ENGINEERING CHANGE NOTICE

Page 1 of 2

1. ECN **652287**

Proj.
ECN

2. ECN Category (mark one) Supplemental ☐ Direct Revision ☒ Change ECN ☐ Temporary ☐ Standby ☐ Supersedure ☐ Cancel/Void ☐	3. Originator's Name, Organization, MSIN, and Telephone No. TA Nuxall, SNF CVD, R3-47, 372-3739		4. USQ Required? ☐ Yes ☒ No	5. Date 7/1/99																					
	6. Project Title/No./Work Order No. W-441 Spent Nuclear Fuel Cold Vacuum Drying		7. Bldg./Sys./Fac. No. CVDF	8. Approval Designator SQ																					
	9. Document Numbers Changed by this ECN (includes sheet no. and rev.) SNF-4627, Rev. 20 ²³ 7/1/99		10. Related ECN No(s). N/A	11. Related PO No. N/A																					
12a. Modification Work ☐ Yes (fill out Blk. 12b) ☒ No (NA Blks. 12b, 12c, 12d)	12b. Work Package No. N/A	12c. Modification Work Complete N/A Design Authority/Cog. Engineer Signature & Date	12d. Restored to Original Condition (Temp. or Standby ECN only) N/A Design Authority/Cog. Engineer Signature & Date																						
13a. Description of Change Revision in response to DCN W-441-HE-446.																									
13b. Design Baseline Document? ☐ Yes ☒ No																									
14a. Justification (mark one) Criteria Change ☒ Design Improvement ☐ Environmental ☐ Facility Deactivation ☐ As-Found ☐ Facilitate Const ☐ Const. Error/Omission ☐ Design Error/Omission ☐																									
14b. Justification Details DCN W-441-HE-446.																									
15. Distribution (include name, MSIN, and no. of copies) <table border="0"> <tr> <td>C. Miska</td> <td>R3-86</td> <td>1</td> </tr> <tr> <td>C. Van Katwijk</td> <td>R3-47</td> <td>1</td> </tr> <tr> <td>CVD Library (K. Boes)</td> <td>R3-86</td> <td>1</td> </tr> <tr> <td>T. Hays</td> <td>R3-86</td> <td>1</td> </tr> <tr> <td>J. Brehm</td> <td>R3-26</td> <td>1</td> </tr> <tr> <td>AVS-P. Morrell</td> <td>G1-50</td> <td>1</td> </tr> <tr> <td>AI-M. Evarts</td> <td>N1-29</td> <td>1</td> </tr> </table>					C. Miska	R3-86	1	C. Van Katwijk	R3-47	1	CVD Library (K. Boes)	R3-86	1	T. Hays	R3-86	1	J. Brehm	R3-26	1	AVS-P. Morrell	G1-50	1	AI-M. Evarts	N1-29	1
C. Miska	R3-86	1																							
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J. Brehm	R3-26	1																							
AVS-P. Morrell	G1-50	1																							
AI-M. Evarts	N1-29	1																							

RELEASE STAMP

DATE: **JUL 02 1999**

STA: *A*

HANFORD
RELEASE

ID: *e*

ENGINEERING CHANGE NOTICE

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1. ECN (use no. from pg. 1)

652287

16. Design Verification Required [] Yes [X] No	17. Cost Impact <div style="text-align: center;">ENGINEERING CONSTRUCTION</div> Additional [] \$ Additional [] \$ Savings [] \$ Savings [] \$	18. Schedule Impact (days) Improvement [] Delay []
19. Change Impact Review: Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 13. Enter the affected document number in Block 20.		
SDD/DD []	Seismic/Stress Analysis []	Tank Calibration Manual []
Functional Design Criteria []	Stress/Design Report []	Health Physics Procedure []
Operating Specification []	Interface Control Drawing []	Spares Multiple Unit Listing []
Criticality Specification []	Calibration Procedure []	Test Procedures/Specification []
Conceptual Design Report []	Installation Procedure []	Component Index []
Equipment Spec. []	Maintenance Procedure []	ASME Coded Item []
Const. Spec. []	Engineering Procedure []	Human Factor Consideration []
Procurement Spec. []	Operating Instruction []	Computer Software []
Vendor Information []	Operating Procedure []	Electric Circuit Schedule []
OM Manual []	Operational Safety Requirement []	ICRS Procedure []
FSAR/SAR []	IEFD Drawing []	Process Control Manual/Plan []
Safety Equipment List []	Cell Arrangement Drawing []	Process Flow Chart []
Radiation Work Permit []	Essential Material Specification []	Purchase Requisition []
Environmental Impact Statement []	Fac. Proc. Samp. Schedule []	Tickler File []
Environmental Report []	Inspection Plan []	[]
Environmental Permit []	Inventory Adjustment Request []	[]
20. Other Affected Documents: (NOTE: Documents listed below will not be revised by this ECN.) Signatures below indicate that the signing organization has been notified of other affected documents listed below. Document Number/Revision Document Number/Revision Document Number Revision		
N/A		
21. Approvals		
Signature	Date	Signature Date
Design Authority C. Miska CR Mw 7/1/99		Design Agent PE _____
Designated Cog. Eng. C. Van Katwijk C. Van Katwijk 7/1/99		QA QA _____
Authorized Rep. Mgr. T. Choho T. Choho 7/1/99		Safety Safety _____
QA T. D. Hays T. D. Hays 7/1/99		Design Design _____
Safety N J. Brehm J. Brehm 7/1/99		Environ. Environ. _____
		Other _____

		DEPARTMENT OF ENERGY
		Signature or a Control Number that tracks the Approval Signature

		ADDITIONAL

FLEX HOSE CONNECTORS TO SCHe HELIUM BOTTLE SCHe-TK-5*01, 5*02, 5*03, 5*04

Carl Van Katwijk
Numatec Hanford, Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-96RL13200

EDT/ECN: 652287	UC: 620
Org Code: 2G300	Charge Code: 105559/A000
B&R Code: 39EW40400	Total Pages: 12

Key Words: Flex Hose Connectors to SCHe Helium Bottle SCHe-TK-5*01, 5*02, 5*03, 5*04

Abstract: Flex Hose Connectors to SCHe Helium Bottle SCHe-TK-5*01, 5*02, 5*03, 5*04

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Release Approval 7/2/99

DATE:		ID:
STA:
JUL 02 1999		
Date	Release Stamp	

Approved for Public Release

RECORD OF REVISION

(1) Document Number

SNF-4627

Page 1

(2) Title

FLEX HOSE CONNECTORS TO SCHe HELIUM BOTTLE SCHe-TK-5*01, 5*02, 5*03, 5*04

Change Control Record

(3) Revision

(4) Description of Change - Replace, Add, and Delete Pages

Authorized for Release

(5) Cog. Engr.

(6) Cog. Mgr.

Date

1 RS

(7)
ECN 652287

CR Rev 2-14 JLS 7/2/98

Commercial Grade Item Upgrade Dedication Form

SNF-4627, Rev. 1

ECN No. **N/A**CGI No. **CGI-SNF-D-13-2-P5-049**

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Title: **FLEX HOSE CONNECTORS TO SCHe HELIUM BOTTLES SCHe-TK-5*01, 5*02, 5*03, 5*04**

Section 1 Part Information

Item No.: **N/A**

Manufacturer:

Supplier:

Mfg. Part/Model No.:

Supplier's P/N:

Part Description:

End Use Description:

Section 2a Component Information

Equipment No.: **Flex hoses for SCHe supply bottles to the Helium process system.**Specification No.: **W-441-P5, Rev. 2; Dwg. H-1-82367 with DCN #W-441-HE-446.**Manufacturer: **Matheson**Past P.O. No.: **N/A**Manufacturer's Part/Model No.: **SP-2980 Dwg. H-1-82367, Item 55 with DCN #W-441-HE-446.**

Equipment Supplier (if different from manufacturer):

Equip. Supplier's Part No.:

Component Description: **These metallic flex hoses connect the SCHe high pressure helium supply bottles, SCHe-TK-5*01, 5*02, 5*03, and 5*04 to pressure regulators PCV-5*04, 5*23, 5*43, and 5*63 respectively.**

Section 2b Commercial Availability of the Item

1. Is the Item available from a catalogue of a qualified NQA1 supplier? (coordinate with project CGI interface Engineer or BTR)

☐ YES (go to #2 below)

☒ NO (go to procedure step 5.3.2, proceed to dedicate Item.)

If not available from a qualified NQA1 supplier, is it available from an ISO 9000 supplier? (coordinate with project CGI interface Engineer or BTR)

☐ YES (go to #2 below, then go to procedure step 5.3.2, proceed to dedicate Item)

☒ NO (go to procedure step 5.3.2, proceed to dedicate Item.)

2. List of Candidate qualified suppliers or ISO 9000 suppliers

company name & type

contact name

phone

N/A

3. Recommended Procurement Strategy (coordinate with project CGI interface Engineer or BTR):

NA

Section 2c CGI Determination

1. Question #1: Is the Item subject to design or specification requirements that are unique to nuclear facilities or activities?

☐ YES (the Item is not commercial grade)

☒ NO (continue)

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Title: **FLEX HOSE CONNECTORS TO SCHe HELIUM BOTTLES SCHe-TK-5*01, 5*02, 5*03, 5*04**

2. Question #2: Is the Item used in applications other than nuclear facilities or activities?

☐ NO (the item is not commercial grade)

☒ YES (continue)

3. Question #3: Is the Item ordered from manufacturer/supplier on the basis or specifications set forth in the published product information (e.g. manufacturer's catalog)?

☐ NO (the Item is not commercial grade)

☒ YES (continue)

☒ All three criteria have been satisfied. The Item meets the definition of commercial grade.

Section 2d Reason for Dedication

The above described Item is being Dedicated for use in the application cited for the following reason(s):

☒ Item is being purchased from a non ESL manufacturer supplier as commercial grade to be used in a Safety Class application.

☐ Item is being purchased from a non ESL manufacturer supplier as commercial grade to be used in a Safety Significant application.

☐ Item was purchased from a non ESL manufacturer supplier as commercial grade to be used in a Safety Class application.

☐ Item was purchased from a non ESL manufacturer supplier as commercial grade to be used in a Safety Significant application.

☐ Other ('like-for-like', similar, substitution, replacement evaluation)

Section 3 Failure Effects Evaluation

A. Part/Component Safety Function:

1. **These hoses provide a pressure boundary and a path for the SCHe bottle helium supply to the SCHe helium purge system.**

2. **Maintain critical function before and after Seismic Event**

3.

B. Part/Component Functional Mode:

Safety Function #1:

☐ Active – Mechanical or Electrical change of state is required to occur for the component to perform its safety function

☒ Passive – Change of state is not required for the component to perform its safety function

Safety Function #2:

☐ Active – Mechanical or Electrical change of state is required to occur for the component to perform its safety function.

☒ Passive – Change of state is not required for the component to perform its safety function

Safety Function #3:

☐ Active – Mechanical or Electrical change of state is required to occur for the component to perform its safety function.

☐ Passive – Change of state is not required for the component to perform its safety function

C. Host Component Safety Function (if applicable): **N/A**

1.

2.

3.

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Title: **FLEX HOSE CONNECTORS TO SCHe HELIUM BOTTLES SCHe-TK-5*01, 5*02, 5*03, 5*04**

D. Failure Mode(s) and the effects on component or system safety function (see Worksheet 1):

1. **Rupture of the flex hose or failure of the connection would fail the pressure boundary and result in loss of helium supply to the affected purge line.**
2. **Severe kink in the flex hose could impair or block helium flow from the SCHe bottle to the pressure regulator.**
3. **Foreign matter introduced inside the hose during bottle changout could block flow in the hose or in the regulator.**
- 4.
- 5.

Section 4 Environmental & Natural Phenomena Hazard Design

Environmental Qualification Required:

Yes ☐

No ☒

Environmental Condition B

If yes: Environmental Qualification Requirements

Limiting Environmental Conditions:

Required Safety Functions:

Qualification Period:

Natural Phenomena Hazard (NPH) Design Required:

Yes ☒

No ☐

HNF-PRO-97, Rev. 0

W-441-P5, Rev. 2

If yes: NPH Design Requirements

Performance Category: **PC-3**

NPH Design Req'ts.: **Seismic Condition A**

Required Safety Functions: **Maintain critical function before and after Seismic Event.**

Section 5 Component Functional Classification

☒ Safety Class (SC)

☐ General Service (GS)

☐ Safety Significant (SS)

If part/component classification is different from host component/system, document basis. **N/A**

Section 6 (Reserved)

Section 7 (Reserved)

Section 8 References (for Functional Classification)

National Codes/Standards: **ASME B31.3**

Safety Analysis Report (SAR): **HNF-SD-SNF-SAR-002, REV. 4A**

Drawings: **Dwg. H-1-82367, Item 55 with DCN #W-441-HE-446. HNF-SD-SNF-SEL-002, Rev. 6A**

Vendor Manual/Manufacturer/Supplier Information: **Matheson Gas Products, Gas Handling Equipment Model SP-2980 Custom Flex Hose Pigtail, Dwg. B-TS-1167. .**

Other: **N/A**

Commercial Grade Item Upgrade Dedication Form

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ECN No. **N/A**CGI No. **CGI-SNF-D-13-2-P5-049**

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Title: **FLEX HOSE CONNECTORS TO SCHe HELIUM BOTTLES SCHe-TK-5*01, 5*02, 5*03, 5*04**

Section 9 Critical Characteristics

Critical Characteristics Verification Document: **Dwg. H-1-82367, Item 55 with DCN #W-441-HE-446.**
HNF-SD-SNF-SEL-002, Rev. 6A

Acceptance Criteria/Tolerances

Acceptance Method

ID

Function

1. Item Identification Critical Characteristics (necessary for reasonable assurance that the Item delivered is the Item specified)

Manufacturer	Matheson	1, IN	X	
Part Number	SP-2980	1, IN	X	
Flex Hose Length	Nominal 1 1/2 feet	1, IN	X	

2. Physical Critical Characteristics (for reasonable assurance that the Item delivered is the Item specified)

End Connections	1/4 inch FNPT with 90 degree elbow connector on one end and 580 CGA connector on the other end.	1, IN	X	
Material	Stainless Steel Note 4	1, IN 1, T	X	

3. Performance Critical Characteristics (for reasonable assurance that the Item will perform its intended safety function(s))

Pressure Boundary Integrity	Pressure Test at 3300 psig (No Bubbles) Note 3	1, T		X
Environmental	Note 1			
Seismic Condition A	Note 2	1, T		X

4. Notes and Legend:

- The flex hose is not subject to degradation from the 40°F and 60% RH or 115°F and 22% RH conditions and is suitable for Environmental Condition B application.
- Maintain critical function before and after seismic event. W-441-P5, Rev. 2, Appendix I, page I-2, provides a seismic testing plan for these components at a seismic spectra TBD. Equipment that has been shaker-table tested should not be installed in a plant (Ref. IEEE Standard 344-1984, Section 7). Consequently, the seismic test constitutes a destructive test.
- Pressure test at 110% of 3000 psig system design pressure.
- Material verification acceptance method may be by either inspection or test.

Acceptance Method:

- Special Test and Inspection
1, IN for Inspection
1, T for Test
- Commercial Grade Survey
- Source Verification
- Vendor/Item History

Section 10 Initial Review and Approval

Approvals:

Designated Engineer: C. Van Katwijk 7/1/99Design Authority: CRM 7/1/99QA Engineer: T.D. Day 7/1/99

07/01/99

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Title: **FLEX HOSE CONNECTORS TO SCHe HELIUM BOTTLES SCHe-TK-5*01, 5*02, 5*03, 5*04**

WORKSHEET 1 DETERMINATION OF FAILURE MECHANISMS/MODES

Section 1

Typical Failure Mechanisms	Definition	Applicable to Component under Evaluation
Fracture	Separation of a solid accompanied by little or no macroscopic plastic deformation.	Yes ☒ No ☐ ; If Yes, indicate failure Mode: Failure of the connection fitting would open the pressure boundary and stop the helium supply for that line.
Corrosion	The gradual deterioration of a material due to chemical or electrochemical reactions, such as oxidation, between the material and its environment.	Yes ☐ No ☒ ; If Yes, indicate failure Mode _____
Erosion	Destruction of materials by the abrasive action of moving fluids, usually accelerated by the presence of solid particles carried with the fluid.	Yes ☐ No ☒ ; If Yes, indicate failure Mode _____
Open Circuit	An electrical circuit that is unintentionally broken so that there is no complete path for current flow.	Yes ☐ No ☒ ; If Yes, indicate failure Mode _____
Short Circuit	An abnormal connection by which an electrical current is connected to ground, or to some conducting body, resulting in excessive current flow.	Yes ☐ No ☒ ; If Yes, indicate failure Mode _____
Blockage	Clogging of a filtering medium resulting in the inability to perform its purification function or blockage of flow.	Yes ☐ No ☒ ; If Yes, indicate failure Mode _____
Seizure	Binding of a normally moving item through excessive pressure, temperature, friction, jamming.	Yes ☐ No ☒ ; If Yes, indicate failure Mode _____
Unacceptable Vibration	Mechanical oscillations produced are beyond the defined permissible limits due to unbalancing, poor support, or rotation at critical speeds.	Yes ☐ No ☒ ; If Yes, indicate failure Mode _____
Loss of Properties	A loss of mechanical and physical properties of a material due to exposure to high temperatures, radiation exposure.	Yes ☐ No ☒ ; If Yes, indicate failure Mode _____
Excess Strain	Under the action of excessive external forces the material of the part has been deformed or distorted.	Yes ☐ No ☒ ; If Yes, indicate failure Mode _____
Mechanical Creep	From prolonged exposure to high temperature and stress, the object will show a slow change in its physical (shape and dimension) and mechanical characteristics.	Yes ☐ No ☒ ; If Yes, indicate failure Mode _____
Ductile Fracture	Fracture characterized by tearing of metal accompanied by appreciable gross plastic deformation.	Yes ☐ No ☒ ; If Yes, indicate failure Mode _____

Section 2 Additional Failure Modes Applicable to the Component Under Evaluation

- Severe kink in the flex hose could impede or block helium flow to the pressure regulator.**
- Foreign matter introduced inside the hose during bottle changout could block flow in the hose or in the regulator.**
-
-
-

Commercial Grade Item Upgrade Dedication Form

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ECN No. **N/A** CGI No. **CGI-SNF-D-13-2-P5-049**

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Title: **FLEX HOSE CONNECTORS TO SCHe HELIUM BOTTLES SCHe-TK-5*01, 5*02, 5*03, 5*04**

CHECKLIST 1
ACCEPTANCE METHOD 1
SPECIAL TEST/INSPECTION VERIFICATION

SECTION 1			
Item Description: FLEX HOSE CONNECTORS TO SCHe HELIUM BOTTLES		Equip #: Dwg. H-1-82367, Item 55 with DCN #W-441-HE-446.	
System #: 13-2		Model #: SP-2980	
Manufacturer (Address/Phone): Matheson Gas Products 8800 Utica Avenue Cucamonga, CA 91730 (909) 987-4611 P.O. #		Supplier (Address/Phone):	
SECTION 2 CRITICAL CHARACTERISTICS TO BE VERIFIED BY METHOD 1.			
Insp	Test	Post-Test	
☒	☐	☐	1. Manufacturer
☒	☐	☐	2. Part Number
☒	☐	☐	3. Flex Hose Length
☒	☐	☐	4. End Connections
☒	☒	☐	5. Material (Verification may be by either inspection or test)
☐	☒	☐	6. Pressure Boundary Integrity
☐	☒	☐	7. Seismic Condition A
☐	☐	☐	8.
SECTION 3 VERIFIED BY INSPECTION			
* See Attachment G of Desk Instruction for Sampling Size			
Characteristic: Manufacturer			
Sample Size*: All Items			
Acceptance Criteria: Matheson			
Receipt Inspection Plan / Report #: _____			
References (see Section 7): _____			
Characteristic: Part Number			
Sample Size*: All Items			
Acceptance Criteria: SP-2980			
Receipt Inspection Plan / Report #: _____			
References (see Section 7): _____			

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Title: **FLEX HOSE CONNECTORS TO SCHe HELIUM BOTTLES SCHe-TK-5*01, 5*02, 5*03, 5*04**

Characteristic: **Flex Hose Length**

Sample Size*: **All Items**

Acceptance Criteria: **Nominal 1 1/2 feet**

Receipt Inspection Plan / Report #: _____

References (see Section 7): _____

Characteristic: **End Connections**

Sample Size*: **All Items**

Acceptance Criteria: **1/4 inch FNPT with 90 degree elbow connector on one end and 580 CGA connection on the other end.**

Receipt Inspection Plan / Report #: _____

References (see Section 7): _____

Characteristic: **Material**

Sample Size*: **All Items**

Acceptance Criteria: **Stainless Steel**

Receipt Inspection Plan / Report #: _____

References (see Section 7): _____

Characteristic:

Sample Size*: **All Items**

Acceptance Criteria:

Receipt Inspection Plan / Report #: _____

References (see Section 7): _____

SECTION 4 VERIFIED BY SPECIAL TEST

* See Attachment G of Desk Instruction for Sampling Size

Test To Be Performed by:

☐ Purchaser

☐ Supplier/Manufacturer**

☐ Other

Number of Items to be Tested:

Test/Inspection Location:

Characteristic for Test: **Pressure Boundary Integrity**

Acceptance Criteria: **Pressure Test at 3300 psig. (No Bubbles)**

Sample Size*: **Normal Sampling Size**

Actual Test Value:

Test Plan and Report #: _____ References (see Section 7): _____

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Title: **FLEX HOSE CONNECTORS TO SCHe HELIUM BOTTLES SCHe-TK-5*01, 5*02, 5*03, 5*04**

Characteristic for Test: **Seismic Condition A**

Acceptance Criteria: **Maintain Critical Function Before and After Seismic Event**

Sample Size*: **W-441-P5, Rev. 2, Appendix I, page I-2, provides the seismic testing plan for these components. The seismic testing is conducted for one complete panel with the components assembled on the panel and tested as a complete assembly. The test seismically qualifies the entire assembly, including mountings, piping, and components. The number of components tested is dictated by the panel assembly design.**

Actual Test Value:

Test Plan and Report #: _____ References (see Section 7): _____

Characteristic for Test:

Acceptance Criteria:

Sample Size*: **Normal Sampling Size**

Actual Test Value:

Test Plan and Report #: _____ References (see Section 7): _____

Characteristic for Test:

Acceptance Criteria:

Sample Size*: **Normal Sampling Size**

Actual Test Value:

Test Plan and Report #: _____ References (see Section 7): _____

** If Supplier/Manufacturer or Other, Refer to CGI Checklist-2 for Support Information

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Title: FLEX HOSE CONNECTORS TO SCHe HELIUM BOTTLES SCHe-TK-5*01, 5*02, 5*03, 5*04

SECTION 5 TEST / INSPECTION SUMMARY (Acceptance Method 1)

1. SUMMARY OF VERIFIED CRITICAL CHARACTERISTICS, THEIR VERIFICATION METHODS, AND RESULTS

ITEM DESCRIPTION:

Critical Characteristics				Verification Results							
Critical Characteristics	Acceptance Criteria/Tolerances	ID	Function	Method T/IN	Procedure or RR#	Check-list ID	Number Tested	Number Failed	Verifying Organization	Printed Name Signature	Date
Manufacturer	Matheson	X									
Part Number	SP-2980	X									
Flex Hose Length	Nominal 1 1/2 feet	X									
End Connections	1/4 inch FNPT with a 90 degree elbow on one end and with 580 CGA connector on the other end.	X									
Material	Stainless Steel	X									
Pressure Boundary Integrity	Pressure Test at 3300 psig (No Bubbles)		X								
Seismic Condition A	Maintain critical function before and after Seismic Event.		X								

2. DISPOSITION OF UNVERIFIED OR FAILED CRITICAL CHARACTERISTICS

Critical Characteristic	Disposition

3. SIGNATURE INDICATES ALL CRITICAL CHARACTERISTICS VERIFIED SATISFACTORY OR ACCEPTABLY DISPOSITIONED AND COMMERCIAL GRADE DEDICATION IS SATISFACTORY AND COMPLETE.

BUYER VERIFICATION			
Testing Agency Approval: _____	Date _____	Design Authority: _____	Date _____
Testing Agency QA Engineer: _____	Date _____	QA Engineer: _____	Date _____

07/01/99

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Title: **FLEX HOSE CONNECTORS TO SCHe HELIUM BOTTLES SCHe-TK-5*01, 5*02, 5*03, 5*04**

SECTION 6 CONTACTS / PHONE NUMBERS

Name	Phone
Design Authority	()
QA	()
QC	()
Cog - Engineer	()
CGI Engineer	()
Procurement Engineer	()
Other	()

SECTION 7 SUPPORTING DOCUMENTATION FOR THIS CHECKLIST

Initial Procurement Documents	For Critical Characteristics
☐ Drawings:	
☐ Manuals (specify type & number):	
☐ Design Calculations	
☐ Installation Instructions	
☐ Operation Instructions	
☐ Calibration Instructions	
☐ Manufacturer's Recommended Spare Parts List	
☐ Other:	
Procurement Documents	
☐ Certificate of Conformance/Compliance	
☐ Seismic Qualification Certificate	
☐ Environmental Qualification Certificate	
☐ Test Report (s):	
☐ Inspection Report (s):	
☐ CMTRs for ASME Pressure Retaining Materials	
☐ Valve Seat Leakage Report	
☐ Weld Records	
☐ Material Traceability Record	
☐ Other:	