CHAPTER - III

Profile of the Company
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The steel authority of India ltd. (SAIL) is the largest steel manufacturer in India. The company’s four integrated steel plants and three specialized facilities produce a variety of steel used in the construction, engineering, utilities, railway, automotive and defense industries. SAIL’s product line includes hot and cold rolled sheets and coils, galvanized sheets. Electrical sheets, structural, railway products, plates, bars and rods, stainless steel, and alloy sheets, while India’s government owns approximately 85% of the company, SAIL operates under a “Navaratna” status. That is, it enjoys substantial operational and financial authority.

EARLY HISTORY

The history of the iron and steel industry in modern India is closely bound up with political and economic developments since the country achieved independence from Britain in 1947. Most of the productive units aid and assistance from industrially developed countries and operated by SAIL’s predecessor, Hindustan Steel Ltd. SAIL’s main subsidiary, the Indian iron & steel company ltd., India’s largest single iron and steel company, developed separately as a private company before nationalization, but it depended on state
subsidies from 1951 onward and had to function within the terms of the government's planning system.

The industry, however, did not spring from nowhere in 1947. Iron had been produced in India for centuries, while Indian steel was superior in quality to British steel as late as 1810. With the consolidation of the British raj the indigenous industry declined and the commercial production of steel did not begin in earnest till 1913, when the Tata iron and steel company began production at Sakchi, on foundations laid by Jamsetji Tata, whose sons had raised the enormous sum of INR 23 million to set up the company, partly from family funds but mostly from Bombay merchants, several maharajahs, and other wealthy Indians who supported the movement for Indian self sufficiency (Swadeshi) but did not want to appear openly anti-British. Tata was to dominate the Indian steel industry until the 1950s. The Indian iron & steel company was setup in West Bengal in 1918 by the British firm Burn & Co with plans to become a rival steel maker. Steel prices declined in the early 1920s, however, and the company produced only pig iron until 1937. The acute depression suffered by the iron and steel industry after World War I was alleviated by the government's protective measures. The industry continued to make steady progress from the late 1920s when the British authorities introduced a system of barifs that protected British and Indian steel but raised barriers against
imports from other countries, the Indian market was divided in the ratio of 70 to 30 between British producers on the one hand and the Tata company on the other... thus effectively excluding indigenous new comers. By 1939 the Tata works were producing 75% of the steel consumed in what was then the Indian empire consisting of the present day India, Sri Lanka, Pakistan, Bangladesh, and Burma.

In the late 1930s as European rearmament pushed iron and steel prices upward, the export of Indian pig iron increased and two small firms began to compete directly with the Tata company in steel production. The first was the Mysore State iron works, which had been set up by the maharajah of Mysore in 1923 to produce pig iron at Benkipur, now Bhadravati. The second was the steel corporation of Bengal, a subsidiary established by the Indian iron & steel company in 1937, the year after it had bought up the assets of the bankrupted Bengal iron and steel company. The steel corporation of Bengal was reabsorbed into its parent company in 1953. All three companies profited from the British connection during World War II. Annual output rose from one million tons in 1939 to an average of 1.4 million tons between 1940 and 1945.
In 1947, When India become independent as the biggest, but not the only. Successor state to the British raj, the three major iron and steel companies had a total capacity of only 2.5 million tons. A great deal of their plant was already more than three decades old, and badly in need of repair and replacement while demand for iron and steel was growing.

**INDUSTRY CHANGES IN THE LATE 1940S-1950S**

Under the terms of the new government’s industrial policy statement of 1948 confirmed in the industries development and regulation Act three years later, new ventures in the iron and steel industry were to be undertaken by the federal government, but existing ventures would be allowed to stay in the private sector for the first ten years. Thus the first five year plan, from 1951 to 1956, involved the use of government funds to help tata iron and steel and India iron & steel to expand and modernize while remaining in the private sector. As for new projects in 1953 government signed, an agreement with the German steel makers krupp and Demag on creating a publicly owned integrated steel plant, which was sited at rourkela, in the state of orissa, to make use of iron ore mined at Barsua and kalta. Krupp and Demag were chosen after the failure of Indian requests for aid from Britain and the United States but were exclude form the project by 1959. When the estimates committee of the lok sabha, the
lower house of the Indian parliament, concluded that getting investment funds from them was equivalent to borrowing at an interest rate of 12%.

In order to carry out its side of the agreement the government setup Hindustan steel ltd in 1954, as a wholly state. Owned company responsible for the operation of the Rourkela plant. By 1959 when the plant was commissioned, Hindustan steel had become responsible for two more plants, at Bilai in Madhya Pradesh and at Durgapur in west Bengal. Under the second five year plan which started in 1959, the Bilai plant located between Bombay and Calcutta, was designed and equipped by soviet technicians, under an agreement signed in 1955, and by 1961 it included six open hearth furnaces with a total capacity of one million tons, supplied from iron ore mines at Rajhara and dalli. The Durgapur plant, meanwhile, was built with assistance and advice from Britain and sited near the Bolani iron ore mine. Hindustan steel took over the iron ore mines supplying its plants, all three of which had been located to take advantage of existing supplies.

Hindustan steel's other major venture was its alloy steels project, also based at Durgapur, which was inaugurated in 1964, Hindustan steel's tasks included not only steel production by also the procurement of raw materials, and its subsidiaries included, in addition to the iron ore mines already
mentioned, limestone and dolomite mines and coal washeries. It also operated a fertilizer plant at Rourkela.

The modernization of the two private sector leaders and the program of public sector investment together raised Indian steel output from about one million tons a year in 1940s to three million tons in 1960s then to six million tons only four years later.

Pig iron output rose by an even greater margin from 1.6 million tons in 1950 to nearly five million tons in 1961. In 1965 Hindustan steel's tallest project for an iron and steel plant with an associated township at Dhanbad in the state of Bihar, was transferred to a new company created one year earlier, Bokaro steel limited, contact continued between the two companies, however mainly through an arrangement where by the chairman of each company was made a part time director of the other, like the Bhilai plant the Bokaro project was initiated with aid and advice from the soviet union including blue prints, specialist equipment, technical training, and a loan at 2.5% interest. After establishment of SAIL the Bokaro Company was changed back into a division of the public sector steel company.
Indian government policy since 1965 has been to use its iron ore less as a contribution to domestic growth than as an export, earning foreign exchange and helping to reduce the country's chromic deficit on its balance of trade. Production of ore increased from 18 million tons in 1965 to 43 million tons in 1985, in order to supply a growing number of overseas markets.

With the expansion and diversification of Hindustan steel, the separate establishment of Bokaro and the beginning of planning for new plants at Salem, vishakhapatnam, and vijayanagar, it become increasingly clear that public sector iron and steel production would need some new form of coordination to avoid duplication and to channel resources more effectively. The steel authority of India limited, was established in January 1973 for this purpose, to function as a holding company along the lines of similar but older bodies in Italy and Sweden. The new organization was placed on a secure footing when the Indian iron and steel company was nationalized, giving SAIL control of all iron and steel production apart from the venerable tata iron and steel company and a number of small scale electric arc furnace units. At the time of nationalization the Indian iron and steel company included a steel plant at burnpur in West Bengal: iron ore mines at Gua and manoharpur; coal mines at Ramuagore,
jitpur, and chasnalla; and a specialist subsidiary. The IISCO Ujjain pipe and foundry co.ltd based at kulti.

Both Sail and its predecessor sought to expand capacity to meet predicted rises in demand for steel. In 1971 Hindustan steel had unveiled plans for India’s first coastal steel plant, at Vishakhapatnam. The project, which in 1991 was in the process of being opened, with one blast furnace already in operation, was expected to allow productivity of 230 tons per man year compared with less than 50 in SAIL's existing plants. The authority also invested heavily in modernizing its oldest plants, at Rourkela and Durgapur.

CHALLENGES IN THE 1980S:

The 1980s were not a happy decade of SAIL it suffered losses between 1982 and 1984 but went back into the black in the following two years. Meanwhile Tata iron and steel was consistently profitable. By 1998 all the main steel plants in India except vishkapanm were burdened with obsolescent plants and equipment, and Indian steel prices were the highest in the world. The government Proposed a ten year plan to modernize the plants, based on aid from West Germany, Japan and the soviet union just at a time when the world wide economic recession was deepening and the world bank was recommending the privatization of SAIL and the liberalization of steel imports. In 1989 SAIL acquired vivesvata iron and steel ltd. In its first year under
SAIL's wing this new subsidiary's production and turnover showed an improvement over its last year in the private sector. This progress contrasted with results for SAIL as a whole in 1989-90, since production declined and once again planned targets were not met. Various factors contributed to this disappointing outcome, including unrest at the rourkela plant as a result of the management's decision not to negotiate with a new union, rourkela sramik sangha, which had challenged the established union, rourkela mazdoor sabha, and had even won all the seat & on the plant's elected works committee. Another problem continuing over several years, arose from defects in power supply; the impact of power cuts on steel output in 1989-90 was estimated as 1,70,000 tons lost, and the supply of coal was unrealizable.

The country's resources of iron ore and other raw material's for iron and steel made industry was not sufficient to meet the requirements of SAIL. In the first half of the 1980s prices for coal, Ferro manganese, lime stone, or iron ore cut rose by between 95 and 150%, at the same time as electricity charges rose by 150%. Most of these increased were imposed by other state enterprises. Nor did it help SAIL that the high soulful content of Indian coal required heavy investment in deuslfurization at its steel plants. Indeed, the industry had chronic problems in trying to operate blast furnaces designed to take low-soulful coking coal. The more suitable process of making sponge iron with non-coking coal,
then converting it to steel in electric arc furnaces, was introduced in the private sector later. Through by 1989 only 300,000 tons were being produced in this way. India's basic output costs of INR 6,420 per ton in 1986 compared well with the averages for West Germany (INR 6,438), for Japan (INR 7898) and for the United States (INR 6,786). What finally kept Indian steel from being competitive was the imposition of levies that raised its price per ton by about 30% and which included excise duties, a freight capitalization surcharge, and a steel development fund charge.

In spite of such problems, and in response to them, SAIL announced in December 1990 an ambitious plan to increase its annual output of steel from 11 million to 19 million tons, thus transforming itself from the world's thirteenth largest steel producer to its third largest, with in ten years. SAIL's use of its steel production capacity, running at about 77% in 1990, would be raised to 95% by 1996, thus permitting output of crude steel to rise by two. Fifths over its current level. Output for 1990 had actually been only six million tons, however, compared with 6.9 million tons in 1988, and eight million tons in 1989. SAIL was no more able than large steel companies in other countries to achieve the optimum balance between demand and supply, between increasing the quality of output and improving its quality by modernizing and thus escaping form its heritage of outdated plant and equipment. Neither Hindustan steel nor Sail was
ever in a position to defy the circumstances of the Indian economy or of the world steel industry on their own, but they achieved, in large part, the more modest goal of contributing to India’s post war economic growth.

THE 1990S AND BEYOND:

As part of an economic reform policy, India set plans in motion to partially privatize its nationalized industries in 1993 as such 10% of SAIL was offered to private investors over the next several years. In 1994, the company announced its plans to offer an additional 10% to international investors in order to raise funds for plant modernization and expansion.

While SAIL worked to reach the goals set forth in the early 1990s the company faced severe challenges in the latter half of the decade. Falling international steel prices, high costs related to its modernization program, increased inventory levels brought on by private sector growth, the Asian economic crisis, and falling export sales took their toll on SAIL’s bottom line. In fact, during the 1998-99 fiscal years, the company posted one of the largest net losses in its history—$ 360 million.

Over all, the global steel industry struggled during the late 1990s and into the new millennium. By 2002, a turn around appeared to be on the horizon and demand in India had increased by 5.7% V.S.Jain was named chairman that year and was tapped to reverse SAIL’s fortunes. Under his leadership, the company
planned to raise its production capacity to 20 million tons by 2011. SAIL’s output surpassed ten million tons of saleable steel in 2003 while exports grew by 53% over the previous year. By 2004, the company was producing 12.5 million tons.

Although SAIL appeared to have weathered the industry downturn, it continued to face problems related to coking coal supplies.

Along with the challenges brought on by the coking coal concern, SAIL was forced to deal with rising steel prices. Over the past several years, the company had worked to overcome industry problems by diversifying into new business areas in an attempt to bolster profits. In 2001, the company formed a joint venture with the National Thermal power corporation to create NTPC SAIL power company ltd., power plants. Other newly formed joint ventures included the Bokaro power supply co ltd. and the Bhilai Electric supply co ltd.

Believing that it had a solid strategy in place, SAIL’s management team remained optimistic about the company’s future. India’s economy was growing, leading SAIL to assume that the country’s steel consumption would nearly double the 2004 levels, reaching 55 to 60 million tons by 2012. Although the company’s bottom line stood to benefit from its estimate, the cyclical and turbulent nature of the steel industry left SAIL’s future hanging in the balance.
SALEM STEEL PLANT

A Steel plant in Salem was a long cherished dream. Government of India decided in May 15, 1972 to set up an integrated special steel plant at Salem in the state of Tamil Nadu for the production of sheets and strips of electrical, stainless and other special and mild steels on the basis of sound techno-economic considerations.

The construction of the plant was inaugurated in June 13, 1972 by the late shri Mohan kumaramangalam, the Minister for Steel & Mines. Thus a dream of having a steel plant Salem had started taking a shape in the foot-hills of kanjamalai. The company “Salem Steel Limited “was registered on October 25, 1972. It was a Government of India undertaking and subsidiary of Steel Authority of India Limited (SAIL) Shri.V. Subramanian was the Managing Director of the Salem Steel limited.

The plant was designed to rollout 32000 tonnes of cold rolled stainless steel strips and wide sheets per annum in the first phase, situated in the Tamilnadu the plant brings to India the latest sophistication in cold rolling technology. In the second phase, the production capacity was increased to 70,000 tonnes per annum by installing the second Sendzimir Mill, Stainless Steel from Salem finds application in many industries nuclear Petroleum, chemicals, fertilizer, food processing, pharmaceuticals, dairy, house hold
appliances and cutlery. The plant is actively pursuing development activities to promote use of stainless steel in new areas such as coinage, railway coaches, building, furniture, automobiles etc. In addition to the cold rolling mills Blanking line was commissioned during the year 1993 with a capacity of producing 3000T coin blanks per annum and the provision is there to make utility blanks. As one step ahead in reaching the goal of backward integration. Hot rolling stickle mill was commissioned during November 3, 1995 with an installed capacity of around 2 lakhs tonnes with an approximate investment of Rs. 839 crores. This mill is capable of rolling both stainless and non stainless steels.

SSP certified for ISO 9001: 2001 quality assurance and ISO 14001:2004 environmental management systems, Salem steel plant is one of India’s leading producer of quality stainless steels. The plant is capable of rolling 186200 tonnes of hot rolled carbon (Stainless steel flat products and 70,000 tonnes of cold rolled stainless steel sheets coils annually. Its blanking line has the capacity to produce 3000 tonnes of ferritic-grade coin blanks on 3600 tonnes of utility blanks per annum. SSP’s products, branded Salem stainless are well accepted in the domestic and international markets.
The plant produces cold rolled stainless steel as well as hot rolled carbon and stainless steel products beyond its designed capacity in thinness and thicker gauges. It is also capable of producing and supplying micro alloyed carbon steel. New applications of stainless steel are being continuously developed and special grades are being supplied for manufacturing metro rail coaches. Salem steel plant is also engaged in conversion and supply of its products like kitchen ware and pipes and other applications. Besides undertaking turnkey projects. The plant also has an agreement with BPCL for retail of Salem stainless kitchenware and table ware through Bharat Gas outlets in the new finishes are also being developed and supplied for various architectural applications, railways and elevator segments.

Industrial segment using “Salem stainless” include heavy engineering chemicals and fertilisers, railways, automobile, construction, dairy and food hi tech areas like atomic power stations and space research etc.

**Hot Rolling Steckel Mill**

The hot rolling facilities of Salem steel plant employ the most modern technology capable of rolling stainless steel as well as carbon steel grades. This new facility has equipped the plant in meeting majority of the requirement of industrial sector in India.
The hot rolling mill complex consists of a slab yard, a walking beam reheating furnace, a roughing mill, a single stand 4 high reversible stecket mills, a down coiler and coil yard for marking, cooling and despatch. The major equipments excepting for the walking beam reheating furnace have been supplied by M/s SCHLOEMANN. SIE MAG (SMS) of Germany.

Hot rolling steckel mill the mother unit for hot rolling facilities with level II automation, is provided with hydraulic gauge setting and automatic Garuge Controls (AGC). The continuously variable crown (cvc) which controls the profile and flatness of the strip by work roll shifting and bending further improves strip profile and flatness.

The equipment of HRM complex have been procured from world renowned suppliers. The main 4 high steckel hot strip mill, 4-hi reversing roughing mill and down coiler have been supplied by SMS schoelmann siemag A.G.Germany. The walking beam re heating furnace, the roll grinding supplied respectively by italimpianti, Italy; Toshiba, Japan and siemens, Germany.

PRODUCT MIX:

With the commissioning of hot rolling steckel mill, Salem steel plant has also entered the market of carbon steels. The hot rolling mill is capable of producing both stainless as well as non stainless steels. In case of carbon steels
the minimum thickness which can be achieved is 1.6 mm and the case of stainless steel the minimum thickness achieved would be 2.0 mm. The mill has the capacity to roll upto 1300mm width.

**PROCESS:**

Slabs of carbon steel or stainless steel are received through wagons form Alloy steel plant. Durgapur or Bhilai steel plant or from a broad and stored in slab storage yard. As per the schedule the slabs are charged into the walking beam re heating furnace and annealed to a suitable temperature. Later these slabs are discharged from furnace and sent to roughing mill. In roughing thickness of 25mm and sent to steckel mill for further reduction. Having achieved the required thickness, the material is cooled with the system of laminar cooling in case of carbon steel and coiled in down coiler. In case of stainless steel the material is directly coiled in don coiler after natural cooling. From down coiler HR coils cue taken to CRM customers through trucks.

**PRODUCT MIX PROCESS EQUIPMENT AND INFRASTRUCTURE OF COLD ROLLING MILL:**

Cold rolling complex of Salem steel plant is equipped with the most modern stainless steel production lines sourced from leading manufactures the world over. The mills produce stainless steel coils and sheets that are
characterized by their superior quality precise dimensional tolerances, high degree of flatness and attractive finishes.

Computerized 20 high sendzimir mills, the most sophisticated high speed mills of their kind spearhead the cold rolling process. Coils built up in the coil build-up line are softened and decaled in continuous annealing and pickling lines. The latest ruthner, neutral electrolytic pickling process employed in these lines ensure flawless surface finish.

The shearing line with two precision roller levellers, electronically controlled flying shear and vacuum piler, allows defect-free piling of the levelled cut sheets-coils of narrow width and smaller weight are produced by precision slitting line equipped with latest features like in feed car grip device, tension padd and inter changeable slitters. The shearing and slitting lines have online continuous marking system.

A few special production facilities like 300 t stretcher leveler to produce sheets of very high degree of flatness. Requiring shear. Recoiling line for inspection of special products, sheet grinding and polishing line packing line for shit products and coils are also available in the cold rolling complex.

In addition to the common 2D and 2B finishes, a wide range of finishes including No3,4 and 8 can be produced. Also available are stainless steel coils
in no 1 finish and other special finishers the like moon rock, hammer tone, stripe, chequered etc.

**PRODUCT MIX:**

Salem steel plant specializes in the production of wide cold rolled stainless steel sheets and coils. During the first stage, the plant had a capacity to produce 32000 tonnes of stainless steel sheets to and coils with thicknesses ranging from 0.3 mm to 6.00 mm and width varying form 600 mm to 1250 mm. for sheets the length varies from 500 to 400 mm. for slit coils, the minimum width can be as low as 50 mm. in addition to the common 2D and 2B finishes, a wide range of surface finishes, mirror and hair-line finishes are produced in a variety of grades, conforming to international standards.

**PROCESS:**

Salem steel plan employs the latest technology in cold rolling and incorporates the most modern equipment, supplied by the leading machinery manufacturers all over the world.

The raw material for Salem Steel Plant is hot rolled stainless steel coils, called hot bands. These coils are processed in coil Build up line (CBL) coils from CBL are softened and decaled in annealing and pickling lines (APL) form here they are sent for cold rolling in the sendimir mill (Z-mill) to the desired final thickness. The cold rolled coils are again-softened and descaled to obtain
optimum finish and mechanical properties. These are passed through the skin pass mill (SPM) to give a bright finish and necessary flatness. The coils are ultimately either slit or sheared into finished products in the form of slit divided coils or cut lengths. The special surface finished are obtained in sheet form in the sheet grinding and in coil form in the strip grinding line (SGL).

With the special feature of computerized gauge control in the sendzimir mill it is possible to obtain very close gauge tolerances. The latest rather neutral electrolytic pickling process in the annealing and pickling lines ensures excellent surface finish and minimum environmental pollution.

EQUIPMENT SUPPLIERS AND OTHER AGENCIES OF CRM:

The Salem steel plant bears contribution by way to equipment supplies from 13 major foreign suppliers in eight centuries, twelve public sector undertakings and several private sector industries in India. In value, only 38% of the equipment have been paid in foreign exchange, with 20% supplied by public sector undertakings in India and 42% supplied by Indian private sector. The erection of equipment is totally Indian, the Hindustan steel works construction limited providing civil and structural requirements and Tamilnadu water supply and sewage facilities, one of the biggest liquefied petroleum Gas storage facilities in the country is a Salem steel plant, put by Indian agencies.
The production know-how for cold rolling stainless steel and finishing was obtained from M/s ugine of France

BLANKING LINE:

Blanking line in SSP uses top-of-the-line technology to produce the best quality blanks for coins and utility applications. The know-how for the blanking process was provided by royal mint services, UK. Detailed engineering was done by centre for engineering and technology (CG) the in house consultants of SAIL.

Facilities at the blanking line include blanking press, rimming, machine, annealing, pickling, polishing, counting and packing units. The straight sided high speed blanking press, a high performance machine, uses precise tool guidance to achieve production quality. The blanking press, a self balancing machine, punches out about 2000 kg of blanks per hour.

SUPPLIERS TO THE WORLD:

Highly advanced facilities and technical expertise of the operating personnel, enables Salem steel plant to meet the stringent requirements of export markets.

Salem stainless occupies a pride of place in international markets and is exported to more than 37 countries world wide. Australia Spain, UK, Italy, USA, Japan, Germany, Switzerland, Den Mark, Portugal, China, Malaysia are a
few stainless rings a bell. At the plant, quality standards are ensured right from procurement of raw material their processing through different equipment classification and categorization based on testing and inspection.

The plant’s laboratory can test the chemical composition, mechanical properties and metallurgical characteristics with respect to various certifications are computerized to minimize errors and eliminate delay.

QUALITY ASSURANCE:

At Salem steel plant, it is an accepted fact that the reputation of the company hinges on the quality of its products. With stringent quality control measures aided by modern process plant control, inspection and testing facilities, the plant ensures supply of quality products conforming to international standards. From the selection of the input material up to dispatch of finished products, strict quality control measures are exercised at every stage. The plant’s quality certified to the ISO 2002 standard by RWTUV, Germany. The quality assurance efforts are complimented by the testing facilities of metallurgical laboratory equipped with sophisticated equipment like:

- Universal testing Machine
- Image analyzer
- Scanning electron micro scope
- Optical micro scope (with micro hardness testers)
- Hardness cup tester
- Impact tester (with sub zero cooling chamber)
- Ferrite meter
- Optical emission spectrometer
- Portable analyzer
- UV-VIS spectrometer
- Carbon sulphur determinator
- Oxygen nitrogen determinator
- Atomic absorption spectrometer
- Grade sort analyser.

A VALUABLE EDGE:

To reach its products safety to the customers Salem steel plant has evolved packaging techniques of high standards. These include the online method, application of productive surface laminate, and special flexible waterproof covers. The plant using galvanised plain sheet has developed a system of packaging by which no damage occurs to the sheet or coil. The coils and sheets are wrapped thoroughly with polythene films before covering them with GP sheets to guard against any seepage of water.
CUSTOMER SERVICE AND APPLICATION DEVELOPMENT:

Salem steel accords priority to customers’ feedback. Manufacturing practices are constantly updated and modified to suit the exact requirement of customers be it in terms of quality packaging timely delivery and after sales service.

The plant also endeavours to ensure that customers derive the best from its products by offering technical services in the selection and fabrication of stainless steel.

The latest technological advances are incorporated through product. Application and development aimed at developing specific products for particular and used, optimization of forming and fabrication practices and trouble shooting.

The application development activities initiated by the plant include ferric stainless steel coin blanking, ss409 m applications, stainless steel rail coaches/wages, stainless steel door frames etc.

CONCERN FOR ENVIRONMENT:

Salem steel plant has an abiding commitment to its environment management. Adequate steps have been taken from the beginning and necessary precautions are built into the system at the design stage itself to minimize pollution. The plant effluents are continuously monitored by the pollution
control board or Tamilnadu and by the Salem steel plant. An acid recovery system installed in the plant can recover free acids used in the picking solution there by further reducing the pollution level. The purified acids are re-used.

A lot of greenery has also been developed in and around the plant by growing trees and through affrestation. Teak saplings are planted every year under the affrestation scheme. Which are irrigated using the treated efferent water from the plant and the township.

HUMAN RESOURCE DEVELOPMENT

It there is anything that equals the sophistication of the production facilities. It is the quality of its motivated and adequately trained managerial and non-managerial cadres of human resources.

Many of the engineers and technicians manning the equipment have been trained abroad in equally technologically advanced plants in Australia Austria, Belgium, Canada, Finland, France, Germany, Italy, Japan, South Korea, Sweden, USA, UK etc.

Their skills are constantly updated through well structured technical and non-technical training programmes specially devised by the management training institute of SAIL at Ranchi and by the human resource development centre at Salem. They are also trained in sister plants of SAIL and other reputed institutes in India.
A highly qualified and experienced team of engineers amalgamates the modern production facilities and the technological advances obtained by way of know-how transfer.

SUMMARY

In this chapter, the profile of the Salem steel plant has been outlined. The Salem steel plant was a long cherished dream. Government of India decided in May 15, 1972 to set up an integrated special steel plant at Salem in the state of Tamilnadu for the production of sheets and strips of electrical, stainless and other special and mild sheets on the basis of sound techno-economic considerations. The company provides employment opportunities to many and to improve its further efficiency, various research and development activities are being undertaken.