Imperial College London

Health and Safety Matters

December 2013

THE NEW STRESS ASSESSMENT TOOL

PAGE 3

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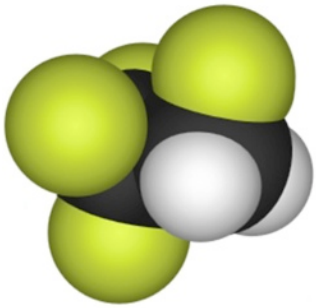


Fluorinated Greenhouse Gases

Continuing the theme of environmental articles, Sara Muir, Head of Energy & Environment, looks at the Fluorinated Greenhouse Gases (F-gas) Regulations 2009 and what they mean to the College

Fluorinated gases are manufactured refrigerants of which hydrofluorocarbons, known as HFCs, are the most common. Other fluorinated gases include perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6). They were developed in the 1990s to replace the ozone-depleting substances which were phased out due to concerns over their impact on the ozone layer.

Today, F-gases are everywhere: in industrial refrigeration, air-conditioning systems and heat pumps, in electrical switchgear and in some types of fire protection. F-gases are relatively safe to use – they have low toxicity levels and are non-flammable. However, they have a very high global warming potential and, once released, can stay in the atmosphere for a long period of time. The aim of the F-gas Regulations is to reduce emissions of F-gases by preventing leaks from systems where they are used and thus reduce their impact on the environment. The regulations are enforced by the Environment Agency and Local Authorities.

As an operator of air conditioning and stationary refrigeration equipment, the College has a duty to comply with the F-Gas Regulations. Our responsibilities are to:

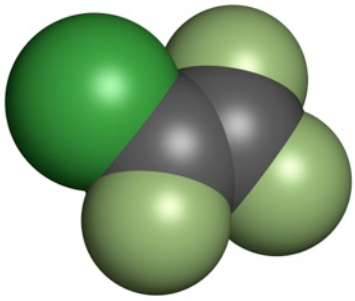
- Have any leak repaired immediately.
- Use appropriately trained and qualified contractors to service, maintain and dispose of equipment and refrigerant.
- Test systems containing between 3kg (6kg where the system is hermetically sealed) and 30kg of refrigerant for leaks at least once a year, and systems with more than 30kg twice a year.
- Keep records of tests and of any leaks discovered.
- Fit permanent leak detection to systems containing more than 300 kg of refrigerant. Log leak tests and refrigerant usage.

The Estates Facilities Team ensures compliance with the regulations for the air conditioning systems it maintains and for all electrical switchgear. However, some departments install their own air conditioning systems. If you wish to check that your air conditioning equipment is covered by Estates Facilities arrangements, please contact the Customer Service Helpdesk on fm.csc@imperial.ac.uk. Refrigeration equipment disposed of by Facilities Soft Services is sent to contractors who are licensed to recover the F-gases before recycling/destruction.

As a general rule of thumb, domestic sized refrigeration equipment will contain less than 3kg of refrigerant gas ('domestic' sized refrigerators would broadly include many laboratory refrigerators and those found within kitchens on College premises). At present, there are no firm plans to survey existing departmental equipment to determine what falls within scope, but options may become available for relatively pain-free registration on the back of the need for Estates Facilities to manage their own equipment. It may be that some sort of self-service registration system can be implemented using proprietary software.

Refrigeration equipment containing less than 3kg refrigerant is therefore subject to the less onerous elements of the legislation, though if you are responsible for such equipment you should ensure that you are able to contact a licensed contractor to effect a repair quickly should a fault develop (if a repair is at all possible – it may be that disposal and replacement is the only option). Departments are encouraged to use the established system that Soft Services have in place for disposal of such equipment. However, if departments dispose of refrigeration equipment via an arrangement with their own waste contractors, efforts should be made to ensure that evidence is provided to confirm that F-gases have been reclaimed prior to disposal.

Finally, environmental performance should be a consideration when purchasing any new refrigeration equipment. More information on the F-gas Regulations can be found on the Environment Agency and Defra websites:
http://www.environment-agency.gov.uk/business/se



Good mental health is as important as physical health; it enables us to get the most out of our lives, be productive and successful and gives us the resilience to cope with adversity.

In order to create a supportive inclusive work environment for individuals who have experience of mental health problems or who have the potential to develop mental health problems, College has developed a strategic and coordinated approach to promote Mental Wellbeing at work. The goals are to

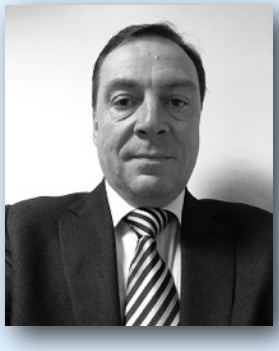
- Prevent work-related stress in staff
- Support staff with mental health difficulties
- Promote good mental health through work
- Reduce stigma associated with mental health difficulties

The Occupational Health Service, in conjunction with the Learning and Development Centre and Human Resources, have developed a stress toolkit to enable individuals to identify which work place stressors may be relevant to them. This is based on the HSE's Management Standards for Stress and by using this tool, employees can prioritise the issues which are causing them most concern. They will be signposted towards support resources as well as encouraged to have a discussion about stress with their line manager. Information has also been produced to assist line managers understand the type of adjustments or support which can be put in place.

The toolkit was launched to coincide with National Stress Awareness Day. Speaking at the event, Louise Lindsay, Director of Human Resources, said: *"Together we're building up a package that recognises that stress is something we can talk about. Everybody at some point will experience stress and what we want to do is provide people with tools, activities and initiatives that enable them to deal with it in their daily lives and don't have to keep those things inside and face them alone."*

To learn more about resources available to manage stress at work and to identify your workplace stressors visit:
http://www3.imperial.ac.uk/occhealth/guidanceandadvice/workplacestress

Welcome.....
Adrian Dorrington
Chief Fire Officer



Adrian joins the College having served several years as a community firefighter with Royal Berkshire Fire and Rescue Service and more than 25 years with the Defence Fire and Rescue Service. The formative years were spent as an operational firefighter and junior officer before taking up a Fire Station Commander position, followed by a tour of duty at the fire training school as an instructor, principal tutor and officer commanding of the distance learning department as well as an examination and standards officer.

Upon promotion to the more senior officer ranks, Adrian moved to Buckinghamshire, where he took up a dedicated fire safety appointment, working as Project Fire Officer for major new builds and refurbishments, as well as overseeing and auditing regional and local fire safety arrangements, primarily across the RAF estate within the southern half of England. His remit also required driving through the changes required to comply with the *Fire Precautions Workplace Regulations* and the new fire risk assessments that stemmed from them. During all this, he was given the lead role in planning for fire service industrial action on a regional and national level, and deployed to the 'front line' in a command and control role during many of the strike periods, to oversee and maintain the safety of the military contingency fire-fighting force.

In the wake of the London bombings eight years ago, Adrian was posted to London, working out of Whitehall as Group Manager Fire Safety Specialist. Whilst maintaining a significant fire safety portfolio, and also having to introduce and implement the requirements of the *Regulatory Reform (Fire Safety) Order*, he now also became much more involved in resilience, emergency and contingency planning for a whole raft of 'peacetime' scenarios as well as more grave threats. He also had a significant role in preparing for and the successful conclusion of the Olympic and Paralympic Games, which saw him work for a number of years with designers, project teams, LOCOG, TfL, other emergency services and Government departments.

Now that Adrian is with us, he intends to engage very closely with everyone at the College who has control of or responsibility for people, processes and activities, to ensure that fire risks are suitably captured and addressed. If you have any of those kinds of duties and you have not met him yet, no doubt you will soon, where he will explain how he and his team will be assisting you in continuing your work whilst still managing to fulfil your statutory obligations.

Radioactive legacy waste....who needs it?

Brian Robertson, College Radiation Protection Manager, describes encountering radioactive legacy waste both in the College and beyond

Over the past twelve years, hundreds of unwanted radioactive items have been removed from College premises. These have ranged from a single sample capsule to ~40 tonnes of ore. Is there anything else out there?

Radioactive legacy items are often found when refurbishing or moving out of occupied space. The most recent was a collection of stock pots that appeared on a shelf in a shared laboratory after several years hiding at the back of a cupboard. Contamination may also be found from work carried by previous occupiers. I have been involved with several finds of radioactive material this year - not all were on College premises, but interesting nevertheless.

Pint of radium anyone?

In one example, a College staff member purchased an old medical device when visiting another part of Europe. The device was originally used to deliberately contaminate water with radium for patient consumption...definitely not something done now! The item set off alarms when coming through a port and was detained along with its owner until eventually cleared after tests to show that it was not leaking and within limits. Advice given to the owner included appropriate packaging and storage.

Another issue concerned the discovery of a container labelled 'radioactive' by a television crew on location at a residential premises. I visited the house in a consultancy role and found weapons, asbestos, a radium dial clock and a large metal container labelled 'radioactive' the container had once been used for transporting temperature sensitive items by air but was not found to be radioactive or contain radioactive material. However, the dose-rate from the clock was over 50 microSv per hour. Advice included storage and protecting the clock from damage that could release radium.

Do not open!

A third recent issue was discovered during a music recording session. The manager of the studio described a collection of rocks from Cornwall he kept in his spare room at home. When investigated, many of the rocks were found to be radioactive and accumulation of radon gas was suspected. Advice included improved ventilation and moving the more active items out of the house.

Your time is up

These three cases were discussed off-record with an Environment Agency inspector who confirmed that as these were individuals rather than 'legal entities' the EA had no remit. The EA or HSE would not wish to be directly involved, however, the owners of these radioactive items were receiving doses of radiation externally and possible internally from ingestion or inhalation.

Another issue involved an individual but also a 'legal entity', and resulted in a rather expensive incident. A member of public visited a council re-cycling centre and threw a collection of radioactive dials from military aircraft into several skips. When these were taken for processing, alarms were triggered and the skips rejected. A preliminary investigation identified potential contamination of skips, concrete, PPE etc. and confirmed the presence of significant photon emitters. Some of the personnel involved would have received an external dose and ingestion of radium could not be fully ruled out. The clean-up operation involved specialist contractors and Regulators. The cost to the Council was tens of thousands of pounds and there was significant disruption to operation of the site.

If anyone has or suspects they might have radioactive items at College or elsewhere, please let me know - I am happy to help. The cost of disposal is usually relatively minor compared with the financial impact, disruption and reputational costs when items are discovered inappropriately stored on-site or after leaving site. More importantly, appropriate storage or disposal restricts or eliminates risks to health and the potential for environmental impact.

News Snippets

Fume cupboard training video

We reported in the June issue that production of a fume cupboard training video was under way. The final version of the film has now been delivered to the Safety Department. This will be available for departments to incorporate into their existing laboratory training schemes in whichever way suits them. We will most likely make the video accessible via the Safety Department website and we will write an introductory web page on the subject.

Lone working alarms

The Safety Department will shortly be conducting a trial of lone working alarms supplied by a company called *Lone Alert*. A number of variations will be assessed including their options that have panic buttons, tilt switches (to detect a man down) and a mobile phone app. A small number of volunteers will be selected and the functionality, defined escalation protocols etc. will be put to the test. We will publicise the results of the trial once it has concluded.

Blunt sharps

Blunt sharps may sound like an oxymoron, but there are numerous scientific applications that require the use of a fine needle but not necessarily a sharp one. It is not unusual for us to receive accident reports of needlestick injuries where the remedial measures amount to recommending blunt needles in future. So why not use them from the start? Occupational Health, the Safety Department and Purchasing have been working to source reliable supplies of blunt needles in a range of different gauges. These are currently known to be available from:

- *VWR: Monoject blunt needles with aluminium hub - 15 to 23G, 1 to 1.5 inch.*
- *SLS: NEE23G - 23G blunt needle, 1.5 inch.*

Further information available from the Purchasing Department.

First Aid Policy

The College First Aid Policy has been reviewed and was discussed at Health and Safety Consultative Committee in October. The revised guidance includes:

- the requirement for First Aid training to be registered with *Ofqual*.
- arrangements for the provision of Automatic External Defibrillators (AEDs) within departments.
- clarification on the administration of medicines (in both onsite and fieldwork situations).
- the recording of first aid training on the OLM system.

Computer health & safety

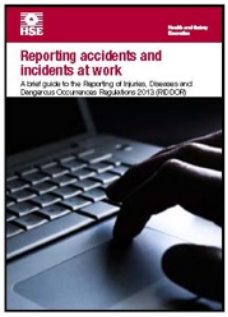
The Occupational Health Service report an unprecedented demand for DSE related ergonomic assessments which could usually be addressed locally by DSE assessors. It usually becomes evident that users are not familiar with the relevant pages on the OH website and nor do they know who their local assessor is. Some departments do not appear to have a nominated assessor.

Departments should maintain a current list of assessors and communicate this information locally. Dates for DSE assessor training sessions are available on the LDC Safety Training website. OH also stress that they are not responsible for giving advice in situations where individual's chairs are broken or need replacement - this remains a local management issue.

The Computer Health Policy is due for revision in 2014.

Nitric acid bottles

There has been some recent correspondence on the Chemical Safety Advisors network concerning the supply of concentrated nitric acid in plastic containers. It noted that, until recently, containers had been labelled with 'use within 5 years of opening' with a space on the label for the users to write the date of opening. It also noted that labels stating 'use within 18 months of packing' were now being supplied with the packing date printed on the label. Either way, the implications are that the container has a shelflife and that exceeding that shelflife may increase the risk of the container degrading and becoming unsafe. Nitric acid is one of the 'nastier' acids we use in the College. At the time of going to print, we have not had the opportunity to follow up on this matter, but it might be advisable for anyone holding nitric acid stocks in plastic bottles to check these details. We'd be interested to hear any feedback.



RIDDOR Changes 2013

On 1 October 2013, a number of significant changes came into force with respect to the *Reporting of Injuries, Diseases and Dangerous Occurrences Regulations* (RIDDOR). The changes are intended to simplify the reporting requirements in a number of areas:

- The classification of 'major injuries' to workers has been replaced with a shorter list of 'specified injuries'.
- The existing schedule of 47 types of industrial disease have been replaced with eight categories of reportable work-related illness.
- Fewer types of dangerous occurrence will require reporting.

There has also been further clarification with respect to the issue of reporting injuries to members of the public (e.g. students) that require hospital treatment. Now, the injury will only require reporting if treatment is received. The Regulations clarify that examinations and diagnostic tests (such as X-rays) do not constitute treatment and neither are 'precautionary' visits reportable. The relevant page on the Safety Department website offering guidance on reporting accidents has been updated accordingly. There is also further information available on the HSE RIDDOR pages.

As has always been the case, the Safety Department remain responsible for reporting incidents to the HSE on behalf of the College. The guidelines are for information only and to assist local safety officers in determining whether an incident might be reportable so that they may liaise with the Safety Department accordingly.

Safety Department website: http://www3.imperial.ac.uk/safety/subjects/reportingaccidents
HSE website:http://www.hse.gov.uk/riddor/index.htm

Salus Upgrade

Salus, the College incident reporting and management system will undergo an upgrade to the latest version of the software in January. It is hoped that the upgrade will eliminate any bugs that exist in the current version and it also presents an opportunity to tidy up some areas of the database and to add a little additional functionality. Anyone submitting a report to the system should see little difference. However, there will be an additional field (non-mandatory) whereby the person can identify the responsible manager, supervisor or PI. A note will also be inserted on the front page of the form advising that the Safety Department must be notified in the event that anyone has a period of absence from work following a workplace injury or work related ill health.

Those safety managers who have access to the parts of the system relating to investigation and sign-off, will notice that the option to 'co-permission' the incident to another part of the organisation. For example, if an incident occurred in an area shared between two Faculties, the person reviewing the incident can make the report accessible to the safety manager of the other Faculty. In addition:

- the search page will be been laid out more logically.
- some additional options will be added to the drop-down lists.
- a 'contributory factors' drop down list will be activated.
- a 'lost time / absence' report will be able to be generated.

Faculty / Campus Safety Managers and Departmental Safety Officers will be notified of the above changes when they are about to take place.

Annual Accident Statistics

In January, the Safety Department will be submitting the annual College accident statistics as we have done in previous years. This information used to be collated by the University Health and Safety Association (USHA) but from this point onwards it will be submitted to the Higher Education Statistics Agency (HESA) and will constitute part of the Estate Management Record. The reporting format is very similar and includes data on the number and type of RIDDOR reportable injuries and dangerous occurrences, total number of other injuries and numbers of staff and students at risk. Historical data is held by the Safety Department should anyone in the College require this information. It is not unusual for funding organisations or collaborators to request this information from the College prior to putting research agreements in place and we have been contacted on numerous occasions to provide such information in the past.

Radiation Protection Supervisors – What you need to know

Where there is work with ionising radiations, a risk assessment must be carried out prior to that work taking place. Depending on the finding of the risk assessment, it may be necessary to designate radiation work areas as either "Controlled" or "Supervised".

Designation brings with it additional requirements, one of which is the production of radiation "Local Rules". The local rules are a set of instructions that set out the key arrangements for restricting exposure in a particular area. They are designed to ensure that when followed, work is compliant with the *Ionising Radiations Regulations 1999* (IRR99), and any radiation exposures as a result of that work are kept to as low as reasonably practicable (ALARP). Staff working with ionising radiations must comply with the local rules and to ensure this happens.The radiation employer is required to appoint a Radiation Protection Supervisor (RPS). The RPS's job is to supervise the arrangements set out in the local rules, thus making sure that the personnel involved in the work comply with the requirements set out therein.

At the College, this duty is delegated to the Head of Department and RPS appointments must be made in writing. The RPS has a key supervisory role, so a person's suitability for appointment as an RPS will depend both on a knowledge and understanding of IRR99 and local rules plus an ability to exercise a supervisory role. To this end it is important that individuals considered for an RPS post:

- Know and understand the requirements of IRR99 and the local rules.
- Command sufficient authority from the people doing the work to allow them to supervise the radiation aspects of the work.
- Understand the necessary precautions to be taken and the extent to which the precautions will restrict any exposures.
- Know what to do in an emergency.

RPSs must attend suitable training. College currently provides at least two RPS training sessions each year and bookings can be made via the Learning and Development Centre web pages. Refresher training for RPSs is also essential and all RPSs must attend refresher training at least once every three years.

When appointing RPSs, it is very important that consideration be given to ensuring adequate cover. The role of the RPS is to exercise close supervision of the work on behalf of the employer, but it may not always be necessary for the RPS to be present. The range and complexity of the work must be considered when decisions regarding the number of RPSs required are made. In some circumstances it may be necessary to appoint more than one RPS, so that cover can be maintained in the event of sickness absence, annual leave, sabbatical or leave of absence to attend overseas conferences or carry out research work elsewhere. If there is a high work load and a large number of radiation workers, ensuring continual RPS cover is essential. Smaller, less busy research groups with only one or two very experienced workers may not need to appoint more than one RPS.

More information can be obtained from the relevant guidance note (IRPM-ICRP-027, Radiation Protection Supervisors) on the College web pages at : http://www3.imperial.ac.uk/safety/subjects/ionradiation

FREQUENTLY ASKED QUESTION

FAQ

Does my transportable cryogenic vessel require a Written Scheme of Examination (WSE)?

The *Pressure Systems Safety Regulations* (PSSR) are concerned with preventing serious injury from the hazard of stored energy resulting from the failure of a pressure system or one of its component parts. The Regulations will apply to any gases or fluids that exert a pressure in excess of 0.5 bar above atmospheric pressure. There is an additional threshold in that the full weight of the Regulations, including the requirement for a WSE, will apply to any vessel having a pressure-volume product equal to or exceeding 250 bar litres.

Pressurised transportable cryogenic vessels may typically have an operating pressure of 3 -4 bar. If this is the case, it therefore follows that any vessels having a liquid capacity exceeding about 85 litres will fall within scope of the requirement for a WSE (3 x 85 = 255 bar litres). Many vessels in use within the College have a liquid capacity way in excess of 85 litres and therefore many will require a WSE. WSEs are prepared by a Surveyor Engineer working on behalf of Zurich, the College insurers. Departments must register their vessels with the Customer Services Helpdesk in the first step towards enabling the inspector to arrange to examine the vessel and draw up a WSE. A registration form is available on the Safety Department website: A planned preventative maintenance schedule (PPM) is of course required for all vessels irrespective of whether or not they fall above or below the threshold for a WSE. PPM's are usually routinely carried out as part of the BOC contract. The Registration form may be found at:
http://www3.imperial.ac.uk/safety/subjects/pressuresystems

Safety Training

LDC safety training submitted a report to Health and Safety Consultative Committee on 9 October 2013 covering the 2012/13 academic year. A total of **255** classes were run on **37** subject areas across College and tremendous effort has been made to ensure rooms are available. The total attendance including staff, postgraduate students and contractors was **3,559**. The total spend for this period was **£139,542.36** against a budget of **£90,000**. The shortfall was made up by internal and external income.

The current LDC budget allocation 2013/14 for safety training is £130,000, so all internal charges are removed with the exception of NEBOSH NGC at £400 per delegate and Bio-safety Practitioners Award at £350 per delegate. The LDC will continue to charge external delegates and any income will be re-invested in the wider programme. The challenge is to ensure that the fall in internal charging is managed to offset the loss of internal income.

LDC safety training has begun an internal Quality Assurance (QA) process in order to promote best practice and to help tutors reflect, develop and maintain their skills and practice. It is an opportunity to give open and honest feedback to tutors after observation from someone outside the tutor team. A QA Working Party report was presented to Safety Training Advisory Committee (STAC) on 12 July 2013 and it was agreed to circulate the QA framework to all safety tutors involved in the safety training programme and encourage feedback. Central to its adoption is “buy-in” by STAC and acceptance by all internal trainers who deliver training. The LDC has widely consulted on this and the feedback has been positive although trainers have been anxious and have sought reassurance regarding the process.

The NEBOSH National General Certificate continues to be a flagship event attracting both internal and external participants. Fifteen delegates attended the March-June 2013 course and the results were 3 Distinctions, 6 Credits, 2 Passes and 3 Referrals. It was decided at a NEBOSH NGC tutor’s meeting not to go ahead with the Sep-Dec 2013 event because of a lack of suitable internal candidates.

The practical fire prevention and fire safety sessions at South Kensington have been disrupted this term as a result of a defective gas flame unit. The Fire Office has researched a more modern fire safety gas flame simulator which meets College needs in terms of providing realistic fire extinguisher training. This retails at £2,995.00 + VAT and approval has been given by Estates Facilities to purchase three kits for South Kensington, Silwood Park and Hammersmith. The equipment will be subject to an annual inspection which would be best undertaken by the Maintenance Team. The equipment consists of a control unit with propane bottle and various components including a waste bin, oil tray, fat fryer and computer monitor. The LDC is keen on continuing with the practical fire exercises to gain experience in the use of extinguishers. There is continuing debate on whether we encourage all delegates to experience the practical or whether we are more selective in targeting specific groups.

The LDC will look at additional safety courses on pressure systems and machinery risk assessment as part of the core offering led by external consultants. It is also providing additional breathing apparatus courses for Chemistry and pendant crane operations and slinging for Mechanical Engineering. There was acknowledgement that there needs to be more local practical training within departments on work equipment, risk assessments, standard operating procedures and for it to be recorded.

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If you have any comments or suggestions for inclusion in the Newsletter, please contact the editor:

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