



Notes of the Specialist Meeting, 14th March 2012.

Location:- Hilton Hotel, East Midlands Airport, Castle Donnington. DE74 2YW

The Meeting was hosted by Pitkin & Ruddock Ltd and chaired by Dean Clackett

The purpose was:

- To maintain and build inter-company relationships
- Share knowledge and experiences
- To discuss current refrigerant issues including usage recording and audit methods
- To discuss Safe Systems of Working – Protecting Employees
- To discuss Employee Training / E-Learning
- To receive a presentation from Mitsubishi Electric

Present: -

Ty Brooks, Nick Oxtoby

Paul Matthews

Scott Gleed (morning session only)

Steve Airey, Dave Wright, MacWhirter (Cardiff) Ltd

Alan Roberts, John Drew

Garrion Leeds, Glenn Church

Calvin Irvine, Ian Fawcett

Bob Ruddock, Dean Clackett, Nigel Tovey

Kevin Slater

Airco Ltd

Bry-Kol Ltd

Ceilite Ltd

MacWhirter (Bristol) Ltd

Mitchell's (Gloucester) Ltd

Montgomery Refrigeration Ltd

Pitkin & Ruddock Ltd

Upnorth Group

Bob Ruddock thanked Garrion Leeds and Lyn Turner of Mitchell's for organising the specialist meeting. He welcomed Ty Brooks and Nick Oxtoby from Airco Ltd, the latest ARC member company, and all the other delegates.

1. Company Project Presentations

Airco Ltd

Ty and Nick provided an overview of a recent project where a derelict brewery building had been refurbished with air conditioning installed over four floors, Mitsubishi Electric VRF and Lossnay heat recovery ventilation equipment was used.

The system is shortly due to be fully commissioned and the client hopes that the project will be recognised for a building regeneration award.

Bry-Kol Ltd

Paul outlined some difficulties being experienced with an Air Conditioning installation project, in terms of the approval of working practices through a third party and the end user's HSE representatives.

Celite Ltd

Scott outlined an AC installation Celite had carried out where a small bore punch swage had broken leaving a blockage in the pipe work, a problem was identified during pressure testing but the exact cause and blockage point was difficult to trace.

MacWhirter Ltd

Alan of MacWhirter Bristol outlined a close control AC application where Vapac Steam cylinders were being used to maintain the 65% RH condition this was replaced by a free-standing Stulz ultrasonic humidifier unit that used de min water from a small on-skid reservoir from a previous application that was not currently in use.

Dave of MacWhirter Cardiff outlined the company's future involvement in the European wide iSERVE project, which is the follow on from the Harmonac project. The project is intended to provide information for Practical Improvements of Air Conditioning Systems Across the E.U. by creating benchmarks for a number of system types.

<http://www.rehva.eu/en/426.iserv>

In total 1600 systems will be surveyed with MacWhirters due to inspect and report on approx 80 systems.

Mitchell's (Gloucester) Ltd

Glenn and Garrion outlined a recent project at an abattoir and meat packing factory where Mitchell's had carried out a variety of building services including process refrigeration, air conditioning – ventilation and electrical works. Searle DSR coolers used in the 4 – 6°C room's with off cycle / fan on defrost suffered from water carry over. Upon investigation the coolers were found not to have had a sheet metal tray fitted between the coil block and the drip tray as did the same DSR coolers with electric defrost which did not have the same problem.

Another problem was with a very high failure rate on light ballasts / electronics this again proved to be caused by a manufacturing fault. All these components, faulty or not, were replaced and currently some of the replacements are also failing!

Both of these instances highlighted the potential impact manufacturing faults can have on our organisations.

Montgomery Refrigeration Ltd

Ian outlined two projects:

Firstly a Design and Build project in Bangor where Montgomery's provided all services and associated works, the building featured a number of 'ECO' features including a biomass boiler in an integrated plant room, rain water recovery, LED lighting, CO2 refrigeration systems and cold aisle recovery.

The project was delivered on time against a 14-week programme.

Secondly Ian outlined the use of the Trox active chilled beam system currently being installed on hospital projects in Northern Ireland.

Pitkin & Ruddock Ltd

Dean provided an overview of a recently completed marine refrigeration project, a suite of five cold rooms and associated refrigeration equipment were installed on a UK built, 96-metre private super yacht.

The project timeline extended over five years and involved P&R in the design and build of the insulated compartments, shelving systems as well as the high and low temperature refrigeration systems, spares support and technical training of the ships engineering team.

Upnorth Group

Kevin outlined some of the practical experiences Upnorth had gained working in high heat intensity data rooms, and advised that the rooms are often shared by more than one company.

This can result in problems with rack orientation and general difficulties when trying to create a hot / cold aisle arrangements. Upnorth have used cold room type PVC air curtains and specially designed floor air terminals to improve air distribution within rooms / through racks.

The heat output level from IT racks is increasing, making correct air distribution and the need for energy efficient systems more and more important.

It was identified by a number of members that many customers with business critical IT rooms are still relying on old systems, sometimes operating on R22, with very little built in equipment redundancy.

2. Refrigerant.

Whilst all member companies hold F Gas Certification (Mandatory) via REFCOM not all hold the REFCOM Elite standard (voluntary), the criteria and audit differences were outlined.

It was determined that other than HVCA (B&ES) or REFCOM audit there was very little or no policing of F-Gas / ODS regulations Also many other regulations such as AC Inspection requirements introduced in the past few years.

Discussion took place regarding the possible introduction of R32 refrigerant for air conditioning applications, it is understood Daikin and others are testing its use in a variety of systems / applications. Although this substance has a flammability rating of A2, its introduction and use did not specifically concern any delegates, some felt the introduction of such a product might reinforce control of use, supply and working procedures giving an advantage to companies who already work to high standards. It was however identified that the insurance industry and some end users may identify a higher degree of risk in its installation and ongoing use.

Only two members are currently involved to any large scale with CO2 refrigeration systems, however they felt since the last meeting the servicing and design issues are gradually being improved upon. No delegates had any detailed experience with CO2 air conditioning systems, the feedback from some Air Conditioning equipment

manufacturers was that when tested CO2 could not currently provide the energy efficiency levels required for current / future system requirements.

Ammonia (NH3 R717) still generally remains limited to the larger industrial plant with a few exceptions that have been reported in the recent trade press.

Hydrocarbons also seem limited in application to either small integrals or chiller plants using secondary refrigerants, it was noted that JLP / Waitrose and M&S are using Hydrocarbons in some parts of their estates.

It was also noted that some supermarkets are now moving toward refits using HFC refrigerants with lower GWP's to replace R404A, refrigerants such as R407A R 407F or R134a are being used or suggested. The 407 family however has a high glide temperature and correct application / commissioning is essential to avoid practical problems.

3. Safe Systems of Work – Protecting Employees.

The issue of safe systems of work and how they are implemented and monitored was discussed.

Risk assessments and method statements were extensively used to support engineering activities, and some member companies had already exchanged formats and content to allow comparison and improvements to be made.

It was agreed this should continue as it can only build upon the good work done by individual member companies and help reinforce the systems of work used by all member companies.

Scott Gleed presented some ~~hand-out~~handouts to indicate how Ceilite recorded and monitor training.

It was discussed that even with the best system of work and training regime in place there was a weak link where individuals (engineers) are left to implement the working practices without direct supervision, which is the reality in many of our practical work situations. It was felt the challenge we now need to address is the ongoing improvement in monitoring the effectiveness of the systems we have in place, and continuing to build a culture at all levels in our organisations where safe working practices are applied to the correct level using a common sense approach.

In conclusion the ARC principal of member companies exchanging information and experience's, fits very well with the ongoing improvements in Health, Safety and Environmental management that we are all seeking.

4. Employee Training - E-Learning

A number of member companies are using E-Learning formats such as Human Focus or the Safety Passport system to successfully deliver short Health and Safety training modules to their employees.

Ceilite had found the Human Focus provision to be very cost effective as had Montgomery's who have set up a training area at their Belfast premises with facilities specifically to deliver E-Learning.

It was noted that the CSCS card H & S test and the theory section of the City & Guilds 2079 are both online assessments using a set number of questions from a larger bank.

Whilst some longer E-Learning training courses are available such as Real Skills Europe (Refrigerant Containment), these do require a certain level of dedication and commitment by individuals to successfully complete them.

Star Refrigeration deliver an E –Learning package for CO2 systems, these two modules must be completed before moving on to the M&S practical training elements at White City, so this training is a mixture of both formats.

BRA CO2 short courses are available from Cool Concerns info@coolconcerns.co.uk,

EPTA Jon.Sheehan@eptarefrigeration.com and WR Refrigeration paul.arrowsmith@wrref.com.

As far as delegates were aware the City & Guilds qualifications (6187-31) relating to CO2 in Refrigeration and Air Conditioning are still being developed.

It was felt that some of the more technical training required by our industry is better delivered by the traditional method of using a tutor to allow instant feedback and questions to be asked.

This led to a discussion on the provision of industry specific technical training, which as outlined at past meetings, is an issue, some member companies are unable to get good quality basic RAC training within a reasonable distance from their operating base, others who have local colleges delivering RAC training felt the quality of the provision was poor or inconsistent.

5. SWOT ANALYSIS

This item was unable to be covered due to lack of time (possible topic for future meeting).

6. Presentation by Mitsubishi Electric

Deane Flint of Mitsubishi Electric presented an overview of the Air Conditioning – Heat Pump market featuring historic data and their own predictions for growth by sector.

A short Q & A session on the presentation and related topics followed and Deane was thanked for his input to the meeting.

Finally Dean Clackett thanked everyone for their valuable input and the meeting was closed at 17.20