The spurt in the use of CNG as an automotive fuel in the country has led to a manifold increase in demand for CNG cylinders for onboard application on automobiles. The production of such cylinders in India is limited to a few manufacturers and as such automobile manufacturers and retrofitters engaged in conversion of vehicles to CNG are increasingly looking to cylinders imported from other countries. Cylinders manufactured in China have emerged as a major competitor to the cylinder manufacturers in Europe because of their cost competitiveness. In the past, not many cylinders were allowed to be imported into the country from China as much was not known about the quality systems in place with the Chinese manufacturers. However, lately PESO has received a number of requests for allowing import of cylinders of Chinese origin, especially for use with CNG, for automobile application. A PESO team comprising of Shri M. Anbunathan, Chief Controller of Explosives and Shri C.R. Surendranathan, Controller of Explosives, Head Quarter, Nagpur therefore, undertook a tour to China and visited cylinder manufacturing facilities of M/s. BTIC at Beijing and Tianjin and tube manufacturing facilities at TIPCO, Tianjin. They also visited the cylinder manufacturing unit of M/s. Shanghai High Pressure Container Co. Ltd., Shanghai. During the visit, they were exposed to the latest technologies employed in the manufacture, testing and quality control of seamless steel tubes and cylinders, manufacture of cylinders using billet piercing and spun tube process, and composite materials etc. The above technologies are yet to be adopted in the country. Tubes of cylinder quality are also not manufactured indigenously. The visit has helped the officers to have a balanced view of the capabilities of cylinder manufacturers of China, the quality control systems employed by them and also to understand how some of the cylinder manufacturers in China could successfully integrate with global competition and penetrate into the European and American markets—a model of development worth emulating by the indigenous industry.

VISION STATEMENT

Chief Controller of Explosives, Nagpur and his team shall constantly endeavour to render efficient, prompt and courteous services to all licensees, public and industry with complete transparency in their working through optimum utilization of available human resources and e-technology while keeping in view National Interest and Safety as First motto.
COLD STRETCHING OF PRESSURE VESSELS

Austenitic stainless steel exhibits stress/strain characteristics, different from that of carbon steel. Such characteristic of austenitic steel makes it suitable to accept strain as a means of increasing its proof strength. Austenitic stainless steel which has been strained to a higher proof strength retains and even increases its enhanced strength advantage when used under cryogenic conditions. For achieving this, austenitic stainless steel is loaded to a certain critical stress above its proof strength when a permanent plastic elongation results. It is thereafter unloaded. When such steel is loaded again it retains elastic proportion up to a stress to which it was earlier stressed which now becomes its new proof strength. Only when this stress is exceeded, does the permanent elongation restart and the deformation follows the original stress/strain again. In practice, the straining for strengthening is achieved by pressurizing the finished vessel to a specified stretching pressure known to produce the strengthening stress above the proof stress. This produces a change in the dimensions of the vessel because of plastic deformation of steel. However, the vessel now becomes capable of being suitable for higher design pressure. The advantage of the technique is that it allows calculation of wall thickness for internal pressure on the basis of stress at the strengthening pressure and not on the basis of conventional design stress value of the material used. This results in obtaining a wall thickness substantially lower than thickness based on conventional design stress value. Such a change in design basis can lead to saving in material of the vessel to up to 40%.

European community has formulated standard designated as EN:13458-2:2002(E) which lays down the norms for design, strengthening procedure, record, etc using cold stretching technique. Normally, such technique can be used for austenitic stainless steel of a wall thickness of not more than 30mm, strengthened by pressurization at room temperature after being completed and intended for a maximum operating temperature of less than 50°C.

The above technique of cold stretching has been employed in European countries for several years in the past to produce vessels which are capable of withstandng higher pressures at cryogenic temperatures. M/s. TUV, Germany has been pioneers in developing procedure in this area. In 2004, shop trial for using the technique in India was under taken by M/s. Inox. The trial on the technique was conducted by them at their fabrication shop in Baroda. Procedure and engineering for the fabrication and stretching was developed by TUV, Germany and witnessed by their inspectors. Encouraged by the results of the field trial, M/s. Inox decided to make commercial use of the technique for fabrication of pressure vessels for cryogenic use. Approval for using the technique for fabricating a 5.3m3 LN vessel in Inox fabrication shop at Baroda was issued by PESO in February, 2005. The actual process of cold stretching was recently witnessed by Shri A.N. Biswas, Jt. CCE, Nagpur. The process was carried out under TUV third party inspection. Recorded data during stretching and results of inspection by the TUV Inspector in India will be finally reviewed by TUV, Germany before issue of control certificate. Such a technique is expected to find wide usage in the future because of its cost advantage.
PETROLEUM INSTALLATIONS

A need for protection against lightning

In India petroleum installations, including those located in lightning prone areas, are not suitably equipped against lightning strikes. There have been a number of incidents when Petroleum storage tanks have caught fire when struck by lightning.

The conventional lightning rods, which we find installed on tall structures and chimneys, are not suitable for Petroleum installations. Rather than providing protection, they facilitate lightning discharge through them. Such discharge through lightning rods can produce secondary effects leading to fire in petroleum tanks.

A technology termed as Dissipation Array System (DAS) developed by M/s. Lightning Eliminators & Consultants, Inc., USA is now finding increased usage for lightning protection in Petroleum installations world wide. The system involves providing protection for the entire Petroleum installation by way of installing numerous configured ionizer points at different locations in the area to be protected. Each point of ionization comprises of a bunch of metallic spikes. The spikes are further grounded using specially designed grounding electrodes.

The system works by reducing the potential between the site to be protected and the storm cloud cell overhead, so that the potential between the two is not high enough for a lightning stroke to terminate within the area. This is achieved by release or leak off, of the charge induced in the area to a level where a lightning stroke is impractical. The spikes work as efficient dissipation devices, dissipating the ions and neutralizing the charge emanating from the clouds. The ionized air molecules formed by the discharge are drawn above the ionizer where they slow down and tend to form a shield. An efficient grounding system installed with the system provides continuous source of charge to keep the ion current flowing through the spikes and thus in the process forming a shield over the area to be protected and reducing the charge on the ground.

Installation of such a system in a petroleum storage area does not allow the potential difference between the tank and its contents to rise to a level so as to be able to create a spark within the vapour space of the tank and thus result in a fire. The design of the system has however to ensure that the charges induced in the petroleum tank and its contents get efficiently dissipated through an effective bonding arrangement.

CCE has recently permitted the use of the system for providing lightning protection to petroleum installations in lightning prone areas. The system will be installed on a trial basis at first and if found successful, will be used extensively for protection of petroleum storage tanks.

NOISE LEVEL CONTROL OF FIREWORKS

Supreme Court issues directive.

Hon’ble Supreme Court has recently given a landmark judgment on noise pollution from firecrackers. In its judgment, the Hon’ble Court has entrusted responsibilities for developing eco-friendly fire works on the Organisation. The Hon’ble Court in its judgment has directed the Organisation to undertake activities for the purpose of developing chemical compositions for various types and categories of fire crackers so that the sound limits emanating from such fire crackers does not exceed the maximum allowable sound limit of 125 d.B. (A1). Based on the research, the Organisation will be required to specify the proportion/composition as well as the maximum permissible limit of every chemical used in the manufacturing of fire crackers. Consequent to the directions of Hon’ble Supreme Court, PESO has already taken up with NEERI, Nagpur for undertaking a comprehensive study to develop environmental friendly fireworks. In addition to the above, the Organisation has been directed to classify into two categories namely, the sound emitting fire crackers and color emitting fire crackers. As per Hon’ble Supreme Court’s directive, it will now be necessary for the manufacturers to display the chemical content of the fire crackers on each box of such crackers.
LNG – FUEL FOR THE FUTURE
Approval for pilot project

As the petroleum reserves get depleted, LNG is being increasingly looked at as an alternative source of energy. Even though LNG has been in use as an energy source for quite some time in the other parts of the world, its use in India is relatively new. The main application of LNG in the country so far has been as a fuel for power generation. However, considering the substantial advantages it has over other conventional fuels, its use for other applications like automotive and industrial fuel merits serious consideration.

M/s. Petronet LNG Ltd., Dahej, Gujarat who have been among the first few companies to set up marine terminal facilities in the country for importing LNG have now come up with a project to supply LNG as a fuel to Industries situated within a radius of 200 to 300 km. of its terminal at Dahej using semi articulated road tankers. The project is being undertaken as a pilot study to validate the design of LNG transportation and handling system using LNG semi articulated road tankers and to establish technical feasibility of supplying LNG for use by small industrial customers. The company has for this purpose, entered into a collaboration with M/s. IBP for developing a pilot project to load LNG into cryogenic semi articulated road tankers, custom built to handle and deliver LNG to sites at short distances from Dahej. M/s. Chart Industries Inc. USA will provide the design and consultancy work for LNG road tankers and small capacity storage installations. PESO has recently given its consent for the pilot project which involves taking tapping from the existing LNG pipeline at Dahej and establishing two filling bays for filling LNG road tankers. The filling bays being established will have a capacity to fill in 8 Nos. of tankers per day. The detailed engineering design for the system based on NFPA 58A is under development at present. Once the pilot project establishes the design and the operational feasibility of transporting and handling LNG for use by Industrial customers, the consumption of LNG in the country is expected to show exponential growth.

ACCIDENT REVIEW

LPG is nowadays finding increasing use as an auto fuel. There is no doubt that from the environment angle, LPG as the auto fuel scores much higher than the conventional fuels like MS, HSD, etc. However, there is also no denying the fact that its use is associated with more hazards than the conventional fuels especially when proper caution is not exercised in selection and installation of the equipment associated with the running of auto mobiles on LPG. Below mentioned incident involving LPG used in an automotive vehicle illustrates this.

This incident occurred in Tiruvankulam in Ernakulam district of Kerala. It involved a Maruti van run with LPG as a fuel which was completely wrecked as a result of a fire and explosion involving LPG. The van was retrofitted with an unauthorized conversion kit in a workshop which was not approved as per the requirements of CMV regulations. It made use of an ordinary domestic LPG cylinder instead of a duly fitted, approved auto LPG tank. In order to undertake longer journey, an additional LPG cylinder had also been stacked inside the van. The fire and the subsequent explosion was so severe that the roof of the van was completely blown-off and glass panes of the van were reduced to smithereens. Investigation revealed that the incident started with a short circuit in the battery resulting in sparks which caused fire in the upholstery of the van. The fire then spread to the LPG rubber tubing connecting the LPG cylinder to the copper piping feeding the van engine. Profuse leakage of LPG from the tubing aggravated the fire, engulfing the LPG cylinders on-board in the process. One of the cylinders exploded as a result of intense heat generated by the fire, wrecking the vehicle completely. Fortunately, the occupants of the van had moved away before the aggravation of the fire. Had it not been for the timely intervention of the local fire brigade authorities, the incident had the potential of causing considerable loss to life and property.

It surmises from the above that it is very important to spread awareness amongst the users of LPG about the hazards involving in the use of LPG and the need to use proper equipment and follow proper installation procedures for retro fitting of the vehicles. There is also need for law enforcing authority to be more vigilant so as to ensure that only approved conversion kits, cylinders and accessories are used on Auto LPG run vehicles.

The roots of education are better. but the fruits are good!
GOLDEN PEACOCK AWARD
FOR SHELL INDIA LTD.

Shell India Marketing Pvt. Ltd. has won the prestigious “Golden Peacock Eco-Innovation Award 2005” conferred by the World Environment Foundation (WEF). The award has been given in recognition of innovative environmental features and technologies developed at Shell India fuel retail outlets. Such features include double-walled fibre glass storage tanks, leak proof piping, impervious forecourts and oil water interceptors, amongst many other initiatives. The award is yet another milestone in the pursuit of excellence by Shell. PESO which plays a pioneering & pro-active role in facilitating and promoting innovative technologies in the Petroleum retail sector with commitment to safety and environment, feels proud to have been associated with Shell India, in approval and implementation of such innovative concepts for the first time in the country.

Well done Shell India! Congratulations!

POSITIVE ATTITUDE

Will a positive attitude solve all your problems? No, but it can open your eyes to the valuable opportunities within even during the most difficult situations.

Will a positive attitude make you rich and powerful? No, but it will serve as a constant reminder that you can achieve whatever you choose to achieve.

Is a positive attitude a way to escape from reality? No, in fact a positive attitude is a very powerful and effective way to successfully deal with reality.

Will a positive attitude magically bring into your life all the things you desire? No, but it can enable you to see and to follow the very real path from where you are now to where you want to be.

Will a positive attitude bring you any new energy or resources? No, but it will give you vastly greater access to the overwhelming abundance that is already yours.

Do you want to fully live the best that life has to offer? A positive attitude will enable you to see it, so that you can be it.

CLEAR THINKING

The following Sufi story gives us a clear understanding of how problem solving is affected when our minds are disturbed and we are not in our senses:

A man saw Mulla Nasrudin, who was rather agitated and was looking for some lost property on the ground.

“What have you lost, Nasrudin?” he asked.

“The key to my house,” said Nasrudin,

So the man bent down to help Nasrudin look for the key.

After a period of fruitless searching the man asked:

“Nasrudin, where exactly did you drop the key?”

“In my own house,” Nasrudin replied.

“Then why are you looking for it here?”

‘Because there is light here and there is no light in my house.’

Even when we are in our senses, our grasp of reality through sense perception is limited in range. In the ordinary state of awareness our senses do not even respond to one millionth of the total sensory stimulus present in a small room. We cannot, for example, smell the world with as much intensity as a dog does. We do not have the sharpness of vision of an eagle, which allows it to spot its prey from miles away. We also cannot hear the ultrasonic universe of which a bat can make sense. In the course of its evolution, the human species has lost much of its senses.

We look with our……
eyes but fail to see; we hear sounds but fail to listen;
we touch yet we do not feel.........
“हिंदी पखवाड़ा कार्यक्रम”

हमारे संगठन (पेयो) के विभिन्न अंचल, उप अंचलों, विभागीय परीक्षण केंद्र तथा नागपुर कार्यालय में सितम्बर माह में हिंदी पखवाड़ा बदे भूमि-भाषा तथा उच्चाय पूरक मनाया गया।

नागपुर कार्यालय में हिंदी पखवाड़े के उपलब्ध में विभिन्न कार्यक्रम आयोजित किए गये जिसमें सभी कर्मचारियों तथा अधिकारियों द्वारा भाषा सिक्त गया। हिंदी पखवाड़ा सितम्बर 14 से प्रारंभ होकर 29 सितम्बर को समाप्त हुआ। हिंदी पखवाड़े के अन्तर्गत हिंदी कार्यालय सभी आयोजित की गई जिसमें अंबाजी ओर्डरेन्स फैक्ट्री के श्री. अरोक कुमार सोनी, हिंदी अधिकारी के द्वारा विभिन्न जानकारियों की गई तथा निवंद प्रतिवेदिता, सुंदर दिशापट्ट तथा आलोचनात, प्रश्नोत्तरी, अंतर्वती तथा स्तंभों के आचरण कार्यक्रम में आयोजित किए गये।

हिंदी पखवाड़े के समाप्त समारोह की अयत्ता श्री. एम. अनुज्याथन, मुख्य विस्फोटक नियंत्रक द्वारा की गई। अपने समारोहित भाषण में उन्होंने कहा कि, हिंदी बहुत ही सरल एवं सुगम भाषा है सारे भारत वर्ष में हिंदी का संपर्क भाषा के रूप में अपनाया जाता है।

“हिंदी प्रयोग का उत्कृष्ट प्रदर्शन”

वर्ष 2003-04 में हिंदी में उत्कृष्ट कार्य के लिये संरक्षण मुख्य विस्फोटक नियंत्रक, फरीदाबाद कार्यालय को प्रथम पुरस्कार प्राप्त हुआ तथा शील्ड दी गई तथा वर्ष 1998-1999 एवं 2002-2003 में द्वारीय एवं वर्ष 1999-2000 में प्रथम पुरस्कार दिया गया।
“स्वतंत्रता दिवस समारोह”
पेट्रोलियम तथा विस्फोटक सुरक्षा संगठन अधिकारियों तथा कर्मचारियों ने बड़े उत्साह तथा हर्षालाप विभागीय परिषद केंद्र, गोडडेड, नागपुर में देश का 59 वां स्वतंत्रता दिवस मनाया।

श्री. एम. आंबुनाथन ने अपने भाषण में संगठन के अधिकारियों तथा कर्मचारियों को संबोधित करते हुए स्वतंत्रता दिवस का महत्व स्पष्ट किया कि किस प्रकार प्रत्येक सदस्य द्वारा स्वतंत्रता को बनाए रखने में अपना योगदान करना चाहिए। उन्होंने अधिकारियों को संबोधित करते हुए कहा कि, यह अपना ध्यान संगठन के विकास की ओर केन्द्रित करना तथा प्रत्येक सदस्य इस प्रकार मिल जुल कर संभावित सुरक्षा दंग से काम करें जिससे कि उन्हें इस संगठन की ऊंचाई तक आने में सहयोग मिले तथा संगठन का सर्वोच्च विकास हो।

श्री. एम. आंबुनाथन ने अपने भाषण में संगठन के अधिकारियों तथा कर्मचारियों की ओर केन्द्रित करते हुए स्वतंत्रता दिवस का महत्व स्पष्ट किया।

"एक पुर्खार"

चलो उठो करो ऐसा काम अपनी ही नहीं जिसमें संगठन की देशकी राहत की ही अद्भुत पुर्खार एकता उन्माद व उत्तमत की हृदयाक।

मत सीचियु बुरा, करो मत बुरा परिचय दो अपनों को अपना जानी है दम चुंबिय जीवी है हम मानी तब जब जंग कहे समाज कहे।

न रहें हम संकीर्ण भावना न करो हम आरो से हमन कुंजत सदस्य होहा भाविया बनाए रखें हम अपनी सदस्यता।

| तो चलो उठो करो ऐसा काम | अजय निमान
| स. गु. डिव. निमान |
| नागपुर |

जैसे विचार, उसका ही व्यक्तित्व और वैसा ही जीवन.।