



Safety Services Guidance



The Role of Generic and Dynamic Risk Assessments

Key word(s):	Dynamic risk assessments; generic risk assessments; risk management; supervision;
Target audience:	Anyone involved in carrying out risk assessments, monitoring their preparation and effectiveness; supervisors and managers with oversight for risk assessments.

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Introduction

1. The significant findings from risk assessments need to be recorded, but where an activity is frequently modified or decisions have to be taken rapidly, it may be impracticable to re-write risk assessments. This is where generic risk assessments and dynamic risk assessments have a role to play.
2. **Generic risk assessments** are written down, and provide the framework to describe how all risk assessments are carried out in practice. Many assessments are dynamic, forever changing to deal with the changing nature of the work. It is not realistic to write all these down, but an assessment must take place, nevertheless. Typically, they cover a defined range of activities. For example, it would not be reasonably practicable to record a risk assessment every time someone crossed a road, but a generic risk assessment could describe the general procedure for doing so.
3. **Dynamic risk assessments** are not written down (at least, not at the time a decision has to be made) but take place within a framework that enables competent persons to respond to changing circumstances. Emergency services must make dynamic risk assessments when dealing with call-outs, but receive training on the use of various response techniques.
4. Taking the example of crossing the road further:

Work as a Pelican crossing attendant.

The written generic risk assessment for someone who works on a pelican crossing would list all the hazards (road traffic, weather conditions, offensive behaviour, etc.) but no risk assessment could possibly record each and every time the person assessed if it was safe to stop the traffic flow and direct children across the road.

The generic risk assessment would specify that the attendant should receive certain training and information (as well as high visibility clothing and the lollipop!) and perhaps do some initial supervision to ensure that the decisions they made in practice were competent and safe ones.

The attendant will make dynamic risk assessments every time s/he stops the traffic. These will not be –and cannot be - recorded in writing.

The review and monitoring processes should be specified in the written risk assessment.

Generic and dynamic risk assessments in practice

5. In the University setting, a generic or model risk assessment will often be used during the early stages of a piece of work, when many of the risks are known and can be assessed but also when there are some unknowns. Some examples might help to explain.
 - An engineering researcher might know that s/he is going to build a rig and broadly what components will be needed, but may not know exactly how it will all fit together or what fixing techniques will be required (eg cold fixing or welding?).
 - A chemist might know the reagents s/he wishes to use, but might vary reaction conditions several times a day, over a wide range of temperatures, pressures, concentrations, etc.
 - An Estates technician might be asked to carry out routine maintenance work or checks on an electrical installation for which they are fully trained and competent, but does not know the location and access arrangements for the particular job.
 - A life sciences or human sciences team might be using a wide range of substances to explore the virulence of a particular organism, with the expectation that knocking out specific genes would reduce virulence.
 - An office worker might have a generally compliant display screen work station, but in practice, will vary their work, the type of document, the length of time they work without breaks, their working position, etc during the day.

6. A generic risk assessment might be prepared in each of these examples. This should comprehensively identify the hazards that could arise, and the controls appropriate in each case. Often, one of the control measures will be that the work must be carried out by a skilled person who has the knowledge, experience and competence to achieve the necessary outcome safely, by making dynamic risk assessments as they work. In the examples above, this might be the experienced and qualified researcher, chemist or technician, or persons (such as students) working under supervision or with someone else who has the necessary skills and experience. The risk assessment should then record – in writing - that the named person is competent to perform these tasks, and will carry out dynamic risk assessments as the work progresses and circumstances demand.

7. It is important that the generic risk assessment also records:
 - the limits of that person's competence
 - any circumstances in which additional assistance will be required

- what training or refresher training, information, or other resources (time, equipment, etc.) that person requires to do the work competently
- the need for review should unanticipated hazards be encountered
- any specific legal requirements to be met. There are numerous regulations dealing with topics such as machine guarding, assessment of chemical or explosive hazards, working with display screen equipment, manual handling, use of pressure vessels, etc.

8. To illustrate further, using the above examples:

Task being assessed	Comments on generic risk assessment	Comments on dynamic risk assessment
<p>Designing & building an engineering rig</p>	<p>The generic risk assessment might specify that the rig is built by a technician of a certain grade and standing, with a portfolio of attendance at specific training courses, or that all work is supervised by a named person. That competent person is specified as being responsible for the dynamic risk assessments.</p> <p>The generic risk assessment must specify the range of work for which the person is competent to undertake dynamic assessments, and may instruct the technician to follow the engineering design precisely. It should also specify how modifications or detailed work not included in the main design should be dealt with (eg by agreeing all modifications with the academic member of staff responsible for the rig).</p> <p>Depending on the circumstances, it might also specify that the machinery to be used is guarded in accordance with the Provision and Use of Work Equipment Regulations 1998.</p>	<p>As the build proceeds, the technician(s) or named person(s) will make dynamic risk assessments to resolve the day-to-day problems, assuming the hazards are those identified in the original generic assessment. If a new hazard is identified, that person will review the generic risk assessment and call for additional resources or assistance, as necessary.</p> <p>For example, if it suddenly becomes apparent that welding is required and the technician does not have those competences, additional expertise will be required, and the generic risk assessment will need to be amended.</p>

Task being assessed	Comments on generic risk assessment	Comments on dynamic risk assessment
Research programme in chemistry lab	The written generic risk assessment might specify a range of experimental conditions a post-graduate student is competent to deal with, or the method of work to be followed (safe operating procedure, local rules, lab script, etc), together with the range of relevant lab equipment and techniques. It might specify that the quantities of hazardous substances must not be scaled up. This factor was highly relevant in a fume cupboard explosion in Sussex University several years ago. The written assessment should be checked by the supervisor, and should refer to safety data sheets, literature searches, etc.	<p>The dynamic risk assessments will be carried out by the post-graduate student as they use standard laboratory techniques and equipment to work through a range of variables of concentrations, temperature, reaction time, etc.</p> <p>If the research results indicate that scaling up is desirable, then the original risk assessment must be reviewed and amended if necessary, with the authority of the competent supervisor.</p>
Routine electrical maintenance work	The written generic risk assessment for the Estates technician's work might include risk assessments for ensuring electrical safety and some typical access hazards, such as the use of ladders or working in a confined space or riser. The technician will receive relevant training so that they can carry out dynamic risk assessments as they carry out their work. That training should equip him or her with the ability to identify risks which are outside their competence and experience, for which they are not competent to carry out dynamic risk assessments, and instruct him to stop working and consult his or her supervisor.	<p>The dynamic risk assessment will be carried out every time the technician changes a light fitting or carries out a routine task.</p> <p>If the technician encounters, for example, what he suspects is asbestos or chemical contamination in an electrical riser, the outcome of his dynamic assessment should be to stop work and seek assistance, and competent assessment of the risk by others.</p>
GM work on virulence	The formal GM risk assessment will include general information on the range of vector(s) and knock out(s) to be used, together with predicted	The dynamic risk assessment must check that the predicted outcomes are in fact seen in practice. Any indications that the

Task being assessed	Comments on generic risk assessment	Comments on dynamic risk assessment
	expression and virulence. If the genes being knocked out are known to affect virulence, the risk assessment will – quite reasonably - predict less virulence.	original assumptions are not being borne out in practice must lead to a review of the generic assessment.
Use of display screen equipment	Users will complete an online DSE self-assessment (link available form local Safety Advisor) The assessment will be dated, and will refer to conditions at the time.	Any changes to work, work patterns, physical conditions, etc should be subject to a dynamic assessment, which in many cases will conclude that the original self-assessment remains relevant. On occasions, a significant change will mean that the generic assessment must be reviewed and updated as appropriate. Significant changes would include new seating, new desk layout, new method of working.

Dynamic risk assessment in research work.

9. In a typical research project (if there is such a thing), development of an experimental protocol is usually an iterative process which may take many months or even years to perfect. The initial stages of making a proposal and working up a design involves an academic, who will then liaise with experimental officers, technicians and research students about the practicalities of building and operating the system. The original specification may evolve as the academic reviews new research findings, etc. The technicians will often encounter practical problems during the build or assembly, which may require amendment of the design.
10. It is essential that the generic risk assessment for the project describes clearly who is responsible for the subsequent dynamic risk assessments. That responsibility will shift between academic / EO / technician, depending on the actual work being carried out, and the competencies required. It is unreasonable to expect the academic to assess risks in a mechanical workshop, or for the technician to carry out detailed design calculations.

Monitoring that dynamic risk assessments are taking place.

11. It is clear that dynamic assessments will not be formally recorded, and there will be less evidence that the process is in fact taking place. Nevertheless, during monitoring and inspection exercises, there should be possible to demonstrate that it occurs. For example, discussions with persons recorded as being competent to carry out dynamic risk assessments should elicit examples of on-going work and decisions which reflect (amongst other things) how health and safety considerations have been included in their thinking. Over the life of a research project, it is inevitable that some of these dynamic assessments will have led to a review and/or revision of the original risk assessment, and there will be evidence of this. Managers and PIs can question staff about recent developments and their health and safety implications at any time, and make a brief note that they have done so. Routine team or individual progress meetings, or meetings to discuss the research could also be used for this purpose. There may also be examples of individuals reaching the limits of their competence, and asking for the work to be stopped until they have more training, information, assistance or resource – which should result in a review of the original assessment.

Training requirements

12. This guidance will be used in the risk assessment training courses arranged by STDU.

Document control box	
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