ENGINEERING CHANGE NOTICE

Page 1 of 21. ECN **662314**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. T. Nuxall, CVDF, R3-86, 372-3739		4. USQ Required? ☐ Yes ☒ No	5. Date 9/2/00
	6. Project Title/No./Work Order No. SNF/W-441 Spent Nuclear Fuel Cold Vacuum Drying		7. Bldg./Sys./Fac. No. CVDF 142-K	8. Approval Designator Q
	9. Document Numbers Changed by this ECN (includes sheet no. and rev.) See block 13a		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 Hood SNF-3876, Rev. 2, SNF-3877, Rev. 2, SNF-3878, Rev. 1, SNF-3879, Rev. 3, SNF-3880, Rev. 1, SNF-3881, Rev. 2, SNF-3882, Rev. 2, SNF-3883, Rev. 3, SNF-3884, Rev. 2, SNF-3886, Rev. 2 , Rev. 1, SNF-4418, Rev. 1, SNF-3933, Rev. 1, SNF-3936, Rev. 2, SNF-5964, Rev. 0, SNF-5970, Rev. 1 ^{HMC} _{9/2/00} SNF-4419, Rev. 1 ^{9/2/00}				
13b. Design Baseline Document? ☐ Yes ☒ No				
Updated document numbers and deleted revision numbers. USQ Approval: CX B.1 from AP-NS-4-001-15.				
14a. Justification (mark one) Criteria Change ☐ Design Improvement ☒ Environmental ☐ Facility Deactivation ☐ As-Found ☐ Facilitate Const ☐ Const. Error/Omission ☐ Design Error/Omission ☐				
14b. Justification Details Editorial changes for configuration control. The design verification method for SS/SC components is by independent review in accordance with EN-6-027-01. Documentation of this review is accomplished by the independent review approval signature provided on page 2 of this ECN.				
15. Distribution (include name, MSIN, and no. of copies) See distribution sheet.				

RELEASE STAMP SEP 5 2000 HANFORD RELEASE ID. 25	
DATE: STA:	19

ENGINEERING CHANGE NOTICE

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

662314

16. Design Verification Required	17. Cost Impact	NA	18. Schedule Impact (days)
☒ Yes ☒ No	ENGINEERING	CONSTRUCTION	NA
Additional	Additional	Additional	Improvement
Savings	Savings	Savings	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	☐	IEPD 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

NA

21. Approvals

[illegible]

[illegible]

Nupro Process Vent/MCO Check / Relief Valve- Prevent Back Flow From Process Vent Into MCO

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Project Hanford Management Contractor for the
U.S. Department of Energy under Contract DE-AC06-96RL13200

Fluor Hanford

P.O. Box 1000

Richland, Washington

SNF-3933

Revision 2

ECN 662314

Nupro Process Vent/MCO Check / Relief Valve- Prevent Back Flow From Process Vent Into MCO

Project No: W-441

Document Type: RPT

Division: SNF

C Miska

FH

Date Published

September 2000

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Project Hanford Management Contractor for the
U.S. Department of Energy under Contract DE-AC06-96RL13200

Fluor Hanford

P.O. Box 1000

Richland, Washington

Release Approval

9/3/2000
Date

Release Stamp

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Total Pages: 17

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Commercial Grade Item Upgrade Dedication Form

SNF-3933, Rev. 2

ECN No.: **NA** CGI No.: **CGI-SNF-D-07-P4-040**

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Title: **NUPRO PROCESS VENT/MCO CHECK / RELIEF VALVE --
PREVENT BACK FLOW FROM PROCESS VENT INTO MCO**

Section 1 Part Information

Item No.: NA	Manufacturer: NA	Supplier: NA
Mfg. Part/Model No.: NA	Supplier's P/N: NA	
Part Description: NA		
End Use Description: NA		

Section 2a Component Information

Equipment No.: VPS - CKV-*112	Specification No.: SNF-5303 (W-441-P4)	Manufacturer: Nupro Valve Mfg. Company	Past P.O. No.: NA
Procurement and/or Model No.: SS-RL4M8F8	Equipment Supplier (if different from manufacturer): TBD		Equip. Supplier's Part No.: NA

Component Description: **This valve is a 1/2 inch check / relief valve located between the MCO pressure safety element and the process vent. The valve prevents air backflow from the process vent into the MCO.**

Section 2b Qualified Vendor/Supplier Survey

- 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.)

- List of Candidate qualified suppliers or ISO 9000 suppliers

company name and type	contact name	phone
NA		

- Recommended Procurement Strategy (coordinate with project CGI interface Engineer or BTR):
NA

Section 2c CGI Determination

- 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)
- Question #2: Is the Item used in applications other than nuclear facilities or activities?
 - ☐ NO (the item is not commercial grade)
 - ☒ YES (continue)

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Title: **NUPRO PROCESS VENT/MCO CHECK / RELIEF VALVE –
PREVENT BACK FLOW FROM PROCESS VENT INTO MCO**

3. Question #3: Is the Item ordered from manufacturer/supplier on the basis or specifications set forth in the Published product information (e.g., manufacturers 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 ELS 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. **Check valve closure prevents air back leakage from the process vent to the MCO to prevent hydrogen explosion.**

2. **Confinement - Prevents air leakage into the MCO during vacuum operation or after rupture disc burst.**

3. **Check valve opens when required to provide overpressure relief path.**

4. **Maintain critical function before and after Seismic event.**

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

Safety Function #4:

☐ 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

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Title: **NUPRO PROCESS VENT/MCO CHECK / RELIEF VALVE –
PREVENT BACK FLOW FROM PROCESS VENT INTO MCO**

C. Host Component Safety Function (if applicable): **NA**

1.

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

1. **Seizure – failure of the check valve to close as required, resulting in air leakage into the MCO.**

2. **Fracture of the valve body or piping attachment, resulting in air leakage into the MCO.**

3. **Seizure -- failure of the check/relief valve to open as required, resulting in functional impairment of the pressure safety element, VPS-PSE-1*33.**

Section 4 Environmental & Natural Phenomena Hazard Design

Environmental Qualification Required:

Yes []

No [**X**]

Environmental Condition B

If yes: Environmental Qualification Requirements

Limiting Environmental Conditions:

Required Safety Functions:

Qualification Period:

Natural Phenomena Hazard (NPH) Design Required:

Yes [**X**]

No []

HNF-PRO-97

SNF-5303

If yes: NPH Design Requirements

Performance Category: **PC-3**

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

Required Safety Functions: **Check Valve Closure to
Provide Isolation Between the Process Vent
and the MCO; Confinement; open when
required to provide overpressure relief path.**

Section 5 Component Functional Classification

[**X**] Safety Class (SC)

[] General Service

[] Safety Significant (SS)

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

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

Drawings:

**H-1-82161; HNF-SD-SNF-
SEL-002, + ECN 652269;
CVDF-SSD-003**

Vendor Manuals/Manufacturer/Supplier Information: **Nupro Company - "HL4" Series Low Pressure
Proportional Relief Valves.**

Other: **NA**

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Title: **NUPRO PROCESS VENT/MCO CHECK / RELIEF VALVE –
PREVENT BACK FLOW FROM PROCESS VENT INTO MCO**

Section 9 Critical Characteristics				
Critical Characteristics Verification Document: Vendor Specifications, HNF-SD-SNF-SEL-002, ECN 652269	Acceptance Criteria/Tolerances	Acceptance Method	ID	Function
1. Item Identification Critical Characteristics (necessary for reasonable assurance that the Item delivered is the Item specified)				
Nameplate - Manufacturer	NUPRO Valve Mfg. Company	1,IN	X	
Component Number-Procurement and/or Model Number	SS-RL4M8F8 , (Per SNF-5303, Section H, Design Data Sheet)	1,IN	X	
Process Connection, Inlet/outlet	1/2" Male NPT X 1/2" FNPT	1,IN	X	
2. Physical Critical Characteristics (necessary for reasonable assurance that the Item delivered is the Item specified)				
Material, Body	Stainless Steel (Note 4)	1, IN, 1,T	X	
Material, Process Connection	Stainless Steel (Note 4)	1, IN, 1,T	X	
"A" Dimension	Nominal 5.43 inch	1, IN	X	
3. Performance Critical Characteristics (necessary & sufficient for reasonable assurance that the Item will perform its intended safety function(s))				
Confinement	No leakage at test pressure of 165 psig. Note 3.	1,T		X
Internal Pressure	150 psig and full vacuum	1,T		X
Cracking Pressure Setting	Nominal 30 psig (not to exceed 31 psig). Lockwire to be in place to maintain pressure relief setting after test.	1,T		X
Release Pressure	Reseal must occur > 20 psig	1,T		X
Seat Leakage, Reverse Flow After Cracking	Pressure test to design pressure (150 psig) (bubble tight standards < 10⁻³ ml He/sec.)	1,T		X
Environmental	Note 1			
Seismic Condition A	Note 2	1,T		X
Flow Rate	Nominal 10 std cft/min at 30 psig.	1,T		X

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Title: **NUPRO PROCESS VENT/MCO CHECK / RELIEF VALVE –
PREVENT BACK FLOW FROM PROCESS VENT INTO MCO**

4. Notes and Legend:

1. The check / relief valve bonnet seal, stem seal, and bonded poppet seal (VITON) is not subject to degradation at ambient conditions of 40°F and 60% RH or 115°F and 22% RH and is suitable for Environmental Condition B application.
2. Maintain critical function before and after Seismic event. SNF-5303, Appendix L, page L-18 provides a seismic testing plan for this safety class, Seismic Condition A component at a Seismic Spectra SNF-4896. 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. The industry sampling practice for destructive test is to test only one item.
3. Pressure test at 110% of design accident condition pressure of 150 psig.
4. Material verification acceptance method may be by either inspection or test.

Rev. 2: Updated reference documentation.

Acceptance Method:

1. Special Test and Inspection
1,IN for Inspection
1,T for Test
2. Commercial Grade Survey
3. Source Verification
4. Vendor/Item History

Section 10 Initial Reviews and Approvals

Approvals:

Designated Engineer:

Design Authority:

QA Engineer:

He for participation
Carl Sankarajit 9/2/00
9/2/00
Hank M. Chafin 9/2/00

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Title: **NUPRO PROCESS VENT/MCO CHECK / RELIEF VALVE –
PREVENT BACK FLOW FROM PROCESS VENT INTO MCO**

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 [] Mode. _____	No [X]; If Yes, indicate failure
Corrosion	The gradual deterioration of a material due to chemical or electrochemical reactions, such as oxidation, between the material and its environment.	Yes [] Mode. _____	No [X]; If Yes, indicate failure
Erosion	Destruction of materials by the abrasive action of moving fluids, usually accelerated by the presence of solid particles carried with the fluid.	Yes [] Mode. _____	No [X]; If Yes, indicate failure
Open Circuit	An electrical circuit that is unintentionally broken so that there is no complete path for current flow.	Yes [] Mode. _____	No [X]; If Yes, indicate failure
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 [] Mode. _____	No [X]; If Yes, indicate failure
Blockage	Clogging of a filtering medium resulting in the inability to perform its purification function or blockage of flow.	Yes [] Mode. _____	No [X]; If Yes, indicate failure
Seizure	Binding of a normally moving item through excessive pressure, temperature, friction, jamming.	Yes [] Mode. _____	No [X]; If Yes, indicate failure
Unacceptable Vibration	Mechanical oscillations produced are beyond the defined permissible limits due to unbalancing, poor support, or rotation at critical speeds.	Yes [] Mode. _____	No [X]; If Yes, indicate failure
Loss of Properties	A loss of mechanical and physical properties of a material due to exposure to high temperatures, radiation exposure.	Yes [] Mode. _____	No [X]; If Yes, indicate failure
Excess Strain	Under the action of excessive external forces the material of the part has been deformed or distorted.	Yes [] Mode. _____	No [X]; If Yes, indicate failure
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 [] Mode. _____	No [X]; If Yes, indicate failure
Ductile Fracture	Fracture characterized by tearing of metal accompanied by appreciable gross plastic deformation.	Yes [] Mode. _____	No [X]; If Yes, indicate failure

Section 2 Additional Failure Modes Applicable to the Component Under Evaluation

- Failure of check valve to seat and prevent reverse flow/failure of check valve to open and provide flow path for pressure safety element VPS -PSE-1 *33.**
- Process connection/body break.**

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Title: **NUPRO PROCESS VENT/MCO CHECK / RELIEF VALVE –
PREVENT BACK FLOW FROM PROCESS VENT INTO MCO**

CHECKLIST 1

ACCEPTANCE METHOD 1

SPECIAL TEST/INSPECTION VERIFICATION

SECTION 1			
Item Description: Nupro Process Vent/MCO Check / Relief Valve		Equip #: VPS-CKV-*112	
System #: 07		Procurement and/or Model #: SS-RL4M8F8	
Manufacturer (Address/Phone): Nupro Valve Mfg. Company		Supplier (Address/Phone):	
P.O. #			
SECTION 2 CRITICAL CHARACTERISTICS TO BE VERIFIED BY METHOD 1.			
Insp	Test	Post-Test	
☒	☐	☐	1. Nameplate - Manufacturer
☒	☐	☐	2. Component Number-Procurement and/or Model Number
☒	☐	☐	3. Process Connection
☒	☐	☐	4. "A" Dimension
☒	☒	☐	5. Material, Body (Verification may be by either inspection or test)
☒	☒	☐	6. Material, Process Connection (Verification may be by either inspection or test)
☐	☒	☐	7. Confinement
☐	☒	☐	8. Internal Pressure
☐	☒	☐	9. Cracking Pressure Setting
☐	☒	☐	10. Reseal Pressure
☐	☒	☐	11. Seat Leakage, Reverse Flow After Cracking
☐	☒	☐	12. Seismic Condition A
☐	☒	☐	13. Flow Rate
SECTION 3 VERIFY BY INSPECTION			
* See Attachment G of Desk Instruction for Sampling Size			
Characteristic: Nameplate - Manufacturer			
Sample Size*: All Items			
Acceptance Criteria: NUPRO Company			
Receipt Inspection Plan / Report #: _____			
References (see Section 7): _____			

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Title: **NUPRO PROCESS VENT/MCO CHECK / RELIEF VALVE –
PREVENT BACK FLOW FROM PROCESS VENT INTO MCO**Characteristic: **Component Number-Procurement and/or Model Number**Sample Size*: **All Items**Acceptance Criteria: **SS-RL4M8F8 , (Per SNF-5303, Section H, Design Data Sheet)**

Receipt Inspection Plan / Report #: _____

References (see Section 7): **Nupro Company - "HL4" Series Low pressure Proportional Relief Valves.**Characteristic: **Process Connection, Inlet / Outlet**Sample Size*: **All Items**Acceptance Criteria: **1/2" Male NPT X 1/2" FNPT**

Receipt Inspection Plan / Report #: _____

References (see Section 7): _____

Characteristic: **Material, Body**Sample Size*: **Normal Sample Size**Acceptance Criteria: **Stainless Steel**

Receipt Inspection Plan / Report #: _____

References (see Section 7): _____

Characteristic: **Material, Process Connection**Sample Size*: **Normal Sample Size**Acceptance Criteria: **Stainless Steel**

Receipt Inspection Plan / Report #: _____

References (see Section 7): _____

Characteristic: **"A" Dimension**Sample Size*: **Normal Sample Size**Acceptance Criteria: **Nominal 5.43 inch**

Receipt Inspection Plan / Report #: _____

References (see Section 7): _____

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Title: **NUPRO PROCESS VENT/MCO CHECK / RELIEF VALVE –
PREVENT BACK FLOW FROM PROCESS VENT INTO MCO**

SECTION 4 VERIFY 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: **Confinement**

Acceptance Criteria: **No Leakage at Test Pressure of 165 psig**

Sample Size*: **Normal Sampling Size**

Actual Test Value:

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

Characteristic for Test: **Internal Pressure**

Acceptance Criteria: **150 psig and full vacuum**

Sample Size*: **Normal Sampling Size**

Actual Test Value:

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

Characteristic for Test: **Cracking Pressure Setting**

Acceptance Criteria: **Nominal 30 psig (must not exceed 31 psig). Lockwire to be in place to maintain pressure relief setting after test.**

Sample Size*: **Normal Sampling Size**

Actual Test Value:

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

Characteristic for Test: **Real Pressure**

Acceptance Criteria: **Reseal must occur > 20 psig.**

Sample Size*: **Normal Sampling Size**

Actual Test Value:

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

Characteristic for Test: **Seat Leakage, Reverse Flow After Cracking**

Acceptance Criteria: **Pressure test to design pressure (150 psig) (bubble tight standards < 10-3 ml He/sec.)**

Sample Size*: **Normal Sampling Size**

Actual Test Value:

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

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Title: **NUPRO PROCESS VENT/MCO CHECK / RELIEF VALVE –
PREVENT BACK FLOW FROM PROCESS VENT INTO MCO**

Characteristic for Test: **Seismic Condition A**

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

Sample Size*: **Destructively Test Only One Item**

Actual Test Value:

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

Characteristic for Test: **Flow Rate**

Acceptance Criteria: **Nominal 10 std cft/min at 30 psig.**

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**

Commercial Grade Item Upgrade Dedication Form

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Title: NUPRO PROCESS VENT/MCO CHECK / RELIEF VALVE – PREVENT BACK FLOW FROM PROCESS VENT INTO MCO

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
Nameplate - Manufacturer	Nupro Valve Mfg. Company	X									
Component Number- Procurement and/or Model Number	SS-RL4M8F8, (Per SNF- 5303, Section H, Design Data Sheet)	X									
Process Connection	1/2 inch MNPT X 1/2 inch FNPT	X									
"A" Dimension	Nominal 5.43 inch	X									
Material, Body	Stainless Steel	X									
Material, Process Connection	Stainless Steel	X									
Confinement	No Leakage at Test Pressure of 165 psig (No Bubbles)		X								
Internal Pressure	Full Vacuum (No Bubbles)		X								

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Title: NUPRO PROCESS VENT/MCO CHECK / RELIEF VALVE – PREVENT BACK FLOW FROM PROCESS VENT INTO MCO

Cracking Pressure Setting	Nominal 30 psig (must not exceed 31 psig). Lockwire to be in place to maintain pressure relief setting after test.	X																		
Reseal Pressure	Reseal must occur > 20 psig	X																		
Seat Leakage, Reverse Flow After Cracking	Pressure test to design pressure (150 psig) (bubble tight standards < 10 ⁻³ ml/sec.)	X																		
Seismic Condition A	Maintain Critical Function Before and After Seismic event.	X																		
Flow Rate	Nominal 10 std cft/min at 30 psig.	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.

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

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Title: NUPRO PROCESS VENT/MCO CHECK / RELIEF VALVE --
PREVENT BACK FLOW FROM PROCESS VENT INTO MCO

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:	