

# NSSL Limited – innovation through reliability

According to NSSL Limited the company's vision is to become one of the leading valve manufacturers in the world by increasing their product range and maintaining an international reputation of quality, reliability, prompt delivery and after sales service, aiming to achieve maximum customer satisfaction. The company's mission is to accomplish this through sustainable growth and return on investment by continuous improvement of human resources, the environment, technology and products. It would seem NSSL are on target to meet their vision and Valve World takes the opportunity to pass on to you in a straightforward way what we learned from the company.

By Gillian Gane

## History of the company

Since its inception in 1989 NSSL has built up a solid brand reputation with 25 years' experience in manufacturing and supply to more than 30 countries and over 500 projects in the oil and gas and process industries, and the offshore, petrochemical, power, marine and steel sectors. Part of the NECO Group of Industries, NSSL is a multinational company headquartered in Nagpur, India, with seven manufacturing facilities located in Italy, Qatar and India. Technical expertise is combined with the latest design software and dedicated R&D facilities to produce valves up to 80" and pressure classes up to 2500#.

NSSL tell us that the NECO Group is the largest foundry group in India having a 1 million tonnes integrated steel plant. With this strong foundation NSSL diversified and began producing valves in 1989, becoming one of the largest

manufacturers in India in just a few years, proving its presence in the global market by increasing its customer base and turnover with a vertical growth of 30% year on year.

In the early 1990s NSSL became the first valve manufacturing company in India to have an in-house cryogenic testing facility and more than 5,000 valves have been produced and supplied by the company to date, for major domestic and international clients such as Ras Gas, KNPC with the capacity for cryogenic valves of over 48". Ever seeking technological advancement, the company entered into collaboration with Schubert & Salzer, Germany, then focused on the manufacture of valves for hydrogen, oxygen, seismic and CNG service.

In 2008, NSSL acquired Econo Valves Pvt. Limited, Chennai, India – a company that manufactured plug valves in sizes up to 24". Today, they are one of the few manufacturers internationally who can

supply pressure balanced plug valves up to 36".

In 2009 a new manufacturing facility was set up in Italy, NSSL Italia S.r.l. at Rottofreno, Italy and horizons were extended to produce ball valves from ½" to 60" and pressure classes up to 2500#, forged and cast in grades ranging from A105 to titanium.

2012 saw NSSL enter into a joint venture with Almana Group setting up a new



Automated test bench.





India Plant.



CNC line for 24 inch and above.

valve manufacturing plant at Doha, Qatar: NSSL – Almana Middle East W.L.L., to cater mainly for the growing demand in the Middle East. In 2011, a new, USD 32m, state-of-the-art manufacturing plant was opened in India,

incorporating a covered area of 125,000 sq. ft. having the latest CNC machines with automated test benches and an annual capacity of around 100,000 valves. The company's latest venture is the setting up of a new Valve Care Unit in

2013, taking it into the servicing sector for servicing all types of valves of any make.

### R&D and SAP implementation

Research and Development is of major importance to NSSL. The company has successfully endorsed its design capabilities by certifying over 250 designs under European Conformity Norm "EC Design – Examination Certificate" under Annex III (Module B1) of Directive 97/23/EC through M/s Det Norske Veritas, Italia S.r.l. They have a dedicated R&D facility for new development and testing in house, including hot and cold cyclic test, CV analysis, stem pull test, fire safe test, operating test, seismic test, FE test, high pressure test, helium test, cryogenic test, chemical & mechanical test, NDT including iridium source.

The latest design software is used including Solid Modeling and CAD CAM and the company has invested in one of the largest, state-of-the-art manufacturing



Stelling facility.



Plant Facilities overview.



Greenery inside the plant.





Shop overview.

facilities with a covered area of 12,000 sq metres with a further 55,000 sq metre area for expansion. This facility includes a dedicated line for various product sizes from 2" to 80" and is equipped with the latest machining centers and LAP Masters & light band checking for lapped surfaces. Automated testing benches allow the testing of larger sized valves and the latest automated seal technology produces welding without visible joints / Hard facing & PTA for Stellite deposition; also a shot blasting facility and an automated painting booth.



Some of the many castings in stock.

The implementation by NSSL in 1997 of SAP R/3 business application helps the company achieve a centralized Management Information System, better business control, material movement tracking, inventory management and business transparency. All plants and offices are linked with the head office for real time information and faster decision making. Enhancements to the system are planned to include business intelligence, mobile infrastructure, customer relationship management, supply chain management and system integration.

### NSSL special service and exotic material valves

The NSSL range of valves includes both special service valves and valves manufactured from exotic materials. These include:

- Cryogenic valves, used in process applications for liquid oxygen, nitrogen, helium, neon, argon, methane and ethylene line services. Type test certificates available as per BS 6364, conducted under TPI agencies such as BVIS, TUV, EIL, Lloyd's etc. Ranges for cold box and non-cold box application
- Inconel clad valves with 625 or 825 cladding. For applications where strength and corrosion resistance are required such as: sea water (desalination); oil and petroleum (heat exchangers, reaction vessels and fuel gas desulphurization); nuclear reactors (reactor components, reactor core and control rod components); chemical processing (thin walled and reaction vessels); hydrogen service, NACE service, nuclear application valves with seismic loading and impact hammer tests, vacuum services etc.
- Double block and bleed ball valve consisting of two separate blocks to maintain both an upstream and downstream seal between the valve ports, in either direction and under pressure balance conditions. Features full metal sealing and zero leakage on liquids and gas. Typically used in liquid and gas process isolation; instrument isolation; chemical injection; pipeline drain or bleed points; pulp & paper; food processing
- HIPPS application valves designed to prevent over-pressurization of a plant or oil refinery. Used in refineries; chemical process industry; onshore and offshore facilities; pipeline vessels and process packages; LNG facilities
- Nuclear application valves – specially developed seismic loading tested and impact hammer tested valves at NPCIL approved laboratories. "N" stamp certification under implementation
- Power valves for super critical power plants, from main steam stop valves, to valves for turbines and boilers, utility valves, valves for coal washery etc. Also high pressure class valves up to 4500#
- Exotic material valves in duplex and super duplex, as supplied for the Khurais Crude contract, the Bottleneck Condensate System project at Haradh gas plant, Chennai Metropolitan water supply and Sewerage Board's desalination project in India, coal gasification plant, India.

## HR philosophy

HR at NSSL has been an evolutionary and motivating process and remains focused on providing direction, satisfaction and a sense of purpose in the workplace. Employees are taught strong core values, competency and skill sets are continuously updated and ongoing training is given to develop capabilities and encourage career progression. The company strategy is to develop business leaders for tomorrow and foster creativity, innovation and enthusiasm.

NSSL are also committed to the environment and society and, to this end, have implemented OHSAS systems and introduced a green plant area in the factory, amongst other things. The company is also active in the community organizing roadside plantation work in the city, blood donation camps, constructing overhead water tanks and toilets in surrounding villages and lake beautification work.

## Achievements

### Gate, Globe & Check valves

- Cryogenic valves supplied in sizes up to 28" and class 600#. Recent supply to Ras Gas Qatar for 24" 600# cryogenic valve
- Pneumatic operated valves to KAIGA nuclear power project of NPCIL, India
- 56" 600# swing check valve – 8 nos. Design under development for French customer
- Successfully supplied gate valves in sizes up to 80" including: 56", 54", 48", 42" for oil & gas sector
- Order for butterfly valves up to 80" including 72", 40", 32", 28" and 20" for SMS shop at steel plant
- Order for supplying valves in duplex stainless steel for Kuwait market
- Supplied 2568# duplex stainless steel valves to Khurais Crude Oil project of Saudi Aramco A/c Saipem Snamprogetti
- Order supplied 18" 2500# & 16" GTV 2500# for 130 MW x 3 thermal power plant
- We developed 16" 2500# globe valve for German customer and supplied in record time of 8 weeks
- FBE (Fusion Bonded Epoxy Coating) coated valves to Saudi Aramco A/c Saipem,

### Ball valves

- 48" 600# TMBV (LF2, 3pc construction) to Russian market
- 12" 1500# TMBV to Qatar Petroleum
- 18" 1500# ball valve order for HIPPS application under SIL 2 certification
- 24" 300# cryo.TMBV to Ras Gas through Chiyoda, Qatar
- 32" 900# TMBV (A105N) with pneumatic actuator
- Order from The Netherlands for ½" to 30" 1500# valves in both LF2/SS 316 material – qty 283
- 20" to 36" 300# LF2 TMBV for SOGT (offshore) project, Malaysia, through SAMSUNG
- 10" 600# ball valves to KJO, Al-Khafji, Saudi Arabia
- 16" 2500# TMBV (LF2) to Germany

### Plug valves

- 1500# plug valves to ONGC, India
- Supplied sizes up to 28" MOV valves to Indian refinery
- Supplied 8" 900# MOV plug valves to Saudi Aramco
- Supplied up to 8" 900# plug valves with Inconel 625 cladding to Saudi Aramco
- Supplied 6" 900# WCC Phen-Epoxy coating plug valves to Saudi Aramco



36" 150# class gate valve.



Plug valve.



24" 600# class LCC valve.

## NSSL – why use us?

- Multi National Company with manufacturing facilities in strategic locations to serve local markets
- Profit making company with growth rate of 30% in past 10 years
- Large product range and valves for all services and core sectors from a single source
- Captive steel foundry for producing stainless steel, alloy steel, duplex and super duplex castings with minimum delivery time
- Shorter delivery with higher volumes, especially for project requirements
- Well-equipped Design and R&D team for developing new products in the shortest delivery period
- All major Quality System Approvals from international accreditation agencies and customers
- Fully equipped machine shops with state-of-the-art machines, tools, etc.
- Good response time to enquiries, techno-commercial clarifications on time on pre-post order stages
- Availability of technical team at customer's door for any clarifications or discussions. Accessibility to higher management
- Separate SBU (Valve Care Services) catering to the needs of all types of valve repair and servicing on site
- 24/7 customer service and support
- Professionally managed and well trained manpower in all departments
- Sound financial assets with the support of the Group Company