SAFE STAFFING ARRANGEMENTS - USER GUIDE FOR CRR348/2001 METHODOLOGY:

Practical application of Entec/HSE
process operations staffing assessment methodology
and its extension to automated plant and/or equipment

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FOREWORD

An important element of making a continuing demonstration of safe operation under the Control of Major Accident Hazards Regulations (COMAH) 1999 is that a structured and effective process is undertaken to ensure that staffing levels are adequate for abnormal or emergency situations, as well as for normal operations. This is a key issue for the Health and Safety Executive (HSE) in inspection and safety report assessment, and they have observed some companies taking steps to reduce staffing levels, change roles and responsibilities of personnel, and to generally reorganise their operating teams without considering possible adverse effects on safety and health.

Entec was commissioned by HSE to develop a practical methodology that companies could use to identify any weaknesses in staffing arrangements. Following industry and HSE trial and consultation, the research was published by HSE Books as HSE Contract Research Report CRR348/2001 *Assessing the safety of staffing arrangements for process operations in the chemical and allied industries*. Throughout this user guide, the methodology is referred to as the *CRR348/2001 methodology* and the report as the *CRR348/2001 methodology report*.

The CRR348/2001 methodology enables the assessment of staffing arrangements at major hazard process operations to ensure they are sufficient to prevent and/or respond to hazardous incidents. These are considered the worst case for staffing arrangements because they often result in high workload, stress, reliance on communication, and require a timely and effective response. The CRR348/2001 methodology addresses a wide range of human factors issues associated with operating process plants, not just major accidents. It is not designed to calculate a minimum or optimum number of staff to control a process, but to flag where staffing arrangements may not be sufficiently robust.

Whilst the CRR348/2001 methodology is widely used by the major hazard process industries, feedback solicited by the Energy Institute (EI) identified a need for guidance setting out a best practice approach to the CRR348/2001 methodology that captures learnings from its use. In addition, a need was identified for supplementary guidance on how best to apply it to automated plant and/or equipment. EI therefore commissioned Entec to develop this user guide. Note that the user guide does not duplicate the contents of the CRR348/2001 methodology report, and so should be read alongside it.

HSE's view is that companies should engage with the process where necessary to demonstrate the continuing adequacy of their staffing arrangements, and as part of their management of organisational change using either the CRR348/2001 methodology and this user guide or equally effective alternatives. HSE's experience also shows that real workforce engagement and participation in the process is necessary if it is to be fully effective.

Although it is believed and anticipated that this user guide will assist those with responsibility for human factors issues, the Energy Institute cannot accept any responsibility, of whatever kind, for adverse health, incidents, injury, damage or loss arising or otherwise occurring because of the application of this user guide.

Amendments to the user guide will be issued by the Institute as considered necessary and users are invited to send comments or suggestions for improvement to the Technical Department, Energy Institute, 61 New Cavendish Street, London W1G 7AR.

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1

BEST PRACTICE USER GUIDE FOR IMPLEMENTING THE CRR348/2001 METHODOLOGY

1.1 OVERVIEW

The CRR348/2001 methodology provides a framework for companies to assess the safety of their staffing arrangements. It is intended to be used in circumstances with the potential to cause major accidents. Figure 1.1 illustrates that the methodology is particularly applicable where staffing arrangements have been, or will be changed. It can also assist in meeting obligations and assessing risks, even where changes are not involved.

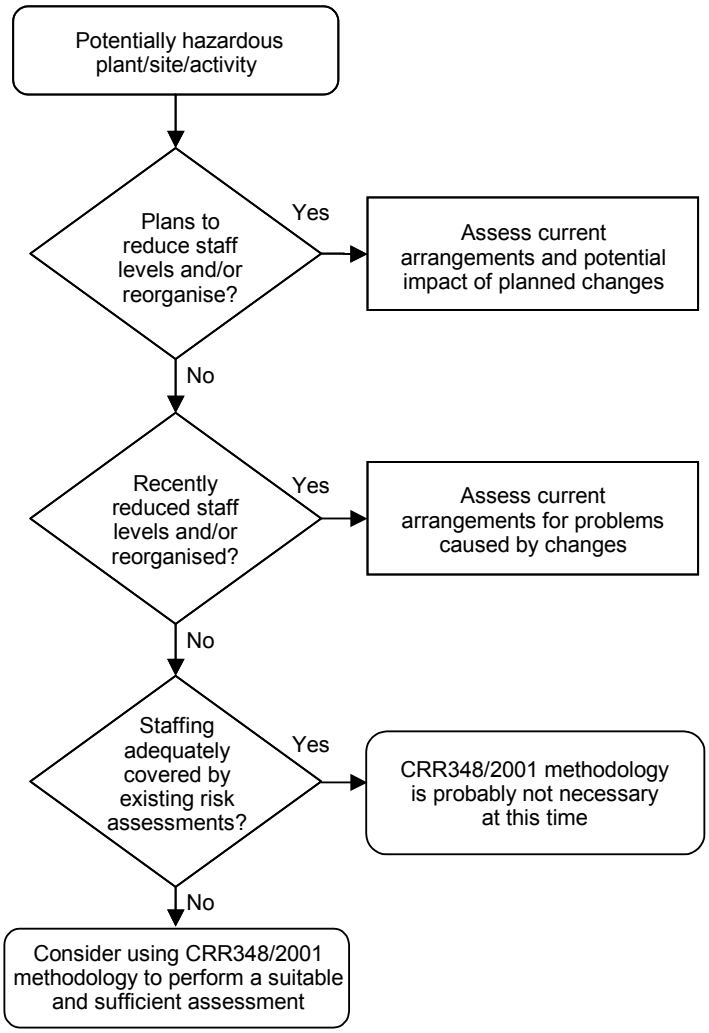

Figure 1.1 - When to use the CRR348/2001 methodology