Safety Analysis Report for Packaging
Safkeg–LS Design No. 3979A
Package Docket No. 07109337

Application for Approval by the NRC

Applicant: Croft Associates Limited

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Chapter 0 SARP STATUS AND CONTENTS

This Safety Analysis Report for Packaging (SARP) has been prepared by Croft Associates Ltd for the new approval of the SAFKEG-LS Design No. 3979A transport package as a Type B(U) design.

This section (Section 0) defines the document status and lists the contents of the SARP (SARP sections and appended documents included in the SARP).

This SARP is a controlled document under the Croft Associates Ltd Quality Assurance Program approved by the NRC under Approval Number 71-0939.

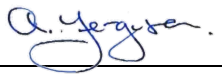
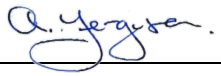
Revisions are on a page control basis, with revisions indicated by a vertical change bar in the right hand margin.

Reference documents, which are listed in the Appendices to each section, are those available in the general literature and are not provided in the SARP.

Supporting documents are those developed specifically for the SARP and are provided in the section that is most closely associated with the document. These supporting documents are listed in this section, together with their revision status.

Document control for the supporting documents, which have been produced by different organizations at different times with different styles, is established by reference designations and issue status and/or date: there is no significance in the various policies of adding the names of author, checker or approver or whether they are manually or electronically signed.

0.1 SARP REVISION STATUS

Title	SAFKEG-LS 3979A Docket No. 07109337	**Number**	CTR 2008/10
		Issue	Revision 8
		File Reference	[CTR2008-10-R8-Sc0-v3-Status and Contents.docx]
Compiled		**Checked**	
	A L Ferguson		M B Johnson
Approved		**Date**	19 November 2021
	A L Ferguson		
Croft Associates Ltd F4 Culham Science Centre Abingdon Oxon OX14 3DB UK Tel 44 (0)1865 407740			

0.2 PAGE AND SUPPORTING DOCUMENT REVISION STATUS

Page/Document Reference	Issue Status	Title/*Comments*
Section 0 – Page and Supporting Document Revision Status		
Page 0-1 to 11	Rev 8	
Section 1 - GENERAL INFORMATION		
Page 1-1	Rev 6	
Page 1-2	Rev 4	
Page 1-3	Rev 4	
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Page 1-21	Rev 4	
Page 1-22	Rev 4	

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Page 1-23	Rev 4	
Page 1-24	Rev 4	
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Page 1-26	Rev 4	
Page 1-27	Rev 5	
Page 1-28	Rev 4	
Page 1-29	Rev 4	
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Page 1-35	Rev 4	
Page 1-36	Rev 4	
Page 1-37	Rev 4	
Page 1-38	Rev 4	
Page 1-39	Rev 4	
Documents in Section 1.3 Appendix		
Documents in Section 1.3.2 Calculation Model Drawings		
0C-6049	Issue A	Safkeg-LS Construction
1C-6097	Issue A	Containment Vessel LS Lid Construction
1C-6099	Issue A	Containment Vessel LS Body Construction
Documents in Section 1.3.3 Licensing Drawings		

Page/Document Reference	Issue Status	Title/*Comments*
1C-6040	Issue H	Cover sheet for Safkeg-LS design no. 3979A (licensing drawing)
0C-6041	Issue C	Safkeg-LS design no. 3979A (licensing drawing)
0C-6042	Issue F	Keg design no. 3979 (licensing drawing)
0C-6043	Issue C	Cork set for Safkeg-LS (licensing drawing)
1C-6044	Issue F	Containment vessel design no. 3980 (licensing drawing)
1C-6045	Issue E	Containment vessel lid (licensing drawing)
1C-6046	Issue E	Containment vessel body (licensing drawing)
2C-6171	Issue C	LS-12x65-Tu insert design no. 3984 (licensing drawing)
2C-6172	Issue C	LS-31x73-Tu insert design no. 3983 (licensing drawing)
2C-6175	Issue D	LS-50x103-SS insert design no. 3986 (licensing drawing)
Documents in Section 1.3.4 Supporting Documents		
PCS 036	Issue D	Package Contents Specification for Safkeg-LS - Package Design No 3979A
Section 2 - STRUCTURAL EVALUATION		
Page 2-1	Rev 4	
Page 2-2	Rev 4	
Page 2-3	Rev 7	
Page 2-3a	Rev 7	
Page 2-4	Rev 4	
Page 2-5	Rev 4	

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Page 2-12	Rev 4	
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Documents in Section 2.12.2, Appendix		
CTR 2009/21	Issue D	Prototype Safkeg-LS 3979A/0002 NCT and HAC Regulatory Test Report
CTR 2009/27	Issue A	Prototype SAFKEG LS 3979A/0002 NCT and HAC Regulatory Test Report
SERCO/TAS/002762/01	Issue 1	Compression Testing of Cork
Vectra, 925-3272/R1	Rev 6	Stress Analysis of Safkeg LS 3979A Containment Vessel
CS 2009/08	Issue A	SAFKEG LS 3979A – Maximum Pressure in CV
CS 2010/11	Issue B	Calculation of the Density of the 3977A Package
Vectra, 925-3274/R1	Rev 1	Safkeg LS 3979A – Additional HAC Case
Vectra, 925-3272/M2	15/03/10	Safkeg LS 3979A – Mesh Sensitivity Analysis
Section 3 - THERMAL EVALUATION		
Page 3-1 to 3-29	Rev 8	*Rev 8 Changes:* *Entire section raised to Rev 8, pages renumbered.* *Section 3.2.2, page 3-11: 1st paragraph changed to reduce NCT test temperature from 150°C to 130°C* *Note (second paragraph, added.*

Page/Document Reference	Issue Status	Title/*Comments*
		Section 3.5.2, page 3-30: CTR 2021/22 and CTR 2021/24 added.
Documents in Section 3.5.2, Appendix		
SERCO/TAS/5388/001	Issue 2	Thermal Analysis of the Safkeg LS Design
SERCO CJF10302	31 Mar 10	Response to comments on thermal performance of SAFKEG LS raised by NRC assessor
CS 2010/16	Issue A	SAFKEG LS 3979A – Maximum Temperature of CV Inserts
CTR 2021/22	Issue A	3979A O-ring NCT Test Temperature Reduction - SARP Impact *Document added in Rev 8 to justify NCT seal test temperature reduction.*
CTR2021/24	Issue A	LS 3979A (3980) O-ring Seal Thermal Tests *Document added in Rev 8 to provide test evidence for NCT seal test temperature reduction.*
Section 4 - CONTAINMENT		
Page 4-1	Rev 4	
Page 4-2	Rev 4	
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Page 4-4	Rev 4	
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Documents in Section 4.5.2, Appendix		
CS 2009/06	Issue A	SAFKEG-LS # 3979A - CV seal leak size for leaktight condition
CS 2009/07	Issue B	SAFKEG-LS 3979A - Gas contents limit for leaktight condition

Page/Document Reference	Issue Status	Title/*Comments*
Section 5 - SHIELDING EVALUATION		
Page 5-1	Rev 5	
Page 5-2	Rev 4	
Page 5-3	Rev 4	
Page 5-4	Rev 6	
Page 5-4a	Rev 6	
Page 5-5	Rev 4	
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Page 5-11	Rev 4	
Page 5-12	Rev 5	
Page 5-12a	Rev 5	
Page 5-13	Rev 4	
Page 5-14	Rev 6	
Documents in Section 5.5.2, Appendix		
CTR2009/22	Issue B	SAFKEG LS 3979A: Package Activity Limits Based on Shielding
CTR 2015/10	Issue A	Uncertainties Associated with the Proposed Shielding Calculation Method for the SAFKEG-LS 3979A Package
SERCO/TAS/003191/001	Issue 1	Monte Carlo Modelling of Safkeg LS Container
Section 6 - CRITICALITY EVALUATION		
Page 6-1	Rev 4	
Page 6-2	Rev 4	

Page/Document Reference	Issue Status	Title/*Comments*
Documents in Section 6.9, Appendix		
None	-	
Section 7 - OPERATING PROCEDURES		
Page 7-1	Rev 4	
Page 7-2	Rev 4	
Page 7-3	Rev 4	
Page 7-4	Rev 4	
Page 7-5	Rev 4	
Page 7-6	Rev 4	
Page 7-7	Rev 4	
Documents in Section 7.5, Appendix		
None	-	
Section 8- ACCEPTANCE TESTS AND MAINTENANCE PROGRAM		
Page 8-1 to 8-12	Rev 8	*Rev 8 Changes:* *Entire section raised to Rev 8, pages renumbered.* *Section 8.1.5.2, page 8-3, 1st, 2nd and 6th paragraphs.* *NCT O-ring seal test remperature reduced from 150°C to 130°C (130 to 135°C range).*
Documents in Section 8.3, Appendix		
None	-	