

University of St. Andrews
School of Chemistry

Minutes of the School Safety Committee
Thursday 19th January 2023

Kevin Jones	[KJ]	H&S Manager (Chair)
Bela Bode	[BEB]	Assistant Safety Coordinator
Petr Kilian	[PK]	Assistant Safety Coordinator
Andreas Stasch	[AS]	Assistant Safety Coordinator
Magnus Alphey	[MA]	BSRC, X-Ray
Bob Steele	[RS]	Earth Sciences Representative
David Brown	[DB]	Drochaid
Terry Smith	[TKS]	Biological Safety Officer
Brian Walker	[BW]	Electronic Engineer

1. Apologies

Apologies received from Iain Smellie, Scott Filipovic, Iona Hutchison, Paul Connor and Nick Taylor

2. Minutes from Previous Meeting

The minutes from meeting on 4th May 2022 were taken as read and approved.

3. Matters Arising / Progress Update

KJ explained that he had circulated a word document showing the progress made towards the matters raised at the last meeting. Progress has been made in many tasks, but several are awaiting completion.

Safe Use of Base Bath Procedure

KJ explained that the "safe use of base baths" procedure had been uploaded to the Chemistry H&S website. A section detailing how to perform regular checks to ensure the automatic closing mechanism is still operational is required and will be added in due course.

Actions	Date Completed
Action PK and AS to inform KJ when base baths are being regenerated so an approach can be tested and added to the procedure.	15/02/2023
Subsequent to meeting, KJ was able to work with members of the EZC group to test the closing mechanism for a base bath. Photos and video will be added to the SOP in due course.	

4. Accidents

KJ explained that, following best practice from the Biology H&S Committee, a discussion of high-profile accidents will be a standing item on the H&S committee agenda going forward. The aim is to provide an opportunity for the committee to offer suggestions that may prevent similar accidents reoccurring in the future.

Incident 1:

KJ explained a rotary evaporator was left on over the weekend and tubing disconnected from the unit leading to a minor flood. Investigating the incident revealed the tubing was not secured in place with cable ties or suitable equivalent. As a long-term solution, it would be better to use a recirculating chiller.

TKS suggested that KJ / SF approach Estates and ask for financial support through the environmental fund. MA mentioned that a similar incident had occurred in the BSRC annex and that butterfly clips were added as an immediate solution, but switching to a recirculating chiller would be best.

DB suggested that chillers could daisy-chained together to service multiple rotary evaporators . KJ agreed that this was a good idea and confirmed that the range HUBER offer are based around how many chillers are connected together.

MA queried whether there was a chilled-water loop that could accessed to service the lab. In response, BEB explained that he had been involved in a project to install a recirculating water loop that would service high-use equipment (e.g. EPR and single crystal diffraction equipment). Accessing this system would not be possible for all labs, however, the university are likely to support purchase of chillers if it removes the flooding risk.

RS explained that earth science have always used recirculating chillers and the cost of running water is likely to be far higher than a chiller and that ES would be happy to show how they do this if it would help.

Actions	Date Completed
KJ to contact Al Clarke / Estates to enquire about funds to support circulating chillers	10/02/2023

Incident 2:

KJ explained that a fume-cupboard sash shattered in a synthetic laboratory. The precise reason for the failure is not clear, however, three potential reasons were determined (operator error during freeze-pump-thaw process, star crack in glassware under vacuum or simply failure of an old sash). KJ inspected the damage and found that the glassware was still largely intact indicating an implosion / explosion was unlikely. With this being said, development of a SOP for the freeze-pump-thaw process would be a worthwhile document and KJ will work with the research group to help produce a draft document.

PK mentioned that this had happened before in the teaching laboratory and possibly due to installation and sashes not being correctly aligned.

KJ agreed with this point and explained that, following the incident, he had conducted an inspection of other fume cupboards of a similar age to look for obvious deterioration signs of damage. Nothing was observed and this is hopefully an isolated incident

Incident 3:

KJ explained that two disposable needles and a set of glass vials containing research samples had been found in general waste bins (in two different laboratories). Both groups have been reminded of proper disposal procedures. A member of one research group admitted that this was their error. KJ explained that he thought waste processes were well sign-posted in the department, but had circulated an e-mail to the department to remind everyone of the rules around waste disposal. KJ was unsure if any additional measures could be introduced to stop this happening.

MA queried whether asking individual groups to keep an eye on their own bins would be a simple solution. KJ confirmed that in the lab in which needles were incorrectly disposed, post-docs will check rigorously over the next few weeks to make sure that waste is being managed correctly.

BW queried whether a laboratory steward is due to be installed to remove waste from the laboratories. KJ confirmed that the long-term plan is for a cleaner to be offered additional over-time to remove laboratory waste, but this is reliant on a new contract being established with Tradebe and the department being able to commit budget for specialist waste removal. KJ will update the committee in due course.

Actions	Date Completed
KJ to investigate Tradebe contract and report back to the committee	

5. Updates to CHARM

KJ explained that, following an accident in one of the laboratories and subsequent discussions with Principal's Office, some changes to the CHARM system have been suggested. KJ demonstrated a prototype and explained that the "details of procedure" and "hazards and control measures" had been separated and an additional text box for indicating reaction scale has been added. KJ explained this was an initial draft and welcomed feedback on potential improvements.

MA commented that he would suggest the hazards / control measures box is presented before the details of procedure and that a "not applicable" option is added to the text box discussing reaction scale.

BEB commented that he did not necessarily agree with the modification of the system because people are not capable of completing a robust risk assessment (including consideration of scale), however, if these changes will encourage people to meet this requirement then changes are acceptable. He mentioned that having a "non applicable" option may lead to people by-passing the section. BEB suggested that this should be mandatory and a sentence added stating that scale has been considered scale and it does not increase the hazard level.

RS commented that the current wording relating to the scale of the procedure may be confusing and can be improved. He also commented that inclusion of the physical hazards is a sensible addition and this is already considered in Earth Science.

PK commented that whilst the addition of a text box covering scale was sensible, he was not sure about separating the details of procedure and hazards/control measures and that this should be more

clearly explained in the "details of procedure" section. PK also mentioned that having multiple examples available would be a welcome addition.

BEB and MA both highlighted that reordering the text to state "please outline the hazards and control measures in the context of your chemical procedure" would make this clear and avoid the need for a second text box.

BEB commented that forcing people to add a maximum scale for the reaction would be a good addition. MA flagged that this would not be required for many procedures used in Biology.

KJ explained that he would come up with another version of the CHARM modifications and recirculate to the committee for further comment.

Actions	Date Completed
KJ to draft a set of proposed changes and recirculate to the committee for further discussion	16/02/2023

6. EssentialSkillz Courses

KJ updated the committee on the development of mandatory safety-training courses to be released on the EssentialSkillz platform. The fire safety course was released in late September 2022 and a current course with the working title "good laboratory practice" is nearing completion. KJ highlighted that these courses, in addition to courses on risk assessment and a general Purdie Building induction will form the basis of a general induction for all new staff / students in the future.

MA explained that Principal's Office had asked for the course to be general and could not be made bespoke for a given department. KJ added that this explains the need for a specific induction course for each school.

BW mentioned that electrical safety would be an important addition to a general induction as he has observed unsafe practices in laboratories, which is largely due to people not being aware of these dangers.

PK commented that the name of the course should be changed as "good laboratory practice" is an internationally recognised lab management standard. Altering the name to "Good Practice in the Research Laboratory" would be a suitable alternative.

BEB queried who the courses would be required to complete these courses. KJ explained that staff (including post-docs), PhD students and undergraduates completing final-year projects will be required to complete the courses. The only point of contention is the inclusion of undergraduate students as the University is concerned about the amount this will cost.

Actions	Date Completed
KJ and MA to raise title of course at next ES meeting	23/01/2023
Course title will be changed accordingly	

7. Update to Monthly Inspection Checklists

KJ explained that, with the introduction of ChemInventory, the requirement for staff to add their inventories to the chemistry intranet is no longer required. The intranet site remains active as a handful of staff are yet to transition to the new system, but once this is complete, the intranet page can be removed. As part of an ongoing task to update the monthly inspection questions, KJ suggested that uploading the inventory to the intranet be replaced with a request to ensure "lab hazard plans" are up-to-date and any new hazards uploaded to the intranet.

BEB mentioned that the questions used in the Biology monthly inspections are good examples and would encourage a similar style is adopted.

MA explained that he has two versions sent out on alternative months so staff are not always answering the same questions. MA mentioned that he would be happy to share these to be used as examples.

Actions	Date Completed
MA to send KJ monthly inspection examples	19/01/2023
KJ and AS to generate new monthly inspection forms for chemistry	

8. Out-of-Hours QR Code

KJ outlined a new QR swipe sign-in/sign-out system for out-of-hours access to the Purdie Building. The QR code links to a Microsoft Form that logs name, email, laboratory number and sign-in/sign-out times. KJ explained that this would replace the physical sign-in books and as the QR codes can be displayed in the research laboratories so hopefully will catch all people entering the building. An additional benefit is that access to the Microsoft Form can be granted to Security & Response so they can see who has logged into the building in the event of an emergency.

PK highlighted that he thought this was a good idea.

RS queried why swipe-card data could not be used to achieve the same result. MA mentioned that not all exits require use of a swipe card to exit so this would not be possible. KJ also highlighted that information is not currently shared between ID cards and Security & Response so in an emergency this data may not be immediately accessible. RS mentioned that he supports the idea and would be interested in a copy of the form.

BEB commented that Physics also use a similar system and adopting a uniform approach would be beneficial. BEB also mentioned that if you forget to sign-out, you can access a website, scan the QR code and sign-out at home, which is much more likely than returning to work to sign-out. BEB would encourage people to leave a phone number so they can be contacted immediately in the event of an emergency.

Actions	Date Completed
KJ to produce a final version of the QR Sign-In/Out and demonstrate at staff council	

9. Overnight Forms

KJ outlined a suggested update to the existing overnight forms generated by the CHARM system and shared a draft of a new form that captures all the information in the current form as well as (i) the major chemical hazards associated with a given experiment, (ii) what services are in use and (iii) actions to be taken in an emergency. KJ explained that some risk assessments have multiple stages and it may be unclear precisely what stage of the experiment is being performed using the current system.

DB queried whether the location should be added to the form. KJ apologised and explained that this was an oversight and will be added to the form.

BEB mentioned that he would be careful with laminated forms as students may change information, but keep the signature and date. KJ mentioned that laminated and printed versions could be made available depending on supervisor preference.

Actions	Date Completed
KJ to update the overnight form and demonstrate at staff council	

10. Fire Extinguisher Training

KJ explained that the department had purchased a fire-simulation rig and is scheduled to start delivering training over the Summer (train-the-trainer sessions scheduled for April).

11. SOPs Safety Bulletins and Risk Assessments

KJ explained that a new section had been added to the Chemistry H&S website that lists useful information on the use of specific chemicals / safe methods of work and safety bulletins (that highlight important accidents and the lessons that can be learnt)

12. Electrical Safety

KJ explained that BW had produced a list of electrical safety issues commonly encountered in laboratories. KJ suggested that he sits down with BW to generate a guide for electrical safety that can be circulated to the committee for further comment

Actions	Date Completed
KJ and BW to generate electrical safety document	