



THE FELLOWSHIP OF ENGINEERING

Draft Guidelines for Warnings of Preventable Disasters Offered to the Professional Institutions for Consideration

SUGGESTED ACTIONS FOR PEOPLE MAKING OR RECEIVING WARNINGS OF DISASTER

In September 1990, The Royal Academy of Engineering (then The Fellowship of Engineering) in conjunction with a number of engineering institutions and the HSE, organised a conference chaired by Sir Denis Rooke OM CBE FREng FRS, at the Queen Elizabeth II Conference Centre, Westminster on 'Preventing Disasters.' The conference's aim was to improve the guidelines for professional engineers of all disciplines in the identification and prevention of man-made disasters. Prior to the conference a small working group chaired by the late Dr Edmund C Hambly FREng, after consultation with a number of engineering institutions and others, had prepared draft guidelines for people making or receiving warnings of disasters. These guidelines were presented to the conference by Dr Hambly, who stressed the ethical issues involved. These were subsequently published in revised form in May 1991, and are given below:

1. Introduction

These Guidelines suggest courses of action to assist engineers to react in a responsible, prompt and disciplined manner when they are faced with potentially disastrous situations. Engineers, in the course of their work and at other times, can identify unforeseen risks of disaster to the public or the environment. Others managing public facilities and hazardous installations can be presented with unexpected warnings of potential disaster. Engineers are placed under a professional duty to uphold the safety of the public and the environment by the codes of conduct of their Institutions and organisations. A reciprocal responsibility is placed on the Institutions and organisations to assist a member who turns to them for help in furthering this duty under the code of conduct.

1.2 Well-managed organisations have safety cultures which encourage employees to be vigilant in the identification and elimination of hazardous situations. They encourage employees at all levels to report potentially dangerous situations, and commend the employees even when a warning later proves to have been unfounded. Many organisations have established procedures for making and responding to unexpected warnings; and engineers are expected to work within such procedures where they exist. The systematic reporting of warnings enables newly developing risks to be identified before disaster occurs. These Guidelines may help organisations and Institutions to review their existing lines of communication. However, the Guidelines have been prepared primarily for the non-routine circumstances which occur rarely and which do not fall within established procedures.

1.3 The underlying principle of these Guidelines is that any person needing to make a warning or receiving a warning should draw on his professional peers to verify the risk, decide upon

appropriate action and remedy the situation. By sharing the problem the person improves his own credibility and improves the effectiveness of the course of action.

1.4 In the normal course of events a warning can be given, and avoiding actions taken, in an informal manner by the individuals and organisations directly involved. It is anticipated that the more formal procedures of this document will only be followed on very rare occasions.

1.5 This document examines what may be good professional practice in appropriate cases. The Guidelines do not displace or alter the statutory, contractual and civil law duties of the parties involved. The laws in some countries may impose greater duties on organisations and individuals than are implied here.

2. Actions Which Might be Taken by a Person Identifying a Possible Cause of Disaster

2.1 Prepare a simple explanation of the potential disaster situation which can be understood by a layman.

2.2 Obtain a second opinion on an advisable course of action from someone competent to understand the failure risk.

2.3 Review your motives for making the warning. Ensure that you could make a declaration that the warning is not influenced by financial or personal considerations.

2.4 Make the warning with explanation to someone in the responsible organisation who is in a position to take action to avoid the possible disaster.

2.5 Enclose a copy of this document with the warning and indicate your availability to discuss the problem.

2.6 Maintain confidentiality.

3. Actions Which Might be Taken by a Person Receiving an Unsolicited Warning of Disaster

3.1 Draw the warning to the attention of those ultimately responsible for resolving the situation and obtain a response.

3.2 If the risk of disaster, or the necessity for avoiding action, is not clear cut, obtain a second opinion from a competent, person who is truly independent. Guidance may be sought through the Secretary of the appropriate Chartered Engineering Institution.

3.3 Consider your position and, if appropriate, obtain advice on legal liability and implications for insurance cover in the light of the warning received.

3.4 It is desirable that all parties concerned discuss the matter and come to an agreement. If this is not done, advise the person making the warning that action is being taken, or that a second opinion is being obtained.

4. Notes

4.1 In this document the 'warner' is the person making the warning, while the 'warnee' is the person receiving the warning, and the 'hazard' is the possible disaster situation. 'He' and 'his' should be interpreted as 'she' and 'hers' where appropriate. 1

4.2 This document is not intended to be exhaustive or restrictive. The course of action in each situation, and the need for detailed calculations and checking, must be decided by the warner and the persons consulted for guidance. Simpler courses of action than those listed may be suitable when the risk or cost of remedy is small, or if effective lines of communication already exist.

4.3 The warner would normally be expected to turn for advice in the first instance to his colleagues or managers. He -should continue to obtain guidance from his advisers during subsequent developments. Colleagues and management are likely to understand the repercussions of the problem better than people less familiar with the warner or hazard. The warner may not be able to identify all the factors involved or all the repercussions of a warning. He should take particular care if his concern is not shared by the people he turns to for advice: if he cannot convince friends he is unlikely to persuade others.

4.4 If the warner is an employee, or consultant, of the organisation responsible for resolving the situation, and if he does not resolve the matter quickly with his immediate manager, he should pursue the matter to senior management (preferably with a private meeting). Reference should be made to this document and to the professional duties of his Institution's Code of Conduct.

4.5 It is essential that the warner should retain an attitude of cooperation with the warnee and that he should follow established procedures and lines of communication as far as practicable.

4.6 The warner should make clear whether he is basing his warning on professional knowledge or is acting simply as a non-expert member of the public. If he has professional knowledge relating to the hazard he adds weight to the warning and takes on a greater degree of responsibility, as discussed in this document. If he does not have relevant expertise he should take care not to give the impression that he has.

4.7 Many failures and disasters have resulted from unpredicted oversights or human errors. Moreover, a disaster seldom results from a single cause but rather from a chain of events, the elimination of any one of which may be sufficient to prevent tragedy. Prior to failure the risk can seldom be predicted precisely and, to a certain extent, its assessment is subjective and a matter of opinion. It is therefore important that any second opinion is as objective and independent as possible, and takes account of all the factors considered likely to lead to disaster.

4.8 An engineer may seek advice through the Secretary of the appropriate Engineering Institution on how to proceed and on his professional duties and obligations. He should take care not to disclose the names of other parties or confidential information, unless such disclosure is agreed by the other parties. It is possible that others may wish to turn to the Institution in confidence on the matter.

4.9 Disclosure of confidential information may infringe conditions of employment, which could have serious repercussions for the employment or advancement of the warner. A warner who is concerned about the consequences of a warning on his employment should discuss the matter with his Engineering Institution.

4.10 If an informal warning is not heeded, and the warner and his advisers remain convinced of the seriousness of the hazard, then he should issue a formal written statement to the warnee setting out the reasons why he believes the public or environment is at risk, and indicating how he has followed these Guidelines.

4.11 The warner's obligation to his Institution's Code of Conduct should be discharged by issuing the written statement, except where the warner has in some way contributed to the risk. The warner should seek guidance from the Institution about how much further it is right to take the matter. An employee has no authority to direct his employer, therefore he cannot be held responsible for his employer's conduct. If the employer's action should prove to be detrimental to public health and safety then this would be a matter for adjudication by the Courts.

4.12 If the warner is uncertain as to whom to make the warning within the responsible organisation, he should make the warning to the head of the organisation; eg. Chairman of the company, Minister of Government Department.

4.13 If the hazard could relate to several organisations and situations that the warner and Engineering Institution may not be able to identify, it may be appropriate to approach a national body, such as the Health and Safety Executive, or Government Department. Under some circumstances the Engineering Institution might consider it appropriate to organise a meeting for discussion which is open to the public. In the case of a generic hazard the Engineering Institution might issue a public warning.

4.14 The warner and the warnee are likely to incur expense which is not recoverable. The warnee, or his advisers, could suffer substantial loss as a consequence of a warning even if they are supported by a second opinion. The warner must take care not to be negligent or careless in communicating the warning. The need for legal advice should be included in the matters discussed with the Engineering Institution.

4.15 The Chartered Engineering Institutions or The Fellowship of Engineering will endeavour to supply names of appropriate persons and organisations who can provide a second opinion or can undertake an independent safety audit.

4.16 If the disaster does occur the warnee, should seek legal advice immediately and the warner should consult his Engineering Institution.

4.17 If this document is used by members of the public The Fellowship of Engineering will endeavour to advise them on the appropriate organisation to approach for guidance.

4.18 This document is published by The Fellowship of Engineering solely to assist professional engineers by giving guidance to such engineers about the way they discharge their professional duties in the circumstances described above. The Fellowship of Engineering hereby expressly disclaims any duty of care, or any other special relationship to any third party and specifically states that it assumes no responsibility or risk at law, howsoever arising, for any use (including the ignoring of any warning) made by any party of these Guidelines and/or any warnings issued because of the existence of these Guidelines.