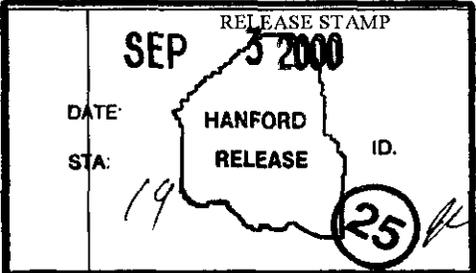


ENGINEERING CHANGE NOTICE

1. ECN **662314**

Proj.
ECN

2. ECN Category (mark one) Supplemental <input type="checkbox"/> Direct Revision <input checked="" type="checkbox"/> Change ECN <input type="checkbox"/> Temporary <input type="checkbox"/> Standby <input type="checkbox"/> Supersedeure <input type="checkbox"/> Cancel/Void <input type="checkbox"/>	3. Originator's Name, Organization, MSIN, and Telephone No. T. Nuxall, CVDF, R3-86, 372-3739		4. USQ Required? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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 <input type="checkbox"/> Yes (fill out Blk. 12b) <input checked="" type="checkbox"/> 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 ^{ITMC} _{9/2/00} SNF-4419, Rev. 1 ^{9/2/00}		13b. Design Baseline Document? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		SC
Updated document numbers and deleted revision numbers. USQ Approval: CX B.1 from AP-NS-4-001-15.				
14a. Justification (mark one) Criteria Change <input type="checkbox"/> Design Improvement <input checked="" type="checkbox"/> Environmental <input type="checkbox"/> Facility Deactivation <input type="checkbox"/> As-Found <input type="checkbox"/> Facilitate Const <input type="checkbox"/> Const. Error/Omission <input type="checkbox"/> Design Error/Omission <input type="checkbox"/>				
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.				



SNF-4418
Revision 2

Nupro Inline Instrument Air Filters

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-4418
Revision 2

ECN 662314

Nupro Inline Instrument Air Filters

Project No: W-441

Document Type: RPT

Division: SNF

C Miska
FH

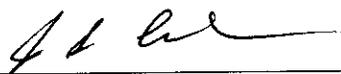
Date Published
September 2000

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

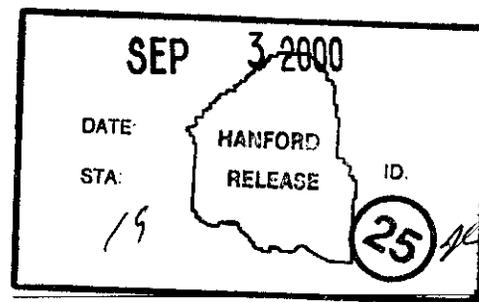
Project Hanford Management Contractor for the
U.S. Department of Energy under Contract DE-AC06-96RL13200

Fluor Hanford

P.O. Box 1000
Richland, Washington


Release Approval

9/3/2000
Date



Release Stamp

TRADEMARK DISCLAIMER

Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors.

This report has been reproduced from the best available copy.

Printed in the United States of America

Total Pages: 15

TRADEMARKS

NUPROTM is a Registered Trademark of Nuclear Products Co., Cleveland Ohio

Commercial Grade Item Upgrade Dedication Form

SNF-4418, Rev. 2

ECN No. NA CGI No. CGI-SNF-D-Various-P4-039

Page 2 of 11

Title: **NUPRO INLINE INSTRUMENT AIR FILTERS**

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)

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 of 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 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. **Filter out particulates which may be in the instrument air supply to the air operated isolation valves to prevent common mode valve actuator failure.**

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

Commercial Grade Item Upgrade Dedication Form

SNF-4418, Rev. 2

ECN No. NA CGI No. CGI-SNF-D-Various-P4-039

Page 3 of 11

Title: **NUPRO INLINE INSTRUMENT AIR FILTERS**

C. Host Component Safety Function (if applicable): **NA**
1.

D. Failure Mode(s) and the effects on component or system safety function (see Worksheet 1):
1. **Clogged Filter/High Differential Pressure - low flow and filter efficiency results in slower operation of the valve to actuate when air is supplied. This filter condition would not affect the valve stroke time when air is vented from the actuator for the valve to assume its safety position.**
2. **Break / Failure of filter element - release of particulates into solenoid valve and isolation valve actuator.**

Section 4 Environmental & Natural Phenomena Hazard Design

Environmental Qualification Required: Yes [] No [X]	If yes: Environmental Qualification Requirements Limiting Environmental Conditions: Required Safety Functions: Qualification Period:
---	---

Environmental Condition B

Natural Phenomena Hazard (NPH) Design Required: Yes [] No [X]	If yes: NPH Design Requirements Performance Category: PC-1 NPH Design Req'ts.: NA Required Safety Functions: Remove possible particulates from instrument air supply to isolation valves actuators.
---	---

HNF-PRO-97

SNF-5303

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: AMSE B31.3 Fluid Category D	Safety Analysis Report (SAR): HNF-SD-SNF-SAR-002	Drawings: H-1-82161; H-1-82165 for System 13-2 SCHe filters HNF-SD-SNF-SEL-002
---	--	---

Vendor Manual/Manufacturer/Supplier Information: **Swagelok Companies - "FW" Series All Welded Inline Filters**

Other: **NA**

Commercial Grade Item Upgrade Dedication Form

SNF-4418, Rev. 2

ECN No. NA CGI No. CGI-SNF-D-Various-P4-039
 Title: NUPRO INLINE INSTRUMENT AIR FILTERS

Page 4 of 11

Section 9 Critical Characteristics

Critical Characteristics Verification Document: Vendor Specifications; HNF-SD-SNF-SEL-002	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	1, IN	X	
Component Number- Procurement and/or Model Number	SS-4FW-2, (Per SNF-5303, Section G, Design Data Sheets)	1, IN	X	

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

Body Material	Stainless Steel (Note 3)	1, IN 1, T	X	
Process Connection	1/4 inch Swagelok	1, IN	X	
"A" Dimension	Nominal 2 3/16 inch	1, IN	X	

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

Pressure Boundary Integrity	Pressure Test at 165 psig (leak tightNote 2)	1, T		X
Environmental	Note 1			
Seismic Condition	NA			
Flow Capacity	Nominal 4.98 scfm air at 70°F. Pressure drop 10 psi to atmosphere.	1, T		X

<p>4. Notes and Legend:</p> <ol style="list-style-type: none"> 1. The filter material 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. Pressure test at 110% of design condition pressure of 150 psig. 3. Material verification acceptance method may be by either inspection or test. <p>Rev. 2: Updated reference documentation.</p>	<p>Acceptance Method:</p> <ol style="list-style-type: none"> 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 Review and Approval

Approvals: *all for section*
 Designated Engineer: *Carol Van der Vliet 9/2/00*
 Design Authority: *[Signature] 9/2/00*
 QA Engineer: *Frank M. Chapin 9/2/00*

Commercial Grade Item Upgrade Dedication Form

SNF-4418, Rev. 2

ECN No. NA CGI No. CGI-SNF-D-Various-P4-039

Page 5 of 11

Title: **NUPRO INLINE INSTRUMENT AIR FILTERS**

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 [X]; If Yes, indicate failure Mode _____
Corrosion	The gradual deterioration of a material due to chemical or electrochemical reactions, such as oxidation, between the material and its environment.	Yes [] No [X]; 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 [X]; 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 [X]; 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 [X]; 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 [X]; If Yes, indicate failure Mode _____
Seizure	Binding of a normally moving item through excessive pressure, temperature, friction, jamming.	Yes [] No [X]; 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 [X]; 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 [X]; 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 [X]; 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 [X]; If Yes, indicate failure Mode _____
Ductile Fracture	Fracture characterized by tearing of metal accompanied by appreciable gross plastic deformation.	Yes [] No [X]; If Yes, indicate failure Mode _____
Section 2 Additional Failure Modes Applicable to the Component Under Evaluation		
1. Failure/rupture of filter element		

Commercial Grade Item Upgrade Dedication Form

SNF-4418, Rev. 2

ECN No. NA CGI No. CGI-SNF-D-Various-P4-039

Page 6 of 11

Title: NUPRO INLINE INSTRUMENT AIR FILTERS

CHECKLIST 1 ACCEPTANCE METHOD 1 SPECIAL TEST/INSPECTION VERIFICATION

SECTION 1			
Item Description: NUPRO Inline Instrument Air Filters for Air Operated Isolation Valves. System #: 07, 13-1, 13-2, 46-1	Equip #: Sys. 07 VPS-F-1*05 VPS-F-1*09 VPS-F-1*11 VPS-F-1*17 Sys. 13-1 HE-F-1*02 HE-F-1*06 Sys. 13-2 SCHe-F-5*12 SCHe-F-5*31 SCHe-F-5*51 SCHe F-5*71 Sys. 46-1 PWC-F-1*03 PWC-F-1*30 Procurement and/or Model #: SS-4FW-2		
Manufacturer (Address/Phone): NUPRO 2451 Alamo S. E Albuquerque, NM. 87106 (505) 843-6078 P.O. #	Supplier (Address/Phone): TBD		
SECTION 2 CRITICAL CHARACTERISTICS TO BE VERIFIED BY METHOD 1.			
Insp	Test	Post-Test	
X			1. Nameplate - Manufacturer
X			2. Nameplate - Model Number
X			3. "A" Dimension
X			4. Process Connection
X	X		5. Body Material (Verification may be by either inspection or test)
	X		6. Pressure Boundary Integrity
	X		7. Flow Capacity
SECTION 3, VERIFIED BY INSPECTION			
* See Attachment G of Desk Instruction for Sampling Size			
Characteristic: Nameplate - Manufacturer			
Sample Size*: All Items			
Acceptance Criteria: NUPRO			
Receipt Inspection Plan / Report #: _____			
References (see Section 7): _____			

Commercial Grade Item Upgrade Dedication Form

SNF-4418, Rev. 2

ECN No. NA CGI No. CGI-SNF-D-Various-P4-039

Page 7 of 11

Title: NUPRO INLINE INSTRUMENT AIR FILTERS

Characteristic: **Component Number-Procurement and/or Model Number**

Sample Size*: **All Items**

Acceptance Criteria: **SS-4FW-2, (Per SNF-5303, Section G, Design Data Sheet)**

Receipt Inspection Plan / Report #: _____

References (see Section 7): **Swagelok Companies - "FW" Series All Welded Inline Filters**

Characteristic: **Process Connection**

Sample Size*: **All Items**

Acceptance Criteria: **1/4 inch Swagelok**

Receipt Inspection Plan / Report #: _____

References (see Section 7):

Characteristic: **"A" Dimension**

Sample Size*: **All Items**

Acceptance Criteria: **Nominal 2 3/16 inch**

Receipt Inspection Plan / Report #: _____

References (see Section 7):

Characteristic: **Body Material**

Sample Size*: **Normal Sampling Size**

Acceptance Criteria: **Stainless Steel**

Receipt Inspection Plan / Report #: _____

References (see Section 7): _____

Commercial Grade Item Upgrade Dedication Form

SNF-4418, Rev. 2

ECN No. NA CGI No. CGI-SNF-D-Various-P4-039

Page 8 of 11

Title: NUPRO INLINE INSTRUMENT AIR FILTERS

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 165 psig (leak tight)**
 Sample Size*: **Normal Sampling Size**
 Actual Test Value:
 Test Plan and Report #: _____ References (see Section 7): _____

Characteristic for Test: **Flow Capacity**
 Acceptance Criteria: **Nominal 4.98 scfm air at 70°F. Pressure drop 10 psi to atmosphere.**
 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

SNF-4418, Rev. 2

Page 9 of 11

ECN No. NA CGI No. CGI-SNF-D-Variou-P4-039

Title: NUPRO INLINE INSTRUMENT AIR FILTERS

SECTION 5 TEST / INSPECTION SUMMARY (Acceptance Method 1)

I. 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	X									
Component Number- Procurement and/or Model Number	SS-4FW-2, (Per SNF-5303, Section G, Design Data Sheet)	X									
"A" Dimension	Nominal 2 3/16 inch	X									
Body Material	Stainless Steel	X									
Process Connection	1/4 inch Swagelok	X									
Pressure Boundary Integrity	Pressure Test at 165 psig (leak tight)		X								
Flow Capacity	Nominal 4.98 scfm air at 70°F. Pressure drop 10 psi to atmosphere.		X								

Commercial Grade Item Upgrade Dedication Form

SNF-4418, Rev. 2
Page 10 of 11

ECN No. NA CGI No. CGI-SNF-D-Various-P4-039
Title: NUPRO INLINE INSTRUMENT AIR FILTERS

2. DISPOSITION OF UNVERIFIED OR FAILED CRITICAL CHARACTERISTICS	
Critical Characteristic	Disposition
<p>3. SIGNATURE INDICATES ALL CRITICAL CHARACTERISTICS VERIFIED SATISFACTORY OR ACCEPTABLY DISPOSITIONED AND COMMERCIAL GRADE DEDICATION IS SATISFACTORY AND COMPLETE.</p>	
Testing Agency Approval: _____ Date _____ Testing Agency QA Engineer: _____ Date _____	BUYER VERIFICATION Design Authority: _____ Date _____ QA Engineer: _____ Date _____

Commercial Grade Item Upgrade Dedication Form

SNF-4418, Rev. 2
Page 11 of 11

ECN No. NA CGI No. CGI-SNF-D-Various-P4-039
Title: NUPRO INLINE INSTRUMENT AIR FILTERS

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