Contents

Preface			
Acknowledgements			
1.	Introduction	1	
2.	Glossary of terms	2	
3.	Legacy systems	4	
	3.1 How do systems become legacy systems?	4	
4.	Impact of exceeding code allowable overpressures	6	
	4.1 Background relating to likelihood of failure	6	
	4.2 Vessel degradation		
	4.3 Significance of the hydrostatic test (P _t)	8	
	4.4 Pressures above hydrostatic test pressure		
	4.5 Data requirements for the assessment		
	4.6 Calculation of maximum pressure expected during overpressure scenario (P_{max})		
	4.7 Likelihood of the overpressure scenario	9	
5.	Qualitative prioritisation method	10	
	5.1 Hazardous event likelihood prioritisation method	10	
	5.2 Hazardous event consequence	12	
	5.3 Qualitative prioritisation outcome		
	5.4 Vessel specific assessment		
	5.5 Risk associated with making site modifications	13	
6.	Risk management of overpressure beyond code allowable limits – workflow	14	
7.	Examples using the workflow	17	
	7.1 EXEMPLAR CASE 1 – Distillation column	17	
	7.2 EXEMPLAR CASE 2 – Shell and tube heat exchanger	18	
	7.3 EXEMPLAR CASE 3 – Produced water skimmer vessel	20	
Re	eferences and Bibliography	22	
Ar	ppendix 1 – Dealing with degradation	23	

List of Figures

Figure 1:	Examplar Case 1 – Distillation column	17		
Figure 2:	Examplar Case 2 – Shell and tube heat exchanger	19		
Figure 3:	Examplar Case 3 – Produced water skimmer vessel	20		
List of Tables				
Table 1:	Definitions of qualitative classifications	10		
Table 2:	Scenario overpressure vs Likelihood of Failure	10		
Table 3:	Hazardous event likelihood	11		
Table 4:	Action required	13		