

Title	Preventing the propagation of error and misplaced reliance on faulty systems: A guide to human error dependency
Publisher/Author	HSE
Publication Date	2001
Executive Summary	<ul style="list-style-type: none"> • Have you ever made a mistake because you thought someone else had done something when in fact they had not? • Have you ever got to the end of a series of actions, and then realised that you had missed out the same step on each one? • Have you ever been a part of a group who has all missed an obvious issue when considering a problem? <p>If so – you are aware of human error dependency.</p> <p>Human error dependency is particularly serious because it can “defeat” multiple independent safety defences, thereby undermining safety in what would otherwise be a high reliability system. This is demonstrated by cases where independent safety systems have failed simultaneously, teams of operators have misdiagnosed emergency situations and staff have relied on inoperative warning systems.</p> <p>This guide is aimed at two audiences:</p> <p>For management it provides:</p> <ul style="list-style-type: none"> • an introduction to dependency issues, to explain what they are and why they arise • an explanation of the impact of human error dependency and the need to take proper account of it throughout all aspects of the system lifecycle - design, management, operations, maintenance, plant modifications, and decommissioning • a framework for identifying and assessing the significance of dependencies associated with human actions and activities. <p>For analysts and designers it provides:</p> <ul style="list-style-type: none"> • a framework for assessing the relative contributions to dependency of different aspects of the tasks and situations; • guidance on defences against dependency; • a method for identifying and assessing potential error dependencies. <p>The guide draws on practical examples of error defences and accident case studies to show that it is Practical to guard against these types of errors.</p> <p>How to use this guide</p> <p>Human Factors specialists with the aid and input of risk analysts and safety managers have produced this guide. It is intended for use in-house by organisations and as such the contents can be freely copied and modified for internal use. Indeed as with all other forms of risk assessment, it is the organisation’s Responsibility to ensure a suitable and sufficient risk assessment is completed.</p> <p>The first two sections explain the nature and impact of dependent errors with the aim of enabling readers to understand how such errors may affect their operations.</p> <p>The third section provides an overview of the role of managers in assessing and controlling dependent errors.</p>

	<p>The fourth and fifth sections are aimed at persons involved in assessing safety and developing safety recommendations. They provide a method for identifying dependent human errors, assessing their likelihood, consequences and causes as well as potential defences.</p> <p>Worked examples are given in the Appendix.</p> <p>As this guidance has been developed for application across a wide range of industries, it does not provide an exhaustive set of solutions and examples. It is expected though that readers will be able to acquire a sufficient understanding of the issues from this guide to be able to assess their own operations and develop their own solutions.</p> <p>Moreover, it is expected that users will wish to integrate the ideas and methods contained in this guide into their own risk assessments, reviews and audits. We do not suppose that users of this guide will carry out a stand-alone assessment of human error dependency. Accordingly we have sought to structure the assessment method around the steps commonly followed in risk assessment.</p>																																								
Table of Contents	<table border="0"> <tr><td>Introduction.....</td><td>5</td></tr> <tr><td>The impact of dependent errors</td><td>7</td></tr> <tr><td>Types and causes of dependent errors.....</td><td>12</td></tr> <tr><td>Defining error dependency</td><td>12</td></tr> <tr><td>What causes human error dependency?.....</td><td>12</td></tr> <tr><td>Contributory factors</td><td>18</td></tr> <tr><td>Detection and recovery of dependent errors</td><td>19</td></tr> <tr><td>Concluding point.....</td><td>19</td></tr> <tr><td>The role of management</td><td>20</td></tr> <tr><td>The hfrg error dependency approach</td><td>24</td></tr> <tr><td>Overview of method</td><td>24</td></tr> <tr><td>Step 1: identifying safety critical human error dependencies</td><td>26</td></tr> <tr><td>Step 2: assess likelihood of dependence and error detection opportunities .</td><td>31</td></tr> <tr><td>Step 3: assessing safety significance of dependency</td><td>37</td></tr> <tr><td>Step 4: choosing strategies for preventing or mitigating dependencies</td><td>39</td></tr> <tr><td>Key messages.....</td><td>46</td></tr> <tr><td>References and further information</td><td>47</td></tr> <tr><td>Appendix a: example of hfrg method</td><td>48</td></tr> <tr><td>Appendix b: example of hfrg method (using optional tables).....</td><td>53</td></tr> <tr><td>Appendix c: human error dependency and probabilistic risk Assessment...</td><td>57</td></tr> </table>	Introduction.....	5	The impact of dependent errors	7	Types and causes of dependent errors.....	12	Defining error dependency	12	What causes human error dependency?.....	12	Contributory factors	18	Detection and recovery of dependent errors	19	Concluding point.....	19	The role of management	20	The hfrg error dependency approach	24	Overview of method	24	Step 1: identifying safety critical human error dependencies	26	Step 2: assess likelihood of dependence and error detection opportunities .	31	Step 3: assessing safety significance of dependency	37	Step 4: choosing strategies for preventing or mitigating dependencies	39	Key messages.....	46	References and further information	47	Appendix a: example of hfrg method	48	Appendix b: example of hfrg method (using optional tables).....	53	Appendix c: human error dependency and probabilistic risk Assessment...	57
Introduction.....	5																																								
The impact of dependent errors	7																																								
Types and causes of dependent errors.....	12																																								
Defining error dependency	12																																								
What causes human error dependency?.....	12																																								
Contributory factors	18																																								
Detection and recovery of dependent errors	19																																								
Concluding point.....	19																																								
The role of management	20																																								
The hfrg error dependency approach	24																																								
Overview of method	24																																								
Step 1: identifying safety critical human error dependencies	26																																								
Step 2: assess likelihood of dependence and error detection opportunities .	31																																								
Step 3: assessing safety significance of dependency	37																																								
Step 4: choosing strategies for preventing or mitigating dependencies	39																																								
Key messages.....	46																																								
References and further information	47																																								
Appendix a: example of hfrg method	48																																								
Appendix b: example of hfrg method (using optional tables).....	53																																								
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