UNIVERSITY OF ST. ANDREWS

SCHOOL OF CHEMISTRY

Minutes of the School Safety Committee Meeting held on Monday 11th December 2017 at 10.00 am

Present:	Alan Aitken [RAA]	School Safety Coordinator (Chair)
	Eli Zysman-Colman [EZC]	Deputy Safety Coordinator and Inorganic Representative
	Chris Goodsell [CAG]	Estates
	Magnus Alphey [MA]	BSRC, X-Ray
	Paul Connor [PAC]	Physical
	Iain Smellie [IAS]	Teaching
	Iona Hutchison [ILH]	Disability Officer
	Carolyn Busby [CMB]	Secretarial
	Bob Steele [BS]	Research Officer (Earth and Environmental Sciences)
	Tommaso Di Rocco [TDR]	Research Officer (Earth and Environmental Sciences)

1. **Apologies**

Andrea Burke, Garry Muir, Juan Carlos Penedo, Terry Smith, Brian Walker

RAA welcomed everyone particularly the Research Officers from Earth and Environmental Sciences who were at the meeting for the first time in Andrea Burke's absence.

2. **Minutes of Previous (Virtual) Meeting on 26th August 2017 and matters arising**

These were circulated and considered at the Staff Council Meeting in September.

3. **Report on developments since the last meeting:**

(a) Record keeping, SharePoint

The system seems to be fully available in the University and we are ready to start establishing a proper database for personnel in the School of Chemistry which will be very useful to keep safety records of who is here, whether they have taken the safety test, read the safety handbook or done any specialist training in manual handling, fire safety, radiation safety etc. This will be a centralised way to keep a track of all these things. RAA is to brief Fraser Kirk on what fields will be required in the database and to liaise closely with office staff to make it useful. It will replace the induction paperwork so that new arrivals would log on as soon as they have their University username and would input all the information that the School requires. MA asked if they would be able to access the Safety Handbook direct from there but RAA pointed out that there were technicalities to be ironed out when setting up the new system and this would be discussed with FK and secretarial staff. A realistic target would be to

introduce this in summer 2018 so that it is in place for new people starting from September 2018 onwards.

[Action: RAA/FK]

(b) Roof fire replacement works

Various research groups have been asking about what is happening following the fire on the Purdie roof in July. RAA asked CAG to give an update on the situation. The financial/insurance side and tendering process has been completed and workmen are due to start repairs on 8th January 2018. They will put scaffolding on the side of the building to begin with in order to winch equipment up to the roof and work will be done on edge protection before work can start. Indications are that it should take about 10 weeks once they arrive on site. BS asked for some background information on the fire and if the work will be near their labs. RAA explained that the fire was at the opposite end of the building to the Geoscience labs. It was exterior to the building and was an electrical/mechanical fire at one of the fume cupboard motors, spreading to and destroying adjacent stacks. CAG stated that Estates is starting a maintenance programme of work so that there will be electronic monitoring in the future. RAA explained that some research groups had been without their fume cupboard capacity since early July so it was quite a serious issue for them. Room 337 had been used as decant space in the meantime. This room is due for refurbishment and there will be an asbestos survey on 14th Dec but it can be used except for that day until the damaged fume cupboards are reinstated.

(c) Waste Disposal

(i) Legacy waste

This is the fallout from large research groups moving out and there is still a substantial residue of Nolan/Cazin chemicals. RAA will give Allan Watson his pick of the chemicals when he arrives next week but apart from that they are now set for disposal. Russell Morris moved into the Level 4 lab (formerly EZC lab) and he sorted out his chemicals and offered a large amount for disposal/to other people. Paul Kamer also left a large amount along with John Walton's stock. Iain Patterson took 3 large boxes of material from the Kamer chemicals for the teaching labs. RAA will send out an email to all synthetic groups to take their pick of the chemicals. Any that are left will be disposed of in the New Year as Allan Watson is bringing his group in January and space needs to be made for them.

EZC mentioned that there are marketplaces run by chemical companies for re-selling chemicals eg Fluorochem, Sigma Aldrich. EZC wondered if this was worth considering if there is a substantial cost involved in disposal. RAA told the committee that the Head of School is intending that the next Technical post should include spending time learning about waste disposal as up to now there has been no manpower to deal with this apart from RAA himself. The new position would include spending part of the time managing waste from the School. However, this will be too late for the current exercise and most of this is going for incineration. RAA doesn't expect there to be a huge cost and while the marketplace idea is worth considering it would need a substantial

amount of manpower to do it. RAA thought this should be documented for the future and it may be worth considering for the collection of research chemicals from past colleagues rather than incinerating them. He will look into this.

[Action: RAA]

(ii) Ongoing waste

RAA would like to remind people about ongoing special waste disposal. Some groups regularly send him lists of waste to be disposed of but others appear to be hoarding waste. RAA is planning a disposal/pick up in January.

[Action: All Staff]

4. **Annual Safety Inspections and Report (due date 10th November 2017)**

For the first time this has been aligned with the academic year instead of the calendar year. The report on Academic Session 2016/17 was due in November. The questionnaire was brief and as it is used for all Schools in the University it is very general. The inspection is more detailed with points discovered during the inspections. This has been submitted to EHSS by the closing date and so far RAA has not had any feedback. EZC asked what should be done next. Some items have been completed and some items have changed. In future we would aim to process the data and send it out to Supervisors shortly after the inspection. RAA did not do this until some time after the inspection by which time a lot of issues had been addressed. The whole report does not get sent out to PIs. MA mentioned that there were items that he was meant to address but had not heard about this and RAA explained that this report was being shown for the first time. It was signed off by Head of School and submitted by the beginning of November. Any urgent matters were dealt with by RAA straight away but a lot was fairly routine. PAC had noted incompatible chemicals being stored together but in some cases this can be due to the insufficient lab space given to supervisors eg if they have only one cupboard they cannot separate acids and bases. RAA said that he and IAS concentrated on breaches of safety regulations rather than "good practice". However, RAA felt it is important to bring people's attention to anything on the spot that requires immediate attention rather than sending a report long after the inspection. The report will now be due in November every year. RAA asked when the inspections should be carried out next year and it was agreed that inspections should be after teaching finishes, perhaps in June 2018.

There has not been a fire practice in Purdie during this session. The previous practice of having a fire practice at the beginning of a session has been changed as there are no longer UG student labs in Purdie which would need to be evacuated. RAA's current plan is to have a fire practice in mid-February. The fire practices are done by building so BMS is separate from Purdie. MA stated the Annexe is done separately too as the buildings are set up so that all three do not need evacuated at the same time. CAG stated that the practices show if things are working technically and it is too much to do all three building at once. EZC felt it was strange that BMS had had one already but Purdie had not. MA said each building should have a practice at least once a year and it would be a good idea to coordinate so the practices take place closer together. In the event of a major catastrophe then all buildings could be evacuated at the same time. RAA agreed that they would coordinate the practices in the future so they were done closer together.

[Action: RAA/MA]

5. Register of gas monitors following incident on 27th September

BW brought this up to be discussed at a previous meeting as he felt this needed to be addressed and an incident on 27th September brought this into sharper focus. A "fluorine alarm" went off, apparently indicating fluorine element leaking in the building. On closer inspection it turned out that fluorine had never been present in this lab and it was a malfunction in the alarm. However, it was worrying that we didn't know there was an alarm for fluorine in the lab. As a consequence, Estates and EHSS were involved and a list of gas monitors was put together for all science buildings including input by RAA and MA. A copy of the list (for Chemistry) was passed round. EZC felt Estates should already have all this information and hold the records. RAA stated that we now have a fairly comprehensive list of fixed alarms however there are also small portable alarms which some groups have for carbon monoxide etc and RAA has a separate list of these, which does not need to be sent to Estates. The purpose of this survey is to develop a procedure specifying what a cleaner or janitor should do if an alarm goes off out of hours. Estates and EHSS are trying to get a uniform instruction for these staff as to what action should be taken. MA asked if this is also to help with maintenance of these alarms since if Estates is not aware of all these alarms maintenance may be patchy. RAA replied that, while this may be a side-benefit, it was not the primary motivation for the exercise. The BMS carbon monoxide alarms were fairly recently installed. CAG pointed out that because there is natural gas in the labs, then the carbon monoxide alarms have to be installed to conform to gas regulations and be compliant with the Gas Safe Register to make sure there is no risk to life or property. These are regulations that are not set up for labs specifically. EZC pointed out that with people moving labs then it has to be ensured that the correct alarms and sensors are installed. CAG said that these alarms are legal requirements and it is planned to install these in Purdie next. These alarms would send a signal to a solenoid which would cut off the gas and it would be reset and the system would do a self-check. EZC asked if a lab that actually uses carbon monoxide as a reagent would have to have a separate sensor/alarm. All the work was done on the basis of using natural gas. RAA only became aware of the system when doing the survey but MA became aware of it when it was being installed in BMS.

RAA said that a uniform notice will be devised by EHSS which will be put beside each gas alarm with instructions on what do if it goes off.

6. Scottish Fire and Rescue Services exercises

The University has these exercises periodically and recently there were two, 3 weeks apart, on a Tuesday evening. On the first evening about 30 firefighters attended who were shown round the building by RAA and CAG and they were able to find out what sort of hazards they might face. The day after the first walk around there was an actual fire in the Woollins/Kilian area. This happened in an oven where someone had put a roll of paper towels and the element was exposed: it overheated and set the paper towels on fire. The 2nd exercise was a major one and an actual event was simulated in room 337, including two casualty dummies which were "rescued" satisfactorily, one from room 337 after a simulated poison gas leak and one from the disabled evacuation point in the Level 4 NE stairwell. It was surprisingly slow but this was in part due to the fact that two of the four units who attended had to leave after a call out to a real fire. They successfully brought out the written risk assessment for the lab and in the end everything was satisfactory. It was however clear that the Fire and Rescue

Service are absolutely depending on expert advice from School staff on call-out in such an incident (see below).

7. **Updating of emergency contact information and signage outside labs**

There are always things to learn from these exercises including how to improve things and the first item that came out of this was the importance of the emergency contact details outside each lab. If there is a fire/incident out with normal hours then the fire service needs to be able to contact the supervisor concerned. In recent weeks all the notices have been updated/replaced. RAA would appeal to staff that anyone who notices that any of these signs are not up to date should contact RAA right away and he asked that Geosciences provide a similar sign outside their labs in Purdie.

[Action: All Staff]

There was an incident with a flood in one of EZC's labs about 7.00 am and the janitors found this but didn't alert anyone. RAA informed Garry Muir and he briefed all janitors in the North Haugh that they should immediately contact the emergency contact if this sort of incident occurs.

EZC asked for an update on waterless condensers and CAG confirmed that he is meeting with suppliers of low energy equipment on 11th January and hopefully equipment will be purchased soon after this date. CAG needs details of equipment that is required. CAG said there is about £4.5 million available for energy efficiency measures. EZC said St Andrews is the last Scottish university to do any of this eg change to waterless condensers etc. CAG said they are looking at energy-efficient ovens, autoclaves, refrigeration, fume cupboards etc. This money will cover energy-efficient equipment in the long-term for the University. CAG explained that this is related to the carbon footprint of the University. CAG suggested that people put forward any ideas they have for energy saving. EZC mentioned insulation of windows in the building.

8. **Number of out of hours access doors and sign-in procedure**

There are ongoing issues with people not signing the books when in the building out of hours. Part of the problem is people who stay on after 6 pm don't go down to sign an overnight book. During the fire exercises the fire service was surprised that so many people were working out of hours in the building. One of the questions that has been raised is "do we need five out of hours doors?" The Purdie building has 3 separate entrances, the swipe access near the common room, mainly used by students, the door near the lift which a lot of staff have a key for and the "Geology" entrance which is now Surface Science. This is at the mouth of Theatre B and has a special key which a few people have for access. RAA proposed that this one be discontinued immediately. The lock would be changed so that it was locked to everyone. It is very close to the Common Room entrance.
[**Note**: subsequent to the meeting the records were checked and there were only 9 valid current key holders for this entrance while over 30 keys for it had gone missing or were unaccounted for. In addition during semester 1, the log-book indicated a total of only 18 uses, all by two people]

[Action: RAA]

EZC asked how it would be possible to make sure everyone who was working after 6 pm goes to sign a book. There followed some discussion on the possibility of full swipe access with an intelligent system that knows who is in the building at any one time. There are difficulties with this and given the layout of Purdie it would be difficult to set up full swipe access. ILH pointed out that the current system does keep a note of who has used swipe access but you don't have to swipe out. The fire service would like to know who is working in the department but RAA thinks it is unrealistic to have swipe in and swipe out. EZC disagreed and thought that there should be swipe in and out for any research areas. However, groups of people can go through together. CAG did point out that you can get close proximity systems which would register someone if they were near a door. The current procedure is changing because during the fire services practices they ask for a list of who is in the building. They did not have the information necessary to go and find that themselves so after discussion it was decided that the out of hours janitors would be the appropriate people to go around and collect the signature books from the doors. Closing off one of the doors would reduce the number that would need to be collected in an emergency. EZC wondered if a system could be in place that gave a higher level of security/swipe access after 6 pm. PAC mentioned that there is a clocking in and clocking out system in the teaching lab and something similar could be provided that meant people could go to that station to swipe their card without having to go to sign a book on a different floor. The information would need to be stored on a computer/laptop in the Janitors box so that it could be easily accessed.

RAA also pointed out that the only way for the fire service to know what is in progress in a given room is to look at the papers outside the door of the lab. EHSS were surprised as they thought that by looking at the CHARM system on a computer this information would be available but this is not the case.

EZC felt it is difficult to create restricted areas in Purdie because of the age and layout of the building. BMS is different as it can have restricted areas eg all lab spaces have swipe card access. The only way to restrict out of hours access is by swipe card but this would involve a lot of investment and major changes to the current systems. It is only staff who use the carpark door and students use the Common Room. RAA asked how many people have a key and ILH confirmed it is all Academic Staff. RAA concluded this section by stating that for the moment we have to rely on the sign-in books and so all staff would be encouraged to use them conscientiously.

9. **Revised occupational exposure limits from August 2018**

A list was handed out which has come from the EU on revised exposure limits. This is currently at the stage of a consultation exercise. Industry etc can input objections, or try to get exemptions but this comes into law in August 2018. RAA does not feel there is any cause for concern as there are no very significant changes from previous limits. RAA will enter this information onto the CHARM system at an appropriate point.

[Action: RAA]

10. **Survey of magnetic fields – 1st November**

On 1st November a contractor came to look at non-ionising magnetic radiation sources ie magnets. All NMR and ESR magnets were checked to make sure they conform to various rules and to have a record of the systems that are present in the University.
(**Note:** Subsequent to the meeting the draft report was received indicating the need to modify or add floor markings indicating the 0.5 mT and 3 mT magnetic field limits for the following

instruments: Room 100 - 600 MHz, Room 122 - Robbie, Felix, Alec and Hector, Room 118 - both ESR instruments. In addition a sign warning of magnetic fields is required for Room 118.)

11. CE marking of electrical equipment, especially from outside Europe

BW asked for this to be discussed. Since he was not present RAA explained that the CE marking was an EU initiative to uniformly handle electrical safety. The rule is that any electrical appliance sold in the EU has to have the CE mark. It is only the manufacturer that puts the mark on but no-one checks that the item abides by the regulations. BW has come across some items from USA (bought by LERC) which were not compliant. Any items bought from outside the EU should be double-checked by BW. PAC also pointed out that any electrical items should also be PAT tested

12. AOB

BS said that the weekly fire alarm test is very loud and startling which he feels is a significant safety concern in the level 1 Geosciences labs. It startles people while they are pouring dangerous and potentially deadly chemicals. CAG pointed out that the practice takes place the same time every week. If someone is concentrating on an experiment they are not necessarily aware of the time of a practice alarm and if there is a fire then the alarm would occur at a random time. RAA asked if there is one sounder or separate ones in each lab. RAA thinks that there is one which has to penetrate all the walls. MA asked if a flashing beacon would be possible which would flash before the alarm goes off. BS is particularly worried about pouring concentrated acid (HF). CAG asked what sort of protective gear is being used and is it sufficient. RAA felt everyone else in the Chemistry labs are happy with it. CAG mentioned that the sound is measured regularly in every room as it has to be heard throughout the building. RAA said it would be interesting to know how many sounders are in the Geosciences area and BS will provide that information.

[Action: BS]

CAG said it might be worth setting up a pre-alarm for the practice days. BS said in his previous workplaces there was a flashing light to alert workers before an alarm went off and CAG said he would look into this. IAS feels that the Health and Safety Executive would ask for processes to be reviewed. BS said that if there was an incident of this nature it would massively hamper the person's ability to evacuate the building. RAA said that this issue had never come up before. CAG said that sounders have to cover all areas.

[Action: CAG]

RAA also said he would welcome more interaction with Earth Sciences especially regarding what is permitted to be stored in the corridors and outside the labs. RAA has already contacted Andrea Burke about this. BS admitted they do have storage problems.

There were no other items.

The next meeting will be in March 2018.

R A Aitken (15.12.17)