

PETRONAS TECHNICAL STANDARDS
HEALTH, SAFETY AND ENVIRONMENT

WORKING WITH VISUAL DISPLAYS UNITS
(GUIDELINE)

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PREFACE

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1. **INTRODUCTION**

Visual Display Units (VDU's) were first introduced in the 1940s in the field of radar operation. Since this small beginning, their usage has grown until now in the 1980s they play a vital role in almost all areas of work activity. VDU's are now as common place in control rooms and warehouses as in offices and computer suites. It is true to say that the vast majority of people will come into contact with VDU's and screen-based communications to a greater or lesser extent in the course of their work.

This massive proliferation has lead to anxiety amongst many users who fear that working with VDU's may damage their health. However, research to date indicates that any health aspects associated with VDU's relate to the working environment, which can be controlled, and not the VDU itself.

Many developments have taken place since the issue of the 1982 PETRONAS Safety Guide and this Revision sets out to provide a comprehensive, updated, reference document for all parties involved in the selection, installation and use of VDU equipment.

The Guide comprises:

PART 1: PERCEIVED HEALTH RISKS

Medical research into the perceived health effects of Visual Display Units is ongoing This Part summarises areas where concern has been expressed and makes Policy recommendations where appropriate.

PART 2: INTRODUCING VISUAL DISPLAY UNITS

This Part identifies and discusses the key areas for consideration in the introduction of visual display units to a working environment. It is sub-divided into three Sections: Planning; VDU Equipment; Workstation Design.

PART 1: PERCEIVED HEALTH RISKS

There are a number of perceived health risks relating to VDUs which have caused concern to users. However, to date there is no evidence of such a risk to substantiate concern; nevertheless, this should not preclude discussion.

1.1 RADIATION

Radiation emissions from VDU's is still a concern of many users.

The potential source of radiation is the electronic circuitry, which may produce emissions of extremely low frequencies (ELF) and radio frequencies (RF).

Scientific evidence indicates that radiation emissions from VDUs are well below normal background levels. In view of this, it can be stated with confidence that radiation from a VDU does not in itself pose a health risk to operators, either in the short or long term.

1.2 PHOTSENSITIVE EPILEPSY

Working with a VDU does not cause epilepsy. However, there is a rare form of epilepsy in which a seizure can be triggered off by a flickering light. This form usually manifests itself in adolescents aged between 10 and 14 and it is extremely unlikely that a first attack would occur in an adult working with a VDU.

A history of epilepsy should not preclude that person from undertaking VDU work but it might be prudent to seek medical advice before starting such work.

1.3 MISCARRIAGES AND BIRTH DEFECTS

There have been a number of reports of miscarriages or birth defects among pregnant VDU users, but no cause attributable to VDU's has been found. The evidence indicates that there is no difference in the numbers of birth defects or miscarriages occurring in women working with VDUs and the general population. Nevertheless in order to minimize anxiety or stress related problems, if, after counseling, a woman who is pregnant is still concerned, consideration should be given to transferring her to alternative work.

1.4 VISUAL FATIGUE

One of the commonest complaints of the VDU user is visual fatigue more usually referred to as "eye strain". The symptoms vary but may include headaches, visual discomfort, pain behind the eyes, blurring of vision or even double vision.

These symptoms may be the result of task, equipment or environmental problems or eye defects which are wholly or partially uncorrected.

Whatever the cause of visual fatigue, it is a temporary, reversible phenomenon.

Nonetheless, measures should be taken to minimize those factors which will aggravate symptoms and specific recommendations on these are given in item 1.6.1 Spectacles and Part 2.

1.4.1 Spectacles

It is estimated that about 30% of the working population have uncorrected or inadequately corrected vision which may only be highlighted when first carrying out a visually demanding task. The use of spectacles or contact lenses (see also item 2.3.2.3. Humidity) should cause no problems although those operators who need reading glasses (usual focal length 33cm) may require special lenses to correct their eyesight to an appropriate viewing distance for VDU's (usually between 35-70cm). Such cases should be referred to an Eye Specialist for an opinion and an accurate measurement of the operator's preferred VDU viewing distance. If special lenses are recommended, consideration should be given to the cost being for Company account.

VDU work often makes different demands of bifocal spectacles to those of everyday wear and therefore are not always suitable - this is also true for multifocal (varilux) lenses. Where these are recommended, lenses must be accurately matched to the respective viewing distances and segment height requirements. Again such cases should be referred to an Eye Specialist .

1.4.2 Eye Tests

Research to date has produced no evidence that working on a VDU damages eyesight.

Apart from aspects detailed in item 1. 6. 1 Spectacles, no special eye test related to VDU work is considered necessary.

1.5 POSTURAL FATIGUE (MUSCULO-SKELETAL DISORDERS)

Together with visual fatigue, postural fatigue is a frequent complaint of VDU operators with symptoms of discomfort in the head, neck, between the shoulders and in the lower back. Where there is constant overloading of particular muscle groups from repetitive use, more specific disorders relating to muscle, tendon and joint fatigue may also result.

In general, these complaints are the result of poor design of the job and/or working area. To alleviate problems of postural fatigue specific recommendations are given in Part 2.