

NAFLIC

National Association For Leisure Industry Certification

Standards & Related Documents Committee

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207. Modification of Software

The definition of *Safety-critical modification* on page 107 of *Fairgrounds and Amusement Parks - Guidance on Safe Practice* (HSG 175; HSE Books; ISBN 0 7176 1174 4) includes the following text :-

- “Any alteration to the ... software of a piece of equipment ...”; and
“It includes any change to: ...
(i) software ...”

Safety critical modifications are subject to a variety of special measures described in HSG175 one of which is the need for a Design Review of the modified software (some of the other relevant advice may be found via the index).

We have heard of instances of software being modified without following the required procedure. Quite often this is carried out on behalf of the controller or by an engineering company other than the software designer, and without full understanding of the interrelationships existing in the original programme. There may be serious implications. For instance, changing a timer setting may introduce a serious risk, since some of the safety functions may have been implemented on a time basis. The implications are not always obvious without careful study of the associated logic diagrams - this is why HSG175 requires that software modifications should only be designed by competent persons and that design review should follow.

It is also important that uploading / downloading of software should be carefully implemented. Not only is it essential that the original (i.e. confirmed by design review) software is used, but there is a need to be aware that the process of uploading / downloading, including interrogation, may introduce errors - so appropriate testing is required.

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