

# RADIUS



**Integrated Utility Services**

Client newsletter

Putting energy into  
Scottish Water

## The power of water

### **Fibre class**

Bluestar – ‘a good  
job well done’

### **Dyno mod**

Parker Hannifin in  
the generation game

### **Home time**

Multi Utility boost for  
the building industry

## Sharing our world with you

As managing director of IUS it gives me great pleasure to introduce you to our fourth edition of Radius.



This publication is intended to provide you with an insight into our organisation and some of the projects we have recently undertaken. The articles will provide an overview as to the diversity of work that IUS carries out on a daily basis for our clients throughout the UK.

Since the start of the year we have undertaken several changes within the organisation to strengthen the service that we provide to you, our clients. One of the most significant changes is the appointment of John Scarffe as our new director of operations. John adds additional strength to our delivery capability and brings valuable experience to our management team.

We also recognise that our staff are our most important asset and as such we are continually investing in our training and development programme in order to maintain a high quality service to you.

We are committed to continuous improvement and delivering a first class service to our clients. The key to this, we feel, is to develop long term relationships through working collaboratively with you to ensure your projects are delivered safely, on time and to your satisfaction.

*John Scarffe*

# Far and wide

## US's UK Contracting Division is increasing both its geographical reach and staff numbers.

Headed by director of operations John Scarffe, the aim of the team is to provide first class service delivery not only in Yorkshire and the North East but throughout the UK.

Our network of offices is expanding from Wakefield (head office), Stockton-on-Tees in the North East and Hucknall in the Midlands, to include Fleetwood on the West Coast, Grantham and Cannock in the middle of England and satellite offices in London, Edinburgh and Glasgow.

It is from this base in Glasgow that Stuart Curwen has been delivering our contestable connections to Scottish Power's adoptable standards for Scottish Water. (See opposite).

UK Contracting carries out a range of activities for a variety of customers including universities, water and health authorities, government institutions, and the pharmaceutical,

chemical, manufacturing and construction industries. The scope is very varied. It may involve installing new networks or perhaps upgrading or refurbishing existing systems (at both Low Voltage and High Voltage).

An example of UK Contracting's interface with both Low and High Voltage is the fitting of specialist actuator devices for Remsdaq and Groupe Schneider at strategic locations on the electricity distribution network of CE Electric. On a rolling programme, we expect to fit around 200 of these devices each year.

If there is a major fault on the network, these devices can help in two ways. First, they can re-route power supplies to avoid the problem area and second, they indicate between which two substations the fault has occurred.

At this point we send out our engineers, the Senior Authorised Persons (SAPs) to pinpoint the exact location of the fault and arrange the necessary repairs.

SAPs play a

crucial role in UK Contracting because of their training, competency and experience, which enables them to operate on the electrical system and issue and cancel safety documentation. This safety documentation sets the parameters of the system which is under their control and can be worked on. The SAPs are engaged on project-related works including new substations, switchgear replacements, cable installations and transformer changes. These projects can involve complicated switching systems, planned interruptions of supply, adjustment of protection settings, transferring of networks, testing and commissioning or generator connections.

SAPs are not only engaged on project-related work but they are also involved in the second major aspect of the division's activities – High Voltage Customer Service (HVCS).

We have a growing number of HVCS customers – around 2,500 – who engage IUS to carry out maintenance, repair and network improvements. This gives them peace of mind that if they have a



# We love history but we can't just dig it

problem, help is quickly at hand.

Co-ordinating the division's activities across both project and HVCS work is John MacKenzie, contracts manager. John comments: "The challenges of UK Contracting are both interesting and diverse. This can be from both a geographical and scope of works viewpoint. The most recent example of effective working would include repairs and replacement of electrical apparatus during the floods. A number of our 'contracted' customers were extremely grateful for our operational capability to replace/repair water-damaged apparatus and restore supplies."

On the project side, John has two senior project managers, Bryan Dixon, senior project manager North, and Paul Taylor, senior project manager South, who look after work in the northern and southern parts of the UK respectively. On the HVCS front, Phil Kirk, resource manager, programmes the electrical fitters and cable jointers to carry out our services on behalf of clients.

John adds: "We have a great team ethic at IUS and are flexible in our approach. We like to look after our clients and our aim is to be their preferred contractor for their electrical infrastructure needs."

**Top team:**  
back, Jim Elgie, commercial manager;  
Paul Taylor, senior project manager South;  
and Phil Kirk, resource manager.

Front, John Scarffe, director of operations, and John Mackenzie, contracts manager

**T**he Romans were famed for their aqueducts, so it's perhaps ironic that a new electricity supply for Scottish Water had to find its way around a structure built during the rule of the Antonine emperors.

The Antonine Wall near Auchinstarry, North Lanarkshire, is a historic structure. So when IUS had to make a cable connection near the foundations of the wall, an archaeologist was called in to ensure no damage was done to Scotland's heritage.

Stuart Curwen, our Glasgow-based project manager for Scotland, explains: "We had to seek the advice of Historic Scotland and they recommended that an archaeologist inspected our work. The project was to connect a service reservoir facility to the network at a distance of 600m."

The project is just one of many tasks Stuart and his colleagues have carried out since IUS began working with Scottish Water in 2007 as an independent connections provider (ICP).

As an ICP, IUS can carry out contestable connections throughout the UK. IUS is licensed and accredited to complete this specialist connection work to distribution network operator Scottish Power's adoptable standards. It's Stuart's role to look at all such requests from Scottish Water.

He says: "I work closely with Shona Motherwell, utility manager at Scottish Water Solutions (SWS). This joint venture partnership was



set up by Scottish Water in 2003 to manage and deliver its capital programmes. First, we assess whether the connection is contestable and second, if it is, look at solutions and detailed costs of the schemes. We also have a very good relationship with Scottish Power because the work we do is carried out within their southern Scotland operating area."

Stuart and his team ultimately have to produce satisfactory methods of delivering an electricity supply, be it overhead or underground for Scottish Water facilities such as water treatment works and reservoirs. Stuart adds: "There is a lot to consider including geography, geology, planning rules, whether it is Low or High Voltage plus any special requirements of the client and not forgetting archaeology! Our great working relationships with the client and with Scottish Power mean we can work together to overcome any issues."

Contestable connections completed to date for



Scottish Water include connecting water treatment works in Dunbar, the Lomond Hills and Guardbridge in Fife. All were energised ahead of schedule.

Stuart, who has 34 years' experience in the field, believes lessons have been learned each time, making for an even smoother process moving forward: "I think it's the tripartite approach of IUS, Scottish Water Solutions and Scottish Power that is paying dividends. IUS has real visibility in Scotland and this will help with the many projects that are at the detailed design stage now."

One of the works at the planning stage is for the prestigious Edinburgh Drinking Water Scheme, which will include a two-kilometre excavation. "That will be a challenge," says Stuart, "but we are really looking forward to it."

Stuart's client contact, Shona, says: "The majority of Scottish Water projects require power to be installed within a much shorter timescale than would normally be available. As part of a continuing process of improvement, IUS is working to reduce project delivery timescales. Having a presence in Scotland is a huge benefit to us and we now have visibility on our programme. There are still further improvements that we can make to the process and IUS is always willing to do that. We are looking forward to a very busy period as we progress from design to construction and then ultimately project completion."

## Tales along the river bank

**IUS has secured more waves of work on the banks of the River Humber.**

We are carrying out electrical infrastructure works for companies such as BP Chemicals, Conoco Philips

engineering your future  
**IMPRESS**

and Millennium Inorganic Chemicals in this area. These companies, as well

as Air Products, Blue Star, BoC, Cristal, Huntsman, KanufDrywall, Lenzing and Novartis, form part of the ConCom Forum of Chemical and Allied industries. The audit scheme they have

implemented is the IMPRESS accreditation.

IUS has received this prestigious accreditation which allows us to work with any of these companies on the Humber Bank.

# A healthy attitude to avoiding disruption

**I**mproving the power supply to a busy hospital without disrupting the vital routines that take place there necessitates excellent planning and sensitivity.

Power interruption or stopping the flow of ambulances is not an option. When IUS secured the contract for a High Voltage connection for a new Position Emission Tomography (PET) scanner at Sheffield Teaching Hospital, a major hospital operation was diagnosed.

Tendering and estimating engineer, John Potts



**'We were on site from the middle of January until May ... the fact that we caused minimal disruption is testament to the careful planning of this project'**

takes up the story: "The new PET scanner is used for detecting heart disease, cancer and brain disorders. It required an 11kV

connection and meant the laying of 450 metres of new underground cabling following the path of the hospital perimeter road. This proved to be the best course to take as it kept traffic disruption to a minimum. The last thing we wanted to do was to get in the way of ambulances or hospital visitors."

Another consideration for the IUS team was to avoid affecting other essential services to the hospital, such as gas and water.

John adds: "We were on site from the middle of January until May when the new substation was

completed and the fact that we caused minimal disruption is testament to the careful planning of this project."

The scanner connection is one of several projects IUS has carried out at this location. Previously, a major upgrade project took place, which began in 2005 and lasted more than two years.

John explains: "The aim of that project was to put the infrastructure in place to ensure the hospital could cope with demands for power as it carried out a series of developments. It was an exercise in future-proofing."

## Express delivery on the railways

**From the railway city of York, the IUS Rail Team continues to work closely with Network Rail, assisting them with their power supply upgrades strategy.**

Andy Empson, who manages the team, says: "Network Rail aims to be a 'world-leading client' and it requires contractors to deliver outstanding value for money, with work of

exceptional quality, both safely and efficiently."

The team has secured a contract to replace existing AC switchgear at eight locations in London and is also carrying out 11kV non-traction maintenance in Network Rail's North East Territory. They are now looking to secure additional work in the South East in this challenging market.

Andy adds: "Outside the



South East, we are replacing High Voltage switchgear for Network Rail at Leeds City Station and we are also

**New Leeds: IUS is replacing High Voltage switchgear at this important station**

looking for synergies with other rail companies such as English, Welsh & Scottish Railways."

# Accredit to the company

**Our clients can be reassured that they are in safe hands with IUS as the company has gained a series of important accreditations.**

These have been achieved because our policies, procedures, work methods and risk assessments are all part of a controlled documentation process that ensures an effective system.

This, allied to our safety management procedures and delivery capability, has enabled us to gain accreditations including:

## General

- ISO9001:2000 for quality control;
- ISO14001:2004 for environmental performance;
- OHSAS 18001:1999 for our safety management systems.

## Rail

- Network Rail Approved Contractor;
- Link Up, the UK rail industry supplier qualification scheme.

## Utilities / Independent Connections Provider

- Achilles Utilities Vendor Registration;
- NERS, WIRS and GIRS, the national registration schemes for contractors to work in the electricity, water and gas

industries respectively.

## UK Contracting

- Construction Skills Certification Scheme;
- Contractors Health & Safety Assessment Scheme (CHAS);
- SAFEcontractor;
- IMPRESS, the specialist contractor accreditation for working with clients on the Humber Bank.

In addition to these accreditations, we also received the RoSPA gold medal for our safety record, the highest accolade presented by this safety organisation. It was given after we achieved five successive annual gold awards.

**‘These have been achieved because our policies, procedures, work methods and risk assessments are all part of a controlled documentation process that ensures an effective system’**



## Switched on to E.ON's needs

**IUS is a framework service provider for E.ON in the Midlands, operating from a main office in Hucknall and from other locations at Cannock and Grantham.**

Since 2002 the relationship with E.ON has developed as the contract has evolved across the four main workstreams of maintenance, system improvements, connections and diversions. With growth and expansion of services, IUS has adapted to the changing requirements of the client.

As well as the complete range of construction and maintenance electrical activities, IUS also carries out vegetation management

**‘I am involved from project conception through to completion and seeing the finished installation is very satisfying’**

services, building and civil works, helicopter patrolling and tower painting.

A key service provision is the IUS Major Projects function, which is predominantly associated with primary substations. Darren Beddis is the estimating engineer responsible for understanding the connection requirements

and producing quantified delivery solutions.

Darren comments: “I am fortunate to have an operational background at Extra High Voltage and this, coupled with several years in a tendering and estimating role, makes the position ideal for me. I really enjoy the work, especially the client interface.”

So let's take a closer look at some of the developments the Major Projects Team has been involved with recently.

The Derby Shopping Centre required a brand new primary substation, 16 distribution substations and more than 250 Low Voltage supplies.

At Dove Valley in Derbyshire IUS installed 11km of 11kV cables and 19km of 33kV

cables, as well as alterations and improvements to the existing infrastructure.

Other projects completed include 33kV connections to wind farm generation sites on the east coast, and major switchgear replacement works in Corby, Hereford, Rowton and Lincoln.

IUS has also been working on a Multi Utility scheme, which requires the installation of electricity and water mains to the new Whitley Business Park in Coventry.

Asked what he liked most about his role, Darren replies: “I am involved from project conception through to completion and seeing the finished installation is very satisfying.”

# A firm with lots of energy

**B**eing self-sufficient in energy is in the land of eco-dreams for most large companies but for one of IUS's West Yorkshire-based clients, that fantasy became a reality.

With the help of IUS engineers, Parker Hannifin, a multi-national motion and control technologies company, is now looking forward to a sustainable future at its Dewsbury facility and one in which it can even export excess power to the National Grid.

IUS's tendering and estimating engineer, Mike Lines explains: "Parker Hannifin has installed a Dyno Machine, one of only 30 in this country, that converts energy when engines are being tested at the plant into electricity that can be used to meet the company's needs. It is harnessing power that can also be exported when there is spare capacity."

Allowing for this transfer to and from the National Grid has been a tricky project but all has gone well. IUS has installed the infrastructure to make this possible which included two

substations, a Low Voltage switch room and a compound housing two transformers.

There was also another unique challenge, as Mike tells us: "The Dyno is set up for 400 volts, whereas the standard is 433 volts. So we had to order special 'Euro Norm' transformers for this job which are more usually to be found on the continent rather than in the UK. The Dyno is very different from a standard generator, so this caused a few headaches."

One of the final aspects of this project was to fit the technology to limit excess energy being exported. Mike says: "Our equipment ensures that any exported electricity will be of a high standard and fit for purpose, but there will be times when just too much electricity is being generated. Therefore we investigated ways of limiting the flow at these times."

The technology which IUS has fitted for Parker Hannifin has been very well received by the company. Mike adds: "They are very, very pleased that we have overcome the challenges and met their needs."



Dyno men: Steve Wilson of Parker Hannifin, back, with Mike Lines of IUS



# Helping **Bluestar** achieve fibre class

**W**hat do the following have in common – mobile phones, golf clubs and aeroplanes?

As well as being items we either love or hate in our modern lifestyles, they all rely on carbon fibres.

In fact, so many pieces of hardware are made from such material these days, which we all take for granted. Not so Jim Turton, electrical engineer for IUS, who has been working with the industry that produces the raw material for carbon fibres.

He explains: "The development of these materials began in 1938 with the invention of fibreglass. Originally, the technology was used purely in aircraft brakes and flame retardant insulation, but as more sophisticated forms of composites were developed, demand grew wherever products had to be very hardwearing and resilient."

Bluestar Fibres Company is the organisation which produces the continuous filament acrylic that is turned into carbon fibres, the absence of which might cause heart-stopping moments for golfers and air passengers alike. They also manufacture a super-absorbent fibre under the brand name of Technical Absorbents Limited (TAL).

Jim and the IUS team have recently completed two important projects for 'Bluestar'. The first was a scheme for TAL to replace oil-filled High Voltage equipment with modern, vacuum-insulated, health and safety friendly technology. The four-month project involved building the new, safer equipment at the side of the existing stock.

Jim describes the challenges: "We had to deal with two main concerns – keeping the power outage time to an absolute minimum, so as not to disrupt

**George Coates of Bluestar says 'A good job well done!'**

production, and the fact that the new switchgear had to be brought in through a hole in the wall using a special crane to lift it.

This is the sort of scenario we face all the time, so we are not fazed by it."

The second piece of work IUS has recently completed is installing a new High Voltage substation at the factory for a fibre carbonisation plant. There was an altogether different challenge here, as Jim points out: "The new distribution board had to be bespoke to match the existing equipment. Even the colour had to be identical to the existing one. It meant we had to design and build the board from scratch."

Again, such challenges are everyday issues for the IUS team. "We assess the problem and just work out solutions" he adds, "it's what we do."

"The key to success," concludes Jim, "is to handle these projects as a partnership between IUS and the client. You have to embrace their requirement and try to get exactly what the client wants, not just an approximation of it. It's about listening carefully to them."

George Coates of Bluestar says: "Both projects were completed on time and on budget. The work was planned, managed and coordinated professionally. Adrian Garratt and Steve Robinson ensured the work was carried out safely, on time and to the very high standard of workmanship we have come to expect from IUS. A good job well done!"



Site vision:  
Fred Turnbull, left,  
and Neil Fowler

# Building a reputation

## A one-stop utility shop for the UK's house builders is an appealing and popular option.

IUS's Multi Utility service allows developers to commission all of their utility requirements for a particular site from a single source.

Fred Turnbull of IUS explains the advantages: "Instead of having to contact numerous statutory bodies and companies, they can ask us to handle everything - gas, electricity, water and

even street lighting. For the developer, that means a lot less work and for us, it means we can organise the infrastructure in a logical and efficient way. Instead of digging several trenches, we use one which means minimum disruption and maximum efficiency."

The Multi Utility service has gained momentum because of the cost savings it can offer.

The IUS team has been working with some of the UK's best known house builders,

including Taylor Wimpey, Barratt Homes, Keepmoat, Bellway Homes, Miller Homes and Lovell Homes. It has also been heavily involved with Gentoo Construction, a company providing urban social housing to buy or rent.

Neil Fowler, senior quantity surveyor with Gentoo, comments: "Using IUS as a Multi Utility provider from scheme inception to completion is beneficial from both a commercial and co-ordination perspective."

Fred explains: "The key is to work closely with the developer. Any development will be constructed in stages and that's exactly how we build our infrastructure works too.

"We phase the installation of the utilities in conjunction with the house building."

Although the service has been mainly run in Yorkshire and the North East, the team are now actively seeking opportunities in Lancashire, the Midlands and Scotland.

If you would like to find out more about the case studies in this edition, or you would like to discover what IUS could do for you, please:

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