The Contract Heat Treatment Association Newsletter
HOTLINE
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Energy Prices Soar

CHTA Publicity Subcommittee member ***Keith Hayward*** *(Controlled Heat Treatments Ltd) comments…*

The news that HM Customs and Excise are giving serious consideration to allowing contract heat treatment businesses to enter negotiated agreements re CCL is welcome, but members are warned not to be distracted from watching wholesale energy prices that have risen dramatically in recent weeks.

Traditionally, energy contracts are negotiated on an annual basis, with a lot of time and effort spent in the preceding weeks to secure the best possible price. Thereafter, there is a tendency to close the file and to concentrate on other matters, content in the knowledge that prices are stable and fixed for the next 12 months.

Unfortunately, in today's deregulated markets, unless purchasers follow the trends of wholesale prices, the following year's negotiations can lead to some unpleasant surprises.

Many heat treaters will have experienced increases of 15-20% in 2003 energy costs due to sharp increases in gas and electricity prices in the spring, but some will be unaware of more recent increases that have led the regulator, Ofgem, to consider a formal inquiry into the reasons for the sudden hike in charges.

The wholesale gas prices rose by more than 30% in a two-week period at the end of October.

"Whatever the causes, prices have never been so volatile."

The reasons for the increases are unclear, with producers and suppliers claiming that it is simply the balance of supply and demand, whilst campaigning consumer groups accuse them of market manipulation.

Whatever the causes, prices have never been so volatile. Members should be aware of the movements that are taking place and to take them into account when negotiating long-term contracts.

For the latest information on wholesale gas prices, log on to the International Petroleum Exchange of London website www.ipe.uk.com. Registered users can view daily reports on natural gas futures and these provide a good indication of where the market is heading over the next 12 months.

For the best in contract heat treatment:
www.chta.co.uk

CCL update

Well done to all those CHTA members who responded speedily to September's urgent request for energy-use data for submission to HM Customs & Excise. SEA's Dave Elliott reports that information covering well over half of the 71 CHTA member sites was forthcoming.

Dave reckons that a strong case has been made for heat treatment, as an energy-intensive sector, to be included in negotiated agreements. As co-ordinator of this renewed effort, he tells us that a pre-Budget statement, hopefully reflecting this view, is imminent.

CHTA Secretariat

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Inside . . .

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Guido Plicht
Senior Research Engineer

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BODYCOTE WOODFORD PLANT GAINS NADCAP APPROVAL

On 12 September this year, Bodycote Heat Treatments' plant at Woodford became the first subcontract heat treatment service centre in the UK to gain *Nadcap* approval.

Operational in the USA since 1990, *Nadcap* (*N*ational *A*erospace and *D*efence *C*ontractors *A*ccreditation *P*rogram) is an industry-managed approach to conformity assessment of "special processes". It brings together technical experts from prime contractors, suppliers and representatives from government to work together and establish requirements for approval of suppliers using a standardised approach. Rolls-Royce has now mandated that companies who provide a service in "special processes" obtain *Nadcap* approval.

Opened in 1979, the Bodycote Woodford plant was the first UK heat treatment centre to be established and equipped specifically to service the aerospace industry. Since then, Bodycote has continually invested in the latest technology and trained personnel to achieve the highest standards in quality at all its locations around the world.

Nadcap's aerospace approval at Woodford is for vacuum heat treatment, vacuum brazing and associated processes. Under the leadership of Derek Alty (Technical Director) and Bill Hewitt (Group Quality Manager), and with the dedicated involvement of David Donnelly (Works Manager), Steve Wrench (Chief Inspector) and Neil Johnson (Assistant Works Manager), the Woodford team were able to move from audit, at the beginning of July, to secure full accreditation in only ten weeks. This is believed to be unprecedented in the subcontract heat treatment industry and illustrates the robust quality systems and procedures that already existed at the plant.

Procedures are in place to complete the audit and accreditation activities necessary to secure *Nadcap* approval of the atmosphere heat treatment, vacuum heat treatment, brazing, nitriding and electron-beam welding services provided by Bodycote Heat Treatments at a further nine UK sites. Four of the sites had audits booked before the end of the year, with the remainder being audited in the first half of 2004. It is expected that Bodycote Heat Treatments will have all ten of their sites that process aerospace components *Nadcap* approved by June 2004.

Bill Hewitt reflects on the Nadcap accreditation process on page 4.

2004 CHTA Officers

MANAGEMENT COMMITTEE

Following the recent AGM election, CHTA-member representatives in 2004 are:

Roger Bird (TTI Group)
Simon Blantern (Bodycote Heat Treatments)
Richard Burslem (Wallwork Heat Treatment)
Mark Florance (Techniques Surfaces)
Paul Handley (Heat Treatment 2000)
Roger Haw (Flame Hardeners)
Terry Littlewood (Expert Heat Treatments)
Dave Walker (Beta Heat Treatment)
Alan Whitehouse (Tamworth Heat Treatment)

PUBLICITY SUBCOMMITTEE

This committee currently comprises the following representatives of CHTA member companies:

Simon Cockfield (Hammond Heat Treatment)
Gary Coffey (Tamworth Heat Treatment)
Alistair Cowie (Midland Heat Treatments)
Peter Cox (Beta Heat Treatment)
Keith Hayward (Controlled Heat Treatments)
John Jervis (Bodycote Heat Treatments)
Ian Lacey (Alloy Heat Treatment)

The Publicity Subcommittee, which meets four times a year, is keen to increase its number in order to inject a fresh flow of ideas and to ensure that it represents a consensus of CHTA member views. Other members willing to offer a representative should contact CHTA's Secretariat.

PLASMA NITRIDING AT WALLWORK

An investment of over £200,000 by Wallwork Heat Treatment has provided the most advanced method of plasma nitriding in the United Kingdom.

The new furnace, at the company's Birmingham facility, uses a process called Active Screen Plasma Nitriding (ASPN), which gives a number of advantages to automotive and aeroengine components and other precision-engineered steel and stainless steel products and tools. One special advantage for toolmakers is that the nitrided surface layer produced using the technology can be coated subsequently, using PVD coatings such as titanium nitride, to provide radically-extended tool life.

ASPN provides all the benefits of conventional plasma nitriding, with three additional advantages:

- no risk of arcing damage to the components;
- better penetration down blind holes and into inaccessible areas;
- no edge or corner heating effect, which can cause problems with conventional plasma nitriding.

Active Screen Plasma Nitriding (ASPN) at Wallwork Heat Treatment, Birmingham.

Hard layers, up to 1200HV on some materials, are produced with little or no distortion. The layers have uniform thickness, and the type and depth of the layers can be controlled to suit customers' requirements. The ASPN furnace, manufactured by Plasma Metal of Luxembourg, will take components of a maximum diameter of 1000mm and up to 1200mm in length. Smaller components can be stacked in layers to minimise treatment costs.

Wallwork director Richard Burslem says, "We believe this process offers significant advantages, especially to control the thickness and composition of the nitrided layer. Depending on the process choice, the technique will normally produce layers with hardnesses between 800 and 1000HV+."

Another advantage of the ASPN vacuum process, operating at temperatures between 380 and 590°C, is that it is clean, virtually emission-free, and uses no noxious salts or gases. Also a very flexible installation, it can be employed for nitrocarburising as well as nitriding, depending on the choice of reactant gases. Where critical, matching sets of components of different sizes can be treated simultaneously, in order to ensure complete surface compatibility.

Wallwork has also installed a specially-designed full process control system, linked to its internal computer system, to provide complete automatic control. The system has the options to produce tailor-made programs for specific components, thus giving complete process reproducibility.

The ASPN system is particularly suitable for use on tool and high-alloy steels. Stainless steels can also be hardened, with no loss of corrosion resistance, if required.

Richard Burslem adds, "This new technology is faster than other plasma methods, and is designed for flexibility, to enable Wallwork to give rapid turnaround times on plasma nitriding. All commissioning on plasma nitriding was completed in July, and the plant is now operating 24 hours a day."

For more information about the new ASPN process, call Richard Burslem on 0161 797 9111.

TTI GROUP QUALITY APPROVALS

TTI Group has successfully converted its quality management system from ISO 9002:1994 to the requirements of ISO 9001:2000.

In August this year, after a two-year exercise in conjunction with BSI, the certificate was issued for the TTI sites at Blackburn, Cheltenham, Letchworth, Luton, Telford, Tipton and West Bromwich. It also includes the physical vapour deposition coating services, available at Birmingham and Luton. The TTI Group plant in Birmingham has been QS 9000 approved since October 2001.

For further information contact Nigel Setchfield, TTI Group Quality Manager (e-mail: nigelsetchfield@ttigroup.co.uk).

NAME CHANGE

In the subcontract heat treatment business since 1939, long-time CHTA member G.H. White & Co. Ltd. was taken over by Special Steels Ltd in February 1997. Special Steels Ltd. possesses an even longer history, having been established by the current chairman's grandfather back in 1925.

The workforce and the wide range of treatments carried out by G.H. White & Co. Ltd. were retained to complement and enhance the existing Special Steels facilities for bulk treatments, which are, typically, hardening and tempering, normalising, annealing and stress relieving.

In 2001, G. H. White & Co. Ltd. moved from two relatively cramped sites near the centre of Sheffield to a single, but far larger, facility on Woodbourn Hill. This is in close proximity to the Special Steels base on Bacon Lane, Attercliffe.

Processing is now carried out in much better conditions and capital is being invested in order to upgrade the equipment required to harden and temper long tool steel shear blades without any significant distortion.

Back in June this year, the trading name of G. H. White & Co. Ltd was replaced with that of the parent company. As a result, membership of the CHTA has been transferred to the name of Special Steels Ltd. Full contact details can be found in the updated Buyers Guide on CHTA's website at www.chta.co.uk.

AjaxTOCCO ON THE MOVE

As part of the parent company's consolidation under one roof, the contract heat treatment department of AjaxTOCCO International Ltd will be moving to Saltley Business Park in Birmingham.

This project has started, with the company's service engineering and manufacturing departments being the first to transfer. The CHTA-member contract heat treatment department (formerly TOCCO Induction Heat Treatment) will begin to move in the new year, with completion targeted for the end of April 2004.

The opportunity is being taken to replace old equipment, and update where required, in order to create a 'best-in-class' facility with sufficient space to accommodate an expansion of up to 50%. AjaxTOCCO's customers will be consulted and the move will be carefully planned and executed to minimise disruption of their work flow.

AjaxTOCCO's new Birmingham facility.

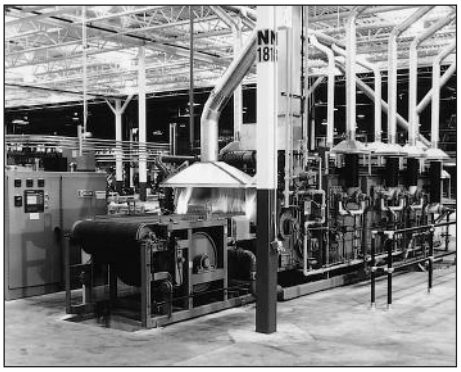
This development forms part of an overall strategy to create 'full service centres' (equipment and inductor manufacturing, service engineering, plus subcontract induction hardening) at strategic sites in Europe. Work is underway at a site in Belgium, and another in Germany is in the planning stage.

AjaxTOCCO's new address will be: 2 Dorset Rd. Saltley Business Park, Saltley, Birmingham B8 1BG (tel: 0121 322 8000; fax: 0121 322 8080).

ALPHA-ROWEN ORDERS SECOND CAN-ENG FURNACE

Three years after installing its first 400kg/h Can-Eng continuous mesh-belt furnace, CHTA-member Alpha-Rowen Treatments (Tipton, West Midlands), the UK's leading contract heat treatment company offering continuous austempering, has just taken delivery of a second.

Kevin Rowen the Managing Director and owner of Alpha-Rowen Treatments said: "We have had three years successful operation and have only recently replaced the original mesh belt. As a contract heat treatment business, it is essential that we have the right equipment and sufficient capacity to provide our existing and potential customers with the reliable high-quality service they need to be competitive in today's challenging market. The investment we have made in purchasing both these Can-Eng furnaces is an essential part of our overall business philosophy."



A Can-Eng mesh-belt furnace similar to the second to be installed at Alpha-Rowen.

In order to keep up with ever-increasing market demands for quality and service, the new mesh-belt furnace will provide additional capacity. It has been installed in a recently-acquired facility located close to the existing company site in Tipton.

The furnace is equipped with a burner management system, which allows the burners to be mounted on one side for optimisation of space, and recuperative burners for energy efficiency. Incorporated in the furnace control panel is a man-machine interface (MMI) to provide operator-friendly control. The panel also incorporates remote modem access to allow Can-Eng to provide any PLC support quickly and efficiently, without the need to despatch engineers to site.

Richard Starczewski, Technical Sales Manager for Can-Eng Furnaces UK, said: "We are extremely pleased with the partnership which has developed between our two companies. It is refreshing to work with a company like Alpha-Rowen Treatments where, despite the current economic challenges facing UK manufacturing industry, the company continues to invest in new plant and equipment that guarantee their clients get the service and improved quality they need".

SPONSORSHIP CONTINUES

CHTA is delighted to announce that Air Products plc have agreed to extend their kind sponsorship of *Hotline* and the Association's website to cover the 2004 calendar year. On behalf of all members, we thank them for their much-valued continuing support.

Nadcap - its impact on contract heat treaters as suppliers of a special process

Bill Hewitt, *Bodycote's Group Quality Manager, was the company's main man in the first Nadcap approval of a UK sub-contract heat treatment plant (see page 2). As promised in the previous edition of Hotline, here he reflects on the accreditation process.*

The objectives

- "Primes teaming together to create and manage a cost-effective consensus approach to special processes supplier oversight and continuous improvement" *PRI orientation tutorial*.
- "Prime contractors working together to improve supplier quality and reduce cost" *PRI Nadcap presentation, Derby, 2002.*

Background

The *Nadcap* accreditation program started in the USA in 1990 when the Government/ Industry Equal Partners Conference recommended the development of a consensus approach to the duplication of supplier quality assurance systems. In July 1990, PRI, an off-shoot of the SAE organisation incorporated as a non-profit trade association, launched the program for the US aerospace industry. In 1995, PRI was registered by the Registrar Accreditation Board.

The *Nadcap* Strategic Planning Board had representatives from the major US prime contractors, with European prime contractors joining in the mid/late 1990's.

The heat treatment industry servicing aerospace in the USA has been exposed to the *Nadcap* process since the early 1990's. The requirement for providers of subcontract services to gain accreditation surfaced in the UK/Europe in 2000, when Rolls-Royce mandated that all its suppliers of special processes must gain accreditation for the appropriate special process program by 31st December 2003.

Within the US aerospace industry, Boeing had remained outside the *Nadcap* community until 2001, when it committed to joining the program. This year has seen Airbus Industries confirm its commitment to *Nadcap* In addition, Honeywell has mandated accreditation in Europe by January 2004, GE Aircraft by June 2004 and Eaton Aerospace by December 2004.

The *Nadcap* process is now firmly established in the UK and Europe, and it's here to stay!

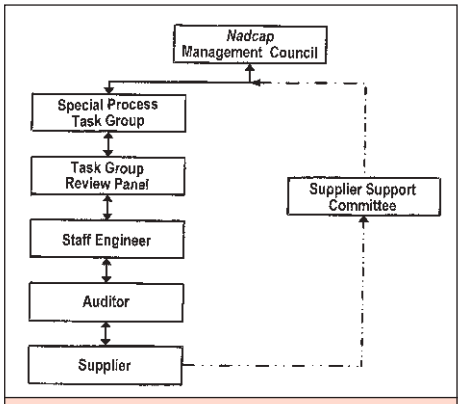
The aerospace / automotive comparison

There are some similarities between the *Nadcap* process and the development of QS 9000 and TS 16949 by the automotive industry in the same period. Both processes require a basic ISO-accredited system to be in place.

Both were initiated by a desire to develop a consensus approach to an industry-led standard of achievement. The automotive industry, through the development of QS 9000 and it's replacement TS 16949, has, from a supplier's viewpoint, been successful in achieving the development of a family of internationally-recognised industry standards that are consistent with the current version of ISO and allow for the accommodation of OEM-specific additional requirements on a consensus basis.

The challenge for the aerospace industry is to achieve a similar level of consensus, but with 15-20 participating primes, compared with the 6 to 8 OEMs contributing to automotive. The frustration with consensus is that, inevitably, it takes time and the larger the numbers, the longer that time is likely to be.

Another difference with *Nadcap* is in the use of a second-party accreditation process, where the primes take direct responsibility and ownership of the regulatory process, rather than the automotive/ European approach using third-party organisations to regulate and monitor accreditation.



Implementation of the Nadcap process.

The *Nadcap* process

From a heat treatment supplier perspective, the *Nadcap* process is implemented as shown in the accompanying diagram.

The auditor's role

At an initial audit, the auditor assesses against the relevant check sheets and writes findings into three major categories: minor, major and product impact (automatic major). At subsequent audits, recurring issues (non-sustaining findings) are automatically rated as major findings, even if, in the initial audit, they were reported as minor. Once written up, the auditor has no authority to cancel or close a non-conformance, even if the issue is resolved at the time of audit.

The staff engineer's role

The auditor's report is submitted for review by the staff engineer, who sees all supplier responses and evidence submissions. The staff engineer may or may not be delegated by the appropriate task group to close out non-conformances. When satisfied with the responses and evidence, which may take several attempts, he will submit the report and responses for a final review by the task group.

The task group role

The task group carries out the final review of the audit report and submissions to audit findings. Accreditation can only be confirmed and the audit process closed out by the task group.

In the case of heat treatments, there is an intermediate stage where the staff engineer submits the report and responses to a task group review panel, which carries out a preliminary review before submission to a full task group review.

The staff engineer can escalate or diminish the severity of a non-conformances; the task group representatives and the task group can re-open findings previously accepted by the staff engineer.

The Supplier Support Committee (SSC)

To quote PRI: "The SSC is made up of active *Nadcap*-accredited suppliers who are willing to help new clients through the process as well as "seasoned" clients to establish, maintain and improve their accreditation process" Through the SSC, suppliers can voice their opinions and raise specific issues and complaints

ISO and *Nadcap* – the differences

With the introduction in December 2000 of the ISO 9001:2000 systems standard, industry has had to accommodate a significant and radical change in the way in which systems are run.

The ISO 9001:2000 standard:

- concentrates mainly on systems;
- is a less compliance-based approach with fewer procedures;
- places emphasis firmly on the processes which affect the business and

the encouragement of continual improvement.

The *Nadcap* program:

- looks much more closely at how work is processed;
- requires greater attention to detail;
- embodies the major concern of avoiding any fault in processing which could have a direct effect on the serviceability of the product through absolute compliance with procedures and specifications.

The *Nadcap* audit

- Heat treatment audits typically occupy four days, depending upon the processes audited.
- The auditor will review systems against the requirements of the relevant sheet which includes related process such as brazing, hardness testing, micro-hardness and metallography.
- Audits will only be carried out on existing process (those for which evidence is currently available). There are no audits on a "like-to-have basis", where a supplier sees a potential opportunity but does not actually carry out the process at the time of audit.
- The audit is in significantly greater depth than most prime-contractor audits
- There is the potential for conflict between "what the specification demands", " how the auditor interprets it" and what the Task Group "prefers"; these do not necessarily mean the same thing. As a result, confusion can exist between auditors and staff engineers on policy or interpretation of issues, which can leave the supplier "between a rock and a hard place" when it comes to resolving non-conformance-related issues.

Audit frequency

After the initial audit, re-assessments are carried out on an annual basis. After satisfactory performance over a number of audits, the frequency may be relaxed to once every 18 months, with a further relaxation to every two years dependant upon continued improvements in audit performance.

***Nadcap* – the suggested benefits (PRI)**

- maintaining levels of business;
- potential additional business;
- improvement in contract review process;
- encourages standardisation of processes and procedures;
- cost savings due to reduced re-work;
- improved communication;
- improvement in earnings by reducing problems and working to systems;
- the Nadcap process aims to reduce the number of prime-contractor audits (PRI).

***Nadcap* – the experience**

- Additional costs: there is a significant direct and indirect cost burden to support the process over and above the audit fees.
- Potential additional business will only be realised if the subscribing prime contractors reward the companies taking the process on board by de-selecting non-*Nadcap*-accredited suppliers from their approved supplier lists. The prime contractors must also instruct and verify that its sub-tier suppliers also only use *Nadcap*-accredited suppliers
- Success in the *Nadcap* process is about attention to detail. The experience within Bodycote to date is that contract review, in particular, is an area where substantial improvements can be made, even where an apparently robust system already exists.

Bodycote Heat Treatments' leaders in the recent Nadcap accreditation of the company's Woodford site: Derek Alty (Technical Director) and (right) Group Quality Manager Bill Hewitt, author of this article.

- Whilst increased attention to detail will certainly reduce the risk of additional costs of claims and rework claims, this factor on its own will not make a large enough positive contribution to offset the costs incurred in implementing the process. These can only be offset by significant levels of additional business.
- Within the supplier's organisation, the *Nadcap* process requires a highly-developed system of communication.
- Within the *Nadcap* organisation, communication, particularly on issues which directly impact product, is rapid around the aerospace prime-contractor community – "bad news travels fast".
- So far, there is no evidence that prime-contractor audits are likely to diminish in the foreseeable future. This is confirmed by the experience at sites in the USA. Speaking to prime-contractor auditors in the UK, it is unlikely that a significant reduction will be forthcoming until aerospace prime contractors achieve the same level of consensus as has been achieved by their OEM counterparts within the automotive Industry
- The process is difficult and time-consuming. Deadlines for responses are finite, tight and may go back and forth several times. The mechanism for submission (eaudit net) is not yet user-friendly, although PRI is working on it.

Comments

On balance, it appears that *Nadcap*, at least initially, is not good news, particularly for smaller organisations, in the prevailing market conditions.

Any supplier thinking about accreditation must carefully consider the balance between the additional cost of the program and the potential benefits. The cost of a typical four-day heat treatment audit is around £4200 and there are substantial cost penalties for rescheduling. The cost of developing the processes necessary to achieve and maintain accreditation is significant, with no guarantees of a return on the investment. Nonetheless, there are some suppliers in the US who have been accredited for a number of years and take a more positive view with respect to the potential for improving market share.

With the additional cost implications equating to approximately 4 or 5 times the audit charge, the impact of *Nadcap* will be greatest on smaller organisations where there is less scope for spreading the cost on a shared basis. In addition, limitation of the audit scope to 'existing' processes restricts the benefit of accreditation as a tool for developing in new business areas or processes.

Although there are significant reservations about *Nadcap*, and the way in which it has been mandated, it has to be said that PRI Europe is open to feedback, good or bad, and is taking a positive approach to improving its relationship with suppliers.

Another challenge is that the *Nadcap* process does not appear to acknowledge differences in culture between the US and Europe. PRI is aware of the effects that these differences have on the perception of *Nadcap* in Europe and is looking for ways to improve the situation.

Success in achieving accreditation requires a significant level of commitment, resources and preparation. Bodycote acknowledges that there are benefits to be gained, in terms of improving the organisation's attention to detail, but whether achieving accreditation has a positive influence on the balance sheet is a long way from being determined.

Finally, to anyone providing subcontract processes to the automotive sector, don't think that you have escaped. The bad news is that the US automotive industry has recently carried out a pilot trial of a *Nadcap*-style approach on its suppliers!!

Changes to the management of hazardous waste - is industry ready?

Edward Perry *and* ***Jennifer Boniface*** *of Golder Associates, a leading earth engineering and environmental services company, highlight the issues, facing industry, surrounding the new landfill regulations.*

In 2001, almost 2.5million tonnes of special waste were disposed of to landfills in England and Wales. However, there are going to be significant changes in the way this waste is managed and disposed of in 2004. These changes are likely to have major financial implications for UK companies.

Hazardous or special?

Waste that is considered to be particularly dangerous to human health or the environment is presently classed as special waste. The movement of special waste is currently regulated by the Special Waste Regulations 1996. The disposal of special waste is regulated by waste management licences, which are issued to waste disposal facilities detailing what waste types may be accepted.

The Landfill (England and Wales) Regulations 2002 (Landfill Regulations) introduced the term 'hazardous waste' to replace special waste. Landfills are now classed as either:

- hazardous: those landfills able to accept only hazardous waste after July 2004;
- non-hazardous: those landfills that will not be allowed to accept hazardous waste after July 2004;
- inert: those landfills that are only allowed to accept inert waste, i.e. not bio-degradable.

A review of Special Waste Regulations has been undertaken with a view to producing new Hazardous Waste Regulations, which are likely to be produced in the first half of 2004.

The requirements of the European Hazardous Waste Directive will be implemented through any new regulations. This will include an expanded definition of hazardous waste and the possibility of new responsibilities for producers of hazardous waste.

Disposal to landfill

45% of hazardous waste was disposed of to landfills in 2001. There are currently a large number of landfills across the country that are able to accept hazardous waste of varying types, including used oil, heavily-contaminated soils and organic chemicals.

The number of landfills able to take this waste will be reduced to a handful after 16th July 2004. Only landfill sites classed as hazardous will be able to take hazardous waste from this date. This reduction in sites will inevitably mean higher prices for the disposal of hazardous waste. This price increase will be exacerbated by the increase in distances that most of the waste will have to travel to be disposed of to landfill.

In addition, there is a requirement in the Landfill Regulations that, from the 16th July 2004, all hazardous waste being disposed of to landfill must be pretreated to reduce either the volume or the hazardous nature of the waste. This could either be carried out by the waste producer or by the collection/disposal company. This is likely to increase the cost of waste disposal further.

There will be a further cost to hazardous waste producers that wish to dispose of their waste to landfill. The Landfill Regulations require waste to be characterised before it is sent to landfill, so that the landfill operators are able to ascertain whether they are allowed to accept the waste.

Changes to wastes consigned as hazardous waste

Any new regulations on hazardous waste will alter the definition of special/hazardous waste. This will have the effect of expanding the number of wastes that are classified as hazardous. For example, fluorescent tubes are not currently special waste but are classed as hazardous waste. The number of companies producing hazardous waste is, therefore, also likely to expand. Further information on whether a waste is defined as hazardous can be found in the Environment Agency Technical Guidance WM25.

Hazardous landfills have limits placed on the composition of the wastes that they are able to accept. One of the limiting factors that is likely to have a significant effect is that the hazardous waste is not allowed to have a total organic carbon content greater than 6%. This is likely to reduce the amount of oily and tarry waste, including waste such as heavily-contaminated soils, that hazardous landfills are able to accept. The full requirements have been defined at EU level through Council Decision establishing criteria and procedures for the acceptance of waste at landfills, pursuant to Article 16 and Annex II of Directive 1999/31/EC6, and are about to be implemented in England and Wales through an amendment to the Landfill Regulations.

Reducing the effects

It is possible that the effects of these changes to the management and disposal of hazardous waste can be reduced. It may be possible for hazardous waste producers to:

- eliminate the use of hazardous materials;
- substitute the use of hazardous materials with non-hazardous or less hazardous materials;
- minimise the quantity of hazardous waste produced by altering the process producing the waste;
- reduce the hazard of the waste by treating it on-site prior to disposal. If the hazardous nature is reduced sufficiently it may become non-hazardous.

If one or more of these actions can be carried out before 16th July 2004, waste producers should be able to mitigate any increase in price for the disposal of hazardous waste.

With the reduction in the number of landfill sites able to accept hazardous waste, and the restriction in the waste they will be able to accept, there may be some wastes that become much more difficult to dispose of, irrespective of any price increase.

Waste management

One of the requirements currently included in the Review of Special Waste Regulations carried out by the Department of Environment, Food and Rural Affairs is the registration of all hazardous waste producers. There would be a fee associated with this to cover the administration by the Environment Agency with the possibility of audits by the Environment Agency.

If businesses eliminate the production of hazardous waste, the requirement for registration as a hazardous waste producer can be avoided in addition to the impact of the price increases. A strategic approach will be required so that any necessary changes can be introduced before 16th July 2004.

Conclusion

2.5million tonnes of hazardous waste is currently disposed of to landfill. In future the cost of disposing of this waste will increase due to:

- reduced numbers of landfills allowed to accept hazardous waste;
- increased transportation distances;
- laboratory testing of waste to determine its composition; and
- the requirement for the waste to be pre-treated.

Additional costs may include Environment Agency fees for the registration as a hazardous waste producer. In addition, through a greater understanding of the new requirements, a company can avoid running the risk of paying unnecessarily high disposal costs when there may be an alternative available. This is where an independent expert consultancy will prove invaluable. For example, Golder Associates (01628 771731) offers a range of services that will assess whether hazardous waste can be eliminated or neutralised prior to its disposal. Without such help from independent consultancies, there is every chance that a company will end up paying spiralling disposal costs.

Whitham Processing

Whitham Processing has recently joined CHTA. This newly-formed enterprise offers processing expertise and technical ability from within the parent Howco Group to the subcontract marketplace.

With years of experience in the heat treatment and testing of a large range of ferrous and non-ferrous alloys, Whitham Processing can provide technical solutions and quality-led services to a demanding and expectant customer base. If the optimum quality and reliability in service is to be achieved, heat treatment has to be performed to the highest standards. At Whitham Processing, we pride ourselves in the total quality of our service.

Located on two sites in the UK (Sheffield and Cumbernauld), Whitham Processing offers heat treatment and associated services operated fully under the internationally-accepted ISO 9001:2000 accreditation system. From quotation to shipment, the company's services are fully supported by its own on-site quality, technical and metallurgical staff.

Complementing the heat treatment service are facilities such as full physical and metallurgical testing, straightening, cutting and shot blasting. Quality checks, from simple hardness verification and metallurgical examination through to mechanical (tensile, impact) and non-destructive (ultrasonic, magnetic and dye-penetrant) materials testing, confirm the product. Material testing laboratories are on both sites and are fully UKAS approved.

Our comprehensive and flexible range of plant and equipment allows us to offer practical cost-effective heat treatment solutions to satisfy our customers' needs. Fully recognising that we are operating in demanding markets, we strive to deliver a fast reliable service. Material collection and delivery is available on request.

Demand ranges from small individual or low-volume batches through to bulk high-volume requirements. Accordingly, furnace options span from relatively-small 3tonne-charge electric furnaces, ideal for small batches or individual pieces, to large 30-tonne gas-fired furnaces for large pieces or high-volume requirements.

At Sheffield, equipment comprises six 30-tonne and seven 10-tonne gas-fired furnaces; purpose-built manipulators to provide rapid transfer to quench; air, oil and water quench facilities. The Cumbernauld plant features one 5-tonne and four 3-tonne electric batch furnaces with integrated quench manipulator and air, water and polymer quenching.

All furnaces on both sites are fully approved to API Standards, with state-of-the-art thermocouple and chart recording controls. Contact and heat sink thermo-couples are available.

THT APPOINTMENT

Tamworth Heat Treatment Ltd (THT), specialists in the heat treatment and surface engineering of tooling and special steels, have announced the appointment of Mr Gary Coffey as Works Manager.

With some ten years experience in this field, Gary is currently in the final year of a degree in Management of Manufacturing Systems at the Technology Innovation Centre, part of the University of Central England at Millenium Point in Birmingham.

Our photograph shows Gary being welcomed by THT Chairman, Mr Ronald Bundy FIM. They are standing in front of the newly-installed PVD hard-coating equipment that is now coming on stream in the surface engineering facility at Tamworth.

Built in the UK by Worcestershire-based Teer Coatings Ltd, the equipment is capable of depositing TiN, TiCN and TiAlN hard coatings on metal substrates to improve wear resistance and reduce friction. It also links THT to the internationally-recognised research and development facility at Teer Coatings, thus enabling involvement in the next generation of coating development.

SPREADING THE WORD ON ADI

Dr Arron Rimmer of ADI Treatments Ltd, West Bromwich, recently visited Germany and South Africa to conduct seminars on austempered ductile iron. The events were at the invitation of design and production engineers and included a workshop for hands-on appreciation of relevant ADI case studies.

Hosting the first meeting for Daimler Chrysler, Dr Thomas Behr from the Research & Technology Division brought together an international audience in Stuttgart-Möhringen. This successful workshop attracted nearly 100 participants from different DC business units, including Mercedes Car Group, Chrysler Group and the Commercial Vehicle Department. While already using ADI castings in production, the company was keen to explore new austempering opportunities for vehicle components.

ADI Treatments Ltd, a member of CHTA, was launched in 1998 and provides design and know-how as well as heat treatment services. The business operates the largest furnaces of their kind in Europe and works closely with manufacturers like Daimler Chrysler to develop component solutions.

Dr Rimmer's presentation included details of the furnace technique, which uses a unique controlled-atmosphere sealed-quench design developed in the USA. He also covered the range of ADI grades that can be processed and described how the

Daimler Chrysler's Thomas Behr introducing Arron Rimmer, far left, at the ADI seminar.

CHTA MEMBERS WITH ISO 9001:2000 ACCREDITATION

Congratulations to CHTA members who this year have reported gaining ISO 9001:2000 approval:

- **ADI Treatments**
- **Alpha-Rowen Treatments**
- **Ajax Tocco International**
- **Alloy Heat Treatment**
- **Beta Heat Treatment**
- **Bodycote Heat Treatments** (14 sites)
- **British Heat Treatments**
- **Century Heat Treatment and Plating**
- **Controlled Heat Treatments**
- **Express Heat Treatments**
- **Hammond Heat Treatment**
- **Heat Treatments (Northampton)**
- **Holt Brothers (Halifax)**
- **J.J. Castings Investments (Heat Treatment)**
- **Keighley Laboratories**
- **Longwear Surface Treatments**
- **Metaltech**
- **Quality Heat Treatments**
- **Special Steels** (formerly G H White & Co)
- **Summitglow** (two sites)
- **Tamworth Heat Treatment**
- **Techniques Surfaces UK**
- **Thermal Hire** (three sites)
- **TTI Group** (eight sites)
- **Wallwork Heat Treatment** (three sites including **Tecvac**)

A couple of the above members say that they've had the accreditation for two years or more (but forgot to tell us!).

austempering treatment is tailored to the casting and its composition.

In South Africa, seminar audiences comprised mining and agricultural engineers interested in the wear properties and toughness of ADI. Dr Rimmer was able to illustrate his presentations with suitable case studies and suggest design solutions.

Speaking on his return, Dr Rimmer observed, "Interest from both the UK and overseas is growing rapidly as more manufacturers appreciate the technical and cost benefits of ADI. We are always happy to visit, to help identify these opportunities, and to provide an expert processing service. Our West Bromwich factory is now carrying out significant work from mainland Europe and we anticipate setting up more regional facilities in the future".

Further seminars have been arranged in Germany, France, Italy and in the UK at the ICME's East Anglia and West Midlands branches. For further information, contact Dr Arron Rimmer, ADI Treatments Ltd, Doranda Way, West Bromwich B71 4LE (tel 0121 525 0303; fax 0121 525 0404; e-mail: arronrimmer@adit-uk.com).

QS 9000 FOR MHT

Wolverhampton-based Midland Heat Treatments Ltd, specialists in subcontract induction hardening, have recently attained the quality standard QS 9000. The CHTA-member company feels that this automotive-led standard is more relevant to the range of work carried out than ISO 9001:2000.

Acknowledging the efforts of Quality Manager Shaun Berry and his team, MHT's Managing Director Alistair Cowie said: "This accreditation will help expand our customer base whilst ensuring that we continue to provide the best service and quality possible".

BLACK ART FROM TECVAC

Perfect anatomical replicas of life-size human skeletons are heat treated and nitrocarburised by Tecvac Ltd of Cambridge, part of the Wallwork Group, to give a lustrous black corrosion-resistant finish, designed to last for centuries. Destined for museums, martial arts locations and militaria enthusiasts, the skeletons are included in a range of products designed by Raven Sculptures, part of Raven Armoury of Thaxted, Essex.

Market Movements

ANALYSIS OF QUESTIONNAIRE REPLIES RELATING TO 39 CHTA MEMBER SITES

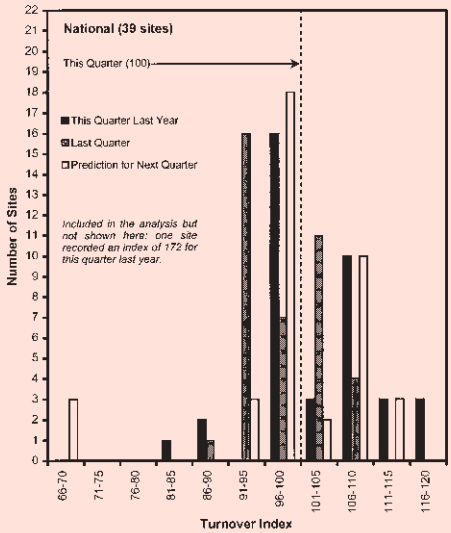
"THIS QUARTER" =

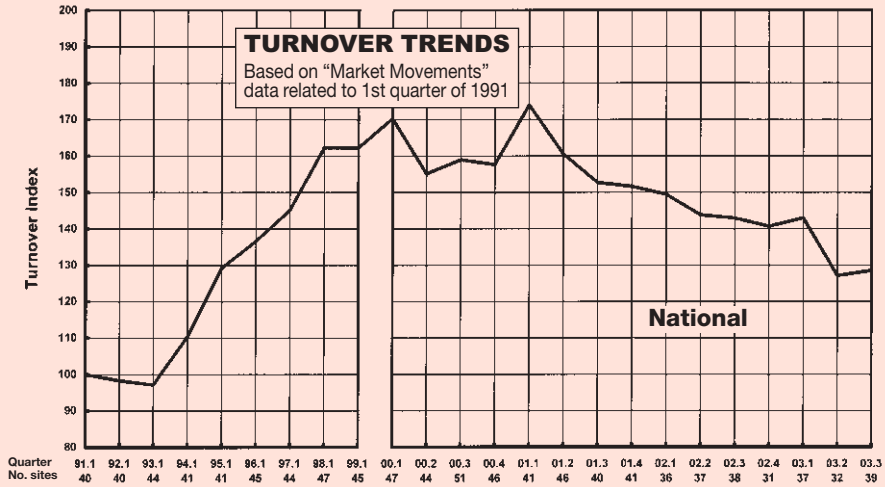
1 JULY – 30 SEPTEMBER 2003

= TURNOVER INDEX 100

National

OVERALL ANALYSIS (39 SITES)	Mean index
This quarter last year	105.5
Last quarter	98.9
Predicted next quarter	100.2





MORE WOLFSON HEAT TREATMENT COURSES IN 2004

Following an all-time record-breaking attendance at the last in October, Wolfson Heat Treatment Centre's well-established three-day *Understanding Heat Treatment* course will be repeated twice, on April 20-22 and October 12-14, in 2004.

Held in the Business School at Aston University in Birmingham, the course is designed to impart a general insight into the metallurgical/technological background to industrial heat treatment processing. It was originally conceived with the heat treatment shop supervisor in mind, but has proved equally suitable for engineers, laboratory personnel and suppliers to the trade.

With the emphasis on steel processing, the syllabus covers basic metallurgical theory of heat treatment; quenching principles and practice; surface hardening theory and practice; furnace types, materials and heating methods; salt-bath heat treatment; controlled-atmosphere heat treatment; fluidised-bed processing; vacuum heat treatment; temperature measurement; quality assurance; and computer software to assist the heat treater.

For full details and registration forms, contact the Course Administrator, Wolfson Heat Treatment Centre, Aston University, Aston Triangle, Birmingham B4 7ET, England (tel: 0121-359 3611, ext.5212; fax: 0121-359 8910; e-mail: whtc@aston.ac.uk; web: www.aston.ac.uk/whtc).

NORTH AMERICAN BILLINGS UP 1.9% IN SEPTEMBER

According to returns from participating MTI members, the North American commercial heat treating sector generated sales of $72.8million in September, a 1.9% rise over the previous September's total sales of $71.4million. At the three-quarter mark, billings were off 1.4% from 2002. Up to and including September this year, sales tallied $636.2million compared with 2002's $645.5million.

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