Notes: refer to the conditions for comment stated towards the beginning of the draft standard.

***DR AS 2243.1 Safety In Laboratories – Planning and Operational Aspects***

Here I step through the draft standard making comments. Where a comment is answered later in the standard, I go back to my original comment and make notes. An uncommented comment is potentially worthy of becoming an official comment on the standard.

**Section 1**

*1.4.19*

Defines an incident (unplanned risk to safety):

Do we need to spell out what a planned activity that could have a potential for injury, ill-health, damage or other loss is? *Section 3.1.3.6 part c* details recording and maintaining a record of incidents.

*1.4.34 Working in isolation:*

How isolated is isolated? Long corridors? Afternoon or night shift based on day shift and reduced staffing? *NOTE: Section 3.1.2 Risk Assessment (f) discusses the differences between normal and outside normal working hours*. *3.4.4 Working in isolation* provides further detail.

**Section 2**

*2.2.4 Eating facilities*

States should be outside of lab. The obvious (do not store or consume food/drink INSIDE THE LAB) is not stated. This is stated in *4.1 Requirements for safe conduct sub section i* and *j*. No Caf-pow for you!

*2.2.6 Write-up areas*

States write-up areas should be separated but does not define what a write up area is (eg, is recording data a write up function, or is writing a report or reviewing data a write up function). Could a potentially contaminated pen be used in a write up area? Can lab coats used in non write up areas be used in write up areas? I recommend segregation of items such as these. (an official comment would need suggested text)

2.5.3 Labelling

Should there be a statement regarding disposal or non-labelled liquids and unidentifiable solids? Treat as if contaminated or dangerous chemicals? This is covered in *4.1 Requirements for safe conduct sub section l:* “regard all substances as hazardous unless there is definite information to the contrary.”

**Section 3**

*3.1.3.2 Training and induction*

States training needs to be performed. Says nothing about assessing effectiveness of training, nor about retraining.

Suggestion:

“[e] Training should be periodically reassessed on a schedule and records of such reassessment shall be maintained.”

*3.1.3.3 Safe operation*

I like that section (g) states “Suggestions for improvements…made by the staff and...action taken…shall be recorded.”

Suggestion:

“ [k] (or as a note) “All reviews arrangements or developed procedures should be documented and maintained”. Alternately add to each section [a..l] where not present.

*3.1.3.5 Safety Equipment*

*Sub section c*: “NOTE The requirement for visitors may vary depending on the activities and risk exposure.” Here I would argue that the PPE worn should match that of the highest risk within that section of the lab, regardless of what the visitor is doing in that section of the lab. At the very least, such an assessment should be documented, preferably by a standard procedure and the presence of visitors recorded and such logs maintained. Recording visitors is essential when combined with *3.2.3 Evacuation of the building* to ensure everyone is accounted for.

Note: section 4.2.1 states training is required in the use of PPE so here I suggest:

“[d] Visitors should be recorded along with training in the use of PPE as per Section 4.2.1 General use of personal protective equipment (PPE).

[e] In the event of an evacuation, refer to Section 3.2.3 Evacuation of Building for additional actions.”

**Section 4**

*4.1 Requirements for safe conduct*

*Sub section g:* “do not indulge in reckless behaviour”. Presumably that means immediate risk, not conducting something that might be seen as a reckless experiment in 10+ years.

Sub section u: Disposal of specialised wastes. When using “buckets” these have a maximum fill line. Perhaps state that this line should not be exceeded.

Suggestion:

[u] “…where waste bins have a maximum fill line, this should not be exceeded.”

*4.2.1 General (use of PPE)*

States training shall be provided to all users, so keep this in mind when a visitor to the lab is required to wear PPE. Suggestion added to section 3.1.3.5.

*4.2.2 Clothing*

The recommendation of wrap around, back opening laboratory coats with quick release textile fasteners is interesting as the traditional front opening buttoned (or stud pin) lab coat is what is seen in the media and used traditionally.

I am not sure what comments or suggestions here are appropriate.

*4.5.1 Handling of glass*

“Manipulation of glass is the cause of many injuries in laboratories.” No reference. No definition of many. Possibly redundant sentence. Suggestion: remove this statement.

*4.5.7 Operations involving cryogenic liquids*

Contains the sentence “Oxygen depletion through displacement of air released by gas can cause asphyxiation…” Seems redundant since the same sentence appears in *Section 4.5.6 Operations involving compressed and liquefied gases*. Suggestion: remove this statement.

*4.5.10 Handling of human biological material*

Suggestion: rename to “Handling and testing of human biological material” as people are the main source of biological material so unless this section also deals with sick or infected laboratory staff, or people shedding in general, the title needs to be specific to its subject matter.

*4.5.12 Temperature measurement*

The use of thermometers is proscribed. However, there is no requirement for such equipment to be calibrated or validated. This creates risk with regards to product and the validity of results coming out of laboratory ovens and incubators.

Suggestion: Add the following statement “Temperature measurement devices should be validated and routinely calibrated and records of such activities maintained.”

*4.7.3 Use of traps*

Seems to be a lot of explanation rather than direction. Justification for direction in each section should be provided in order to make this document consistent. Alternately leave all explanations out of the standard and state directives only (or put them in an appendix).

Suggestion: leave out explanations.

*4.10 Handling, labelling and disposal of laboratory wastes*

*4.10.2 Collection*

Chemical waste is singled out as needing to be clearly identified and segregated. Biological and cytotoxic waste and sharps and broken glassware should also be clearly identified and potentially segregated. This is covered in *Section 4.10.3 Segregation*.

“Each waste category should be clearly labelled with the identity and source (department of laboratory) of the waste.” This is not something I remember as needing to be done up to at least 6 years ago, so it may be new. If new, then the additional administrative burden on labs which may or may not impact on business processes. From a practical standpoint, adding a sticker/label to each waste bin, bag or container stating the source would be sufficient.