## ENCLOSURE 3 TO ATTACHMENT A

## GEH Report, 0000-0105-0835-R2, Pilgrim Nuclear Power Station, ATWS High Pressure

### Recirculation Pump Trip (RPT)", Rev. 2, March 2010

### **GE Non-Proprietary Information**

<u>(15 pages)</u>



HITACHI



0000-0105-0835-R2 Pilg-SRVs-T506-ATWS HiPres RPT-Calc-2010 Revision Number: 2 DRF: 0000-0105-0829 March 2010

# Instrument Limits Calculation Entergy Operations Inc. Pilgrim Nuclear Power Station

# ATWS High Pressure Recirculation Pump Trip (RPT)

[Signed electronically as part of the Independent Verification process.] Preparers: A. Poulos

Verifier: R. E. Miller

Approved: B. Nelson

## IMPORTANT NOTICE REGARDING CONTENTS OF THIS REPORT Please Read Carefully

#### A. Disclaimer

The only undertakings of GE Hitachi Nuclear Energy (GEH) respecting information in this document are contained in the contract between Entergy Nuclear Operations, Inc. (ENOI) and GEH regarding setpoint changes for the Pilgrim Nuclear Power Station (PNPS; Pilg). Nothing contained in this document shall be construed as changing the applicable contract. The use of this information by anyone other than ENOI for Pilg, is not authorized. With respect to any unauthorized use, GEH makes no representation or warranty, and assumes no liability as to the completeness, accuracy or usefulness of the information contained in this document, or that its use may not infringe privately owned rights.

#### **REVISION SUMMARY:**

Rev	Required Changes to Achieve Revision
0	Initial Issue
1	a. Changed current Allowable Value (AV) to be 1175 ± 5 psig, and the associated sheet of Ref. 3.1.
	b. Changed Process Element to "none" and added reference.
	c. Changed Pressure Transmitter Model ID No. to 1151 GP9 E22T0003BP.
	<ul> <li>Identified Pressure Transmitter Mounting position Effect, Zero Shift as a 3 Sigma error.</li> </ul>
	<ul> <li>Stated that Calibration Tool and Calibration Stand errors are "Not required" and referred to Comment 2.</li> </ul>
	f. Added Revision 3 to Ref. 3.2 [Pilgrim Nuclear Power Station Nuclear Station DIR response].
	g. Made miscellaneous editorial changes, including deleting unused boxes.
	h. Changed items previously identified as "Not provided" to "Not required".
2	a. Changed current Nominal Trip Setpoint to be 1175 psig, and the Ref. to 3.2.
	b. Changed the identification of the analysis setpoint to be an Allowable Value (AV), and added Comment 15 to explain what Task T0902 uses.
	c. Identified that the current Operational Limit still applies.
	d. Changed the new resulting Nominal Trip Setpoint (NTSP).
	e. Deleted the Application Specific Setpoint Adjustments table that showed margins from the AL, as that does not apply.
	f. Updated Ref. 5.1.
	g. Made miscellaneous editorial changes.

#### Contents:

This document is a supplemental analysis data sheet to Reference 1. Included in this document in sequential order are:

- The setpoint function for the system,
- The setpoint function analyses inputs and the source reference of the inputs,
- The device in the setpoint function instrument loop,
- The component analysis inputs and input sources,
- The calculated results,
- Input comments and result recommendations,
- References.

#### Reference(s) **Setpoint Characteristics:** Definition Limiting event for the setpoint: Initiate Recirculation Pump Trip (RPT) and Alternate Rod Insertion (ARI) when the Reactor **Event Protection:** pressure exceeds the switch setpoint, to provide a back-up method for controlling reactivity in the unlikely event that the Reactor fails to scram when Ref. 3.1 (Page 3) required. Required $\boxtimes$ Not Required Function After Earthquake Ref. 3.1 (Page 17) $\boxtimes$ **Setpoint Direction** Increasing Decreasing Ref. 3.1 (Page 23) Single $\boxtimes$ Multiple Ref. 3.2 (Section Single or Multiple Channel (Sec.) 4.1, Item 8J) LER Calculation Basis if Standard (Conservative) LER Calculation X, or Ref. 1 (Sec. 5.3); Ref. **Multiple Channel Configuration Specific LER Calculation** 2 (Sec. 1.2.3). Trip Logic for Configuration Specific LER Calculation n/a

1. Function: ATWS High Pressure Recirc Pump Trip

n/a: not applicable

BIO: background info only.

	Value/Equation		Reference(s)	
Current Function Limits:	Value Present Calculation	Value Post Modification Condition		
Analytical Limit	1205 psig Upper 1145 psig Lower		Rof. 3.1 (Pages 9, 15, 40)	Comment 15
Tech Spec Allowable Value	1175 ± 5 psig	1220 psig Upp <del>er</del>	Ref. 3.1 (Sheet 2)	Ref. 5.1
Setpoint	1175 psig	Results in Section	Ref.3.2 (Sec. 4.1 Item 2)	
Operational Limit	1040	) psig	Ref. 3.1 (Pag	ge 15, 23, 40)

Plant Data:	~ Value	Sigma if not 2	Reference(s)
Primary Element Accuracy	n/a		Ref.3.1 (Page 18)
Process Measurement Accuracy (PMA)	-0.003% SP (Bias)	n/a	Ref.3.1 (Page 30 Note 7), Comment 13

#### **Components (or Devices) in Setpoint Function Instrument Loop:**

- Condensing Pot
- Pressure Transmitter
- Analog Trip Module (Master Trip Unit)

## 2. Components:

#### 2.1 Pressure Transmitter

Component Information:	Value/Equation	Reference(s)
Plant Instrument ID No.	PT263-122A,B,C,D	Ref. 3.1 (Page12)
Instrument vendor	Rosemount	Ref. 3.1 (Page14)
Model ID No. (including Range Code)	1151 GP9 E22T0003BP	Ref. 3.1 (Page14)
· · · · · · · · · · · · · · · · · · ·	C2275, C2276, C2275, C2276	
Plant Location(s)	Reactor Building Elevation 51'	Ref. 3.1 (Pages 12, 32)
Process Element	none	Ref.3.1 (Page 18)

#### Inputs:

Vendor Specifications:	Value / Equation	Sigma if not 2	Reference(s)
Top of Scale	1513 psig (20 mAdc)	n/a	Ref. 3.1 (Pages 15, 16)
Bottom of Scale	13 psig (4 mAdc)	n/a	Ref. 3.1 (Pages 15, 16)
Upper Range Limit (URL)	3000 psig	n/a	Ref. 3.1 (Page 16)
Accuracy	± 0.25% Span	3	Ref. 3.1 (Page 18), Ref. 6.1, Comment 7
Temperature Effect	± (0.5% URL + 0.5% Span)/100 degF	3	Ref. 6.2 (Page 3)
Seismic Effect	n/a		Ref. 3.1 (Page 17)
Radiation Effect	n/a		Ref. 3.1 (Pages 17, 28 Note 1), Ref. 3.2 (Sec. 4.1 item 9B)
Humidity Effect	Negligible		Comment 4
Power Supply Effect	< 0.005% Span/Volt = ± 0.375 psig	3	Ref. 3.1 (Pages 23, 32)
RFI/EMI Effect	Negligible		Comment 4
Insulation Resistance Effect	Negligible		Ref. 3.1 (Pages 17, 18), Comment 4
Over-pressure Effect	Not required		Ref. 6.1, Ref. 6.2, Ref. 3.2 (Sec. 4.1 Item 8C), Comment 2
Mounting Position Effect:			
Span Effect	No effect		Ref. 6.2 (Page 4)
Zero Shift	<ul> <li>1 in H<sub>2</sub>O (Calibrated Out)</li> </ul>	3	.Ref. 6.2 (Page 4) Ref. 3.2 (Sec. 4.1 item 9A)
Static Pressure Effect	n/a		Ref.3.1 (Page 20), Comment 5

# 2.1 Pressure Transmitter (cont'd)

Plant Data:	Value	Reference(s)
Calib Temperature Range	60 - 105 <sup>o</sup> F	Ref. 3.2 (Sec. 4.1 Item 8F.)
Normal Temperature Range	60 - 105 <sup>o</sup> F	Ref. 3.1 (Page 32), Ref. 3.2 (Sec. 4.1 Item 8F.)
Trip Temperature range	60 - 105 <sup>o</sup> F	Ref. 3.2 (Sec. 4.1 Item 8F.)
Plant Seismic value	Not required	Comment 4
Plant Radiation value	Not required	Comment 4
Plant Humidity value	Not required	Comment 4
Power Supply Variation value	23 V to 28 V	Ref. 3.1 (Page 32)
RFI/EMI value	Not required	Comment 4
Over-pressure value	1500 psig	Ref. 3.2 (Sec. 4.1 Item 8D)
Static Pressure value	n/a	Comment 5

Drift:	Value	Sigma if not 2	Reference(s)
Current Calib. Interval	24 Mo. Includes extra 25%	n/a	Ref. 3.1 (Pages 4, 16, 39)
Desired Calib. Interval	30 Mo. Includes extra 25%	n/a	Ref. 3.1 (Pages 4, 16, 39)
Drift Source	☐ Vendor	n/a	Ref. 1 (Sec. 4.3.1)
	± 0.25% URL / 6 months		Ref.3.1 (Pages 21, 32 Note 12),
Drift Value	= ± 16.770510 psig		Comment 9, Comment 11

## 2.1 Pressure Transmitter (cont'd)

Calibration:	Value / equation	Sigma if not 3	Reference(s)
	± 0.04 mA		Ref. 3.1 (Pages 21, 39).
As Left Tolerance	± 0.25% SP		Comment 3
	± 0.04 mA		
Leave Alone Tolerance	± 0.25% SP		Ref. 3.1 (Pages 4, 39)
Input Calibration Tool:	Not required		Ref. 3.1, Comment 2
Accuracy	± 0.25% SP		Ref. 3.1 (Pages 4, 18, 39), Comment 3
Resolution / Readability	Not required		Comment 2
Minor Division	Not required	n/a	Comment 2
Upper Range	Not required	n/a	Comment 2
Temperature Effect	Not required	1	Comment 2
· · ·	ZHAN X CAN THE SOLATION		
Input Calibration Standard:	Not required		Ref. 3.1, Comment 2
Accuracy	Included in Input Calibration Tool Accuracy		Ref. 3.1 (Pages 4, 39)
Resolution / Readability	Not required		Comment 2
Minor Division	Not required	n/a	Comment 2
Upper Range	Not required	n/a	Comment 2
Temperature Effect	Not required		Comment 2
Output Calibration Tool:	Not required		Ref. 3.1, Comment 2
Accuracy	Included in Input Calibration Tool Accuracy	,	Ref. 3.1 (Pages 4, 39)
Resolution / Readability	Not required		Comment 2
Minor Division	Not required	n/a	Comment 2
Upper Range	Not required	n/a	Comment 2
Temperature Effect	Not required		Comment 2
<b>Output Calibration Standard:</b>	Not required		Ref. 3.1, Comment 2
Accuracy	Included in Input Calibration Tool Accuracy		-Ref. 3.1 (Pages 4, 39)
Resolution / Readability	Not required		Comment 2
Minor Division	Not required	n/a	Comment 2
Upper Range	Not required	n/a	Comment 2
Temperature Effect	Not required		Comment 2
		a za	an a

## 2.2 Analog Trip Module (Master Trip Unit)

Component Information:	Value/Equation	Reference(s)	
Plant Instrument ID No.	PIS263-123A, 123B, 123C and 123D	Ref.3.1 (Pages 12, 14)	
Instrument vendor	GE	Ref.3.1 (Page 14)	
Model ID No. (including Range Code)	184C5988G112	Ref.3.1 (Page 14)	
Plant Location(s)	C2277, C2278, C2277, C2278	Ref.3.1 (Page 12)	
Process Element	n/a		

Inputs:

,

Vendor Specifications:	Value / Equation	Sigma if not 2	Reference(s)
Top of Scale	1500 psig (20 mAdc)	n/a	Ref. 3.1 (Page 15, Attachment 2 Page 9)
Bottom of Scale	0 psig (4 mAdc)	n/a	Ref. 3.1 (Page 15, Attachment 2 Page 9)
Upper Range Limit	1500 psig (Full Scale)	n/a	Ref. 3.1 (Attachment 2 Page 9)
Accuracy: Trip Repeatability	± 0.13% Full Scale (FS) (to 113.5 <sup>o</sup> F) ± 0.20% FS (113.5 to 142.5 <sup>o</sup> F)		Ref. 3.1 (Pages 19, 31, Attachment 1 Page 3, Attachment 3 Page 2 Sec. 2.3), Comment 6, Comment 12
Temperature Effect	Included in Accuracy		Ref.3.1 (Pages 19, 31, Attachment 3 Page 2 Sec. 2.3), Comment 6
Seismic Effect	n/a		Ref. 3.1 (Page 17)
Radiation Effect	Not required		Comment 4
Humidity Effect	Not required		Comment 4
Power Supply Effect	n/a		Ref. 3.1 (Pages 19, 31)
RFI/EMI Effect	Negligible		Comment 4
Insulation Resistance Effect	Negligible		Comment 4
Over-pressure Effect	n/a		Comment 5
Static Pressure Effect	n/a		Comment 5

# 2.2 Analog Trip Module (Master Trip Unit) (cont'd)

Plant Data:	Value	Reference(s)
Calib Temperature Range	76 – 105 °F	Ref. 3.2 (Sec. 4.1 Item 8H)
Normal Temperature Range	76 – 105 °F	Ref. 3.2 (Sec. 4.1 Item 8H).
Trip Temperature range	60 – 105 °F	Ref. 3.2 (Sec. 4.1 Item 8G)
Plant Seismic value	Not required	Comment 4
Plant Radiation value	Not required	Comment 4
Plant Humidity value	Not required	Comment 4
Power Supply Variation value	Not required	Comment 4
RFI/EMI value	Not required (Negligible) (mild environment)	Comment 4
Over-pressure value	n/a	Comment 5
Static Pressure value	n/a	Comment 5

Drift:	Value	Sigma if not 2	Reference(s)
Current Calib. Interval	3 Months Includes extra 25%	n/a	Ref. 3.1 (Pages 4, 39)
Desired Calib. Interval	3 Months Includes extra 25%	n/a	Ref. 3.1 (Pages 4, 39)
Drift Source	Vendor ZCalculated	n/a	Ref. 1 (Sec. 4.3.1)
Drift Value	± 0.1% FS / 1 Month = ± 2.904738 psig		Ref. 3.1 (Page 21, Attachment 2 Page 7), Comment 9, Comment 11

Page 9 of 15

Calibration:	Value / equation	Sigma If not 3	Reference(s)	
As Left Tolerance	± 0.02 mA 0.13% SP		Ref. 3.1 (Pages 21, 39), Comment 3	
Leave Alone Tolerance	± 0.02 mA 0.13% SP		Ref. 3.1 (Pages 4, 39)	
Input Calibration Tool:	Not required		Ref. 3.1, Comment 2	
Accuracy	0.13% Full Scale		Ref. 3.1 (Page 18, 39), Comment 3	
Resolution / Readability	Not required	Comment 2		
Minor Division	Not required	n/a Comment 2		
Upper Range	1500 psig		Ref. 3.1 (Page 18)	
Temperature Effect	Not required		Comment 2	
Input Calibration Standard:	Not required		Ref. 3.1, Comment 2	
Accuracy	Included in Input Calibration Tool Accuracy		Ref. 3.1 (Page 4)	
Resolution / Readability	Not required		Comment 2	
Minor Division	Not required	n/a	Comment 2	
Upper Range	Not required	n/a	Comment 2	
Temperature Effect	Not required		Comment 2	
Output Calibration Tool:	Not required		Ref. 3.1, Comment 2	
Accuracy	Included in Input Calibration Tool Accuracy		Ref. 3.1 (Page 4)	
Resolution / Readability	Not required		Comment 2	
Minor Division	Not required	n/a	Comment 2	
Upper Range	Not required	n/a	Comment 2	
Temperature Effect	Not required		Comment 2	
			医中枢的 一种和同时的 相关。	
<b>Output Calibration Standard:</b>	Not required		Ref. 3.1, Comment 2	
Accuracy	Included in Input Calibration Tool Accuracy		Ref. 3.1 (Page 4)	
Resolution / Readability	Not required		Comment 2	
Minor Division	Not required	n/a	Comment 2	
Upper Range	Not required	n/a	Comment 2	
Temperature Effect	Not required		Comment 2	
		나라 사람과		

## 2.2 Analog Trip Module (Master Trip Unit) (cont'd)

## 3. Summary Results:

# **Calculated Values**

Selpoint runcaon	Analytic Limit	Value (from Section 1)	Nominal Trip Setpoint <sup>†</sup>	Meets LER Avoidance Criteria	Spurious Trip Avoidance Criteria
ATWS High Pressure RPT		1220 psig Upper	1212 psig Upper	Y	Y

Excludes head correction.

#### 4. Comments and Recommendations:

- 1. Unless specifically identified as "bias" errors in this document, all instrument uncertainty errors will be considered to be random in nature, even when the "±" symbol is not shown.
- 2. Some plant specific information has not been provided in the current setpoint calculation(s) or documents (e.g., Ref. 3.1) and is considered unnecessary because the impact of this information is included within the instrument accuracy values, or considered negligible, within the current setpoint calculation(s) or documents.
- 3. The current setpoint calculation of record (Ref. 3.1; Page 4) provides combined Measuring and Test Equipment (M&TE) errors for both the Pressure Transmitter (PT) and for the Master Trip Units. Specific information is not provided for Calibration Tools and Calibration Standards. In addition, the current setpoint calculation of record (Ref. 3.1; Page 21) provides Calibration Tolerances (i.e., As Left Tolerances). These four errors are all used in calculating the Allowable Value (AV) and Nominal Trip Setpoint (NTSP).
- 4. Temperature effect, radiation effect, seismic effect, humidity effect, power supply effect, Radio Frequency Interference/ Electromagnetic Interference (RFI/EMI) effect, and Insulation Resistance Effect (IRE) errors are marked "negligible", "not provided", or "included in accuracy" and are considered to have negligible or no impact on the manufacturer's accuracy terms when they are not identified separately.
- Per References 1 and 2, overpressure effects are only applicable to certain pressure measurement devices (e.g., differential pressure transmitters), and static pressure effects are only applicable to certain differential pressure measurement devices. These effects are marked "n/a" for other devices.
- 6. The current setpoint calculation of record (Ref. 3.1; Pages 19 and 31) provides a Temperature Effect for the Master Trip Units (i.e., ± 4.66 psig). However, per the guidance in Attachment 3 (Page 2; Sec. 2.3) of Ref. 3.1, there is no additional Temperature Effect, beyond the instrument Vendor Accuracy of ± 0.13% FS, if the instrument is operated up to a temperature of 113.5°F (with the corresponding external cabinet temperature being up to 76 °F) (Ref. 3.1; Page 31; Comment 9). Also, there is no additional Temperature Effect, beyond the higher instrument Vendor Accuracy of ± 2% FS, if the instrument is operated with a temperature from 113.5 to 142.5 °F (with the corresponding external cabinet temperature being 76 to 105 °F) (Ref. 3.1; Page 31; Comment 9).

Per Ref. 3.2 (Sec. 4.1 Item 8G), the Trip temperature range is 60 - 105 °F. Per Ref. 3.2 (Sec. 4.1 Item 8H), the Normal and Calibration temperature ranges match the 76 - 105 °F. Therefore for the Master Trip Unit Accuracy:

• to account for the Trip temperature range above 76 °F, the higher instrument Vendor Accuracy of ± 2% FS must be used under Trip conditions (in the AV and NTSP1 calculations). No additional Temperature Effect is necessary.

• no Temperature Effect is necessary and the higher instrument Vendor Accuracy of ± 2% FS must be used under Normal and Calibration conditions.

- 7. The accuracy for the Pressure Transmitter includes the combined effects of linearity, hysteresis, and repeatability. (Ref. 6.1)
- 8. The current calibrated span for the Pressure Transmitter is from 13 psig to 1513 psig, resulting in a Calibrated Span (SP) equal to 1500 psig. This calibrated span will encompass the post modification Analytical Limit (AL), Allowable Value (AV), and the Nominal Trip Setpoint (NTSP).
- 9. The current approach in GEH setpoint calculation methodology treats the Drift Effect, Radiation Effect and the Seismic Effect for this instrument to be a 2 sigma values, per Ref. 6.3.

#### 4. Comments and Recommendations (cont'd):

- 10. For conservatism, 1500 psig, the Reactor Pressure Vessel Emergency Limit is used as the possible over-pressure value for the Pressure Transmitters.
- 11. The current setpoint calculation of record (Ref. 3.1; Page 32, Note 12) provides a Vendor Drift for the Pressure Transmitters (PTs) (i.e., ± 7.5 psig), without extrapolation beyond 2 years. However, because the Technical Specifications allow for the calibration interval to include ± 25%, Ref. 1 was used to calculate and extrapolate the PT Drift value to 30 months, for conservatism.

The current setpoint calculation of record (Ref. 3.1, Page 21 and Attachment 2 (Page 7)) provides a calculated Trip Unit (TU) Drift (i.e.,  $\pm$  6.0 psig), with a linear calculation from the Vendor Drift for 1 Month to 4 Months. However, the TU Drift was extrapolated using the method in Ref. 1 for 3 Months plus + 25% (i.e., 3.75 months).

- 12. The analog output inaccuracy for the Master Trip Unit does not apply because there is no Slave Trip Unit to the trip setpoint signal to the Anticipated Transient Without Scram (ATWS) logic, but instead a digital (discrete) output from the Master Trip Unit. (Ref. 3.1; Page 12, Page 19, Attachment 1 Page 4, Attachment 3 Page 2)
- The current setpoint calculation states that Process Measurement Accuracy (PMA) "can be neglected" (Ref. 3.1 Page 30 Note 7). However, for conservatism, the PMA is included in the NTSP calculations to reduce both of them.
- 14. Because the calibration tolerance terminology at PNPS may differ slightly from GEH Instrument Setpoint Methodology, the definitions for the terms used in this document are provided here.
  - a. As Left Tolerance (ALT): This is the tolerance within which the device calibration reading is left after calibration.
  - Leave Alone Tolerance (LAT): This is the tolerance within which calibration need not be performed, and is intended to allow for normal variations in instrument readings due to accuracy and drift.
  - c. As Found Tolerance (AFT): This is the tolerance around the final NTSP, and represents the tolerance with which the instrument loop setpoint can be found during verification of the setpoint, without being classified as out-of-tolerance from an instrument performance point of view. This tolerance ensures that channel operation is consistent with the assumptions or design inputs used in the setpoint calculations and that there is a high confidence in future acceptable channel performance.
- 15. Task T0902, Transient Analysis, used an Allowable Value of 1220 psig as the analysis setpoint. Therefore, no Analytical Limit is applicable. (Ref. 5.1)

16. Transfer functions used in this calculation:

Pressure Transmitter Analog Trip Module

Output (mA) linearly converted from input (psig). Comparison of pressure signal (mA, equivalent to psig) with a reference.

#### 5. References:

- 1. NEDC-32889P, Rev. 3, "General Electric Methodology for Instrumentation Technical Specification and Setpoint Analysis", Class 3, November 2002.
- 2. NEDC-31336P-A, "General Electric Instrument Setpoint Methodology", Class 3, September 1996.
- 3. Current applicable Pilgrim Nuclear Station Unit 1 setpoint documents/inputs:
  - 3.1 Boston Edison Calculation No. I-N1-110 (25-226-C025), "Setpoint Calculation for PIS263-123A, B, C, D: Reactor High Pressure ATWS, Rev. 0, June 10, 1993 (Ref. 3.2, Rev. 0).
  - 3.2 Pilgrim Nuclear Power Station Nuclear Station Task Design Input Request (DIR) response, Rev. 0, August 3, 2009

Pilgrim Nuclear Power Station Nuclear Station DIR response, Rev. 1, December 14, 2009

Pilgrim Nuclear Power Station Nuclear Station DIR response, Rev. 2, December 22, 2009

Pilgrim Nuclear Power Station Nuclear Station DIR response, Rev. 3, February 22, 2010.

- 4. Pilgrim Nuclear Power Station Technical Specifications
  - 4.1. Pilgrim Nuclear Power Station, Technical Specifications (TS). Pilgrim Nuclear Power Not used.
- 5. GEH letters / reports:
  - 5.1. Task T0902, Transient Analysis ATWS, licensing input, "T902 Final", eDRF Section 0000–0110–9898, Rev 2 [internal document; not releasable] [Refer to GEH document, NEDC-33532P (DRF 0000-0108-5986) with the same information.]
- 6. Vendor Specifications
  - 6.1. Rosemount 1151 Pressure Transmitter Specifications (2 sheets) (Ref. 3.2, Rev. 1).
  - 6.2. Rosemount 1151 Pressure Transmitter Product Data Sheet, 008913-0100-4360, Rev HA, March 2008 (Ref. 3.2, Rev. 2).
  - 6.3. Facsimile from Gerry Hanson (Rosemount Nuclear Instrumentation, Inc.) to Daniel Gould (GE), "3 Sigma Compliance", February 26, 1999.

### Loop Diagram:



<sup>(</sup>Ref. 3.1 Page 12)