ton).

ANNEXURE II

Sindri Fertilizers and Chemicals Private Ltd.

Ref: No. Sectt. G-11(I)/Vol.II Dated, Sindri the 15th Feb.'58.

The Secretary to the Government of India,
Ministry of Commerce and Industry,
NEW DELHI.

DEAR SIR,

I have been directed by the Board of Directors of the S.F.C.P.L. to approach the Government for an increase in the retention price of ammonium sulphate now paid to the S.F. C.P.L. The present retention price is Rs. 280/- per ton and this became effective from the 15th January 1957. Attention is invited to correspondence resting with the late Production Ministry's telegram No. Fy.I.(1)/56 dated the 7th February 1957 in which this price, which was an increase over the then existing price of Rs. 270/- was sanctioned.

2. Subsequent to the fixation of the price at Rs. 280/- per ton, substantial increases in annual expenditure of S.F.C.P.L. have occurred due to reasons beyond their control. The purchase price of gypsum from the Bikaner Gypsums Ltd. has had to be increased from Rs. 5/14/- per ton to Rs. 7/8/- per ton with effect from October 1957 on account of increase in the royalty paid by B.G.L. to the Rajasthan Government and other inevitable increases in their cost. Similarly, increased royalty has become payable on gypsum mined in the Company's own mine at Kavas as a result of the amendment to the relevant mining rules. It is estimated that in a full year, on 5.6 lakh tons of gypsum the additional expenditure would be about Rs. 6 lakhs. There has been an increase of Rs. 1/8/- per ton in the basic price of coal with effect from 1st July 1957 and the annual increased expenditure on this account is estimated at Rs. 9 lakhs. The increase in the supplementary charges on railway freight from 6¼ per cent

to 12½ per cent, effective from July 1957, will cost Rs. 13 lakhs in additional freight on raw materials alone. The application of the Employees Provident Fund Act and the Employees State Insurance Scheme to the S.F.C.P.L. will impose an additional burden of about Rs. 2·4 lakhs in a year. In addition, as the Government are aware, an *ad hoc* payment of Rs. 16 lakhs has been made to the staff this year also. While the question of substituting this by some incentive payment scheme is under examination, it seems reasonable to assume that in one form or another amounts of this order will have to be disbursed year by year to the staff.

3. In addition to the increased expenditure referred to in the preceding paragraph, Central sales tax payable on raw materials, stores, etc. is anticipated to, cost Rs. 3.6 lakhs and the Wealth tax will account for another Rs. 7 lakhs. This year it has been assessed at Rs. 4.3 lakhs and is being paid; in future years it will increase some what and Rs. 7 lakhs would appear to be reasonable. It is also anticipated that greater advantage will have to be taken during the coming years of the arrangement with the State Bank by which they afford the Company a cash credit upto Rs. 3 crores and the additional interest payable on account of the greater with-drawals and also the increase in the bank rates is estimated at Rs. 10 lakhs per annum Finally in addition, expenditure on staff is likely to go up by at least Rs. 5 lakhs when the discussions which are now proceeding regarding the grant of interim relief are finalised.

4. All this anticipated expenditure specified in the preceding paragraphs will throw an additional burden of Rs. 72 lakhs per annum on S.F.C.P.L. This, on a production of 330,000 tons of ammonium sulphate per annum would mean an incidence of Rs. 22 per ton.

5 Further burdens are likely to be thrown upon the S.F.C.P.L. when the revision of the railway freight structure is finalised. It is not known whether the final freight rates would increase the existing expenditure on freight by 20 per cent or 25 per cent, but it is believed that an increase of this order would be imposed. If the increase is limited to 20 per cent an additional expenditure of Rs. 43 lakhs per annum would be incurred by S.F.C.P.L. whereas if the increase is 25 per cent the additional expenditure would be Rs. 54 lakhs per annum. In other words if the freight increases also take place, the total increased expenditure to S.F.C.P.L. including the items referred to in the preceding paragraph would be either Rs. 115 lakhs or Rs. 126 lakhs per annum, which would mean an incidence of Rs. 35 or Rs. 38 per ton respectively. All these figures have been set out in detail in the attached statement.

6. It will, therefore, be clear that if the present financial position of the Company is to remain unimpared, an increase in the price of ammonium sulphate is inevitable. Government will have noticed that the Company has declared a dividend of 5 per cent on its share capital for the year 1956-57 and has also paid interest at specified rates on the loans from Government. In addition they have been able to put aside Rs. 45 lakhs in reserves. The Board of Directors feel that it is necessary to maintain the finances of the Company at this level, including the provision for general reserves which in fact has enabled the Company uptil now to find nearly 4 crores for being ploughed back in expansion.

7. Another factor which will tend to further inflate the expenditure will be any further increase in the price of coal as a result of the deliberations of the committee considering this. As no indication is available of the probable trend of decisions on this matter, no figure can be put to the increased expenditure in which this will result. In the request for additional retention price made below this factor has not been allowed for ; further additions will, therefore, become necessary if the price of coal is further increased.

8. One consideration sought to be applied in dealing with the fixation of price of ammonium sulphate is the landed cost of the imported material. Apart from the fallacy which can be introduced in this argument by uncertainty regarding the elements which go to make up this landed cost, there would appear to be an inequality of treatment when appeal is made to the landed cost only in circumstances which would result in a depression of the internal price. As far as is known uptil now the landed cost of ammonium sulphate has been greatly in excess of the price given to Sindri; therefore fixing the retention price for Sindri without reference to the landed cost has in fact resulted in Sindri being unable to take advantage of the higher prices and building up its own reserves. It, therefore, seems manifestly incorrect to invoke this consideration when the result of doing so is likely to be adverse to Sindri.

9. In order to meet the additional expenditure falling on Sindri, I am directed to request that Government may be pleased to sanction an addition of Rs. 25 per ton on the retention price of ammonium sulphate paid to the S.F.C.P.L. on the understanding that should the revision of the freight structure referred to in para 5 becomes effective, the increase will be revised to Rs. 36 or Rs. 40 per ton respectively, and if coal prices are further increased, a further corresponding increase will be granted. I am to request that the most favourable

consideration may be given to this as early as possible as the Board of Directors feel that without immediate action to raise the price, the finances of the Company are likely to be placed in jeopardy very soon. I am further to request the orders of Government may be communicated to me at a very early date.

Yours faithfully,

FOR & ON BEHALF OF

SINDRI FERTILIZERS AND CHEMICALS (P) LTD.

Sd/- (V. Nilakantan)

Managing Director.

APPENDIX 'A'

Additional Burdens Thrown Upon the Finances of Sindri

(Since January 1957)

	Rs. in lakhs.	Rs. in lakhs.
RAW MATERIALS		
BASIC RATES.		
GYPSUM		
Increase in the purchase price of Bikaner Gypsum (3·36 lakhs) tons from 5-14-0 to 7-8-0 w.e.f. October 1957 & rise in Royalty for mined gypsum (2.24 lakhs tons) . . .	6.00	
COAL		
Increase in basic rate by 1-8-0 w.e.f. July 1957 on 6 lakh tons .	9.00	15.00
RAILWAY FREIGHT		
Increase in supplementary charges from 6¼% to 12½% from July 1957		
Gypsum (on average rates)	10·00	
Coal (on average rates)	3.00	13.00
LABOUR		
Increase in Company's contribution to Provident Fund due to application of Employee's P.F. Act. to SFCPL . . .	1·40	
Contribution to 'Employees' State Insurance Scheme . .	1·00	
Ad-hoc payment	16·00	18.40
TAXES		
Central Sales Tax		
Coal 1.50		
Stores 0.80		
Gypsum 0.30		
Packing materials 1.00	3.60	
Wealth Tax	7.00	10.60
INTEREST		
Interest on Cash Credit due to heavier drawal and rise in bank rate		10.00
TOTAL .		67.00
Anticipated burdens		
Increase in cost of labour due to application of interim relief of Rs. 5 in D.A.		5.00
TOTAL BURDEN .		72.00

APPENDIX 'B'

	Rs. in lakhs	Rs. in lakhs	Rs. in lakhs
Increase anticipated in Railway Freight as per Freight Rate Revision Committee's recommendations.			
(*a*) @ 20% *increase*			
Gypsum	36.00		
Coal	7.00	43.00	
(*b*) @ 25 % *increase*			
Gypsum	45.00		
Coal	9.00		54.00
Burden as per Appendix A		72.00	72.00
TOTAL BURDEN		115.00	126.00

Increase of 20% and 25% on railway freight rates has been calculated on current rates which include the 12½% supplementary charges.

APPENDIX 'C'

	Total (Rs. in lakhs)	Incidence per Ton Rs.
Additional burden at current rates	72·00	23·00
Taking into account 20% increase on current freight rates . .	115·00	35·00
Taking into account 25% increase on current freight rates . .	126·00	38·00

ANNEXURE III

List of Papers enclosed :

*1. A copy each of the Annual Reports of the Sindri Company for the years from 1952-53 to 1957-58.
2. Statement showing the increase in cost per ton of ammonium sulphate as between January 1957 and October 1958.
3. Statement giving an analysis of cost trends and surpluses.
4. Statement showing the increase in the basic rates of raw materials.
5. Statement showing the increase in railway freight on raw materials.
6. Statement giving an analysis of cost of labour.
7. Statement giving details of capital block debentures and interests.
8. Statement giving details of miscellaneous income and sale of subsidiary products.
9. Statement giving an analysis and reconciliation of cost and financial accounts.
10. Statement showing rough reconciliation of profit as per cost trends with financial accounts.
11. Statement showing figures of production of ammonium sulphate month by month from April, 1952 to December, 1958.
12. Statement showing consumption of gypsum per ton of sulphate of ammonia.
13. Statement showing consumption of ammonia per ton of sulphate.
14. Statement showing consumption of coke (net) per ton of sulphate.
15. Statement showing consumption of coke (gross) per ton of sulphate.
16. Statement showing consumption of fuel per ton of sulphate.
17. Statement showing the consumption of steam coal per ton of sulphate.
18. Statement giving expenditure on amenities to employees.

*Not reproduced.

SINDRI FERTILIZERS & CHEMICALS (PRIVATE) LTD.

Increase in cost per ton of ammonium sulphate as between January' 57 and October' 58.

	Rs.	Rs.
Raw Materials :		
Gypsum	3	
Coking Coal	4	
Steam Coal.	7	
Stock losses	2	16
Freight increases :		
Gypsum	11	
Coking Coal	1	
Steam Coal.	2	
		14
Total increase on materials account		30
Labour :		
Factory	6	
Town & Welfare	1	7
Depreciation		5
Interest		3
Expenses		2
Provision for repairs		1
GRAND TOTAL		48
Increase in credits		9
Net increase per ton		39

NOTES :

1. In January, '57 retention price of Ammonium Sulphate was raised from Rs. 270/- to Rs. 280/- per ton.
2. In October, '58 freight rates were increased from 1-10-58 and Coal prices were reduced from 17-10-58.
3. Effect of Interim Relief of Rs. 10/- per employee is Rs. 3/- per ton of Sulphate.

SINDRI FERTILIZERS AND CHEMICALS PRIVATE LTD.

Analysis of cost trends and Surpluses

	1955-56			1956-57			1957-58			1958-59			increase	Estimates based on in Rly. freight from 1-10-1958		
Production in Tons	3,26,062			3,33,705			3,32,031			3,30,000 (estimate);				3,30,000		
Retention Price	Rs. 270			Rs. 270			Rs. 280			Rs. 280				Rs. 280		
	Consumption Ratio	Rate Rs.	Total Rs. in lakhs	Cost per Ton Rs.	Consumption Ratio	Rate Rs.	Total Rs. in lakhs	Cost per Ton Rs.	Consumption Ratio	Rate Rs.	Total Rs. in lakhs	Cost per Ton Rs.	Consumption Ratio	Rate Rs.	Total Rs. in lakhs	Cost per Ton Rs.	Consumption Ratio	Rate Rs.	Total Rs. in lakhs	Cost per Ton Rs.
RAW MATERIALS																				
GYPSUM																				
Average Basic Price	1.62	5.54	29	9	1.60	7.12	37	11	1.60	7.55	40	12	1·68	8.35	46	14	1.68	8.35	46	14
Average Freight	..	29.00	153	47	..	31.40	164	49	..	32.30	172	52	..	33.40	185	56	..	35.50	197	60
COKING COAL																				
Average Basic Price	0.74	15.33	37	11	0.75	17.10	43	13	0.76	20.16	51	15	0.76	21.08	53	16	0.76	21.75	55	17
Average Freight	..	4.25	10	3	..	5.25	13	4	..	6.30	16	5	..	6.42	16	5	..	6.40	16	5
STEAM COAL																				
Average Basic Price	0.74	13.21	32	10	0.71	14.90	35	11	0.73	17.36	44	13	0.93	18.74	58	17	0.93	19.40	60	18
Average Freight	..	2.68	6	2	..	3.53	8	2	..	4.50	11	4	..	4.78	15	4	..	4.93	15	4
TOTAL RAW MATERIALS				82				90				101				112				118
Bags	..	..	41	13	..	..	45	13	..	..	44	13	..	..	43	13	..	..	43	13
Labour (including Prov. Fund Contribution)	..	..	134	41	..	..	139	42	..	..	152	45	..	..	162	49	..	..	162	49
Materials	..	..	70	21	..	..	70	21	..	..	70	21	..	..	70	21	..	..	70	21
Expenses (Printing, Loco Hire, Propaganda etc.)	..	..	23	7	..	..	26	8	..	..	30	9	..	..	32	10	..	..	32	10
Provision for Repairs & Renewals	..	..	29	9	..	..	32	10	..	..	33	10	..	..	35	11	..	..	35	11
SUB TOTAL				173				184				199				216				222

LESS CREDITS :																						
Misc. Income (Income from Colony canteen etc.)	..	..	(—) 18	6	..	..	(—) 20	6	..	..	(—) 27	8	..	..	(—) 30	9	..	..	(—) 30	9
Chalk Sludge & Bye-Products	..	..	(—) 24	7	..	..	(—) 43	13	..	..	(—) 48	14	..	..	(—) 50	15	..	..	(—) 50	15
Transfers & Adjustments	..	..	(—) 12	4	..	..	(—) 15	4	..	..	23	7	..	..	(—) 25	8	..	..	(—) 25	8
				17				23				29				32				32
TOTAL				156				161				170				184				190
Depreciation	..	..	188	58	..	..	191	57	..	..	196	59	..	..	205	62	..	..	205	62
Stock Verification losses	..	..	7	2	..	..	15	4	..	..	20	6	..	..	19	6	..	..	20	6
Ad hoc Ex gratia	..	..	..	..	..	..	16	5	..	..	16	5	..	..	16	5	..	..	16	5
Wealth Tax	..	..	..	..	..	..	11	3	..	..	11	3	..	..	11	3	..	..	11	3
TOTAL				216				230				243				260				266
Interst on Debentures & Cash Credit.	..	..	24	8	..	..	14	4	..	..	15	5	..	..	22	7	..	..	22	7
Cost of Sales	..	..	729	224	..	..	781	234	..	..	823	248	..	..	883	267	..	..	900	279
Surplus per ton				46				36				32				13				7

SINDRI FERTILIZERS AND CHEMICALS PRIVATE LTD., SINDRI.

Increase in Basic Rates of Raw Materials

	Prior to 12-11-55		From 11-12-55		From 5-7-56		From 8-7-57		From 17-5-58		From 17-10-58	
	Rs. nP.		Rs. nP.		Rs. nP.		Rs. nP.		Rs. nP.		Rs. nP.	
Power Plant Coal :												
Slack Coal Gr. II .	12.37		12.56		15.37		16.87		17.62		17.28	
	Coking	Non-Coking	Coking	Non-Coking	Coking	Non-Coking	Coking	Non-Coking	Coking	Non-Coking	Coking	Non-Coking
Slack Selected Grade 'A' .	15·37	..	15·56	..	18·56	18·37	20·06	19·87	20·81	20·62	20·47	20·28
Slack Selected Grade 'B' .	14·37	..	14·56	..	17·56	17·37	19·06	18·87	19·81	19·62	19·47	19·28
Slack Gr. II .	..	12·37	..	12·56	..	15·37	..	16·87	..	17·62	..	17·28
Steam Selected Grade 'A' .	16·44	..	16·62	..	19·62	19·44	21·12	20·94	21·87	21·69	21·54	21·35
Steam Selected Grade 'B' .	15·44	..	15·62	..	18·62	18·44	20·12	19·94	20·87	20·69	20·54	20·35

N.B.—Basic Rates of Coal have been varied from time to time as given below :—

	Rs
November, 1955	+0·19
July, 1956	+2·81
July, 1957	+1·50
May, 1958	+0·75
October, 1958	—0·34

Gypsum :

	1955-56	1956-57	1957-58	1958-59
	Rs.	Rs.	Rs.	Rs.
Purchased Gypsum	5·87	5·87	5·87 (upto 30-9-57) 7·50	7·50
Mines Gypsum	4·31	4·50	5·30	8·20

SINDRI FERTILIZERS & CHEMICALS (P) LTD.

Increase in Railway Freight on Raw Materials

	Prior to 1-4-56	1-4-56 (6¼% supply chagres)	15-10-56 (Short distance charges)	1-7-57 (12½% supply charges)	1-10-58
	Rs. nP.	Rs. nP.	Rs. nP.	Rs. nP.	Rs. nP.
RLY. FREIGHT PER TON					
Steam Coal	2·50	2·69	43·7	4·62	5·06
Coking Coal	4·00	4·25	5)·82	6·13	6·25
Gypsum :					
Purchased (Jamsar) *Via* Agra East Bank . .	28·12	29·86	..	31·62	34·84
Via Delhi Sarai Rohilla .	28·25	30·00	..	31·75	35·12
Mined (Kavas & Utterlai) *Via* Agra East Bank . .	29·12	30·94	..	32·75	35·94
Via Delhi Sarai Rohilla .	31·25	33·19	..	35·12	38·68
Average Freight . . .	28·92	31·40	..	32·29	35·15

SINDRI FERTILIZERS & CHEMICALS PRIVATE LIMITED, SINDRI

Analysis of cost of labour

	1955-56		1956-57		1957-58		1958-59 (Estimate)	
Production of Sulphate in tons .	3,26,062		3,33,705		3,32,031		3,30,000	
Labour :	Rs. in lakhs	Cost per Ton Rs.	Rs. in lakhs	Cost per Ton Rs.	Rs. in lakhs	Cost per Ton Rs.	Rs. in lakhs	Cost per Ton Rs.
Factory . .	99	30	99	29	107	32	115	35
Administration .	12	3	15	5	16	5	16	5
Town & Welfare.	18	6	19	6	22	6	24	7
	129	39	133	40	145	43	155	47
Provident Fund .	5	2	6	2	7	2	7	2
	134	41	139	42	152	45	162	49

Interim relief of Rs. 5 per employee per month has been sanctioned with effect from 1-7-57. Additional Interim Relief of Rs. 5 per employee per month has been sanctioned with effect from 1-1-1958. Full incidence of both the reliefs is felt in 1958-59 effecting an increase of Rs. 10 lakhs per annum or Rs. 3·00 per ton of Sulphate.

SINDRI FERTILIZERS & CHEMICALS (P) LTD.

Details of Capital Block, Debentures & Interest

Asset	1955-56	1956-57	1957-58	Increase
	Rs. in lakhs	Rs. in lakhs	Rs. in lakhs	Rs. in lakhs
Land	73	73	73	..
Buildings—Factory	458	463	488	+30
Buildings—Colony	109	136	156	+47
Plant & Machinery	1,505	1,528	1,548	+43
Coke Oven Plant	258	263	281	+23
Elect. Installations	53	60	72	+19
Railway Sidings	60	71	87	+27
Water System	153	162	172	+19
Furniture & Fixtures	13	17	20	+7
Roads & Culverts.	24	30	32	+8
Transport Vehicles	7	11	12	+5
Miscellaneous	10	12	13	3
	2,723	2,826	2,954	+231
Debentures	500*	300	300	
Interest on Cash, Credit & Debentures	24	14	15	

* Refunded Rs. 200 lakhs in October, 1955.

SINDRI FERTILIZERS AND CHEMICALS PRIVATE LTD., SINDRI

Details of Miscellaneous Income and sale of Subsidiary Products

	1955-56	1956-57	1957-58
Miscellaneous Income	0·69	1·75	2·99
Rent, Water, etc.	7·32	8·92	10·88
Income from Misc. Sources	2·94	4·96	9·61
Interest	0·83	1·85	0·04
Sale of Power to D.V.C.	3·92	..	..
Sale of Canteen Products etc.	1·87	3·06	3·02
	17·57	20·54	26·54

	1955-56	1956-57	1957-58
Sale of subsidiary Products :			
Chalk Sludge	7·61	24·36	22·96
Coal Tar	11·12	12·04	15·24
Benzol	2·16	2·13	0·85
Benzene	8·08	2·92	6·04
Naptha	0·13	0·65	0·85
Xylene	..	0·08	..
Pitch	..	0·04	0·02
Toluene	..	0·58	0·51
Soft Coke	..	0·44	0·53
Toulol	..	..	1·08
	24·10	43·24	48·08

SINDRI FERTILIZERS AND CHEMICALS PRIVATE LTD., SINDRI

Analysis and Reconciliation Cost and Financial Accounts

	1955-56		1956-57		1957-58	
	Quantity (Tons)	Rs. in lakhs	Quantity (Tons)	Rs. in lakhs	Quantity (Tons)	Rs. in lakhs
Raw materials :						
Gypsum	5·27 lakhs @34·54	182	5·25 lakhs @38·52	201	5·35 lakhs @39·85	212
Coking Coal	2·41 lakhs @19·58	47	2·51 lakhs @22·35	56	2·52 lakhs @26·46	67
Steam Coal	2·38 lakhs @15·89	38	2·38 lakhs @18·43	43	2.50 lakhs @21.86	55
		267		300		334
Coking coal for sales of Coke shown as adjustment :		11		12		14
Shortages :		7		7		10
		285		319		358
Raw Materials as per accounts		285		319		358

	1955-56	1956-57	1957-58
	Rs. in lakhs	Rs. in lakhs	Rs. in lakhs
Stores :			
As per Accounts .	97	103	96
Less Issues outside cost	27	33	26
	70	70	70
Wages & Salaries :			
As per Accounts (Schedule (iv)) . .	135	144	162
Add Contribution to P.F. . . .	5	6	8
	140	150	170
Less Wages Relating to G.D.O's Office as Capital . . .	6	11	18
Wages as per cost .	134	139	152
Stock verification losses:			
Power Plant Coal .	(+)0·30	(—)0·43	(+)1·67
Coking Coal . .	(+)1·41	(+)2·83	(+)0·39
Gypsum . . .	(—)6·54	(—)9·46	(—)10·08
Sulphate . .	(—)2·24	(—)5·12	(—)5·80
		(—)3·73	(—)6·63
TOTAL .	(—)7·07	(—)15·91	(—)20·45

SINDRI FERTILIZERS AND CHEMICALS PRIVATE LTD.

Rough Reconciliation of profit as per cost trends with Financial Accounts

	1955-56		1956-57		1957-58	
		Rs. in lakhs		Rs. in lakhs		Rs. in lakhs
Production (in Tons).	3,26,062		3,33,705		3,32,031	
Cost per ton as per statement of cost trends . . .	224		234		248	
Retention Price . .	270		270		280	
Profit Margin per ton .	46		36		32	
Profit as per cost trends.		150		120		106

		1955-56 Rs. in lakhs	1956-57 Rs. in lakhs	1957-58 Rs. in lakhs
Add Adjustment due to increase in Retention price by Rs. 10 per ton for 2½ months .		..	7	..
Adjustments relating to past periods in financial accounts but not in cost . . .		(—)12	9	10
Effect on profits due to variations in sales .				
	Sales (in tons)	3,17,093	3,61,082	3,29,629
	Production (in tons)	3,26,062	3,33,705	3,32,031
		(—)8,969	27,377	(—)2,402
	Rs. Profit margin per ton	270-176	270-109·6	208-183·31
	i.e.	94	*i.e.* 79·4	*i.e.* 96·69
		(—)8	22	[—2]
Repairs shown only in appropriation account in Financial Accounts . .		29	32	33
Wealth tax not shown in Financial Accounts		..	11	..
Development Reserve not taken in cost .		..	..	(—)6 (—)2
Reserve for bad and doubtful debts not taken in cost . .		..	..	..
		159	201	139
Profit as per Financial Accounts . .		164	205	143

SINDRI FERTILIZERS & CHEMICALS (P) LTD.

Production of Sulphate of Ammonia

Month	1952-53 Tons	1953-54 Tons	1954-55 Tons	1955-56 Tons	1956-57 Tons	1957-58 Tons	1958-59 Tons
April	10,819	22,957	21,974	26,827	28,115	28,145	26,540
May	10,395	23,754	22,144	22,515	24,643	26,700	25,620
June	9,845	18,548	23,851	24,431	21,135	17,782	23,617
July	11,637	21,208	20,838	27,033	28,101	27,002	25,063
August	14,071	21,230	22,706	24,100	27,750	27,124	24,800
September	18,735	20,581	25,620	28,818	24,087	27,100	25,230
October	21,762	20,045	30,001	30,385	32,397	28,681	27,459
November	23,005	20,150	23,151	30,004	31,080	30,871	28,649
December	24,895	23,032	29,300	26,892	29,360	32,891	31,019
January	24,638	18,592	28,023	31,228	27,927	29,200	
February	26,989	18,554	22,783	28,226	28,870	25,964	
March	22,549	21,296	29,542	25,603	30,240	30,571	
TOTAL	219,340	249,953	299,983	326,062	333,705	332,031	

SINDRI FERTILIZERS & CHEMICALS PRIVATE LTD.

OFFICE OF THE CONTROLLER OF ACCOUNTS

Consumption of Gypsum per ton of Sulphate of Ammonia

Month	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
				Tons			
April	1.61	1.64	1.57	1.60	1.60	1.46	1.64
May	1.62	1.62	1.56	1.63	1.64	1.51	1.68
June	1.64	1.58	1.59	1.55	1.70	1.59	1.66
July	1.74	1.64	1.57	1.56	1.67	1.56	1.65
August	1.79	1.65	1.62	1.59	1.72	1.60	1.72
September	1.69	1.69	1.57	1.63	1.63	1.62	1.69
October	1.71	1.69	1.58	1.64	1.66	1.60	
November	1.63	1.63	1.57	1.62	1.55	1.65	
December	1.64	1 63	1.58	1.67	1.50	1.68	
January	1.64	1.60	1.60	1.65	1.58	1.64	
February	1.59	1.63	1.57	1.64	1.46	1.58	
March	1.60	1.61	1.57	1·59	1.45	1.61	

Consumption as per c.c.c. specifications—1.64 tons.

SINDRI FERTILIZERS & CHEMICALS PRIVATE LTD.

Ammonia Consumption per ton of Sulphate

Month	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
April	0.294	0.290	0.276	0.275	0.280	0.280	0.296
May	0.302	0.290	0.276	0.279	0.280	0.280	0.296
June	0.300	0.280	0.277	0.268	0.283	0.285	0.293
July	0.297	0.285	0.271	0.274	0.283	0.285	0.292
August	0.301	0.280	0.279	0.276	0.284	0.284	0.289
September	0.291	0.270	0.277	0.278	0.272	0.279	0.288
October	0.296	0.279	0.271	0.279	0.278	0.281	
November	0.281	0.278	0.275	0.277	0.282	0.282	
December	0.277	0.276	0.275	0.276	0.283	0.288	
January	0.277	0.276	0.275	0.277	0.281	0.292	
February	0.280	0.275	0.271	0.279	0.281	0.294	
March	0.282	0.285	0.274	0.276	0.281	0.294	

Consumption as per c.c.c. specifications—0.274 tons.

SINDRI FERTILIZERS & CHEMICALS PRIVATE LTD.

Net Coke per ton of Sulphate

Month	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
	Tons	Tons	Tons	Tons	Tons	Tons	Tons
April	0.644	0.606	0.574	0.422	0.430	0.490	0.504
May	0.614	0.602	0.618	0.464	0.476	0.469	0.488
June	0.596	0.604	0.640	0.408	0.504	0.500	0.505
July	0.534	0.757	0.727	0.448	0.487	0.478	0.527
August	0.553	0.647	0.554	0.445	0.476	0.454	0.483
September	0.432	0.686	0.498	0.472	0.525	0.468	0.479
October	0.622	0.683	0.487	0.444	0.451	0.511	
November	0.507	0.652	0.464	0.490	0.464	0.451	
December	0.455	0.592	0.427	0.493	0.499	0.477	
January	0.492	0.591	0.422	0.437	0.481	0.495	
February	0.437	0.551	0.423	0.454	0.454	0.474	
March	0.500	0.578	0.406	0.485	0.483	0.486	

Consumption as per c.c.c. specifications—0.476 tons.

SINDRI FERTILIZERS [&] CHEMICALS PRIVATE LTD.

Coke (Gross) per ton of Sulphate

Month	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
			Tons				
April	0.640	0.557	0.574	0.517	0.510	0.550	0.583
May	0.614	0.614	0.558	0.540	0.585	0.555	0.571
June	0.596	0.655	0.586	0.468	0.601	0.588	0.587
July	0.535	0.682	0.641	0.518	0.562	0.543	0.614
August	0.553	0.675	0.533	0.540	0.551	0.553	0.547
September	0.450	0.664	0.498	0.542	0.604	0.565	0.536
October	0.616	0.657	0.481	0.546	0.540	0.638	
November	0.495	0.638	0.526	0.549	0.546	0.508	
December	0.453	0.580	0.496	0.584	0.583	0.533	
January	0.468	0.595	0.510	0.530	0.568	0.585	
February	0.553	0.550	0.530	0.530	0.531	0.543	
March	0.462	0.537	0.499	0.550	0.564	0.550	

Consumption as per c.c.c. specifications—0.506 tons.

SINDRI FERTILIZERS & CHEMICALS PRIVATE LTD.

Fuel Per ton of Sulphate

Month	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
			Tons				
April	1.405	0.996	0.902	0.852	0.800	0.835	0.919
May	1.524	0.984	0.961	0.944	0.897	0.856	0.999
June	1.462	1.083	0.903	0.947	0.944	1.037	1.035
July	1.349	1.029	0.949	0.928	0.863	0.906	1.119
August	1.521	1.013	0.910	0.938	0.882	0.895	1.071
September	1.243	1.119	0.907	0.887	1.004	0.880	0.986
October	1.125	1.030	0.810	0.825	0.797	0.983	
November	1.082	0.941	0.925	0.843	0.781	0.953	
December	1.060	0.892	0.836	0.874	0.823	0.868	
January	1.075	0.970	0.846	0.793	0.810	0.888	
February	0.947	0.948	0.860	0.951	0.789	0.885	
March	1.099	0.916	0.799	0.880	0.820	0.877	

Consumption as per c.c.c. specifications—0.677 tons.

SINDRI FERTILIZERS & CHEMICALS PRIVATE LTD.

Steam Coal Per ton of Sulphate

Month	1952-53	1953-54	1954-55	1255-56	1956-57	1957-58	1958-59
April	1.358	0.945	0.856	0.690	0.718	0.674	0.33
May	1.481	0.927	0.867	0.825	0.752	0.684	0.93
June	1.412	1.031	0.829	0.777	0.816	0.857	0.94
July	1.306	0.977	0.882	0.777	0.756	0.745	1.04
August	1.471	0.959	0.772	0.849	0.762	0.702	0.93
September	1.176	1.070	0.802	0.804	0.850	0.675	0.82
October	1.059	0.971	0.691	0.743	0.659	0.767	
November	0.993	0.892	0.821	0.751	0.655	0.796	
December	0.939	0.855	0.739	0.778	0.670	0.771	
January	0.981	0.930	0.756	0.709	0.665	0.800	
February	0.866	0.903	0.743	0.718	0.655	0.802	
March	1.052	0.876	0.716	0.777	0.672	0.787	

SINDRI FERTILIZERS & CHEMICALS LTD.

Expenditure on Amenities to Employees

	14 months 1952-53	1953-54	1954-55	1955-56	1956-57	1957-58
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Hospital	2,35,642	2,75,117	3,09,425	5,19,435	6,32,237	6,93,231
School	7,626	41,400	78,598	88,363	1,08,469	1,33,480
Public Health	2,28,552	2,56,243	2,74,027	3,29,105	3,90,863	4,17,549
Canteen	19,416	28,594	27,719	35,367	56,847	89,963
Sports and other Misc. Items	63,553	38,448	27,471	66,224	1,36,004	1,71,531
	5,54,789	6,39,802	7,17,240	10,38,494	13,24,420	15,05,754
Production of Sulphate (Tons)	2,39,409	2,49,953	2,99,983	3,26,062	3,33,705	3,32,031
Per ton incidence Rs.	2.31	2.56	2.39	3.18	3.97	4.53

APPENDIX II

[*Vide* paragraph 4.1]

Statements showing the financial position of Sindri Fertilizers and Chemicals Ltd. for 1952-53 to 1958-59.

Statement I—(a) Balance Sheet Analysis—Liabilities

	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paid up capital	17,00,00,000	17,00,00,000	17,00,00,000	17,00,00,000	17,00,00,000	17,00,00,000	17,00,00,000
General Reserve	..	..	94,00,000	1,19,00,000	1,64,00,000	1,64,00,000	1,64,00,000
Reserve for Repairs & Renewals	48,52,821	1,01,24,023	1,31,00,800	1,59,75,419	1,92,04,051	2,25,34,773	2,55,84,546
Development Reserve	..	..	..	..	..	5,83,426	37,81,026
Taxation and other reserves	13,000	3,86,990	3,19,422	33,04,568	73,41,484	86,67,682	1,05,37,456
Loans from Bank	..	1,06,79,305	..	..	18,99,029	1,14,37,925	87,80,555
Loans from Government—Secured	7,49,57,711	7,13,56,410	5,00,00,000	3,00,00,000	3,00,00,000	2,92,92,612	2,92,92,612
Loans from Government—Unsecured	..	..	95,00,000	2,58,00,000	4,30,00,000	5,62,00,000	6,86,00,000
Current Liabilities	2,15,41,869	1,22,62,394	2,72,56,679	3,62,32,259	3,65,75,889	3,27,73,129	3,15,85,673
Profit & Loss Account	95,883	6,16,728	6,17,325	18,06,048	20,49,260	20,00,387	15,57,238
TOTAL	27,14,61,284	27,54,25,850	28,01,94,226	29,50,18,294	32,64,69,713	34,98,89,934	36,61,19,106

Statement I—(b)

Balance Sheet Analysis—Assets

	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Gross Capital Expenditure . .	22,55,01,927	25,52,86,510	26,56,40,438	29,72,60,465	34,36,63,839	37,82,25,140	40,53,33,800
Less Net Depreciation . . .	1,60,43,182	3,27,54,475	4,93,18,853	6,81,13,107	8,70,99,869	10,66,54,932	12,65,65,686
Net Capital Expenditure . . .	20,94,58,745	22,25,32,035	21,63,21,585	22,91,47,358	25,65,63,970	27,15,70,208	27,87,68,114
Stores and Spare Parts . . .	98,02,405	1,32,95,301	1,61,70,812	2,19,92,879	2,78,27,417	3,20,70,151	3,37,93,488
Raw Materials & Finished Products .	2,26,28,179	1,66,31,684	87,90,931	98,26,929	86,07,765	1,27,77,046	1,60,31,800
Loans & Advances	2,20,91,402	2,21,12,736	2,65,59,326	2,49,49,878	3,24,60,105	3,25,33,109	3,57,80,577
Cash & Bank Balances . . .	73,92,711	6,70,234	1,16,54,412	91,01,250	10,10,456	9,39,420	17,45,127
Sundries	87,842	1,83,860	6,97,160	..	..	..	..
TOTAL . . .	27,14,61,284	27,54,25,850	28,01,94,226	29,50,18,294	32,64,69,713	34,98,89,934	36,61,19,106

Statement—II —Profit and Loss Account Analysis

	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59	Total
1. Sale Products (Net)	5,98,02,832	7,78,75,405	9,37,77,026	8,87,98,186	10,38,18,794	9,89,32,106	10,30,38,665	62,60,43,014
2. Sale of miscellaneous goods	1,38,095	77,407	4,40,911	5,18,067	4,60,128	5,43,747	5,90,538	27,68,893
3. Income from other sources	29,51,271	22,92,608	23,44,650	15,03,042	15,73,720	27,53,648	23,51,321	1,57,70,260
TOTAL	6,28,92,198	8,02,45,420	9,65,62,587	9,08,19,295	10,58,52,642	10,22,29,501	10,59,80,524	64,45,82,167
4. Balance profit B/F	..	95,883	6,16,728	6,17,325	18,06,048	20,49,260	20,00,387	..
5. Profit before depreciation and interest	2,71,58,501	3,17,63,007	3,96,69,140	3,75,34,517	4,09,70,719	3,73,45,089	3,89,00,415	25,33,41,388
6. Depreciation	1,60,43,182	1,68,81,404	1,66,64,872	1,88,01,560	1,91,38,029	1,96,11,230	1,99,23,496	12,70,63,713
7. Payment of interest	35,17,069	46,71,260	27,55,307	23,69,675	13,60,846	15,21,924	18,79,965	1,80,76,046
8. Development expenditure written off	26,36,546	42,31,296	44,71,587	..	..	..	..	1,13,39,429
9. Reserve for repairs	48,52,821	52,71,202	29,76,777	28,74,619	32,28,632	33,30,722	30,49,773	2,55,84,546
10. General & other Reserves	13,000	1,87,000	94,00,000	25,00,000	45,00,000	2,00,000	..	1,68,00,000
11. Reserve for taxation including wealth tax	..	..	..	30,00,000	40,00,000	36,46,660	27,93,330	1,34,39,990
12. Development rebate reserve	..	..	..	..	..	5,83,426	31,97,000	37,80,426
13. Dividend	..	..	34,00,000	68,00,000	85,00,000	85,00,000	85,00,000	3,57,00,000
14. Balance carried over	95,883	6,16,728	6,17,325	18,06,048	20,49,260	20,00,387	15,57,238	15,57,238

Statement III —*Fixed Capital Expenditure*

	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
1. Land	58,04,998	63,85,600	64,94,320	72,53,002	72,85,553	73,43,884	87,61,980
2. Buildings	4,35,02,217	4,83,24,933	5,16,37,595	5,66,08,011	5,98,93,965	6,44,21,090	6,92,23,931
3. Plant & Machinery	13,45,54,186	14,68,59,502	14,97,84,615	15,05,59,698	15,28,04,158	15,47,56,166	16,75,67,311
4. Coke ovens	..	..	2,55,17,522	2,57,58,338	2,63,04,354	2,80,78,560	2,82,81,097
5. Electrical Installation	27,14,001	44,93,304	49,84,160	52,96,228	60,15,466	71,69,388	1,12,70,547
6. Railway Siding	44,63,816	50,14,198	52,90,377	59,86,473	70,63,600	87,15,649	97,82,214
7. Water System and Sanitation	1,34,40,094	1,46,19,764	1,49,60,636	1,53,60,965	1,62,20,242	1,71,68,847	1,86,25,912
8. Furniture, Fixtures & Office Appliances	8,40,813	9,34,652	9,98,306	13,12,511	17,27,922	20,02,285	21,39,785
9. Transport Vehicles	9,03,296	7,09,861	7,53,517	10,20,440	11,77,111	12,42,944	14,41,441
10. Roads, Culverts	14,62,591	16,67,133	19,25,669	24,25,743	29,81,656	31,78,641	33,12,948
11. Miscellaneous assets	..	..	2,81,199	6,90,484	10,61,332	13,14,020	14,64,852
Gross Block	20,76,86,012	22,90,08,947	26,26,27,916	27,22,71,893	28,25,35,339	29,53,91,474	32,18,72,018
Works in progress	91,15,915	2,23,77,563	30,12,522	2,49,88,572	6,11,28,500	8,28,33,666	8,20,15,508

APPENDIX III

[*Vide* paragraph 20]

Statement showing the quantities of fertilisers contracted for imports during 1956-57 to 1959-60 *and their costs*

	1956-57		1957-58		1958-59		1959-60	
	Qty. tons.	Rate per ton	Qty. tons.	Rate per ton	Qty. tons.	Rate per ton	Qty. tons.	Rate per ton.
1	2	3	4	5	6	7	8	9
Japan	..	..	..	..	50,000	£. 18-18-0 C & F (Rs. 251.94)	1,57,000	£. 17-3-10 C. & F. (Rs. 229.16)
					13,488	$ 51.80 C & F (Rs. 246.57)		
North Korea	..	..	..	..	..	..	8,500	£. 14-15-0 FOB (Rs. 196.62)
U. S. S. R.	..	..	30,000	$ 46.00 C.I.F. in bulk. (Rs. 218·96)	..	..	21,000	$ 43.00 C.I.F. in bulk. (Rs. 204.68) } Rates Provisional
E. Germany	30,000	£. 18-4-3 FOB (Rs. 242.77)	28,000	£. 17-1-9 FOB (Rs. 227.78)	50,000	£. 16-0-0 FOB (Rs. 213.28)	60,000	£. 15-15-0 FOB (Rs. 209.95) } Rates Provisional
			15,000	£. 17-6-6- FOB (Rs. 230.94)				
			6,250	£. 17-4-0 FOB (Rs. 229.28)				

1	2	3	4	5	6	7	8	9
West Germany . .	..	..	20,000	£. 22-13-6 C & F (Rs. 302.26)	..	..	15,000	£. 15-2-9 C & F (Rs. 201.78)
			60,000	£. 23-0-0 C & F (Rs. 306.59)				
Italy . . .	40,000	£. 18-18-0 FOB (Rs. 251.94)	20,000	£. 22-13-6 (Rs. 302.26)	19,000	$ 51.80 C & F (Rs. 246.57)	40,000	£. 15-2-9 C & F (Rs. 201.78)
Holland . . .	..	..	..	..	..	..	25,000	£. 15-2-9 C & F (Rs. 201.78)
Belgium . . .	..	..	..	..	..	..	28,800	£. 15-2-9 C & F (Rs. 201.78)
Austria . . .	..	..	20,000	£. 17-3-6 C & F (Rs. 228.94)	..	..	..	..
Canada . . .	..	..	70,000	$ 39.00 FOB (Rs. 185.64)	..	..	34,365	$ 43·93 FAS (Rs. 209.11)
U. S. A. . .	70,000	$ 48.42 FOB (Rs. 230.48)	80,000	$ 39.00 FOB (Rs. 185.64)	..	..	..	..
	60,000	$ 47.80 FOB (Rs. 227.53)	..	..	..	..	..	..
TOTAL . .	2,00,000		3,49,250		1,32,488		3,89,665	

SUPPLEMENTARY REPORT ON THE FIXATION OF FAIR RETENTION PRICE OF AMMONIUM SULPHATE PRODUCED BY SINDRI FERTILIZERS AND CHEMICALS LTD.

Origin of the supplementary inquiry

A Report on the fixation of Fair Retention Price of Ammonium Sulphate produced by Sindri Fertilizers and Chemicals Ltd. was forwarded to Government with our letter No. TC/ID/P(16) dated 19th December 1959. Since then a communication dated 7th October 1960 was received from Government drawing attention to the fact that while the retention price recommended by us in paragraph 19 of our Report was based on the estimated production of ammonium sulphate and the proportion which the output of new fertilizers would bear to it, the latest advices which Government had received showed that these estimates are not likely to be achieved. Government have also sent us copy of a report from Dr. Hussain Zaheer, who is also a Director of Sindri Fertilizers and Chemicals Ltd., on the low production of synthesis gas at Sindri and the steps needed to remedy it. We were also furnished with copies of the relevant minutes of the Board of Directors of Sindri Fertilizers and Chemicals Ltd, indicating the Board's submission to Government on our Report, as well as the action that is proposed to be taken on Dr. Hussain Zaheer's report. We have now been asked whether in the light of the information conveyed to us we would like to modify the proposals in regard to the retention price.

Scope of this Report

2.1. The Board of Directors of Sindri has requested that

"(a) In view of the fact that production for 1959-60 was only 285,000 tons as against the 300,000 tons assumed by the Commission, the figure of an average of 320,000 for the three years 1959-60 to 1961-62 will not be realised. On account of the deterioration in the condition of the generators in the Gas Plant during the period the bad coal was used, it is not likely that even with the good qualities of coal as recommended by the Commission the production for the two remaining years of this 3 year period will exceed 285,000 tons per year. For attaining even this reduced target it is absolutely essential that good qualities of coal as recommended by the Commission are made available to Sindri without interruption. An adjustment of the works cost of ammonium sulphate as worked out by the Commission on the basis of an average production of 320,000 tons to an average production of 285,000 tons is, therefore, justified.

(b) The Tariff Commission have apportioned the common overheads and the depreciation of common assets on the basis of 75 per cent for ammonium sulphate and 25 per cent for urea and double salt. This was based on the estimates of production then made available to the Commission. The

production for urea and double salt has since been reestimated on account of considerable difficulties which are being met with, and it is considered that on a realistic appreciation of the levels of production an apportionment on the basis of 90 per cent to ammonium sulphate and 10 per cent to urea and double salt would be more correct."

We called for detailed statements showing production of Sindri month by month since the beginning of 1958 in order to find out the reasons for the steep drop in production in 1959 after the representatives of the company had given evidence before us. At our invitation Shri K. Ramachandran, the present Managing Director, met us on 7th November 1960 and offered further clarification.

2.2. As stated in paragraph 1, we have been asked to review our recommendations in the light of Dr. Hussain Zaheer's report and discussions thereon at the meeting of the Board of Directors of Sindri Fertilizers and Chemicals Ltd., on 22nd July 1960. These papers refer to fall in production, allocation of common overheads between the old and the new plant, uninterrupted supplies of proper grades of coal and overhaul of machinery. They do not refer to any revision of prices due to rise in prices of fuel, etc. which was urged before us by the present Managing Director. Indeed, it would not be proper to revise the prices by taking into account the rise in rates that took place subsequent to our inquiry in 1959 without making due allowance for economies, if any, resulting from the expansion of plant. Such revision would involve a fresh detailed inquiry into the operation of the company which is not the intention of the present reference to us. We have, therefore, confined ourselves in this report to an examination of the case as regards (a) the level of production likely to be achieved during the price period, (b) allocation of common overheads between the old and the expansion plant and (c) revision of price due to (a) and (b). Accordingly, we did not call a fresh meeting of the representatives of the Ministry of Agriculture, Development Wing and other interested organisations of Government.

Basis of claim for price revision

3.1. In order to maintain the target production of ammonium sulphate of 1,000 tons per day, a production of about 270 tons of ammonia is required, which in turn calls for a daily production of 33 to 35 million c.f.t. of raw semi-water gas, for which is needed a regular supply of about 450 tons of coke per day of certain specifications. The critical items in the coke specification are—volatile matter not less than 0.6 per cent, ash not more than 24.1 per cent, high ash fusion range between 1370°—1410° Centigrade and hard coke lumps of broken sizes between 25 to 75 millimetres. Dr. Zaheer has pointed out that coke produced from the Dissergarh coal, although hard and dense, clinkered in the S.W.G. generators creating mechanical troubles. High volatile coals of Dissergarh type were, however, required for optimum gas yields for the new expansion plant. After the coke ovens were commissioned in 1954, tests were carried on with various

grades of coal to find out a suitable blend which would prevent clinkering troubles in the generators and also yield adequate gas for the expansion plant so that coke oven gas can be fully utilised by substituting lean gas for under-firing ovens. It was found that a blend of 55 to 60 per cent Jharia A with a maximum of 40 to 45 per cent of Dissergarh coal is the best for both the objectives in view. However, since the beginning of 1959 coal of requisite specifications has not been received by Sindri resulting in production of poor quality of coke which has also led to excessive clinkering and consequent stoppages in the gas generators as well as to malfunctioning of the lean gas plant. The eight S.W.G. generators although theoretically capable of working 70,080 hours per year can, after allowing for annual overhaul, ash discharge and running maintenance, actually work only to about 70 per cent capacity, *i.e.*, about 51,000 S.W.G. hours per year. Since 1955, due to the troubles mentioned, the raw gas production per generator has been steadily falling and it was only by working all the generators that production was being maintained and this was apparently being done without giving adequate time for annual overhaul or running maintenance for generators. Dr. Zaheer has accordingly recommend that (a) complete overhaul of all the eight generators should be attempted and completed within eighteen months, (b) coal and coke handling in the plant should be re-designed and improved and (c) greater control and supervision of blending operations at night time is necessary to obviate the troubles. His main recommendation is that in order to maintain the high level of production and to get the generators in good shape Jharia coal (Loyabad and Lodna washed) 16,500 to 19,500 tons and Dissergarh coal 10,000 to 12,000 tons per month should be regularly made available to the company.

3.2. In the course of his evidence before us Shri K. Ramachandran further explained the background of the fall in Sindri's output. He agreed that under normal conditions there was sufficient flexibility in the capacity of the eight S.W.G. generators and that if a proper maintenance schedule had been prescribed and carefully worked out, 6 to 6½ "theoretical" generators in a year would be able to furnish the full gas requirements of Sindri. Even seven generators could theoretically be commissioned on occasions to boost up production. But what was apparently done at Sindri in an effort to prevent the level of production from falling since 1955 was to work the generators continuously for a longer time by cutting into the period necessary for annual overhaul and running maintenance. Though in the initial stages operational techniques regarding steam, air pressure, etc. could have been manipulated to prevent clinkering and other troubles in the plant, the curtailment of maintenance time eventually led to reduction of operational flexibility. This resulted in a lowering of efficiency of the plant as well as of the total output of gas. Prompt steps are now stated to have been taken to remedy the situation. One generator has already been reconditioned and put into use and is working to full original capacity. A proper schedule has been drawn up for completing the reconditioning of the other generators. Orders have been placed for essential replacement parts which, if received in time, would

enable the work to be completed in the course of about six months so that the actual output for the last months of 1960-61 would improve slightly and that for 1961-62 might well begin to approach normalcy. This is of course dependent upon satisfactory arrangements continuing for the supply of proper grades of coal for the manufacture of coke. In this respect the position is stated to have improved since March 1960. The Managing Director also explained that within its own resources Sindri will take steps to improve coal and coke handling. Effective steps are also reported to have been taken to improve the efficiency of maintenance staff and to introduce what was described as preventive maintenance.

3.3. We enquired why even as late as November 1959 the representatives of the company had not informed us about the correct position regarding the steep decline in the output. Had this been done, there would have been no occasion for our estimates, which were based on data furnished by the company, going wide of the mark. The Managing Director told us that apparently the authorities of Sindri at that time underrated the seriousness of the trouble. They presumably wanted to maintain the level of production and they were perhaps optimistic of the results. He also mentioned that though the level of production of Sindri for 1959-60 was given to us as 285,000 tons of ammonium sulphate, this included about 45,000 tons produced from ammonia diverted from the expansion plant. Accordingly, the production of the old plant in 1959-60 was only 240,000 tons of ammonium sulphate. His present estimate of production of ammonium sulphate in the old plant from its output of ammonia for 1960-61 and 1961-62 is of the order of 290,000 tons and 300,000 tons respectively. This would amount to an average of less than 280,000 tons per year as against the average of 285,000 tons which the Board of Sindri has in its resolution urged us to adopt. The Managing Director mentioned to us that a ninth S.W.G. generator is under manufacture in the country and will be erected before the end of 1961-62.

3.4. In a note submitted to us the Managing Director stated that additions to price of sulphate would also have to be made on account of the increased consumption of raw materials, namely, coke and gypsum due to their poorer quality, higher costs of these two materials, general increases in price of fuel and higher provision for repairs and replacements. He claimed that a higher rate of return at 12 per cent on capital employed as has been allowed in the case of industries like sugar and paper where the incidence of corrosion is equally high should be allowed. The Managing Director further pressed the Board's request for altering the ratio of apportionment of overheads between the old and new plants of Sindri from 75:25 to 90:10.

3.5. While dealing with these specific requests we have carefully considered the report of Dr. Zaheer, the data about production at Sindri since our last report and the explanation furnished by the Managing Director.

Basis of our original recommendation

In paragraph 9 of our Report we had already referred to the significant drop in production of ammonia at Sindri as a result of the supply of coal of inferior quality for coking. Consequently, as stated in paragraph 15, since production had already fallen at the time we concluded our inquiry in 1959, we had assumed an output of 300,000 tons for 1959-60 as against 330,000 tons for each of the years 1960-61 and 1961-62. On this basis our estimate of average production was 320,000 tons per year for the price period of three years. The management had then told us that as far as the old ammonium sulphate plant was concerned the main cause for fall in output was the deficiency in coal supply and they assured us that the level of plant efficiency and output could be maintained if raw materials of required quality were available. We had, therefore, recommended that this should be done and Sindri's production being essential, allocation of coal needed by it should receive prior consideration. As far as the expansion units are concerned, it was brought to our notice that they were hardly in production for three months and could not be said to have got out of the teething troubles and that it would take them a long time to attain full production. Certain specific difficulties were mentioned regarding the production of double salt and about the inadequacy of supply from the lean gas plant which was needed to boost up the release of cokeoven gas required for raising gas output of the expansion plant from 6 million to 10 million c.ft. per day. In paragraph 14 we have also explained the basis on which it was decided to distribute the overheads between the ammonium sulphate plant (old) and the expansion plant in the ratio of 75:25 and why it was decided to leave out from costing the output of the expansion plant.

Sindri's present claims examined

5.1. On the basis of information now furnished to us it is noticed that during the first nine months of the year 1960 the old plant at Sindri had produced 55,321 tons of ammonia and 180,671 tons of ammonium sulphate while the new plant had produced 21,509 tons of ammonia, 5,578 tons of urea and 24,894 tons of double salt. As the ammonia produced in the new plant could not be fully utilised because of stoppages in the working of urea and double salt plants, some quantity of ammonia was diverted to the old plant accounting for a further production of ammonium sulphate of 26,214 tons. We are informed that while the production of ammonium sulphate for the year 1959-1960 in the old plant as now clarified stood at 240,000 tons, it is likely to be of the order of 290,000 tons during 1960-61 owing to the several measures already taken to improve its operation. Nevertheless, even if the overhauling of all the S.W.G. generators was completed and the level of production for 1961-62 was restored to the norm of 330,000 tons per year, the average production for the price period of 320,000 tons that we had originally envisaged would not be attainable. In view of the improvements that have already been carried out and with the commissioning of the ninth generator in 1961 an average output of about 285,000 tons seems feasible. The Board of Directors of the Company has also suggested that prices could be fixed on an average production

at no higher figure than 285,000 tons per year. We are satisfied that this figure of 285,000 tons on an average may be adopted for the price period 1959-62.

5.2. As regards the ratio of distribution of overheads, there is no basis for Sindri's request for altering the ratio from 75:25 to 90:10. On the basis of actual production in the old and new plants during the first nine months of 1960, the ratio of nitrogen content in the end products worked out to 73:27. This has been achieved despite the fact that the new expansion plant was working below capacity. We, therefore consider that the ratio we have assumed is reasonable.

5.3. The Managing Director of the Company agreed that despite the adverse conditions which have developed affecting the production of fertilizers in the new plant, it was possible to maintain a degree of flexibility in the plant as a whole to overcome diseconomies in process and output. Ammonia could be used further for stepping up the production of urea. It could be diverted to a greater extent for production of ammonium sulphate in the old plant, if due to operational difficulties in the double salt plant there would be surplus of ammonia. He said that manual handling and packing done immediately after production will avoid some of the difficulties in storage and distribution of double salt. The Managing Director, however, mentioned that price cuts had been made for urea and double salt by the Agriculture Ministry on a basis which appeared to depart from that related to the nitrogen parity with ammonium sulphate, which alone should furnish a fair index for fixing prices and this was making the position a little difficult for Sindri.

5.4. As we have not taken up costing of urea and double salt, we have not examined the possibilities of accelerated improvement in production in the expansion plant which can result from proper functioning of the lean gas plant as well as overcoming of the technical problems in the manufacture of double salt. On the basis of relative outputs of the old and new plants, we do not find any need for changing the ratio of distribution of overheads of 75:25 which we have suggested for the present price period. In fact, on their present relative performance this ratio would appear to be more to the advantage of the expansion plant than to the old ammonium sulphate plant.

Revised cost estimates for ammonium sulphate

6.1. On the basis of an estimated annual production of 285,000 tons of ammonium sulphate we have worked out the estimate of cost of production as under:—

		Rs.
1.	(a) Coal	22.00
	(b) Gypsum	72.73
	(c) Bags	12.34
2.	Power and fuel*	
	(a) Steam	15.45
	(b) Electricity	5.74
	(c) Others	1.94

		Rs.
3.	Labour and Establishment	14.56
4.	Consumable stores	4.82
5.	Repair stores	7.76
6.	Miscellaneous services	6.59
7.	Overheads	25.34
	Total	199.27
8.	*Less* credit	29.11
9.	Net total works cost without depreciation	170.16
10.	Depreciation**	66.52
11.	Works cost with depreciation	236.68
12.	Profit at 10% on capital employed	55.11
13.	Total works cost of production	291.79
14.	Margin for contingencies at 5% on item 9	8.51
15.	Fair ex-works price	300.30
	or roundly Rs	300.30

Note:*—Consequent on the assumption of production at 285,000 tons as against 320,000 tons originally estimated there would be surplus generation of steam which could be utilised for generation of more electricity for use in the expansion units or for export to the D.V.C. grid. No change in the rate per unit of steam and electricity has, therefore been made.

**On straight line method adopted by the Company.

Special considerations for a price revision

7.1. It is not usual to consider revision of fair prices for a commodity merely on the basis of fall in performance of an individual unit. But the circumstances of the present case are exceptional. It was the specific case of Sindri which was referred to us. If not the sole producer, Sindri is the largest single producer of ammonium sulphate and accounts for nearly 90 per cent of indigenous production. The fall in its output since we made the assessment in November 1959 is not marginal but fairly heavy. It is also not usual for us to allow any revision of prices unless this is called for by circumstances beyond the control of a costed unit. In the original reference to us, Government had directed that we should take into account the estimated cost of production having regard to the **norms of performance which could be expected from a plant of this type.** In fact, we had kept that in mind in determining the prices in our last Report and have criticised Sindri for not working to standard norms of performance.

7.2. For these reasons we have not accepted the claim for price increase on account of higher consumption of raw materials like coal and gypsum. Since we have already included in the cost structure

a margin for contingencies at 5 per cent on net total works cost without depreciation, we are unable to consider in detail claims on account of higher cost of coal and gypsum, increases in price of fuel, etc. As we have already allowed for cost of maintenance and repairs on the basis of previous year's actuals and part of the increased expenditure on account of repairs and replacement mentioned by the Managing Director would appear to be a legitimate charge against Repairs and Renewals reserve, we have not agreed to consider increases in cost on this account. If these individual items were to be investigated it would involve a much more detailed inquiry. These matters should also in fairness have to be discussed with consumers and other interests represented by the Ministry of Agriculture. For these reasons we have decided only to make a recalculation of the price on the basis of the revised estimate of production of Sindri.

7.3. The report of Dr. Zaheer also brought out the fact that while the fall in output has been due to poor coal supplied, the inefficient working of the S.W.G. generators was in the main due to bad maintenance, and working conditions were probably affected by inadequate control over blending of coal particularly at night. These inefficiencies could not all be described as beyond the control of an efficient management and increases in cost resulting from short fall in production due to it cannot be made good by raising the fair price to be fixed. We, therefore, recommend that fair price of ammonium sulphate produced at Sindri may be fixed at Rs. 300 per ton. The price should hold good for the period from 1st April 1959 to 31st March 1962. The price is exclusive of local taxes, if any.

8.1. In allowing this price we have retained the return at 10 per cent on capital employed as per our original recommendation. The rate of 12 per cent asked for by Sindri is not justified, as it is quite usual to moderate the return in case of a high cost unit. Further, the case of fertilizer which is an essential commodity for the agriculturist is not comparable with that of consumer goods like sugar or paper.

Other matters

8.2. The Company's accounts for 1959-60 are yet to be passed by the Board and have not yet been certified by the auditors. In the circumstances we have not found it possible to examine them in detail. We are, however, generally satisfied that if the output envisaged is maintained, Sindri will, on the basis of the price now recommended, be in a position, after making provision for depreciation and taxation, to meet the following further commitments (a) payment of bonus to workers; if necessary, at a reduced rate, (b) full interest on secured Government loans, (c) the interest on cash credit account in full, (d) a return of not more than 4 per cent as dividend on its share capital. This will however leave no margin for providing reserves. It should be remembered that about Rs. 10 crores are invested in the fixed assets of the expansion plant which is still in the stage of establishing production. No new unit in this stage can be expected to pay a dividend. Since losses on account of new fertilizers have arisen, they cannot be taken into account for revising the price of ammonium sulphate so as

to enable maintenance of full level of dividend for the Company as heretofore. We should also reiterate that it is not usual to allow a bonus like that mentioned at (a) as ordinary working expenditure. If it is a profit-sharing bonus it should primarily be based on the workers contribution to output. In the case of an automatic chemical plant this may at least be related to wages earned and regular attendance of staff.

K. R. P. AIYANGAR,
Chairman

S. K. MURANJAN,
Member

J. N. DUTTA,
Member

R. S. BHATT,
Member

RAMA VARMA,
Secretary.

BOMBAY,
Dated 11th November, 1960.

REPORT ON RETENTION PRICE OF AMMONIUM SULPHATE

Origin of the present inquiry and terms of reference.

1. In their letter No. Ferts. 1(15)/58, dated 16th March 1959 the Government of India, Ministry of Commerce and Industry have asked the Commission to undertake an inquiry into the production costs at Sindri Fertilizer Factory under section 12(d) of the Tariff Commission Act, 1951, and, *inter alia*, to include in the report a specific recommendation in regard to a reasonable retention price to be allowed to Sindri Fertilizers & Chemicals Ltd., for its ammonium sulphate by the Central Fertilizer Pool. A copy of Government's letter with its annexures indicating the terms of reference and its background is given in Appendix I.

Method of inquiry

2.1. Letters were issued in June 1959 to Sindri Fertilizers and Chemicals Ltd. (referred to hereafter as Sindri) and Secretary, Ministry of Food and Agriculture (Department of Agriculture) asking for the necessary memoranda on the subject and also for information as regards Government purchases of imported ammonium sulphate and the prices paid during the period from 1956-57 to 1959-60. The Indian High Commissions in the U. K. and Canada and the Embassies of India in U. S. A., Japan, West Germany and Italy were also addressed for information regarding internal prices and export prices of ammonium sulphate in those countries.

2.2. Shri K. R. P. Aiyangar, Chairman, Dr. S. K. Muranjan, Shri J. N. Dutta and Shri R. S. Bhatt, Members visited the factory of Sindri on 7th and 8th November 1959. Dr. Rama Varma, Secretary, had visited the factory earlier from 27th to 29th July 1959. Shri U. R. Padmanabhan, Cost Accounts Officer, visited the factory from 20th July to 1st August 1959 and examined the cost of production of ammonium sulphate.

2.3. The Commission held discussions at Bombay with the representatives of Ministry of Food and Agriculture (Department of Agriculture), Development Wing (Ministry of Commerce and Industry) and Sindri Fertilizers on 23rd November 1959.

Brief history of factory.

3.1. The fertilizer factory at Sindri owes its origin to the recommendations of the Food Grains Policy Committee of 1943. In the light of the Bengal Famine, the Committee expressed the view that low productivity of agricultural land in India and scarcity of food in relation to a fast growing population—chronic conditions which whenever a natural calamity overtook any part of the country brought on near famine conditions—could be remedied only by enriching the nitrogen and phosphorus content of the soil. The Committee estimated that India would require between 2 and 3 million tons of artificial fertilizer per annum

and recommended that, as a first step, immediate action should be taken to establish production of nitrogenous fertilizers to the extent of 350,000 tons per annum. In view of the national importance of the industry, not only its direct importance, but also its importance as the basis of a heavy chemical industry and a defence potential for the production of munitions and the heavy capital outlay involved in its establishment, Government decided to set up a state-owned factory. A Technical Mission consisting of three experts was invited from the United Kingdom to advise on the best methods of establishing the industry in India and following its recommendation as well as on balance of advantages, the location was decided in favour of Sindri, a village in Bihar. Thereafter a mission was sent from India to the United Kingdom to investigate the supply of plant and machinery. On the recommendation of this Mission, the Chemical Construction Corporation (C. C. C.) of New York, a subsidiary of the well known American Cynamid Co., was entrusted with the designing, construction and supervision of the project till it went into production. The Power Gas Corporation (P. G. C.), a consortium of U.K. Chemical Manufacturers, was appointed for the supply of certain speciality plant of their own manufacture and also to act as Agents to the Government of India for the procurement of other plant and machinery. Structural steel and considerable tonnage of simpler items were made in India. The major construction was started at Sindri in 1947.

3.2. The factory went into production in October 1951, that is, four years after construction started and ever since, the entire production of ammonium sulphate in the factory is being distributed through the Central Fertilizer Pool administered by the Ministry of Food and Agriculture. The fertilizer factory at Sindri is worked by Sindri Fertilizers and Chemicals Ltd. It is a Government company formed in January 1952 of which all the shares are held by the President of India. The Technical Mission's estimate for the project, if located at Sindri, was Rs. 1,053 lakhs while the actual cost debited by Government at the time of handing over the project to the company was Rs. 2,077 lakhs to which capitalised interest of Rs. 176 lakhs was later added.

Financial structure of Sindri — an appraisal.

4.1. The accounts of Sindri are closed on 31st March and for purposes of our investigation the audited accounts for the year ending 31st March 1959 which have not yet been published were made available. The financial position of the company at the end of 1958-59 and since its inception has been set out in Appendix II to this Report which contains the following statements:—

I—(a) Balance sheet analysis—liabilities for 1952-53 to 1958-59;
(b) Balance sheet analysis—assets for 1952-53 to 1958-59;

II—Profit and loss accounts—analysis for 1952-53 to 1958-59; and

III—Fixed capital expenditure for 1952-53 to 1958-59.