**Officially Accredited Courses:**

### Cochrans Courses:

#### Boiler Operation Accreditation Scheme (BOAS) Cat 2 Steam
- **Course Dates:** 7-11 January 2019
- **Duration:** 5 days
- **Cost per person:** £1350

#### Cochrans Courses:

#### Approved Person Pressure Systems
- **Course Dates:** 7-11 January 2019
- **Duration:** 4 days
- **Cost per person:** £1050

#### City and Guilds 6150-06 Medium Risk Confined Spaces: Topman
- **Course Dates:** 24 January 2019
- **Duration:** 1 day
- **Cost per person:** £395

#### Boiler Operation, Maintenance and Safety Awareness
- **Course Dates:** 22-23 January 2019
- **Duration:** 2 days
- **Cost per person:** £680

#### Boilerhouse Risk Assessment
- **Course Dates:** 24 January 2019
- **Duration:** 1 day
- **Cost per person:** £395

#### Cochrans Courses:

#### Asbestos
- **Course Dates:** 7-11 January 2019
- **Duration:** 1 day
- **Cost per person:** £395

#### Boilerhouse Water Treatment
- **Course Dates:** 21 March 2019
- **Duration:** 1 day
- **Cost per person:** £395

#### Confined Space Awareness
- **Course Dates:** 25 January 2019
- **Duration:** 1 day
- **Cost per person:** £395

#### Design of Steam and Condensate Systems
- **Course Dates:** 8 February 2019
- **Duration:** 4 days
- **Cost per person:** £1080

#### Introduction to Steam Boilers and Steam Systems
- **Course Dates:** 21 January 2019
- **Duration:** 1 day
- **Cost per person:** £380

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**All prices quoted are exclusive of VAT.**

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**Energy magazine is published by Cochran Ltd:**

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Welcome

In this, the seventh issue of Cochran’s company magazine, we’ve got some great features on the all-important launch of our new MCPD-ready ST28 boiler, some of our current apprentices, the Company’s Caulkers and news on our expanding range of training courses.

Building on the remarkable (almost) fifty year reign of the famous Wee Chieftain as the world’s go-to industrial boiler, Cochran’s ST28 is a ground-breaking new boiler that we’re extremely proud of. It retains the numerous winning features of its pugnacious forefather, whilst introducing a string of key improvements, including an extended output range and a dedicated economiser, to deliver world beating efficiency and MCPD-ready emissions standards.

We start this edition of Energy with a feature on three of our excellent young apprentices. Cochran has a long tradition of utilising apprenticeships as a vehicle for training new engineers to the exacting standards we require. I have to say, I think that there’s no better grounding for a craftsman engineer and have many fond memories of my own time as an apprentice with Cochran.

We then proceed from our newest people to some of our oldest team members as we use this issue to celebrate three longstanding Cochran stalwarts. David Tait and Dougie Crosbie have been with us for twenty years, whilst Andrew Glendinning is a REAL veteran. He has been working as a Plater with the Company for more than forty years now.

Next we move on to a major event for Cochran with the official launch of our ST28 boiler. Based on the much-loved Wee Chieftain, we’re really proud of this new boiler. The ST28 retains all the key features that have made the Wee Chieftain SUCH a global winner over the (almost) 50 years since it was launched. It also includes a number of key modern tweaks; expanding the output range and matching it with a dedicated Economiser to achieve groundbreaking ‘best in class’ efficiency stats - in excess of 95% across the ENTIRE load range.

Of course, with the arrival of the stringent new MCPD rules governing european emissions standards, it’s the ST28’s CO2 and NOx figures that are all important - and the fundamental reason it was developed. The new boiler is of course built to be ‘MCPD-ready’ - meaning that, as long as all your other equipment measures up, you can breathe easy about being compliant when you install an ST28.

There’s also an interesting case study on major food processor, Dalehead Foods in this issue. Whilst the name ‘Dalehead’ isn’t one you’d instantly recognise, they produce numerous premium quality meat products for some of the UK’s best known retailers.

Our relationship with their Spalding site came about because of increased steam demands that reflect ongoing production expansion. The Company sought to engage the ideal British boiler suppliers to deliver significantly increased volumes of process steam – much more efficiently, with the plan expected to form a template for their many other sites around the UK. The project proved very successful, with a highly efficient new plant delivering fully on expectations to another happy Cochran customer.

Continuing our series on Cochran crafts, in this issue we highlight our Caulkers. These multi-skilled craftsmen play a key role in preparing parts for shaping and welding and carry out much of the work required in the early stages of boiler construction.

Finally you’ll also note that we’ve expanded the training section in the magazine. With so much new legislation on the horizon, ensuring your staff are getting the maximum efficiency and reliability from your boilers, whilst meeting benchmark emissions standards and cost pressures, has never been more important. In recent months we have invested heavily in expanding our well-respected training offering; introducing important new courses and publishing comprehensive new notes to offer customers, what I believe is, simply the best boiler training resource in the country.

Based in a rural area of southern Scotland, Cochran is easily the largest local employer. We take our responsibilities towards our surrounding community seriously and the feature on our support of Cummertrees Primary School highlights this well. This tiny school, with just 41 pupils, is only a couple of miles from Newbie. They approached us to support their new playground development. The youngsters visited Cochran to deliver an excellent presentation and we were only too happy to help.

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Thomas P Ritchie, Group Managing Director
Apprenticeships
Investing in the skilled engineers of the future.

Whilst modern apprenticeships have been extended to encompass everything from Accountancy to IT, serving an apprenticeship has long been THE proven way to develop a career as a skilled craftsman within the engineering trades. Cochran are proud to have run an apprenticeship scheme for more than fifty years, with around 330 Cochran apprentices having served their time with the Company over the years. In fact, many of our senior managers (past and present) started their career this way, including our Managing Director. At Cochran we firmly believe that when the theory learned at college is combined with on-the-job training, the result is excellent tradesmen.

Taylor Trodden Apprentice Fitter
“Since I started my apprenticeship at Cochran I have been working alongside Adam Little who is a Chargehand Fitter.

“Adam has taught me how to carry out a variety of jobs, such as fitting different valves and making sure they are level with the boiler; how to stud boilers and get them ready for hydro testing; and also how to build up water columns.

“I have really enjoyed serving my time at Cochran so far and look forward to developing a successful career in engineering.”

Nathan Brown Apprentice Plant Engineer
Nathan joined Cochran having already achieved an HNC in Electrical Engineering; something that will help him significantly as an Apprentice Plant Engineer. His primary apprenticeship with Cochran will be centred on mechanical engineering, coupled with a solid grounding in electrical disciplines. This will further enhance his fault-finding skills as he progresses through his apprenticeship.

Nathan commented; “So far I am really enjoying my apprenticeship. Working with highly experienced Maintenance Engineers, Andy Gallacher and Adam Little, has been very interesting.”

“By passing on the knowledge they have gained through their vast experience in this field, they have taught me lots of new things. Working on the rolls was a great example of this as I gained invaluable knowledge on hydraulic, electrical and mechanical fault-finding techniques” he added.

Chris Tait Apprentice Plater
“I’ve been working with George Tully since I started two months ago. He’s made learning the different elements of a Plater’s role very simple. Working alongside a man with almost 50 years’ experience at Cochran means there’s almost nothing he doesn’t know about the profession; knowledge he’s only too pleased to pass on to me.

“I started my first few weeks practicing my tack welding on different areas of the boiler, for example tacking pipes to the shell. I’ve also been learning how to assemble boilers, attach tube plates to the shell and add tube plates to the combustion chamber. Of course I’m still being closely supervised by George, who is giving me tips along the way.

“Despite being new to the Cochran set-up and knowing little about industrial boilers, I feel I’ve learned fairly fast as a result of being on the job. Indeed, I think I’m beginning to develop a good understanding of what I’m building and what it will be used for further down the line.”

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In this issue of Energy magazine, we’re are proud to recognise the hard work, dedication and excellent long service of three respected members of staff, David Tait, Dougie Crosbie and Andrew Glendinning.

Following the presentation of official certificates and bottles of Cochran Whisky by Martin Renton and John Riddell, the party went on to visit the award-winning Del Amitri Restaurant at the nearby Powfoot Hotel for a celebratory lunch.

David Tait: Joined the Company in 1998. He will be known to many customers as a well-liked and extremely knowledgeable Service Engineer primarily covering Scotland.

Dougie Crosbie: Joined Cochran twenty years ago. He is responsible for maintaining the various utilities at the Company’s Newbie Headquarters, so he’s a well-known and popular face across all departments.

Andrew Glendinning: Unfortunately Andrew was unable to attend the presentation, but there’s little doubt he’s the most senior amongst the Company veterans recognised this year. Joining Cochran in 1978, Andrew’s now into his forty first year with the Company! As a highly experienced Plater, he plays an essential role in cutting and forming the sheet steel parts that are welded together to form the larger boiler components like the shell and furnace. For those who are interested in the complex work of a Cochran Plater, there’s an extensive article profiling their work in the last issue of ‘Energy’.

MCPD-Ready: ST28 Steam Boiler 1,000-6,000 kg/hr.

MCPD-Ready: ST37 Steam Boiler 7,000-24,000 kg/hr.

MCPD-Ready: HW29 Hot Water Boiler 450-4,100 kW.

MCPD-Ready: HW34 Hot Water Boiler 5,000-16,000 kW.

Pictured top (left): Service Engineer, David Tait receives his twenty year award from Martin Renton.

Pictured bottom (right): Utility man, Dougie Crosbie receives his twenty year award from John Riddell.

...Upgrading Existing Plant:

Cochran is also your ideal partner for ensuring your existing plant meets the new MCPD standards. Supported by our nationwide service team, we utilise leading-edge Cochran combustion and control products to deliver the emissions standards you’re legally required to achieve.

Newbie Works, Annan, Dumfries & Galloway, UK DG12 5QU.
+44(0) 1461 202 111 www.cochran.co.uk
The ST28

The new range builds on the proven engineering and manufacturing principles of the Wee Chieftain, with standard designs covering steam outputs from 1,000 to 6,000 kg/h. Along with its extensive options, the ST28 has been specifically developed to offer ‘best in class’ performance, whilst ensuring it can comply with the stringent new emissions legislation enshrined in the Medium Combustion Plant Directive (MCPD).

The ST28 range has been designed with a larger furnace and shell than the Wee Chieftain. This results in a lower furnace heat release, thus reducing NO\(_x\) levels; whilst also offering larger heating surfaces and improving efficiency. The larger shell also provides greater storage capacity for dry steam; offering a greater steam cushion, making it ideal for sites with ‘peaky’ steam loads.

Impressive Emissions

The ST28 is fitted with the latest modulating combustion and control technology to deliver NO\(_x\) of sub-100 mg/Nm\(^3\) without Flue Gas Recirculation (FGR) and an impressive sub-30 mg/Nm\(^3\) performance with FGR. This control and monitoring can be further enhanced by utilising combustion trim and Cochran’s state-of-the-art ‘Synergy’ monitoring and communication system.

Dedicated Economiser

To further enhance the ST28’s efficiency, it is fitted with Cochran’s own specially designed Economiser. This dedicated unit offers a minimum of 5% efficiency uplift across the entire boiler firing range - not just on full output - and maintains a boiler efficiency in excess of 95% throughout the output range.

The comprehensive improvements now delivered by the ST28 match the market’s most stringent performance demands. Of course they do come at a cost, but the new range offers excellent value for money when enhanced performance and lower running costs are taken into consideration.

Out with the old, in with the NEW!

There can’t be many experienced boiler engineers around the world who have not come across at least one of Cochran’s famous Wee Chieftain boilers during their career. With its compact design and reputation for rugged reliability, easy maintenance and good operational performance, it’s the faithful workhorse stabled in many a boilerhouse and the go-to choice for numerous boiler rental businesses... Indeed, since being brought to the market in 1969, over 5,000 units have been manufactured and today, thousands are in steadfast service across the globe. In fact, such is its longevity that there’s also a thriving second-hand market.

The Wee Chieftain

There are now Wee Chieftains operating in over FIFTY countries worldwide. In addition to the nations that are Cochran’s more traditional markets, they are hard at work in such far-flung and surprising locations as El Salvador, Papua New Guinea and even North Korea. Amazingly, after almost fifty years in production, the Wee Chieftain is STILL our best selling boiler in international markets, with no reason to expect that to change any time soon.

Over the years the Wee Chieftain has evolved and developed both in appearance and the range of outputs available. Nevertheless the fundamental principles and philosophy that have made it SO successful have remained true to the original concept. However, the time has now come to launch a new range to supersede our old favourites... The ST28.

Pictured: Above: An early model Wee Chieftain. Opposite: Cochran’s new ST28 - all the advantages of the old model, now with added features, extended output range and MCPD-ready levels of emissions.
This issue we focus on Dalehead Foods, a market leader in the meat processing industry, providing high quality products to some of the UK’s leading names in retail.

As a result of ongoing increases in process requirements, the Company sought to engage with a UK-based supplier to provide an engineered and expertly executed technical solution to process steam requirements that would form a benchmark for future upgrades at other sites within the Group.

Testament

Dalehead engaged with Cochran not only because of competitive price considerations, but also because of our team’s ability to develop an effective technical solution that matched the Company’s requirements... The real testament to the project has been the efficiency and reliability of the plant and a satisfied customer. We look forward to maintaining the positive relationship we’ve developed with Dalehead Foods at Spalding and rolling it out across similar installations at their sister plants throughout the UK in the near future.

Benefits of the new System

The custom-built steam plant incorporating highly efficient Cochran boilers provides the following benefits:

- **Efficiency**: Increased plant efficiency due to the inclusion of a flue gas economiser.
- **Lower Costs**: Reduced gas usage and therefore reduced costs.
- **Production Continuity**: The ability to perform maintenance with minimal disruption due to boiler redundancy.
- **Flexibility**: The ability to operate the boilers in the most efficient manner with a lead/lag that satisfies the requirements of the plant.
- **Quality Steam**: Reduced operational issues and lower maintenance requirements for the steam traps due to the high quality dry steam now being generated.
- **Lower Staff Costs**: Reduced manning level requirements resulting from the balanced and ergonomically designed plant.
- **Capacity Increase**: The ability to meet process demands, even during peak periods, with appropriate temperature distribution.

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Project Background

It had been established that the existing Spalding boiler plant simply did not measure up to the increasing requirements of Dalehead Foods’ process demands.

Operating the boilers constantly ‘turned up to eleven’ resulted in inefficient steam production. It was also the root cause of poor quality steam due to water carry-over, water hammer, and inefficient steam traps. As production requirements continued to increase it was clear that the plant that could not reliably sustain the demands that further expansion of production would dictate.

The Company gained capital expenditure approval to upgrade their boiler plant. Initially they called in Cochran to undertake a technical appraisal of the Company’s requirements; we were then engaged to deliver the subsequent design, supply and installation of new plant that would measure up to current and future demands of production at Spalding.

Project Scope

The first step was to understand what was required, so an in-depth technical appraisal of the customer’s needs was undertaken.

This enabled Cochran to tailor a bespoke package that met the specific requirements of the Spalding facility, particularly in terms of the varying steam temperature and pressure requirements, whilst meeting differing load demands.

Cochran’s project solution included the installation of two new 4,000 kg/hr boilers, pressure reducing sets, plate heat exchangers, hotwell tank, water treatment and a steam distribution system.

The new boilers were installed with the mechanical and electrical equipment needed to operate it at full efficiency.

Pictured below: Dalehead manufactures and packages a wide variety of premium quality meat products for some of the UK’s leading names in food retail.
CUMMERTREES PRIMARY SCHOOL

Located just a few miles from Cochran’s Newbie Headquarters, this little Victorian primary school has just 41 pupils. It serves the tiny Solway coastal communities of Powfoot, Cummertrees and their surrounding area. Throughout the years the children of many company employees have attended this school. Cochran recently became involved to support much needed improvements to its playground and external facilities.

Head Teacher, Mrs Graham Writes

Cummertrees Primary School is a small rural school a short way up the coast from Cochran’s Newbie headquarters. Our 41 pupils, split into two classes, are housed in a Victorian building with a relatively large playground featuring grass and tarmacked areas. In recent times our old outdoor play equipment had unfortunately deteriorated to the point it had to be removed for Health & Safety reasons.

Pupils, parents and staff became involved in the planning of our ‘Playground Revival’ project, designing a new outdoor area featuring a variety of wooden play structures. This play area will encourage health and wellbeing through physical activity and will allow equipment we have been able to purchase is the ‘Spider Monkey’.

In order to maximise the impact of this project, the aim is to raise funds in stages; allowing pupils to enjoy at least some of the equipment as quickly as possible. The first piece of play equipment we have been able to purchase is the ‘Spider Monkey’.

We applied to a variety of funding streams for this stage and Cochran were kind enough to accept our request to present our plans to them. Pupils used a PowerPoint presentation, which they created themselves, and were delighted to receive a generous £500 cheque from Cochran for their efforts.

We are extremely appreciative of this kind donation and the links we have built within our community through this project.

Student Report

We asked Cochran to help us raise money for some new playground equipment. Before we visited the factory we made a PowerPoint presentation to show what our playground looks like now and what it might look like with the new equipment. We used some photographs to help explain our plans.

We explained how much money we had already raised and asked Cochran if they could donate to our project.

We used the PowerPoint presentation during our talk. We all had our own slide to help us explain and the people at Cochran listened to us.

We had to be clear and give reasons for our project. We explained that our playground was boring and we wanted to make it more exciting. After we did the presentation we went to see Nairn’s mum in the Service Office. When we got back we were told that we had been successful and they gave us a cheque for £500. We were thrilled because we’d never done anything like this before.

Niamh and Amelia, Cummertrees School

Above: Cummertrees School’s brand new ‘Spider Monkey’ climbing frame now in place with the help of a substantial donation from Cochran.

Below, left to right: Cummertrees Head Teacher, Mrs Graham with students, Zak Stevenson, Nairn McCourt, Ross Clarke, Niamh Stairthope and Amelia Robinson.

We are extremely appreciative of this kind donation and the links we have built within our community through this project.
Manufacturing Spotlight

Cochran’s Caulkers

Caulk (verb) ‘To drive the edges of steel plates together to prevent water leakage’.

What is a Caulker?
Before the introduction of the welding process, boiler plates were secured using hot riveting. It was the Caulkers who performed this highly skilled and physically demanding process, which required dexterity and teamwork to be effective. The trade name makes less sense now, but it used to have meaning.

As boiler making has changed, the role of the Caulkers has expanded. Today they play a vital role in our build process from the very start, where they cut and prepare all the steel plates, right through to the Hydrostatic, or Hydro Test. They are truly a multi-skilled section.

Invisibility is Their Super Power!
When you look at a finished boiler you don’t see anything that the Caulkers did, but you wouldn’t have a finished boiler without them. The Caulkers work hand-in-hand with other trades, primarily the Welders and Quality Inspectors, to ensure the boiler passes its Hydro Test.

The boiler doesn’t look pretty in these early stages but the work of the Caulkers is fundamental to the creation of a leak-proof pressure vessel.

Change
The biggest change to affect the Caulkers in recent times is the move from our old Plasma Propane Cutting Machine to the new ESAB Suprarex HD machine three years ago.

Mike Woodman, one of the Caulkers trained to operate the machine says “The difference is amazing. The tolerance on this machine is +/- 0.5 mm whereas the old one was more like 2 mm. It means that we have less to hand-finish now, for instance the tube plates shown in Step Two were bevelled on the machine. It’s also dramatically faster. We can cut all four tube plates for a boiler in the time it used to take to cut one and they’re to a higher standard.”

The Caulking Team
This picture features most of the Company’s ten-strong team of highly skilled Caulkers.

Back row left to right: Christopher Slee, Jordan White, Callum Kerr, Paul Moggia and Stephen Murray.
Front row, left to right: Mike Woodman, Derek Carruthers and David Kay.
Missing from the photo: George Adamson and Gavin Watt.

Step One
The very start of the boiler making process is performed by the Caulkers. They operate our High Definition Plasma cutting machine to cut and weld prep all plates.
Part of their role is to perform, and record, stringent quality and dimensional checks on the pressure part plates to ensure full compliance with our Quality Control Procedures.

Step Two
All areas of boiler plates where welding will be undertaken are ‘dressed’ to remove all potential contaminants which could affect the quality of welds.
The Caulkers typically use an angle grinder to do this – usually 4 or 7 inch diameter. As you can probably imagine, they’re pretty black by the end of a shift!

Step Three
Swaging is used to create reinforcing belts, often called bowling hoops. These are an important feature of many Cochran boilers, providing a degree of thermal expansion for the furnace whilst giving excellent stiffness; important because the furnace will be under pressure from the boiler contents.
The Swaging machine has a rotating table and two forming rollers which are used to create a profile with the required geometry. The material is heated to 940°C and the hoop is formed as the table rotates. The final profile is carefully inspected to ensure that it matches the exact design requirements for each hoop.
Step Four

Once the rear tube plate, flanges and access doors are welded to the shell, all other parts that will be welded are ‘dressed’.

It must pass inspection before we proceed to build the boiler. The Inspectors use Metal Particle Liquid to highlight defects (more on that next time when the spotlight is on the Quality Inspectors). We don’t usually find defects because the Caulkers prepare the surface well and the Welders are highly skilled but, if there is a defect, the Caulkers will dress the area again and it will be re-welded and re-inspected until it passes.

Step Five

Once the furnace is in the boiler and the front tube plate is in place, our Inspectors check the unit again.

They tell the Caulkers which areas they have identified as requiring dressing before the Welders take over.

Step Six

The image shows a large ST37 fully tubed and ready for Hydro Test. The non-load-bearing heat transfer tubes are fitted into the tube plate and a rolling motor with the appropriate expanding tool is used to increase the diameter at the end of the tube until a watertight seal is achieved.

You can see that some of the heat transfer tubes have been welded (highlighted in red), which is because they are load-bearing.

Step Six, continued

Typical of the work of Cochran’s Caulkers, here we see a close up of the boiler tubes. With the exception of the Stay Tubes (highlighted in red), which are welded in position to provide strength to the boiler, all the tubes in the boiler are fitted by the Caulking team.

Step Seven

The first key milestone in boiler manufacture is the Hydro Test. This test is a legal requirement. The boiler is filled with water, then brought up to the appropriate pressure and kept there for a minimum of thirty minutes.

During this time there are quality checks carried out by both our Quality Inspectors and our in-house third-party Inspector. It is essential that the ‘pressure envelope’ is properly sealed and no water can escape. When the third-party Inspector signs the Test Report and physically stamps the boiler, the test is complete.

Throughout the build process, the Caulkers work closely with the Inspectors to ensure that all welded areas comply visually with the respective code and Quality Compliance Procedures.

The photo shows one of our famous Wee Chieftains in the process of undergoing this pressure test.
In this issue of Energy magazine we focus on two invaluable courses primarily aimed at boilerhouse operators and managers: Boilerhouse Water Treatment and the recently launched I-GAS course for working on industrial gas applications. With its accreditation by the Combustion Engineering Association, small class sizes and closer personal attention delivering a near perfect pass rate on BOAS courses, Cochran’s training is widely respected as THE industry benchmark. With our flexibility to deliver boiler training anywhere you require it, you can minimise the time crucial personnel spend off your premises. Alternatively you can book onto one of our scheduled courses. Since we helped ‘write the book’ on boiler standards and training, we can offer courses to meet the requirements of your site, managers and operators. In this issue of Energy magazine we focus on two invaluable courses primarily aimed at boilerhouse operators and managers: Boilerhouse Water Treatment and the recently launched I-GAS course for working on industrial gas applications.

Boilerhouse Water Treatment (BWT)

The Aims of the Course
This course aims to give Boiler Operators and Managers knowledge of basic concepts, equipment, routine testing and recording of boiler water treatment - without the need to become a specialist chemist.

Of course undertaking this training does not replace the need for regular monitoring visits and dosage regime adjustments by professional water treatment specialists. However, it WILL enable candidates to better understand the purpose and value of the daily checks and routines that they need to carry out, it will help them to quickly recognise things that must be attended to as well as providing them with the tools to understand, and if necessary challenge, the quality of service and value for money provided by their water treatment suppliers.

This important course covers:
- Why we need to treat boiler feedwater and condensate
- Consequences of poor water treatment
- Feedwater pretreatment systems
- Deaeration
- Boiler blowdown and Total Dissolved Solids (TDS)
- Boiler water pH
- Chemical dosing
- Water sampling
- Daily check regimes and record keeping
- Treatment of scale and corrosion

Cost per person (exclusive of VAT): £1475

I-GAS qualification is currently available in three levels:

- **Level 1: Entry Portfolio:** An entry level knowledge check for those with little gas work experience. It does not permit a successful candidate to carry out any work on gas systems, but it qualifies people with suitable experience to move on to Levels 2 and 3. The home learning pack helps candidates develop a basic understanding of gas industry standards, legislation and procedures. The course is assessed through an hour long multiple choice exam paper (open book).
- **Level 2: Industrial Gas Maintenance:** For Candidates who work on pipework. It provides training on safe procedures for gas work, breaking into gas ways, repairing or replacing gas line components, strength tests, tightness testing, purging and relighting end of line equipment.
- **Level 3: Industrial Gas Technician:** For Candidates who work on gas burners and gas pipework. This course provides an understanding of combustion principles and equipment, combustion analysis, emissions and setting regulators.

Next I-GAS Level 2 and Level 3 course dates:
- 5 November 2018
- 3 December 2018

Cochran’s Training Courses are accompanied by comprehensive, high quality, full colour publications that combine extensive notes on operation and maintenance with information on all the relevant legal requirements to form an invaluable reference for years to come.

Industrial Gas Training & Assessment (I-GAS)

A key new CEA-accredited Training Course

Cochran is fully approved by the Combustion Engineering Association (CEA) to deliver the new I-GAS industrial gas training and assessment programme. This course is for engineers and technicians working in factory premises containing gas fired equipment. It is the only formal accreditation currently available that is specifically designed for maintenance staff and technicians working with gas in industrial premises.

Candidates must be able to demonstrate suitable, appropriate experience and must also have completed an approved gas qualification such as CCN1, COCN1 or equivalent. An entry level (Level 1) is available for less experienced operatives.

Both Level 2 and Level 3 are intense five-day courses consisting of practical and theoretical training, with written examinations (open book) and practical assessment. On successful assessment completion and approval by the CEA, the candidate is issued with a unique I-GAS identity card which is valid for five years. After five years the candidate will need to be reassessed to ensure compliance with current standards and practices.

Cost per person (exclusive of VAT): £1475

I-GAS Notes
1. Potential course candidates can access any level for which they have suitable qualifications and experience. However, assessment at the higher level does not offer a presumption of competence at a lower level.
2. I-GAS is not a substitute for ACS / Gas Safe Register qualifications, for work in locations where these are a legal requirement.