

# Phase II+ Final Report

## Volume II

DOE Report Number: DOE/ER84626  
DOE Grant No. DE-FG02-06ER84626

### On-Line Monitoring of Accuracy and Reliability of Instrumentation and Health of Nuclear Power Plants

Principal Investigator  
Dr. H.M. Hashemian

DOE Project Manager  
Dr. Madeline Feltus

Prepared for  
U.S. Department of Energy  
Small Business Innovation Research (SBIR) Program



September 2011

## **Phase II+ Final Report**

# **On-Line Monitoring of Accuracy and Reliability of Instrumentation and Health of Nuclear Power Plants**

## **Volume 2**

**September 2011**

### **Prepared by**

H.M. Hashemian  
B.D. Shumaker  
G.W. Morton  
S.D. Caylor

Analysis and Measurement Services Corporation  
AMS Technology Center  
9119 Cross Park Drive  
Knoxville, TN 37923  
Phone: (865) 691-1756  
Fax: (865) 691-9344  
email: [info@ams-corp.com](mailto:info@ams-corp.com)

### **DOE Project Manager**

Dr. Madeline Feltus  
Office of Nuclear Energy  
U.S. Department of Energy, NE-33  
19901 Germantown Road  
Germantown, MD 20874  
email: [madeline.feltus@nuclear.energy.gov](mailto:madeline.feltus@nuclear.energy.gov)

DOE Report Number: DOE/ER84626  
DOE Grant Number: DE-FG02-06ER84626





## **ACKNOWLEDGEMENT**

This material is based upon work supported by the Department of Energy, Office of Nuclear Energy under Award Number DE-FG02-06ER84626.

## **DISCLAIMER**

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. 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. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

## **SBIR/STTR RIGHTS NOTICE**

These SBIR/STTR data are furnished with SBIR/STTR rights under Grant No. DE-FG02-06ER84626. For a period of four (4) years after acceptance of all items to be delivered under this grant, the Government agrees to use these data for Government purposes only, and they shall not be disclosed outside the Government (including disclosure for procurement purposes) during such period without permission of the grantee, except that, subject to the foregoing use and disclosure prohibitions, such data may be disclosed for use by support contractors. After the aforesaid four-year period, the Government has a royalty-free license to use, and to authorize others to use on its behalf, these data for Government purposes, but is relieved of all disclosure prohibitions and assumes no liability for unauthorized use of these data by third parties. This Notice shall be affixed to any reproductions of these data in whole or in part.

## **PREFACE**

This is Volume I of a two-volume report written by Analysis and Measurement Services Corporation (AMS) for the U.S. Department of Energy (DOE) to present the results of a comprehensive research and development (R&D) project aimed at development, validation and implementation of On-Line Monitoring (OLM) technologies for equipment and plant health assessment. This volume describes the project objectives and discusses the main results, and Volume II includes the supporting information and data. For simplicity, the table of contents for both Volume I and Volume II are included in each volume.

This project began in 2006 with a Phase I effort and continued on from 2007 to 2011 in Phase II and subsequently as a Phase II+ (Phase two plus). The report herein concludes the work of the Phase II+ project.

## **TABLE OF CONTENTS**

### **VOLUME I**

1. INTRODUCTION
  - 1.1 Background
  - 1.2 Description of the SBIR Program
  - 1.3 Project Objective
  - 1.4 Project Summaries
    - 1.4.1 Phase I Summary
    - 1.4.2 Phase II Summary
    - 1.4.3 Phase II+ Summary
  - 1.5 Plant Participation
  - 1.6 Project Personnel
  - 1.7 Organization of this Report
2. OLM DATA AND ANALYSIS METHODOLOGY
  - 2.1 Background
  - 2.2 OLM Data for the Phase II+ Project
  - 2.3 OLM Data Analysis Methodology
  - 2.4 OLM Data Analysis Methodology
3. OLM ANALYSIS SUMMARIES
  - 3.1 Farley Unit 1 Cycle 22
  - 3.2 Farley Unit 1 Cycle 23
  - 3.3 Farley Unit 1 Cycle 24
  - 3.4 Farley Unit 2 Cycle 20
  - 3.5 Farley Unit 2 Cycle 21
  - 3.6 North Anna Unit 1 Cycle 20
  - 3.7 North Anna Unit 1 Cycle 21
  - 3.8 North Anna Unit 1 Cycle 22
  - 3.9 North Anna Unit 2 Cycle 21
4. LESSONS LEARNED DURING THE PROJECT
  - 4.1 OLM Data Acquisition

4.2 Analytical Modeling Experience

4.3 Differential Pressure to Flow Conversion

## 5. COMMERCIALIZATION OF OLM

5.1 International Exposure and Publications

5.2 Impact on the U.S. Nuclear Industry

## 6. CONCLUSIONS AND FUTURE WORK

## 7. REFERENCES

Appendix A – On-Line Monitoring Implementation in Nuclear Power Plants

Appendix B – Redundant Sensor Averaging Methods for On-Line Monitoring

Appendix C – Kernel Regression Theory

Appendix D – Tutorial on the Noise Analysis Technique

Appendix E – An Integrated System for Static and Dynamic On-Line Monitoring of Nuclear  
Power Plant Systems and Components

## TABLE OF CONTENTS

### VOLUME II

ACKNOWLEDGEMENT .....	i
DISCLAIMER .....	i
SBIR/STTR RIGHTS NOTICE .....	i
PREFACE .....	ii
TABLE OF CONTENTS VOLUME I .....	iii
TABLE OF CONTENTS VOLUME II .....	v
LIST OF FIGURES .....	vi
LIST OF TABLES .....	vii
1. PRESENTATION OF OLM RESULTS .....	1
1.1 OLM Data for the Phase II+ Project .....	1
1.2 OLM Data Analysis Plots .....	3

Appendix A – Farley Unit 1 OLM Results (Cycle 22)

Appendix B – Farley Unit 1 OLM Results (Cycle 23)

Appendix C – Farley Unit 1 OLM Results (Cycle 24)

Appendix D – Farley Unit 2 OLM Results (Cycle 20)

Appendix E – Farley Unit 2 OLM Results (Cycle 21)

Appendix F – North Anna Unit 1 OLM Results (Cycle 20)

Appendix G – North Anna Unit 1 OLM Results (Cycle 21)

Appendix H – North Anna Unit 1 OLM Results (Cycle 22)

Appendix I – North Anna Unit 2 OLM Results (Cycle 21)

## LIST OF FIGURES

Figure 1.1 Steady-State Deviation Example .....	5
Figure 1.2 Steady-State Drift Example .....	6
Figure 1.3 Steady-State Residual Example .....	6
Figure 1.4 Transient Deviation Example.....	7
Figure 1.5 Data Quality Statistics Plots and Table.....	8
Figure 1.6 Dynamic Narrow Band PSD Window Selection Example .....	11
Figure 1.7 Dynamic Autoregressive Fit of Narrow Band PSD Example .....	12
Figure 1.8 Dynamic Comparison of Narrow Band PSDs Example.....	13

## LIST OF TABLES

Table 1.1 Transmitters Analyzed in Phase II+ Project Per Reactor.....	2
Table 1.2 OLM Data Analyzed for Phase II+ .....	2
Table 1.3 Summary Table Sample Results .....	4
Table 1.4 Dynamic Parameter Table Example .....	10





## **1. PRESENTATION OF OLM RESULTS**

### **1.1 OLM Data for the Phase II+ Project**

The purpose of the Phase II+ project was to expand the OLM analysis demonstration to include data from a total of four nuclear reactors. Engineers from Southern Nuclear Operating Company (SNOC) and Dominion participated in the project by providing OLM data from the Farley nuclear power plant (Units 1 and 2) and the North Anna nuclear power plant (Units 1 and 2). The SNOC and Dominion personnel were primarily interested in applying on-line calibration monitoring for the purpose of transmitter calibration interval extension, therefore, the OLM analysis for the Phase II+ project was focused on the transmitters in each plant that would benefit the most from having their calibration intervals extended. Table 1.1 provides a listing of the services and number of transmitters in each service that were analyzed for the Farley and North Anna plants. Over the course of the project, plant personnel retrieved a 12-hour window of transmitter data each month from the plant computer and sent it to AMS via FTP for analysis. The static data for each plant was sampled at a rate of 1 sample every ten seconds. Overall, static data for 9 operating cycles were included in the analysis. In addition to the static OLM data, AMS acquired dynamic data from Farley Unit 1 and 2 transmitters to evaluate their dynamic response characteristics. Table 1.2 provides a summary of the OLM data from each reactor that was analyzed for this project.

**Table 1.1 Transmitters Analyzed in Phase II+ Project Per Reactor**

Item	Service	Number of Transmitters
1	Steam Flow	6
2	Feedwater Flow	6
3	Steam Generator Level Narrow Range	9
	Steam Generator Level Wide Range	3
4	Steam Pressure	9
5	Pressurizer Level	3
6	Pressurizer Pressure <sup>1</sup>	3
7	RCS Flow	9
8	RCS Pressure	2
9	Turbine First Stage Pressure	2
10	RWST Level <sup>2</sup>	2
11	Containment Pressure <sup>2</sup>	5

1 Farley Units 1 and 2 include 2 additional Pressurizer Pressure transmitters for a total of 5.

2 Only included in Farley Units 1 and 2

**Table 1.2 OLM Data Analyzed for Phase II+**

Item	Reactor	Fuel Cycle	Date(s)	OLM Data Type
1	Farley Unit 1	22	April 2008 – April 2009	Static
2	Farley Unit 1	22	March 2009	Dynamic
3	Farley Unit 1	23	April 2009 – October 2010	Static
4	Farley Unit 1	23	June 2009	Dynamic
5	Farley Unit 1	24	November 2010 – July 2011	Static
6	Farley Unit 2	20	August 2009 – April 2010	Static
7	Farley Unit 2	20	March 2010	Dynamic
8	Farley Unit 2	21	May 2010 – July 2011	Static
9	Farley Unit 2	21	July 2010	Dynamic
10	North Anna Unit 1	20	January 2008 – March 2009	Static
11	North Anna Unit 1	21	April 2009 – August 2010	Static
12	North Anna Unit 1	22	November 2010 – April 2011	Static
13	North Anna Unit 2	21	April 2010 – April 2011	Static

## 1.2 OLM Data Analysis Plots

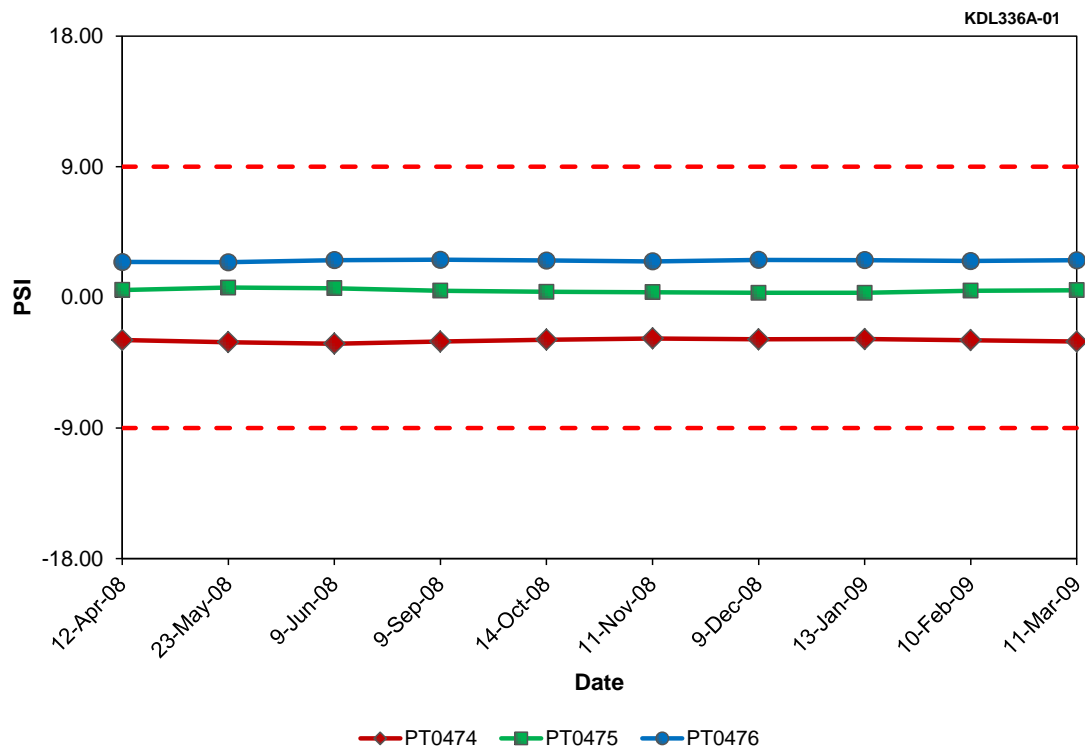
A number of plots and tables are produced by the OLM system software to aid in analysis and present the results. Descriptions of these plots and tables as well as examples of each are provided below:

1. **Static Summary Table.** This table (Table 1.3) list the sensor tag name, service, the result of the steady state data analysis each month, the drift result, the final pass or fail result, and a comment for each sensor. An 'R' indicates the Redundant sensor analysis acceptance limits were exceeded. An 'M' indicates the empirical model analysis acceptance limits were exceeded. A 'D' indicates the drift limits were exceeded.
2. **Steady State Deviation Plot.** This plot (Figure 1.1) presents the average deviation of each sensor from the average of its redundant peers (excluding any outliers) for each time period (typically one month) that is provided during the steady state operation. Deviations that exceed the OLM acceptance criteria (shown in Figure 1.1 as red dashed lines), are indicative of a potential problem with the sensor.  
  
In the analysis performed for Phase II+, the OLM acceptance criteria for deviation, drift, and empirical modeling analysis were set to 0.75% of the sensors' calibrated ranges after discussions with plant personnel from Farley and North Anna.
3. **Steady State Drift Analysis.** This plot (Figure 1.2) provides a visualization of how the deviation for a given sensor changes over time. Drift is calculated from the steady state deviation analysis by subtracting the first month's deviation from each signal (i.e. zeroing the first month). The OLM acceptance criteria limits for drift are shown with red dashed lines.
4. **Steady State Residual Analysis (Empirical Modeling).** This plot (Figure 1.3) presents the average difference between the model estimate and the measured data (also known as the residual) by subtracting the model process estimate from each signal for each month of steady state data. This will identify drift from the training data that is due to sensor drift, process drift, or a common mode drift. Similar to the deviation and drift plots the OLM acceptance criteria limits are shown with red dashed lines.
5. **Transient Deviation Analysis (if available).** This plot (Figure 1.4) presents the deviation of each transmitter from the average of its peers plotted as a function of the transmitter's operating range as the process experiences a transient such as startup or shutdown. Some services do not transition through much of their range during a cycle, and in this case a transient deviation plot is not produced. On the other hand, some services experienced multiple transients during the observation period, resulting in multiple transient deviation plots for some services. Transient deviation analysis plots also incorporate OLM acceptance criteria limits that are denoted by red dashed lines.
6. **Data Quality Statistics.** Data quality statistics are presented by four plots and a table (Figure 1.5). The four plots consist of the mean, standard deviation, skewness, and kurtosis calculated for each month of steady state data. The table contains the average value of each statistic for each sensor in the four plots.

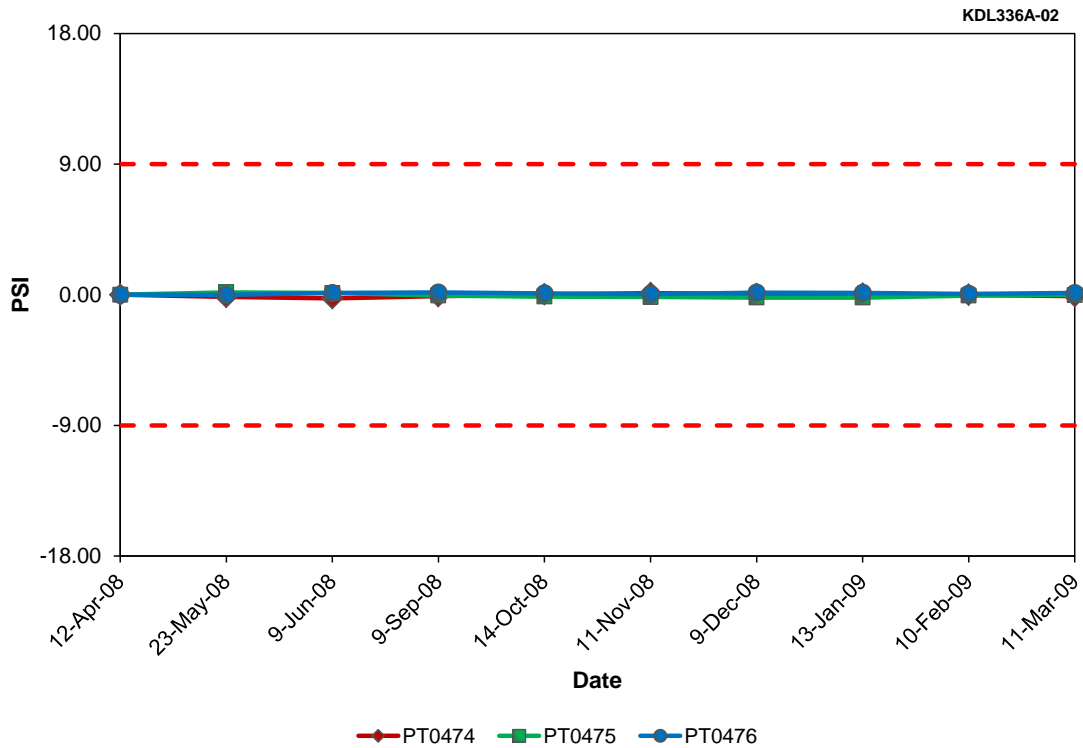
**Table 1.3 Summary Table Sample Results**

Item	Tagname	Service	11 Nov 2008	9 Dec 2008	13 Jan 2009	10 Feb 2009	11 Mar 2009	2 Apr 2009	Drift	Final	Comment
1	FE0474B	SG A STEAM FLOW						R		PASS	
2	FE0475B	SG A STEAM FLOW						R		PASS	
3	FE0476B	FW FLOW TO SG A								PASS	
4	FE0477B	FW FLOW TO SG A								PASS	
5	LT0474	SG A NR LEVEL						R		FAIL	
6	LT0475	SG A NR LEVEL	R	R	R	R	R	R		FAIL	Low bias
7	LT0476	SG A NR LEVEL						R		FAIL	
8	LT0477	SG A WR LEVEL	M	M	M	M	M			FAIL	Drift out (AAKR)
9	PT0474	SG A PRESSURE								PASS	
10	PT0475	SG PRESSURE								PASS	
11	PT0476	SG A PRESSURE								PASS	
12	FE0484B	SG B STEAM FLOW								PASS	
13	FE0485B	SG B STEAM FLOW								PASS	
14	FE0486B	FW FLOW TO SG B								PASS	
15	FE0487B	FW FLOW TO SG B								PASS	

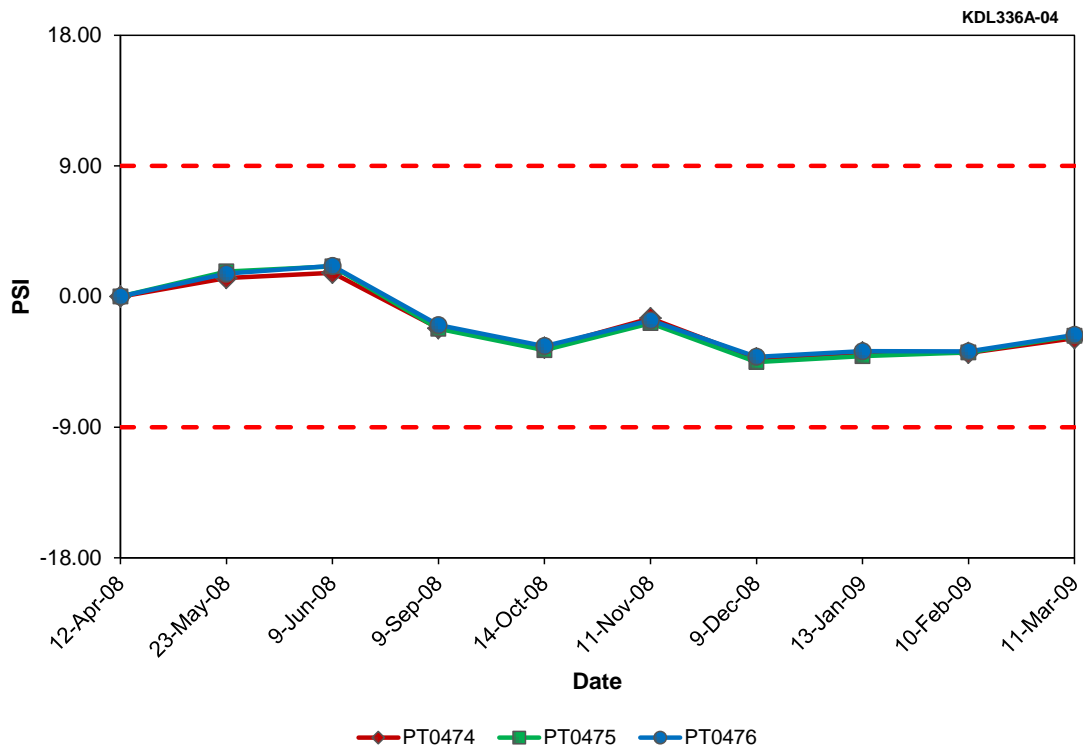
*R = Exceeded Redundant Sensor Analysis Limits    M = Exceeded Model Analysis Limits    D = Exceeded Drift Limits*



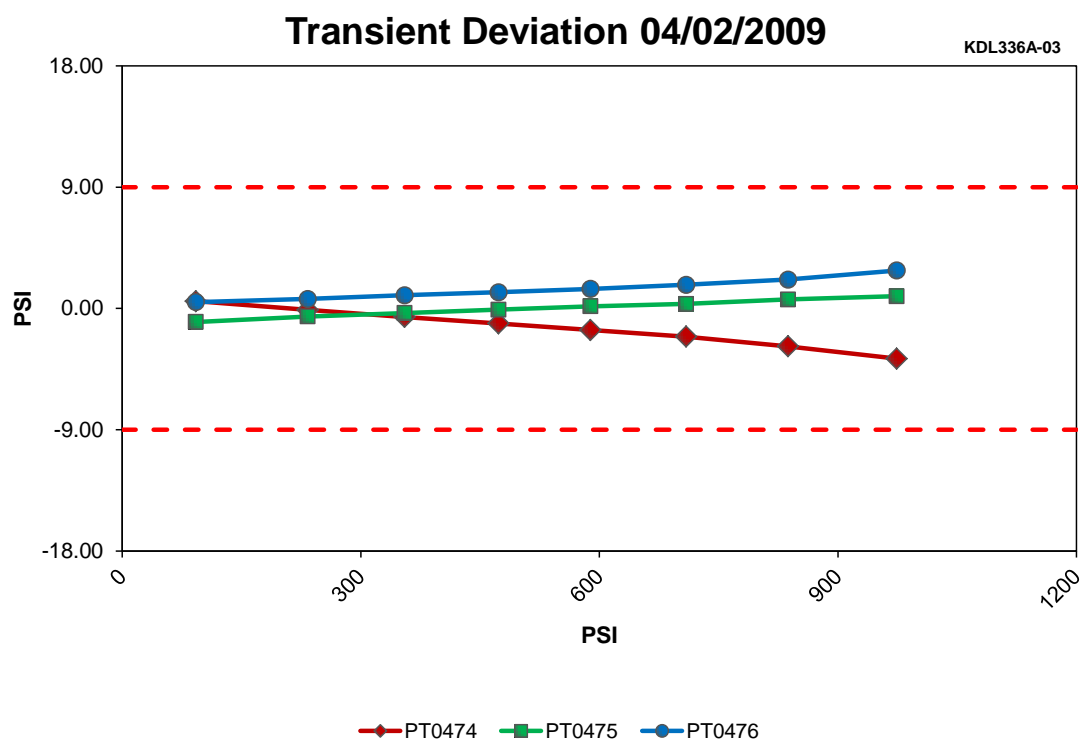
**Figure 1.1 Steady-State Deviation Example**



**Figure 1.2 Steady-State Drift Example**

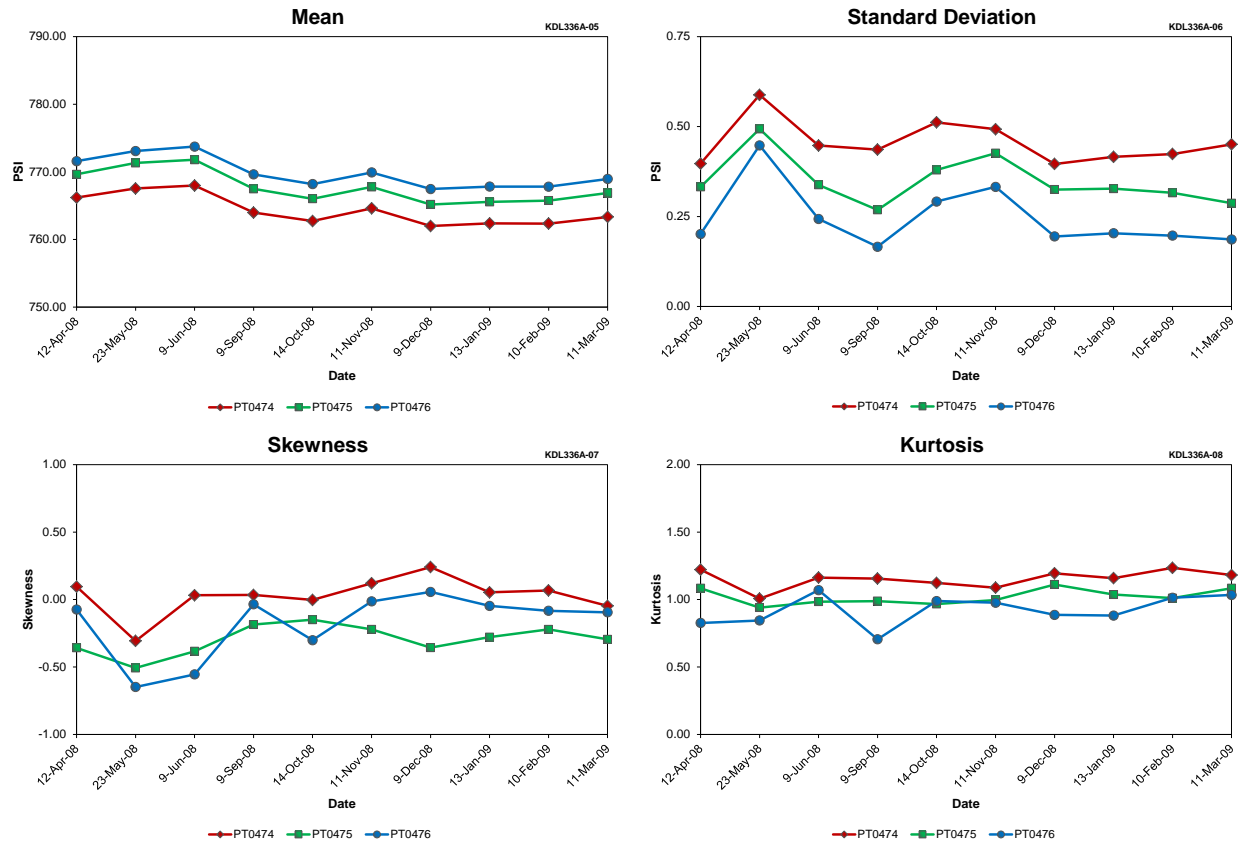


**Figure 1.3 Steady-State Residual Example**



**Figure 1.4 Transient Deviation Example**





**Data Quality Statistics Plots**

**Data Quality Summary Table Example**

Result Type	Tag Names		
	PT0474	PT0475	PT0476
Mean	764.31	767.73	769.82
Std. Dev.	0.46	0.35	0.25
Skewness	0.03	-0.30	-0.18
Kurtosis	1.15	1.02	0.92

**Figure 1.5 Data Quality Statistics Plots and Table**

7. **Dynamic Parameter Table.** This table (Table 1.4) presents the tag name, service, narrow band PSD window low and high frequency that was trimmed from the wide band PSD, the Auto-Regressive (AR) modeling method, and AR order. Once selected, these parameters are stored in the OLM database and become the basis for future analysis.

The reader is referred to the Phase II report [2] for more information on AR modeling and parameter selection.

8. **Dynamic Narrow Band PSD Window Selection.** This plot (Figure 1.6) presents and wide band PSD and shows the low and high frequency selection that are used to create the narrow band PSD. The selected parameters are displayed in the table above the plot. This plot is only included if this is the first analysis for this sensor because it will be the same for subsequent analysis.
9. **Dynamic Autoregressive Fit of Narrow Band PSD.** This plot (Figure 1.7) displays the narrow band PSD and the AR PSD. The difference between the PSDs is displayed in an Error plot at the bottom with the RMS error displayed. Above the plot is a table with the AR parameters.
10. **Dynamic Comparison of Narrow Band PSDs.** This plot (Figure 1.8) presents the current narrow band PSD and the previous Narrow Band PSD for comparison. The difference between the PSDs is displayed in an Error plot at the bottom with the RMS error displayed. Above the table are the current PSD parameters. This is only included if there is a previous analysis for comparison.

The appendices of this Volume contain the OLM Results for Farley Units 1 and 2 and North Anna Units 1 and presented in these plots and tables.

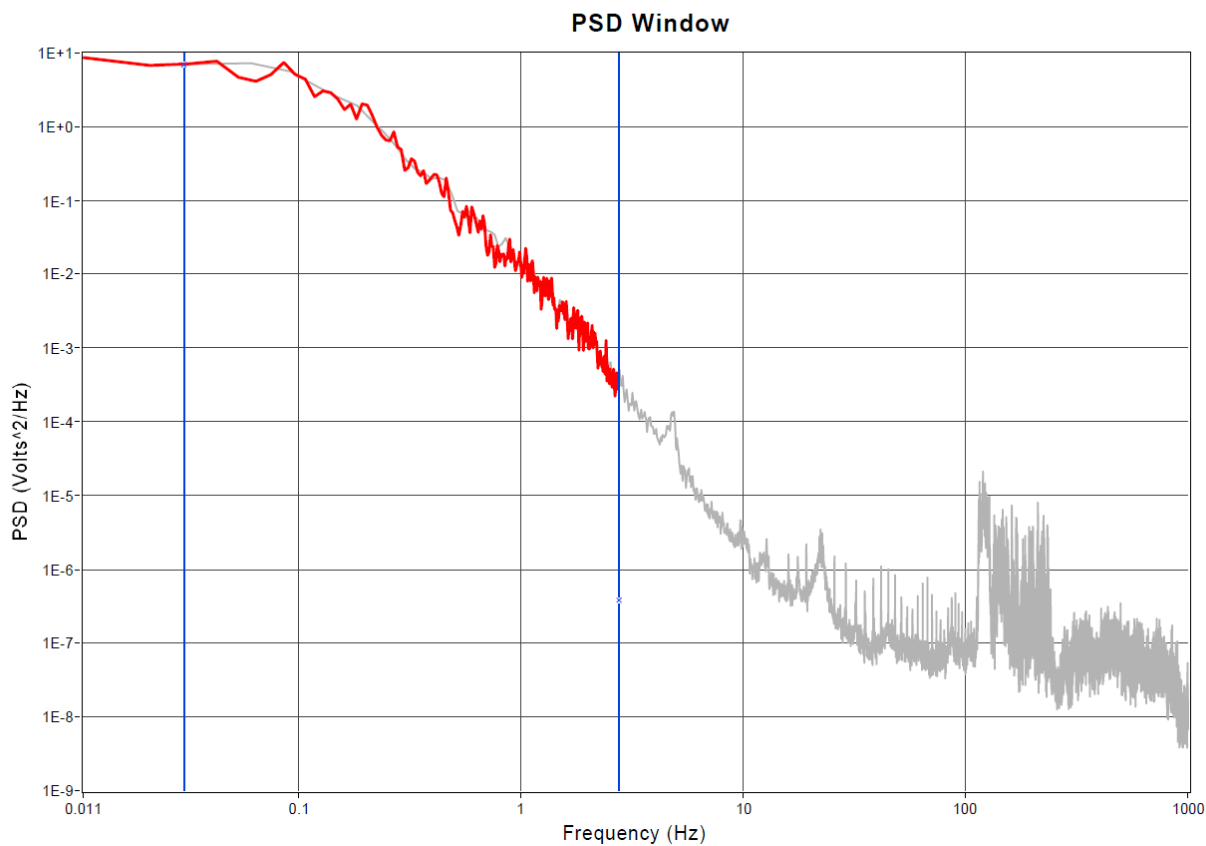
**Table 1.4 Dynamic Parameter Table Example**

Item	Tag Name	Service	Filename	WB PSD Range (Hz)	Decimator	Trim Block Size	Trim Low Freq.	Trim High Freq.	AR Method	AR Order
1	FT0476	FW FLOW	FU2_2010-07_0004	0.0305 : 1000	364	512	0.0107	2.7472	Forward-Backward	11
2	FT0477	FW FLOW	FU2_2010-07_0003	0.0305 : 1000	364	512	0.0107	2.7472	Least-Squares	17
3	FT0486	FW FLOW	FU2_2010-07_0004	0.0305 : 1000	364	512	0.0107	2.7472	Forward-Backward	11
4	FT0487	FW FLOW	FU2_2010-07_0003	0.0305 : 1000	364	512	0.0107	2.7472	Least-Squares	21
5	FT0496	FW FLOW	FU2_2010-07_0004	0.0305 : 1000	364	512	0.0107	2.7474	Forward-Backward	11
6	FT0497	FW FLOW	FU2_2010-07_0003	0.0305 : 1000	364	512	0.0107	2.7472	Least-Squares	21
7	LT0474	SG LEVEL	FU2_2010-07_0001	0.0305 : 1000	85	256	0.0919	11.7643	Forward-Backward	11
8	LT0475	SG LEVEL	FU2_2010-07_0002	0.0305 : 1000	81	256	0.0964	12.3453	Least-Squares	18
9	LT0476	SG LEVEL	FU2_2010-07_0003	0.0305 : 1000	81	256	0.0964	12.3453	Least-Squares	11
10	LT0484	SG LEVEL	FU2_2010-07_0001	0.0305 : 1000	80	128	0.1953	12.4996	Forward-Backward	11
11	LT0485	SG LEVEL	FU2_2010-07_0002	0.0305 : 1000	80	256	0.0977	12.4996	Least-Squares	18
12	LT0486	SG LEVEL	FU2_2010-07_0003	0.0305 : 1000	85	128	0.1838	11.7643	Least-Squares	20
13	LT0494	SG LEVEL	FU2_2010-07_0001	0.0305 : 1000	83	256	0.0941	12.0478	Forward-Backward	11
14	LT0495	SG LEVEL	FU2_2010-07_0002	0.0305 : 1000	78	256	0.1002	12.8201	Least-Squares	18
15	LT0496	SG LEVEL	FU2_2010-07_0003	0.0305 : 1000	83	256	0.0941	12.0478	Least-Squares	20
16	FT0474	STM FLOW	FU2_2010-07_0003	0.0305 : 1000	29	128	0.5388	34.4817	Least-Squares	20
17	FT0475	STM FLOW	FU2_2010-07_0004	0.0305 : 1000	29	128	0.5388	34.4817	Forward-Backward	11
18	FT0484	STM FLOW	FU2_2010-07_0003	0.0305 : 1000	29	128	0.5388	34.4817	Least-Squares	18
19	FT0485	STM FLOW	FU2_2010-07_0004	0.0305 : 1000	29	128	0.5388	34.4817	Forward-Backward	11
20	FT0494	STM FLOW	FU2_2010-07_0003	0.0305 : 1000	29	128	0.5388	34.4817	Least-Squares	19
21	FT0495	STM FLOW	FU2_2010-07_0004	0.0305 : 1000	29	128	0.5388	34.4817	Forward-Backward	11



## OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	FT0496	FW FLOW	FU2_2010-07_0004.psd	11 : 512	0.010731	2.747169	Dynamic	15-Jul-2010 13:36:44



**Figure 1.6 Dynamic Narrow Band PSD Window Selection Example**



## OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0496	FW FLOW	FU2_2010-07_0004.psd	11 : 512	0.010731	2.747169	11	Forward-Backward	15-Jul-2010 13:36:44

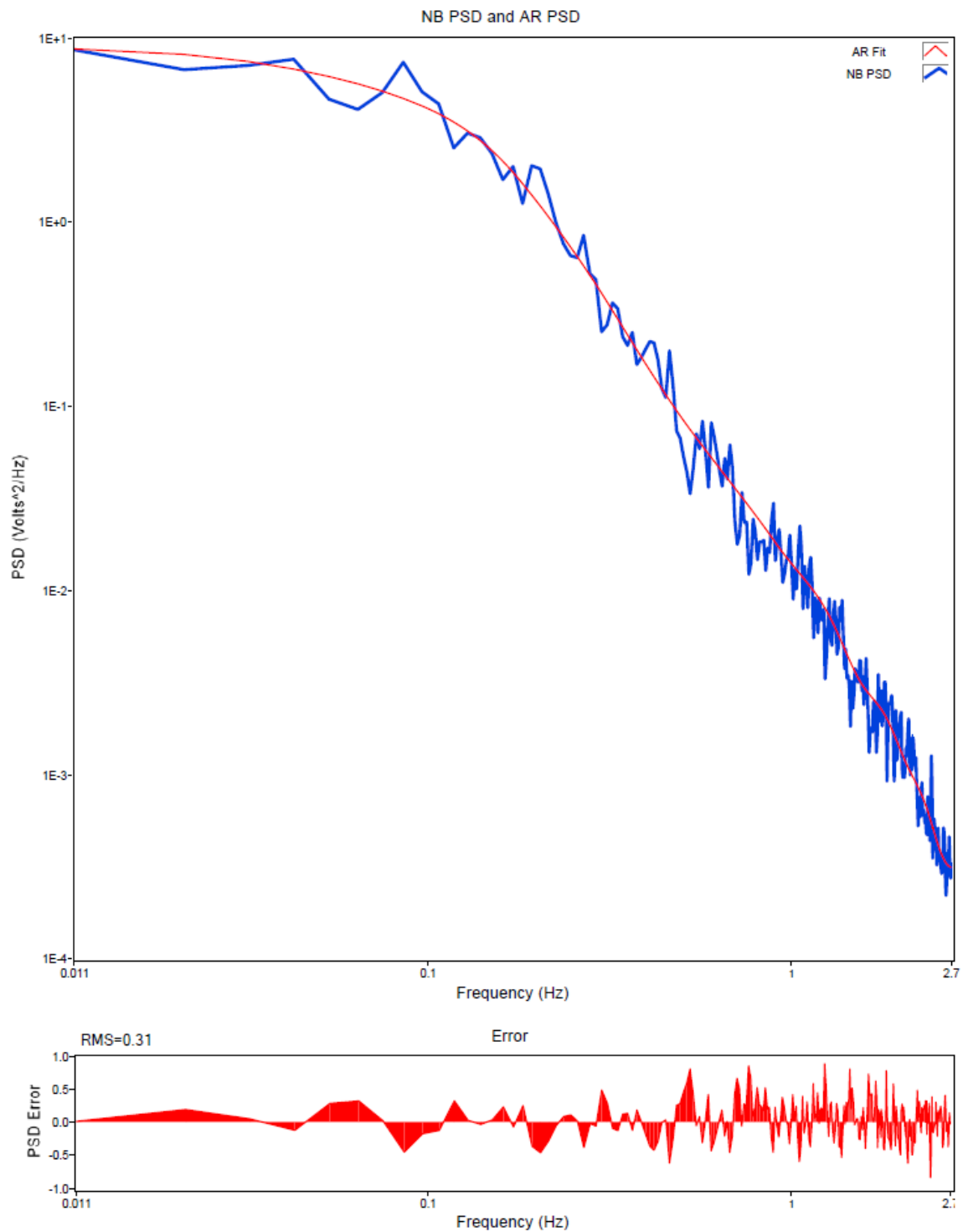


Figure 1.7 Dynamic Autoregressive Fit of Narrow Band PSD Example



## OLM DYNAMIC ANALYSIS RESULTS COMPARE

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0496	FW FLOW	FU2_2010-07_0004.psd	11 : 512	0.010731	2.747169	11	Forward-Backward	15-Jul-2010 13:36:44

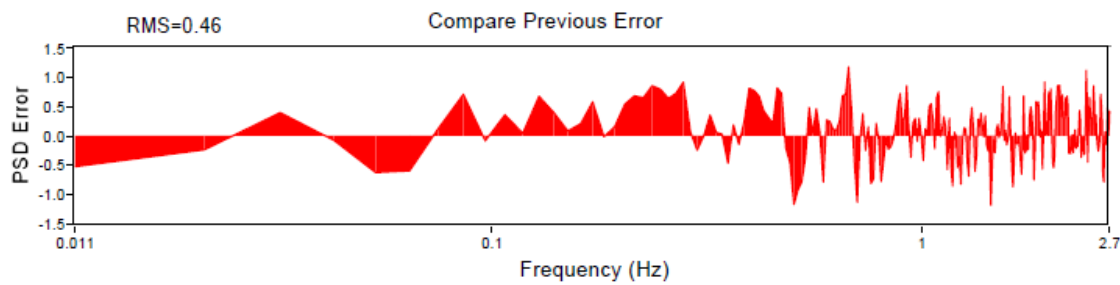
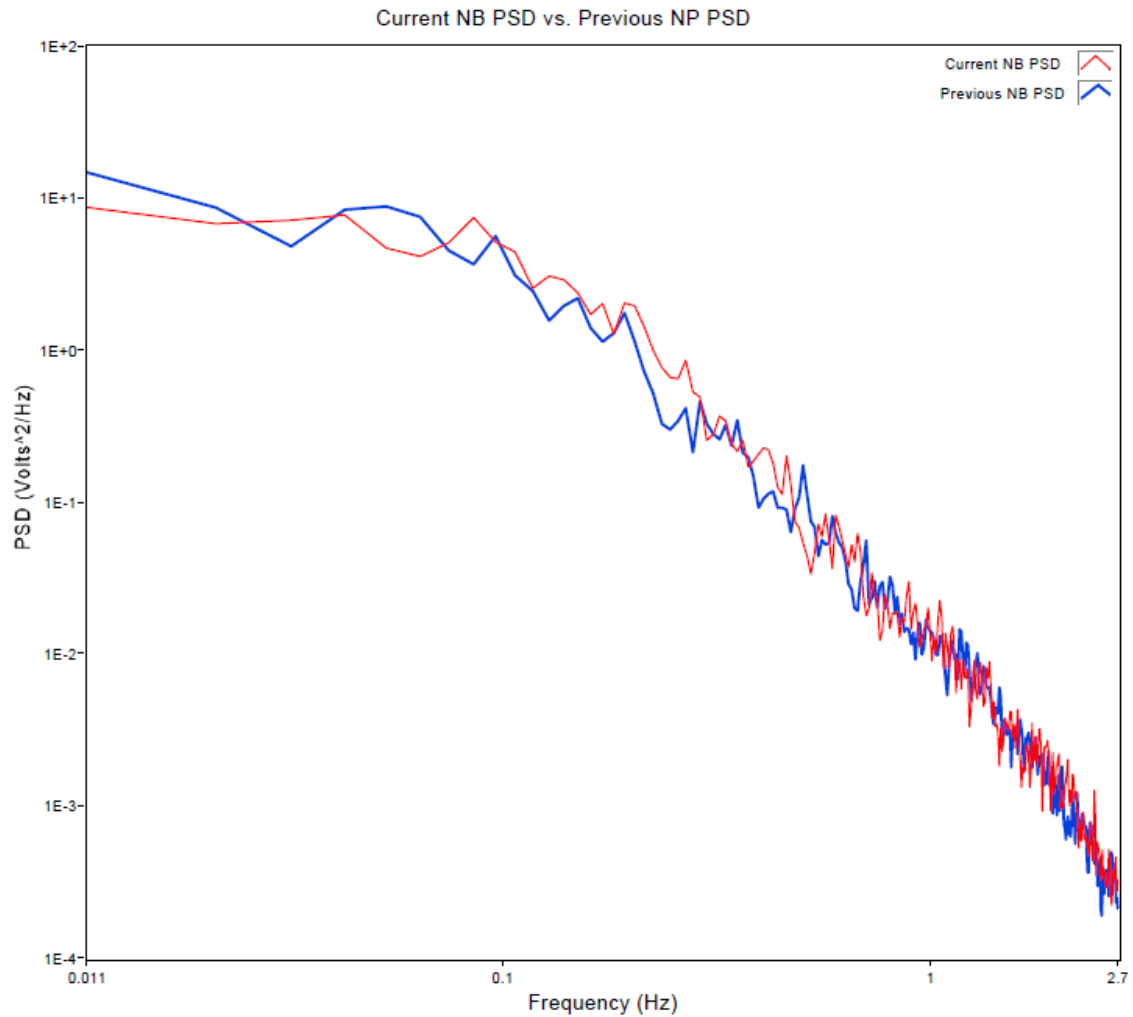


Figure 1.8 Dynamic Comparison of Narrow Band PSDs Example



## **APPENDIX A**

### **Farley Unit 1 OLM Results (Cycle 22)**





Item	Tagname	Service	12 Apr 2008	23 May 2008	9 Jun 2008	9 Sep 2008	14 Oct 2008	11 Nov 2008	9 Dec 2008	13 Jan 2009	10 Feb 2009	11 Mar 2009	2 Apr 2009	Drift	Final	Comment
1	FE0474B	SG A STEAM FLOW											R		PASS	Only out in low range transient
2	FE0475B	SG A STEAM FLOW											R		PASS	Only out in low range transient
3	FE0476B	FW FLOW TO SG A													PASS	
4	FE0477B	FW FLOW TO SG A													PASS	
5	LT0474	SG A NARROW RANGE LEVEL											R		FAIL	Out in low and high calibrated range
6	LT0475	SG A NARROW RANGE LEVEL			R	R	R	R	R	R	R	R	R		FAIL	Low bias
7	LT0476	SG A NARROW RANGE LEVEL											R		FAIL	Out in low and high calibrated range
8	LT0477	SG A WIDE RANGE LEVEL					M	M	M	M	M	M			FAIL	Drift over cycle
9	PT0474	SG A OUTLET PRESSURE													PASS	
10	PT0475	SG A OUTLET PRESSURE													PASS	
11	PT0476	SG A OUTLET PRESSURE													PASS	
12	FE0484B	SG B STEAM FLOW													PASS	
13	FE0485B	SG B STEAM FLOW													PASS	
14	FE0486B	FW FLOW TO SG B													PASS	
15	FE0487B	FW FLOW TO SG B													PASS	
16	LT0484	SG B NARROW RANGE LEVEL													PASS	
17	LT0485	SG B NARROW RANGE LEVEL													PASS	
18	LT0486	SG B NARROW RANGE LEVEL													PASS	
19	LT0487	SG B WIDE RANGE LEVEL													PASS	
20	PT0484	SG B OUTLET PRESSURE	R	R	R	R	R	R	R	R		R			FAIL	Low bias
21	PT0485	SG B OUTLET PRESSURE													PASS	
22	PT0486	SG B OUTLET PRESSURE													PASS	
23	FE0494B	SG C STEAM FLOW											R		PASS	Only out in low range transient
24	FE0495B	SG C STEAM FLOW											R		PASS	Only out in low range transient
25	FE0496B	FW FLOW TO SG C													PASS	
26	FE0497B	FW FLOW TO SG C													PASS	
27	LT0494	SG C NARROW RANGE LEVEL													PASS	
28	LT0495	SG C NARROW RANGE LEVEL													PASS	
29	LT0496	SG C NARROW RANGE LEVEL													PASS	
30	LT0497	SG C WIDE RANGE LEVEL													PASS	

R = Exceeded Redundant Sensor Analysis Limits    M = Exceeded Model Analysis Limits    D = Exceeded Drift Limits

**Table A.1 Farley Unit 1 OLM Results Summary (Cycle 22)**

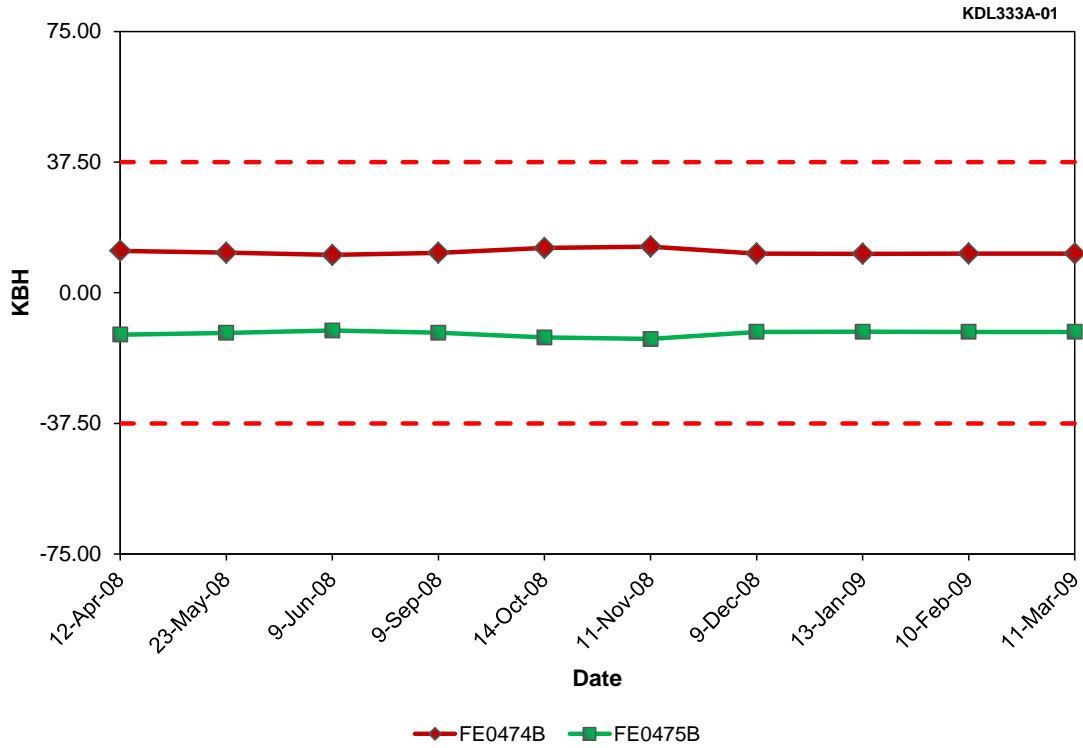


Item	Tagname	Service	12 Apr 2008	23 May 2008	9 Jun 2008	9 Sep 2008	14 Oct 2008	11 Nov 2008	9 Dec 2008	13 Jan 2009	10 Feb 2009	11 Mar 2009	2 Apr 2009	Drift	Final	Comment
31	PT0494	SG C OUTLET PRESSURE													PASS	
32	PT0495	SG C OUTLET PRESSURE													PASS	
33	PT0496	SG C OUTLET PRESSURE													PASS	
34	LT0459	PRESSURIZER LEVEL													PASS	
35	LT0460	PRESSURIZER LEVEL						R,M		R	R,M	R,M	R	D	FAIL	High bias and drift
36	LT0461	PRESSURIZER LEVEL													PASS	
37	PT0455	PRESSURIZER PRESSURE										M	M		PASS	Process change
38	PT0456	PRESSURIZER PRESSURE											M		PASS	Process change
39	PT0457	PRESSURIZER PRESSURE										M			PASS	Process change
40	PT0444A	PRESSURIZER PRESSURE										M	M		PASS	Process change
41	PT0445A	PRESSURIZER PRESSURE										M			PASS	Process change
42	FE0414	RCS LOOP A FLOW													PASS	
43	FE0415	RCS LOOP A FLOW													PASS	
44	FE0416	RCS LOOP A FLOW													PASS	
45	FE0424	RCS LOOP B FLOW													PASS	
46	FE0425	RCS LOOP B FLOW													PASS	
47	FE0426	RCS LOOP B FLOW													PASS	
48	FE0434	RCS LOOP C FLOW						R							PASS	Only low in Nov-2008
49	FE0435	RCS LOOP C FLOW													PASS	
50	FE0436	RCS LOOP C FLOW													PASS	
51	PT0402	RCS WIDE RANGE PRESSURE LOOP C													PASS	
52	PT0403	RCS WIDE RANGE PRESSURE LOOP A													PASS	
53	PT0446	TURBINE FIRST STAGE PRESSURE													PASS	
54	PT0447	TURBINE FIRST STAGE PRESSURE													PASS	
55	LT0501	RWST LEVEL													PASS	
56	LT0502	RWST LEVEL													PASS	
57	PT0951	CTMT PRESSURE													PASS	
58	PT0952	CTMT PRESSURE		R	R								R		FAIL	High bias and span shift
59	PT0953	CTMT PRESSURE													PASS	

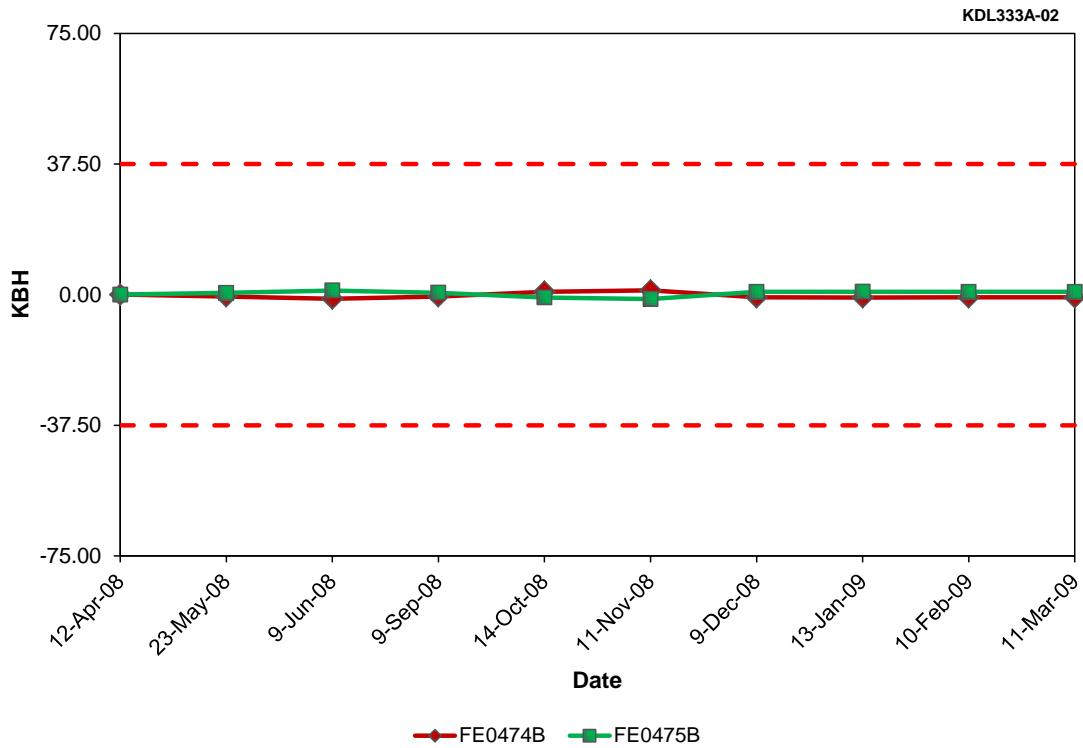
R = Exceeded Redundant Sensor Analysis Limits    M = Exceeded Model Analysis Limits    D = Exceeded Drift Limits

**Table A.1 (continued) Farley Unit 1 OLM Results Summary (Cycle 22)**

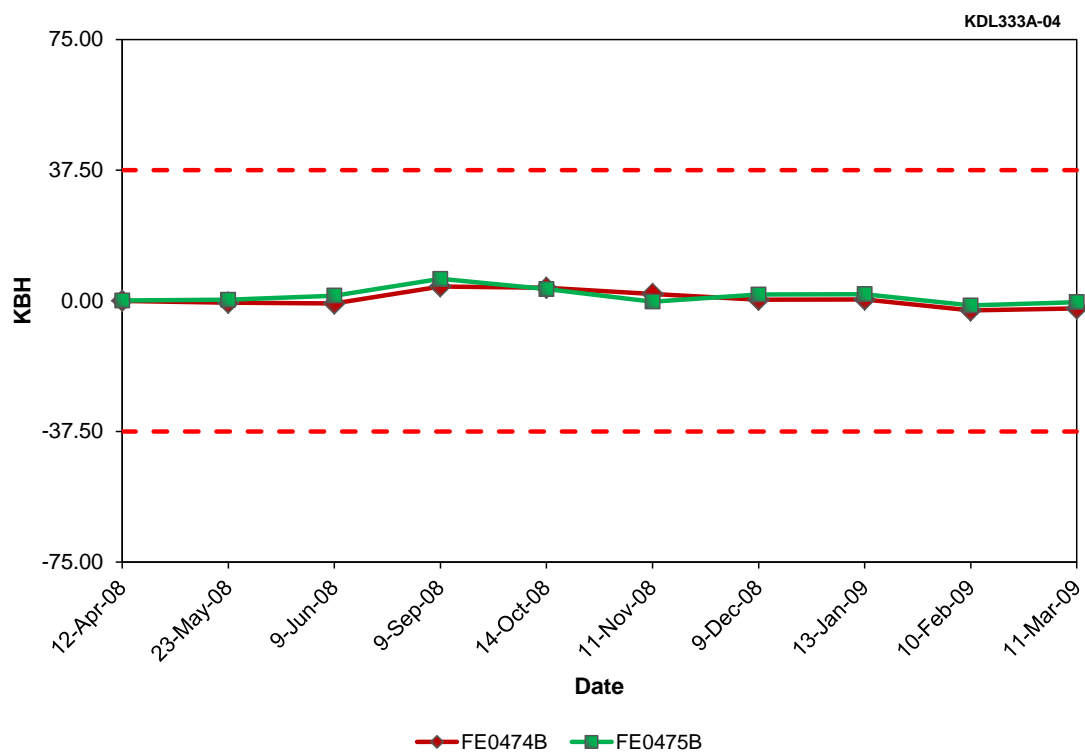




**Figure A.1 SG A STEAM FLOW Steady-State Deviation at Farley Unit 1 (Cycle 22)**



**Figure A.2 SG A STEAM FLOW Steady-State Drift at Farley Unit 1 (Cycle 22)**



**Figure A.3 SG A STEAM FLOW Steady-State Residual AAKR at Farley Unit 1 (Cycle 22)**

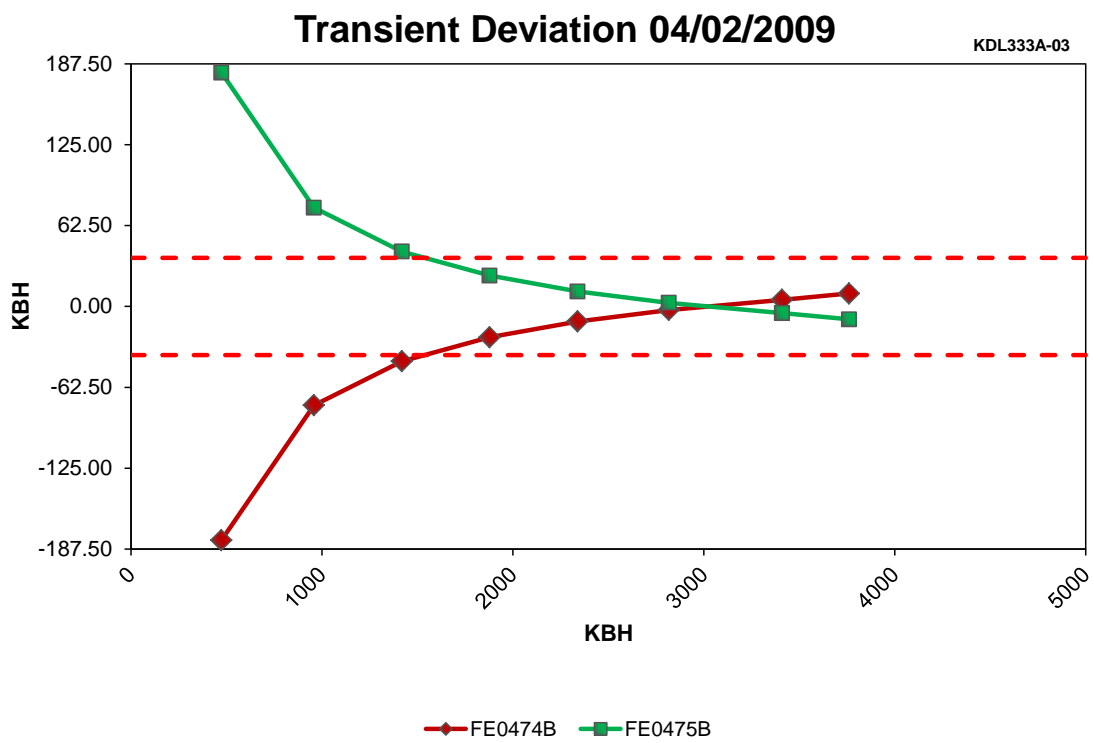
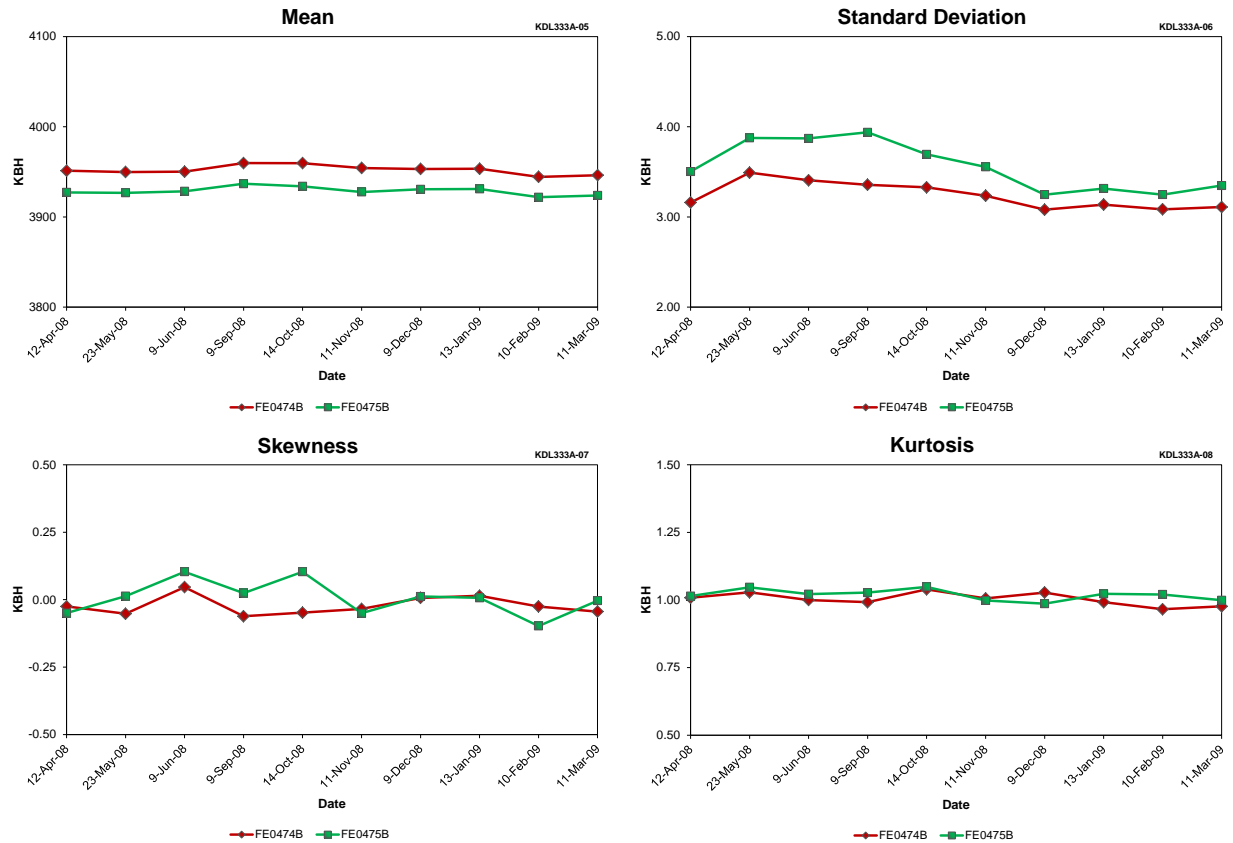


Figure A.4 SG A STEAM FLOW Transient Deviation at Farley Unit 1 (Cycle 22)

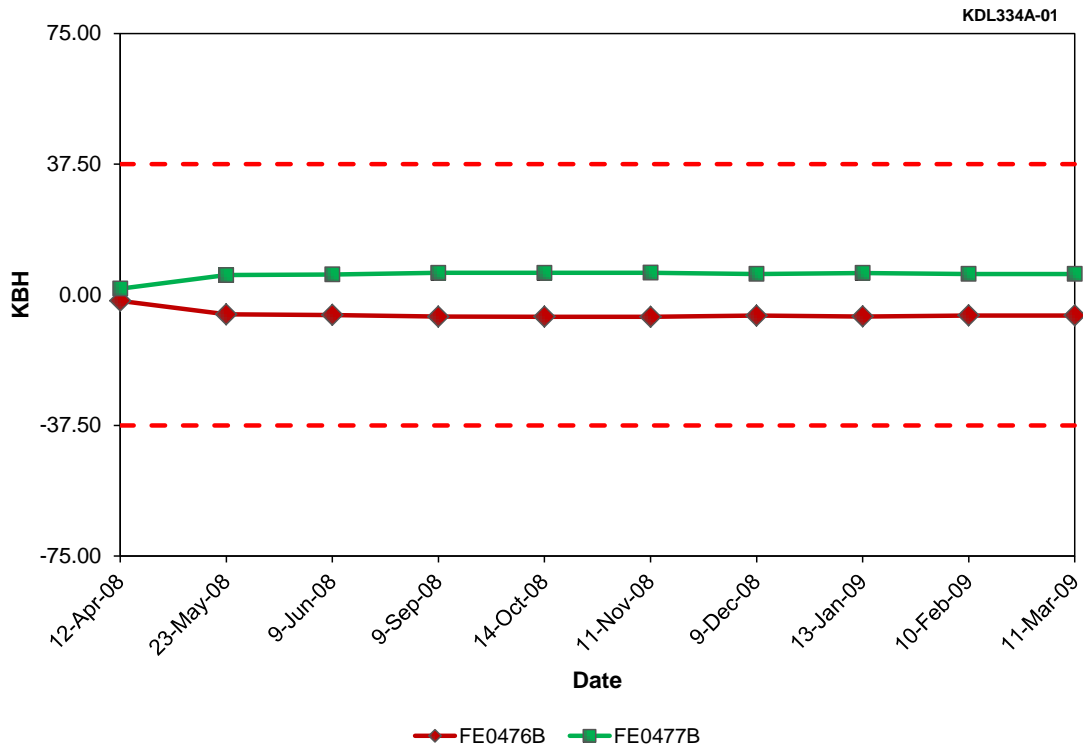




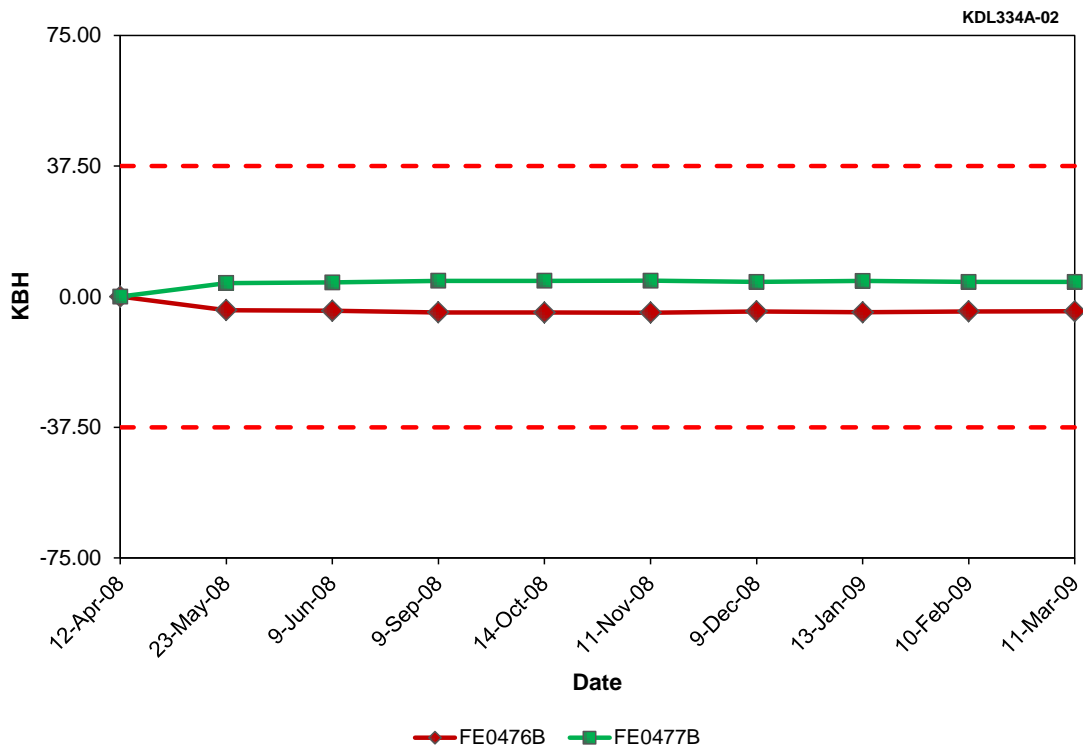
**Figure A.5 SG A STEAM FLOW Data Quality Statistics at Farley Unit 1 (Cycle 22)**

**Table A.1 SG A STEAM FLOW Data Quality for Farley Unit 1 (Cycle 22)**

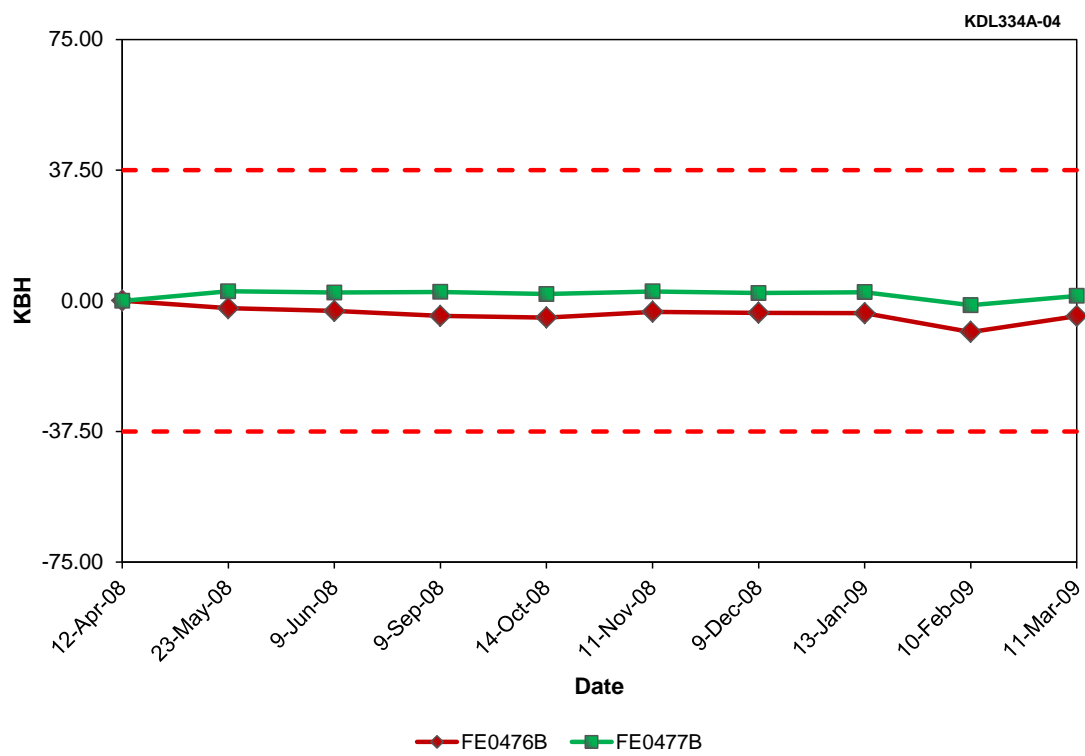
Result Type	Tag Names	
	FE0474B	FE0475B
Mean	3952.19	3928.83
Std. Dev.	3.24	3.56
Skewness	-0.02	0.01
Kurtosis	1.00	1.02



**Figure A.6 FW FLOW TO SG A Steady-State Deviation at Farley Unit 1 (Cycle 22)**



**Figure A.7 FW FLOW TO SG A Steady-State Drift at Farley Unit 1 (Cycle 22)**



**Figure A.8 FW FLOW TO SG A Steady-State Residual AAKR at Farley Unit 1 (Cycle 22)**

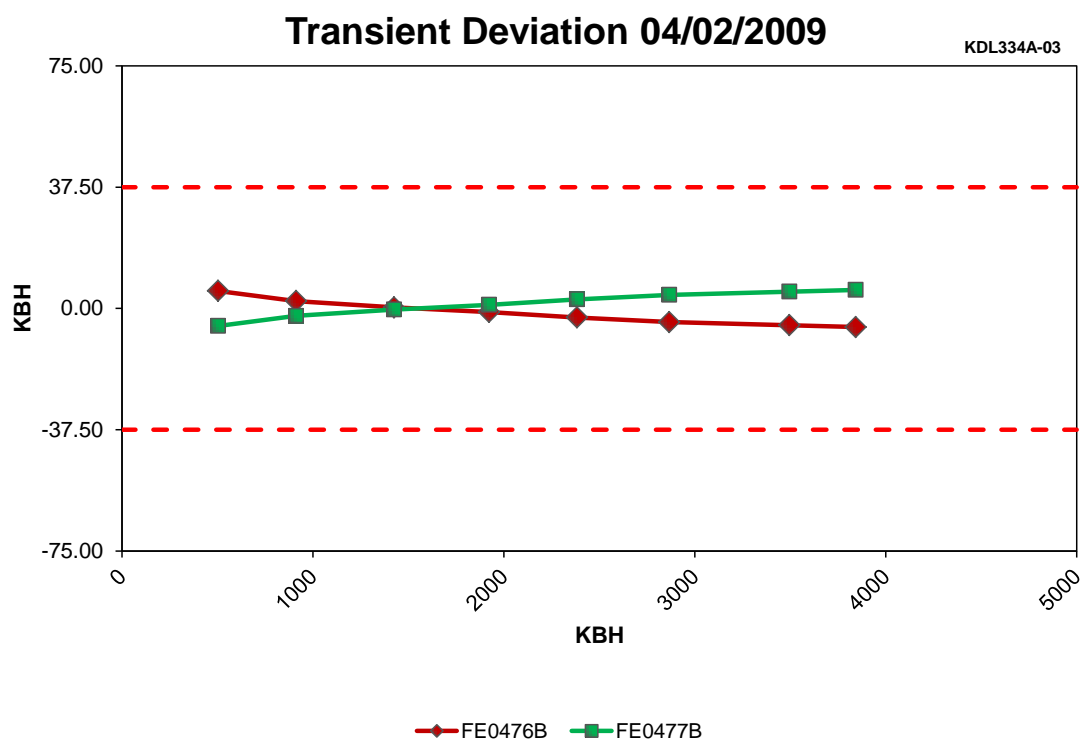
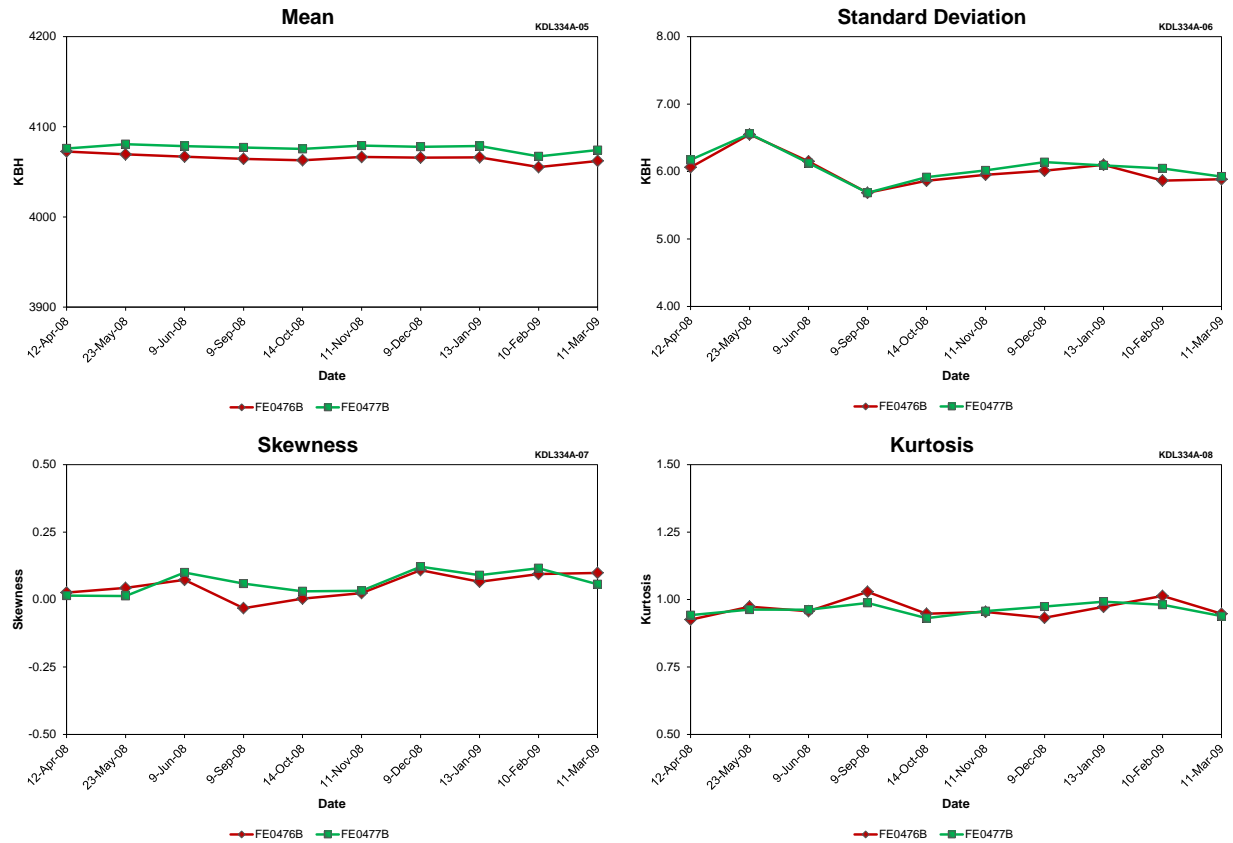


Figure A.8 FW FLOW TO SG A Transient Deviation at Farley Unit 1 (Cycle 22)



**Figure A.9 FW FLOW TO SG A Data Quality Statistics at Farley Unit 1 (Cycle 22)**

**Table A.2 FW FLOW TO SG A Data Quality for Farley Unit 1 (Cycle 22)**

Result Type	Tag Names	
	FE0476B	FE0477B
Mean	4065.16	4065.16
Std. Dev.	6.01	6.01
Skewness	0.05	0.05
Kurtosis	0.97	0.97

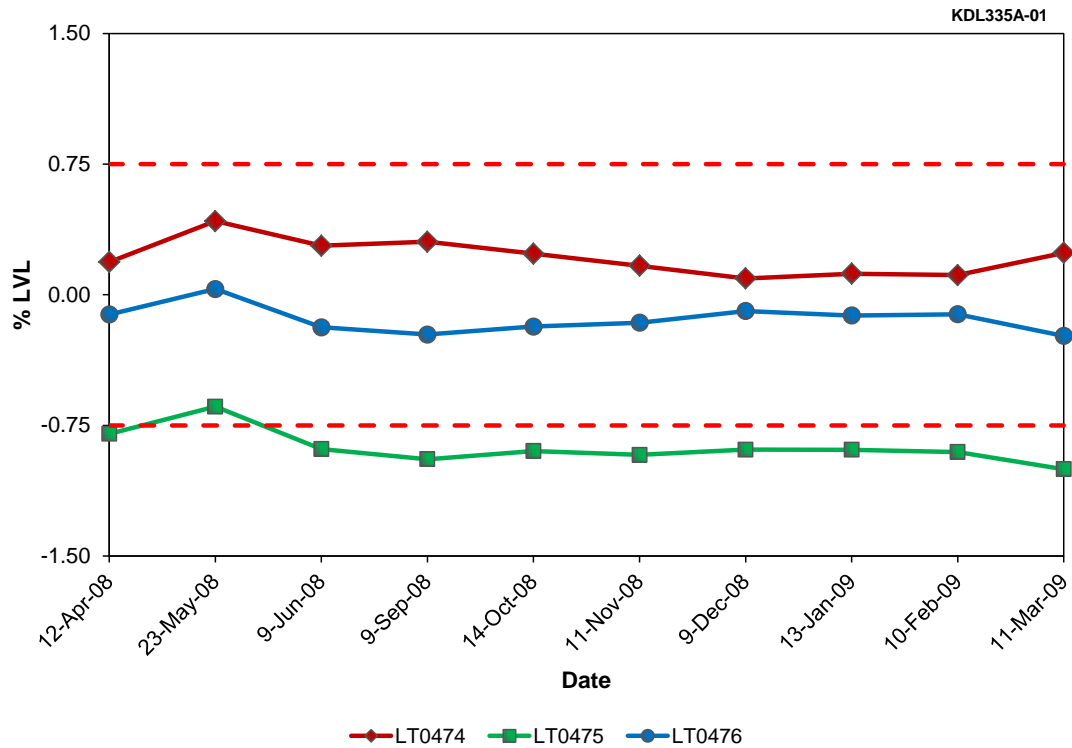


Figure A.10 SG A LEVEL Steady-State Deviation at Farley Unit 1 (Cycle 22)

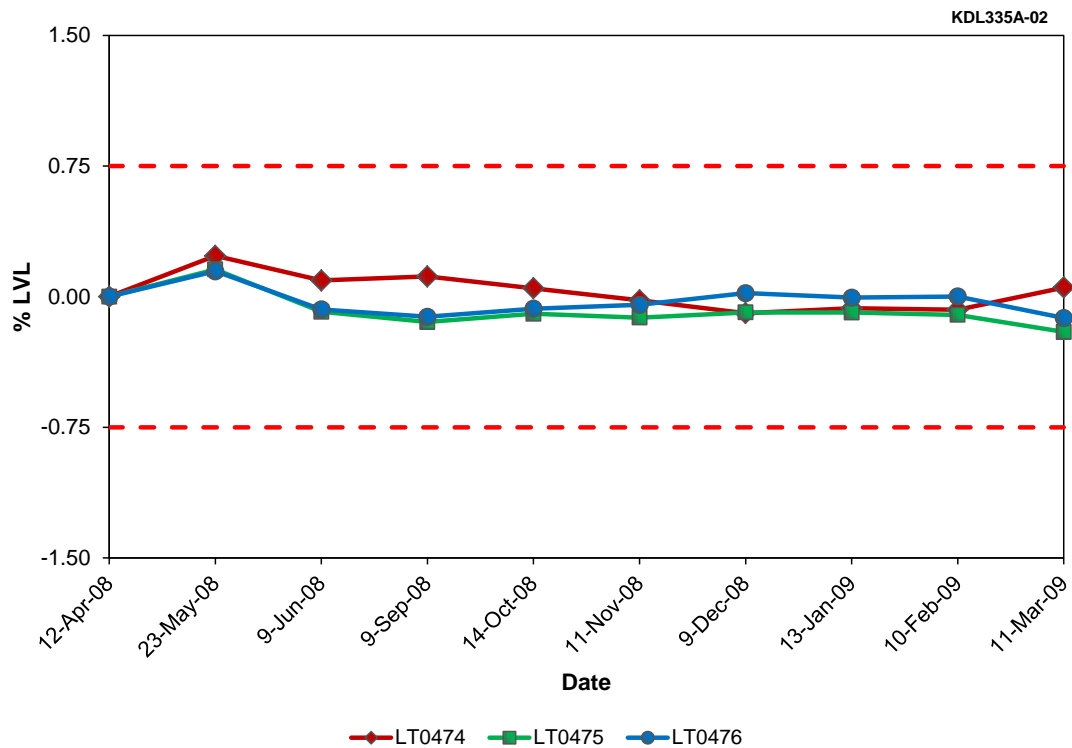


Figure A.11 SG A LEVEL Steady-State Drift at Farley Unit 1 (Cycle 22)

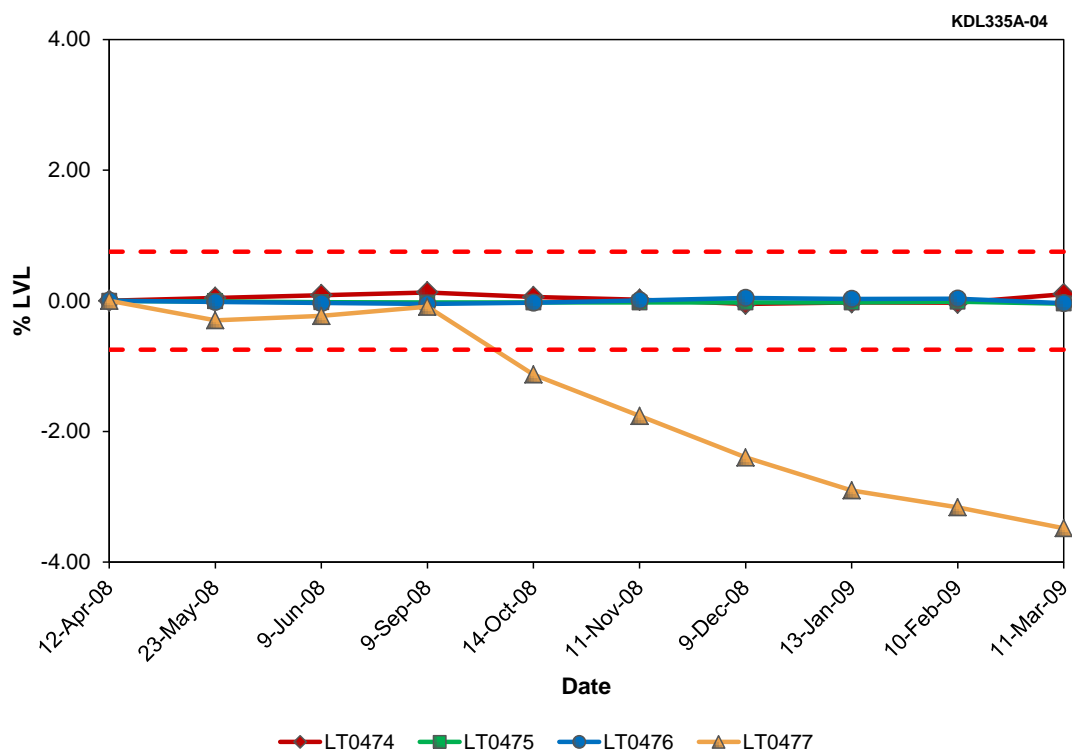
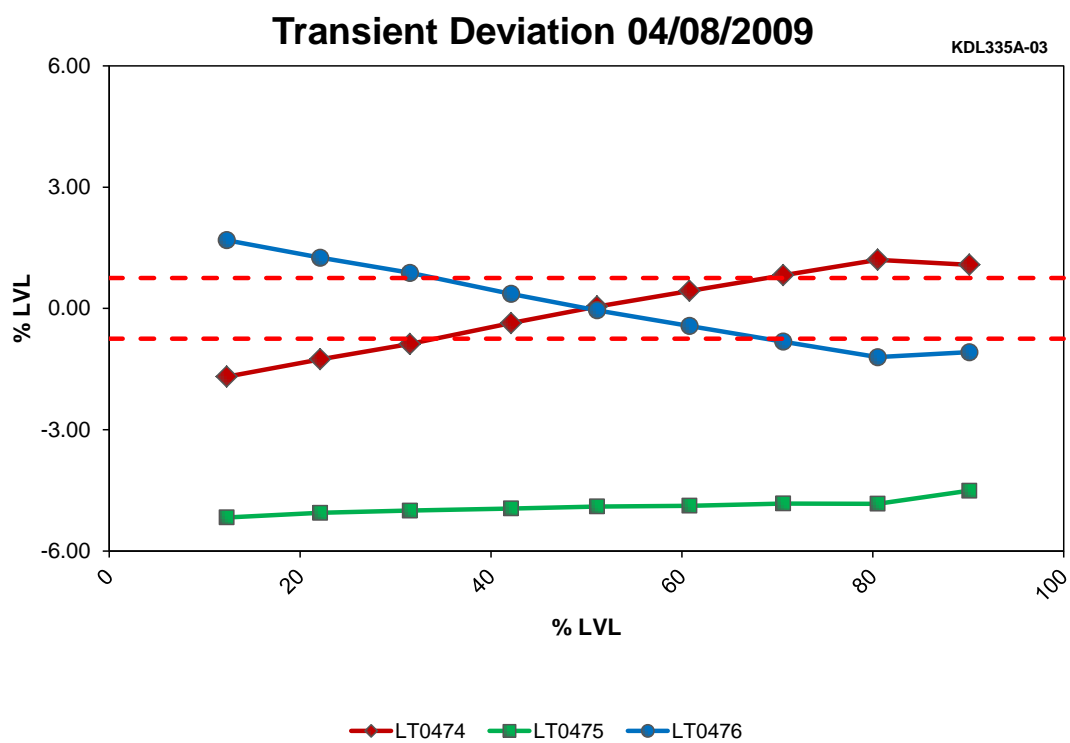
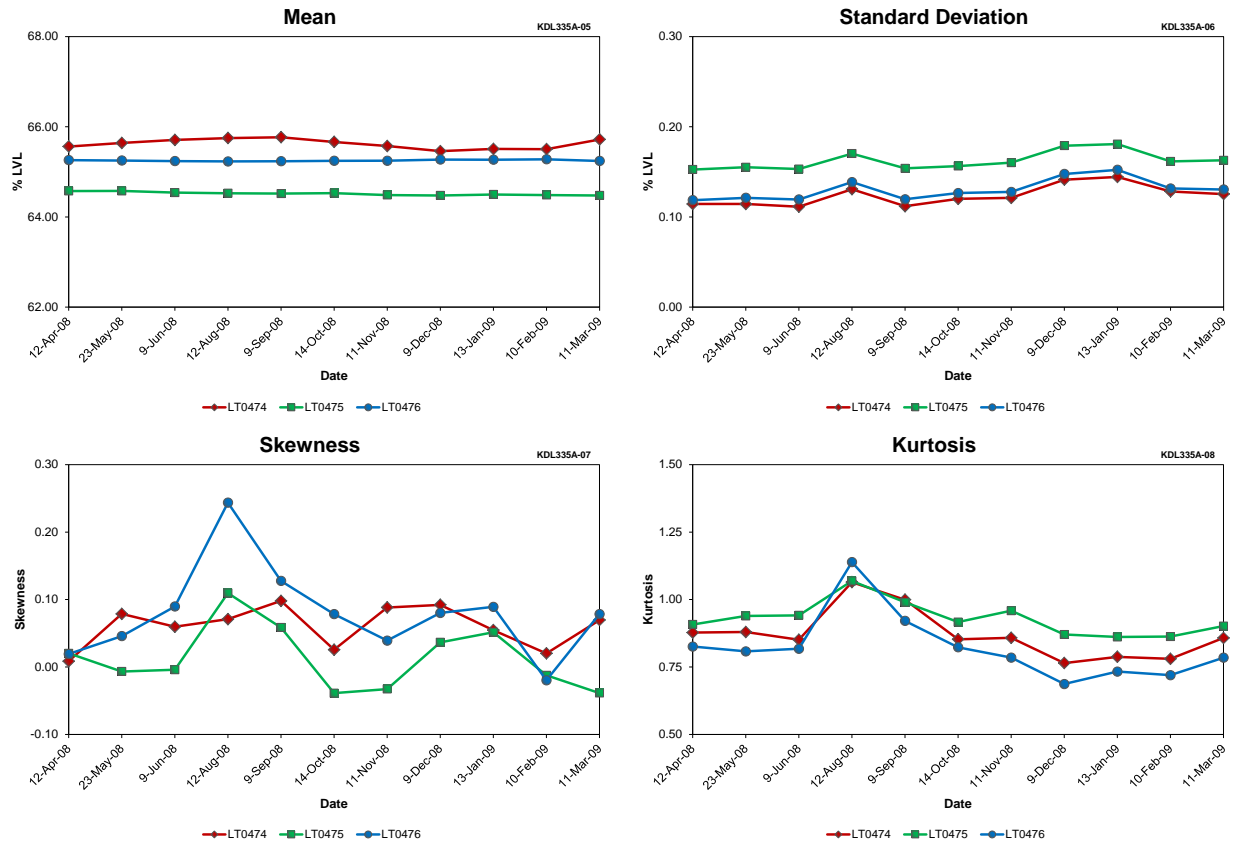


Figure A.12 SG A LEVEL Steady-State Residual AAKR at Farley Unit 1 (Cycle 22)



**Figure A.13 SG A LEVEL Transient Deviation at Farley Unit 1 (Cycle 22)**

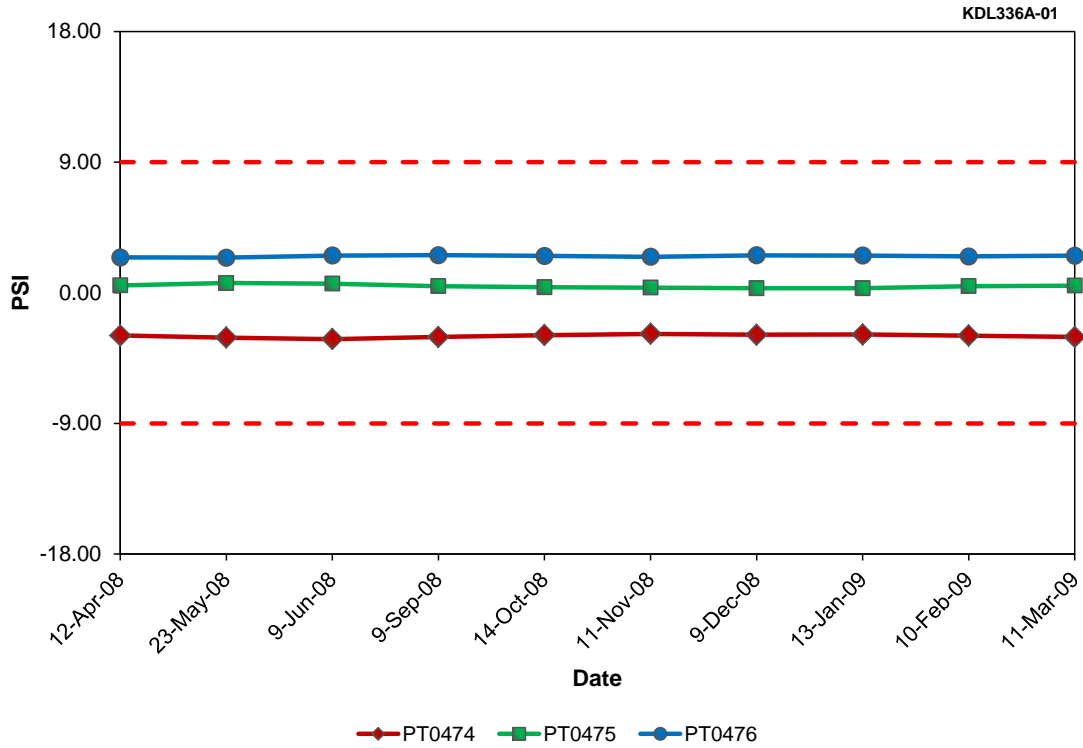




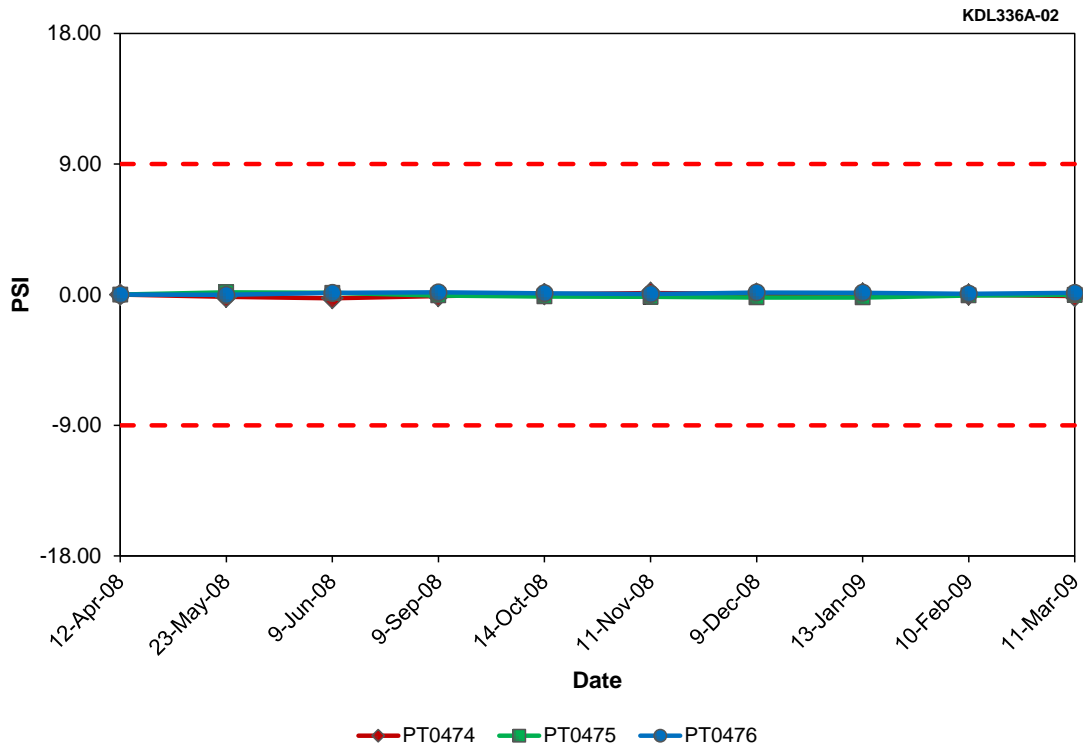
**Figure A.14 SG A LEVEL Data Quality Statistics at Farley Unit 1 (Cycle 22)**

**Table A.3 SG A LEVEL Data Quality for Farley Unit 1 (Cycle 22)**

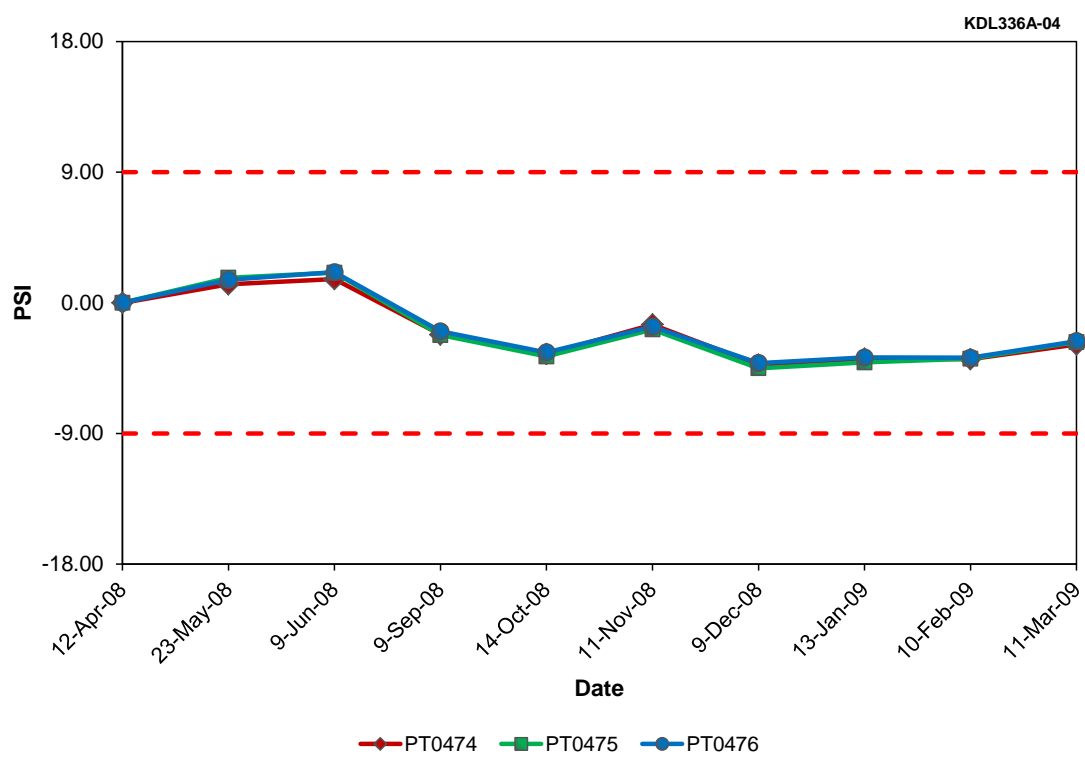
Result Type	Tag Names		
	LT0474	LT0475	LT0476
Mean	65.62	64.52	65.25
Std. Dev.	0.12	0.16	0.13
Skewness	0.06	0.01	0.08
Kurtosis	0.87	0.93	0.82



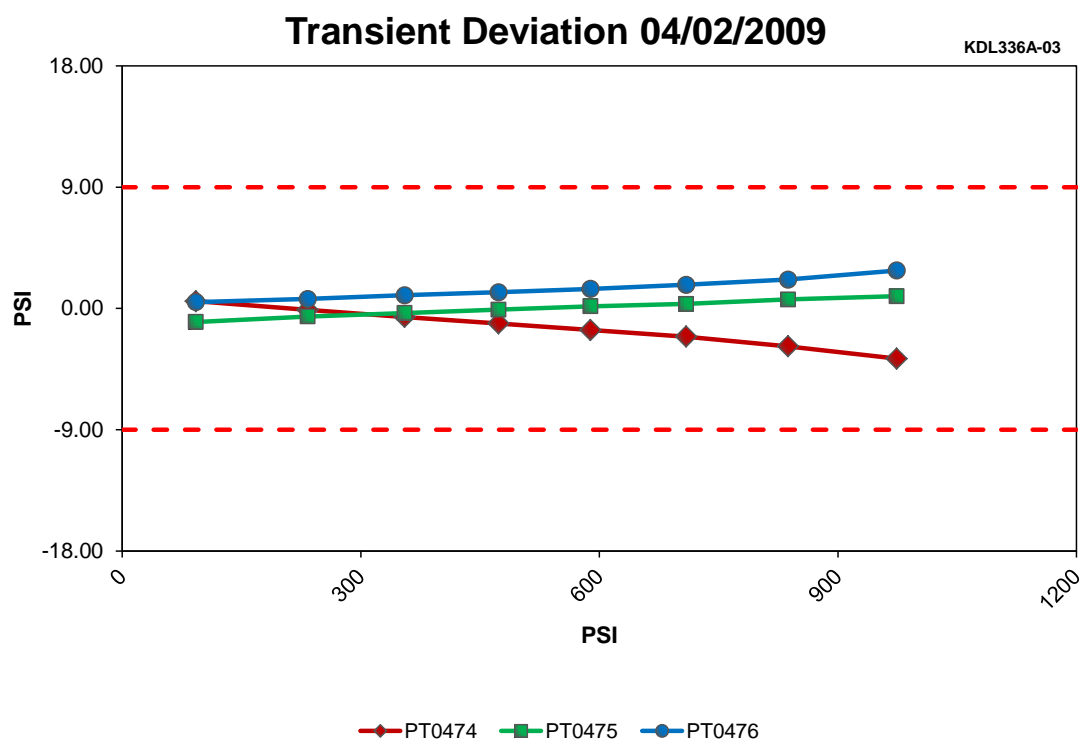
**Figure A.15 SG A OUTLET PRESSURE Steady-State Deviation at Farley Unit 1 (Cycle 22)**



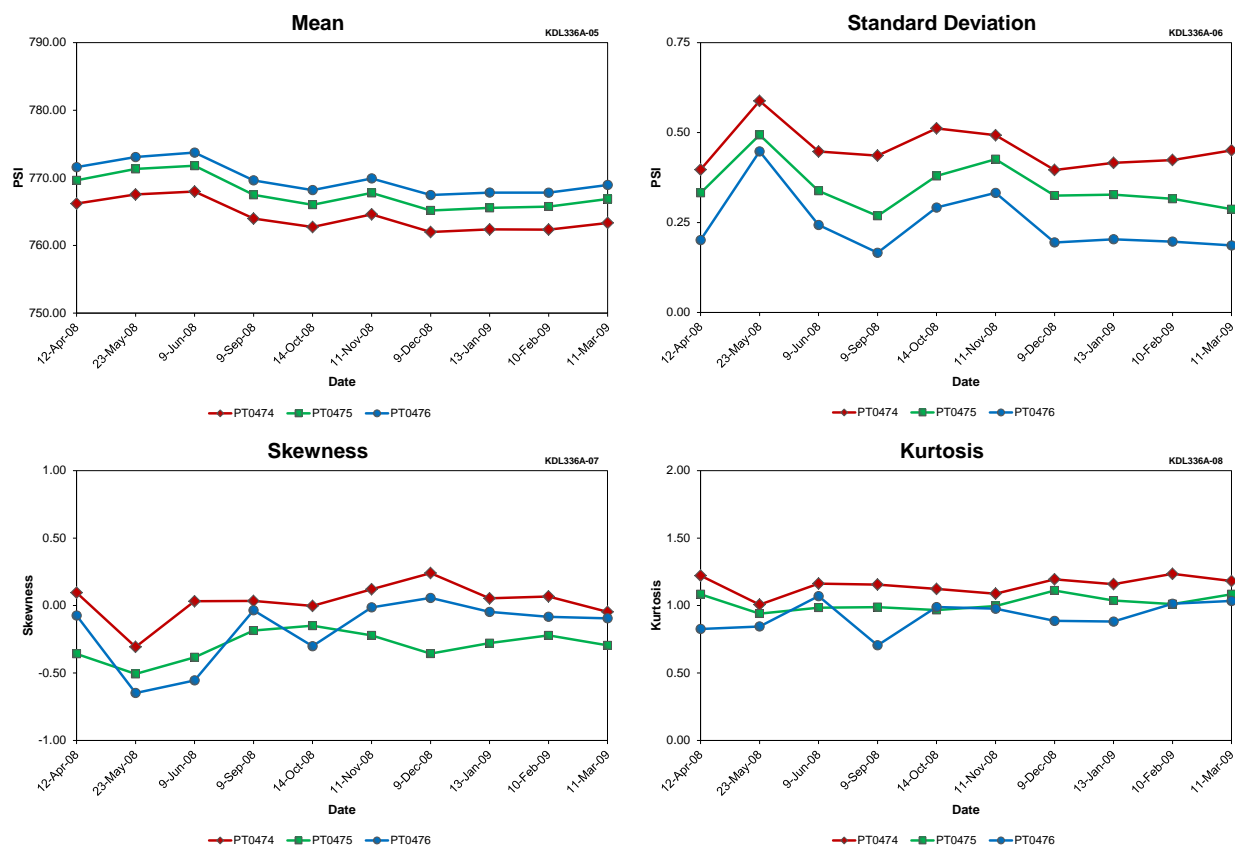
**Figure A.16 SG A OUTLET PRESSURE Steady-State Drift at Farley Unit 1 (Cycle 22)**



**Figure A.17 SG A OUTLET PRESSURE Steady-State Residual AAKR at Farley Unit 1 (Cycle 22)**



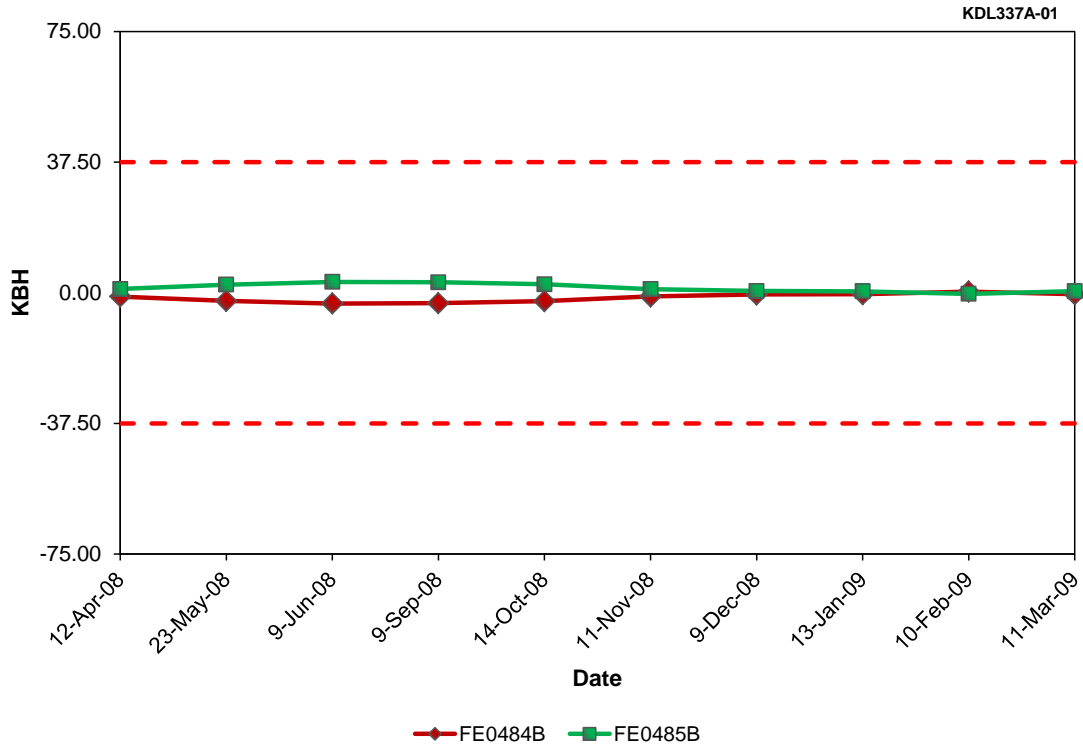
**Figure A.18 SG A OUTLET PRESSURE Transient Deviation at Farley Unit 1 (Cycle 22)**



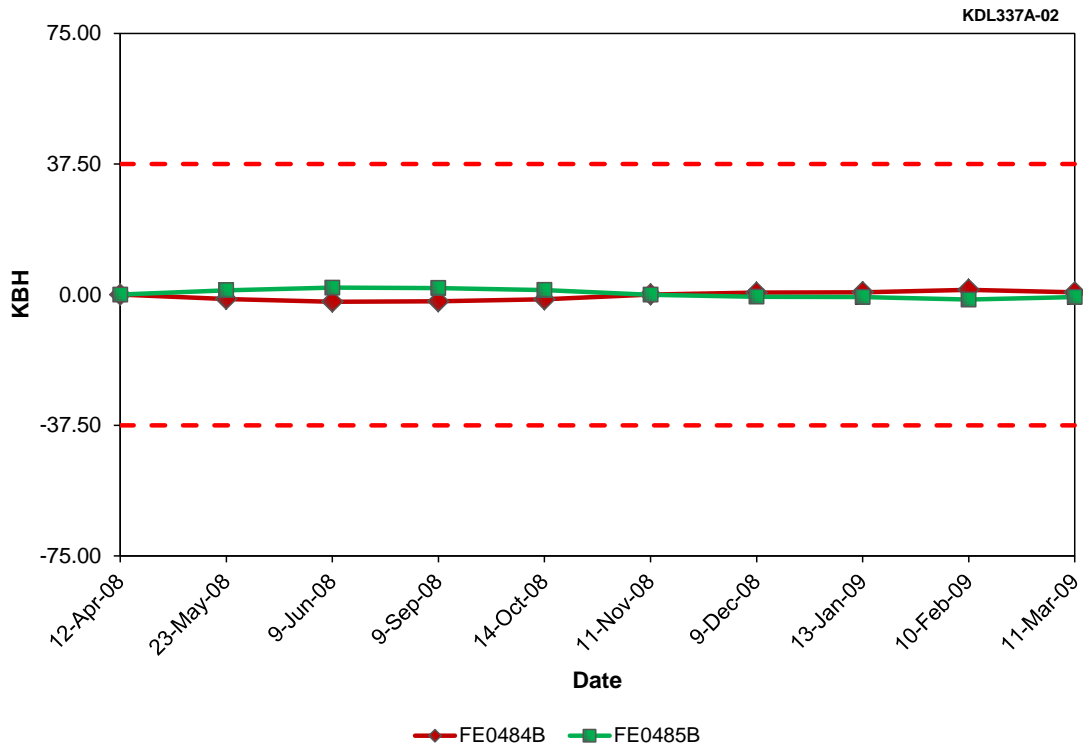
**Figure A.19 SG A OUTLET PRESSURE Data Quality Statistics at Farley Unit 1 (Cycle 22)**

**Table A.4 SG A OUTLET PRESSURE Data Quality for Farley Unit 1 (Cycle 22)**

Result Type	Tag Names		
	PT0474	PT0475	PT0476
Mean	764.31	767.73	769.82
Std. Dev.	0.46	0.35	0.25
Skewness	0.03	-0.30	-0.18
Kurtosis	1.15	1.02	0.92



**Figure A.20 SG B STEAM FLOW Steady-State Deviation at Farley Unit 1 (Cycle 22)**



**Figure A.21 SG B STEAM FLOW Steady-State Drift at Farley Unit 1 (Cycle 22)**

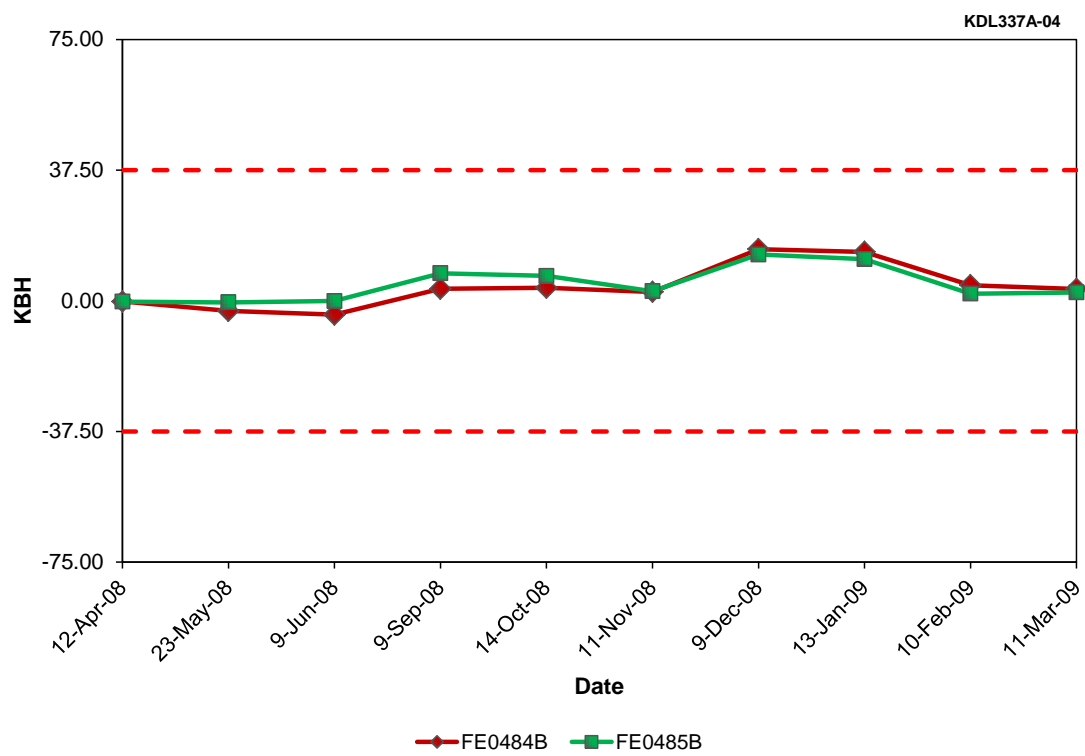
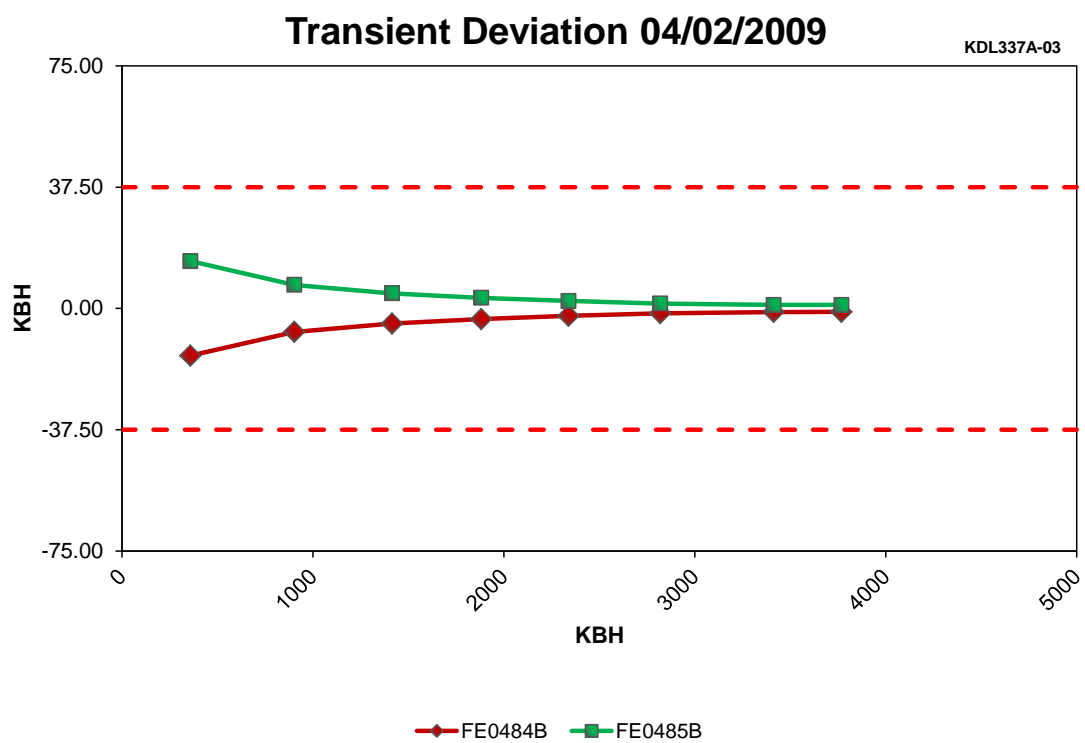
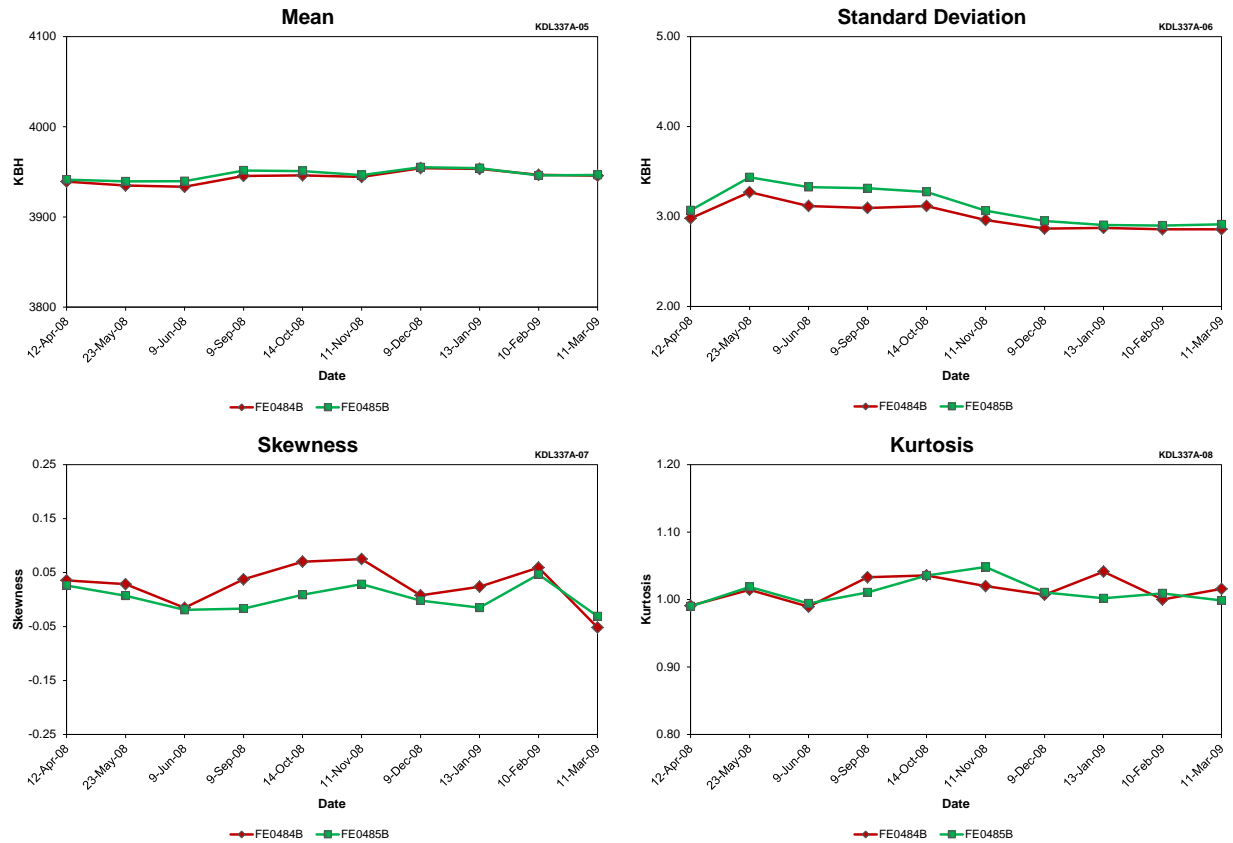


Figure A.22 SG B STEAM FLOW Steady-State Residual AAKR at Farley Unit 1 (Cycle 22)



**Figure A.23 SG B STEAM FLOW Transient Deviation at Farley Unit 1 (Cycle 22)**

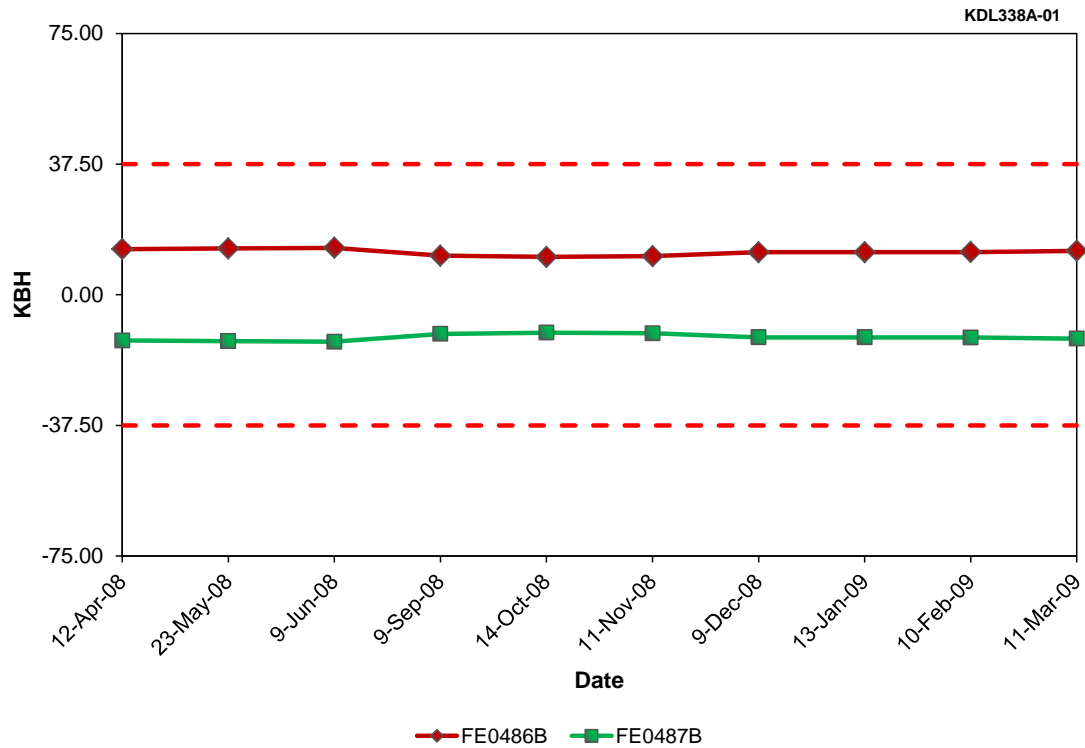




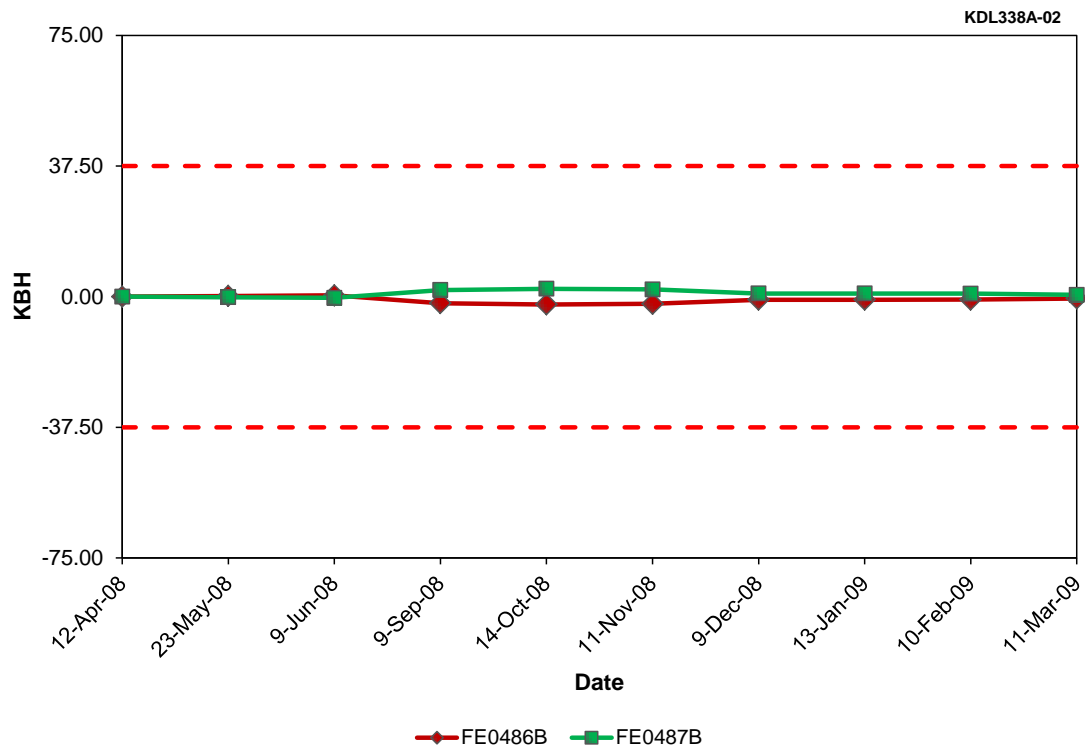
**Figure A.24 SG B STEAM FLOW Data Quality Statistics at Farley Unit 1 (Cycle 22)**

**Table A.5 SG B STEAM FLOW Data Quality for Farley Unit 1 (Cycle 22)**

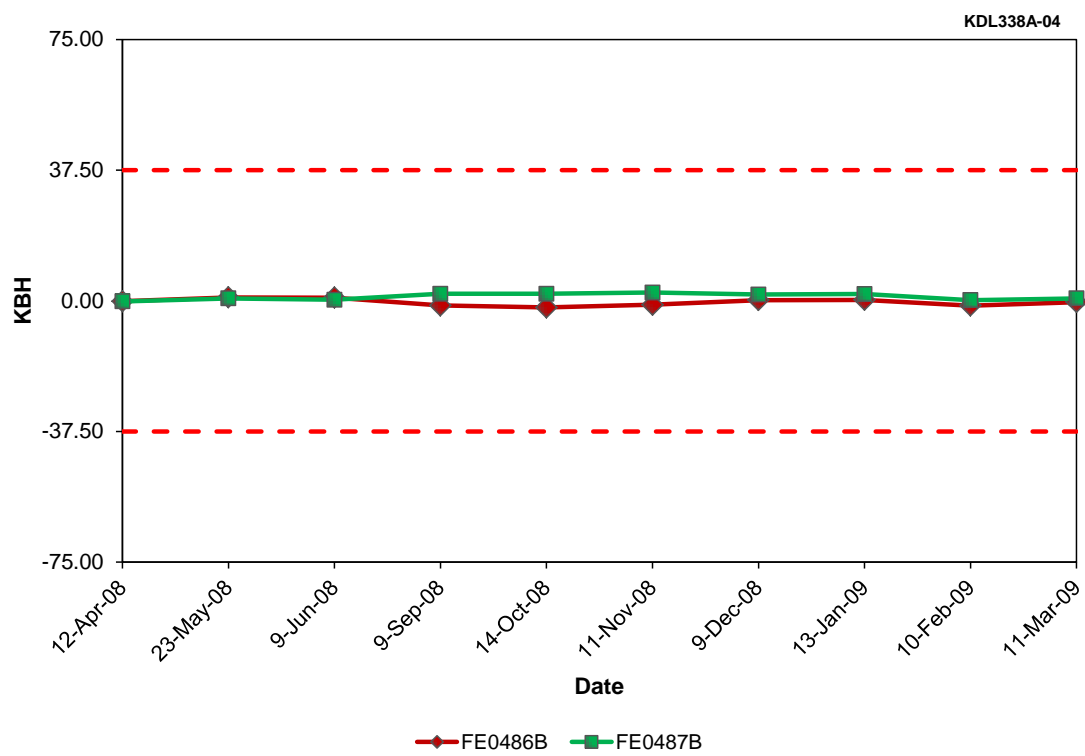
Result Type	Tag Names	
	FE0484B	FE0485B
Mean	3944.29	3947.09
Std. Dev.	3.00	3.12
Skewness	0.03	0.00
Kurtosis	1.01	1.01



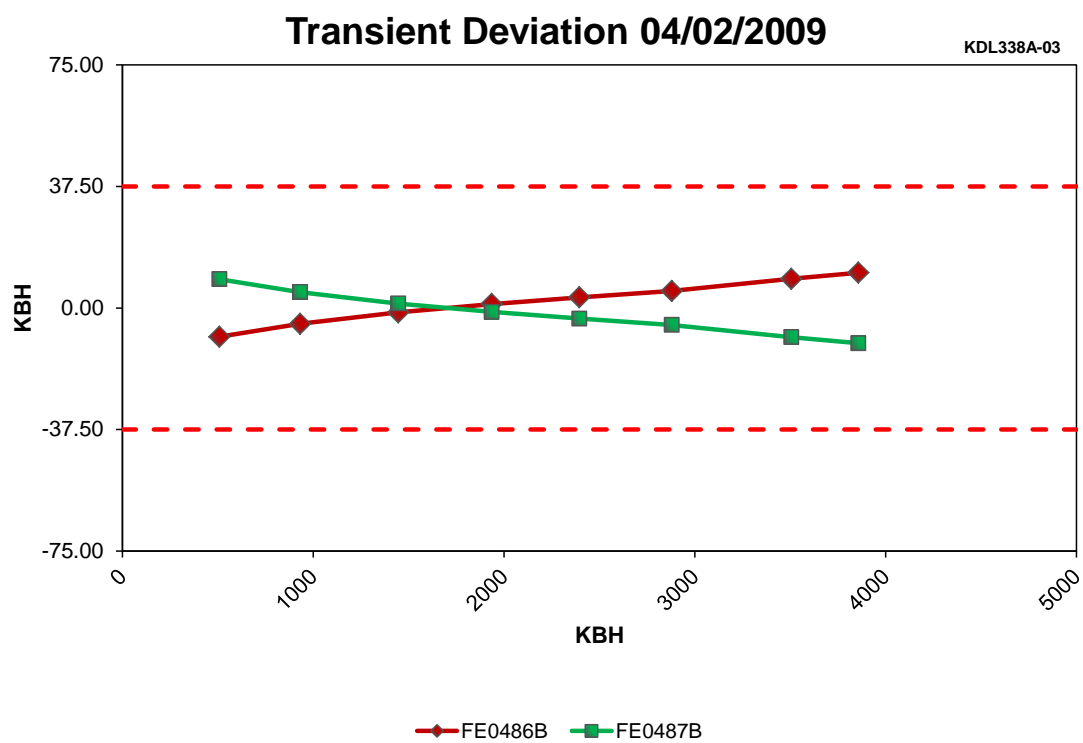
**Figure A.25 FW FLOW TO SG B Steady-State Deviation at Farley Unit 1 (Cycle 22)**



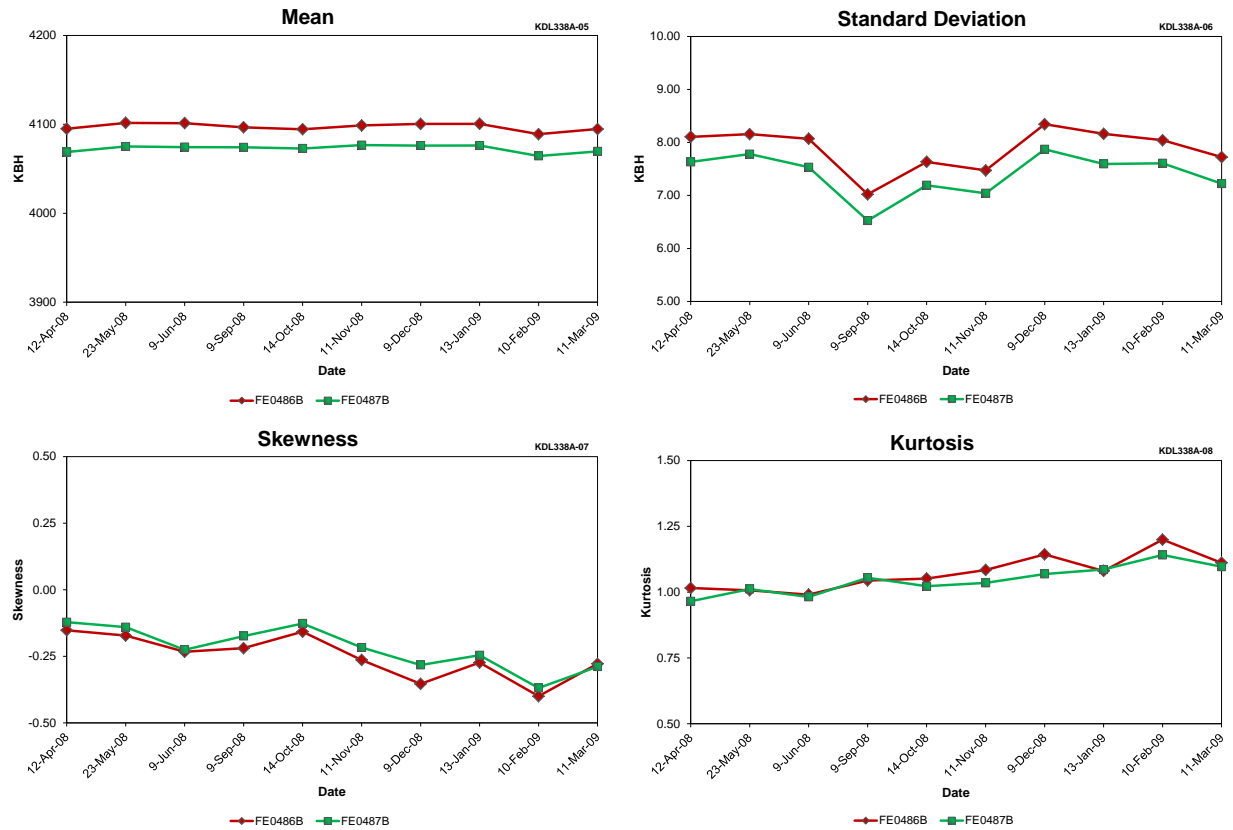
**Figure A.26 FW FLOW TO SG B Steady-State Drift at Farley Unit 1 (Cycle 22)**



**Figure A.27 FW FLOW TO SG B Steady-State Residual AAKR at Farley Unit 1 (Cycle 22)**



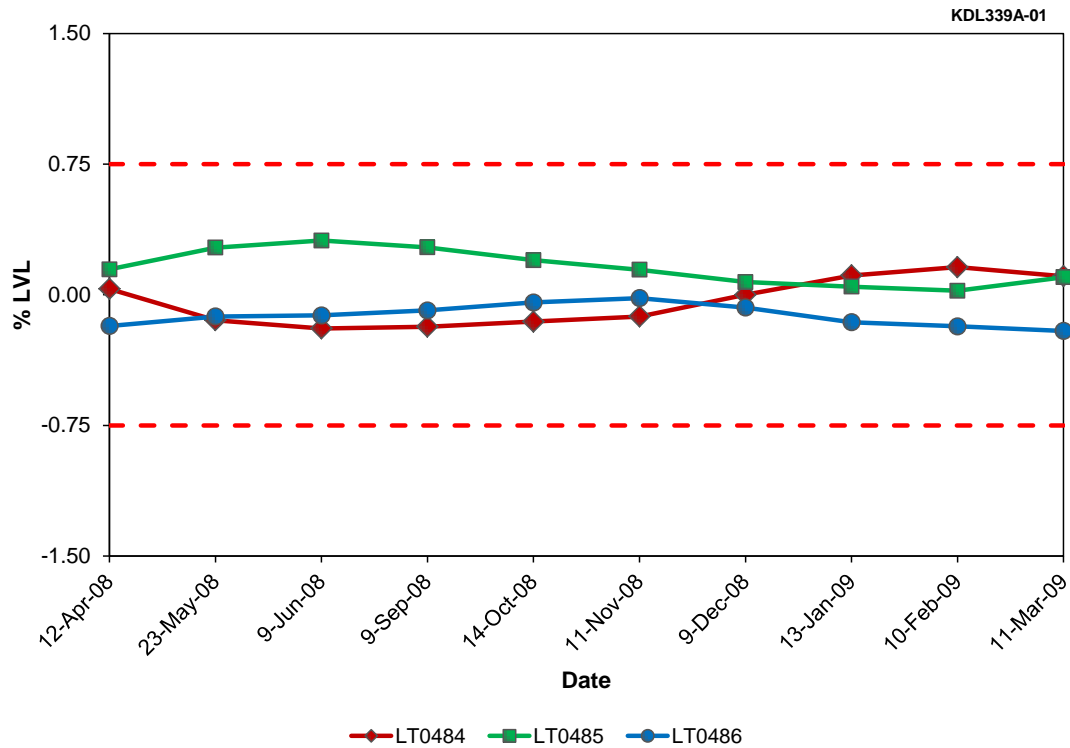
**Figure A.28 FW FLOW TO SG B Transient Deviation at Farley Unit 1 (Cycle 22)**



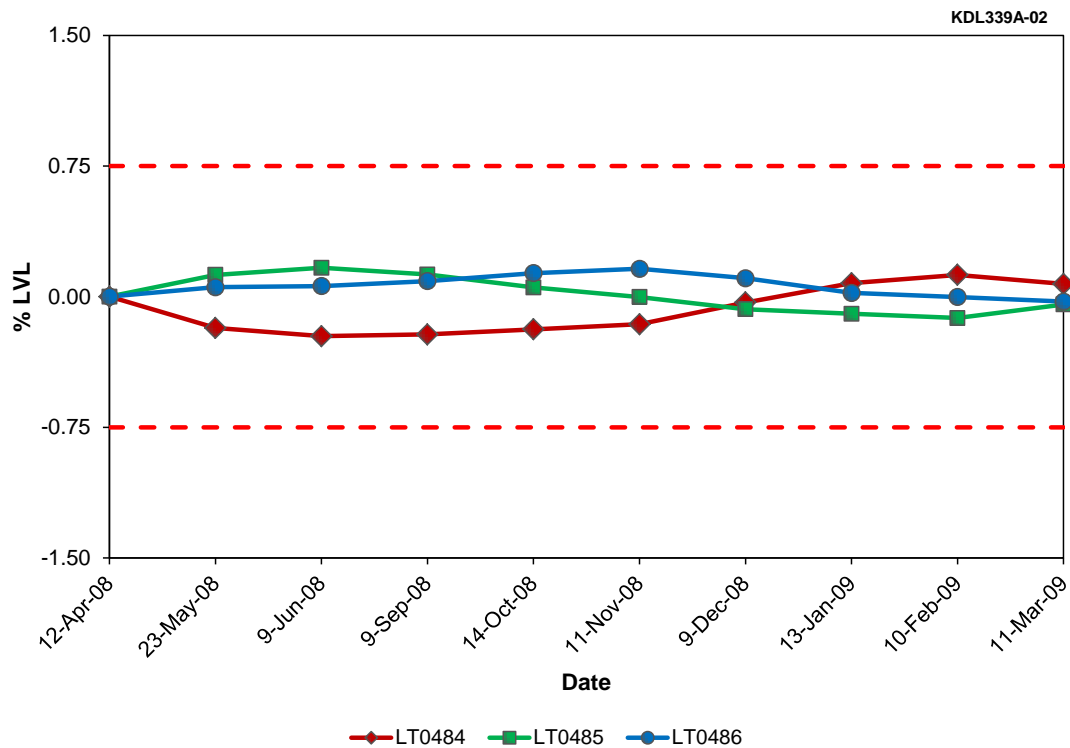
**Figure A.29 FW FLOW TO SG B Data Quality Statistics at Farley Unit 1 (Cycle 22)**

**Table A.6 FW FLOW TO SG B Data Quality for Farley Unit 1 (Cycle 22)**

Result Type	Tag Names	
	FE0486B	FE0487B
Mean	4097.27	4072.85
Std. Dev.	7.87	7.40
Skewness	-0.25	-0.22
Kurtosis	1.07	1.05



**Figure A.30 SG B LEVEL Steady-State Deviation at Farley Unit 1 (Cycle 22)**



**Figure A.31 SG B LEVEL Steady-State Drift at Farley Unit 1 (Cycle 22)**

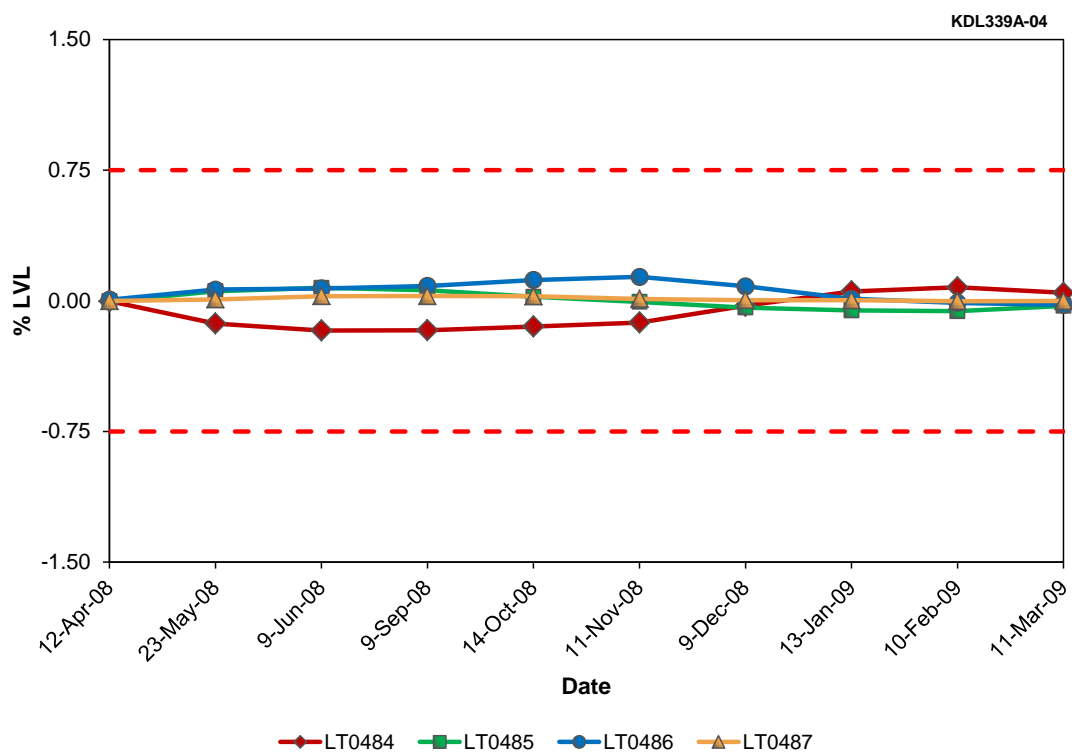
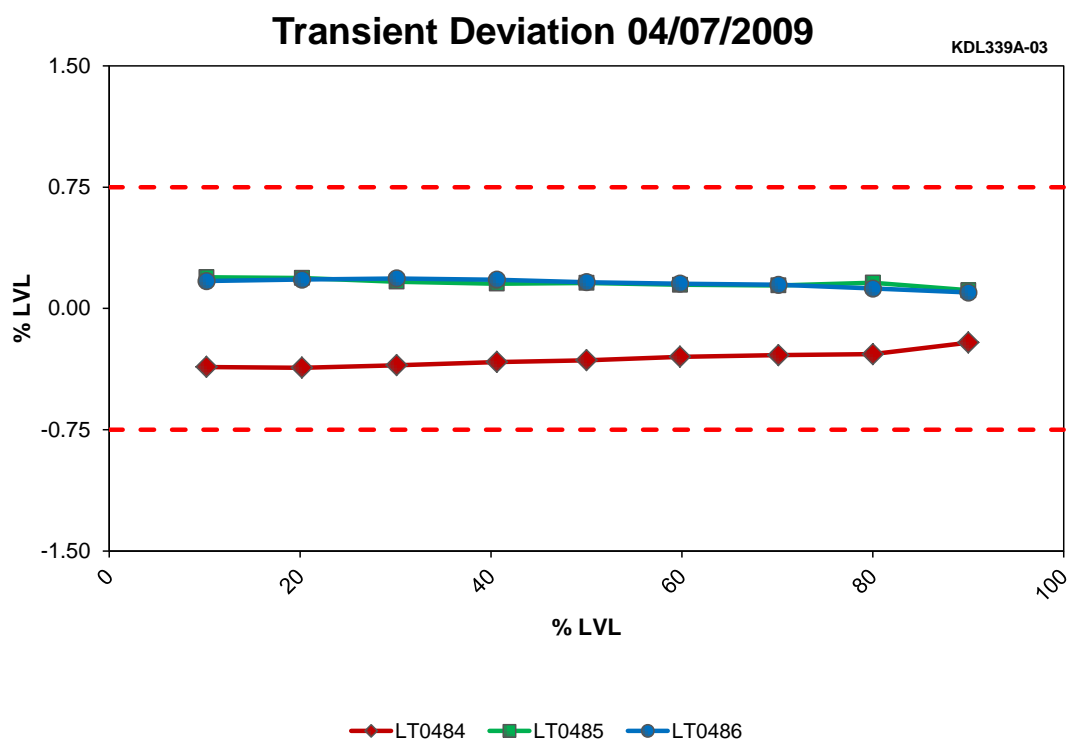
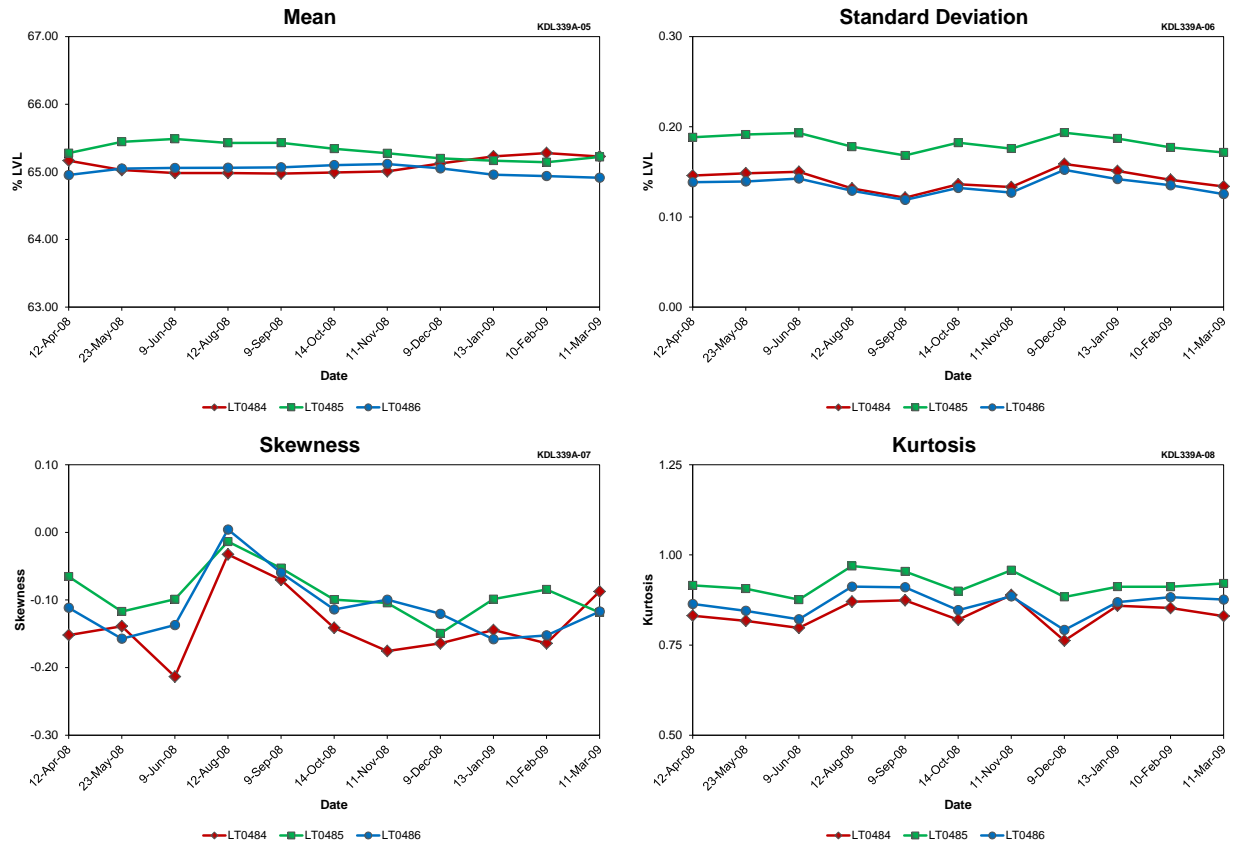


Figure A.32 SG B LEVEL Steady-State Residual AAKR at Farley Unit 1 (Cycle 22)



**Figure A.33 SG B LEVEL Transient Deviation at Farley Unit 1 (Cycle 22)**

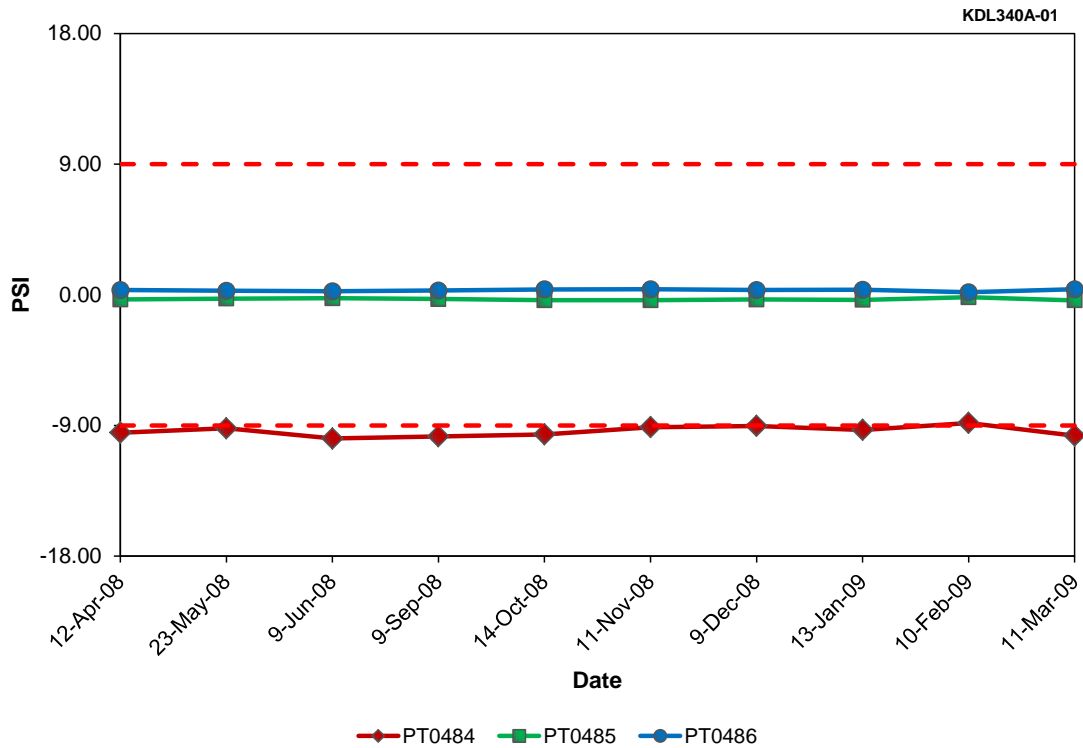




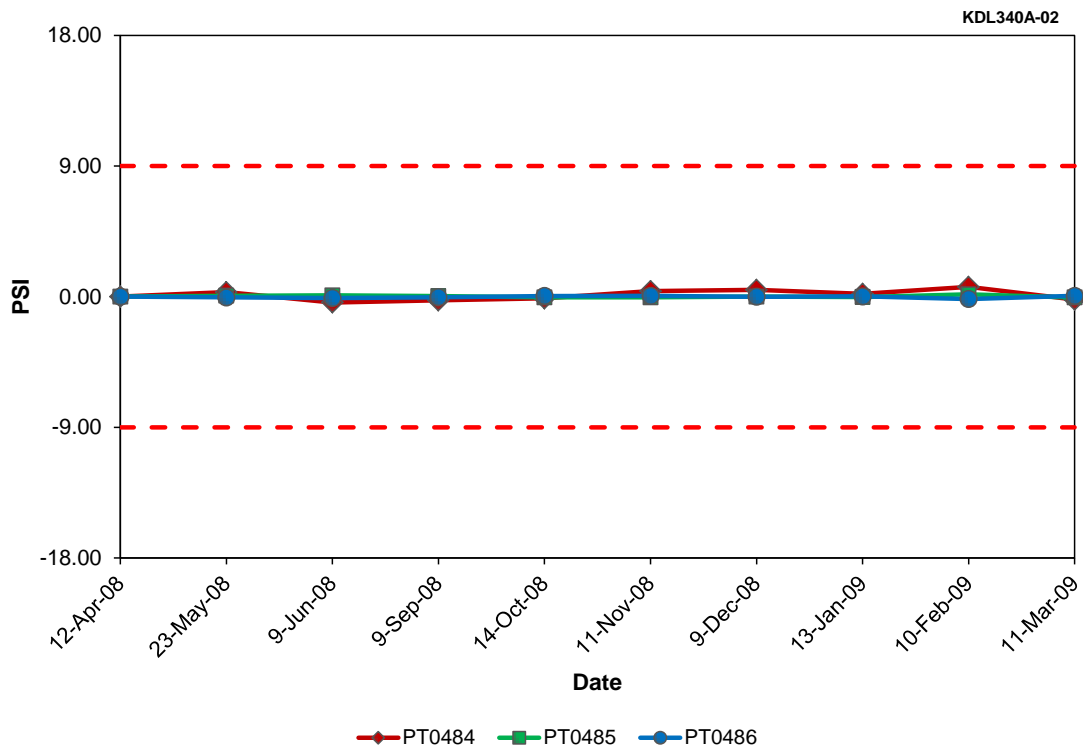
**Figure A.34 SG B LEVEL Data Quality Statistics at Farley Unit 1 (Cycle 22)**

**Table A.7 SG B LEVEL Data Quality for Farley Unit 1 (Cycle 22)**

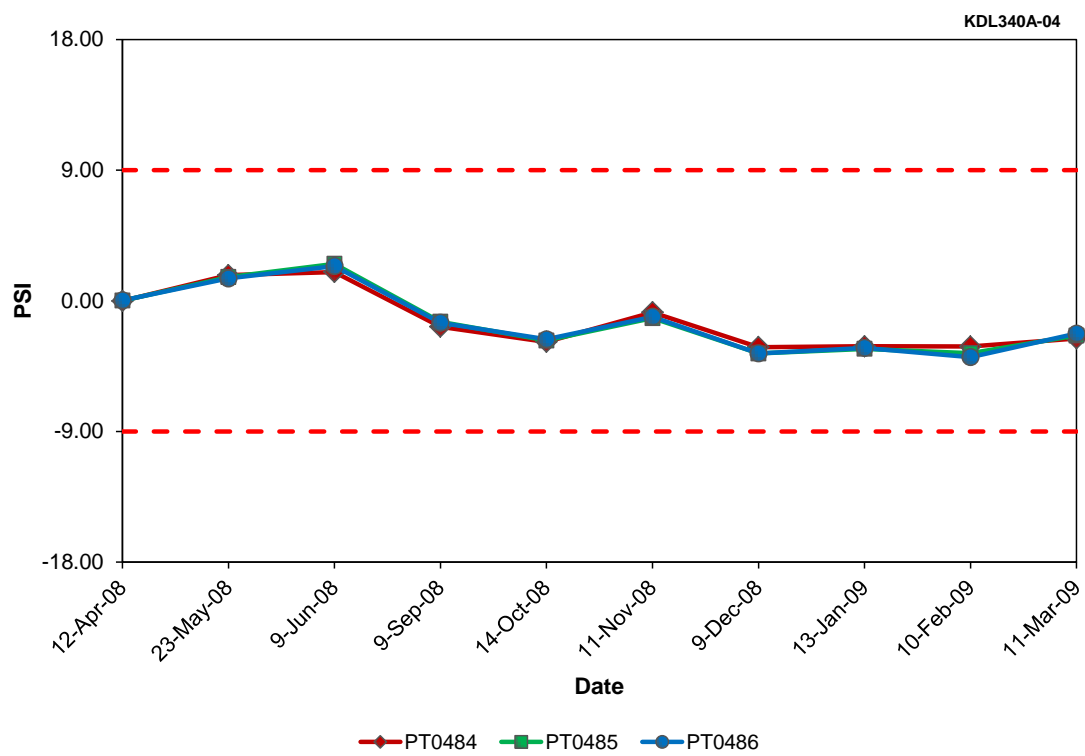
Result Type	Tag Names		
	LT0484	LT0485	LT0486
Mean	65.09	65.31	65.02
Std. Dev.	0.14	0.18	0.13
Skewness	-0.13	-0.09	-0.11
Kurtosis	0.84	0.92	0.86



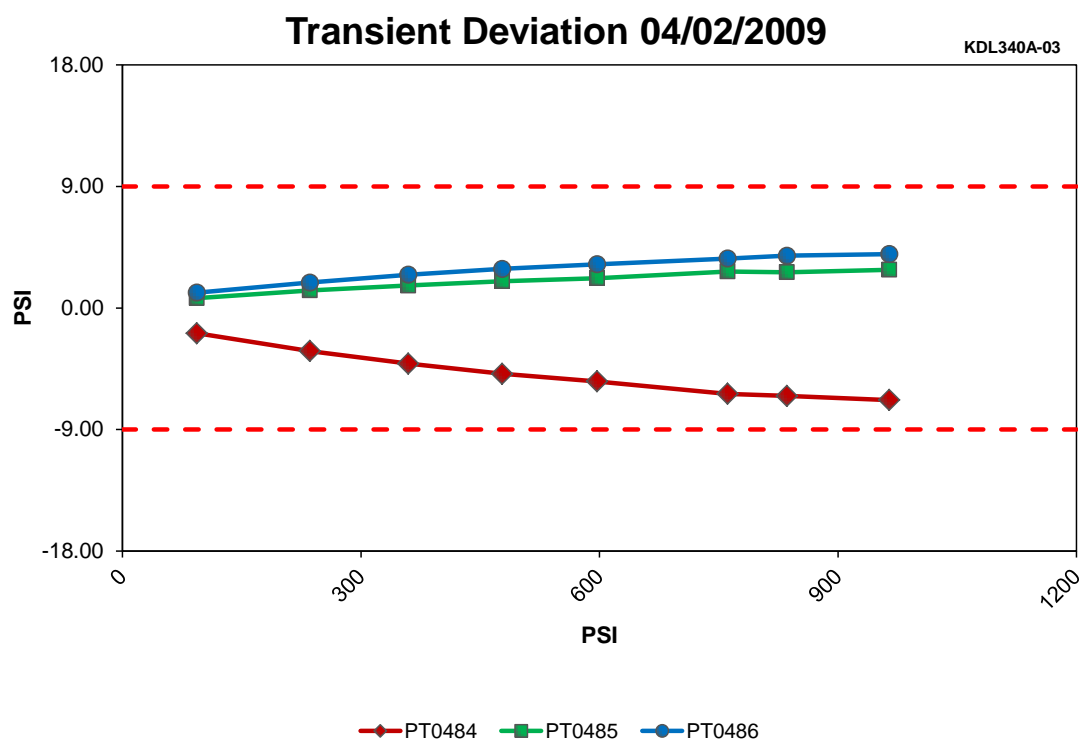
**Figure A.35 SG B OUTLET PRESSURE Steady-State Deviation at Farley Unit 1 (Cycle 22)**



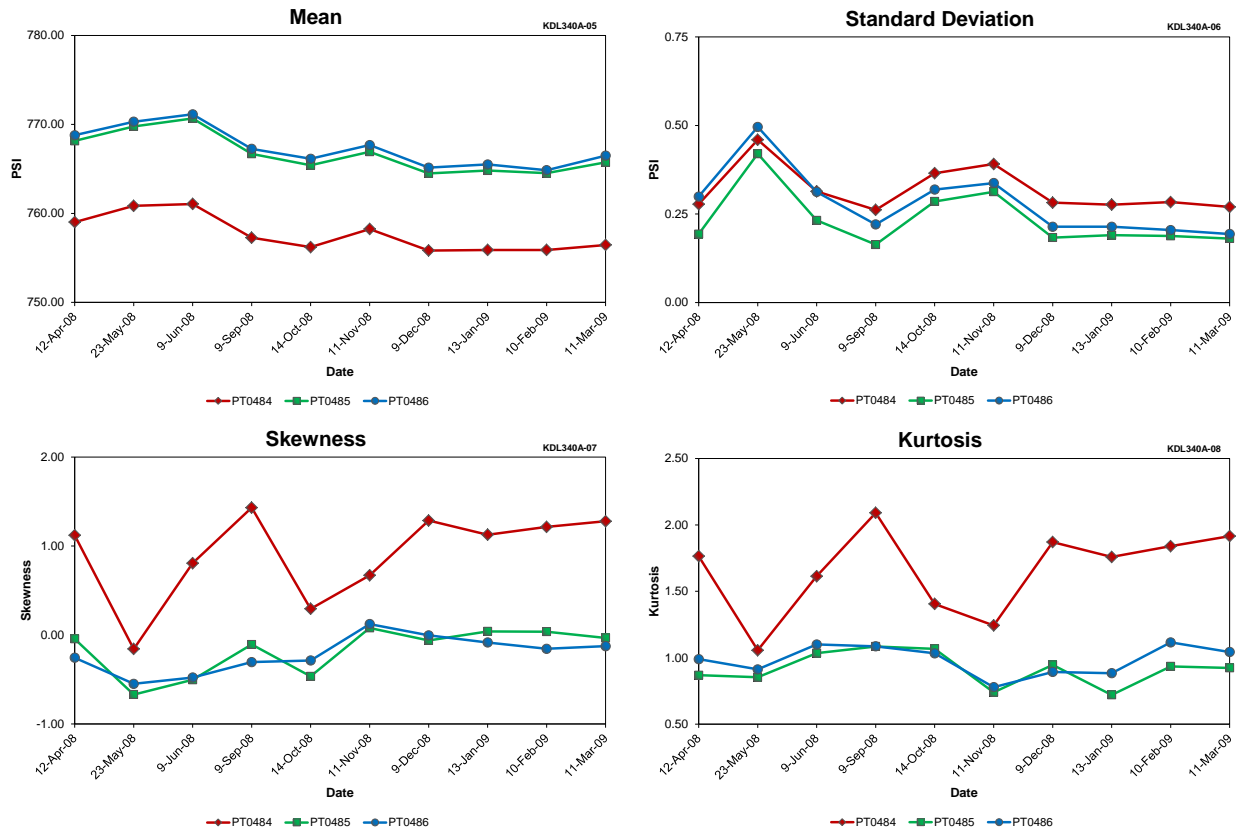
**Figure A.36 SG B OUTLET PRESSURE Steady-State Drift at Farley Unit 1 (Cycle 22)**



**Figure A.37 SG B OUTLET PRESSURE Steady-State Residual AAKR at Farley Unit 1 (Cycle 22)**



**Figure A.38 SG B OUTLET PRESSURE Transient Deviation at Farley Unit 1 (Cycle 22)**



**Figure A.39 SG B OUTLET PRESSURE Data Quality Statistics at Farley Unit 1 (Cycle 22)**

**Table A.8 SG B OUTLET PRESSURE Data Quality for Farley Unit 1 (Cycle 22)**

Result Type	Tag Names		
	PT0484	PT0485	PT0486
Mean	757.67	766.72	767.33
Std. Dev.	0.32	0.23	0.28
Skewness	0.91	-0.17	-0.21
Kurtosis	1.66	0.92	0.98

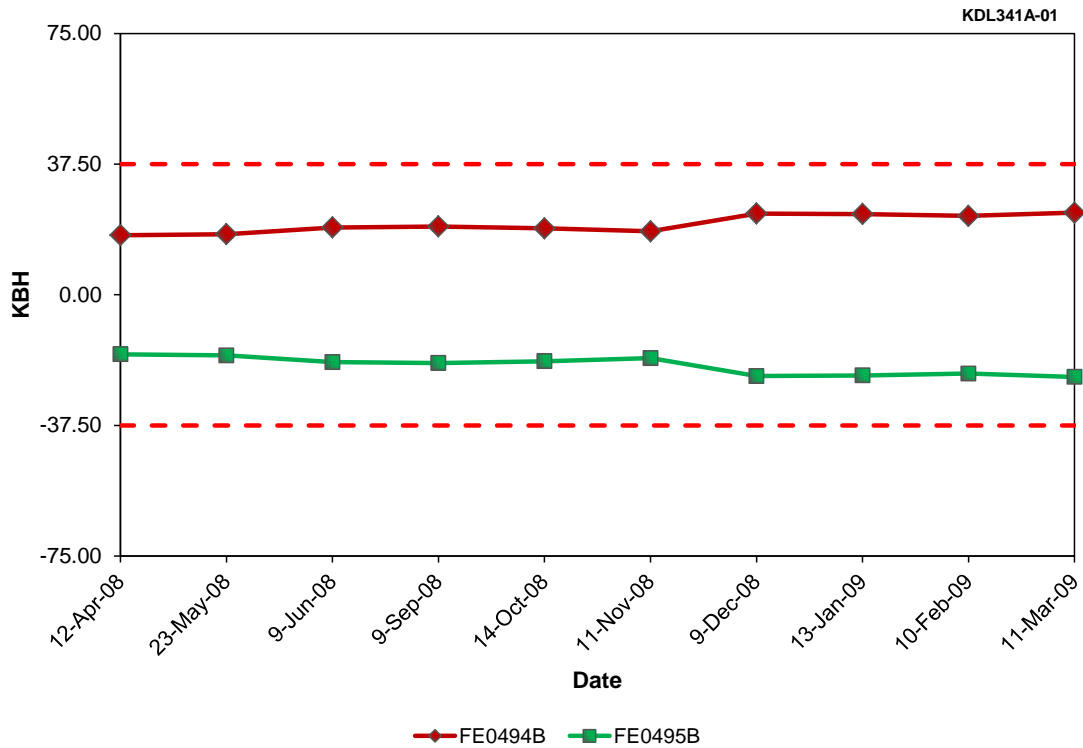


Figure A.40 SG C STEAM FLOW Steady-State Deviation at Farley Unit 1 (Cycle 22)

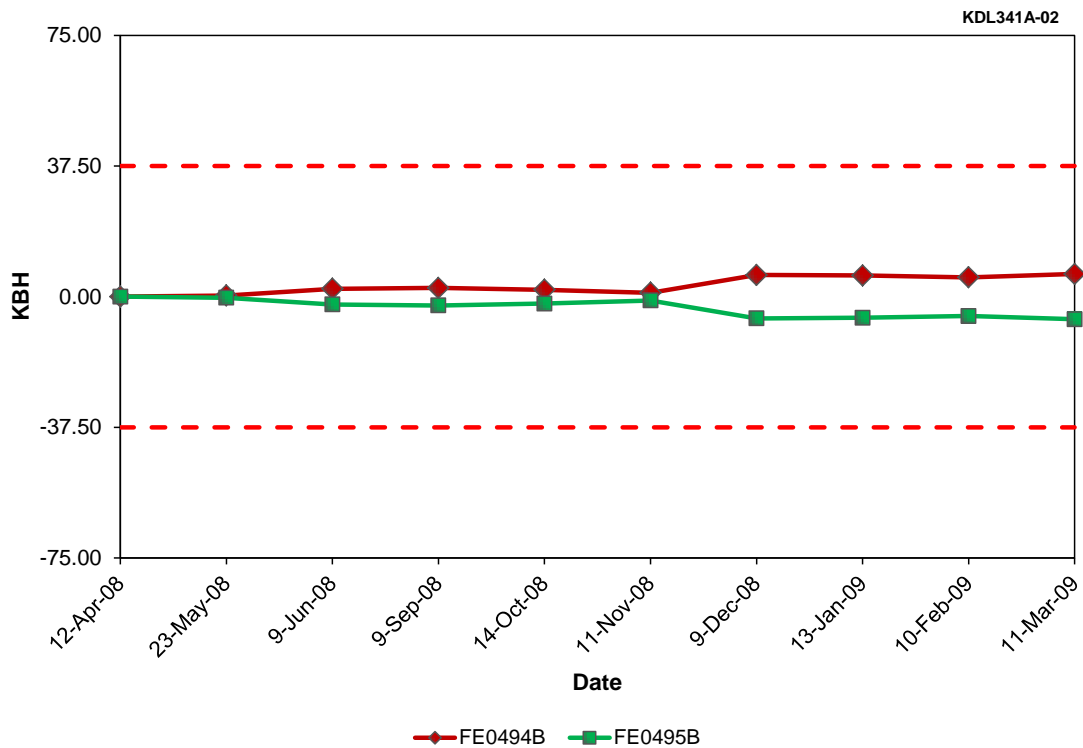
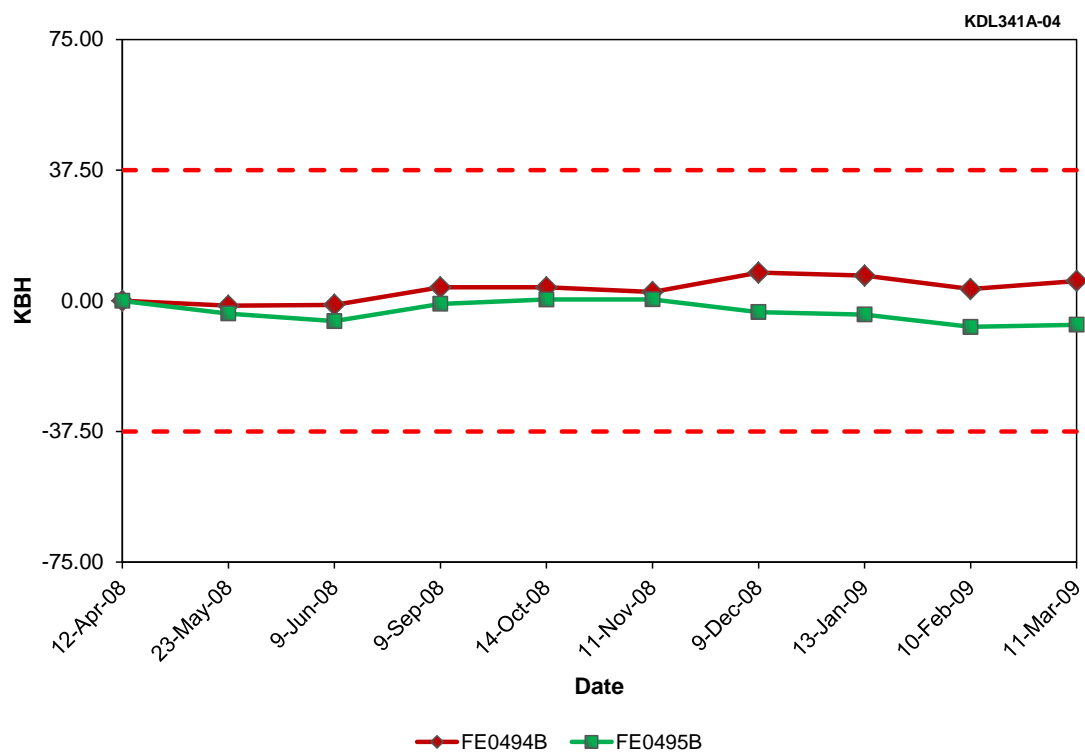


Figure A.41 SG C STEAM FLOW Steady-State Drift at Farley Unit 1 (Cycle 22)



**Figure A.42 SG C STEAM FLOW Steady-State Residual AAKR at Farley Unit 1 (Cycle 22)**

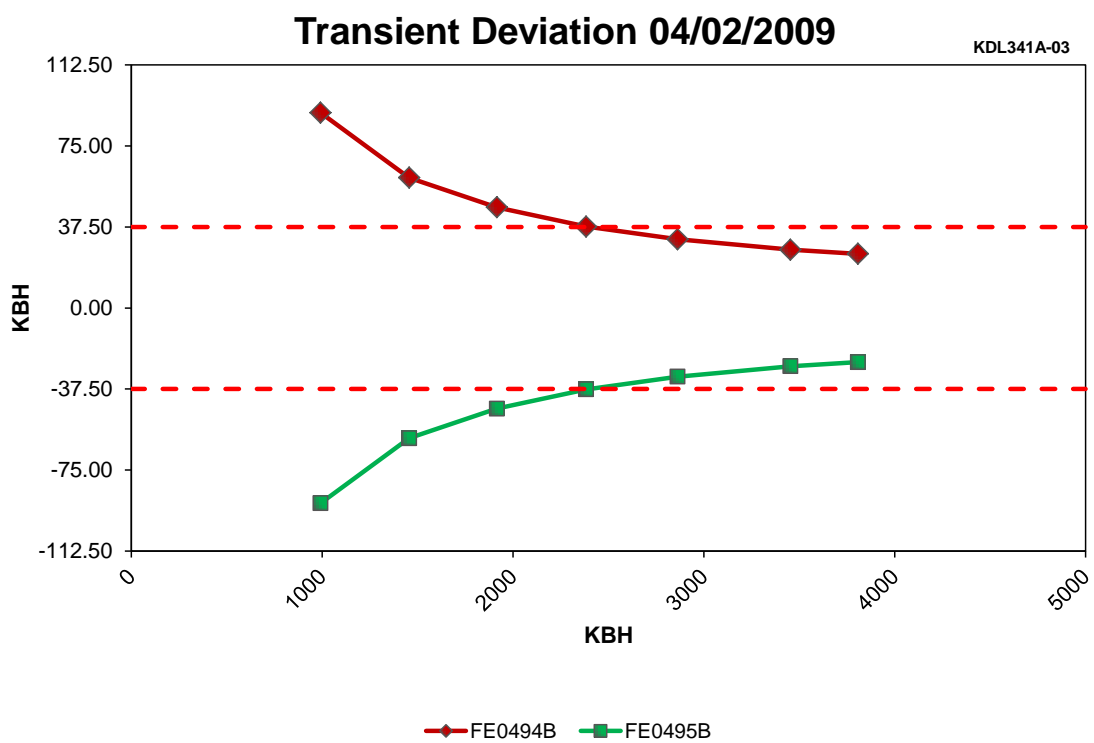
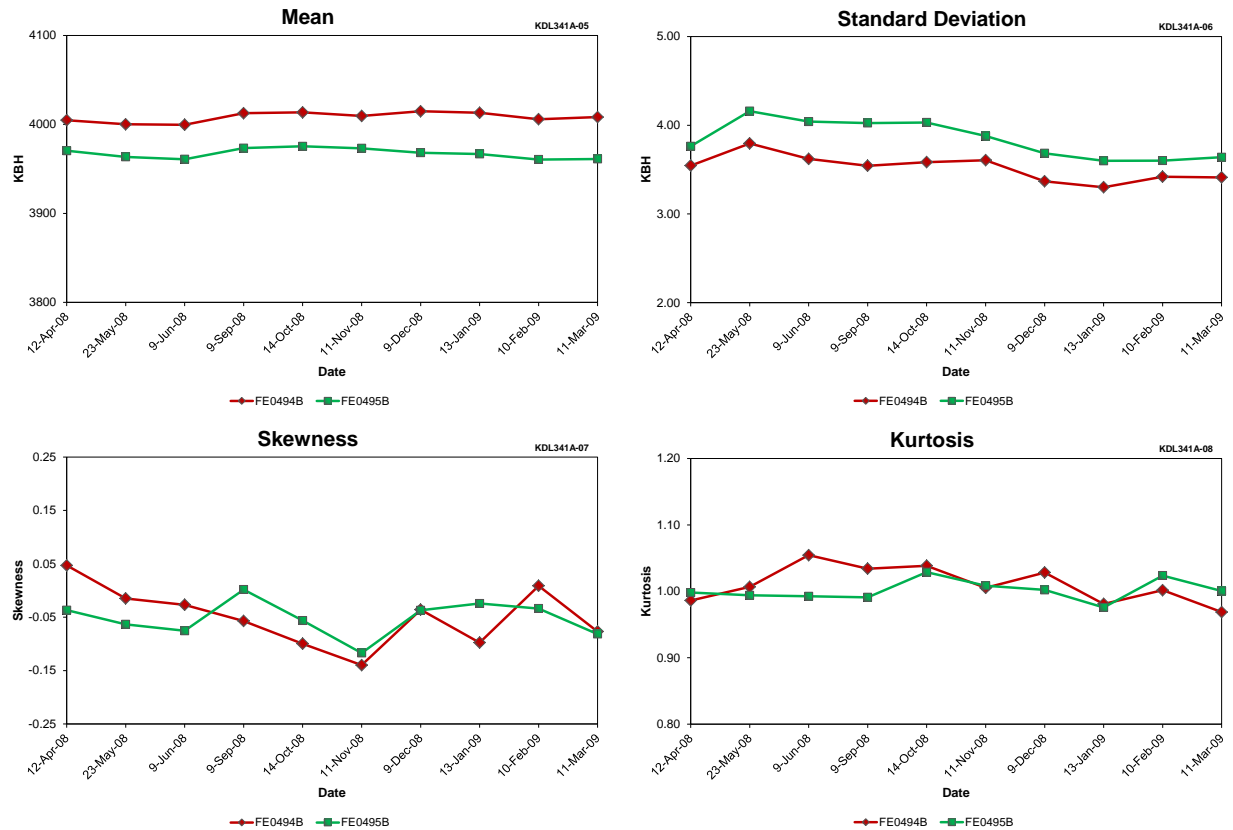


Figure A.43 SG C STEAM FLOW Transient Deviation at Farley Unit 1 (Cycle 22)

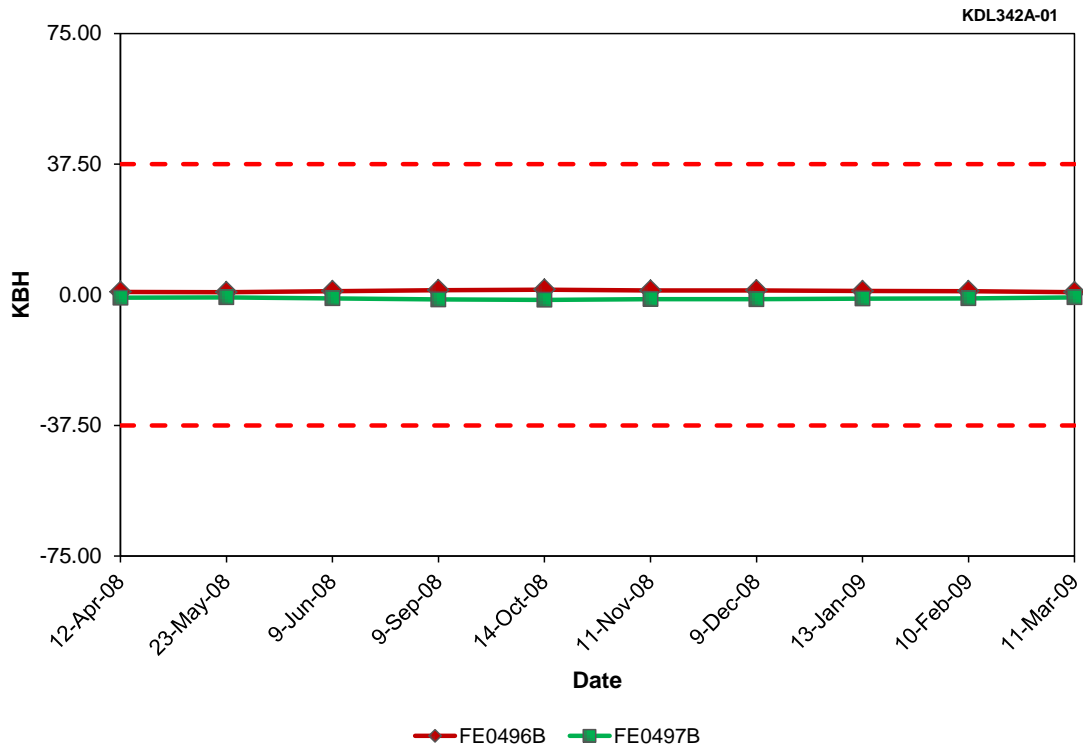




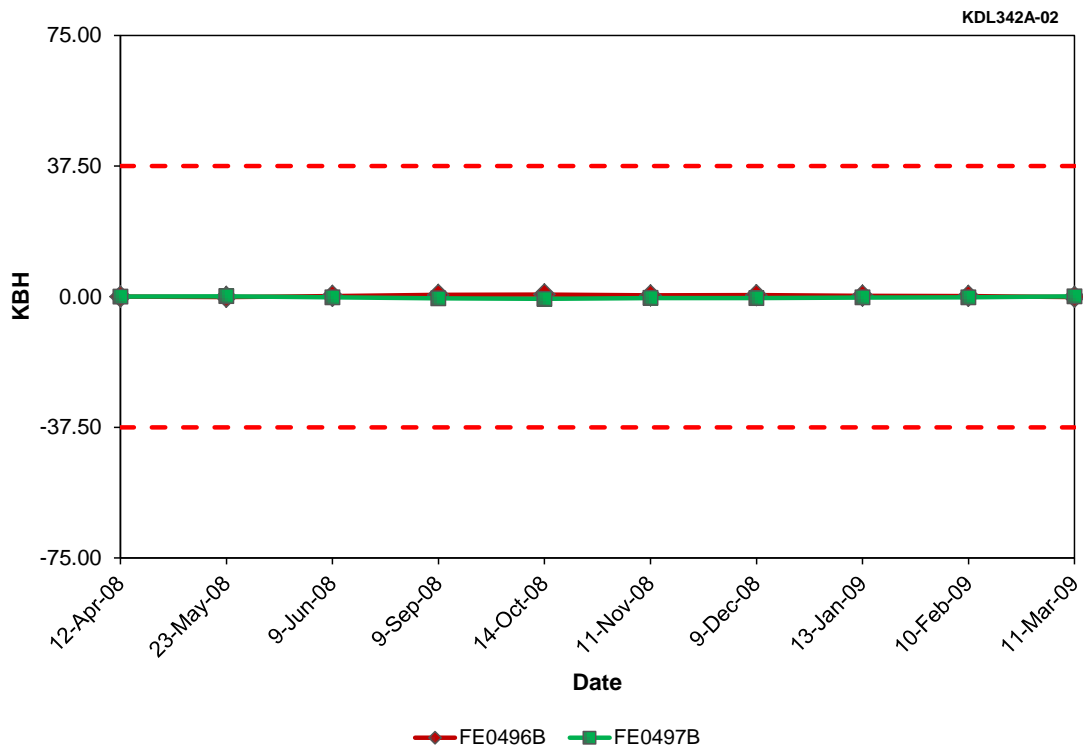
**Figure A.44 SG C STEAM FLOW Data Quality Statistics at Farley Unit 1 (Cycle 22)**

**Table A.9 SG C STEAM FLOW Data Quality for Farley Unit 1 (Cycle 22)**

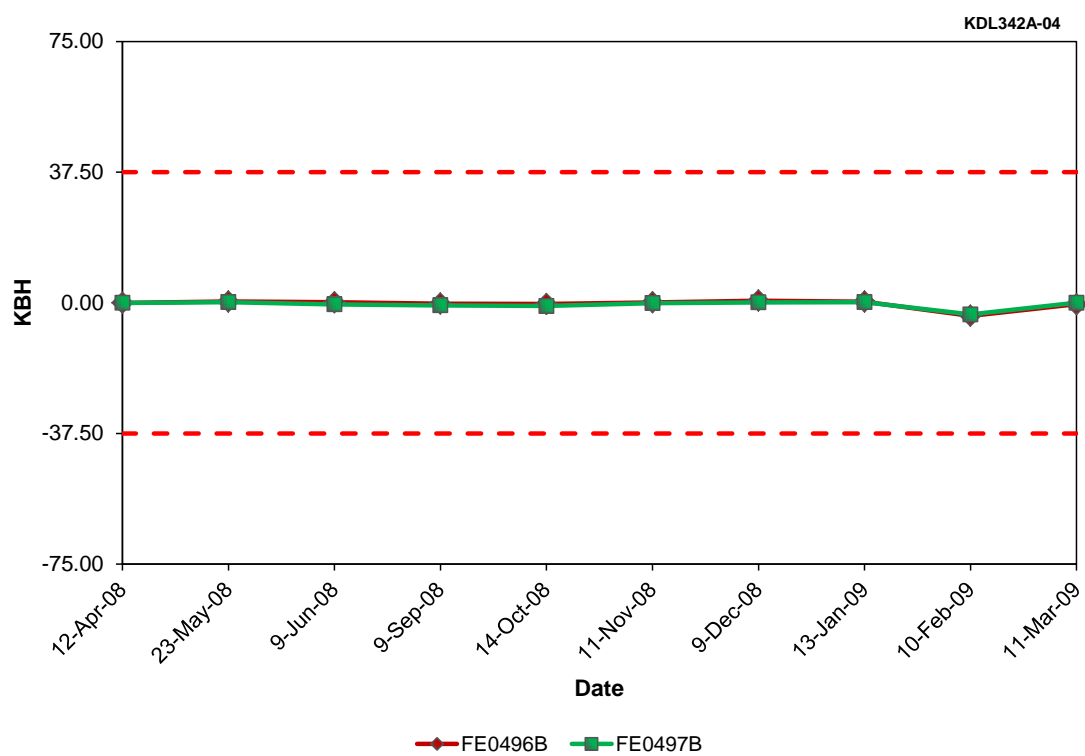
Result Type	Tag Names	
	FE0494B	FE0495B
Mean	4008.22	3967.36
Std. Dev.	3.52	3.84
Skewness	-0.05	-0.05
Kurtosis	1.01	1.00



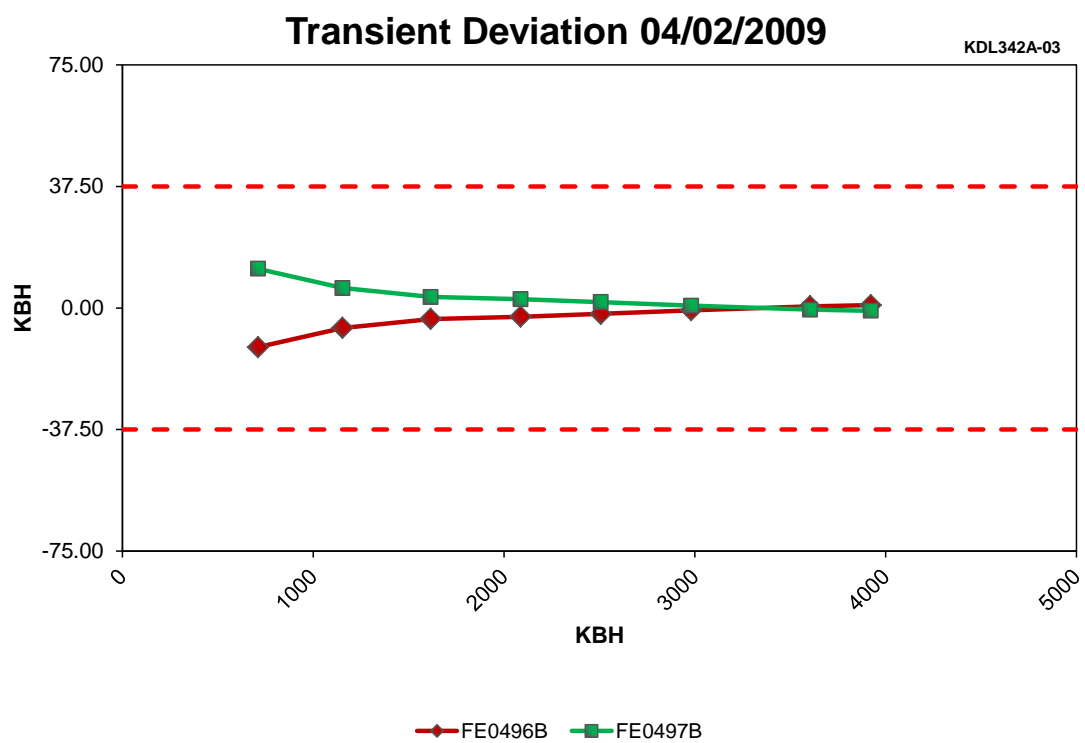
**Figure A.45 FW FLOW TO SG C Steady-State Deviation at Farley Unit 1 (Cycle 22)**



**Figure A.46 FW FLOW TO SG C Steady-State Drift at Farley Unit 1 (Cycle 22)**



**Figure A.47 FW FLOW TO SG C Steady-State Residual AAKR at Farley Unit 1 (Cycle 22)**



**Figure A.48 FW FLOW TO SG C Transient Deviation at Farley Unit 1 (Cycle 22)**

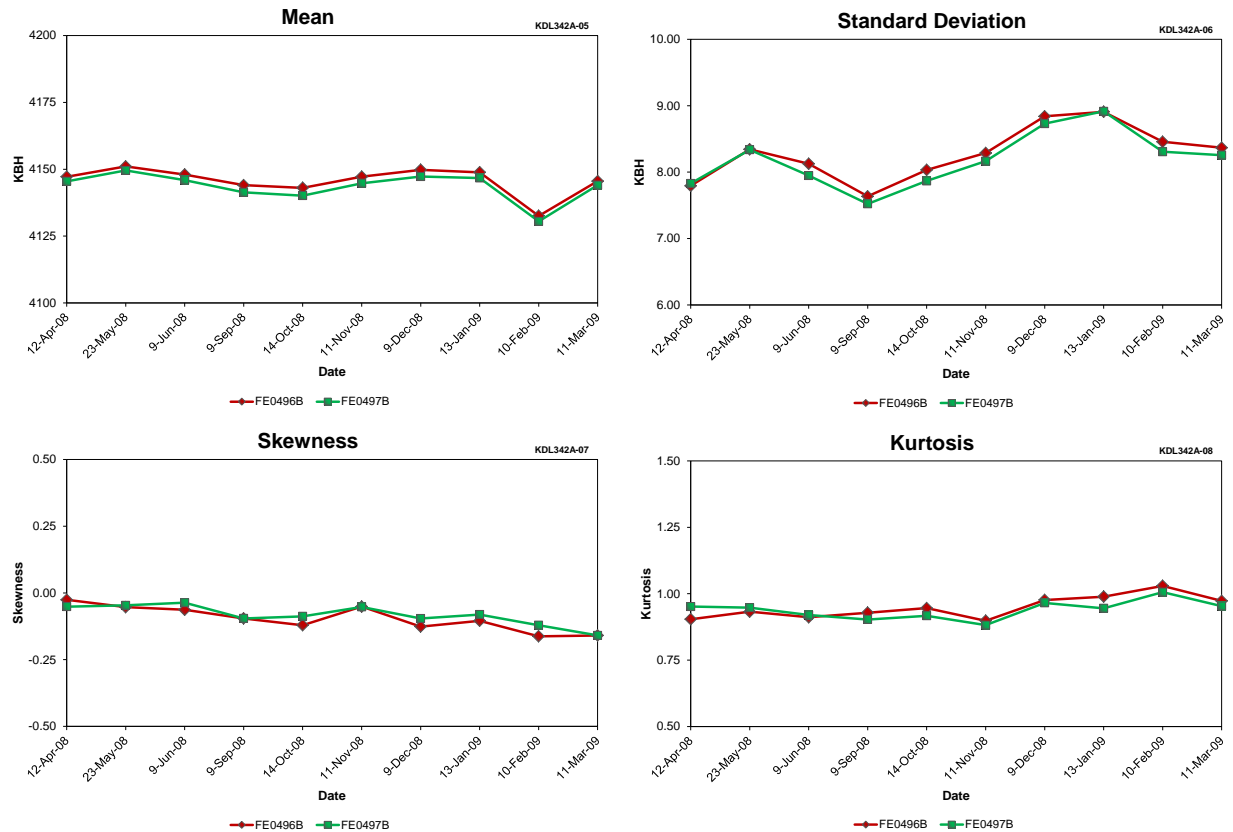


Figure A.49 FW FLOW TO SG C Data Quality Statistics at Farley Unit 1 (Cycle 22)

Table A.10 FW FLOW TO SG C Data Quality for Farley Unit 1 (Cycle 22)

Result Type	Tag Names	
	FE0496B	FE0497B
Mean	4145.73	4143.58
Std. Dev.	8.28	8.19
Skewness	-0.10	-0.08
Kurtosis	0.95	0.94

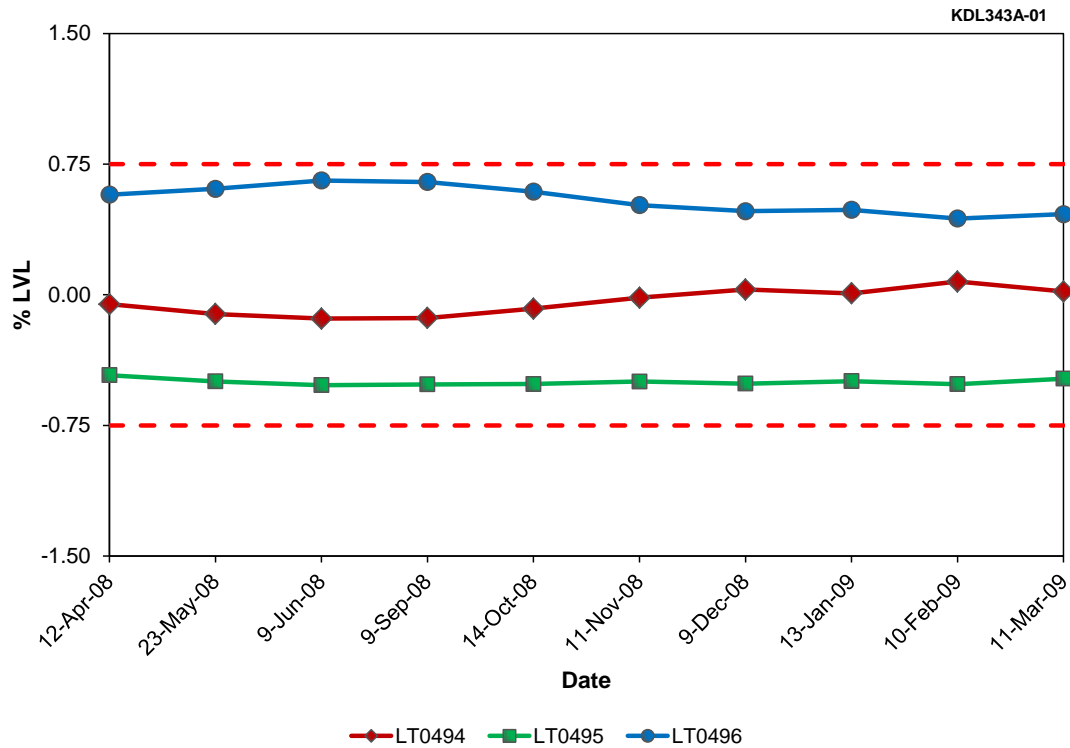


Figure A.50 SG C LEVEL Steady-State Deviation at Farley Unit 1 (Cycle 22)

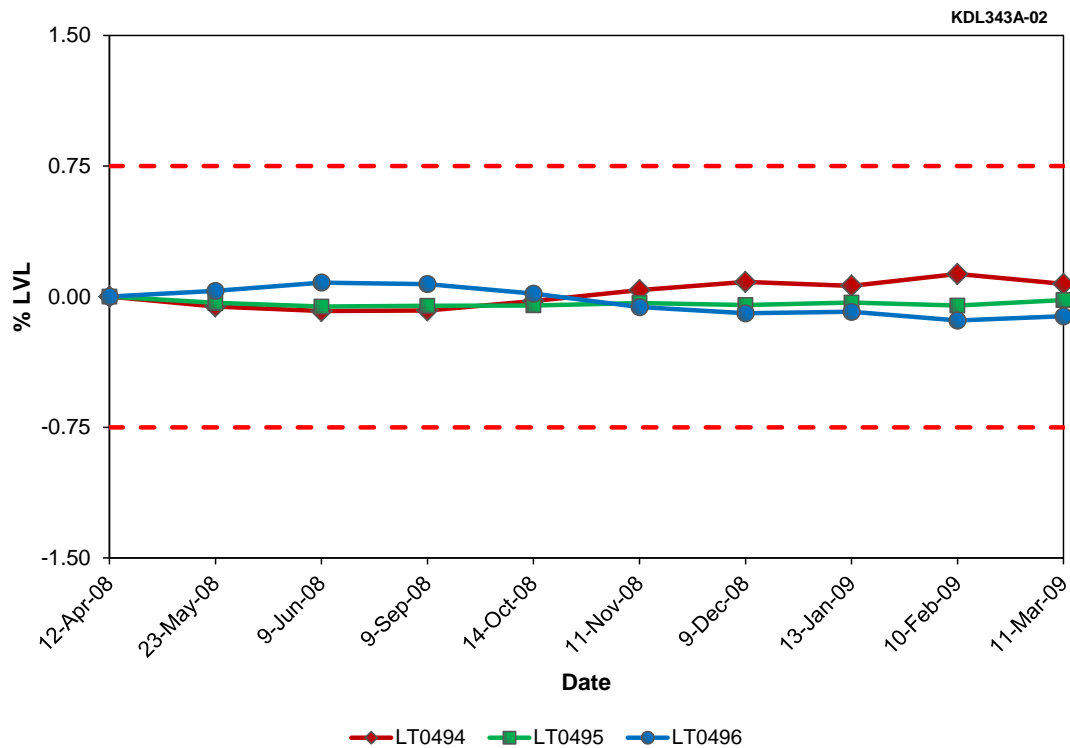
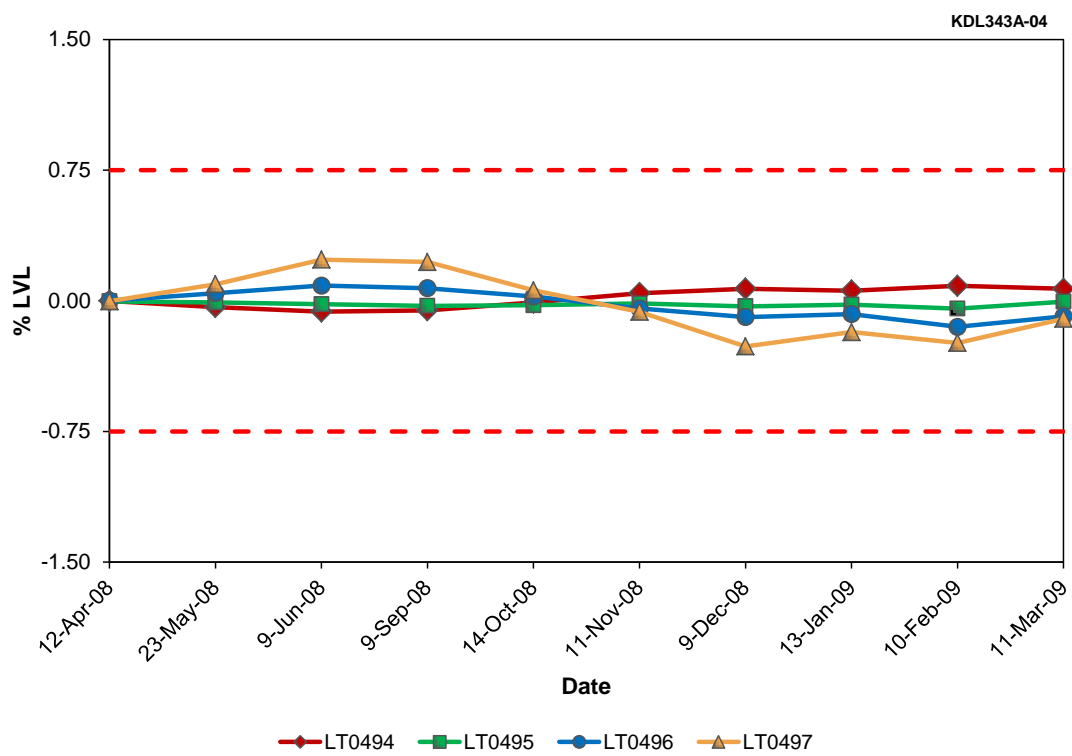
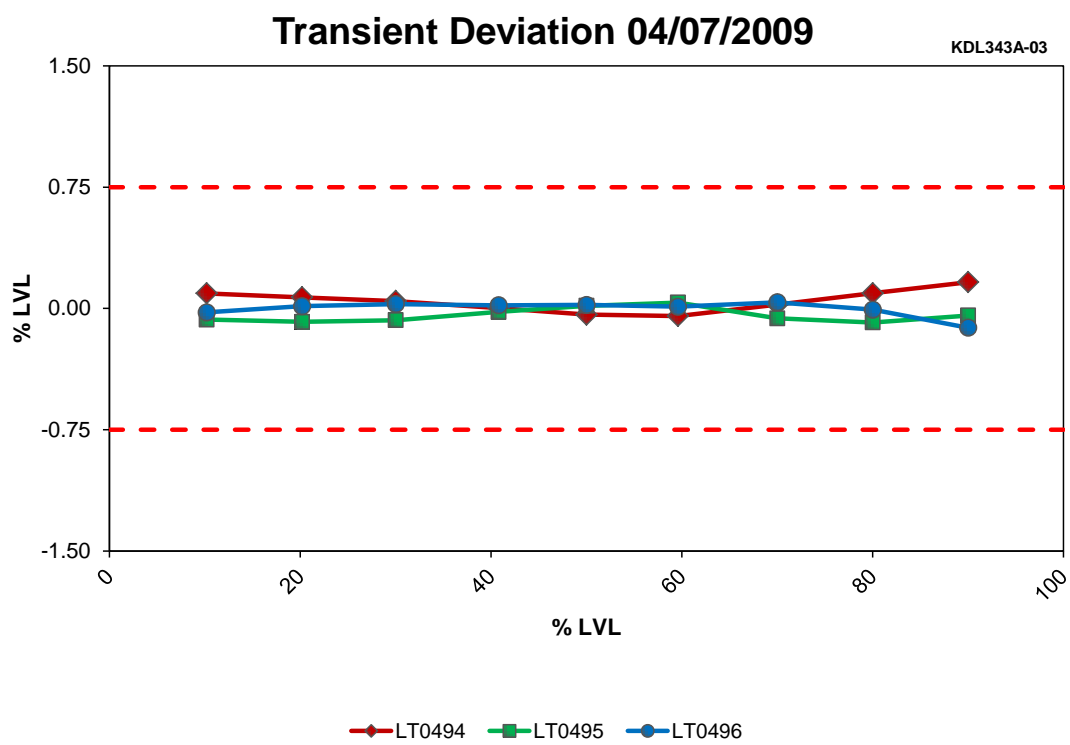


Figure A.51 SG C LEVEL Steady-State Drift at Farley Unit 1 (Cycle 22)

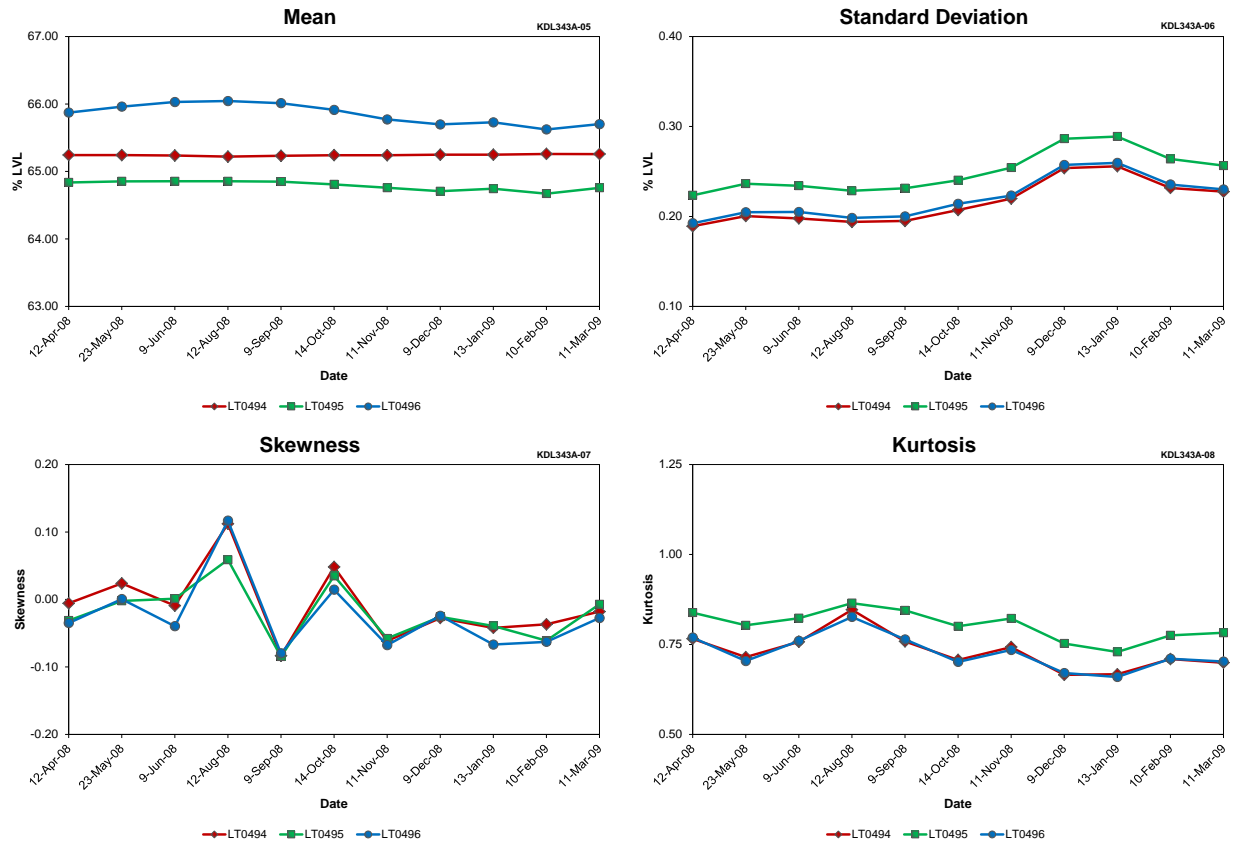


**Figure A.52 SG C LEVEL Steady-State Residual AAKR at Farley Unit 1 (Cycle 22)**



**Figure A.53 SG C LEVEL Transient Deviation at Farley Unit 1 (Cycle 22)**





**Figure A.54 SG C LEVEL Data Quality Statistics at Farley Unit 1 (Cycle 22)**

**Table A.11 SG B LEVEL Data Quality for Farley Unit 1 (Cycle 22)**

Result Type	Tag Names		
	LT0494	LT0495	LT0496
Mean	65.24	64.79	65.85
Std. Dev.	0.22	0.25	0.22
Skewness	-0.01	-0.02	-0.02
Kurtosis	0.73	0.80	0.73

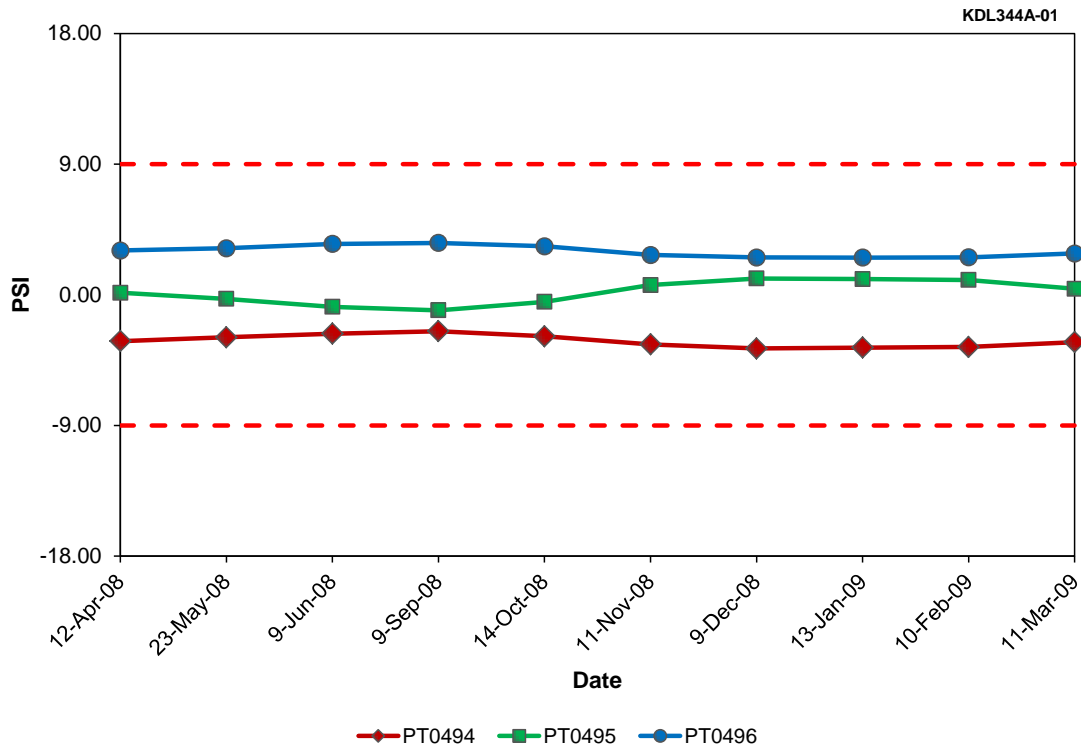


Figure A.55 SG C OUTLET PRESSURE Steady-State Deviation at Farley Unit 1 (Cycle 22)

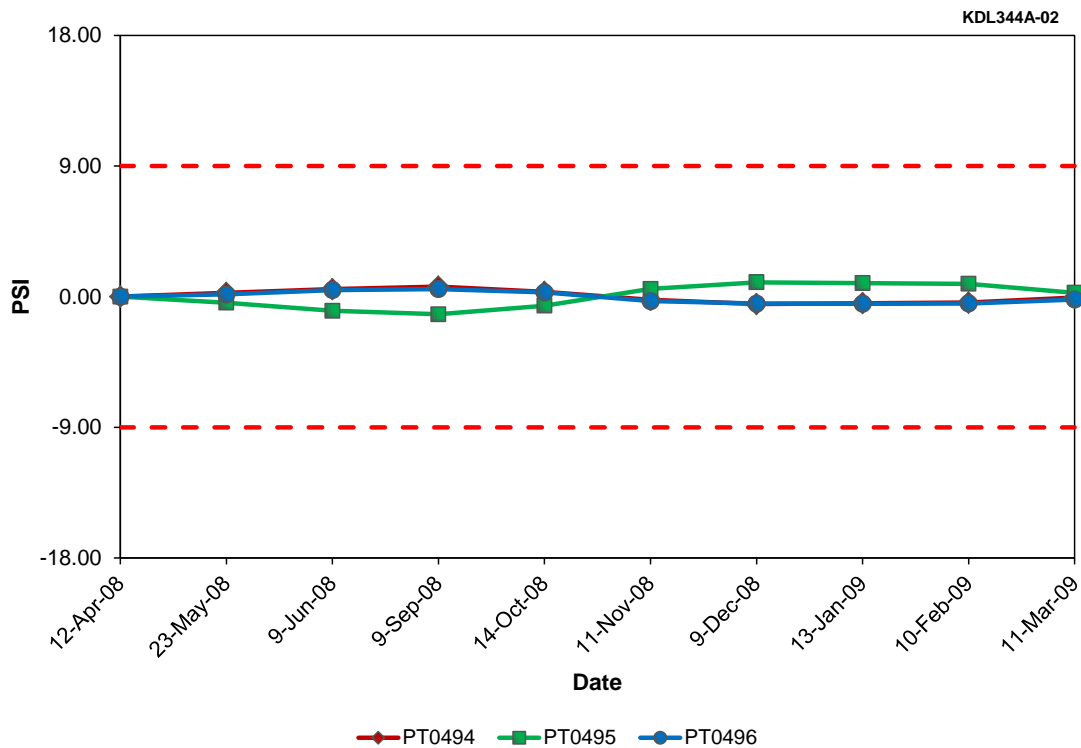


Figure A.56 SG C OUTLET PRESSURE Steady-State Drift at Farley Unit 1 (Cycle 22)

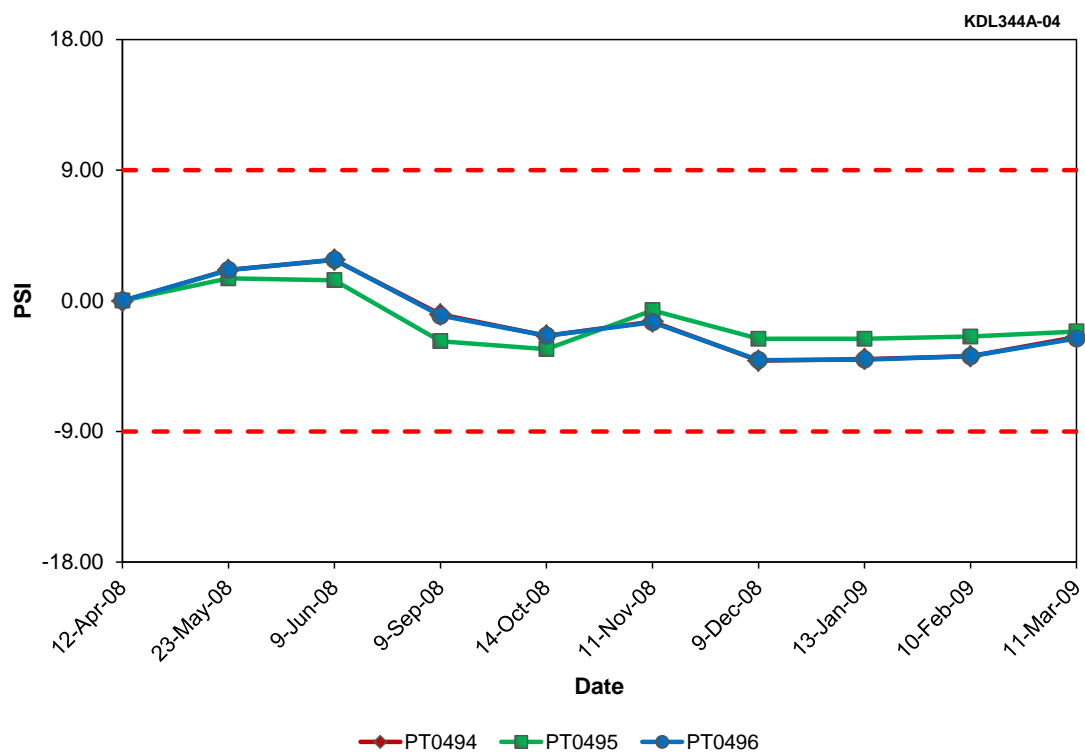
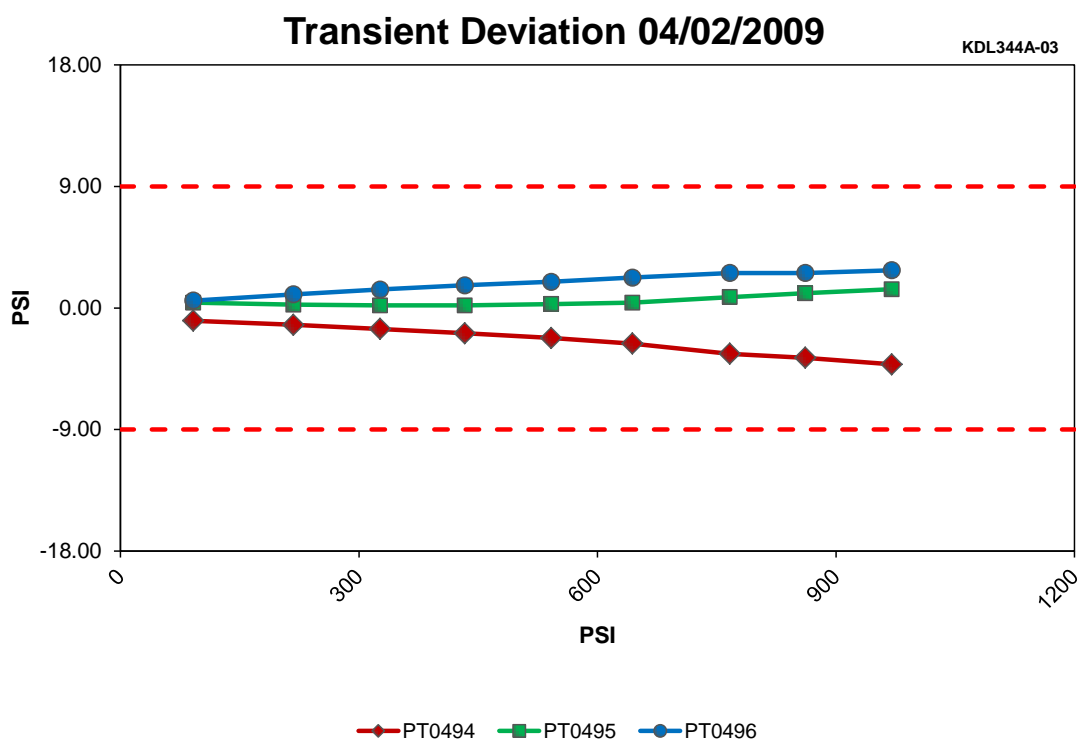


Figure A.57 SG C OUTLET PRESSURE Steady-State Residual AAKR at Farley Unit 1 (Cycle 22)



**Figure A.58 SG C OUTLET PRESSURE Transient Deviation at Farley Unit 1 (Cycle 22)**

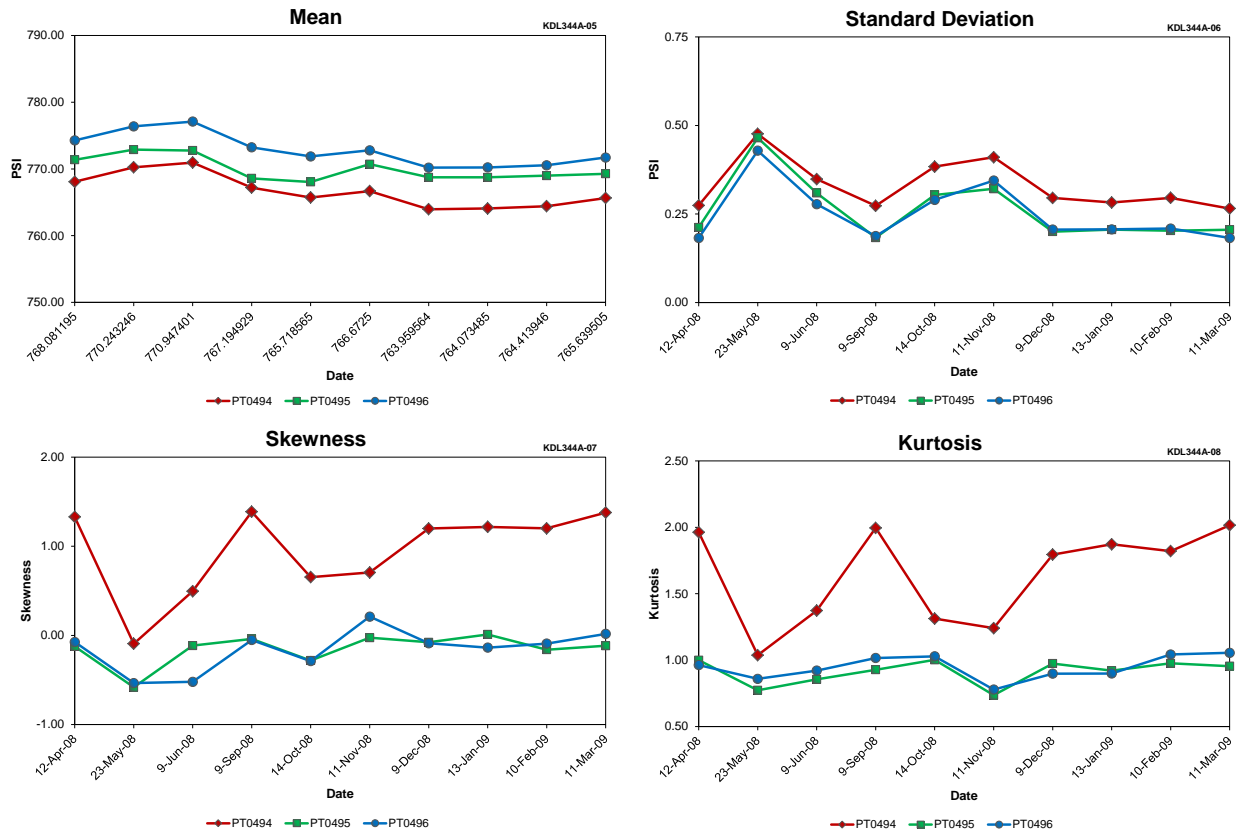
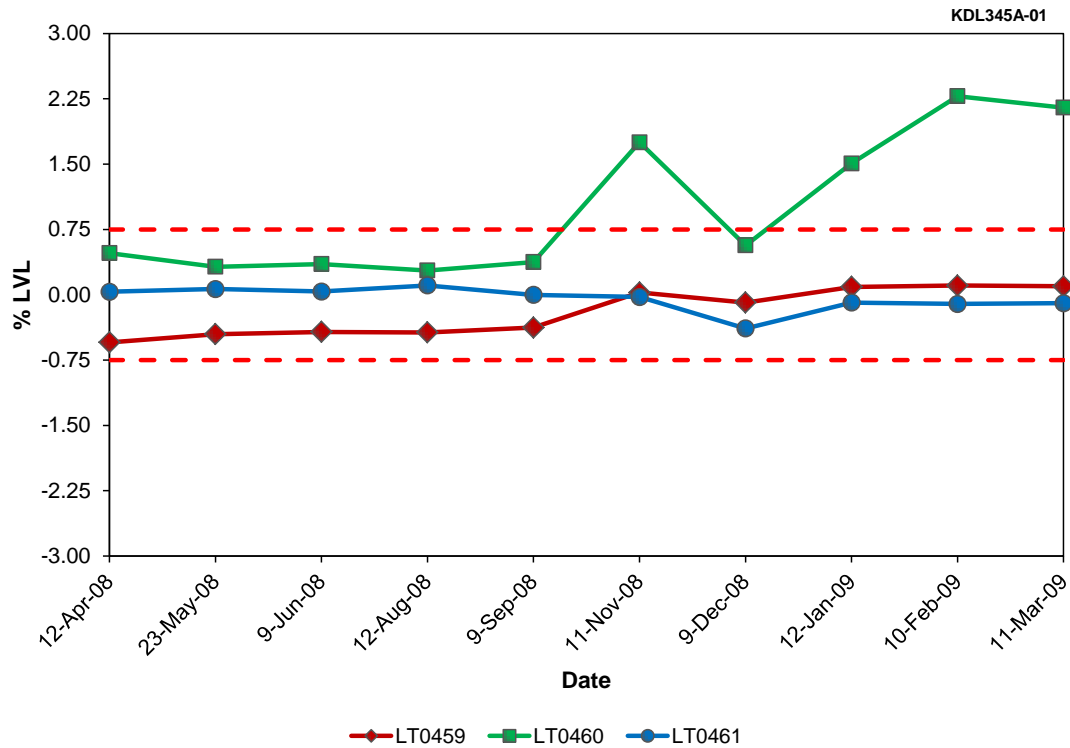


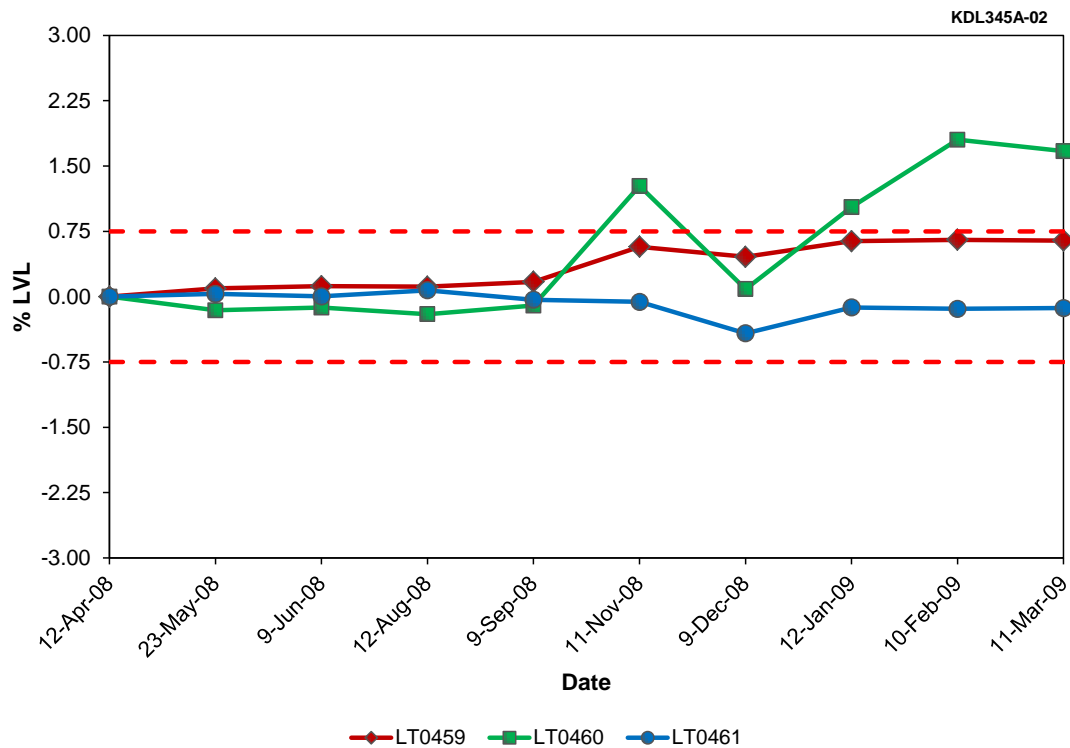
Figure A.59 SG C OUTLET PRESSURE Data Quality Statistics at Farley Unit 1 (Cycle 22)

Table A.12 SG C OUTLET PRESSURE Data Quality for Farley Unit 1 (Cycle 22)

Result Type	Tag Names		
	PT0494	PT0495	PT0496
Mean	766.69	770.01	772.83
Std. Dev.	0.33	0.26	0.25
Skewness	0.95	-0.15	-0.16
Kurtosis	1.64	0.91	0.95



**Figure A.60 PRESSURIZER LEVEL Steady-State Deviation at Farley Unit 1 (Cycle 22)**



**Figure A.61 PRESSURIZER LEVEL Steady-State Drift at Farley Unit 1 (Cycle 22)**

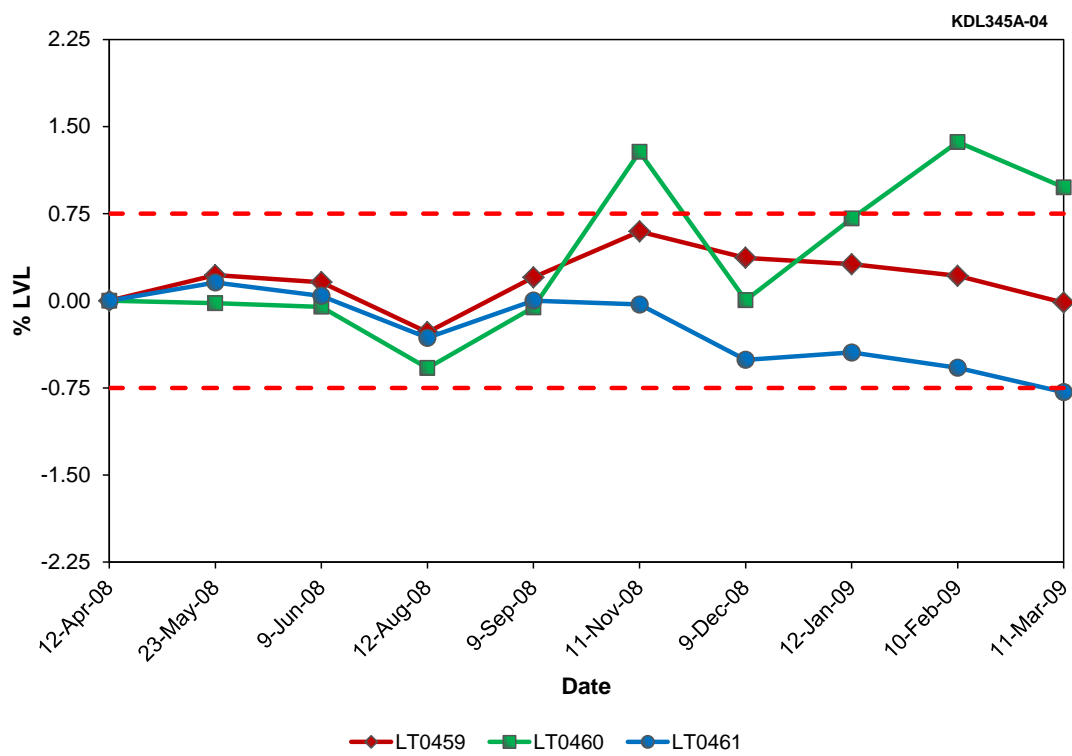
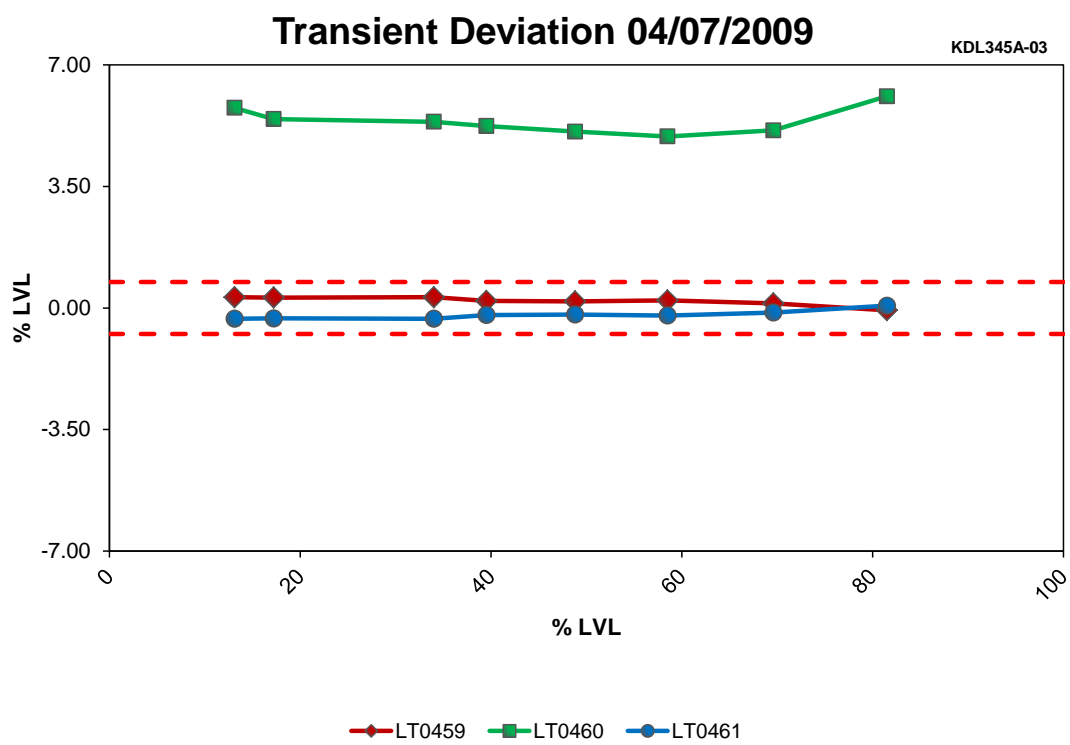
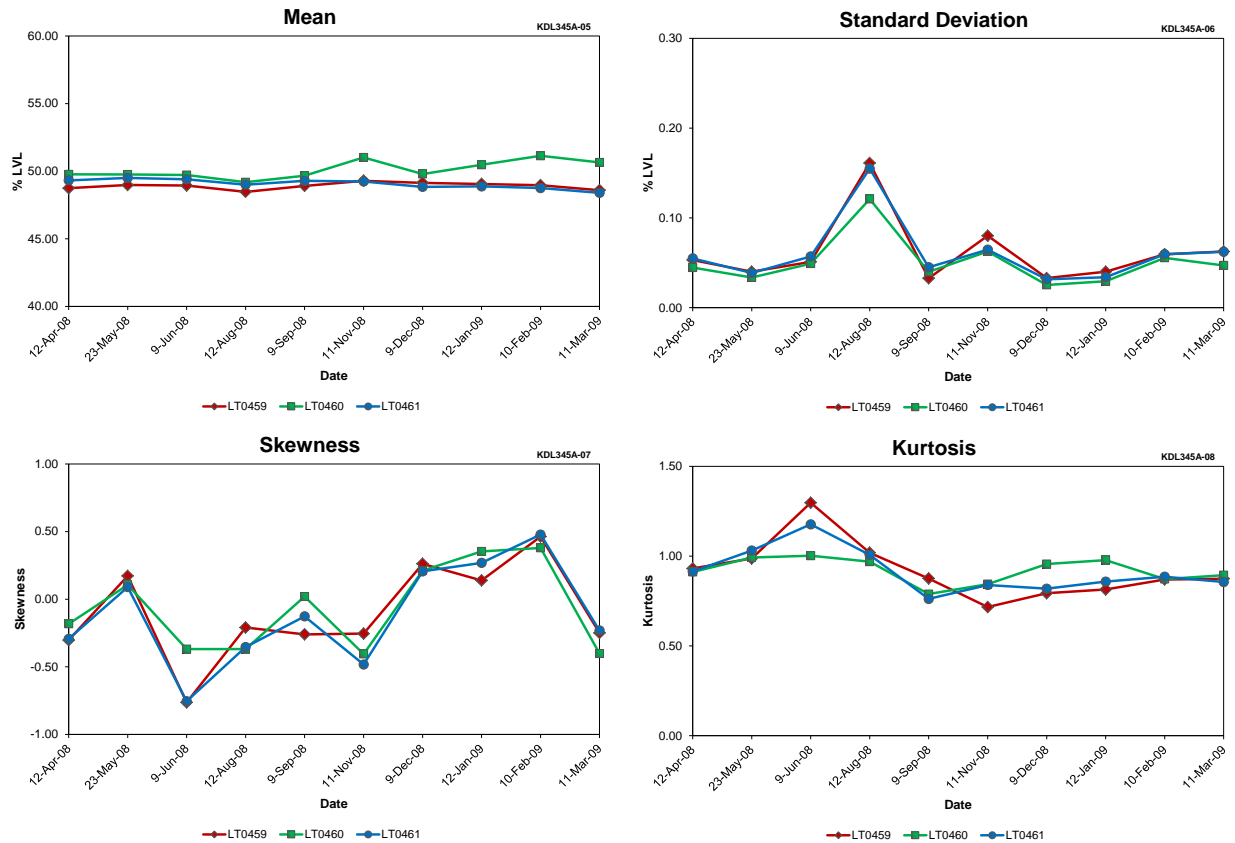


Figure A.62 PRESSURIZER LEVEL Steady-State Residual AAKR at Farley Unit 1 (Cycle 22)



**Figure A.63 PRESSURIZER LEVEL Transient Deviation at Farley Unit 1 (Cycle 22)**

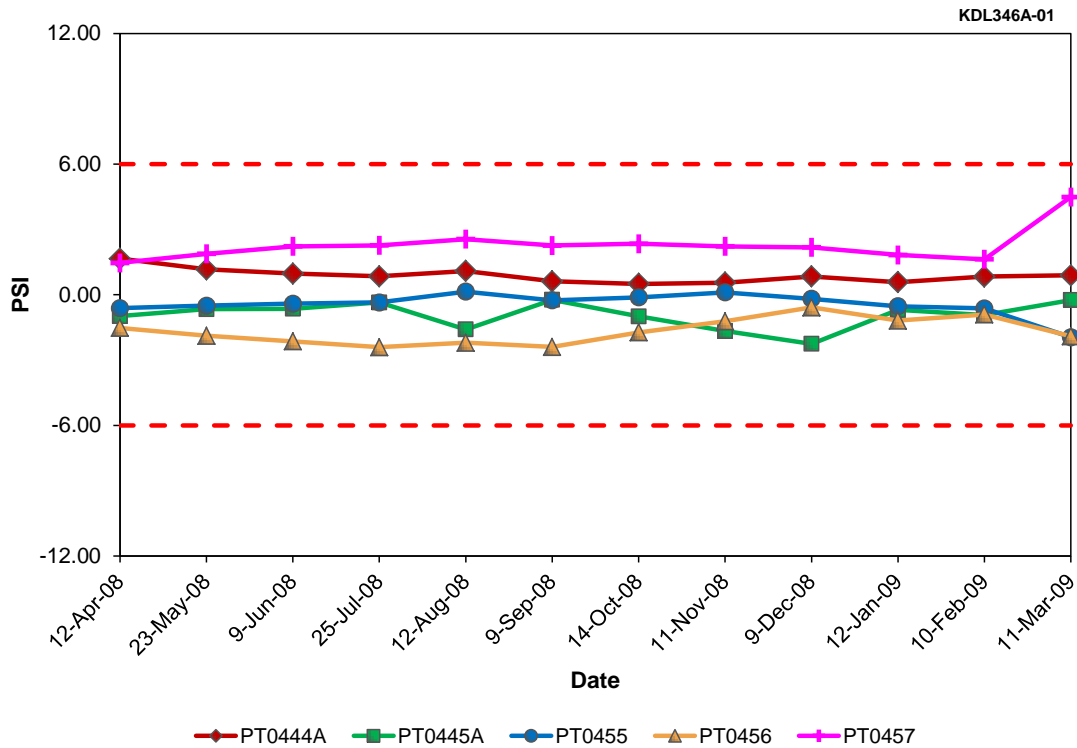




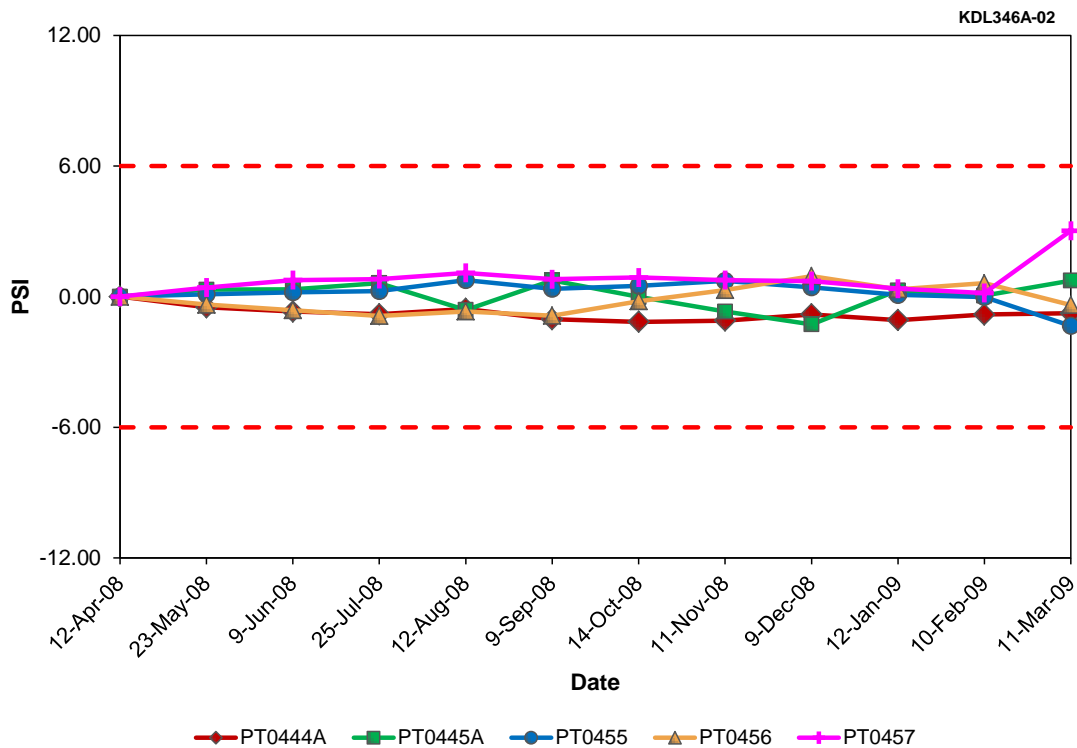
**Figure A.64 PRESSURIZER LEVEL Data Quality Statistics at Farley Unit 1 (Cycle 22)**

**Table A.13 PRESSURIZER LEVEL Data Quality for Farley Unit 1 (Cycle 22)**

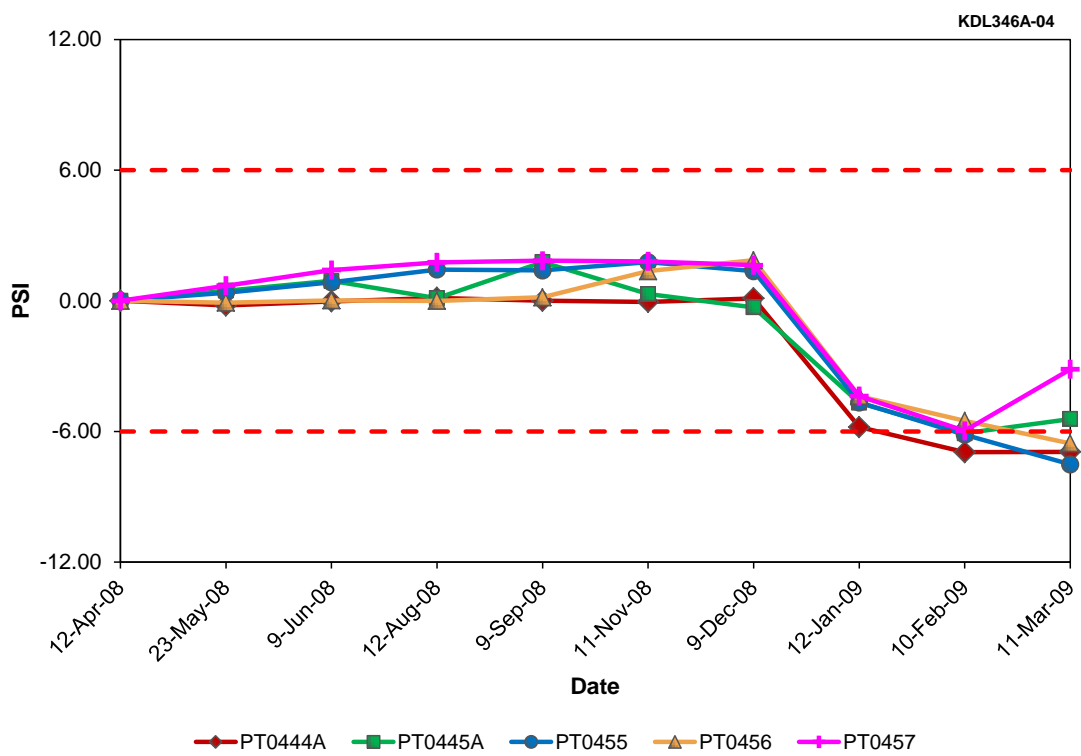
Result Type	Tag Names		
	LT0459	LT0460	LT0461
Mean	48.91	50.12	49.06
Std. Dev.	0.06	0.05	0.06
Skewness	-0.10	-0.07	-0.12
Kurtosis	0.92	0.92	0.91



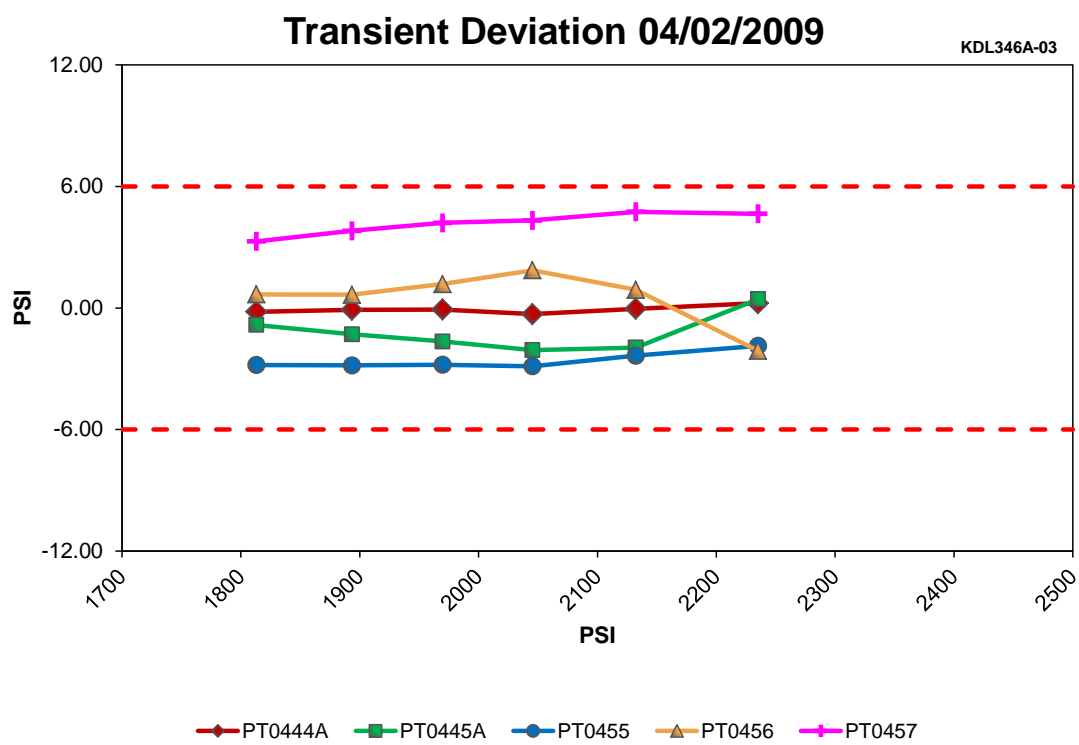
**Figure A.65 PRESSURIZER PRESSURE Steady-State Deviation at Farley Unit 1 (Cycle 22)**



**Figure A.66 PRESSURIZER PRESSURE Steady-State Drift at Farley Unit 1 (Cycle 22)**



**Figure A.67 PRESSURIZER PRESSURE Steady-State Residual AAKR at Farley Unit 1 (Cycle 22)**



**Figure A.68 PRESSURIZER PRESSURE Transient Deviation at Farley Unit 1 (Cycle 22)**

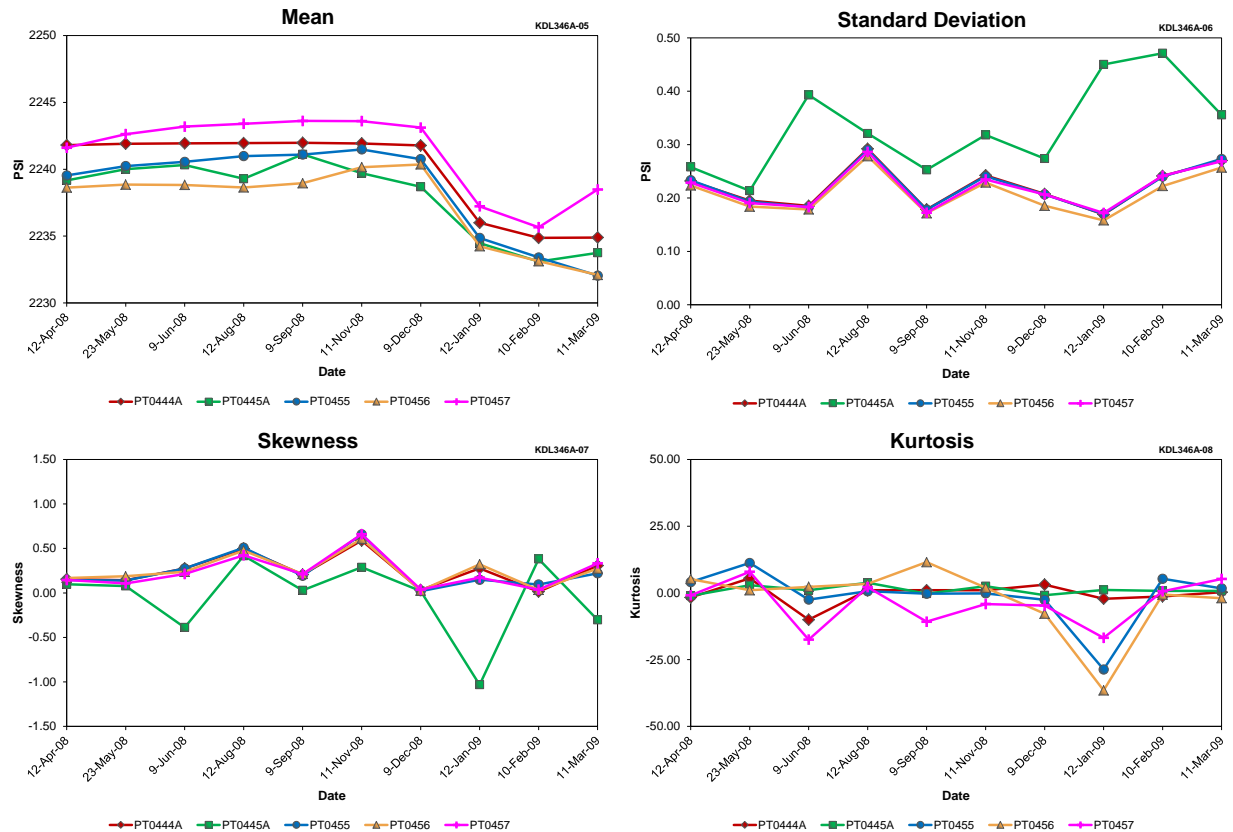


Figure A.69 PRESSURIZER PRESSURE Data Quality Statistics at Farley Unit 1 (Cycle 22)

Table A.14 PRESSURIZER PRESSURE Data Quality for Farley Unit 1 (Cycle 22)

Result Type	Tag Names				
	PT0444A	PT0445A	PT0455	PT0456	PT0457
Mean	2239.90	2237.96	2238.50	2237.39	2241.25
Std. Dev.	0.22	0.33	0.22	0.21	0.22
Skewness	0.25	-0.04	0.24	0.25	0.23
Kurtosis	-0.34	1.06	-1.12	-2.15	-3.89

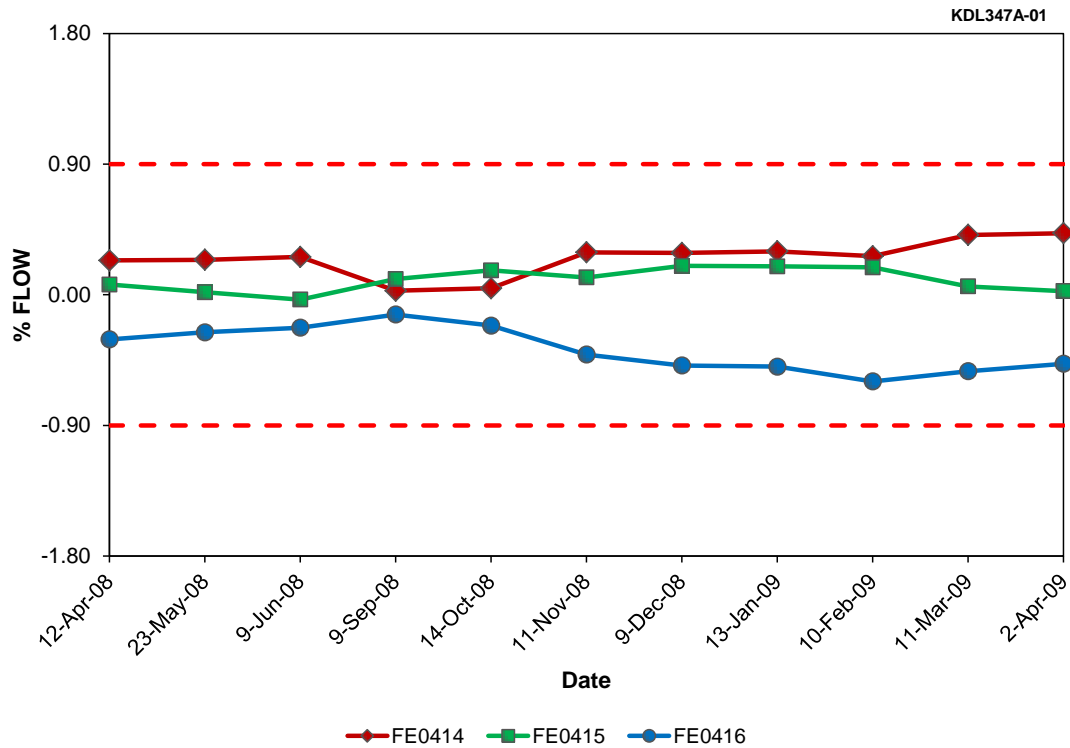


Figure A.70 RCS LOOP A FLOW Steady-State Deviation at Farley Unit 1 (Cycle 22)

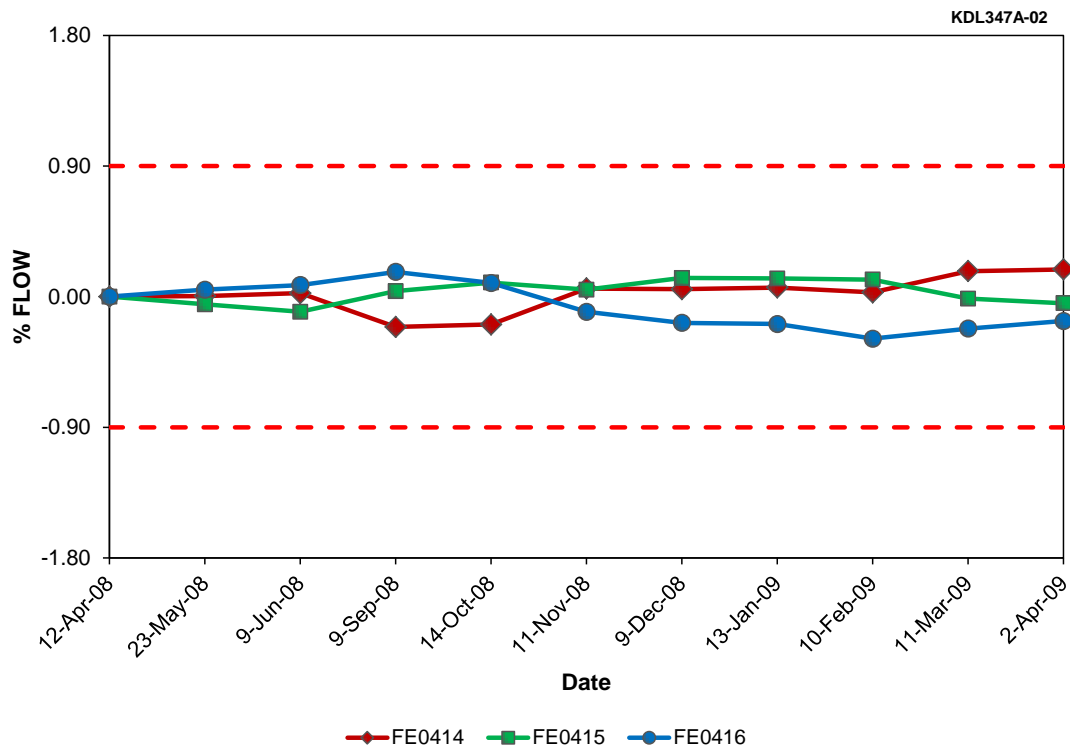
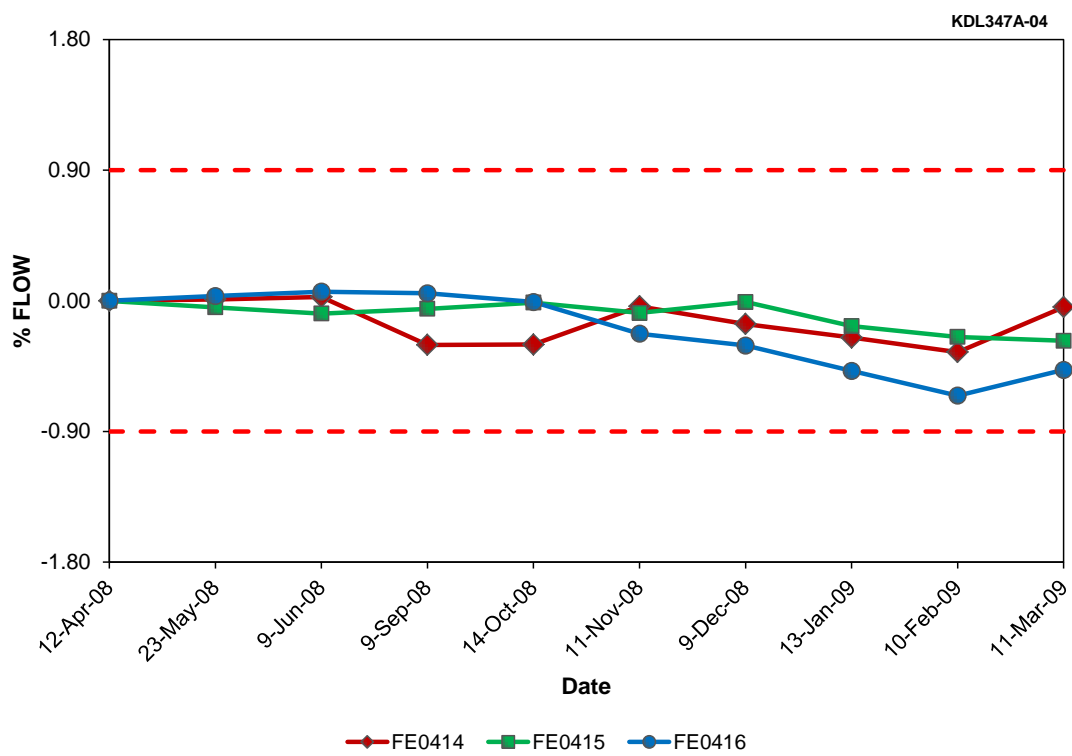


Figure A.71 RCS LOOP A FLOW Steady-State Drift at Farley Unit 1 (Cycle 22)



**Figure A.72 RCS LOOP A FLOW Steady-State Residual AAKR at Farley Unit 1 (Cycle 22)**

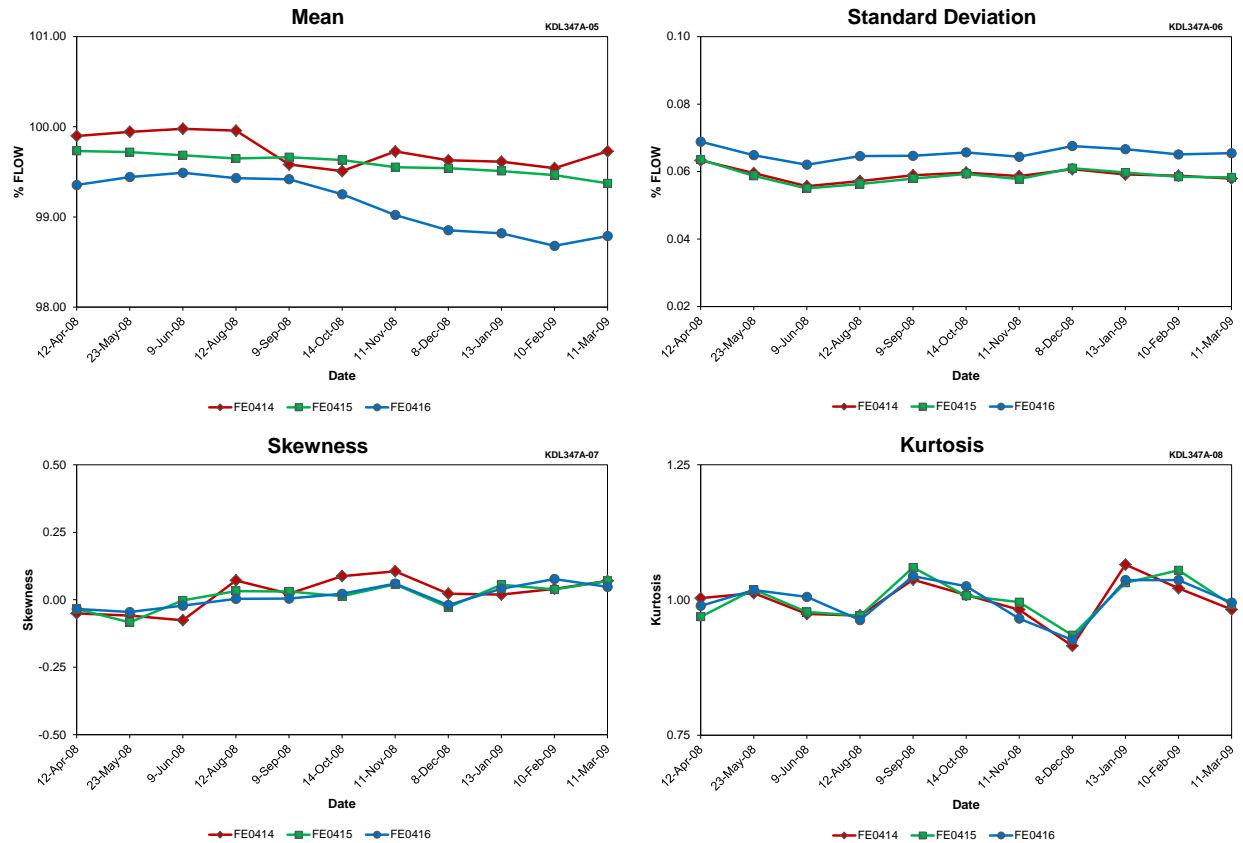


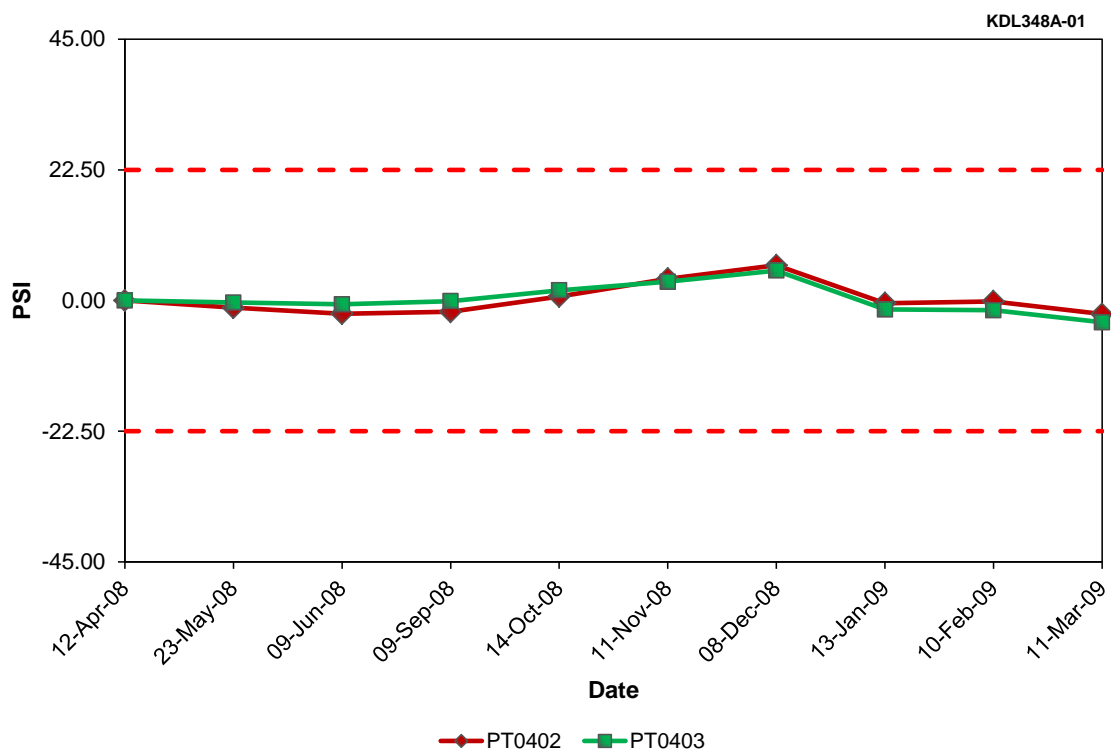
Figure A.73 RCS LOOP A FLOW Data Quality Statistics at Farley Unit 1 (Cycle 22)

Table A.15 RCS LOOP A FLOW Data Quality for Farley Unit 1 (Cycle 22)

Result Type	Tag Names		
	FE0414	FE0415	FE0416
Mean	99.74	99.59	99.14
Std. Dev.	0.06	0.06	0.06
Skewness	0.02	0.01	0.01
Kurtosis	1.00	1.00	1.00







**Figure A.74 RCS WIDE RANGE PRESSURE Steady-State Residual AAKR at Farley Unit 1 (Cycle 22)**

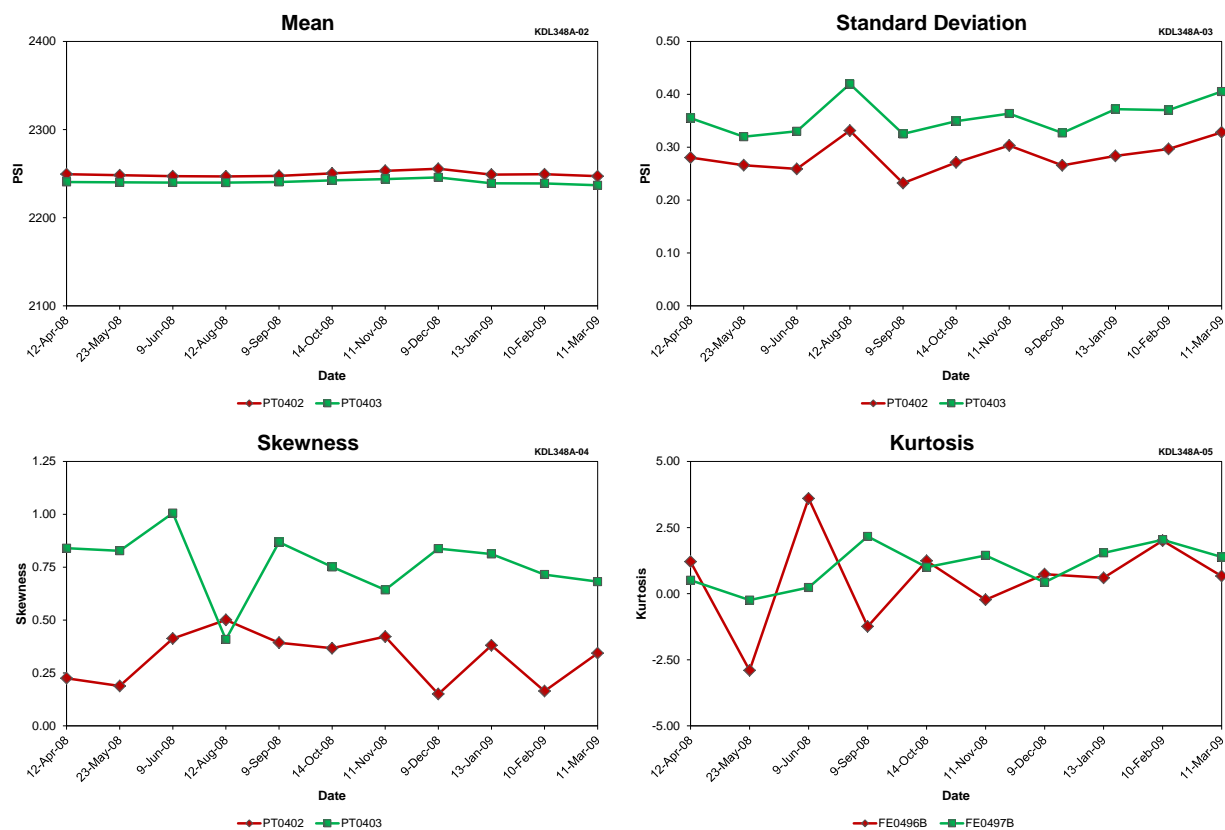
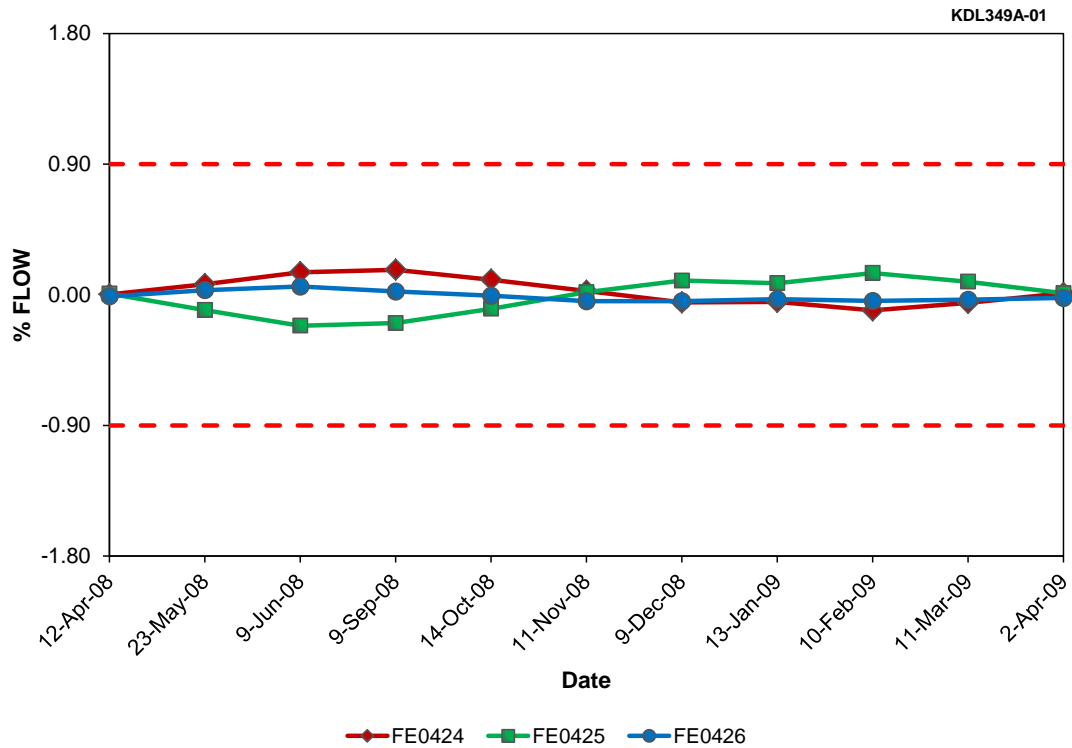


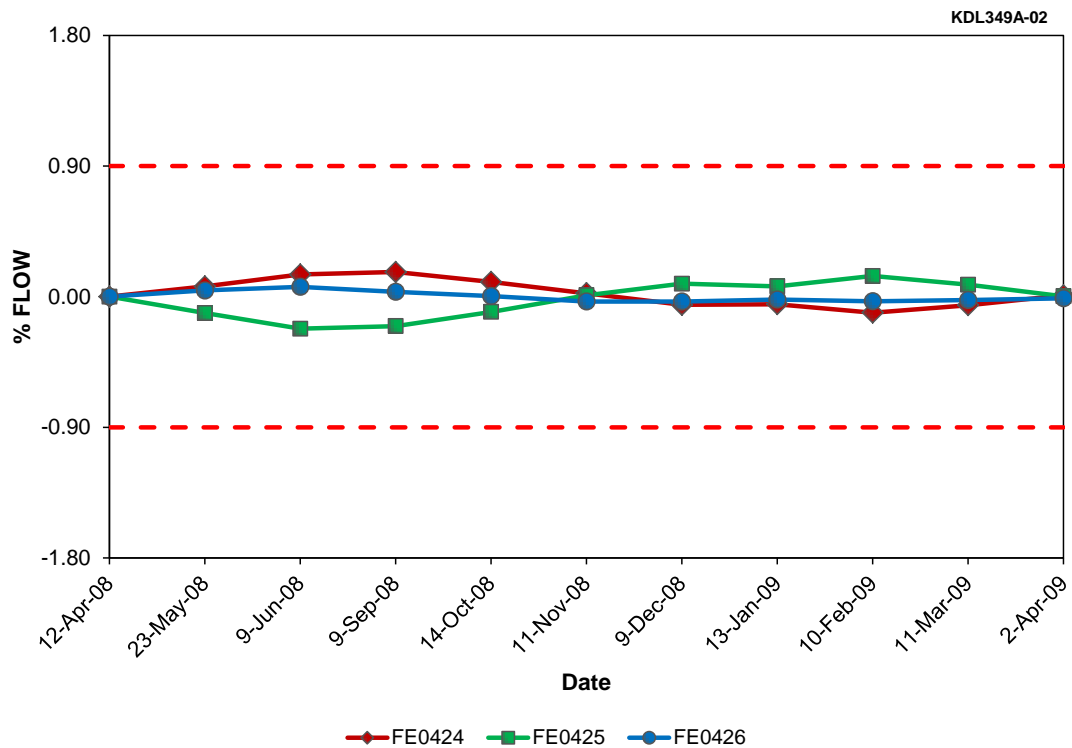
Figure A.75 RCS WIDE RANGE PRESSURE Data Quality Statistics at Farley Unit 1 (Cycle 22)

Table A.16 RCS WIDE RANGE PRESSURE Data Quality for Farley Unit 1 (Cycle 22)

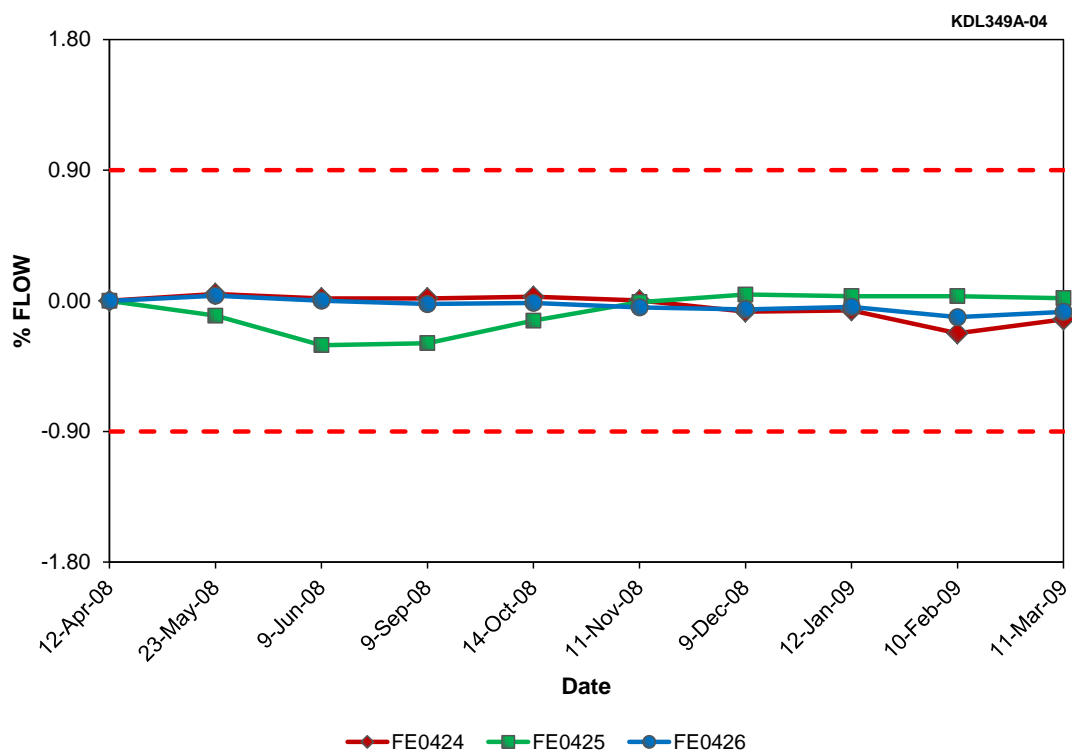
Result Type	Tag Names	
	PT0402	PT0403
Mean	2249.46	2240.75
Std. Dev.	0.28	0.36
Skewness	0.32	0.76
Kurtosis	0.57	1.09



**Figure A.76 RCS LOOP B FLOW Steady-State Deviation at Farley Unit 1 (Cycle 22)**



**Figure A.77 RCS LOOP B FLOW Steady-State Drift at Farley Unit 1 (Cycle 22)**



**Figure A.78 RCS LOOP B FLOW Steady-State Residual AAKR at Farley Unit 1 (Cycle 22)**

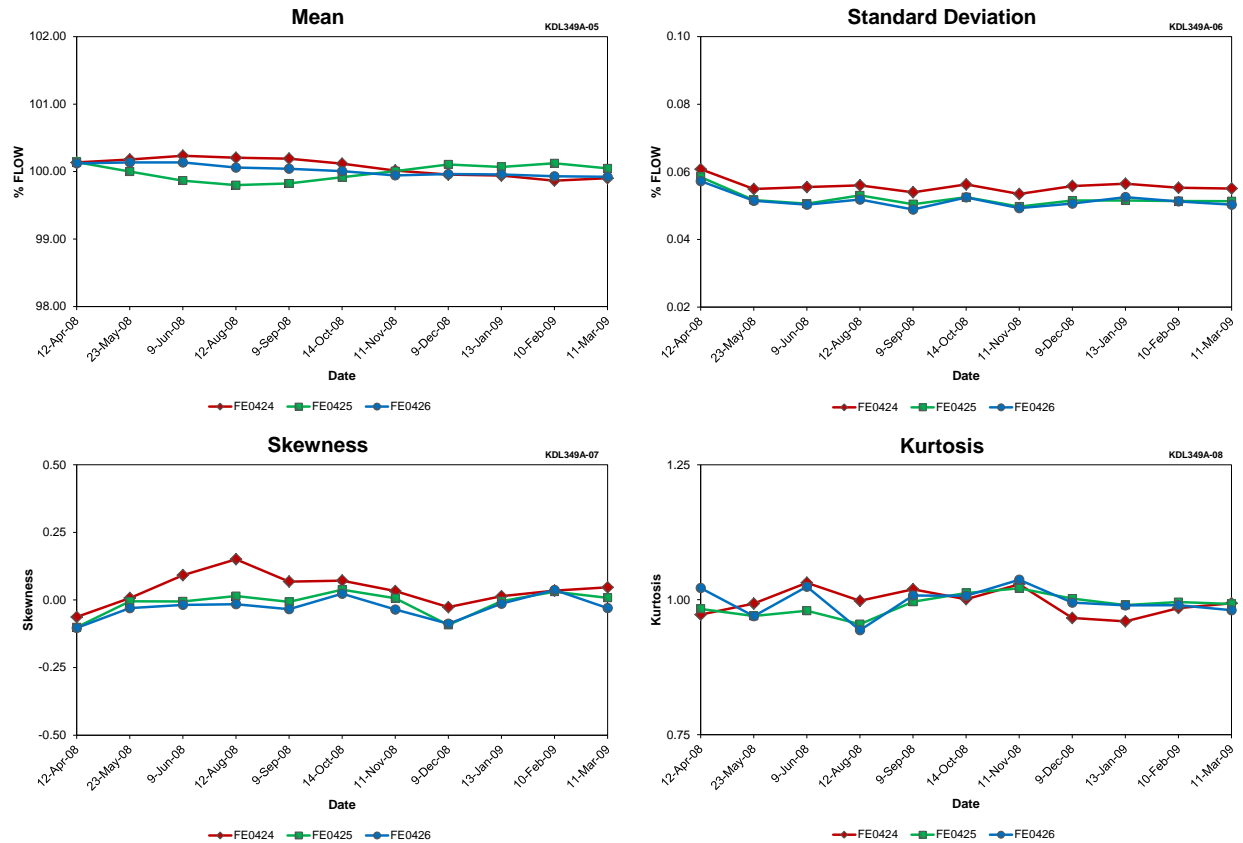
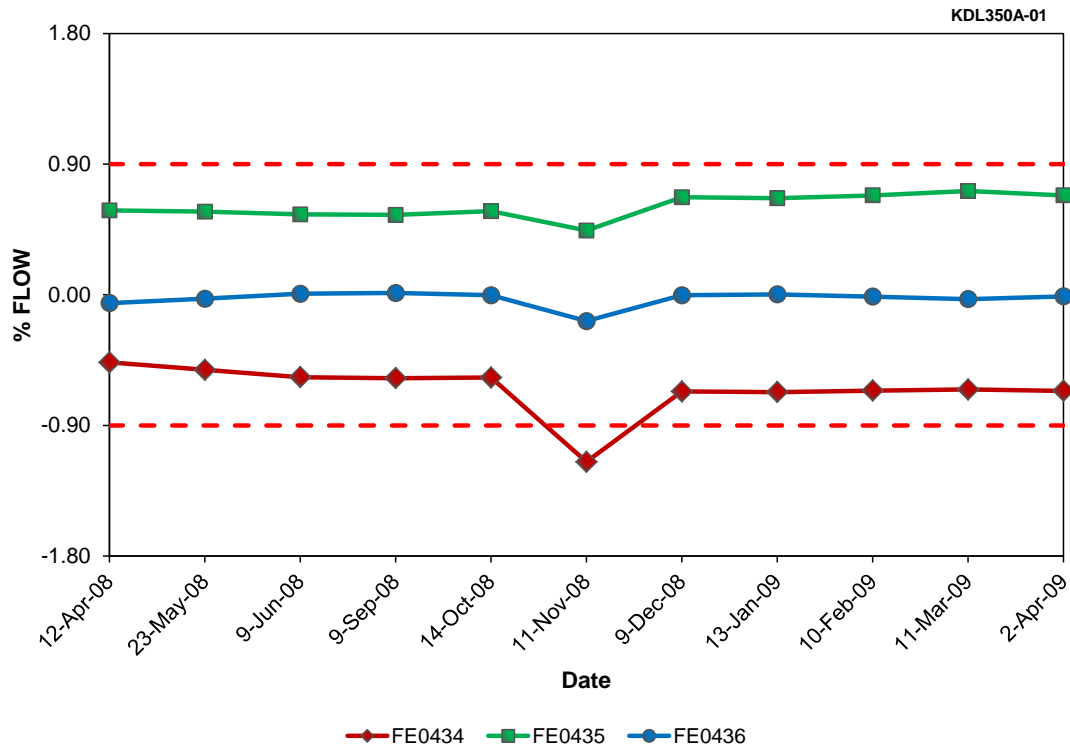


Figure A.79 RCS LOOP B FLOW Data Quality Statistics at Farley Unit 1 (Cycle 22)

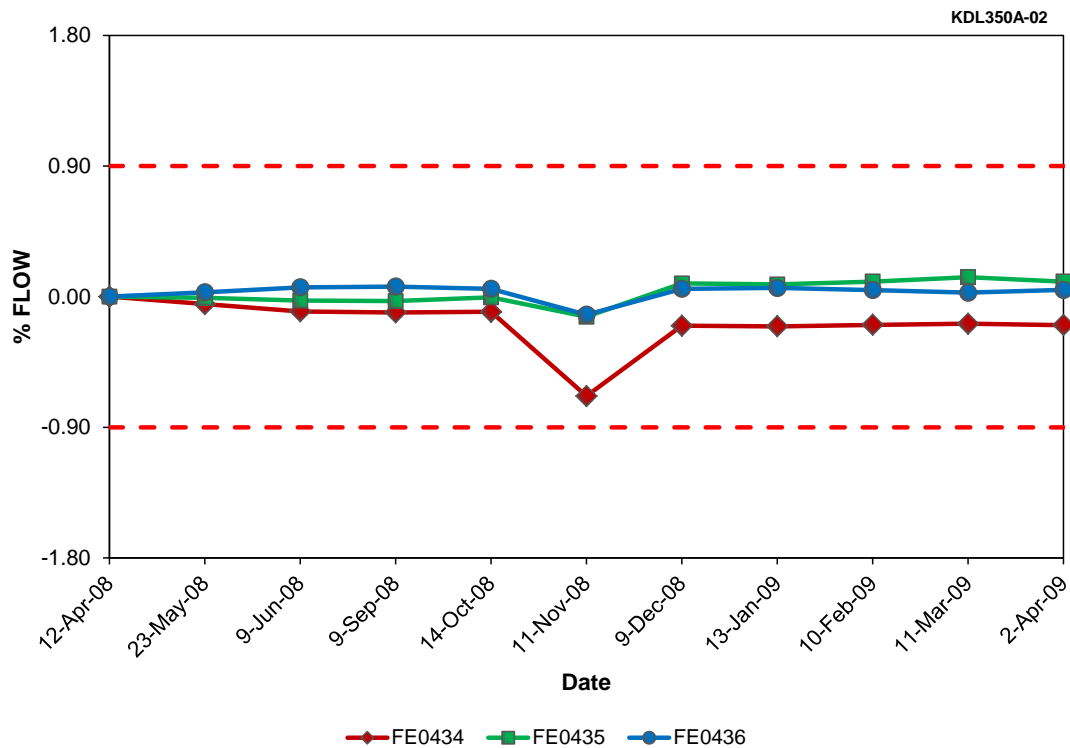
Table A.17 RCS LOOP B FLOW Data Quality for Farley Unit 1 (Cycle 22)

Result Type	Tag Names		
	FE0424	FE0425	FE0426
Mean	100.07	99.99	100.02
Std. Dev.	0.06	0.05	0.05
Skewness	0.04	-0.01	-0.03
Kurtosis	1.00	0.99	1.00





**Figure A.80 RCS LOOP C FLOW Steady-State Deviation at Farley Unit 1 (Cycle 22)**



**Figure A.81 RCS LOOP C FLOW Steady-State Drift at Farley Unit 1 (Cycle 22)**



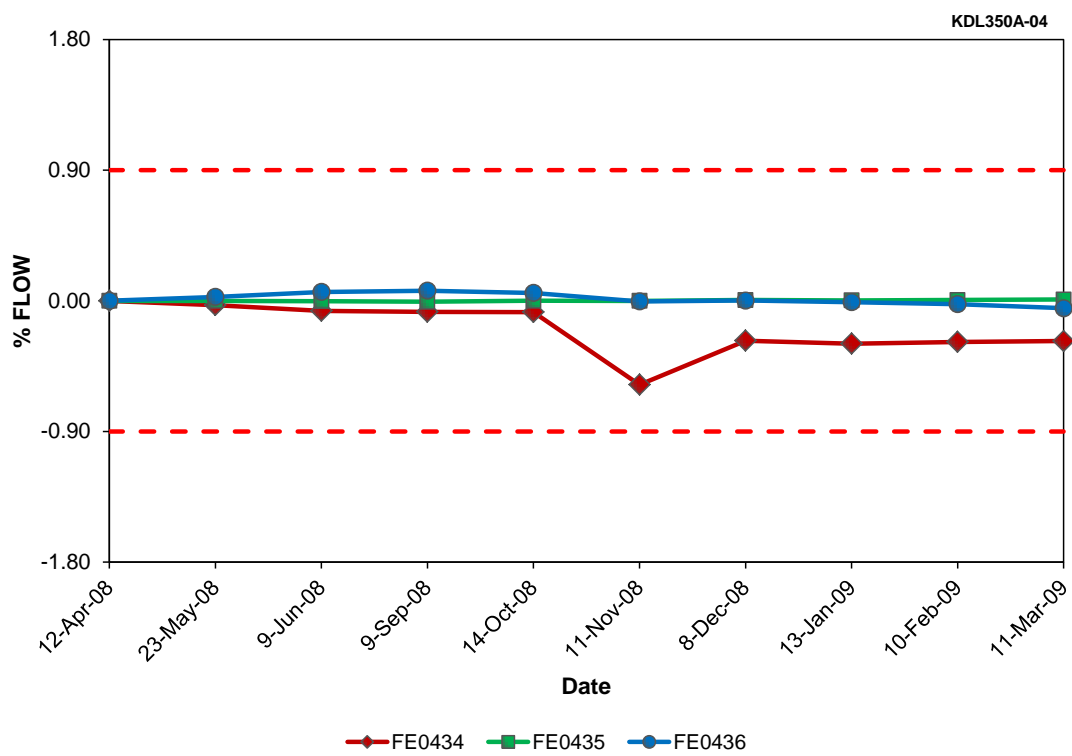


Figure A.82 RCS LOOP C FLOW Steady-State Residual AAKR at Farley Unit 1 (Cycle 22)

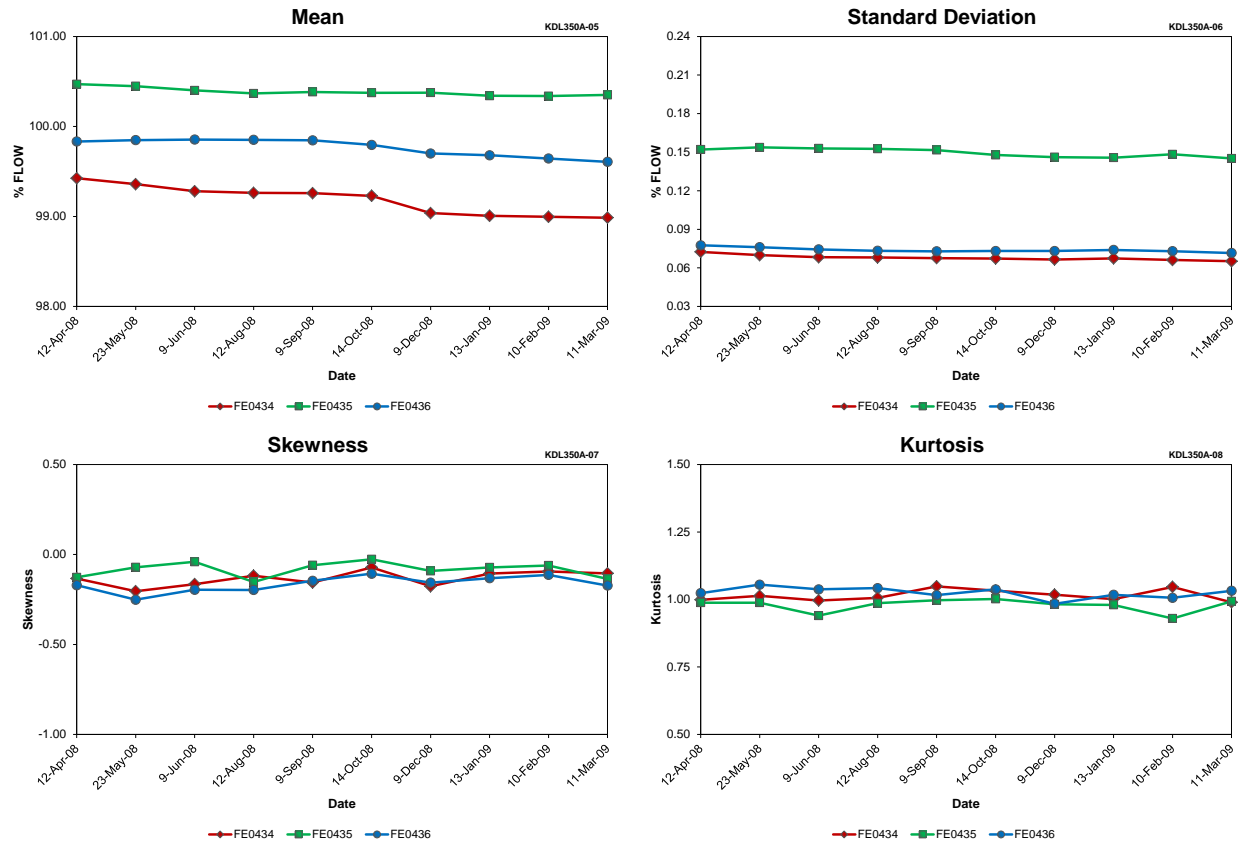
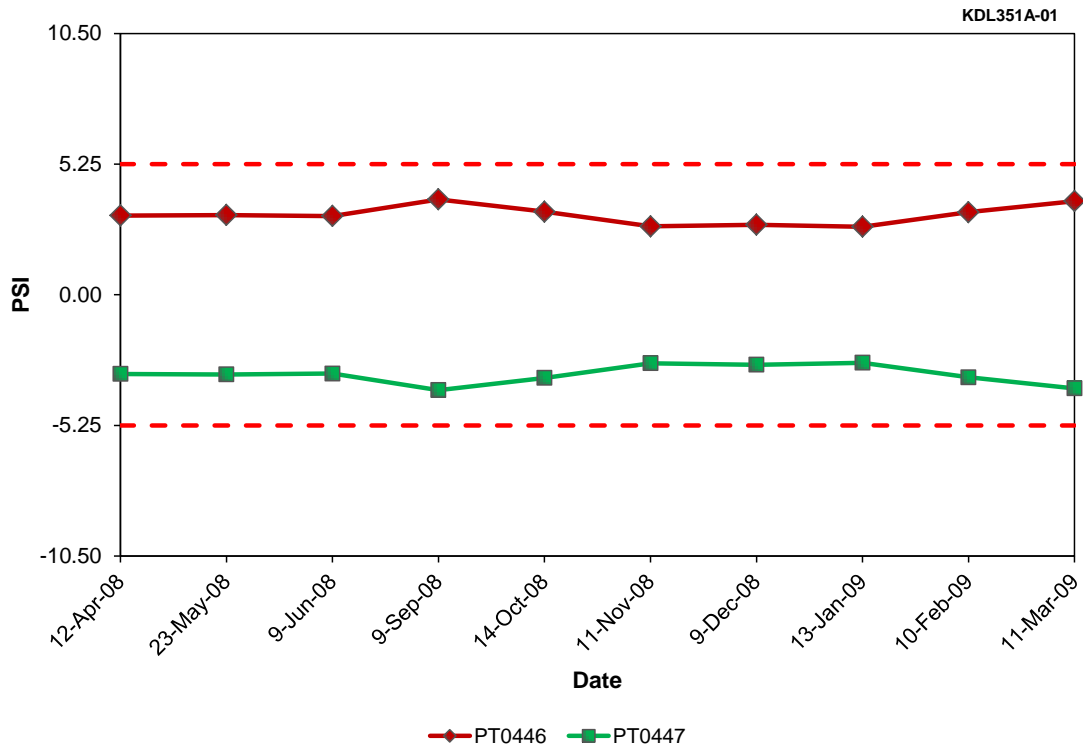


Figure A.83 RCS LOOP C FLOW Data Quality Statistics at Farley Unit 1 (Cycle 22)

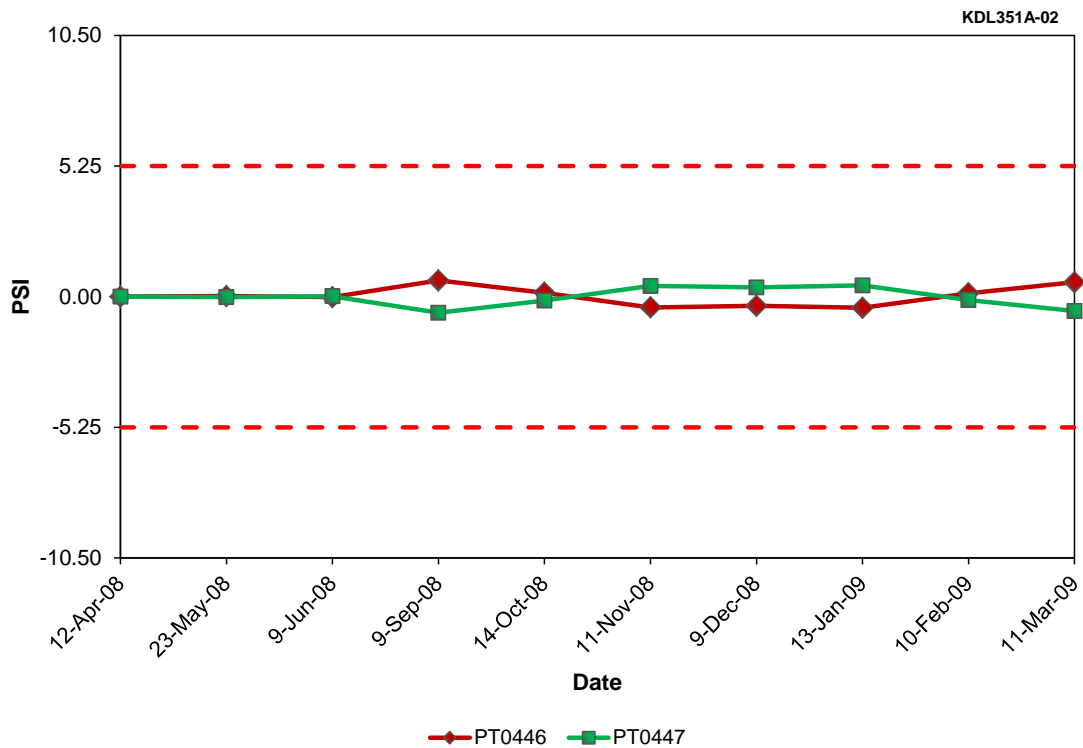
Table A.18 RCS LOOP C FLOW Data Quality for Farley Unit 1 (Cycle 22)

Result Type	Tag Names		
	FE0434	FE0435	FE0436
Mean	99.18	100.38	99.77
Std. Dev.	0.07	0.07	0.07
Skewness	-0.13	-0.08	-0.16
Kurtosis	1.02	0.98	1.03





**Figure A.84 TBIN FIRST STAGE PRESSURE Steady-State Deviation at Farley Unit 1 (Cycle 22)**



**Figure A.85 TBIN FIRST STAGE PRESSURE Steady-State Drift at Farley Unit 1 (Cycle 22)**

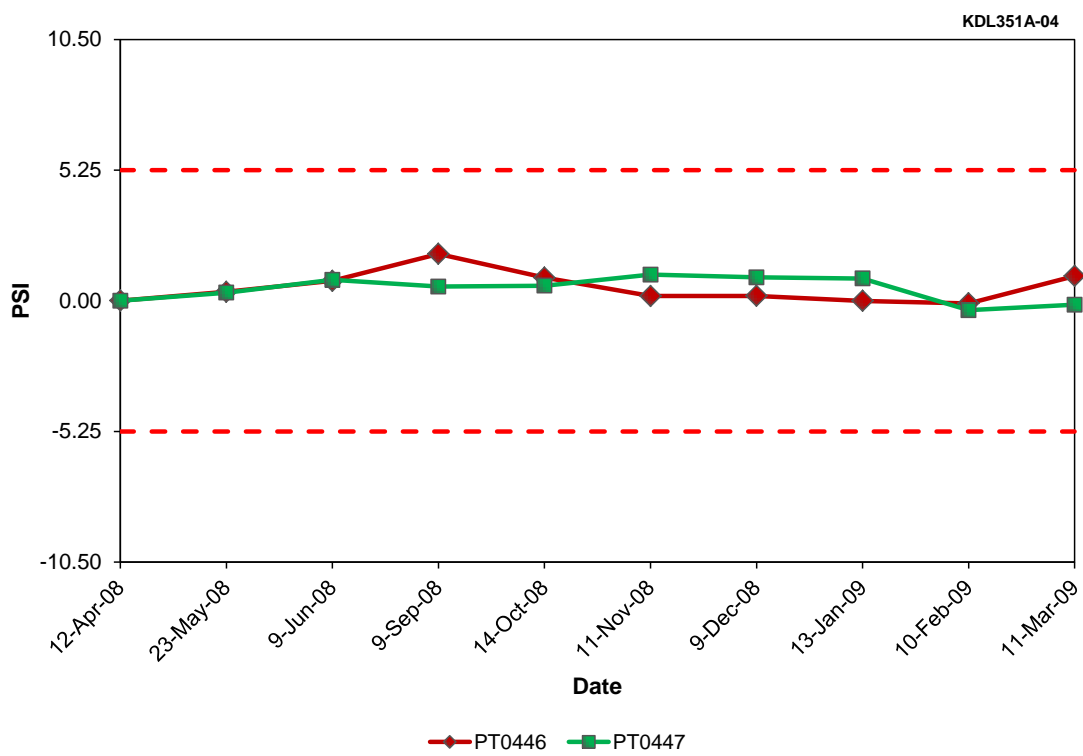
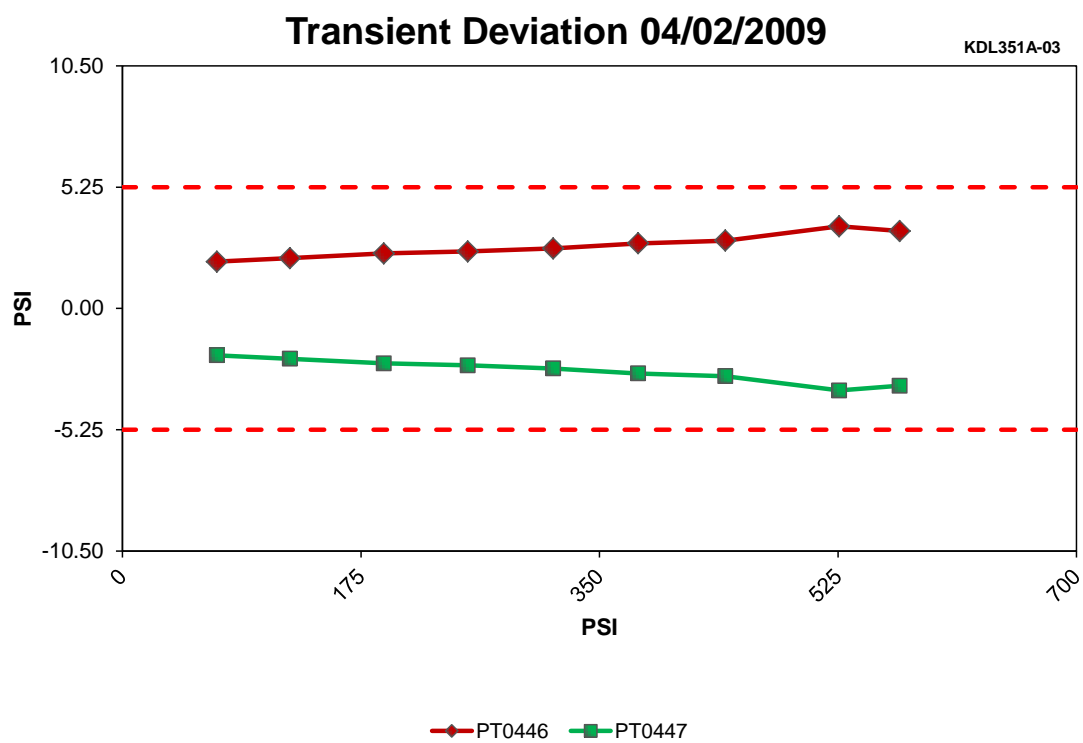
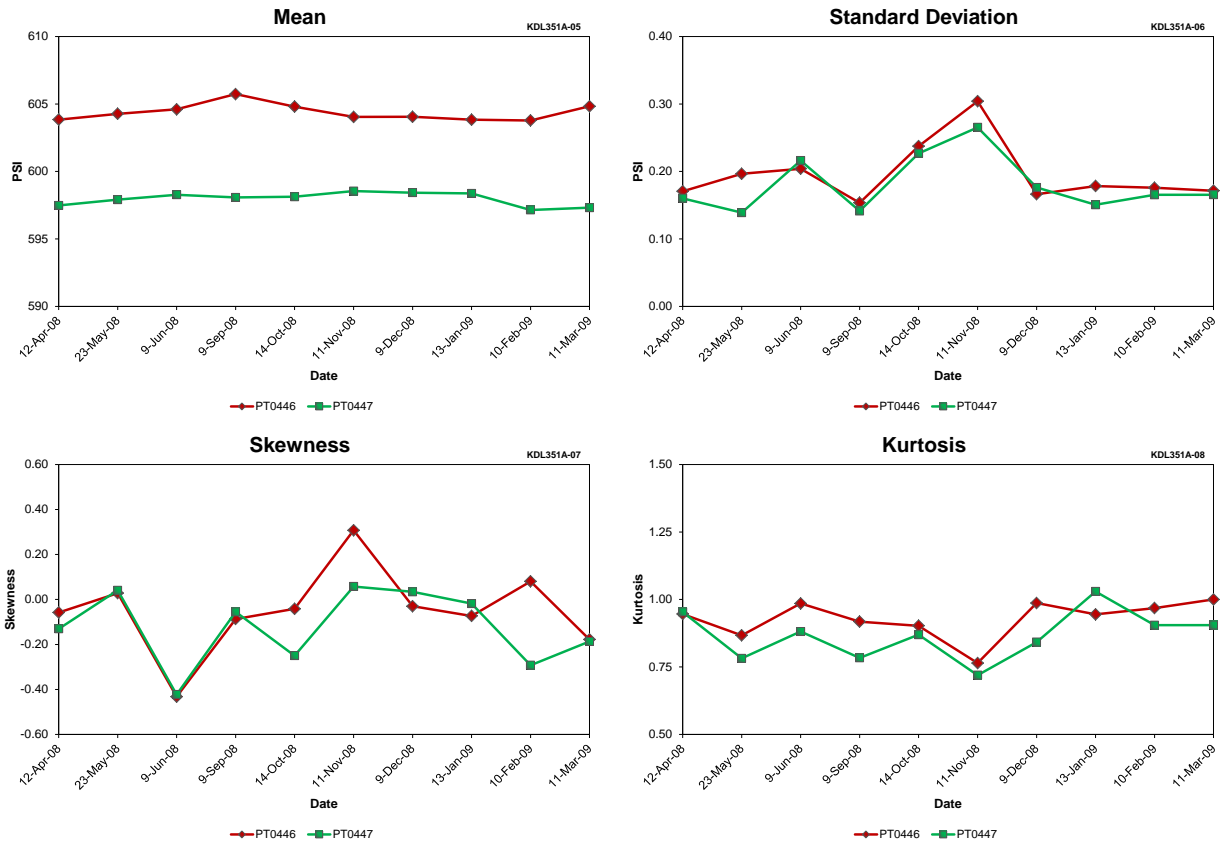


Figure A.86 TBIN FIRST STAGE PRESSURE Steady-State Residual AAKR at Farley Unit 1 (Cycle 22)



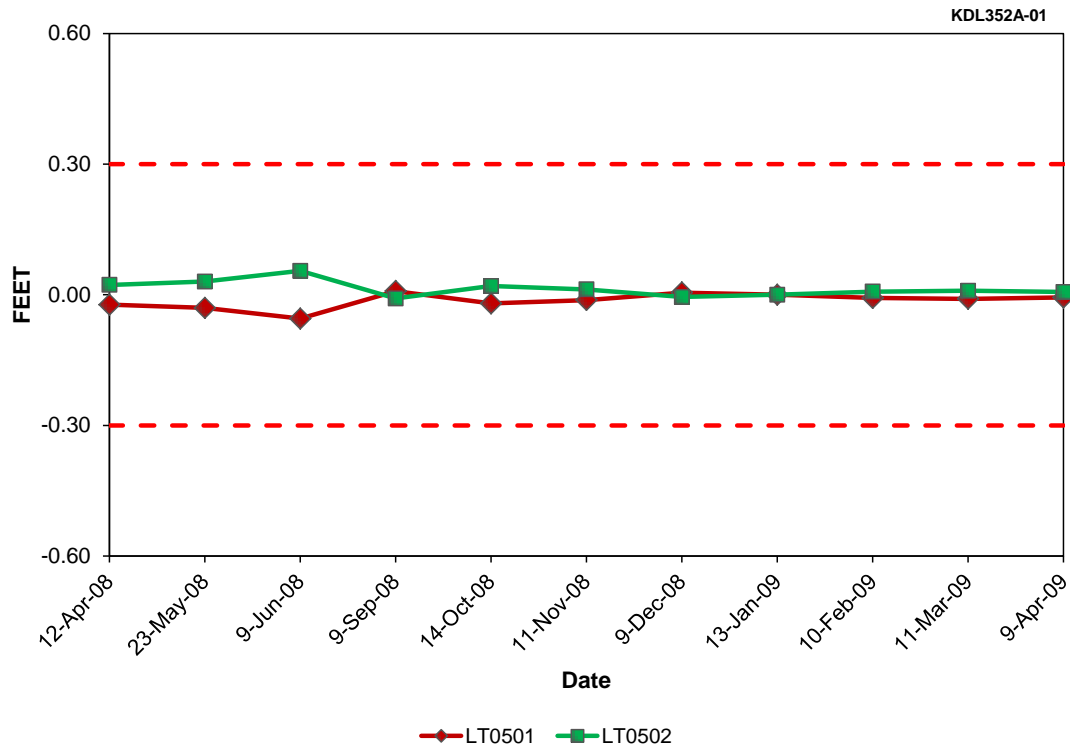
**Figure A.87 TBIN FIRST STAGE PRESSURE Transient Deviation at Farley Unit 1 (Cycle 22)**



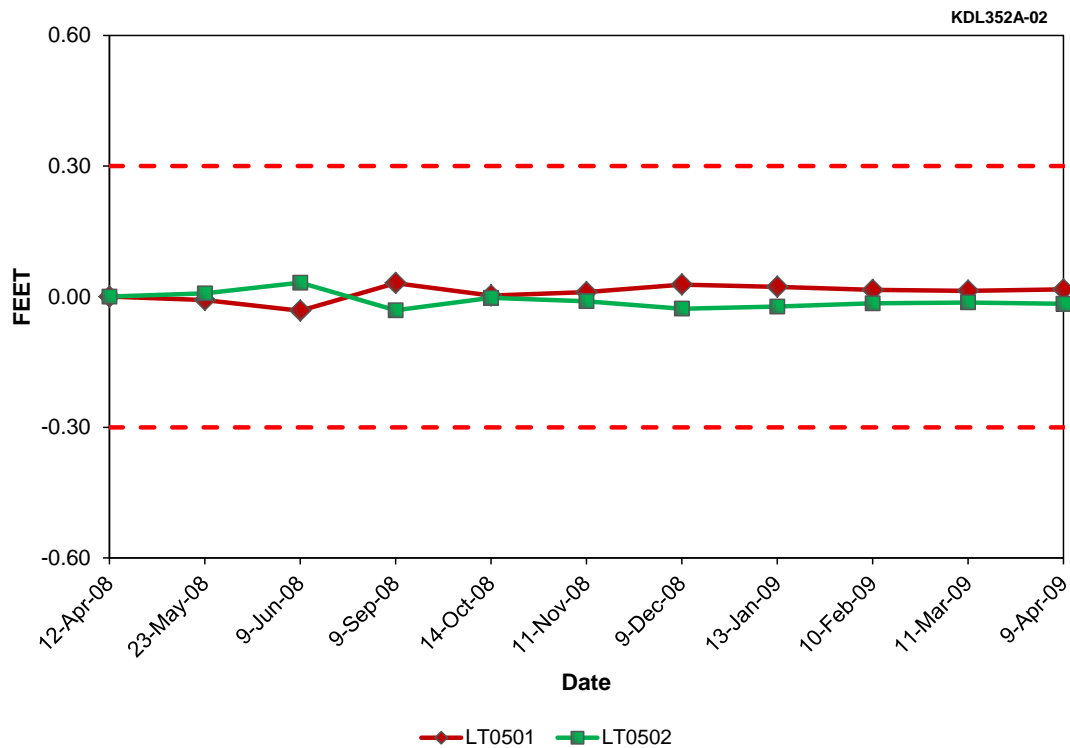
**Figure A.88 TBIN FIRST STAGE PRESSURE Data Quality Statistics at Farley Unit 1 (Cycle 22)**

**Table A.19 TBIN FIRST STAGE PRESSURE Data Quality for Farley Unit 1 (Cycle 22)**

Result Type	Tag Names	
	PT0446	PT0447
Mean	604.38	597.97
Std. Dev.	0.20	0.20
Skewness	-0.05	-0.05
Kurtosis	0.93	0.87

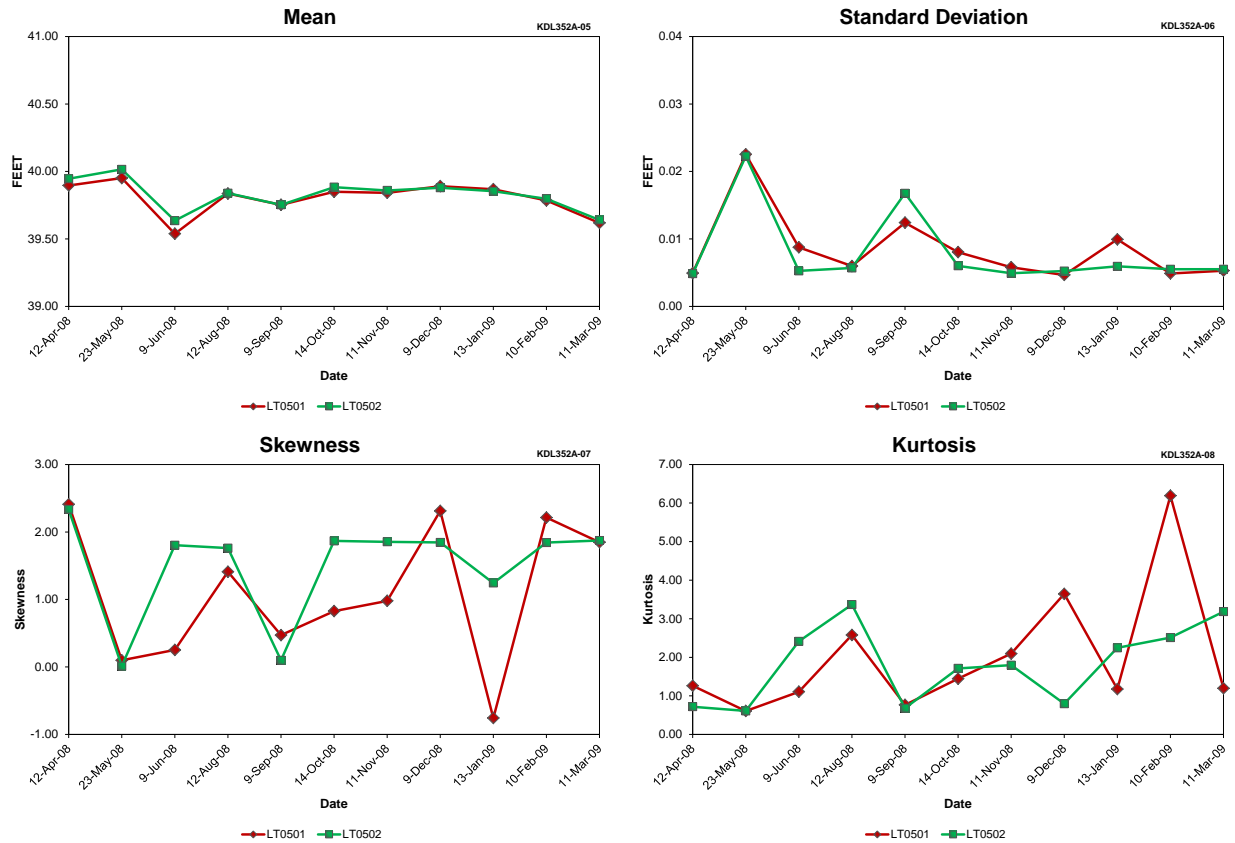


**Figure A.89 RWST LVL Steady-State Deviation at Farley Unit 1 (Cycle 22)**



**Figure A.90 RWST LVL Steady-State Drift at Farley Unit 1 (Cycle 22)**

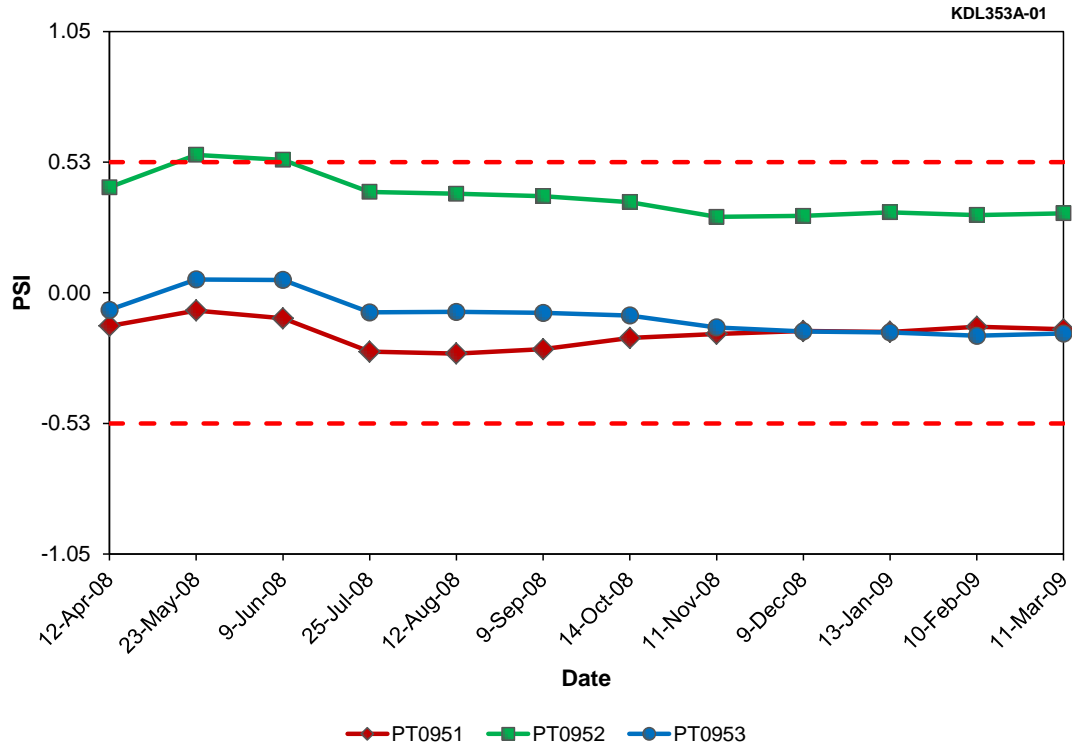




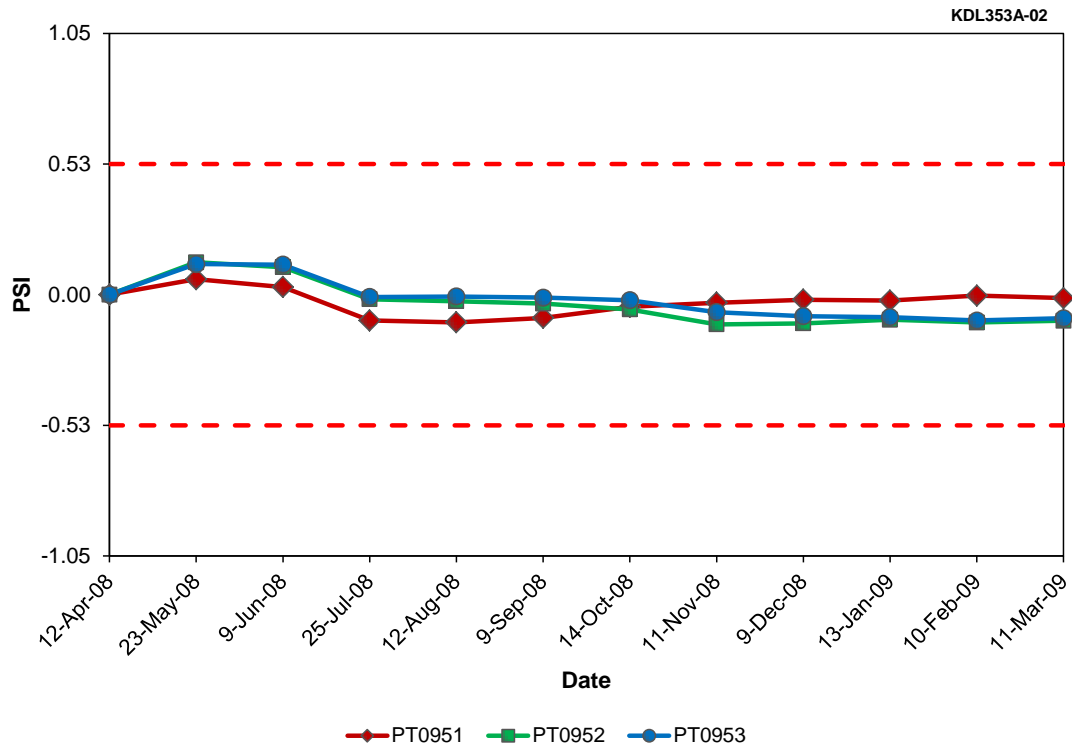
**Figure A.91 RWST LVL Data Quality Statistics at Farley Unit 1 (Cycle 22)**

**Table A.20 RWST LVL Data Quality for Farley Unit 1 (Cycle 22)**

Result Type	Tag Names	
	LT0501	LT0502
Mean	39.80	39.83
Std. Dev.	0.01	0.01
Skewness	1.10	1.50
Kurtosis	2.01	1.82



**Figure A.92 CTMT PSR Steady-State Deviation at Farley Unit 1 (Cycle 22)**



**Figure A.93 CTMT PSR Steady-State Drift at Farley Unit 1 (Cycle 22)**

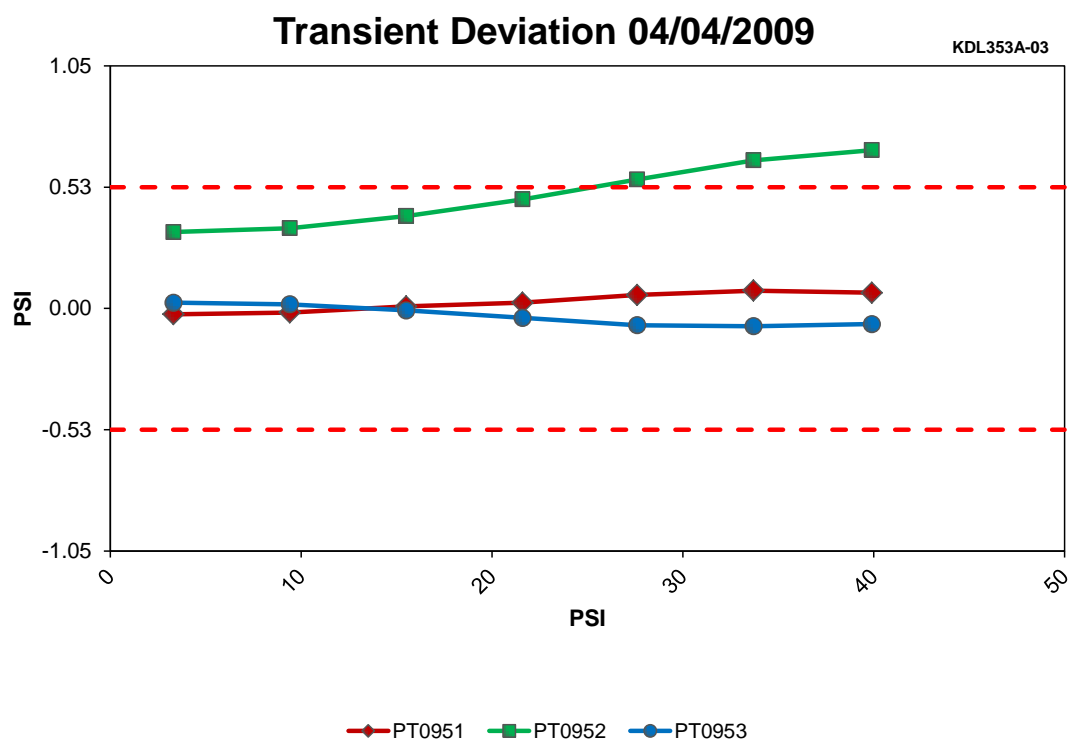


Figure A.94 CTMT PSR Transient Deviation at Farley Unit 1 (Cycle 22)

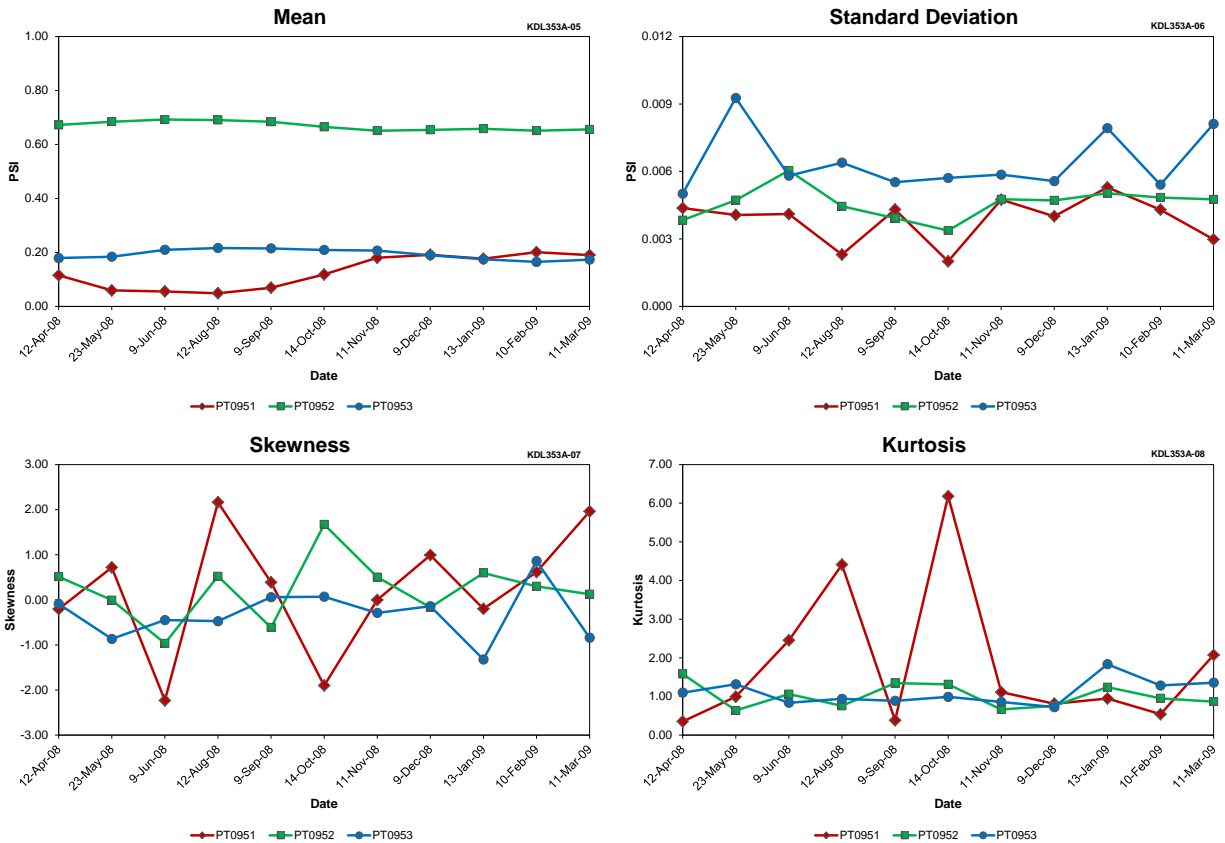


Figure A.95 CTMT PSR Data Quality Statistics at Farley Unit 1 (Cycle 22)

Table A.21 CTMT PSR Data Quality for Farley Unit 1 (Cycle 22)

Result Type	Tag Names		
	PT0951	PT0952	PT0953
Mean	0.13	0.67	0.19
Std. Dev.	0.00	0.00	0.01
Skewness	0.21	0.23	-0.32
Kurtosis	1.84	1.02	1.10

Table A.22 OLM-NA Results

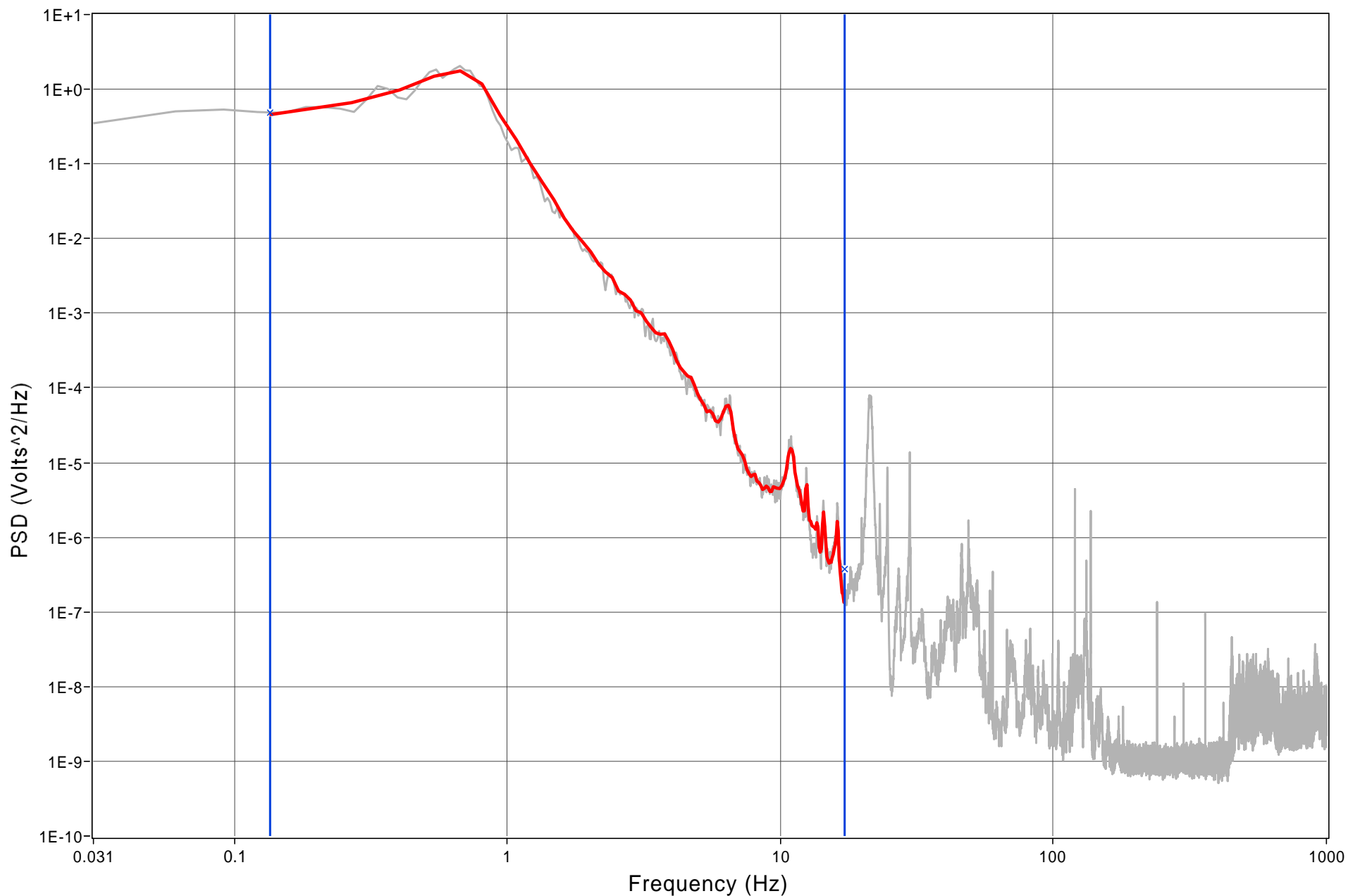
Item	Tag Name	Service	Filename	WB PSD Range (Hz)	Decimator	Trim Block Size	Trim Low Freq.	Trim High Freq.	AR Method	AR Order
1	FT476	FW FLOW	FNP10004	0.0305 : 1000	364	256	0.0215	2.7472	Forward-Backward	22
2	FT477	FW FLOW	FNP10003	0.0305 : 1000	364	512	0.0107	2.7472	Least-Squares	23
3	FT486	FW FLOW	FNP10004	0.0305 : 1000	364	256	0.0215	2.7472	Forward-Backward	11
4	FT487	FW FLOW	FNP10003	0.0305 : 1000	364	512	0.0107	2.7472	Least-Squares	21
5	FT496	FW FLOW	FNP10004	0.0305 : 1000	364	512	0.0107	2.7472	Forward-Backward	11
6	FT497	FW FLOW	FNP10003	0.0305 : 1000	364	512	0.0107	2.7472	Least-Squares	24
10	LT474	SG LEVEL	FNP10001	0.0305 : 1000	58	256	0.1347	17.2409	Forward-Backward	11
11	LT475	SG LEVEL	FNP10002	0.0305 : 1000	58	256	0.1347	17.2409	Forward-Backward	11
12	LT476	SG LEVEL	FNP10003	0.0305 : 1000	58	256	0.1347	17.2409	Forward-Backward	11
13	LT484	SG LEVEL	FNP10001	0.0305 : 1000	58	256	0.1347	17.2409	Forward-Backward	11
14	LT485	SG LEVEL	FNP10002	0.0305 : 1000	58	256	0.1347	17.2409	Forward-Backward	11
15	LT486	SG LEVEL	FNP10003	0.0305 : 1000	58	256	0.1347	17.2409	Forward-Backward	11
16	LT494	SG LEVEL	FNP10001	0.0305 : 1000	58	256	0.1347	17.2409	Forward-Backward	11
17	LT495	SG LEVEL	FNP10002	0.0305 : 1000	58	256	0.1347	17.2409	Forward-Backward	11
18	LT496	SG LEVEL	FNP10003	0.0305 : 1000	58	256	0.1347	17.2409	Forward-Backward	11
19	FT474	STM FLOW	FNP10003	0.0305 : 1000	46	128	0.3397	21.7384	Forward-Backward	11
20	FT475	STM FLOW	FNP10004	0.0305 : 1000	29	128	0.5388	34.4817	Least-Squares	18
21	FT484	STM FLOW	FNP10003	0.0305 : 1000	29	128	0.5388	34.4817	Forward-Backward	11
22	FT485	STM FLOW	FNP10004	0.0305 : 1000	29	128	0.5388	34.4817	Forward-Backward	18
23	FT494	STM FLOW	FNP10003	0.0305 : 1000	29	128	0.5388	34.4817	Forward-Backward	11
24	FT495	STM FLOW	FNP10004	0.0305 : 1000	29	128	0.5388	34.4817	Least-Squares	18



# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	LT474	SG LVL	FNP10001.psd	11 : 256	0.134694	17.240854	Baseline	12-Mar-2009 12:21:02

**PSD Window**

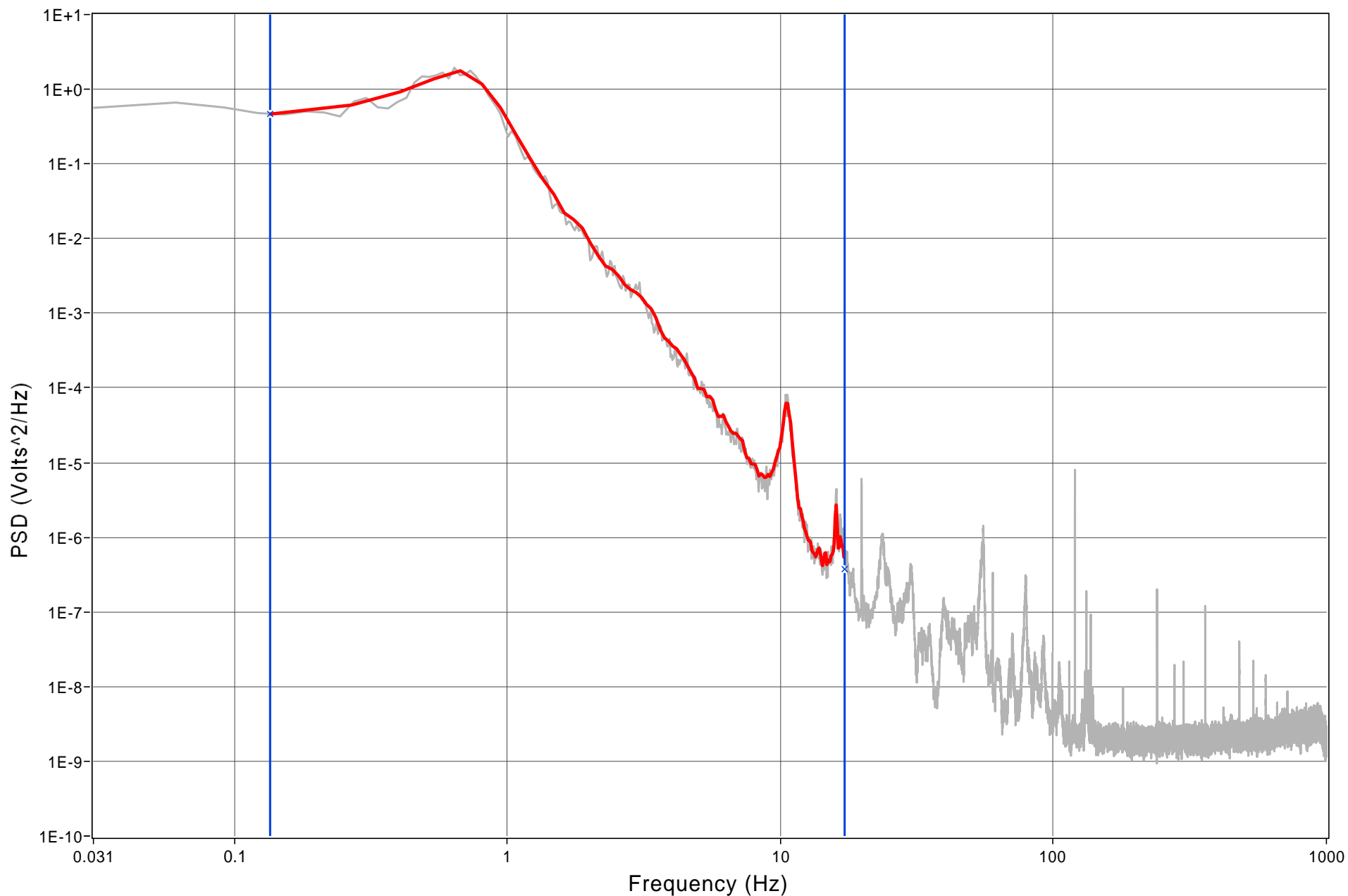




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	LT484	SG LVL	FNP10001.psd	11 : 256	0.134694	17.240854	Baseline	12-Mar-2009 12:21:02

**PSD Window**

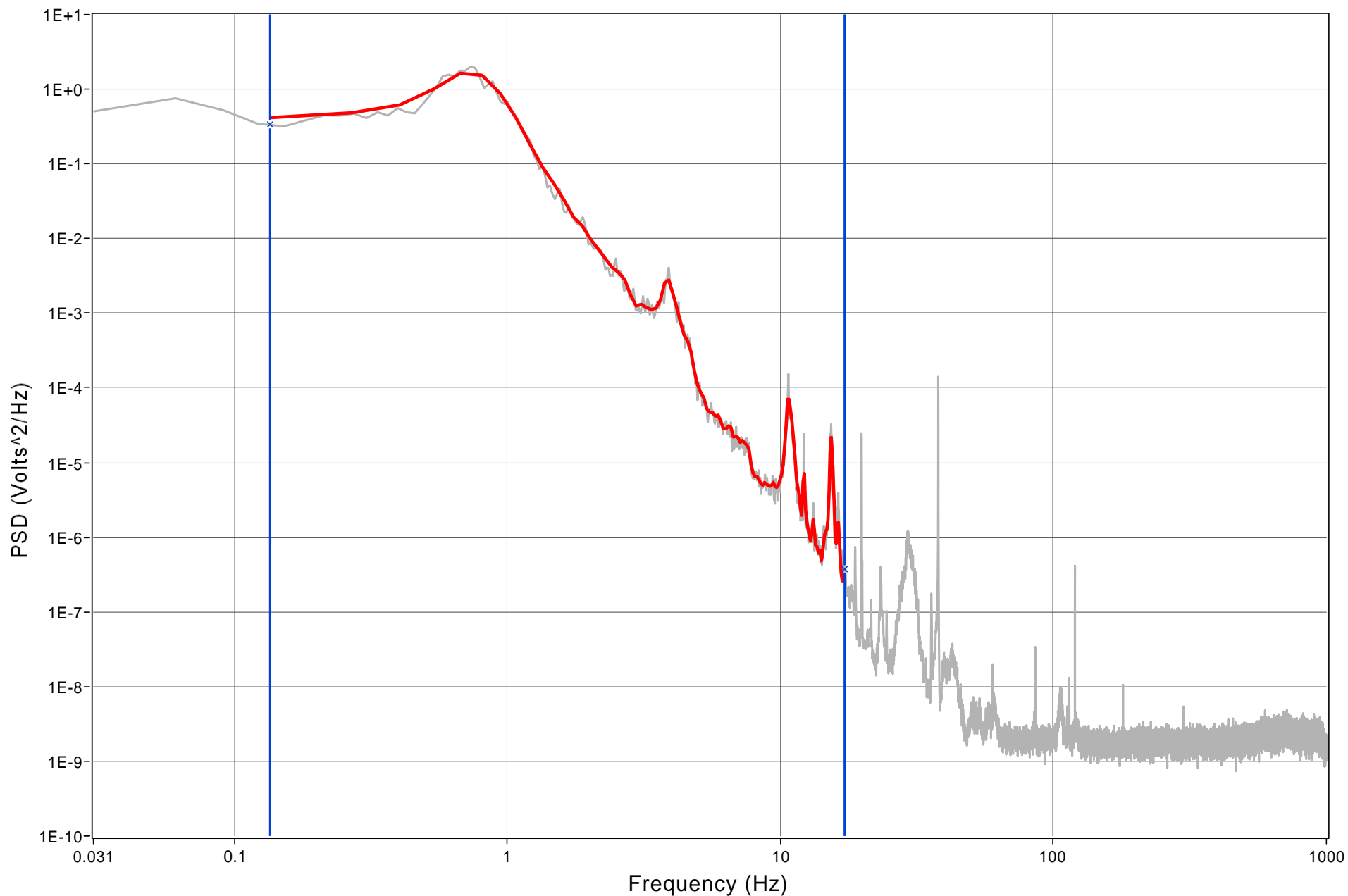




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	LT494	SG LVL	FNP10001.psd	11 : 256	0.134694	17.240854	Baseline	12-Mar-2009 12:21:02

**PSD Window**



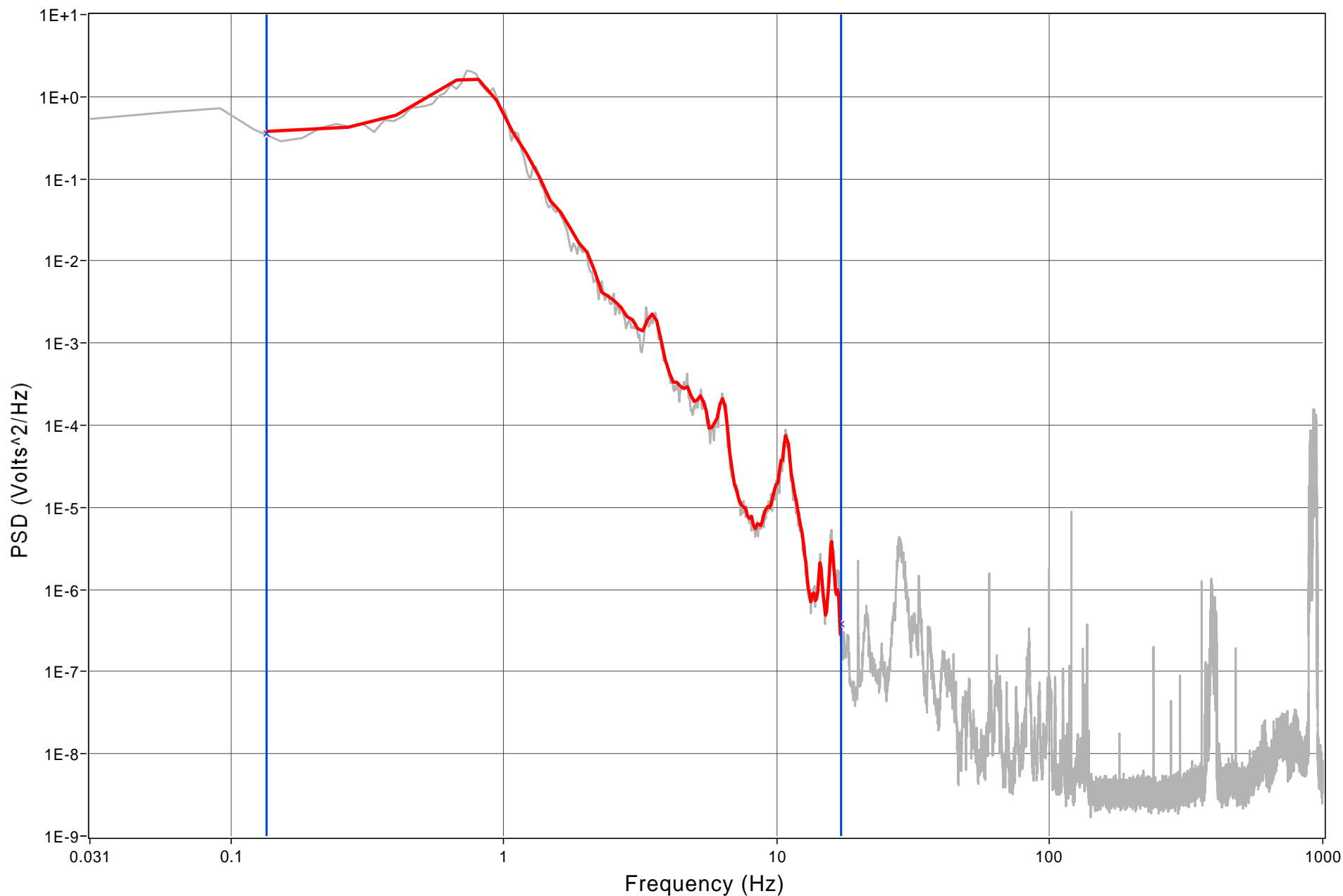




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	LT475	SG LVL	FNP10002.psd	11 : 256	0.134694	17.240854	Baseline	12-Mar-2009 12:21:02

**PSD Window**

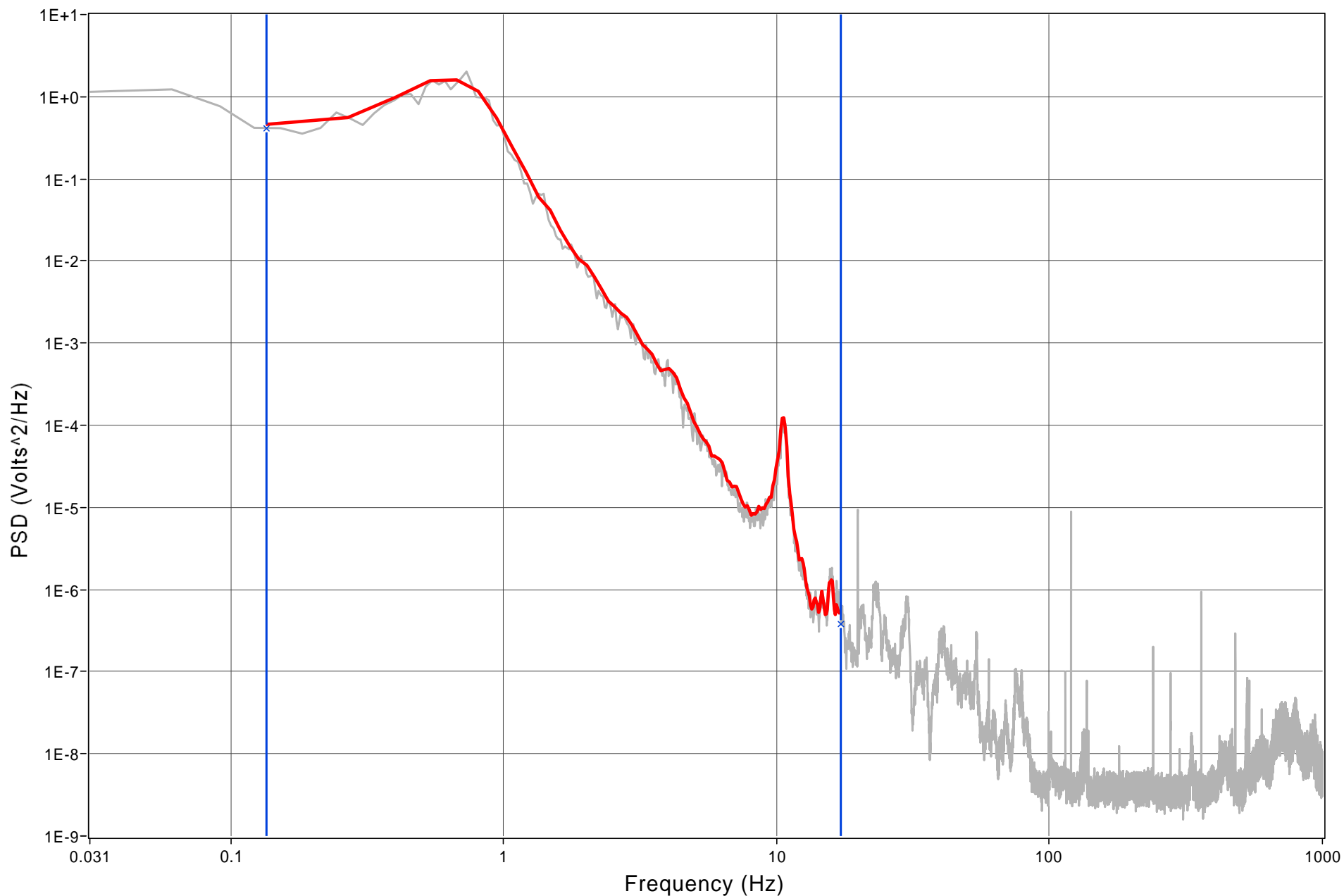




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	LT485	SG LVL	FNP10002.psd	11 : 256	0.134694	17.240854	Baseline	12-Mar-2009 12:21:02

**PSD Window**

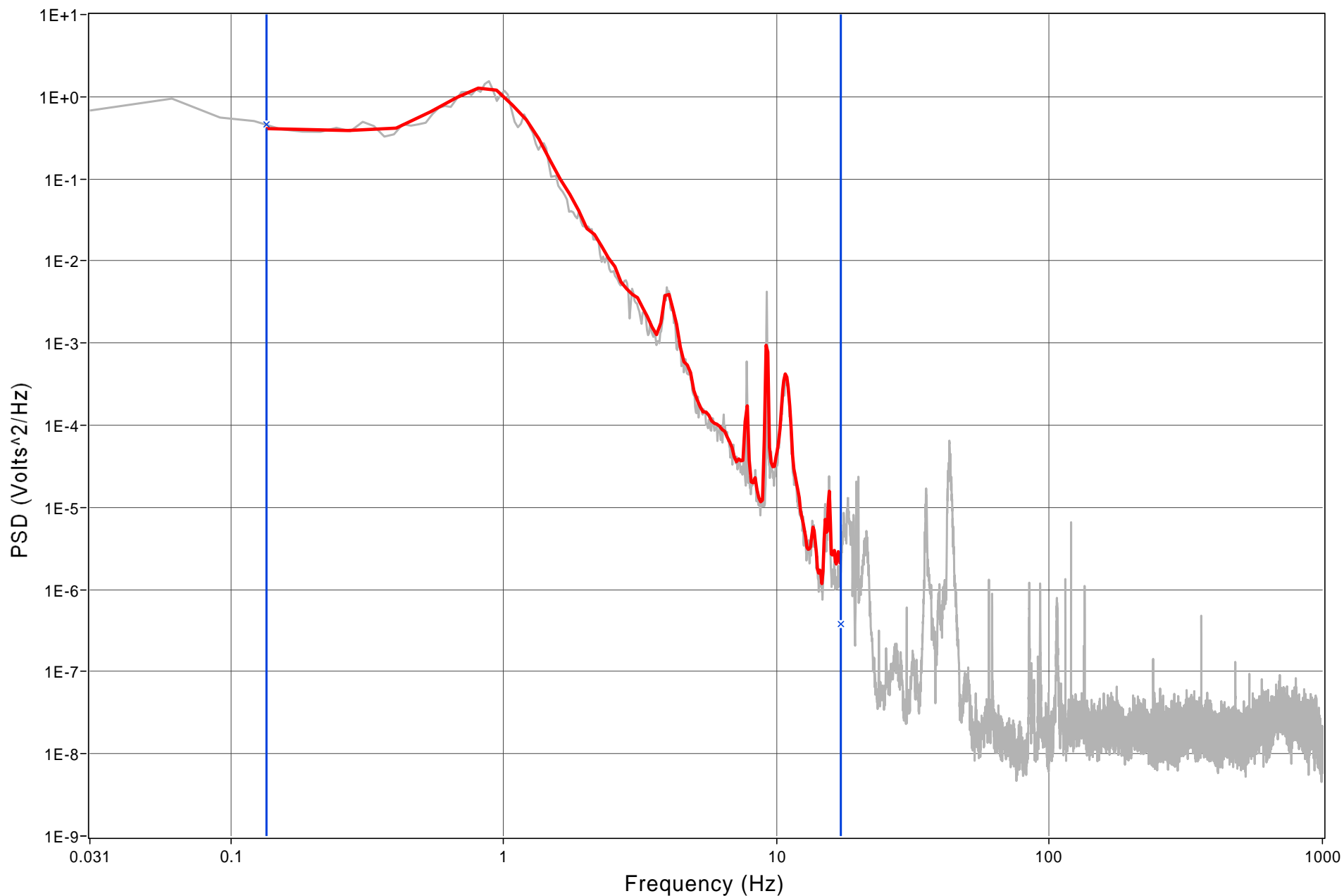




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	LT495	SG LVL	FNP10002.psd	11 : 256	0.134694	17.240854	Baseline	12-Mar-2009 12:21:02

**PSD Window**

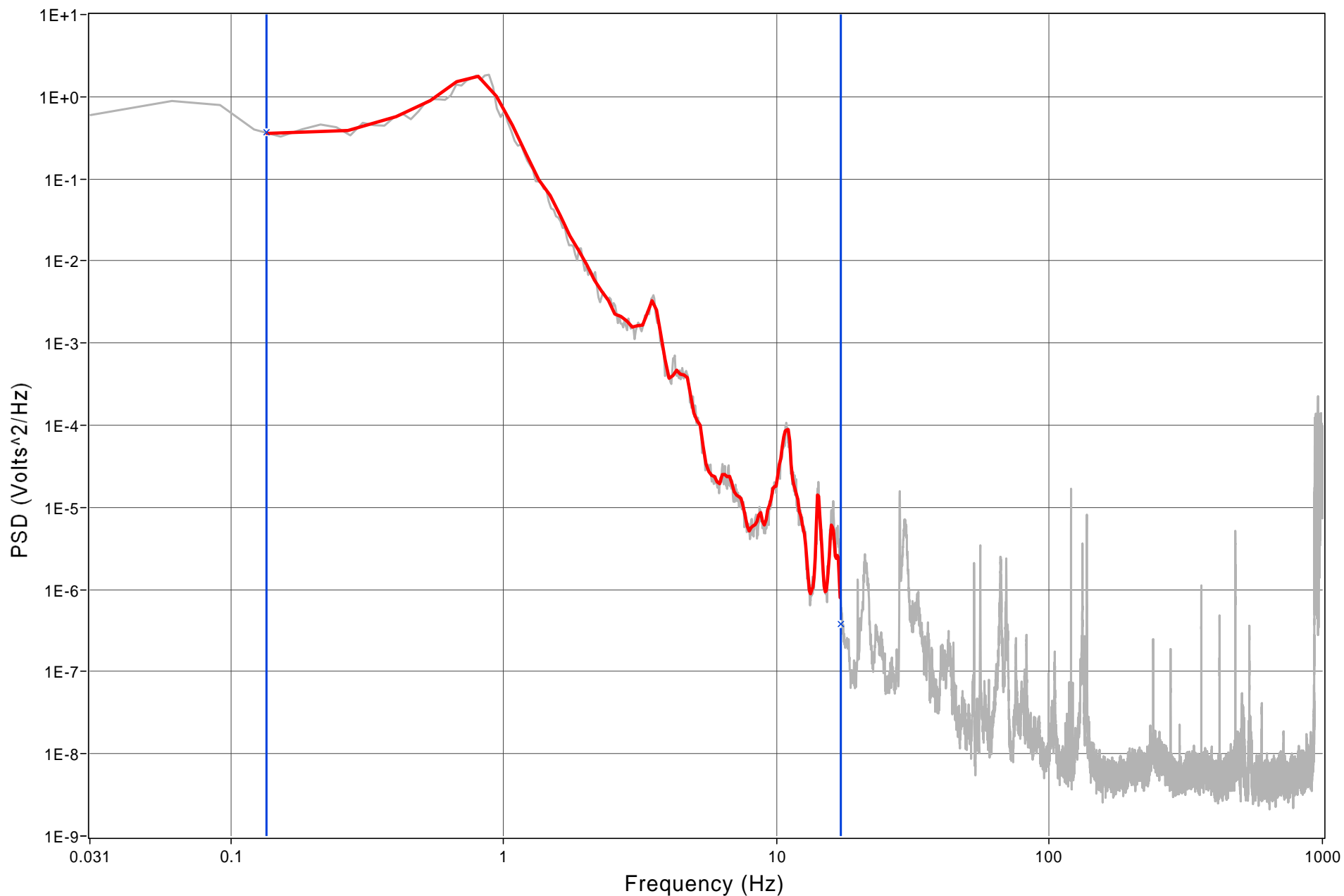




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	LT476	SG LVL	FNP10003.psd	11 : 256	0.134694	17.240854	Baseline	12-Mar-2009 12:21:02

**PSD Window**

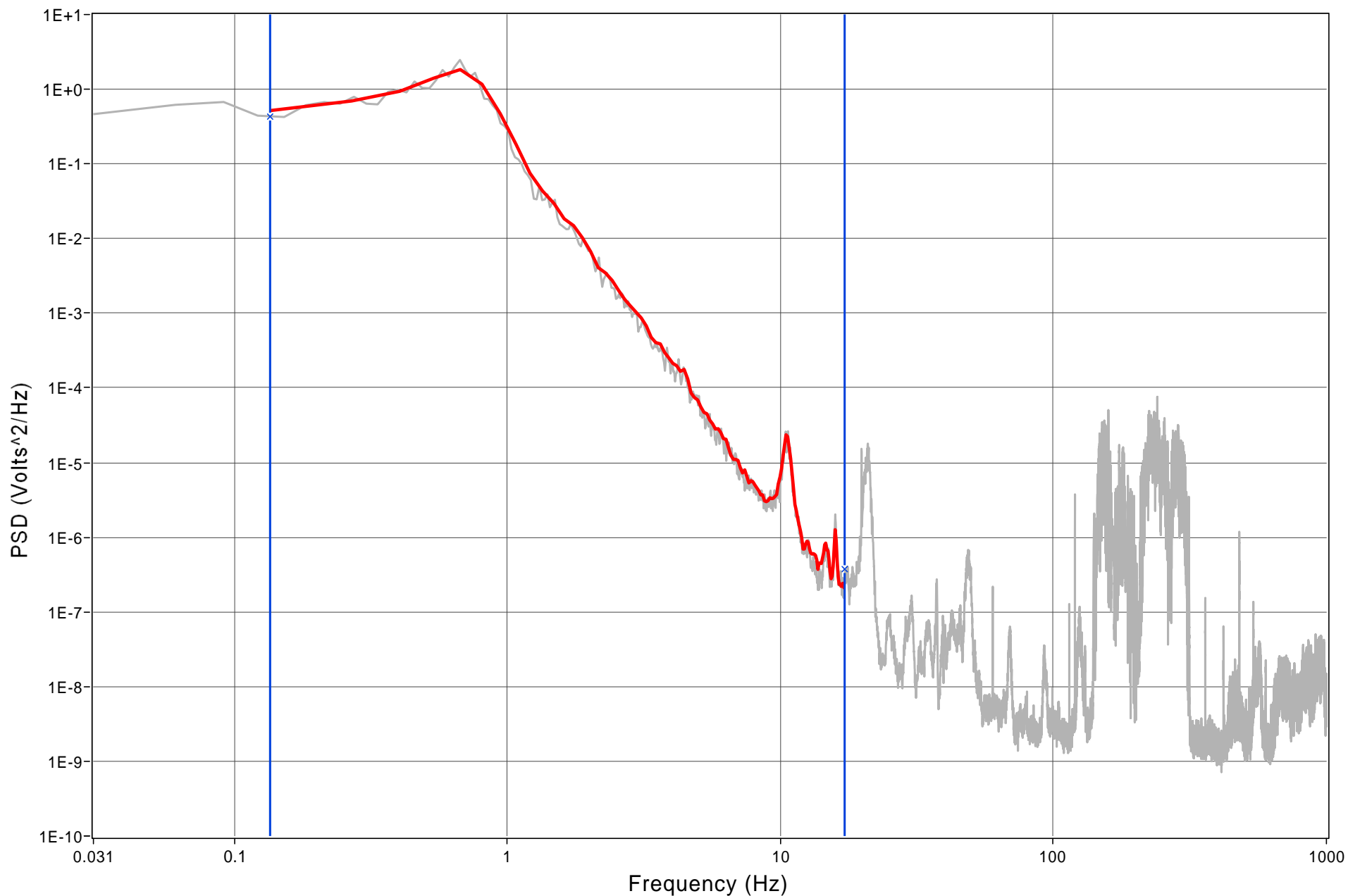




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	LT486	SG LVL	FNP10003.psd	11 : 256	0.134694	17.240854	Baseline	12-Mar-2009 12:21:02

**PSD Window**

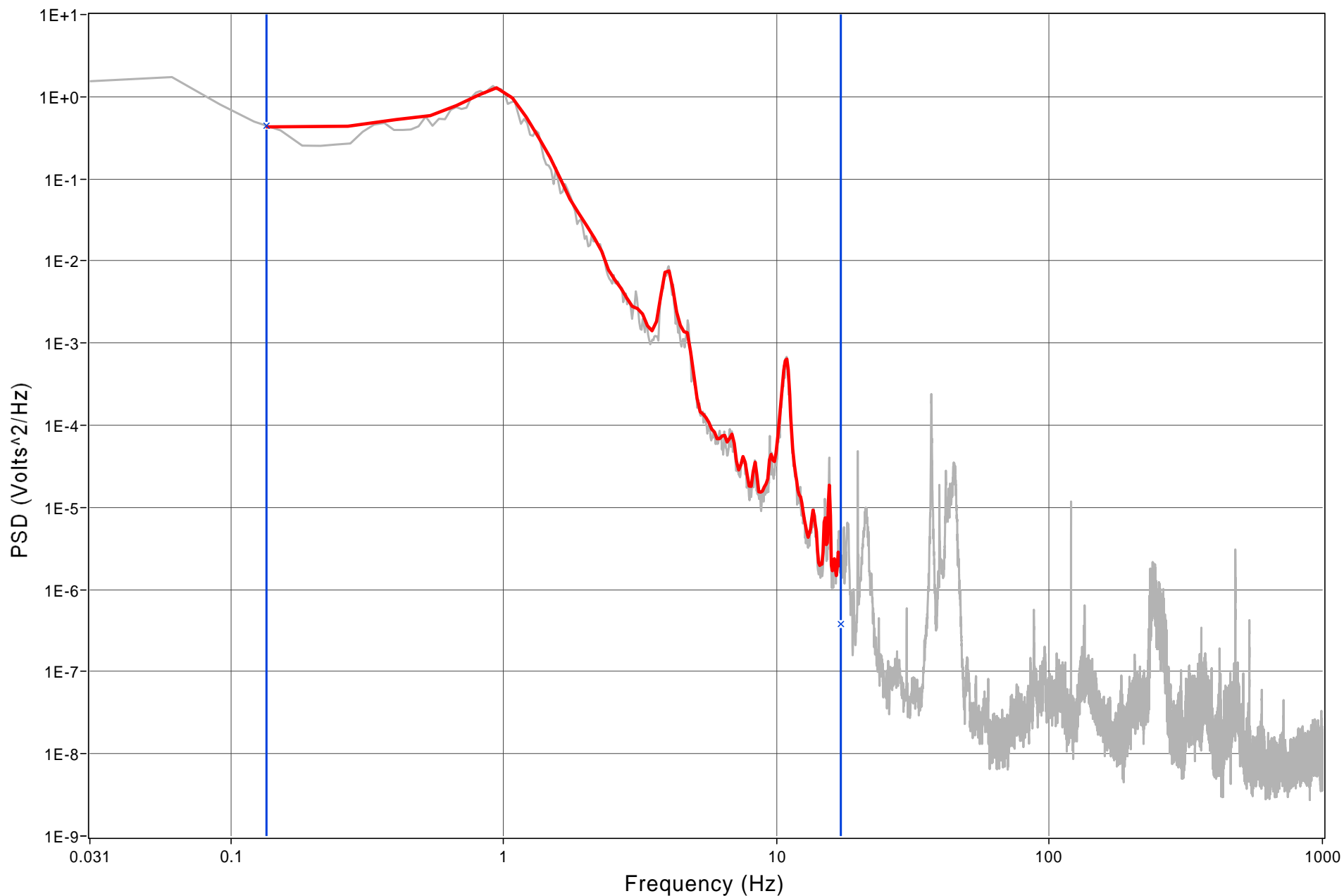




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	LT496	SG LVL	FNP10003.psd	11 : 256	0.134694	17.240854	Baseline	12-Mar-2009 12:21:02

**PSD Window**

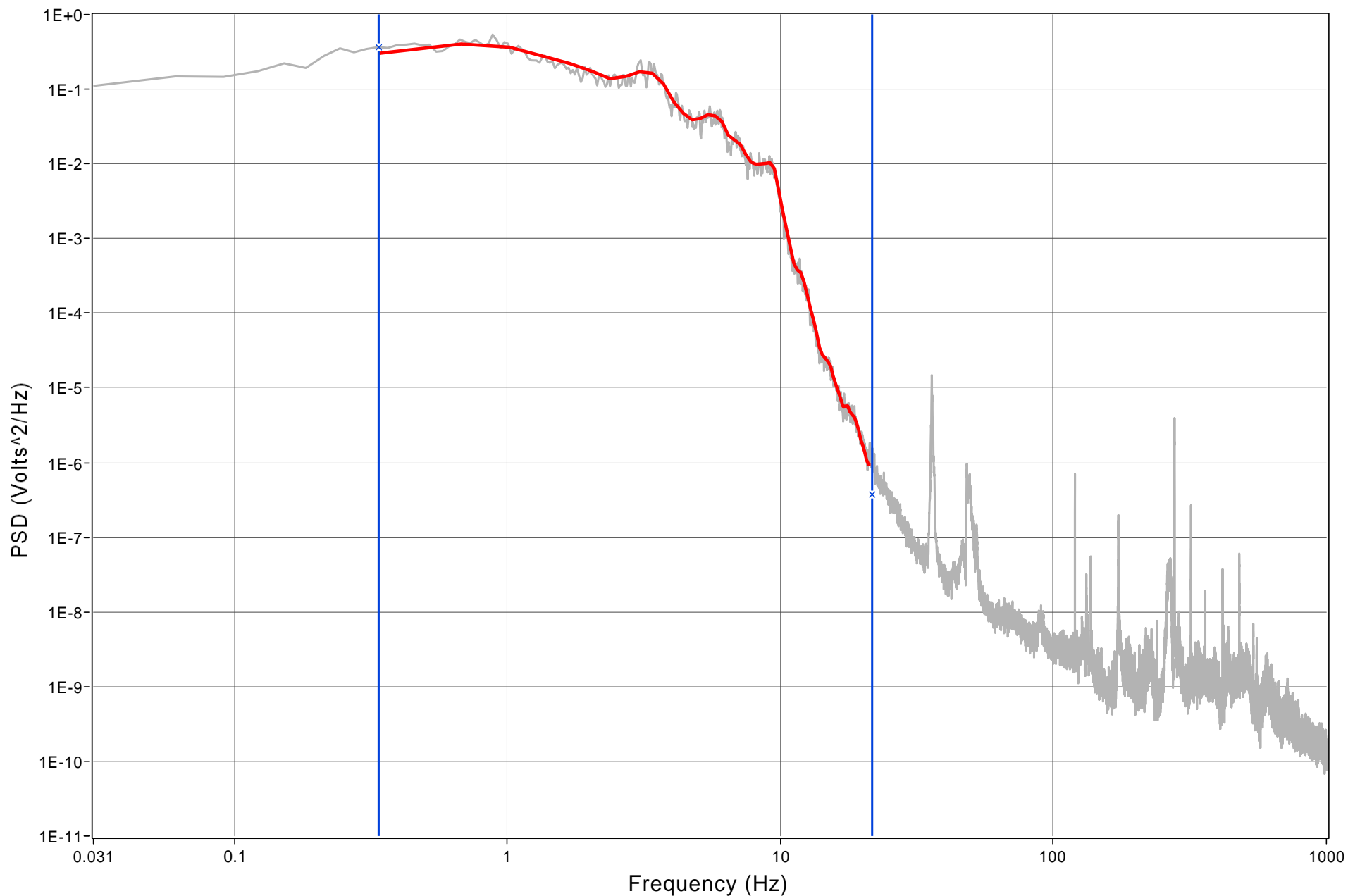




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	FT474	STM FLOW	FNP10003.psd	11 : 128	0.339664	21.738468	Baseline	12-Mar-2009 12:21:02

**PSD Window**

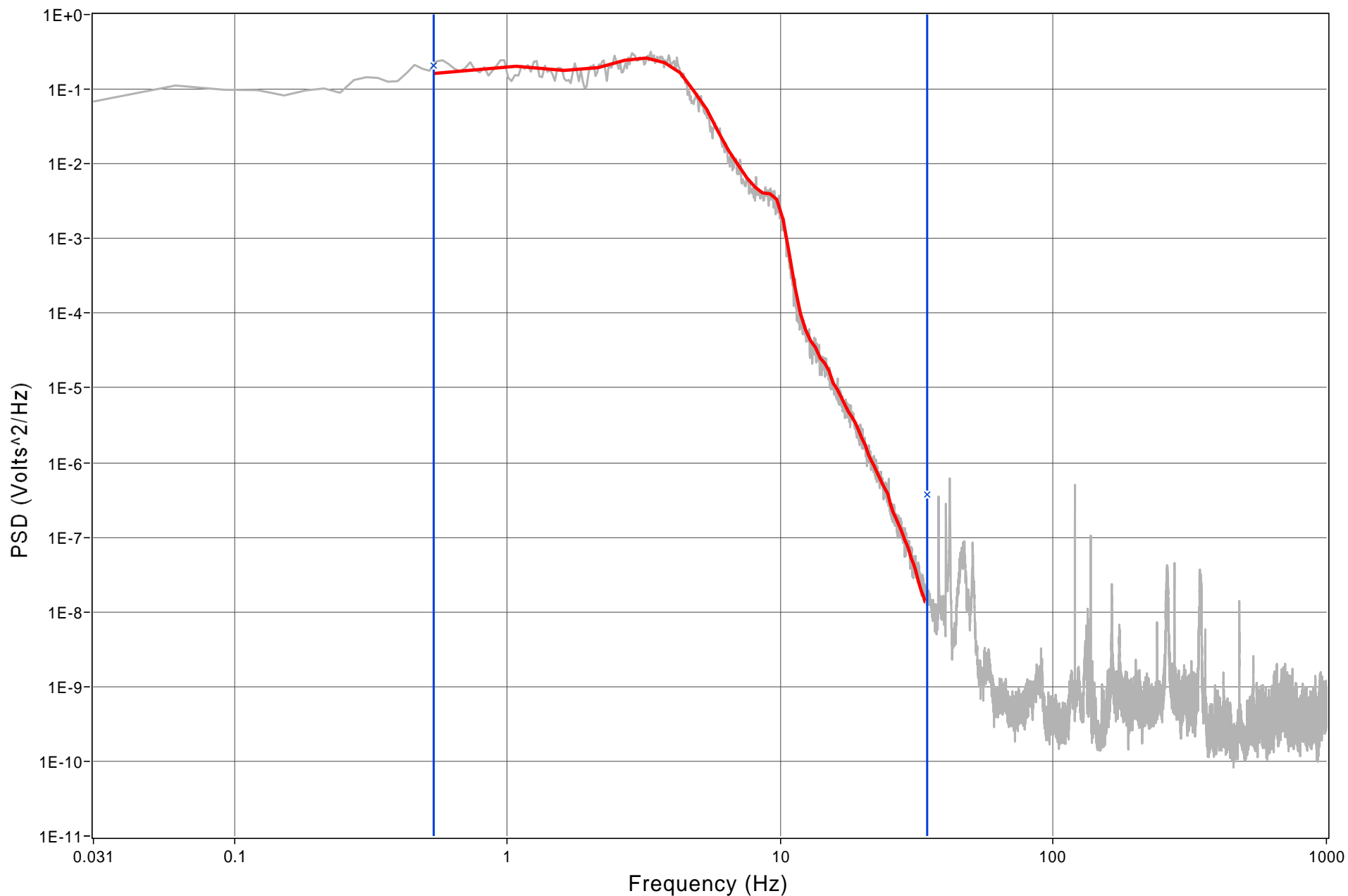




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	FT484	STM FLOW	FNP10003.psd	11 : 128	0.538777	34.481708	Baseline	12-Mar-2009 12:21:02

**PSD Window**



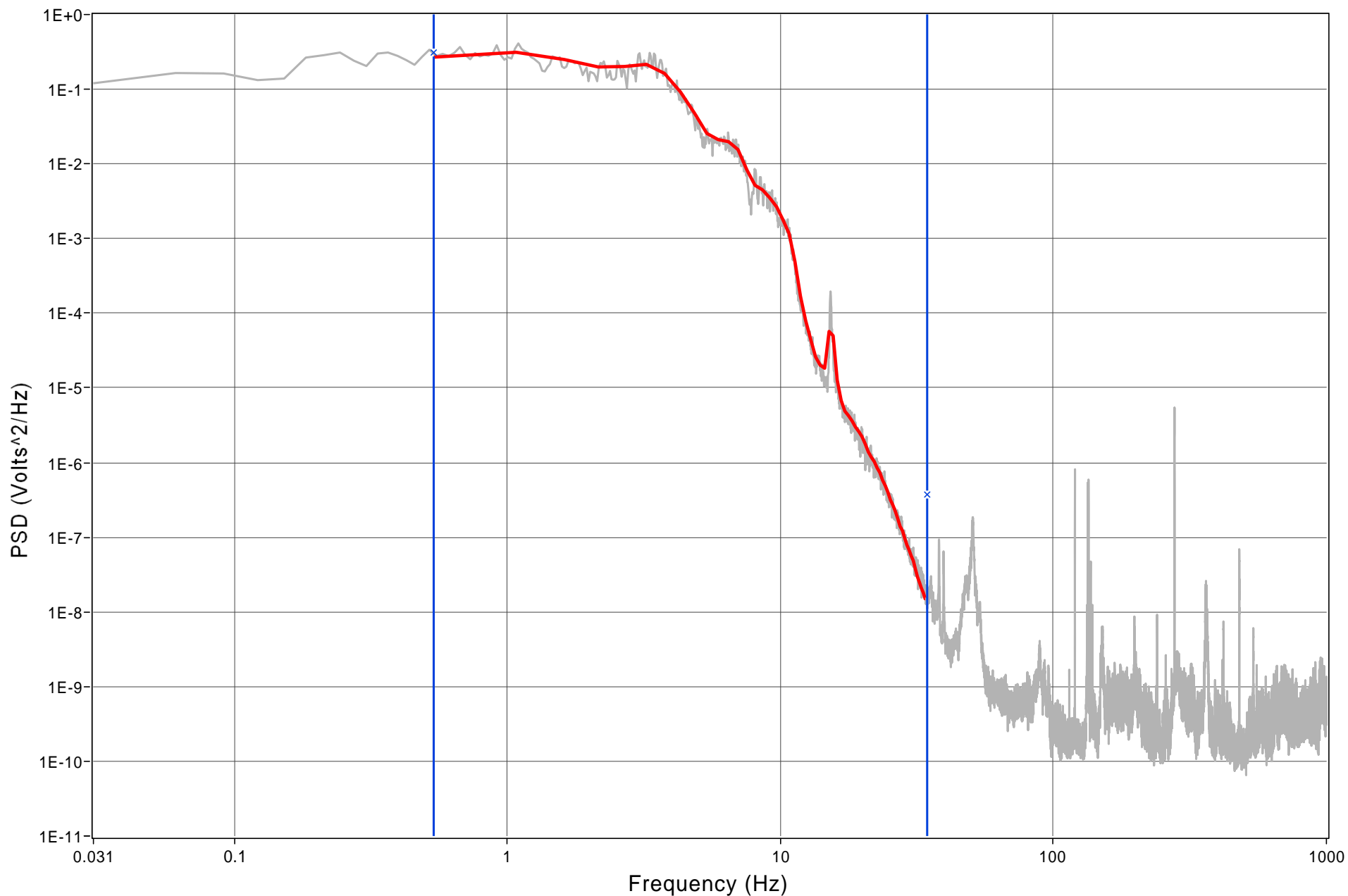




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	FT494	STM FLOW	FNP10003.psd	11 : 128	0.538777	34.481708	Baseline	12-Mar-2009 12:21:02

**PSD Window**

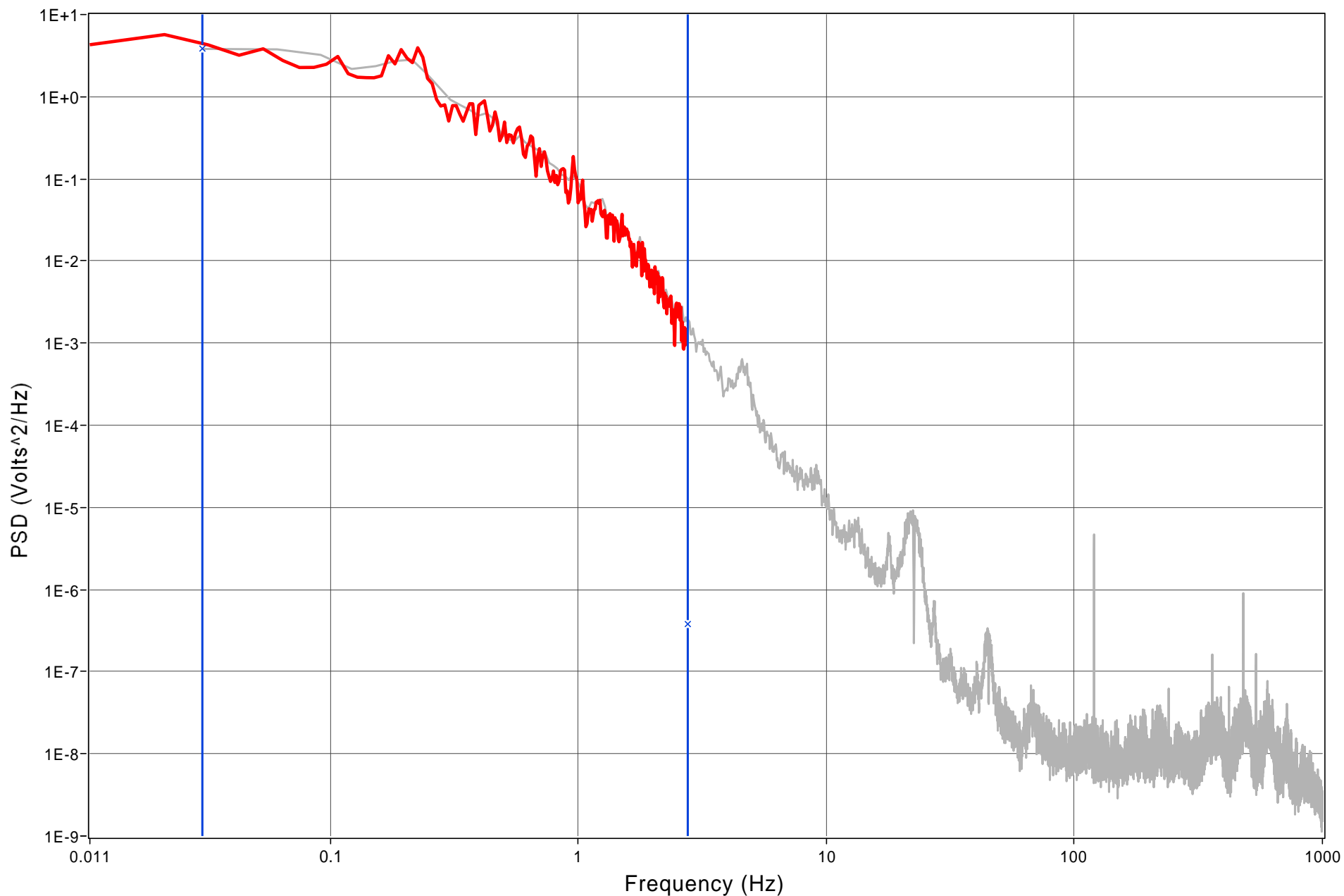




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	FT477	FW FLOW	FNP10003.psd	11 : 512	0.010731	2.747169	Baseline	12-Mar-2009 12:21:02

PSD Window

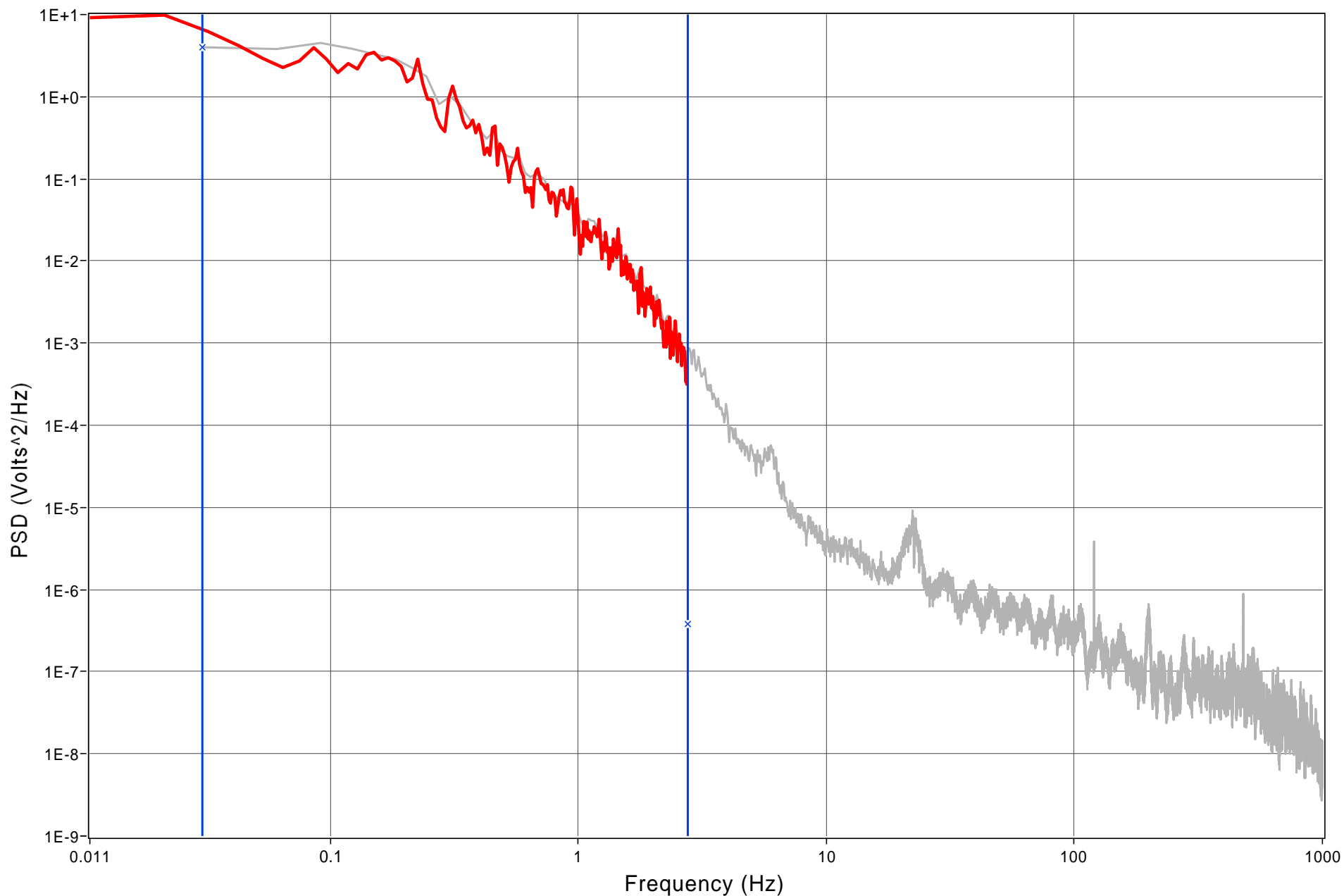




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	FT487	FW FLOW	FNP10003.psd	11 : 512	0.010731	2.747169	Baseline	12-Mar-2009 12:21:02

**PSD Window**

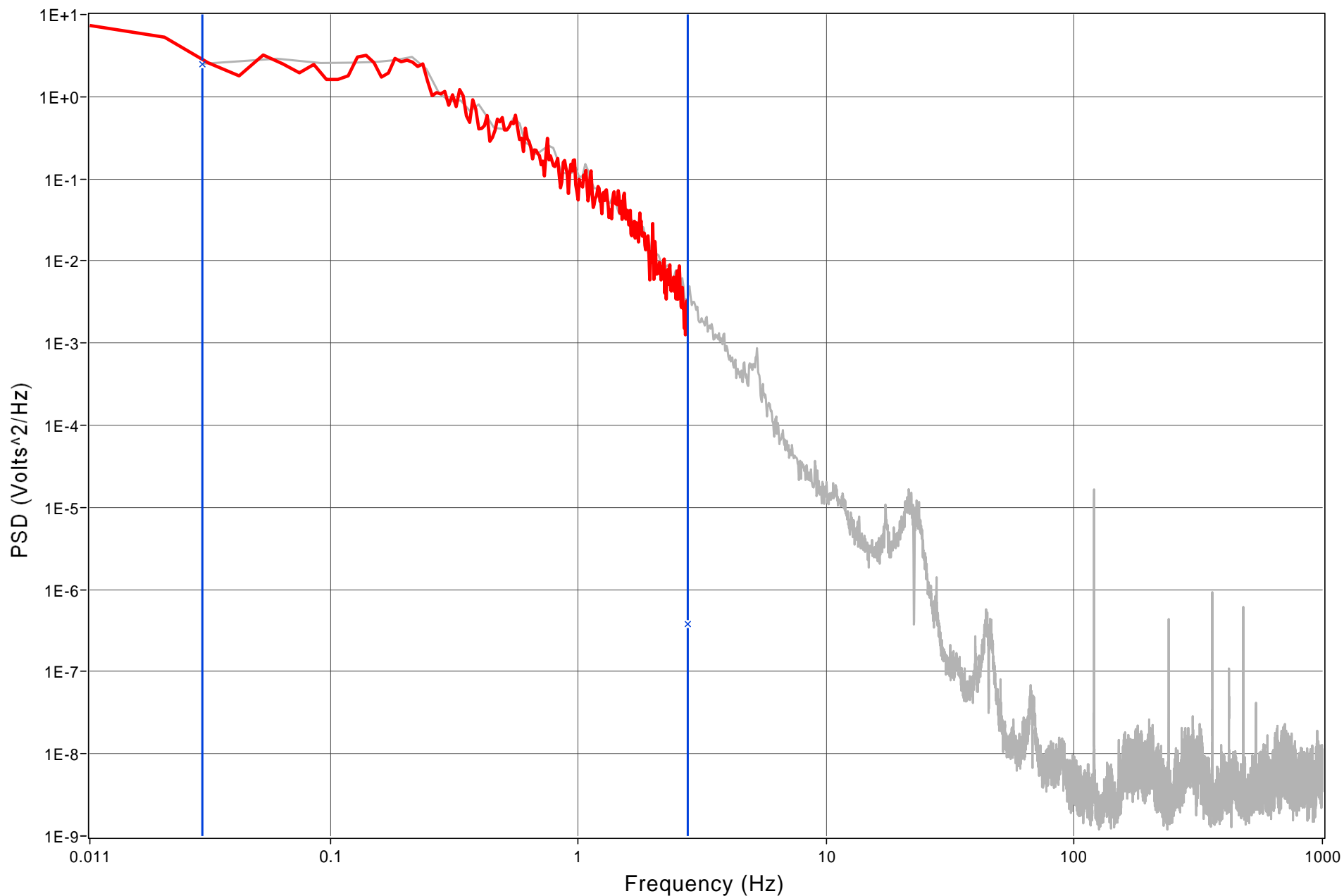




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	FT497	FW FLOW	FNP10003.psd	11 : 512	0.010731	2.747169	Baseline	12-Mar-2009 12:21:02

PSD Window

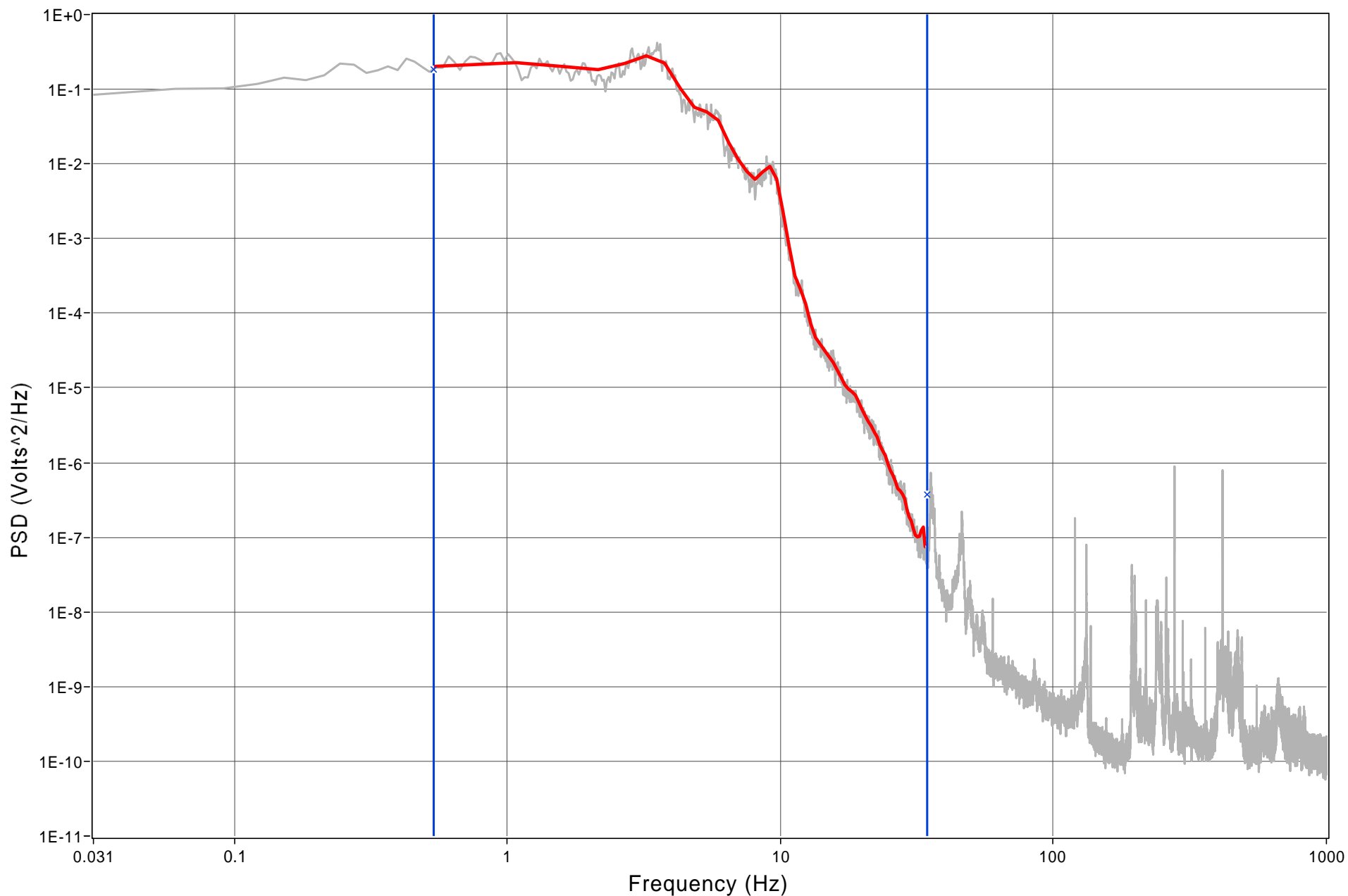




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	FT475	STM FLOW	FNP10004.psd	11 : 128	0.538777	34.481708	Baseline	12-Mar-2009 12:21:02

**PSD Window**

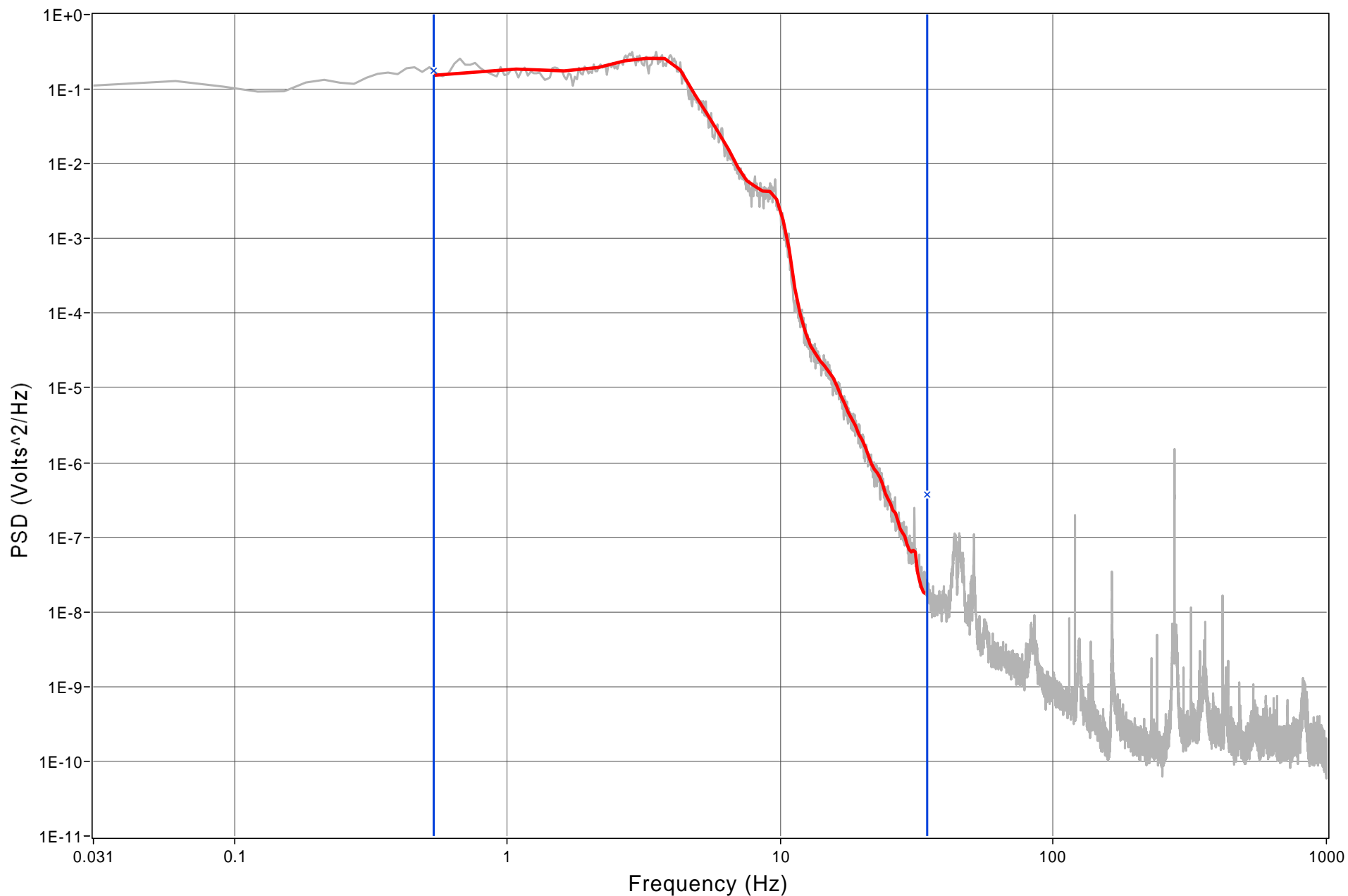




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	FT485	STM FLOW	FNP10004.psd	11 : 128	0.538777	34.481708	Baseline	12-Mar-2009 12:21:02

**PSD Window**

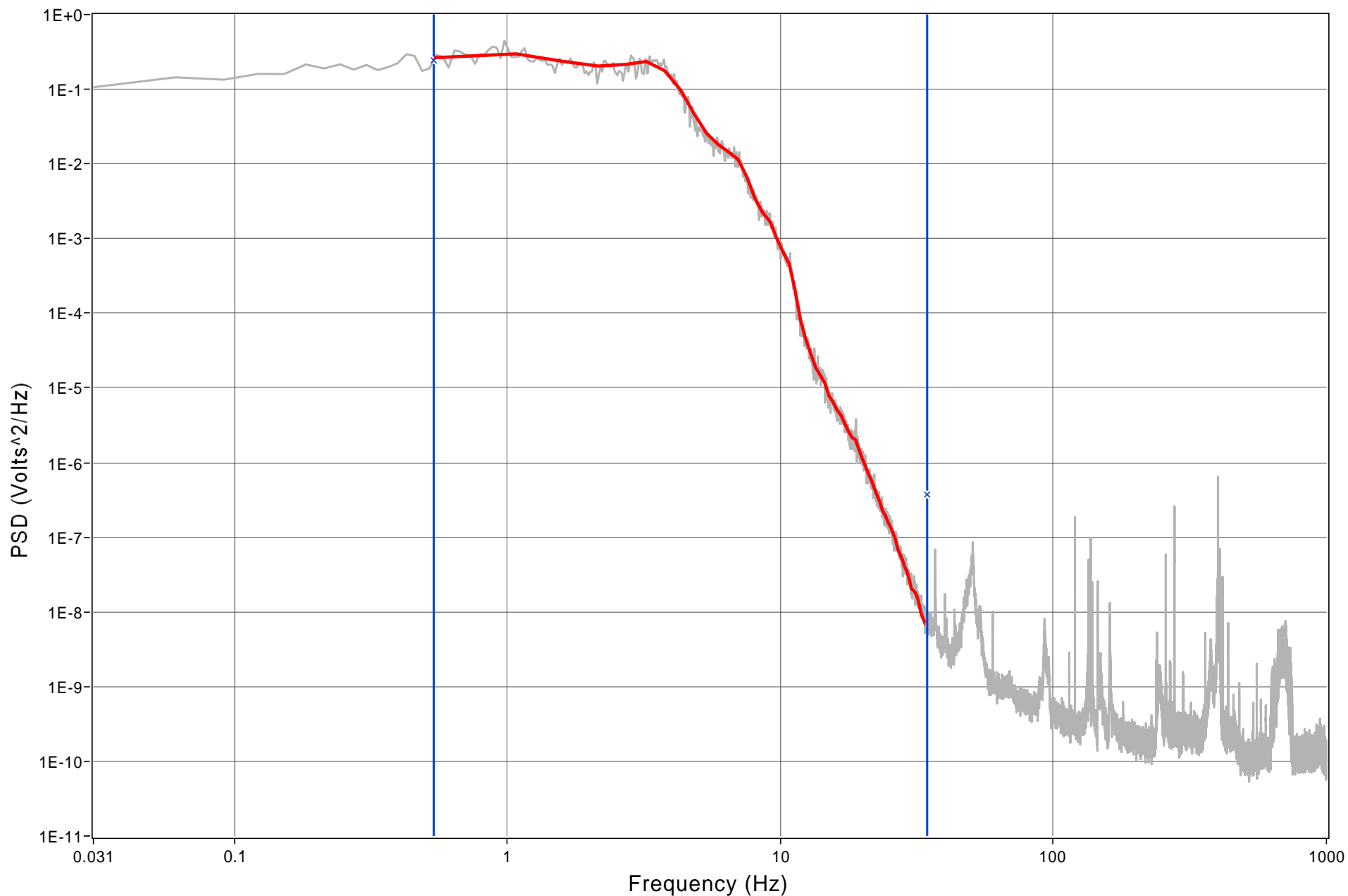




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	FT495	STM FLOW	FNP10004.psd	11 : 128	0.538777	34.481708	Baseline	12-Mar-2009 12:21:02

**PSD Window**

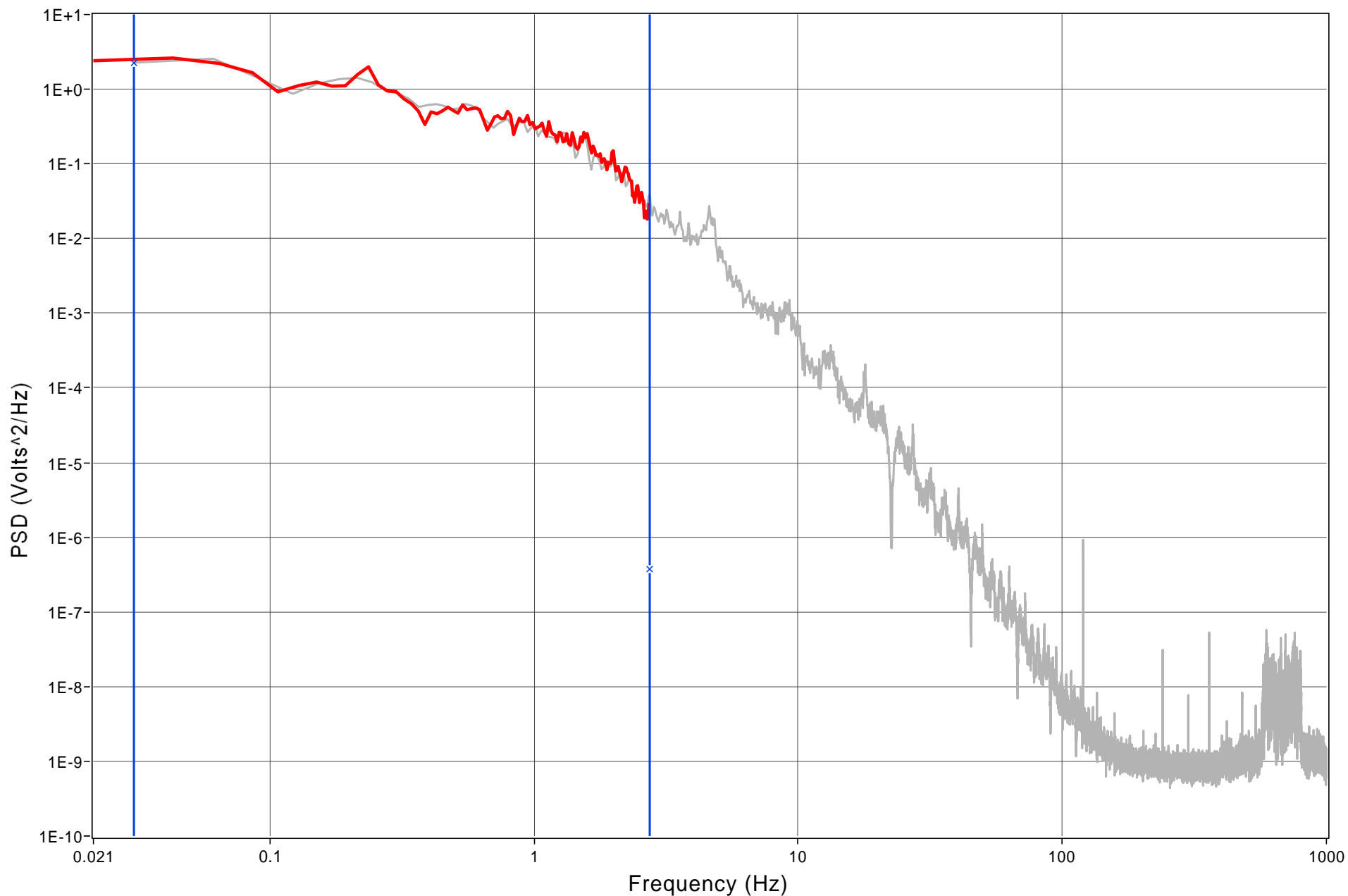




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	FT476	FW FLOW	FNP10004.psd	11 : 256	0.021462	2.747169	Baseline	12-Mar-2009 12:21:02

**PSD Window**



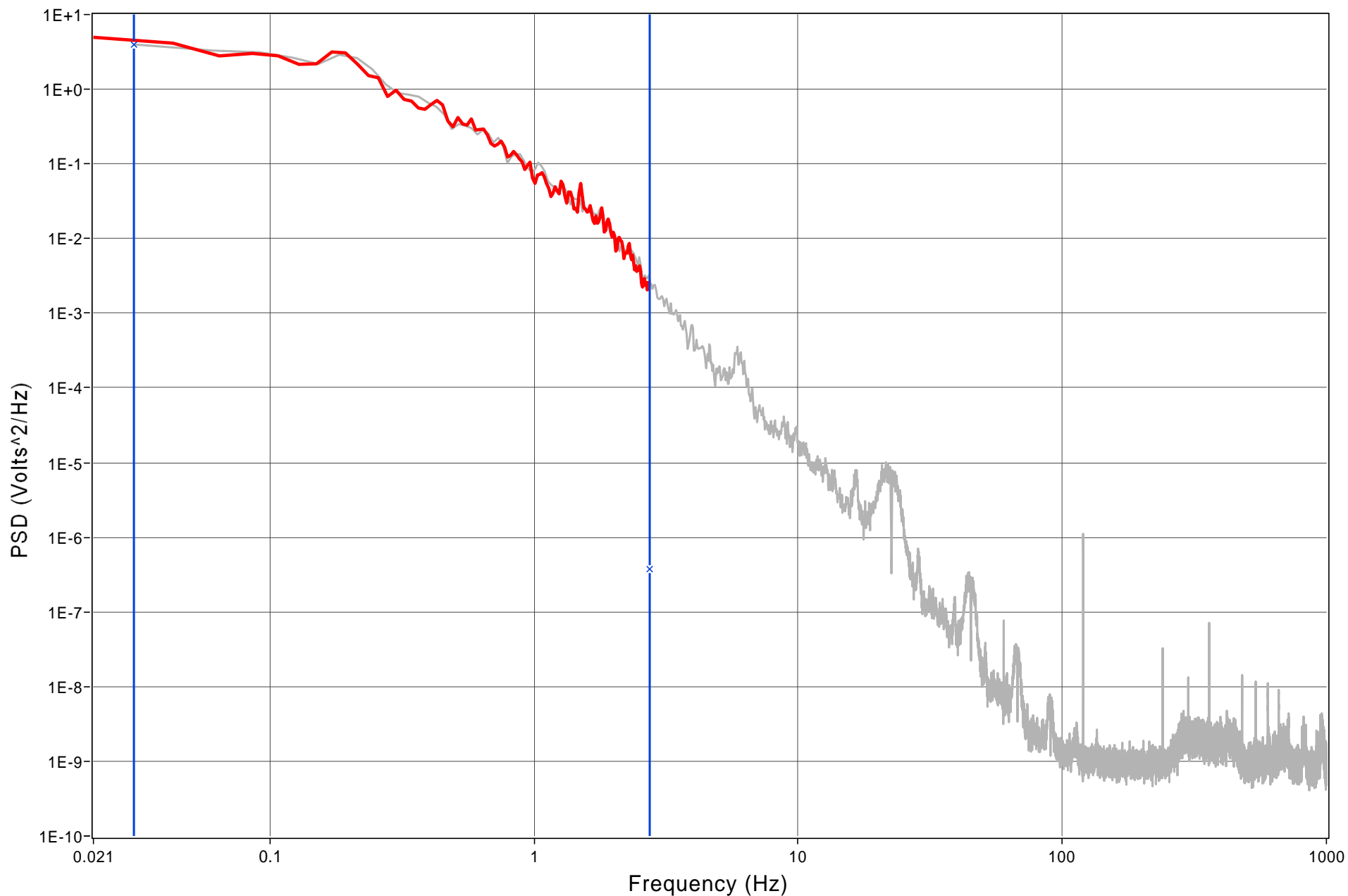




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	FT486	FW FLOW	FNP10004.psd	11 : 256	0.021462	2.747169	Baseline	12-Mar-2009 12:21:02

**PSD Window**

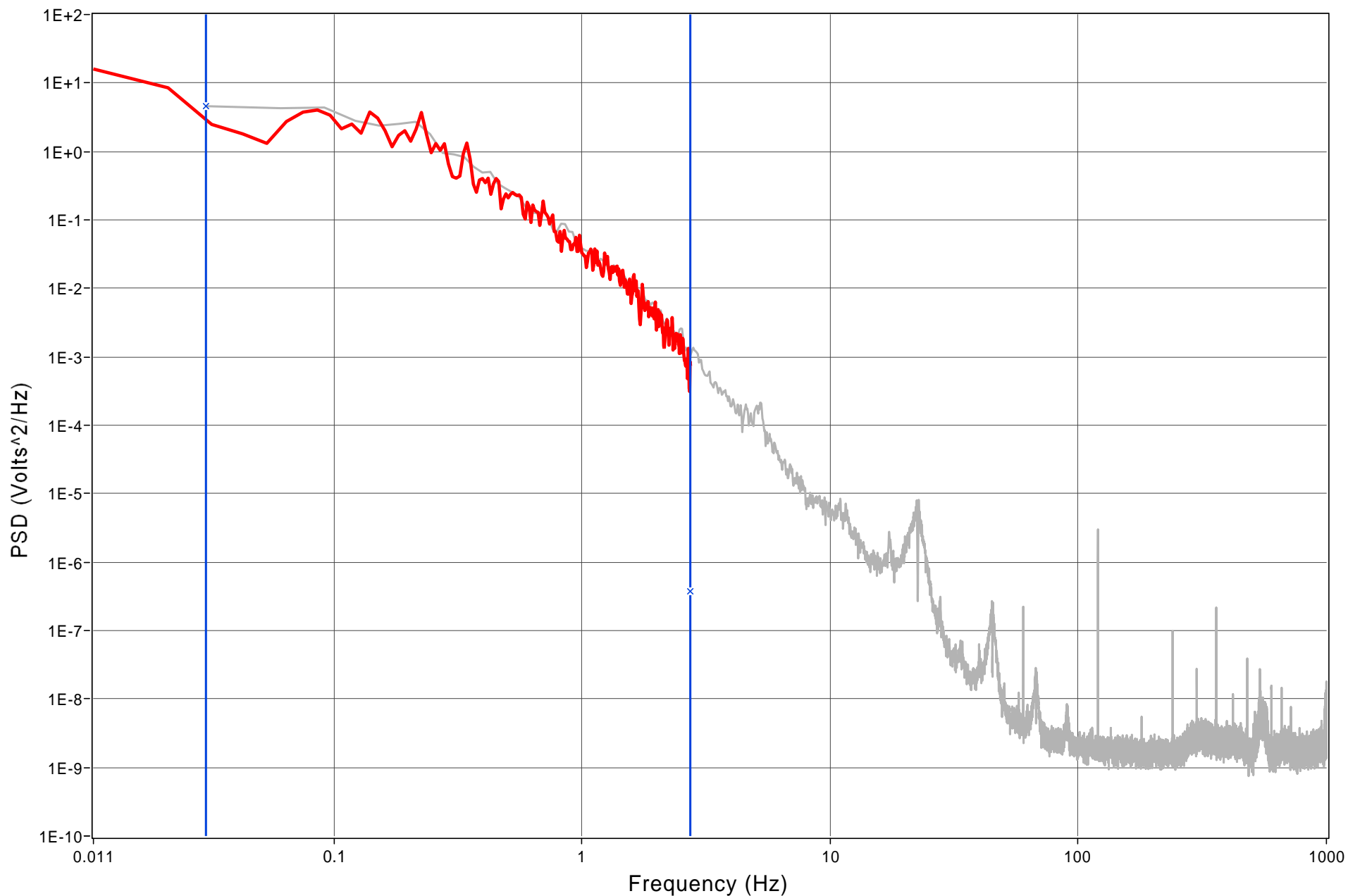




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	FT496	FW FLOW	FNP10004.psd	11 : 512	0.010731	2.747169	Baseline	12-Mar-2009 12:21:02

## PSD Window

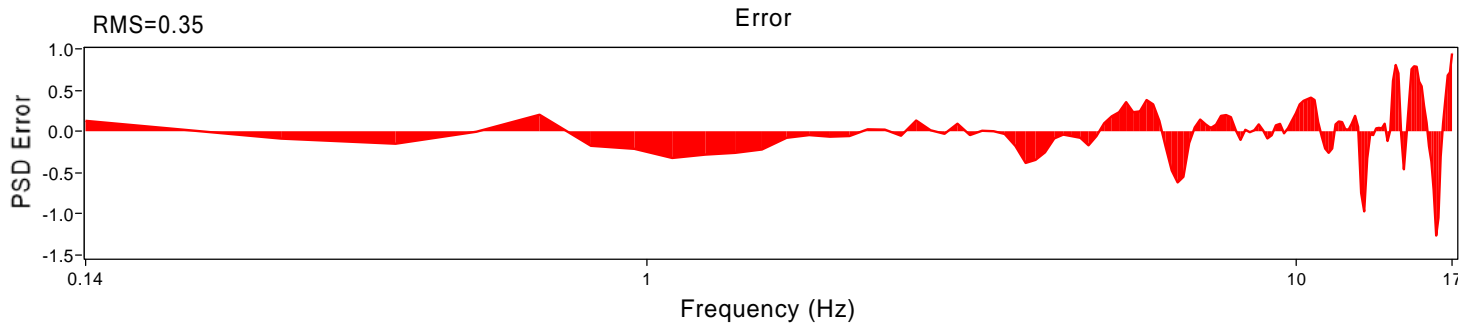
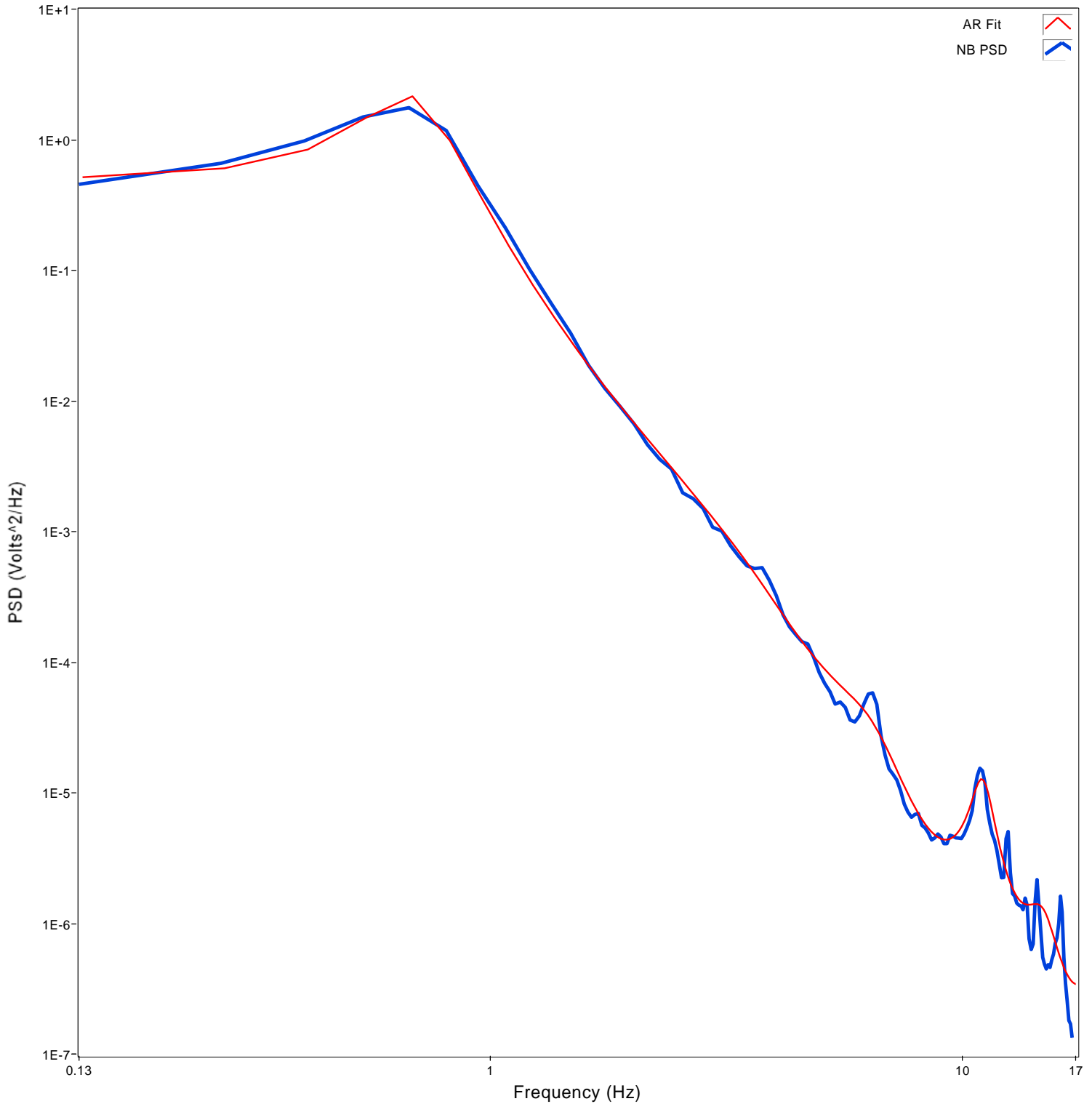




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	LT474	SG LVL	FNP10001.psd	143 : 512	0.134694	17.240854	11	Forward-Backward	12-Mar-2009 12:21:02

NB PSD and AR PSD

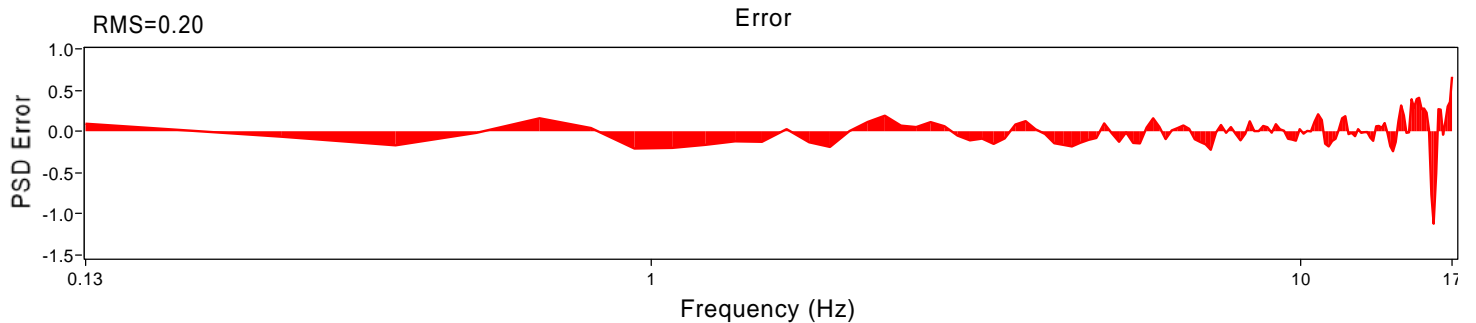
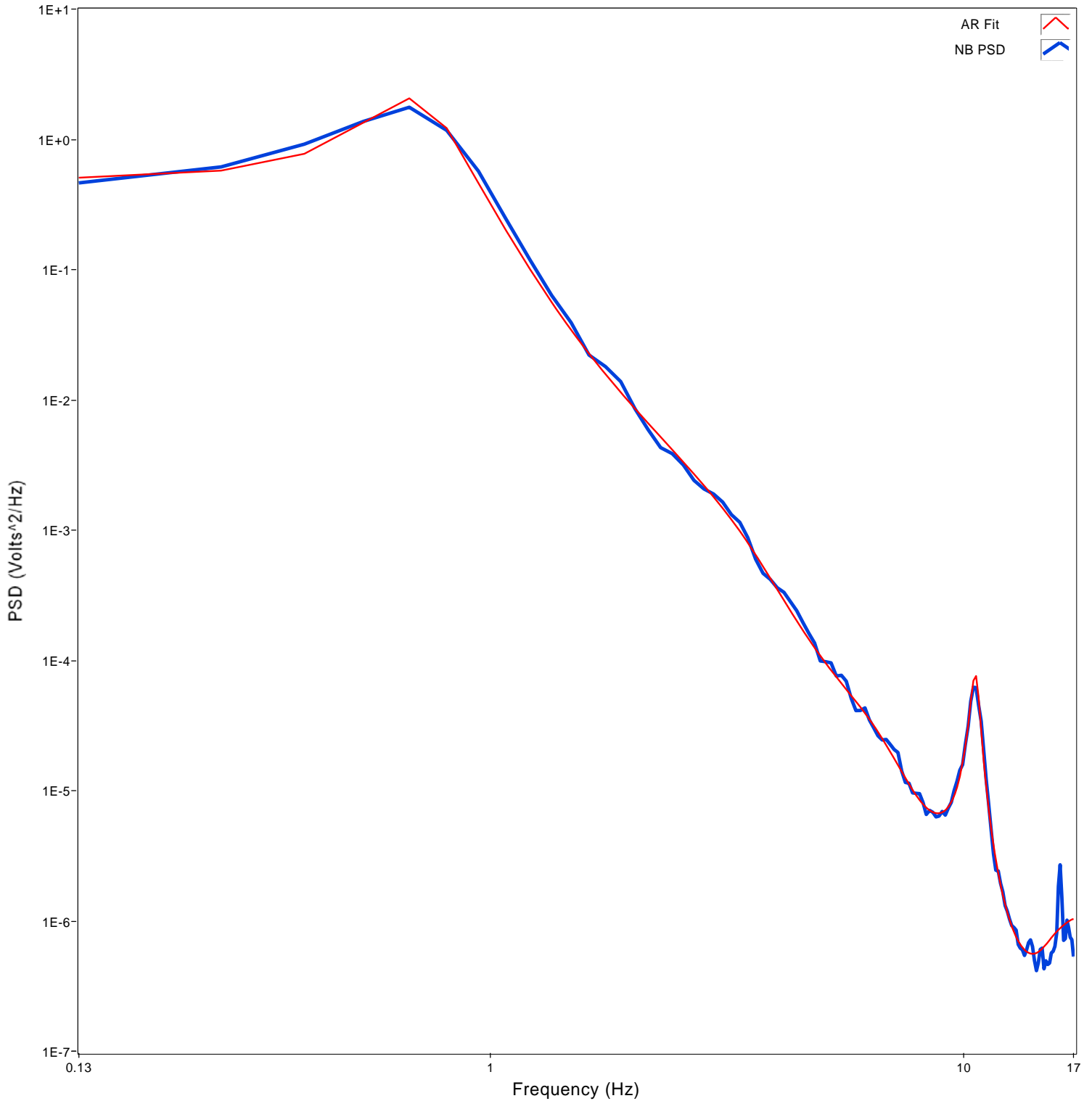




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	LT484	SG LVL	FNP10001.psd	141 : 512	0.134694	17.240854	11	Forward-Backward	12-Mar-2009 12:21:02

NB PSD and AR PSD

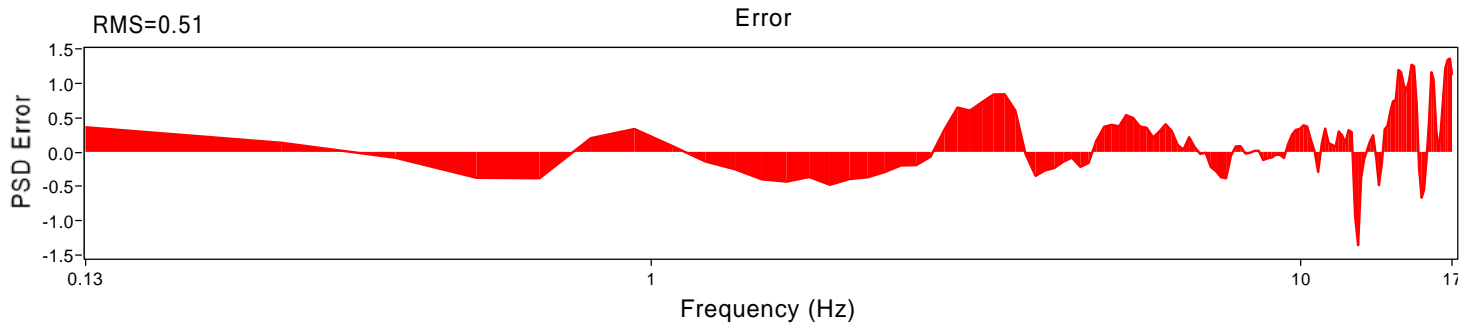
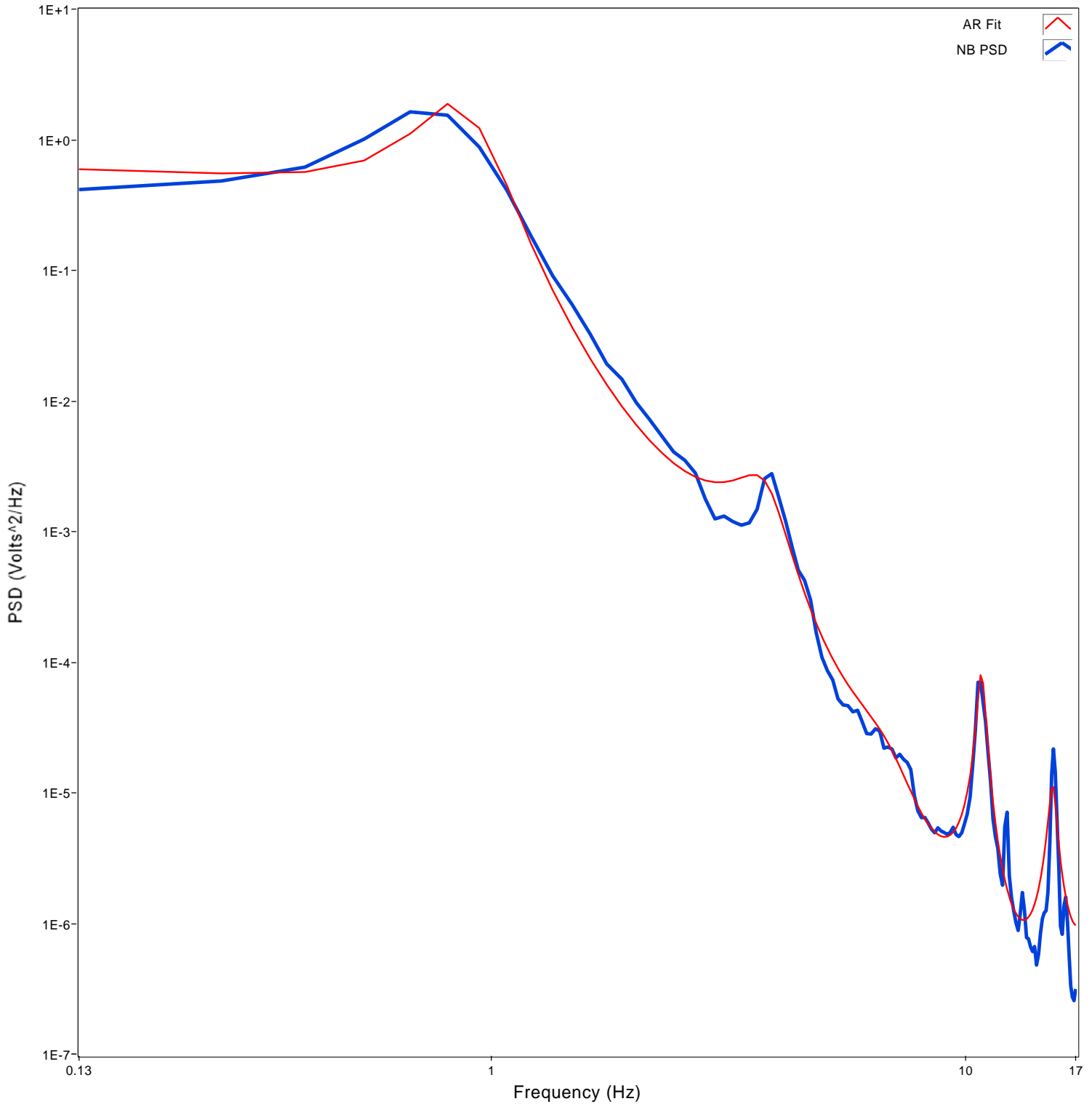




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	LT494	SG LVL	FNP10001.psd	141 : 512	0.134694	17.240854	11	Forward-Backward	12-Mar-2009 12:21:02

NB PSD and AR PSD

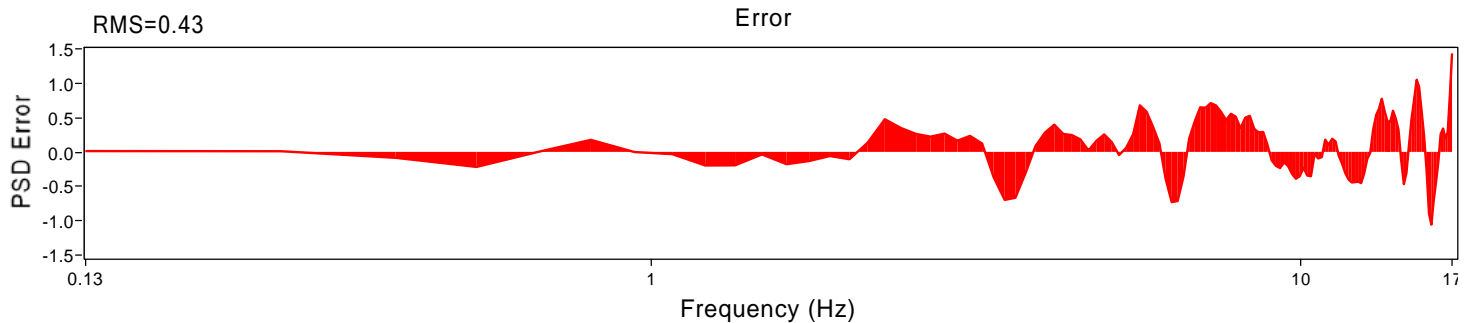
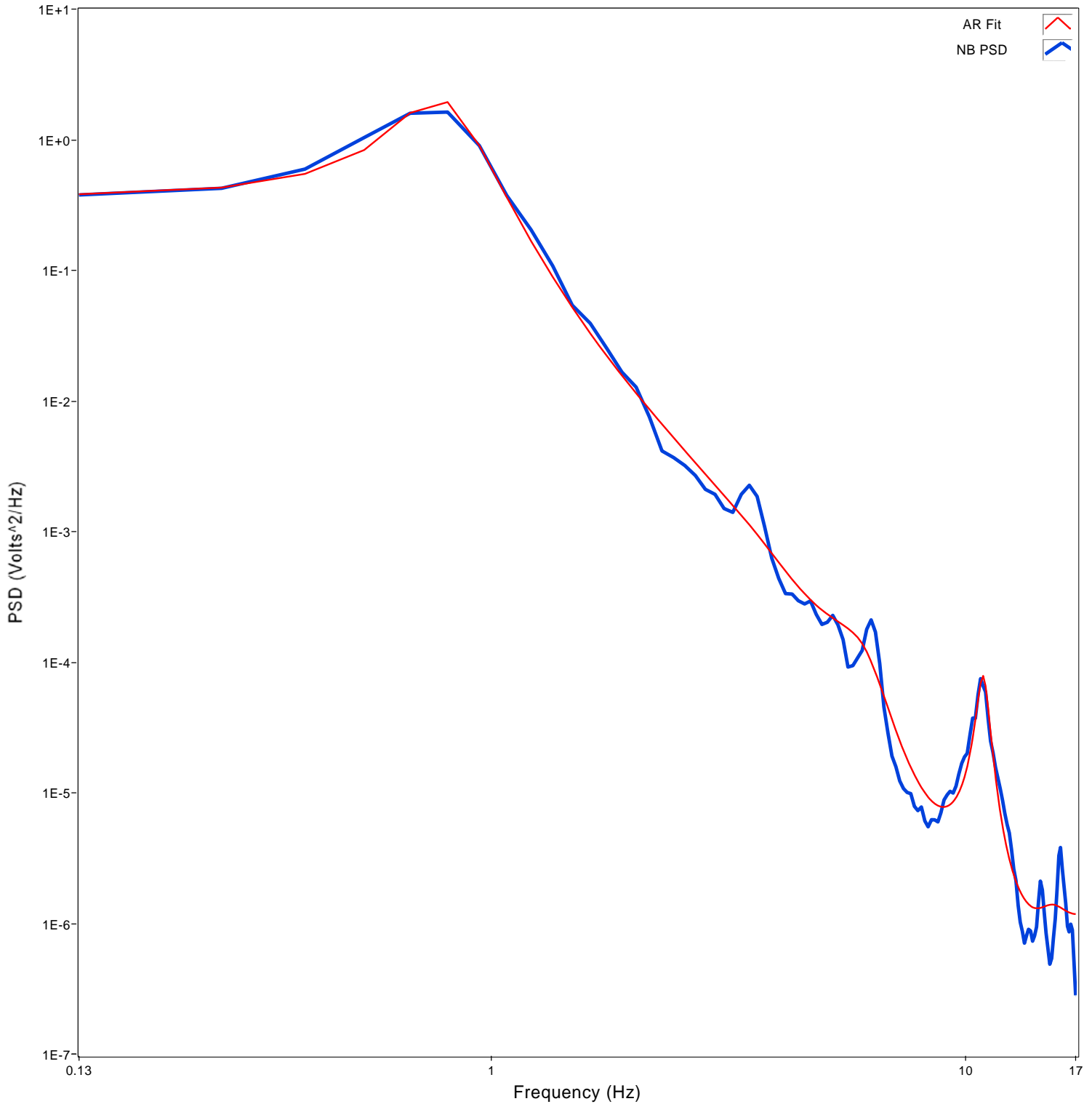




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	LT475	SG LVL	FNP10002.psd	141 : 512	0.134694	17.240854	11	Forward-Backward	12-Mar-2009 12:21:02

NB PSD and AR PSD

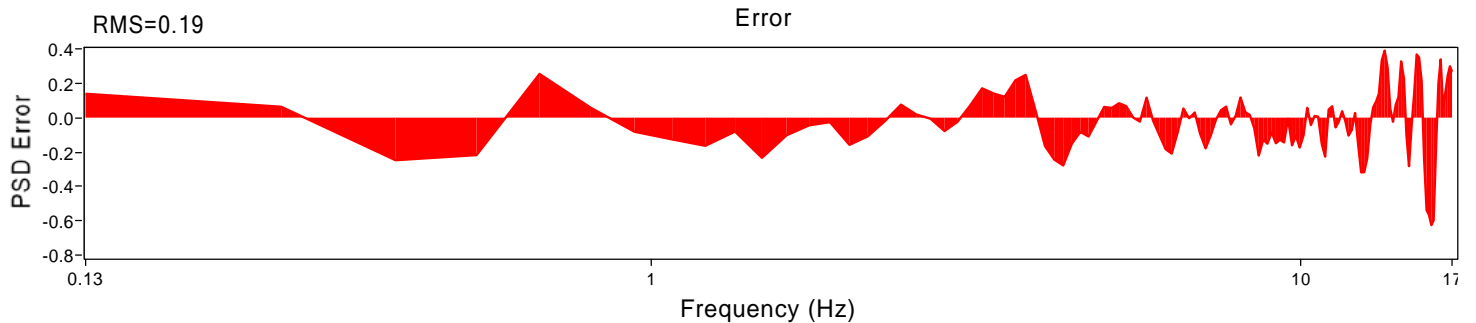
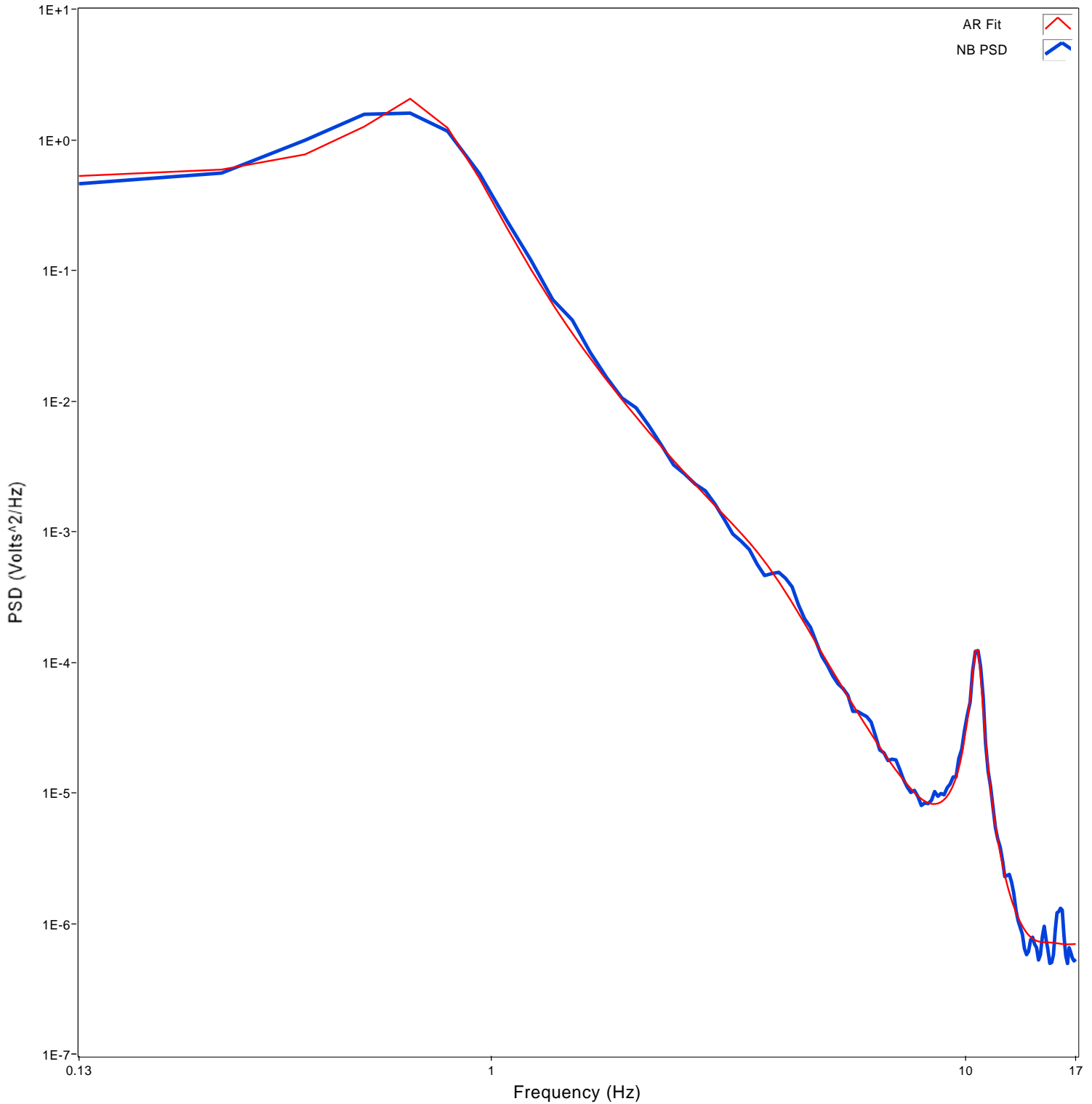




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	LT485	SG LVL	FNP10002.psd	141 : 512	0.134694	17.240854	11	Forward-Backward	12-Mar-2009 12:21:02

NB PSD and AR PSD

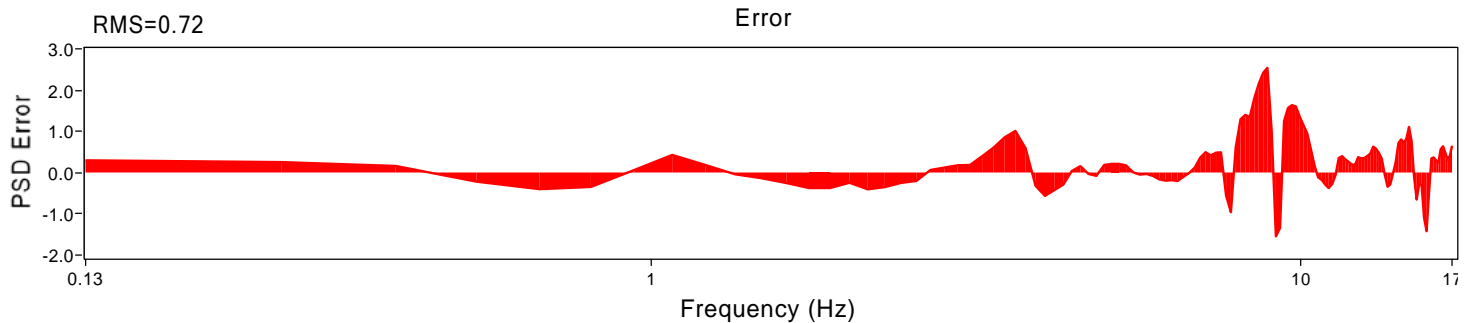
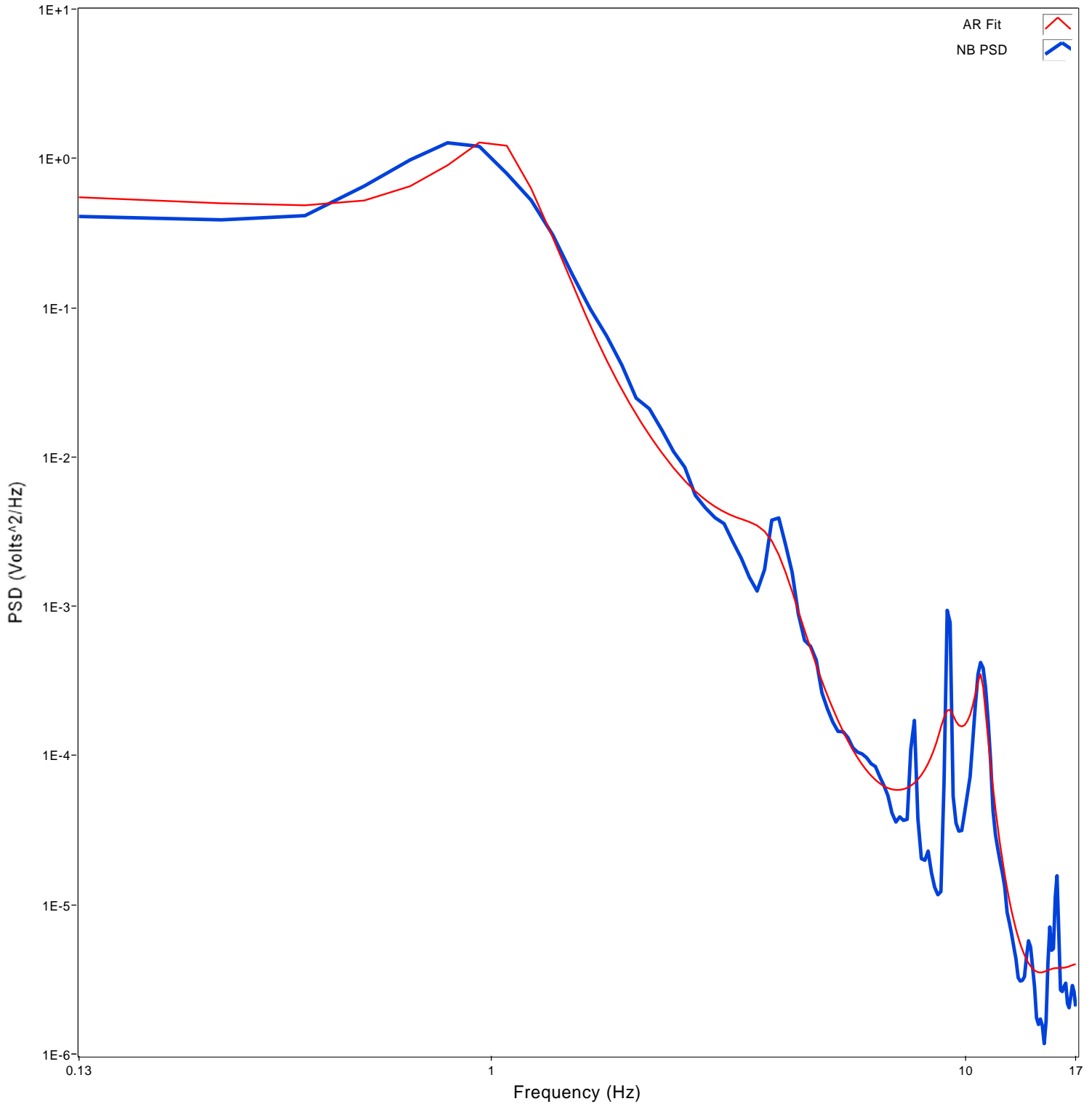




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	LT495	SG LVL	FNP10002.psd	141 : 512	0.134694	17.240854	11	Forward-Backward	12-Mar-2009 12:21:02

NB PSD and AR PSD



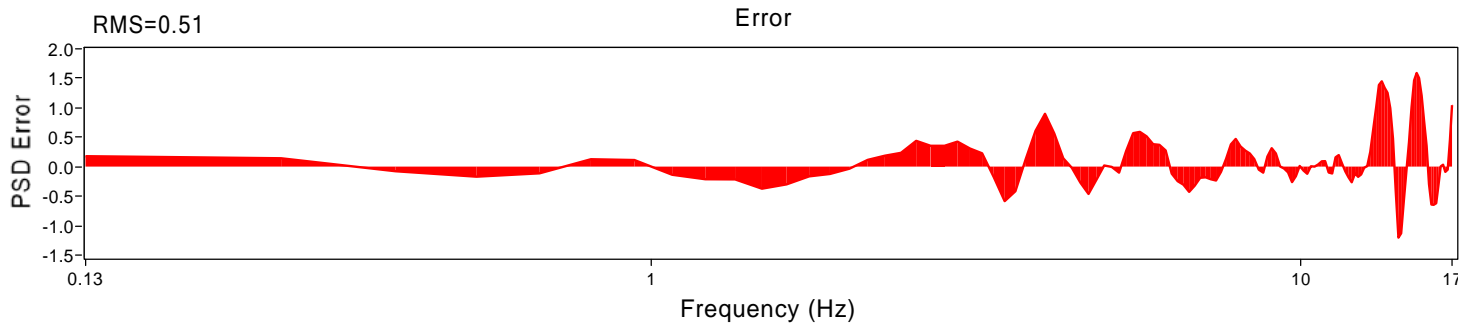
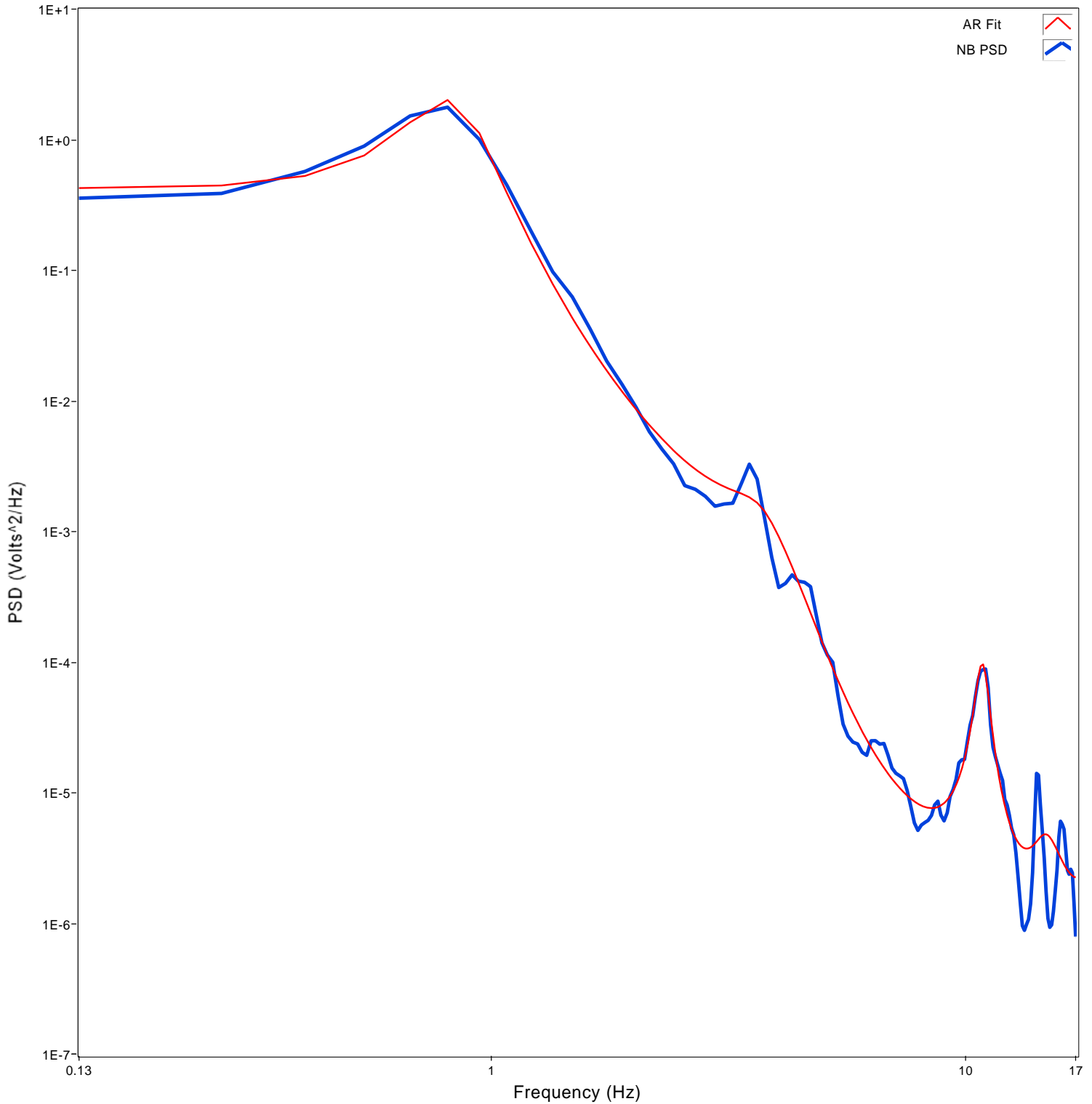




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	LT476	SG LVL	FNP10003.psd	141 : 512	0.134694	17.240854	11	Forward-Backward	12-Mar-2009 12:21:02

NB PSD and AR PSD

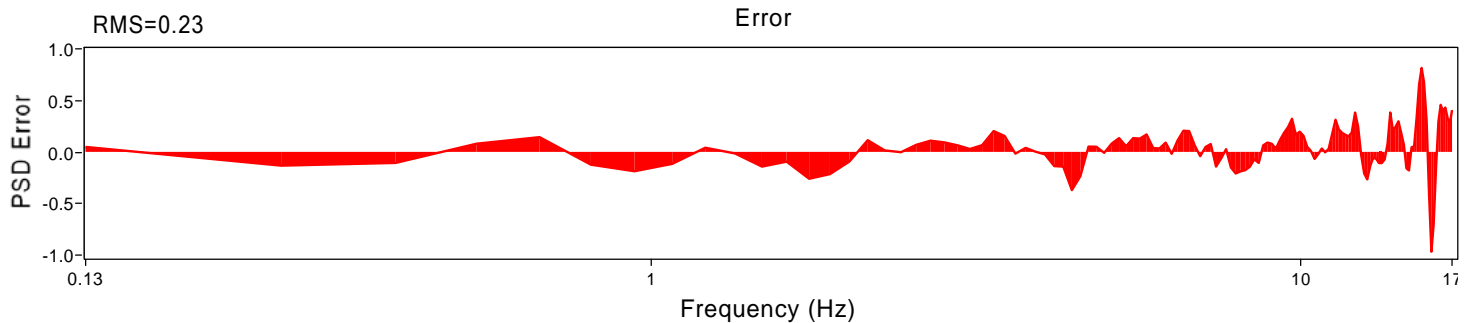
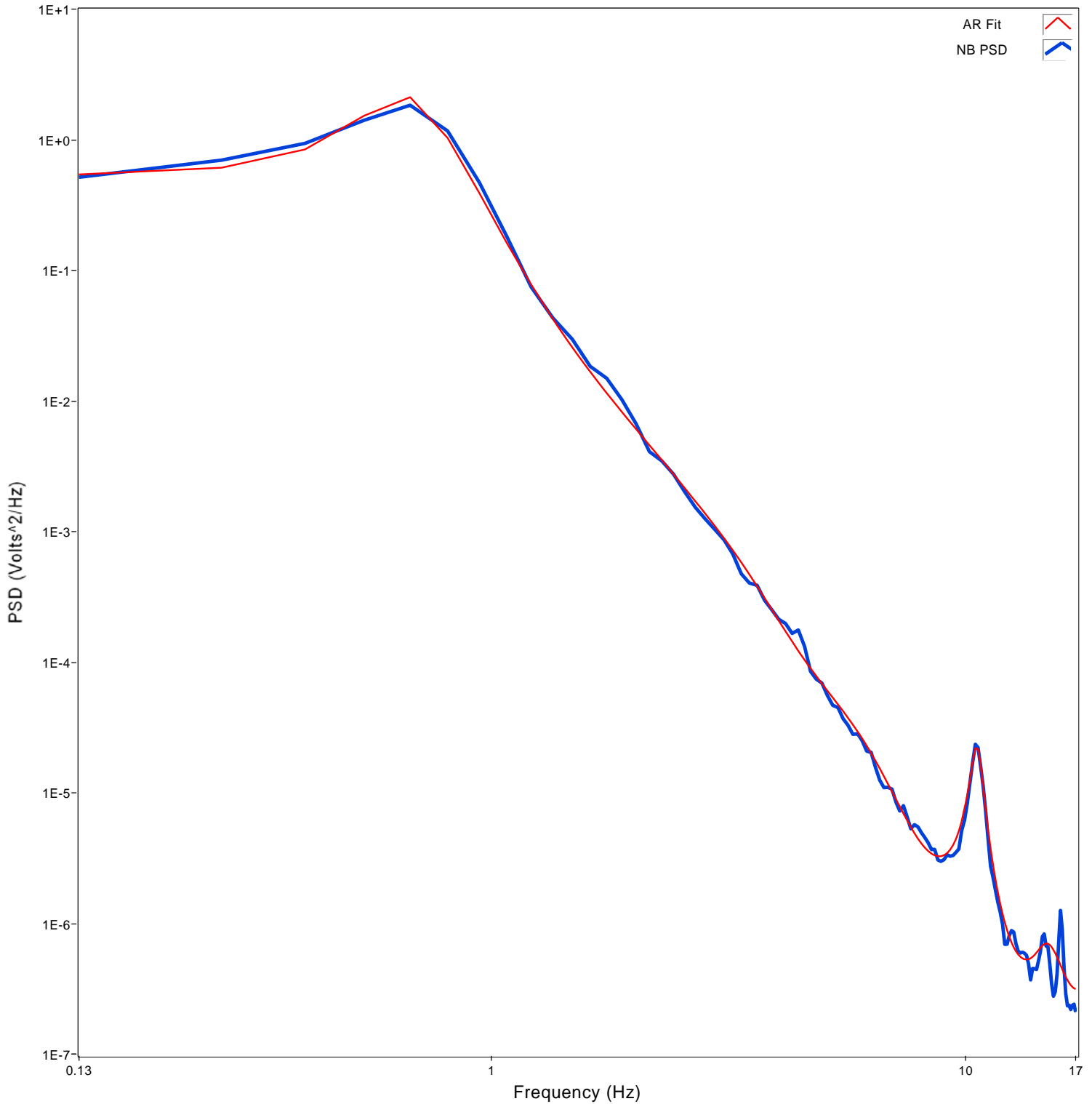




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	LT486	SG LVL	FNP10003.psd	141 : 512	0.134694	17.240854	11	Forward-Backward	12-Mar-2009 12:21:02

NB PSD and AR PSD

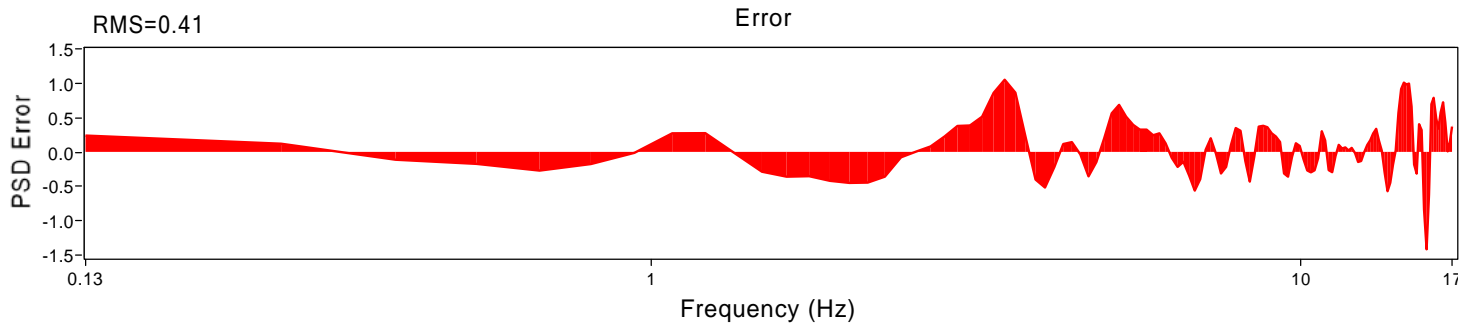
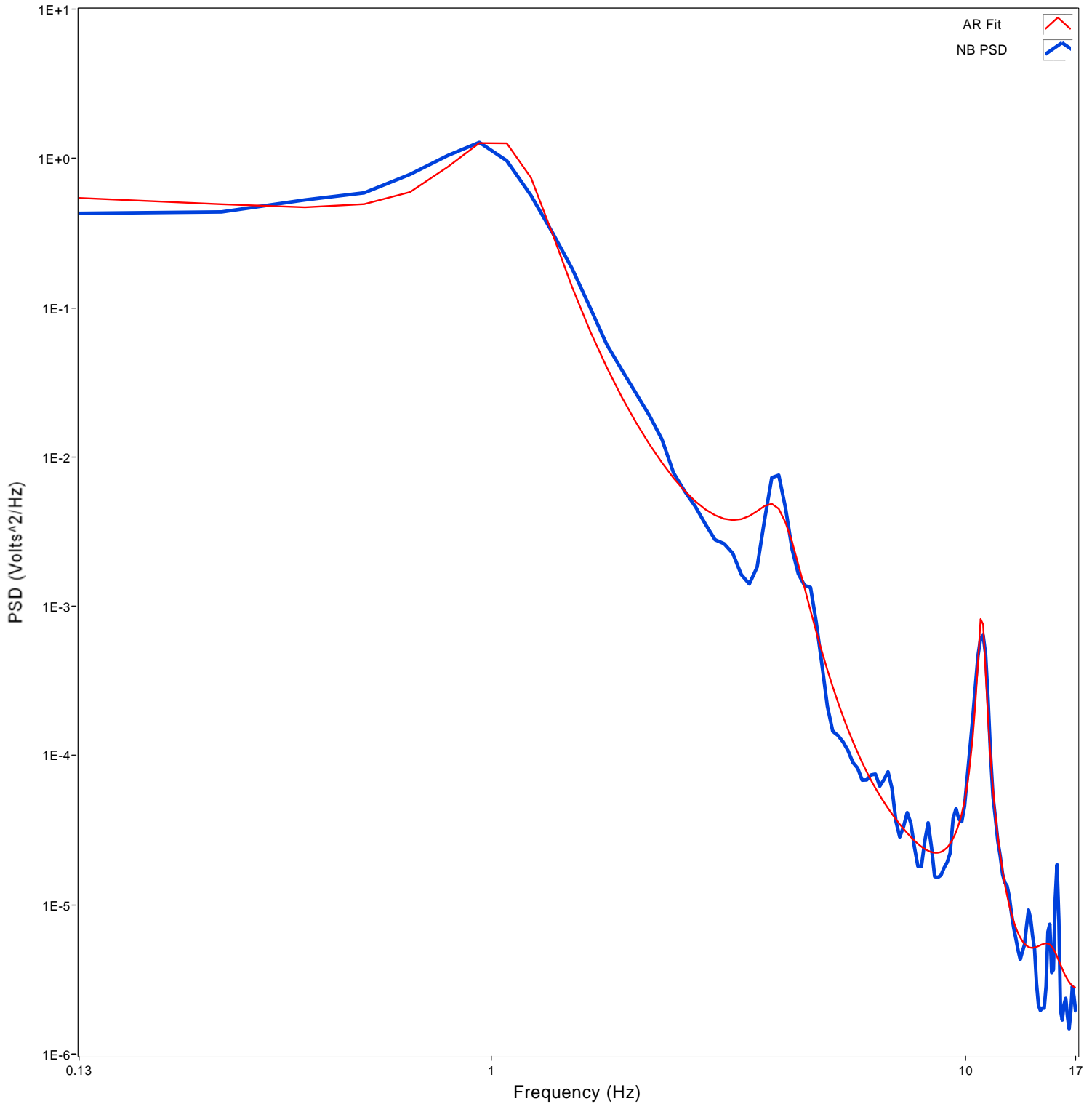




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	LT496	SG LVL	FNP10003.psd	141 : 512	0.134694	17.240854	11	Forward-Backward	12-Mar-2009 12:21:02

NB PSD and AR PSD

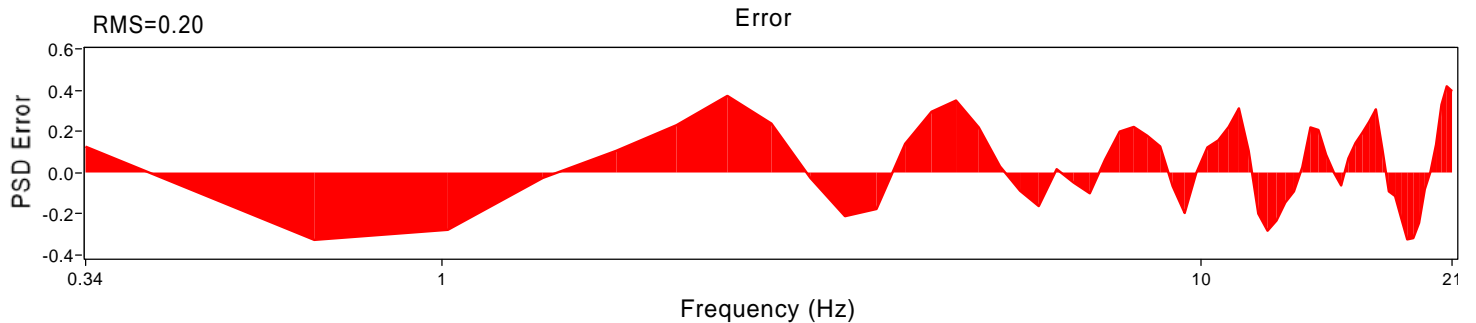
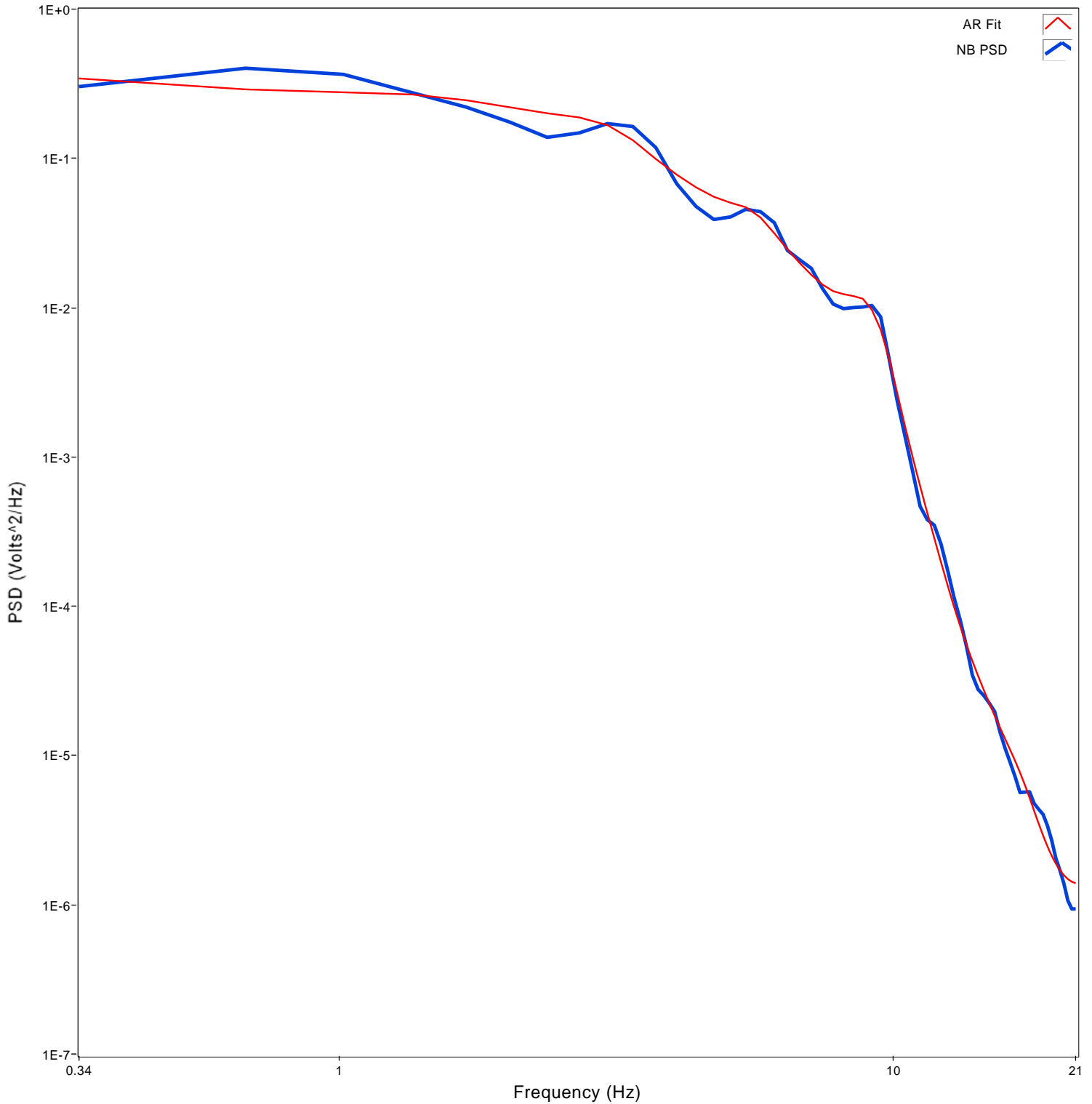




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT474	STM FLOW	FNP10003.psd	355 : 512	0.339664	21.738468	11	Forward-Backward	12-Mar-2009 12:21:02

NB PSD and AR PSD

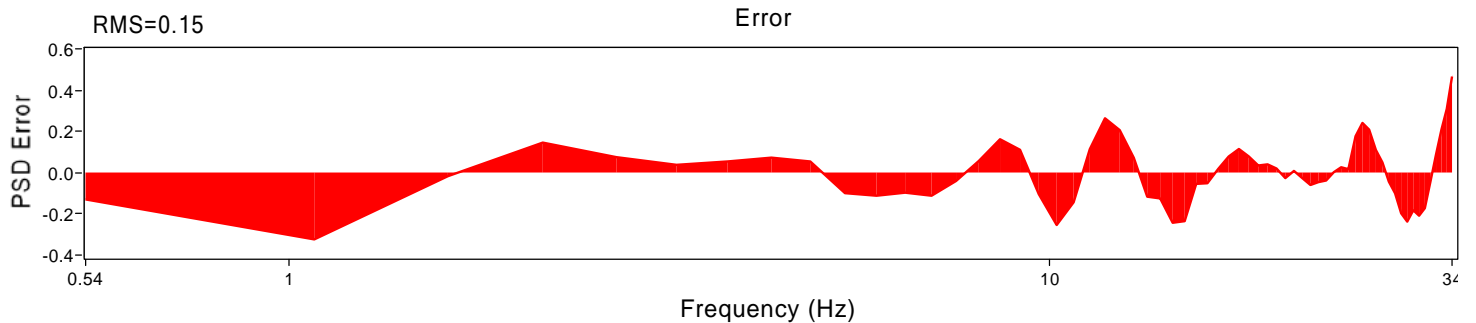
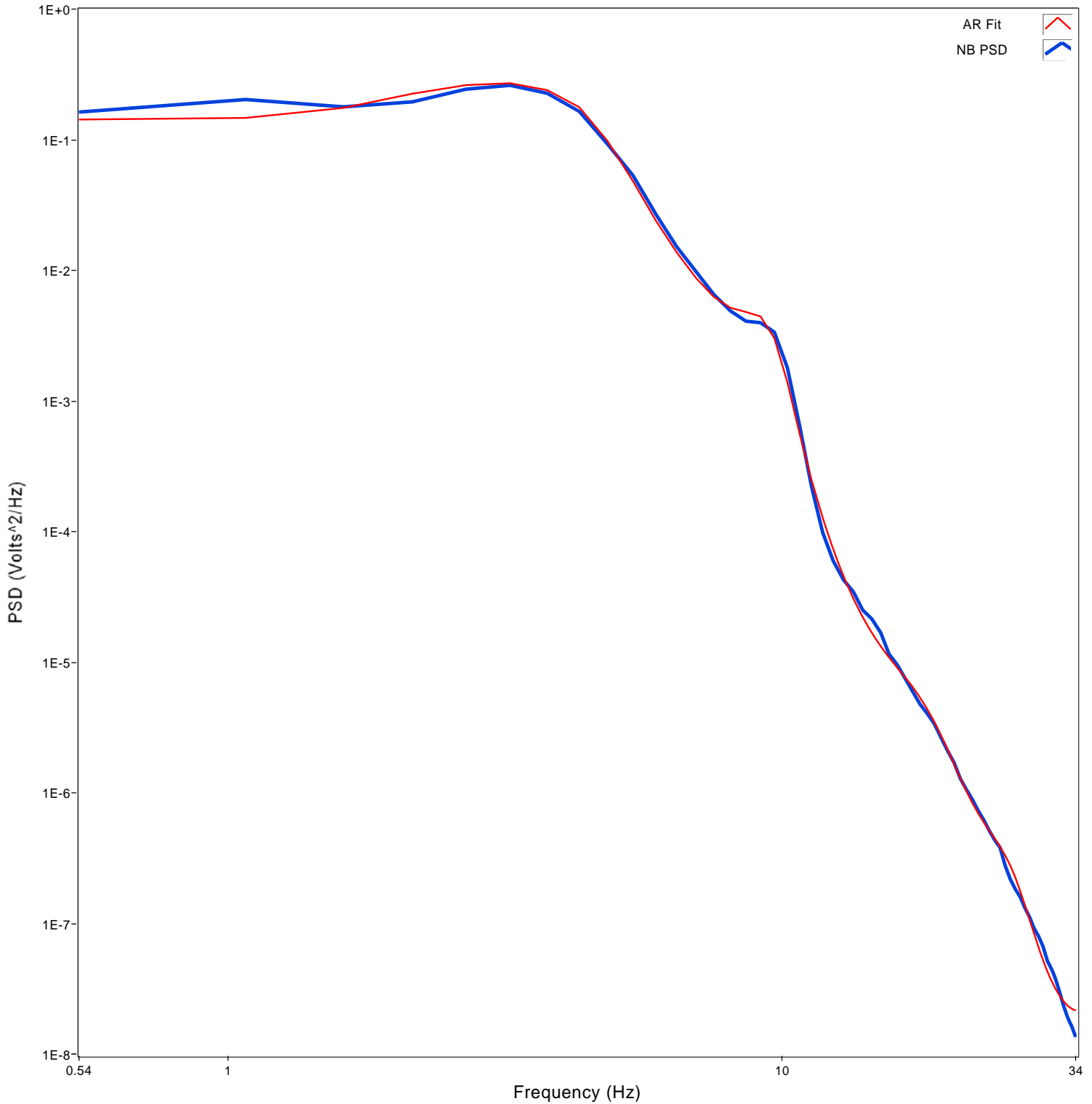




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT484	STM FLOW	FNP10003.psd	564 : 512	0.538777	34.481708	11	Forward-Backward	12-Mar-2009 12:21:02

NB PSD and AR PSD

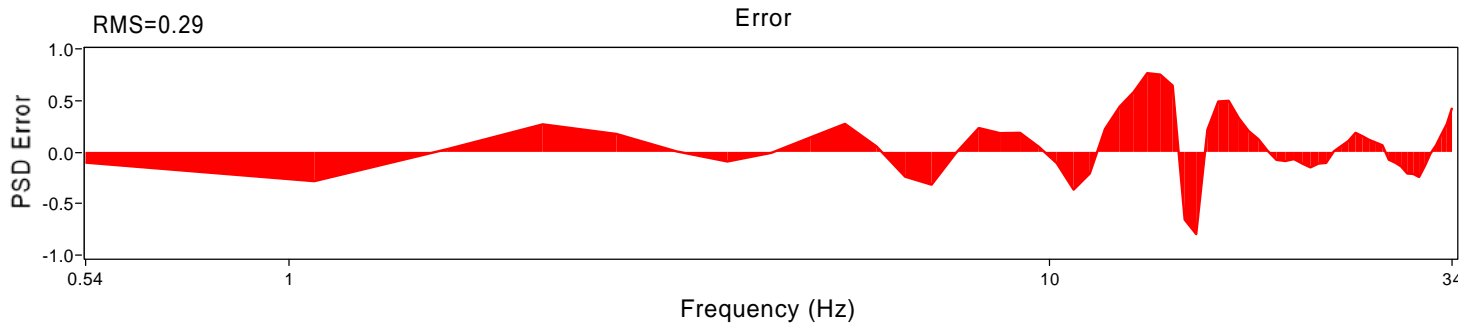
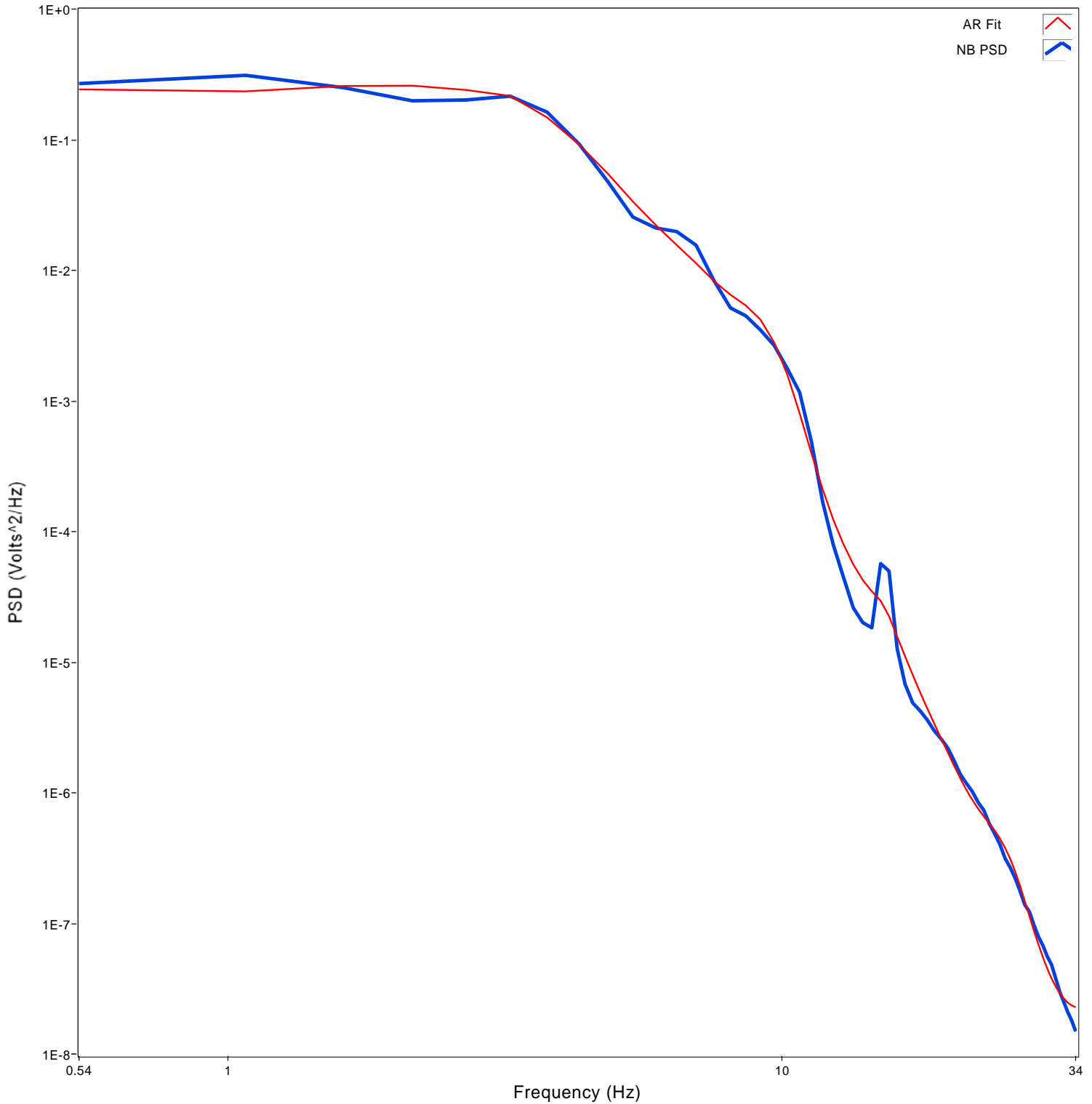




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT494	STM FLOW	FNP10003.psd	564 : 512	0.538777	34.481708	11	Forward-Backward	12-Mar-2009 12:21:02

NB PSD and AR PSD

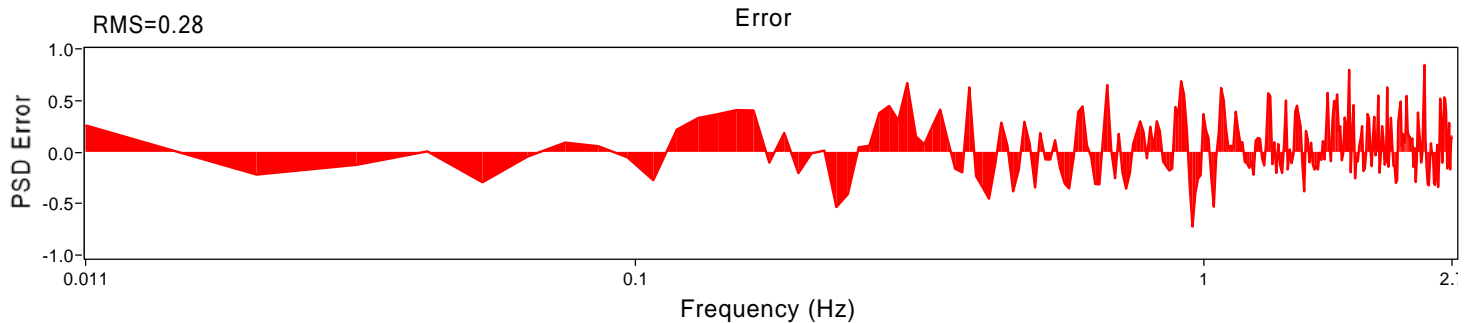
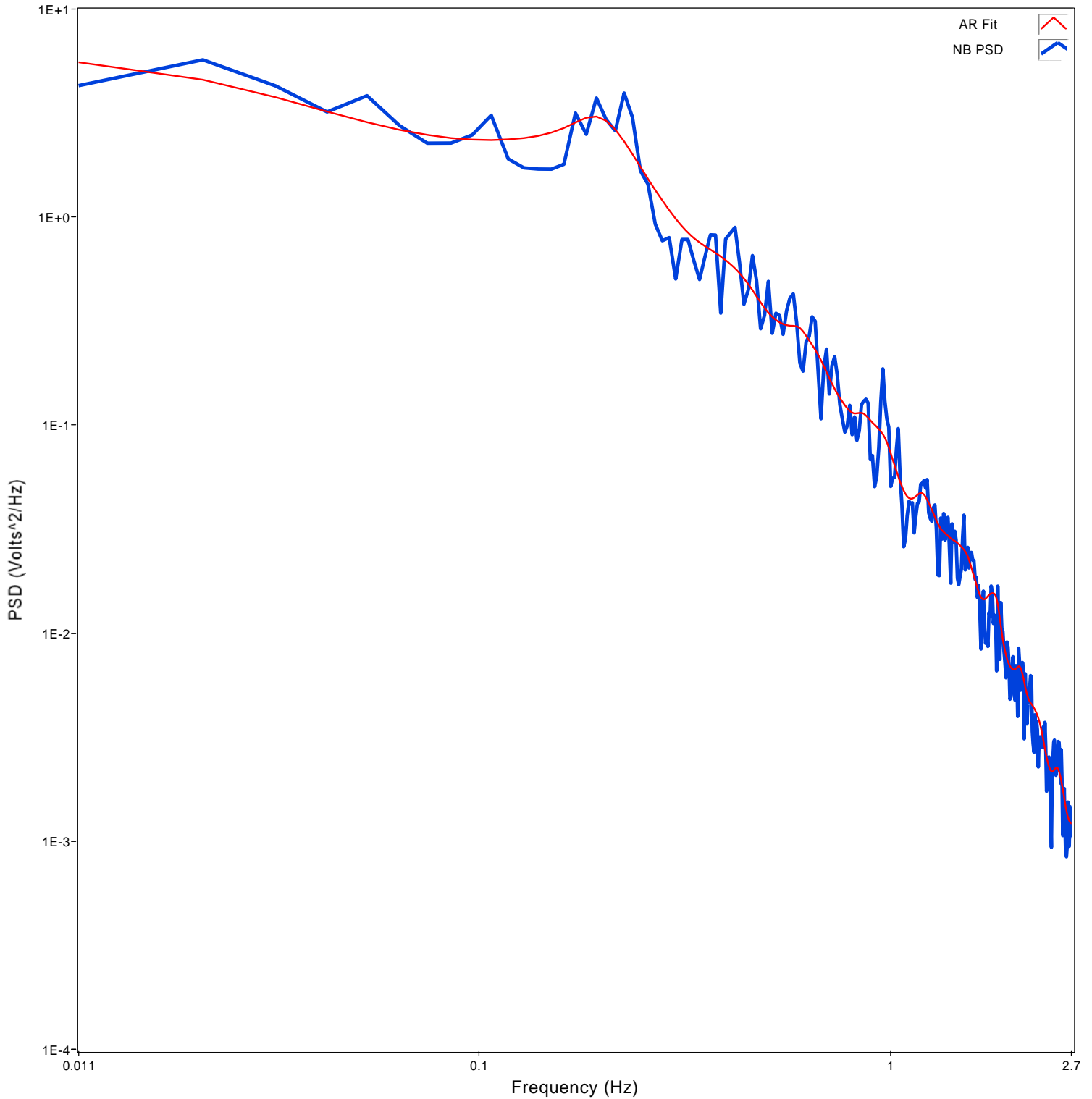




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT477	FW FLOW	FNP10003.psd	11 : 512	0.010731	2.747169	23	Least-Squares	12-Mar-2009 12:21:02

NB PSD and AR PSD

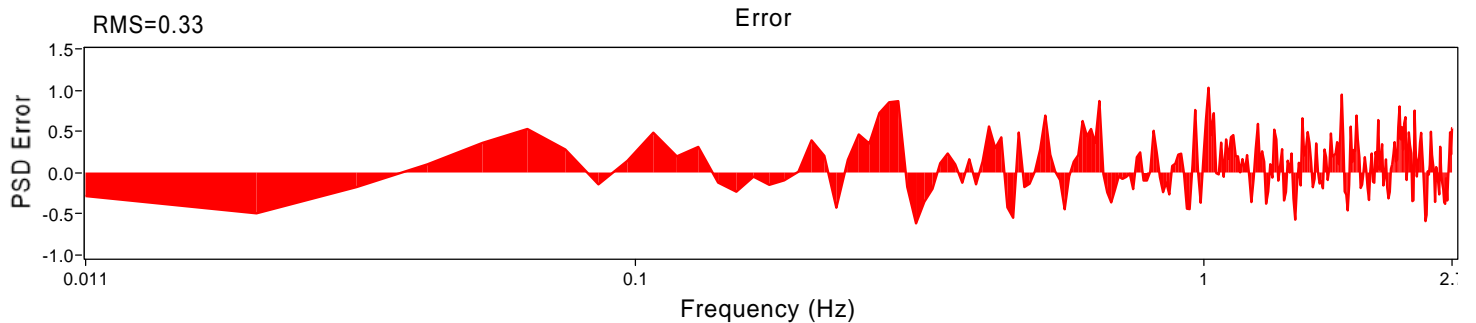
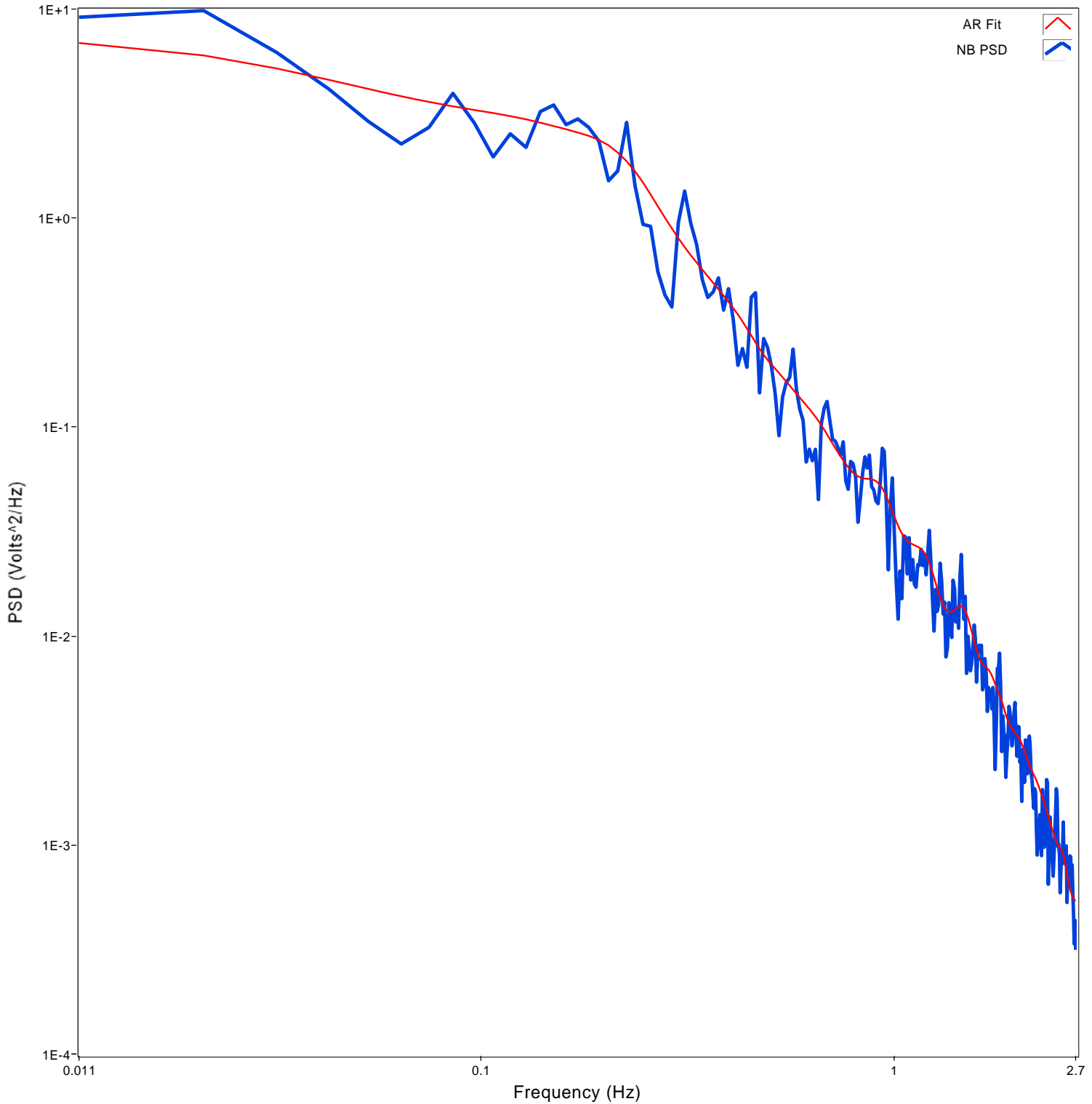




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT487	FW FLOW	FNP10003.psd	11 : 512	0.010731	2.747169	21	Least-Squares	12-Mar-2009 12:21:02

NB PSD and AR PSD



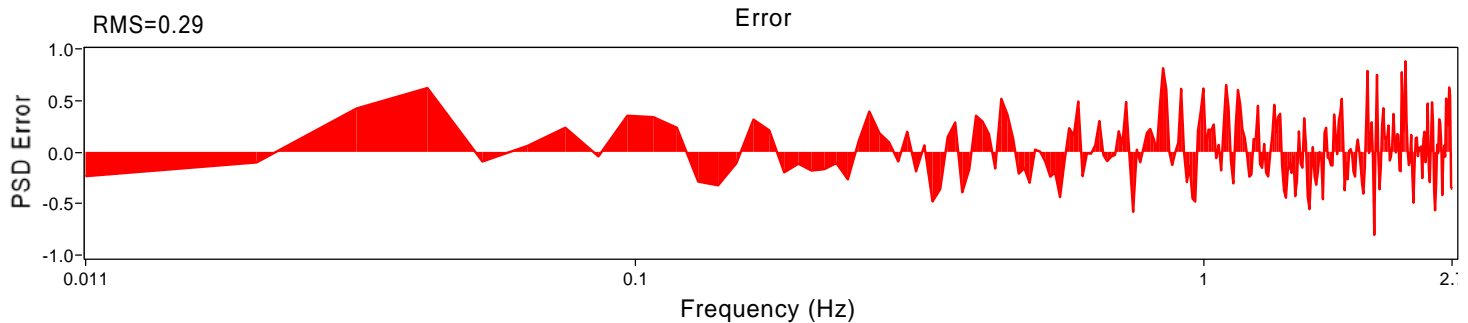
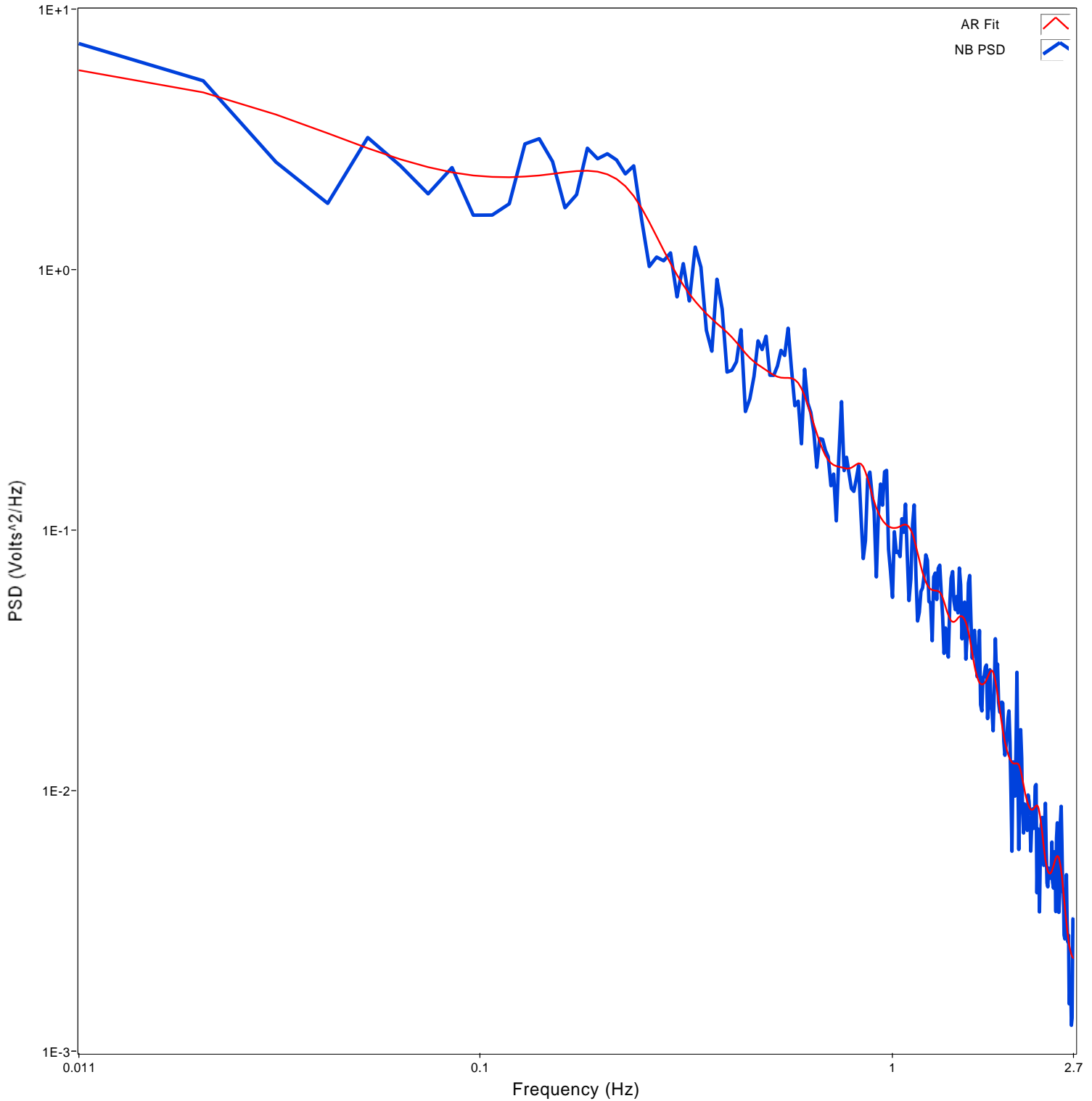




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT497	FW FLOW	FNP10003.psd	11 : 512	0.010731	2.747169	24	Least-Squares	12-Mar-2009 12:21:02

NB PSD and AR PSD

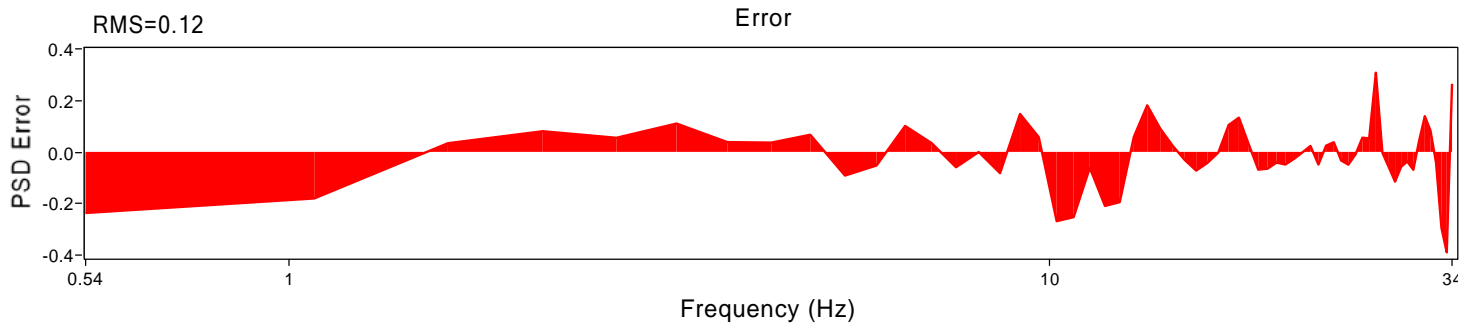
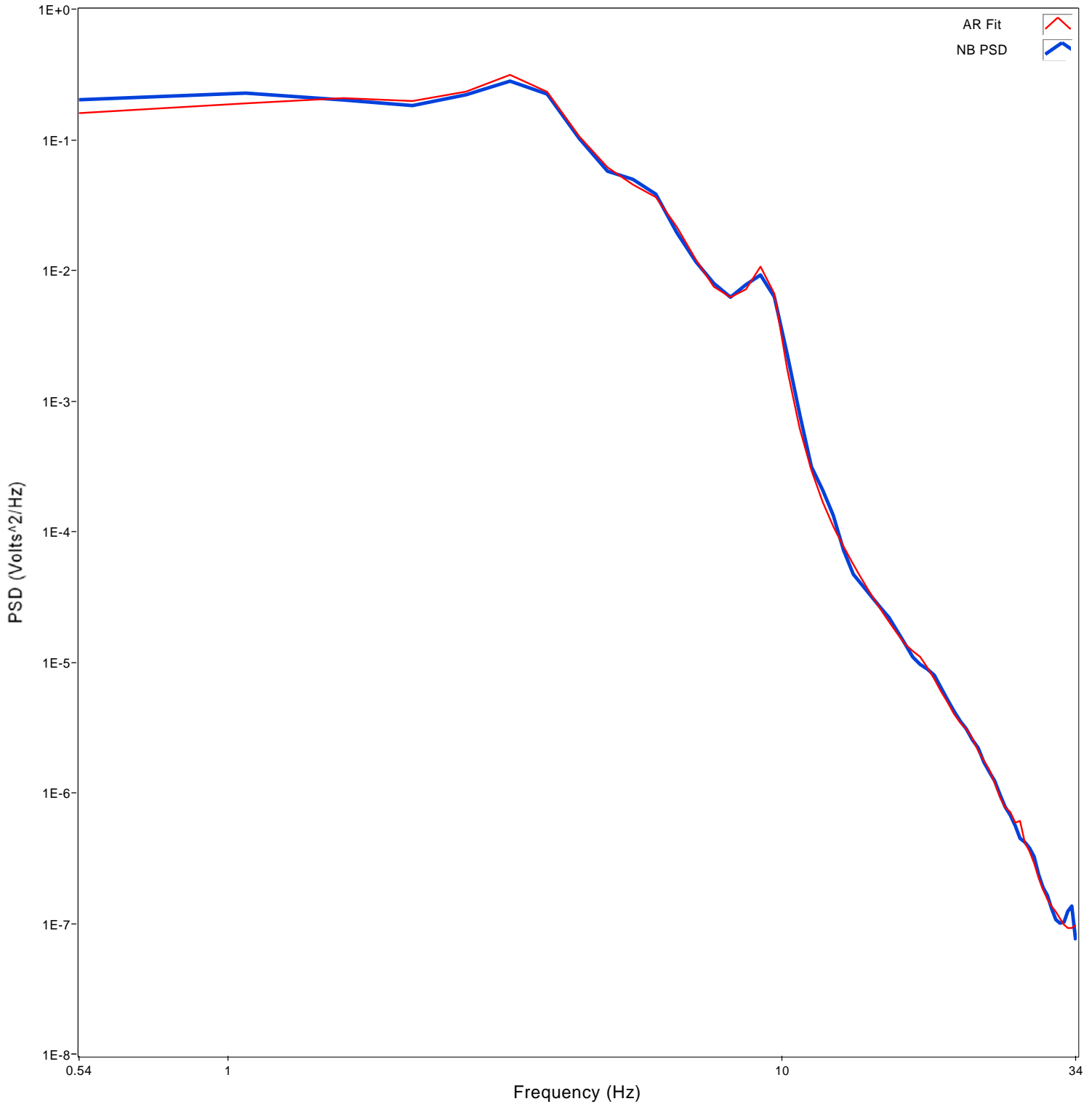




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT475	STM FLOW	FNP10004.psd	564 : 512	0.538777	34.481708	18	Least-Squares	12-Mar-2009 12:21:02

NB PSD and AR PSD

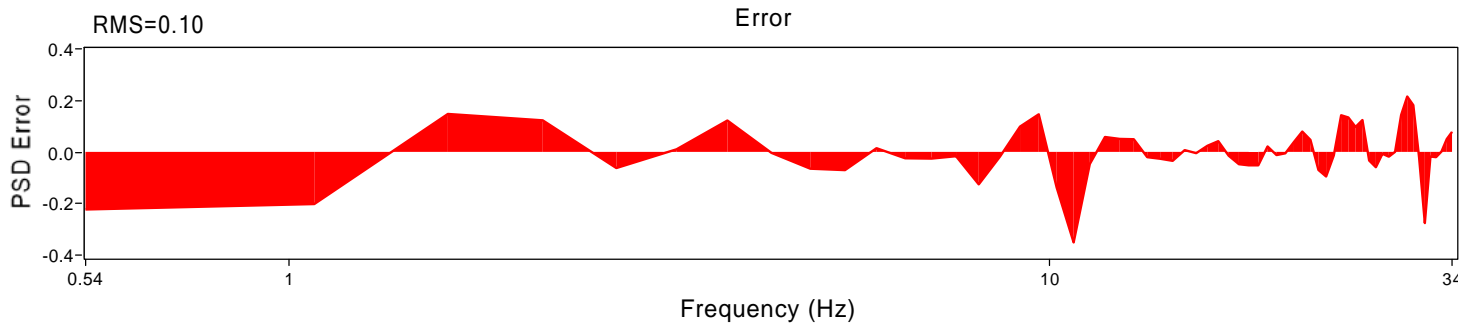
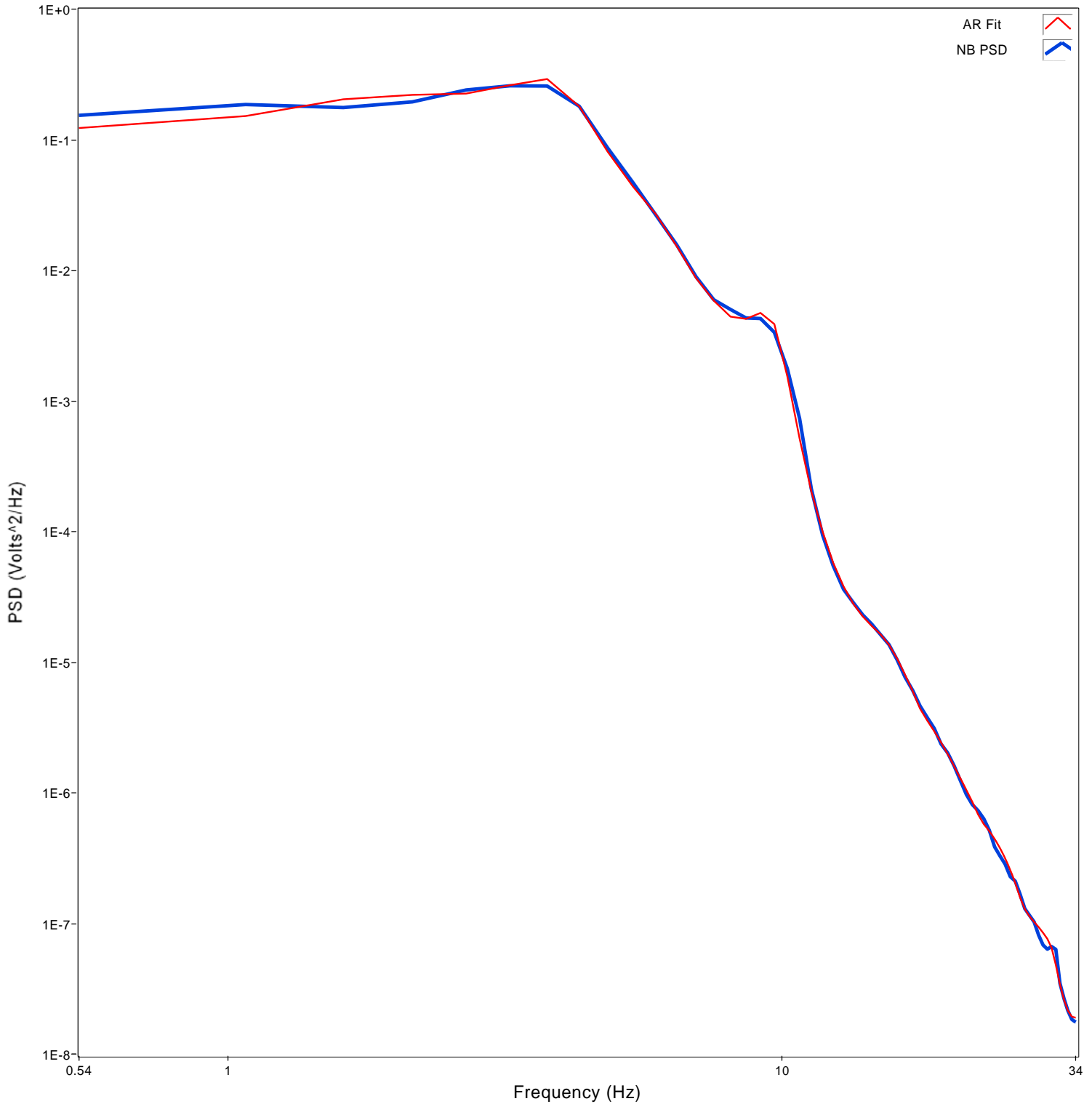




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT485	STM FLOW	FNP10004.psd	564 : 512	0.538777	34.481708	18	Forward-Backward	12-Mar-2009 12:21:02

NB PSD and AR PSD

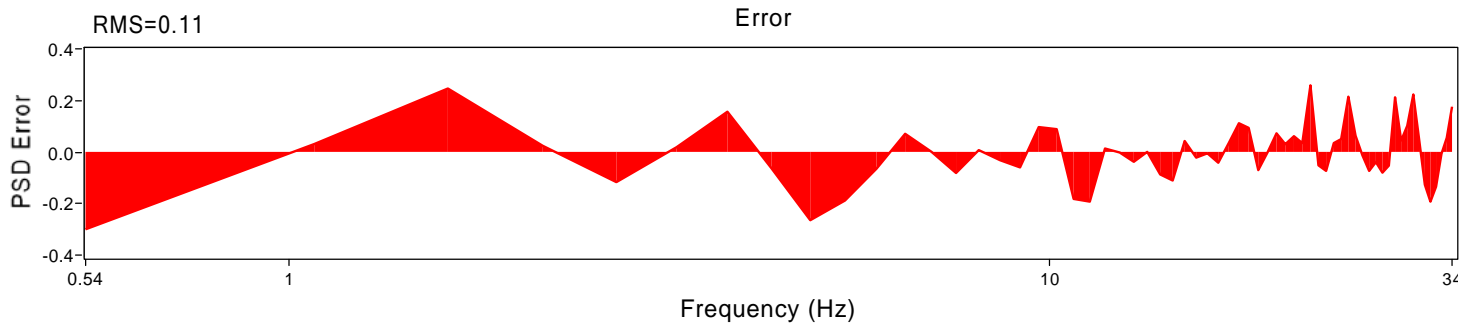
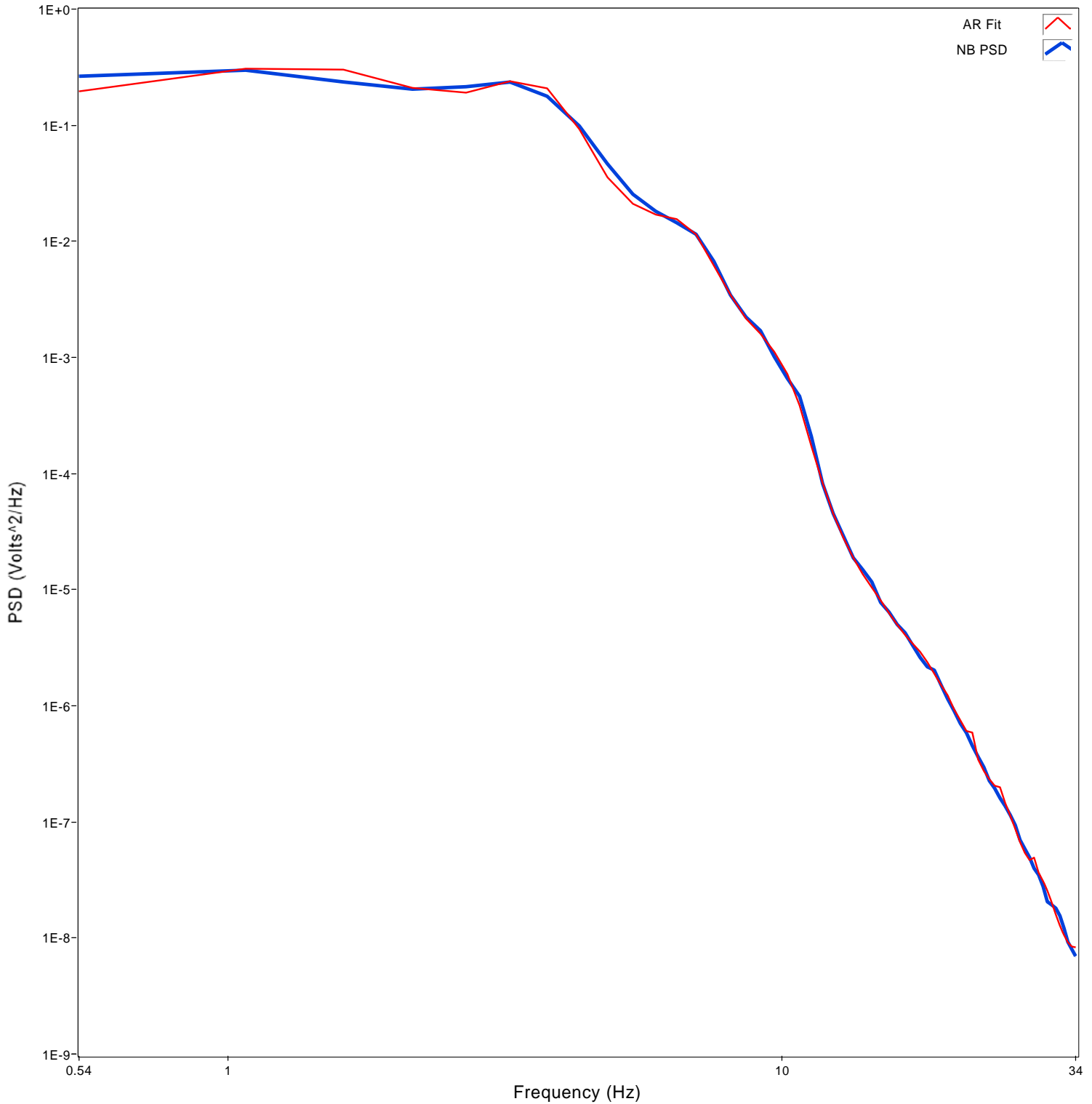




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT495	STM FLOW	FNP10004.psd	564 : 512	0.538777	34.481708	18	Least-Squares	12-Mar-2009 12:21:02

NB PSD and AR PSD

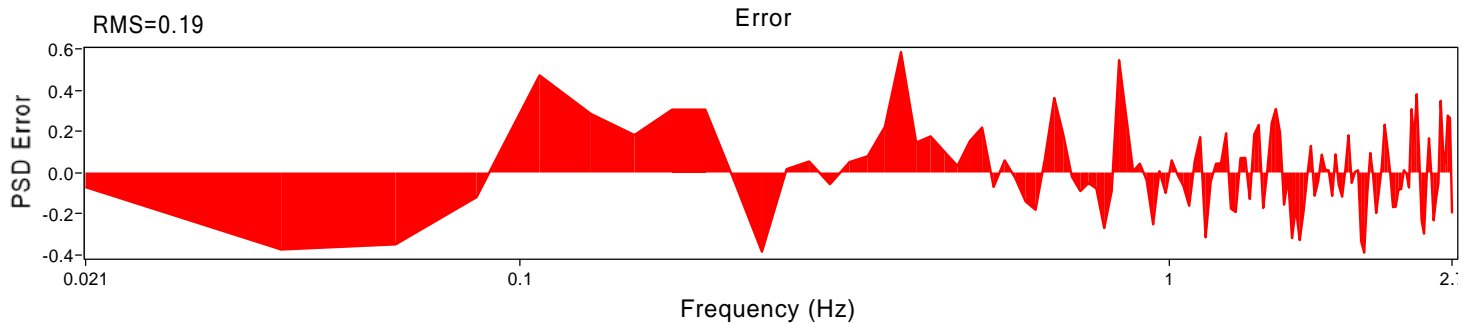
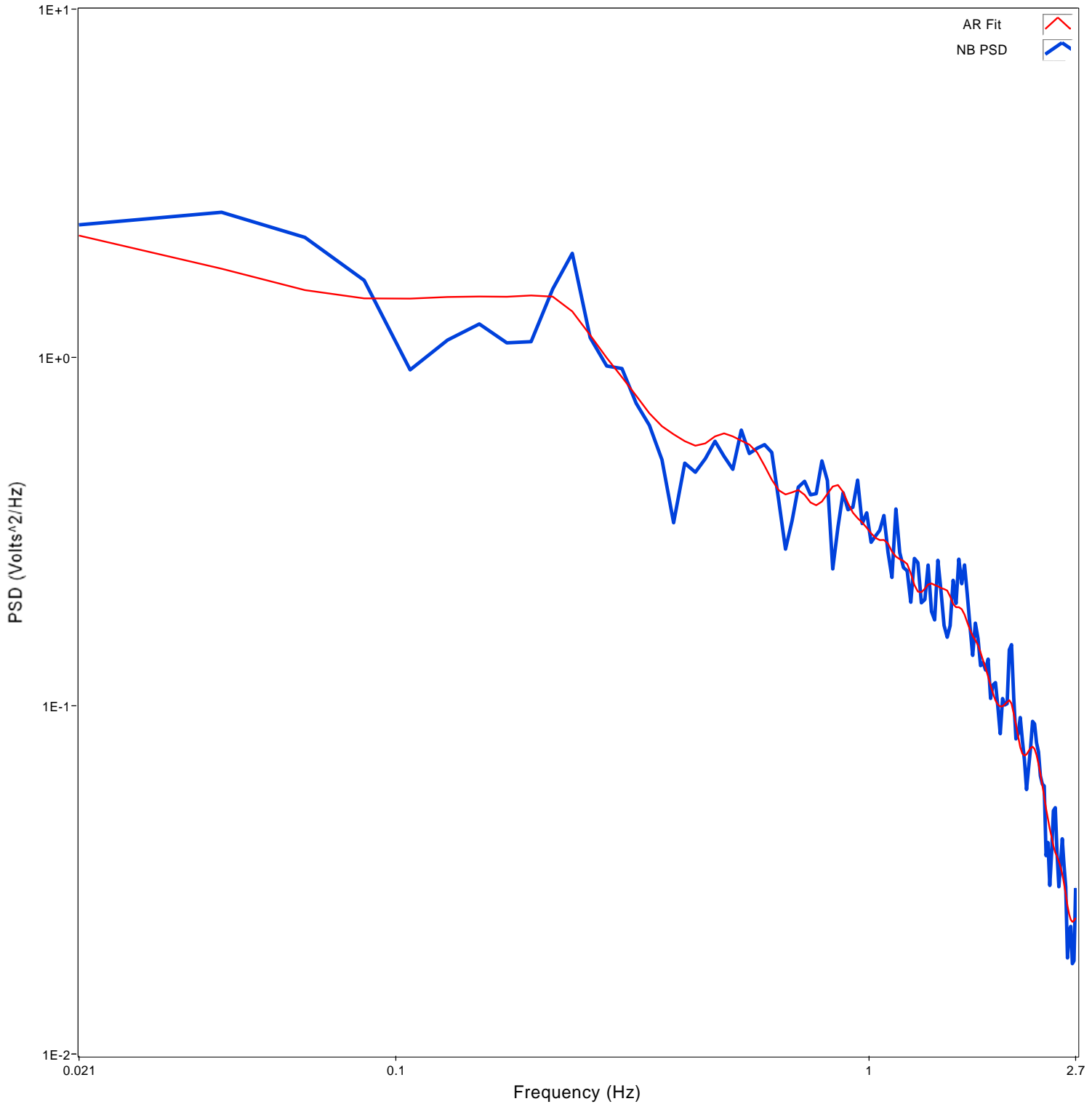




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT476	FW FLOW	FNP10004.psd	22 : 512	0.021462	2.747169	22	Least-Squares	12-Mar-2009 12:21:02

NB PSD and AR PSD

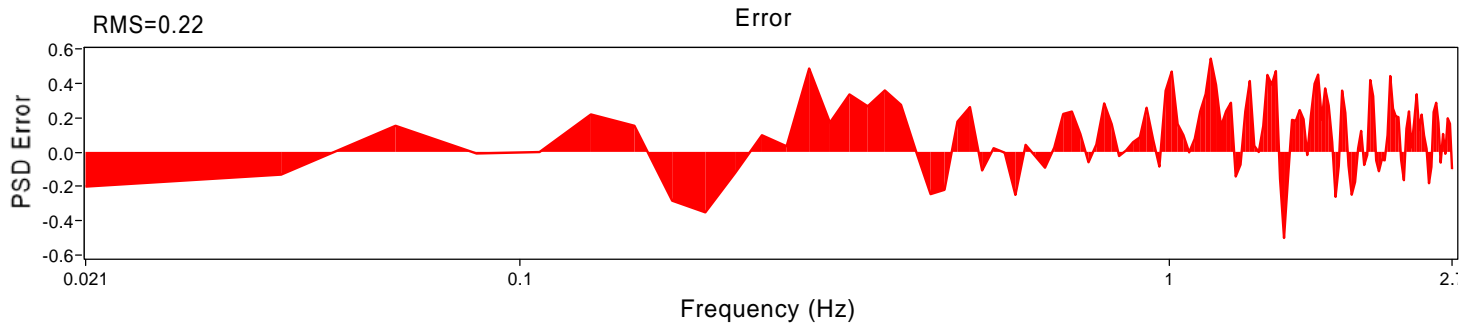
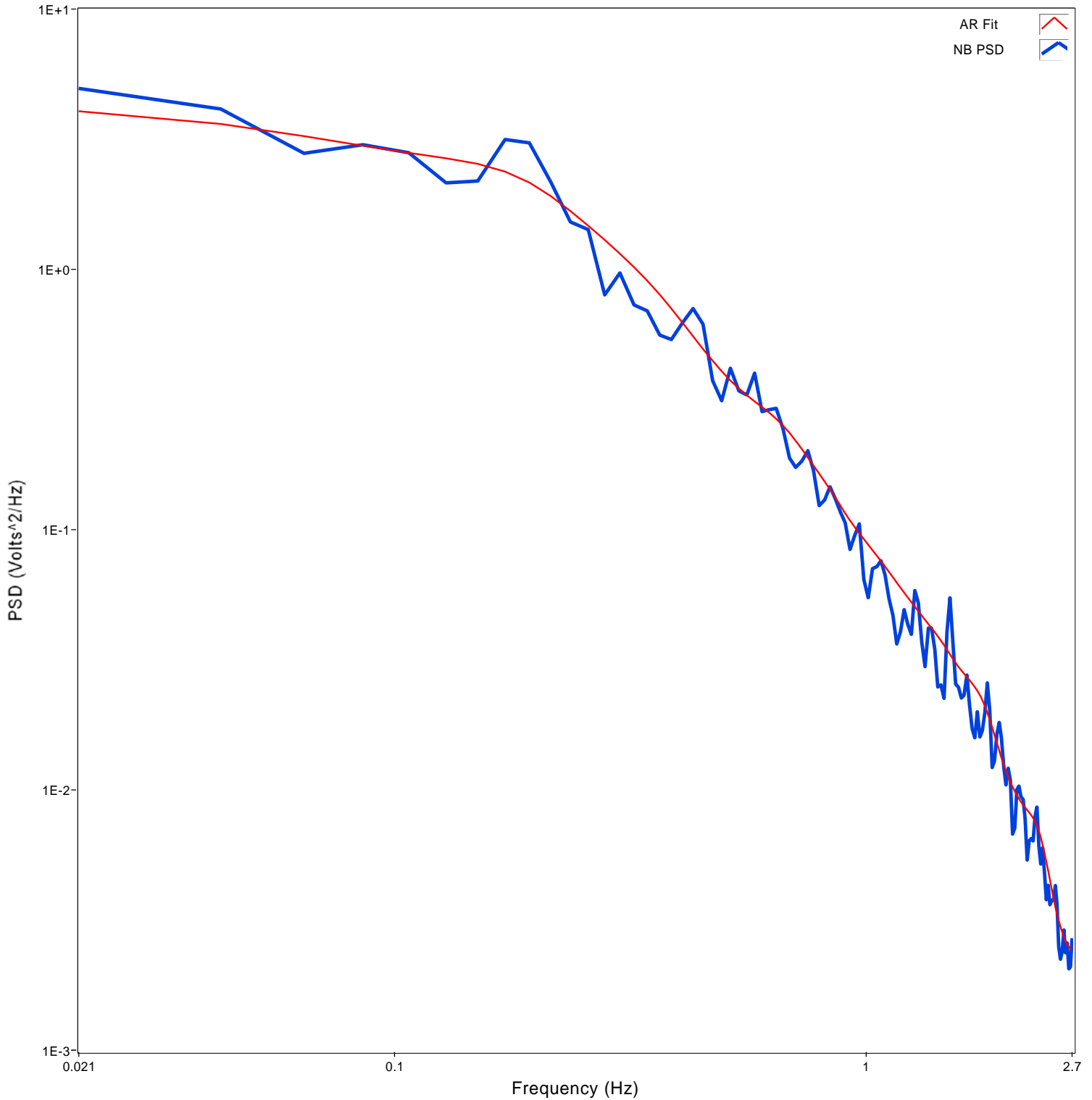




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT486	FW FLOW	FNP10004.psd	22 : 512	0.021462	2.747169	11	Forward-Backward	12-Mar-2009 12:21:02

NB PSD and AR PSD

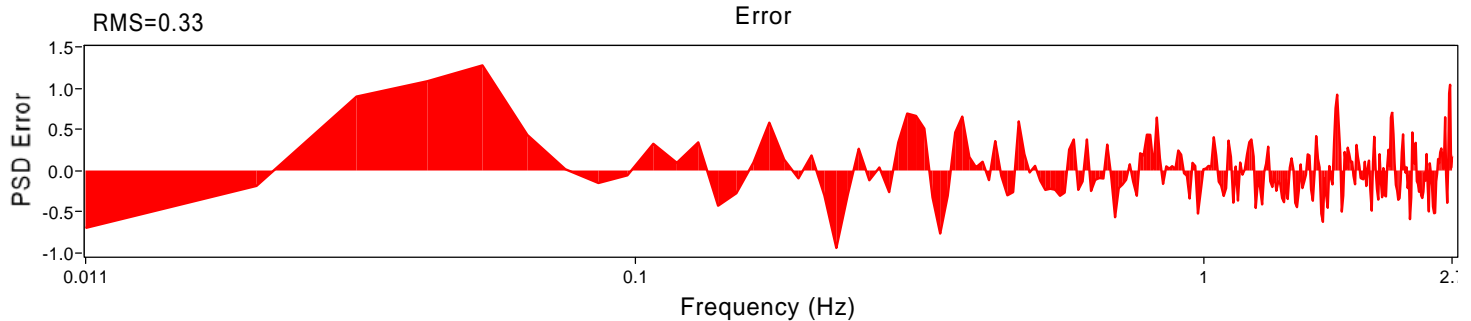
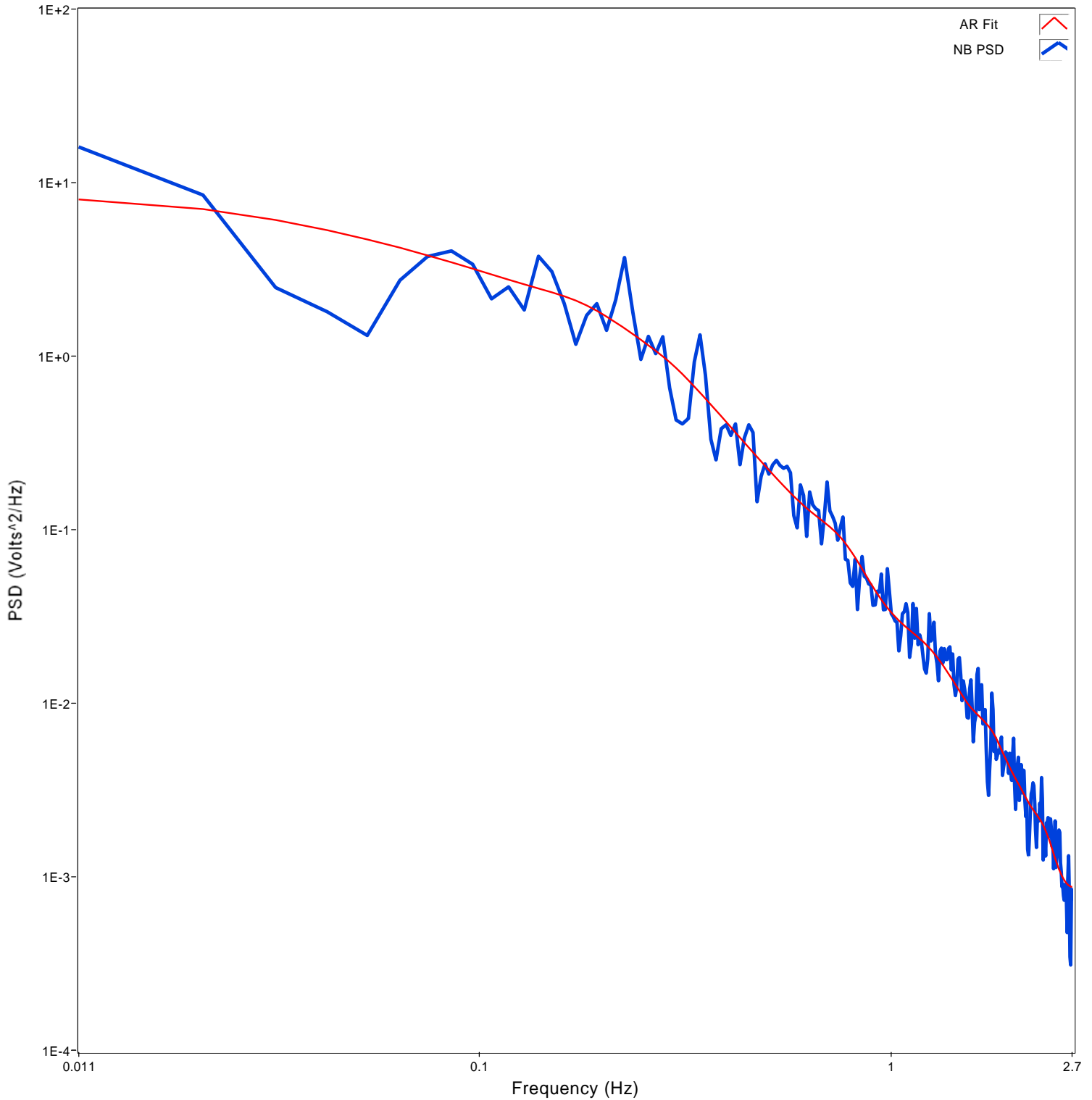




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT496	FW FLOW	FNP10004.psd	11 : 512	0.010731	2.747169	11	Forward-Backward	12-Mar-2009 12:21:02

NB PSD and AR PSD



## **APPENDIX B**

### **Farley Unit 1 OLM Results (Cycle 23)**





Item	Tagname	Service	9 Apr 2009	13 May 2009	28 Jun 2009	16 Jul 2009	21 Aug 2009	23 Sep 2009	26 Oct 2009	24 Nov 2009	29 Dec 2009	20 Jan 2010	27 Feb 2010	26 Mar 2010	26 Apr 2010	24 May 2010	2 Jul 2010	26 Jul 2010	22 Aug 2010	13 Sep 2010	10 Oct 2010	Drift	Final	Comment
1	FE0474B	SG A STEAM FLOW																					PASS	
2	FE0475B	SG A STEAM FLOW																					PASS	
3	FE0476B	FW FLOW TO SG A																					PASS	
4	FE0477B	FW FLOW TO SG A																					PASS	
5	LT0474	SG A NARROW RANGE LEVEL		R																	R		FAIL	Significant dev. between transmitters
6	LT0475	SG A NARROW RANGE LEVEL		R															R	R	R		FAIL	Significant dev. between transmitters
7	LT0476	SG A NARROW RANGE LEVEL		R																			FAIL	Significant dev. between transmitters
8	LT0477	SG A WIDE RANGE LEVEL										M	M	M	M	M	M	M	M	M			FAIL	Drift over cycle (AAKR)
9	PT0474	SG A OUTLET PRESSURE																					PASS	
10	PT0475	SG A OUTLET PRESSURE																					PASS	
11	PT0476	SG A OUTLET PRESSURE																					PASS	
12	FE0484B	SG B STEAM FLOW							M		M	M	M	M		M			M		R		PASS	Out in low range transient
13	FE0485B	SG B STEAM FLOW																			R		PASS	Out in low range transient
14	FE0486B	FW FLOW TO SG B																					PASS	
15	FE0487B	FW FLOW TO SG B																					PASS	
16	LT0484	SG B NARROW RANGE LEVEL																					PASS	
17	LT0485	SG B NARROW RANGE LEVEL																					PASS	
18	LT0486	SG B NARROW RANGE LEVEL																					PASS	
19	LT0487	SG B WIDE RANGE LEVEL																					PASS	
20	PT0484	SG B OUTLET PRESSURE																					PASS	
21	PT0485	SG B OUTLET PRESSURE																					PASS	
22	PT0486	SG B OUTLET PRESSURE																					PASS	
23	FE0494B	SG C STEAM FLOW		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
24	FE0495B	SG C STEAM FLOW		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Bad data starting in Sep-2009
25	FE0496B	FW FLOW TO SG C																					PASS	
26	FE0497B	FW FLOW TO SG C																					PASS	
27	LT0494	SG C NARROW RANGE LEVEL																					PASS	
28	LT0495	SG C NARROW RANGE LEVEL																					PASS	
29	LT0496	SG C NARROW RANGE LEVEL																					PASS	
30	LT0497	SG C WIDE RANGE LEVEL																					PASS	

*R = Exceeded Redundant Sensor Analysis Limits    M = Exceeded Model Analysis Limits    D = Exceeded Drift Limits*

**Table B.1 Farley Unit 1 OLM Results Summary (Cycle 23)**



Item	Tagname	Service	9 Apr 2009	13 May 2009	28 Jun 2009	16 Jul 2009	21 Aug 2009	23 Sep 2009	26 Oct 2009	24 Nov 2009	29 Dec 2009	20 Jan 2010	27 Feb 2010	26 Mar 2010	26 Apr 2010	24 May 2010	2 Jul 2010	26 Jul 2010	22 Aug 2010	13 Sep 2010	10 Oct 2010	Drift	Final	Comment
31	PT0494	SG C OUTLET PRESSURE																					PASS	
32	PT0495	SG C OUTLET PRESSURE																					PASS	
33	PT0496	SG C OUTLET PRESSURE																					PASS	
34	LT0459	PRESSURIZER LEVEL																					PASS	
35	LT0460	PRESSURIZER LEVEL	R																				PASS	Only out in startup. Good in shutdown.
36	LT0461	PRESSURIZER LEVEL																					PASS	
37	PT0455	PRESSURIZER PRESSURE		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R		FAIL	Low bias
38	PT0456	PRESSURIZER PRESSURE																					PASS	
39	PT0457	PRESSURIZER PRESSURE																					PASS	
40	PT0444A	PRESSURIZER PRESSURE																					PASS	
41	PT0445A	PRESSURIZER PRESSURE		R																			PASS	Out in startup but good in shutdown.
42	FE0414	RCS LOOP A FLOW																					PASS	
43	FE0415	RCS LOOP A FLOW																					PASS	
44	FE0416	RCS LOOP A FLOW																					PASS	
45	FE0424	RCS LOOP B FLOW																					PASS	
46	FE0425	RCS LOOP B FLOW																					PASS	
47	FE0426	RCS LOOP B FLOW																					PASS	
48	FE0434	RCS LOOP C FLOW		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R		FAIL	Low bias
49	FE0435	RCS LOOP C FLOW																					PASS	
50	FE0436	RCS LOOP C FLOW																					PASS	
51	PT0402	RCS WIDE RANGE PRESSURE LOOP C																					PASS	
52	PT0403	RCS WIDE RANGE PRESSURE LOOP A																					PASS	
53	PT0446	TURBINE FIRST STAGE PRESSURE																					PASS	
54	PT0447	TURBINE FIRST STAGE PRESSURE																					PASS	
55	LT0501	RWST LEVEL																					PASS	
56	LT0502	RWST LEVEL																					PASS	
57	PT0951	CTMT PRESSURE																					PASS	
58	PT0952	CTMT PRESSURE																					PASS	
59	PT0953	CTMT PRESSURE																					PASS	

R = Exceeded Redundant Sensor Analysis Limits    M = Exceeded Model Analysis Limits    D = Exceeded Drift Limits

**Table B.1 (continued) Farley Unit 1 OLM Results Summary (Cycle 23)**



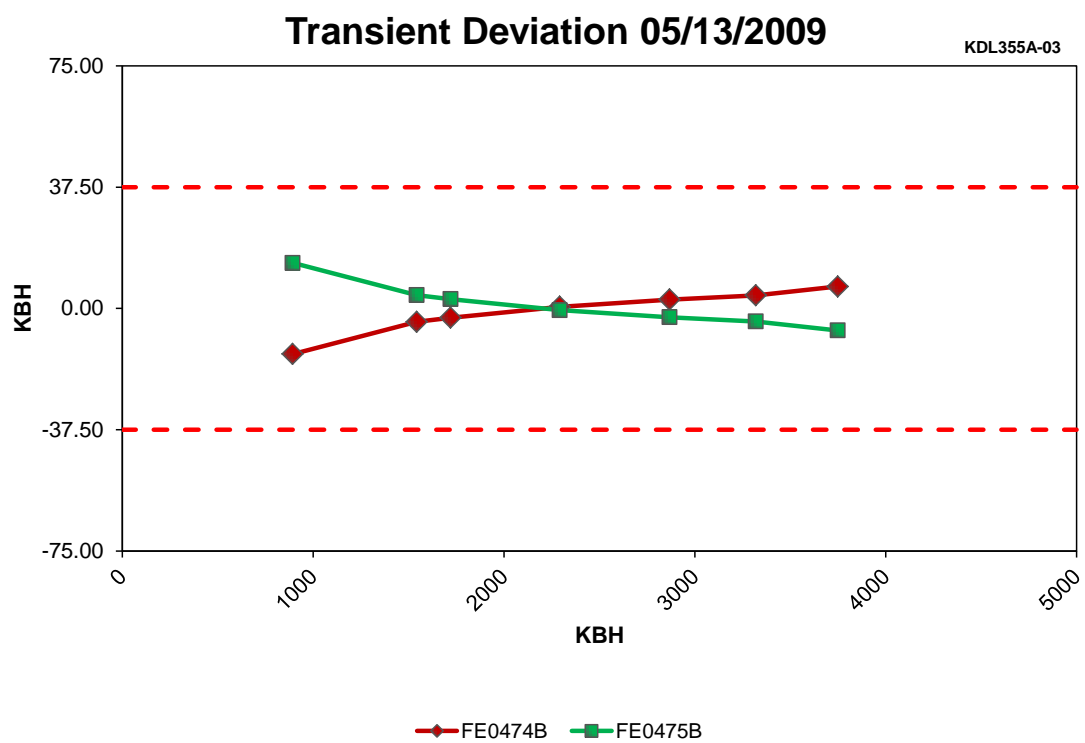


Figure B.1 SG A STEAM FLOW Transient Deviation at Farley Unit 1 (Cycle 23)

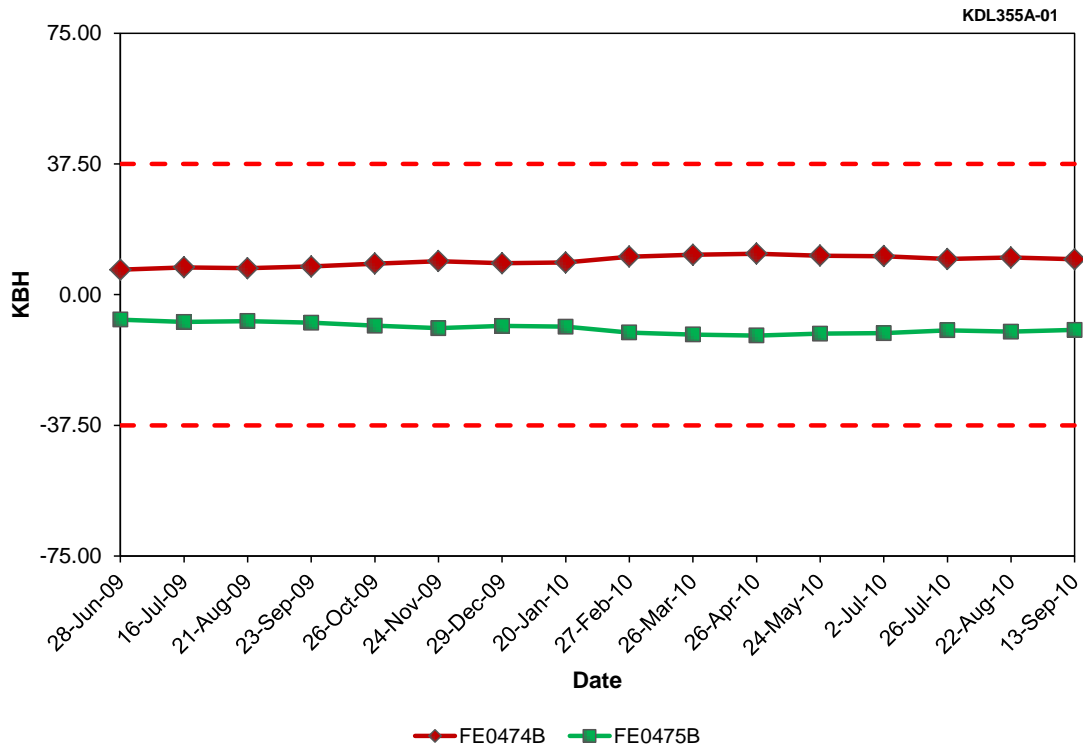


Figure B.2 SG A STEAM FLOW Steady-State Deviation at Farley Unit 1 (Cycle 23)

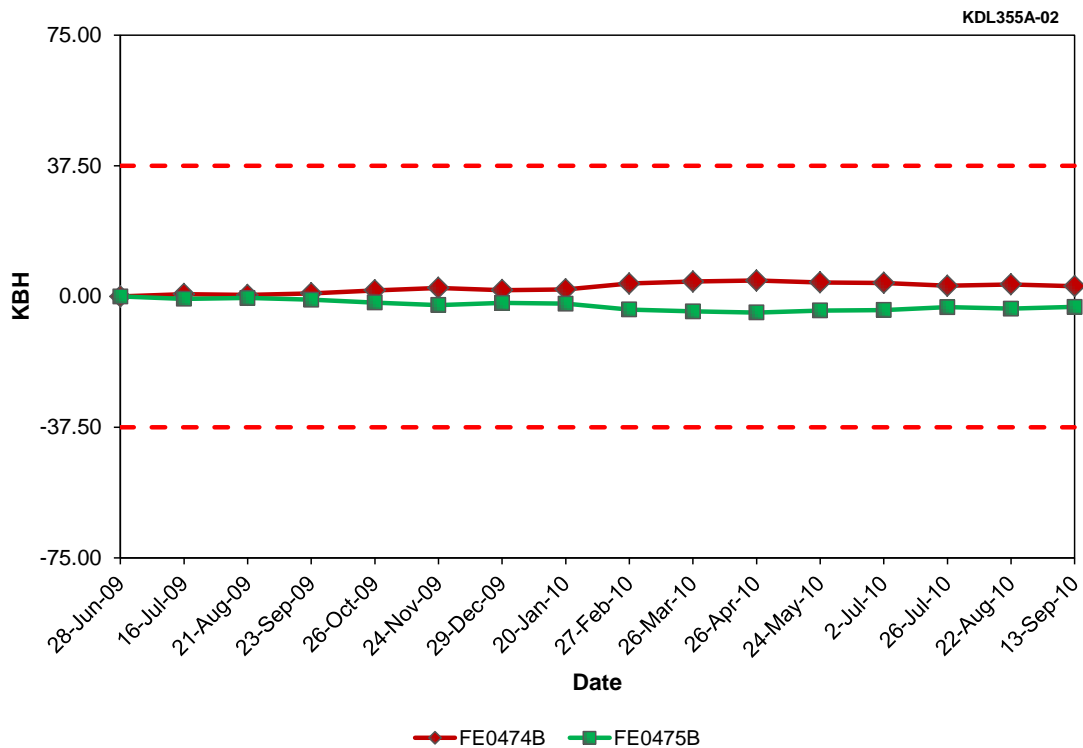
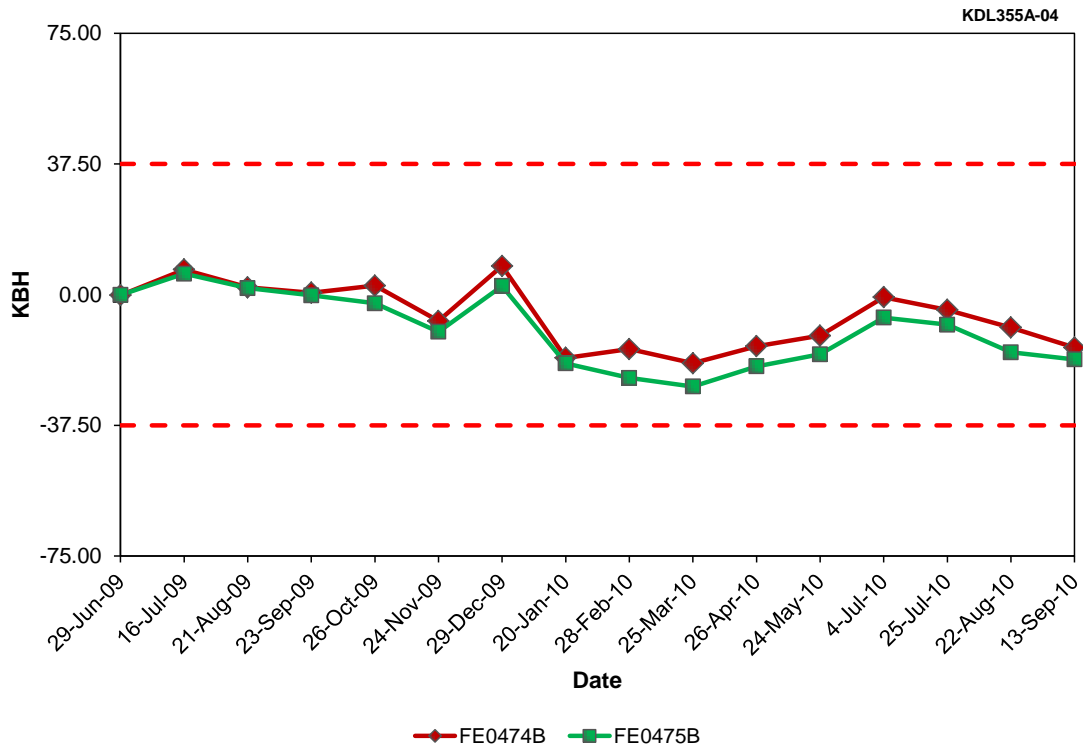
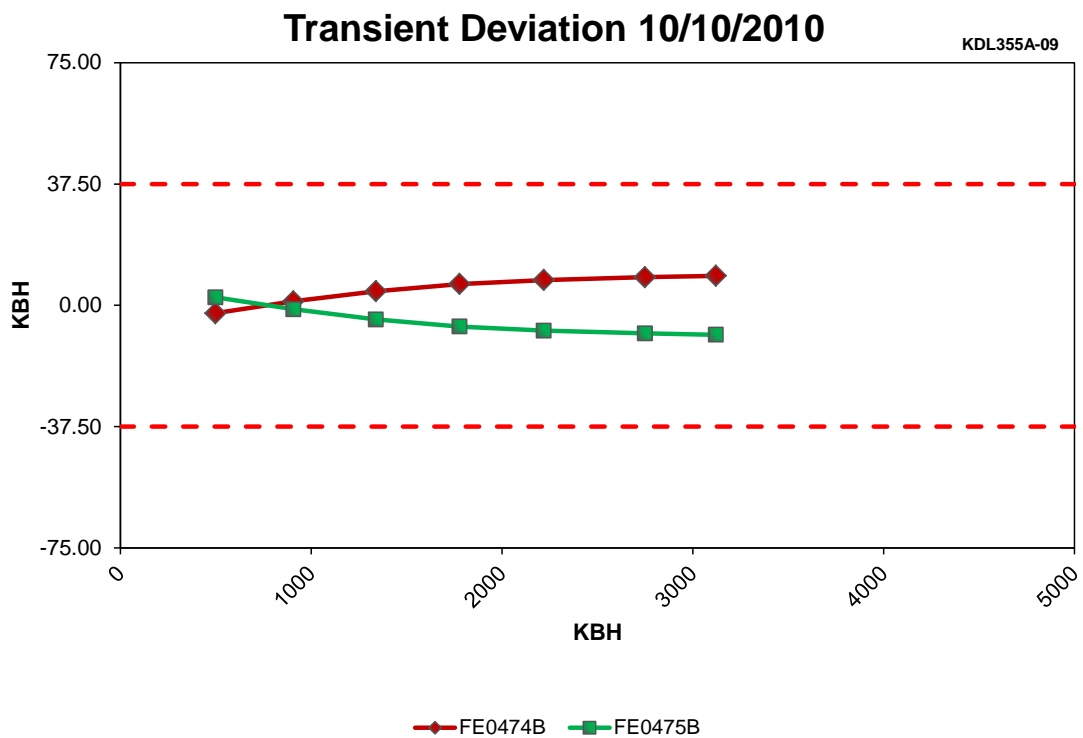


Figure B.3 SG A STEAM FLOW Steady-State Drift at Farley Unit 1 (Cycle 23)

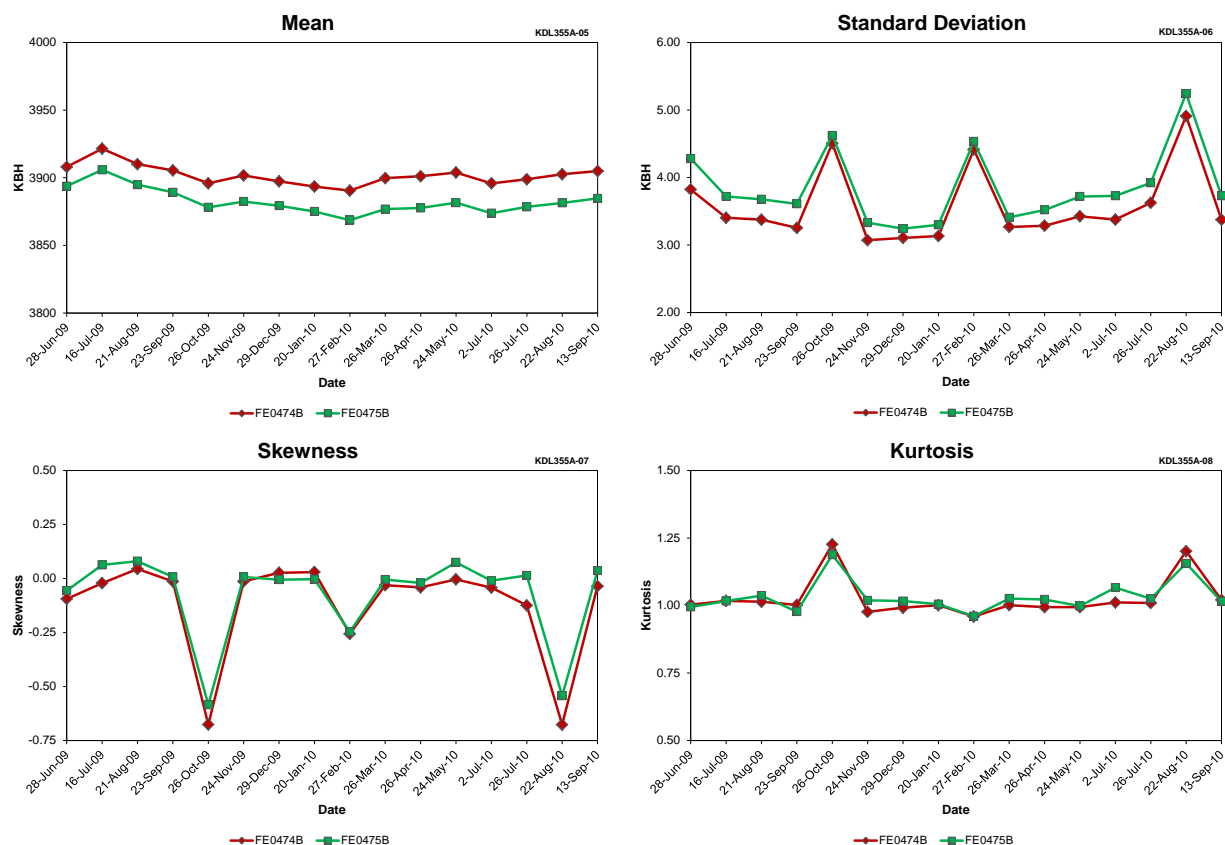


**Figure B.4 SG A STEAM FLOW Steady-State Residual AAKR at Farley Unit 1 (Cycle 23)**



**Figure B.5 SG A STEAM FLOW Transient Deviation at Farley Unit 1 (Cycle 23)**

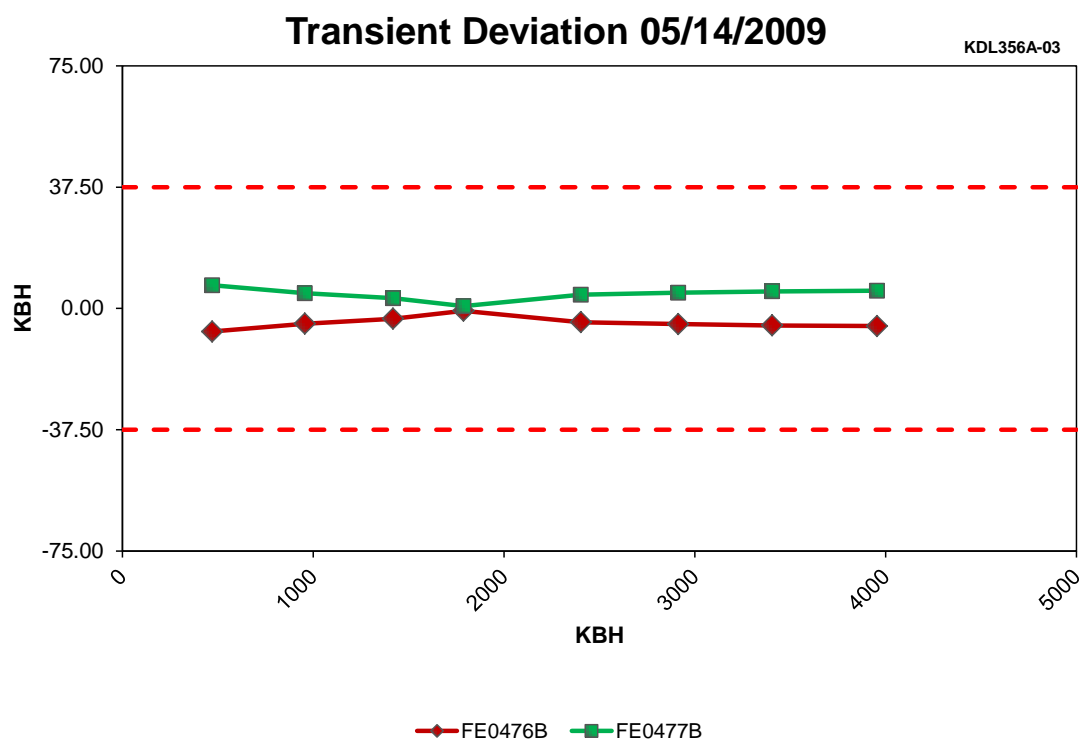




**Figure B.6 SG A STEAM FLOW Data Quality Statistics at Farley Unit 1 (Cycle 23)**

**Table B.1 SG A STEAM FLOW Data Quality for Farley Unit 1 (Cycle 23)**

Result Type	Tag Names	
	FE0474B	FE0475B
Mean	3901.93	3882.62
Std. Dev.	3.58	3.85
Skewness	-0.12	-0.07
Kurtosis	1.03	1.03



**Figure B.7 FW FLOW TO SG A Transient Deviation at Farley Unit 1 (Cycle 23)**

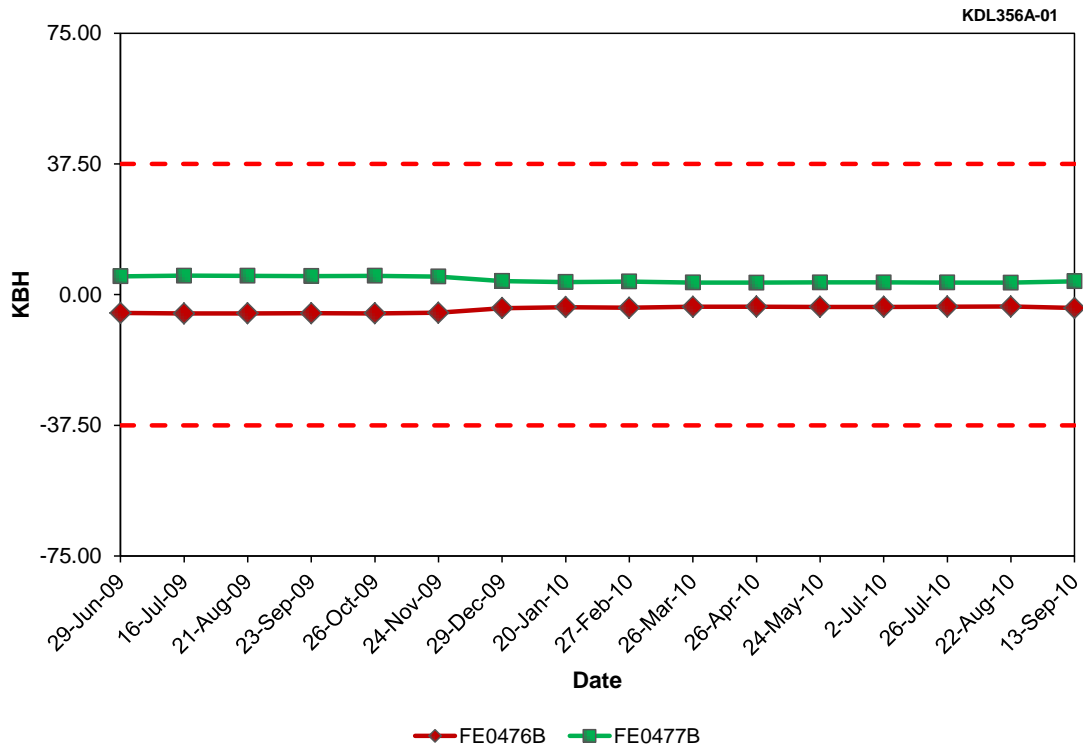


Figure B.8 FW FLOW TO SG A Steady-State Deviation at Farley Unit 1 (Cycle 23)

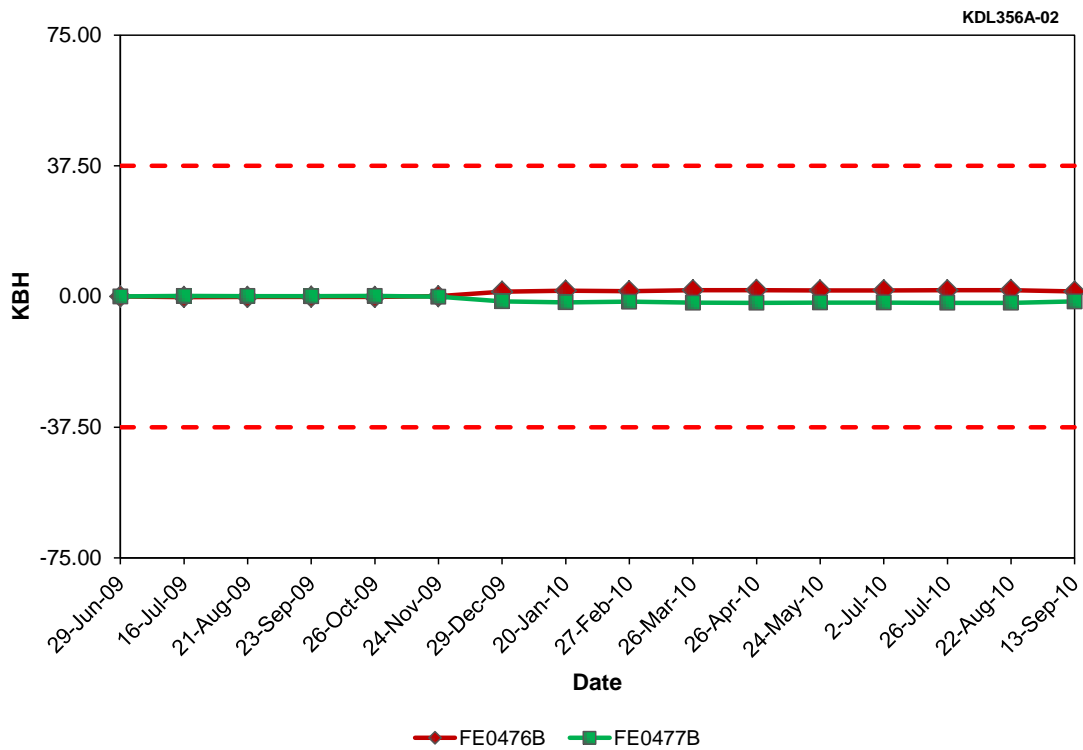


Figure B.9 FW FLOW TO SG A Steady-State Drift at Farley Unit 1 (Cycle 23)

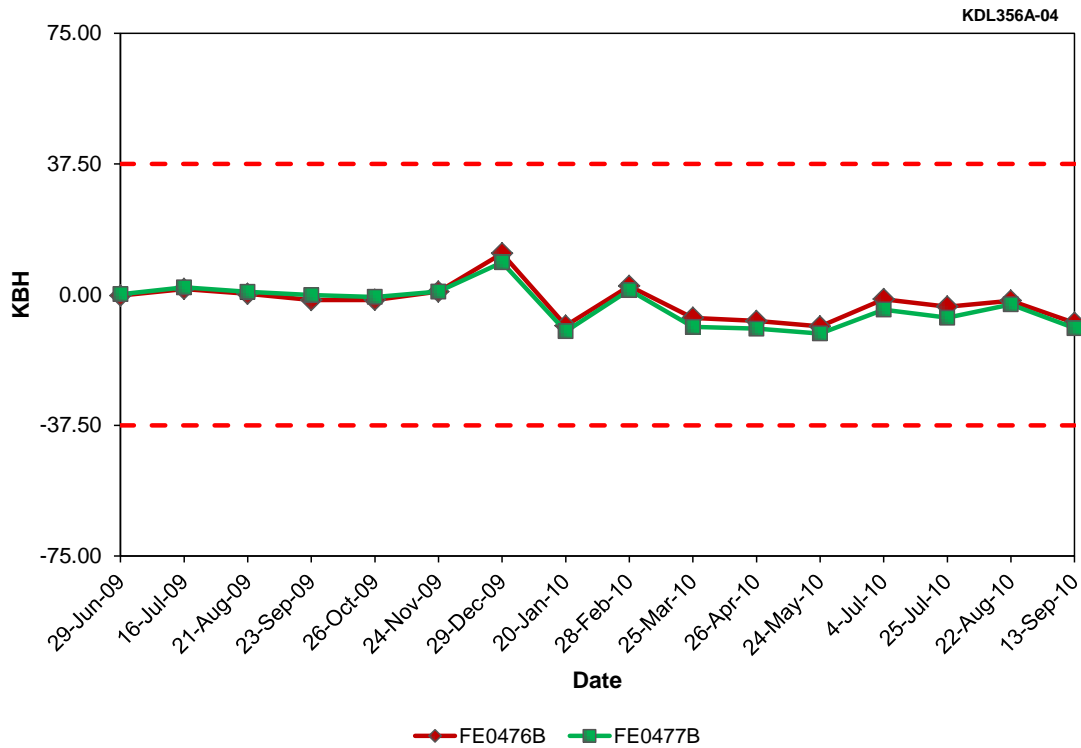


Figure B.10 FW FLOW TO SG A Steady-State Residual AAKR at Farley Unit 1 (Cycle 23)

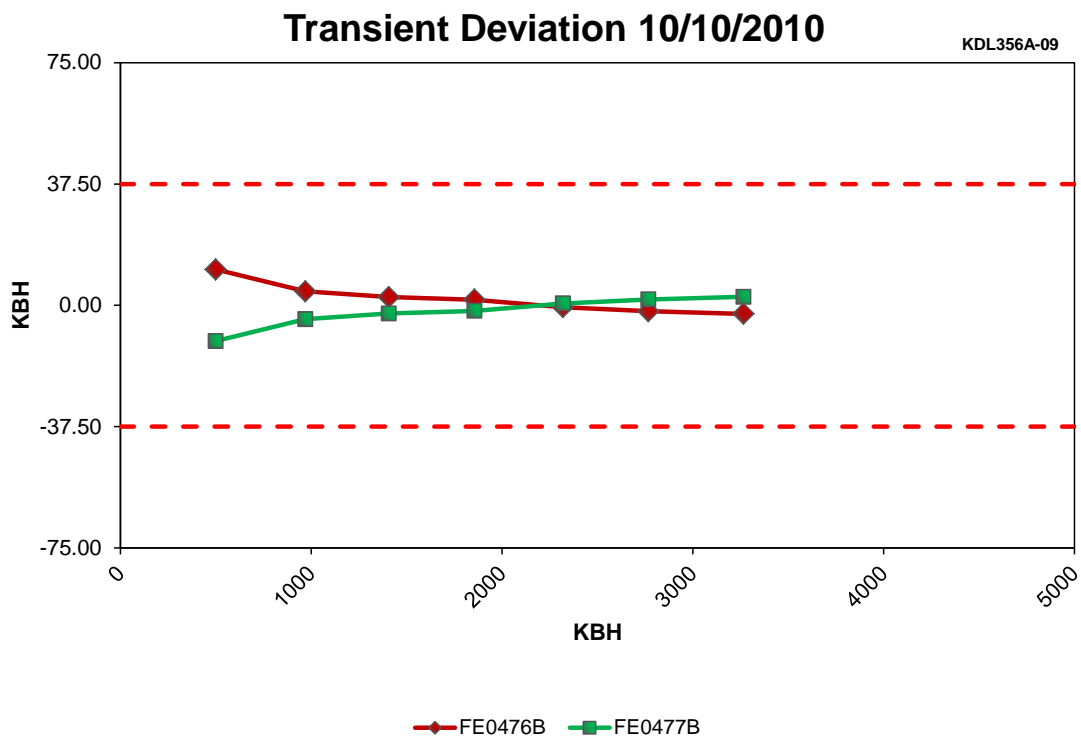


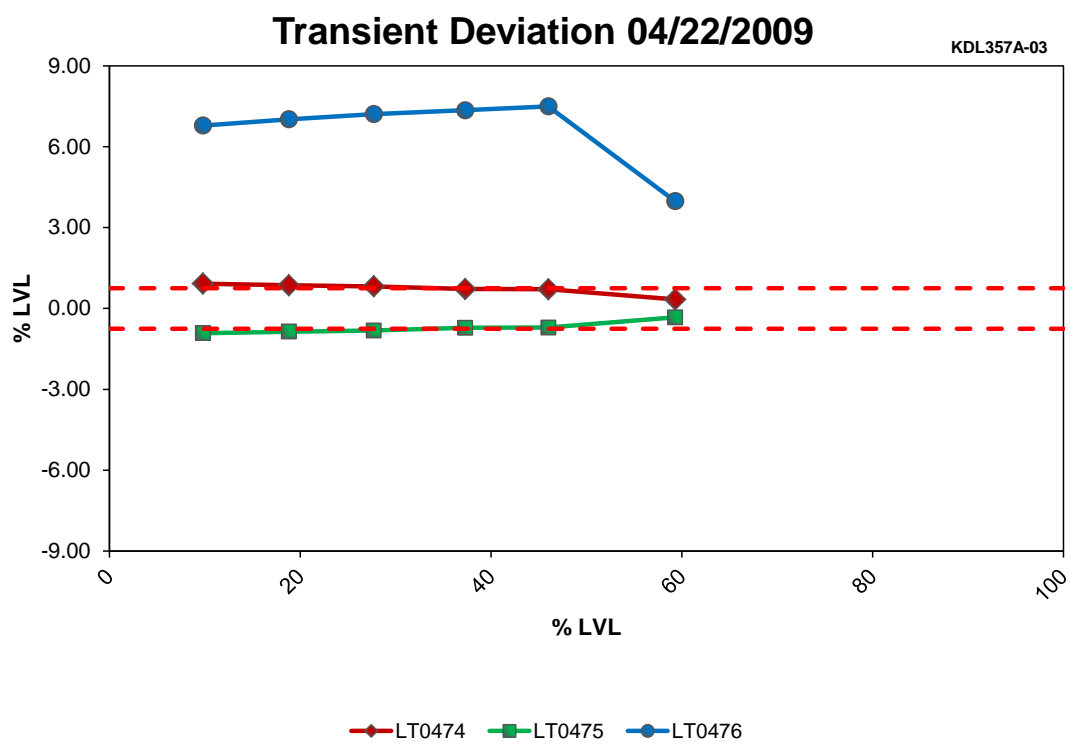
Figure B.11 FW FLOW TO SG A Transient Deviation at Farley Unit 1 (Cycle 23)



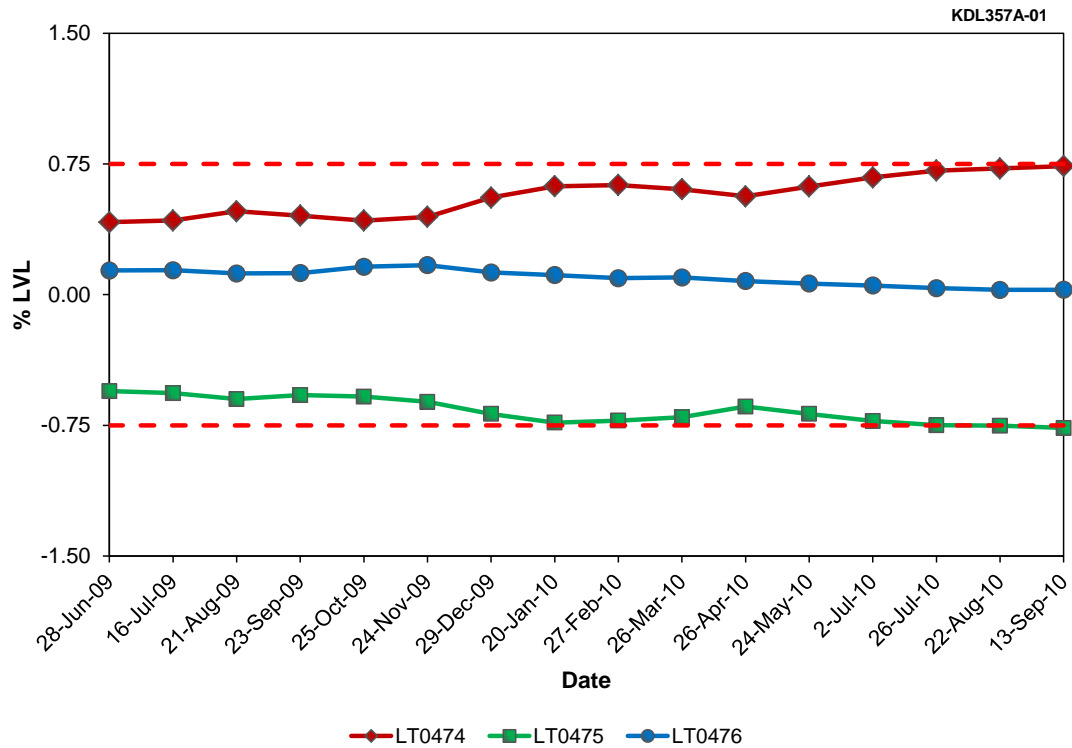
**Figure B.12 FW FLOW TO SG A Data Quality Statistics at Farley Unit 1 (Cycle 23)**

**Table B.2 FW FLOW TO SG A Data Quality for Farley Unit 1 (Cycle 23)**

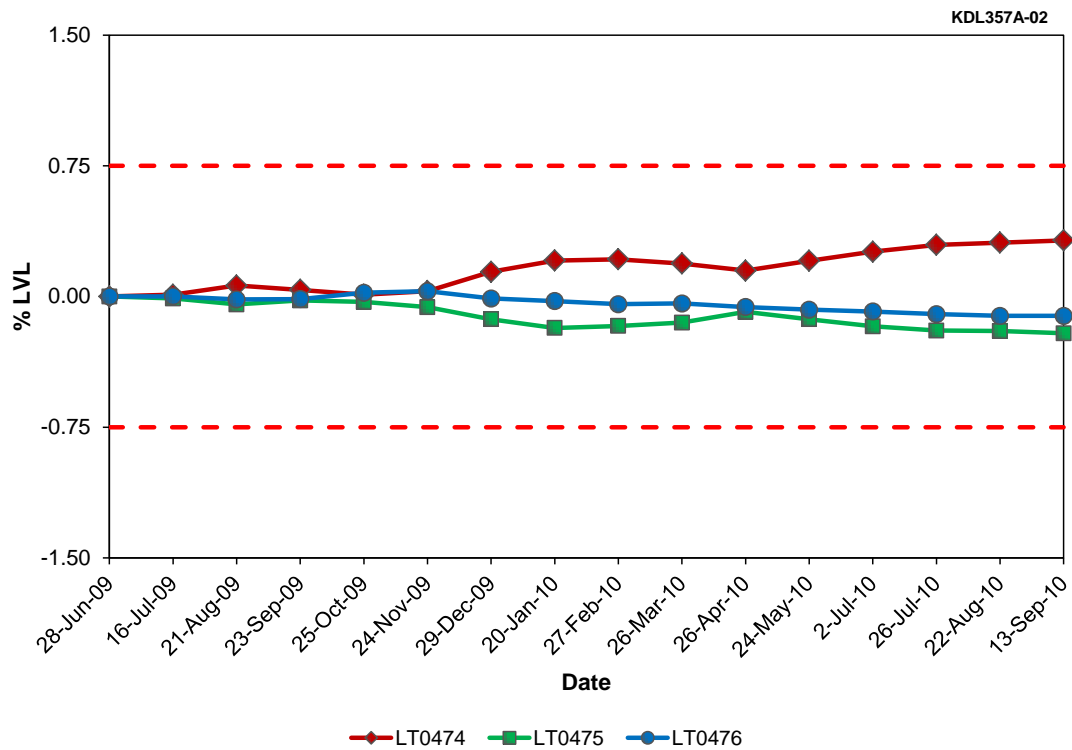
Result Type	Tag Names	
	FE0476B	FE0477B
Mean	4042.89	4051.38
Std. Dev.	6.15	6.23
Skewness	-0.03	-0.02
Kurtosis	0.94	0.94



**Figure B.13 SG A LEVEL Transient Deviation at Farley Unit 1 (Cycle 23)**



**Figure B.14 SG A LEVEL Steady-State Deviation at Farley Unit 1 (Cycle 23)**



**Figure B.15 SG A LEVEL Steady-State Drift at Farley Unit 1 (Cycle 23)**

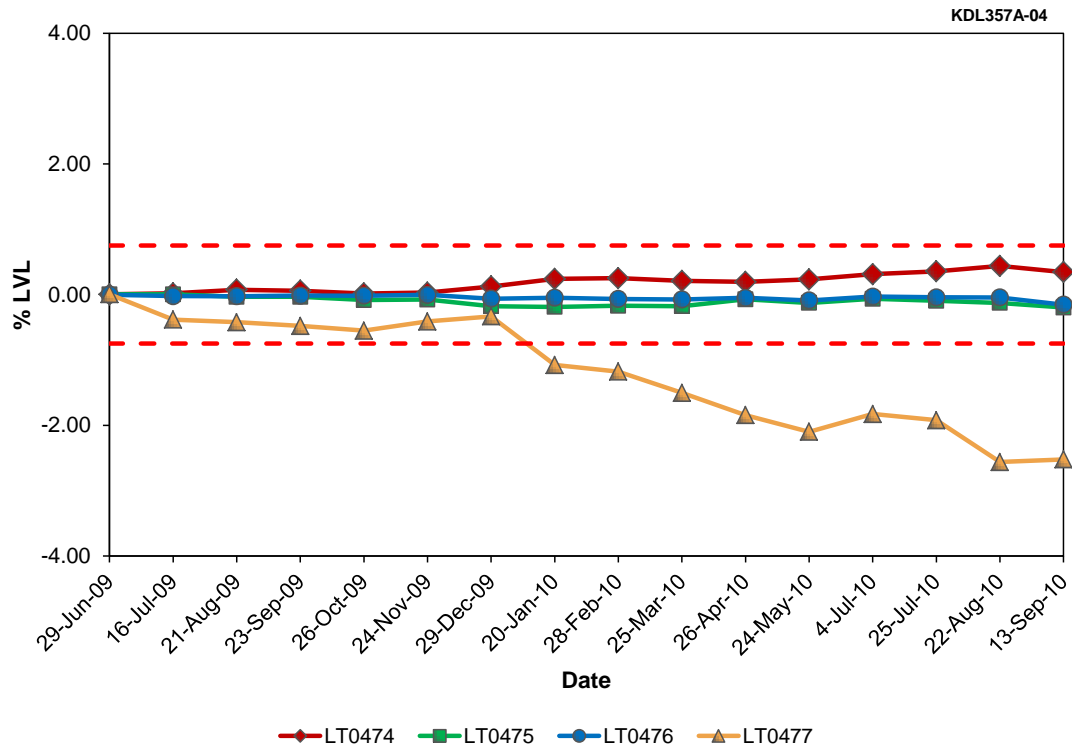


Figure B.16 SG A LEVEL Steady-State Residual AAKR at Farley Unit 1 (Cycle 23)

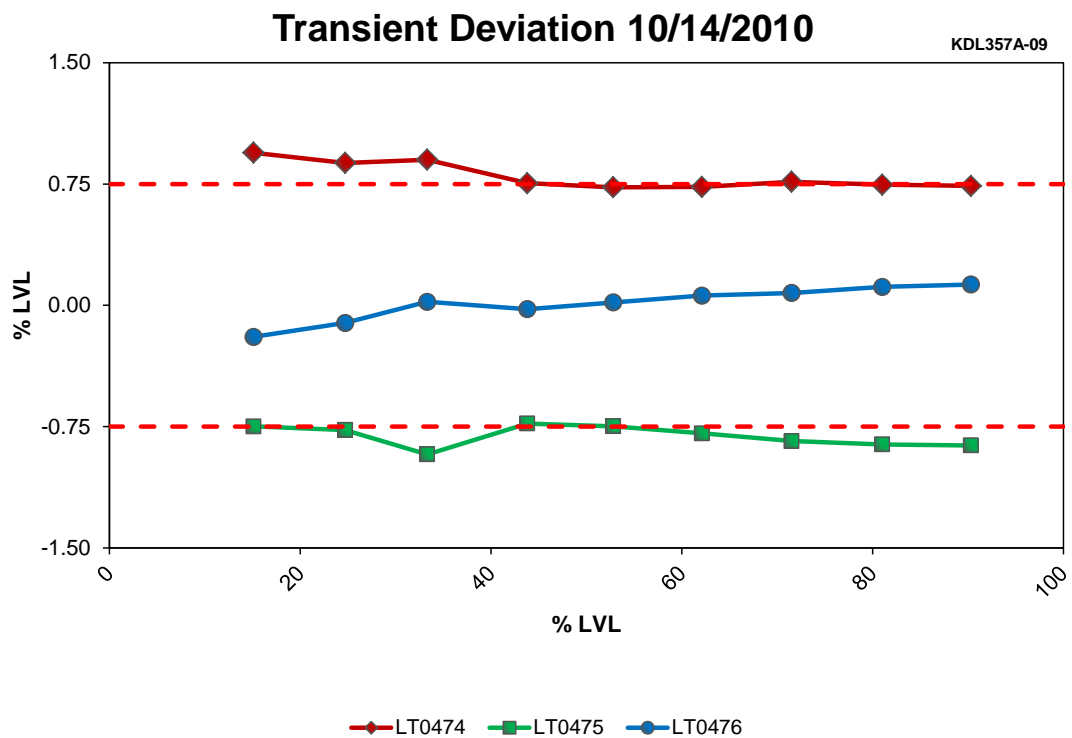
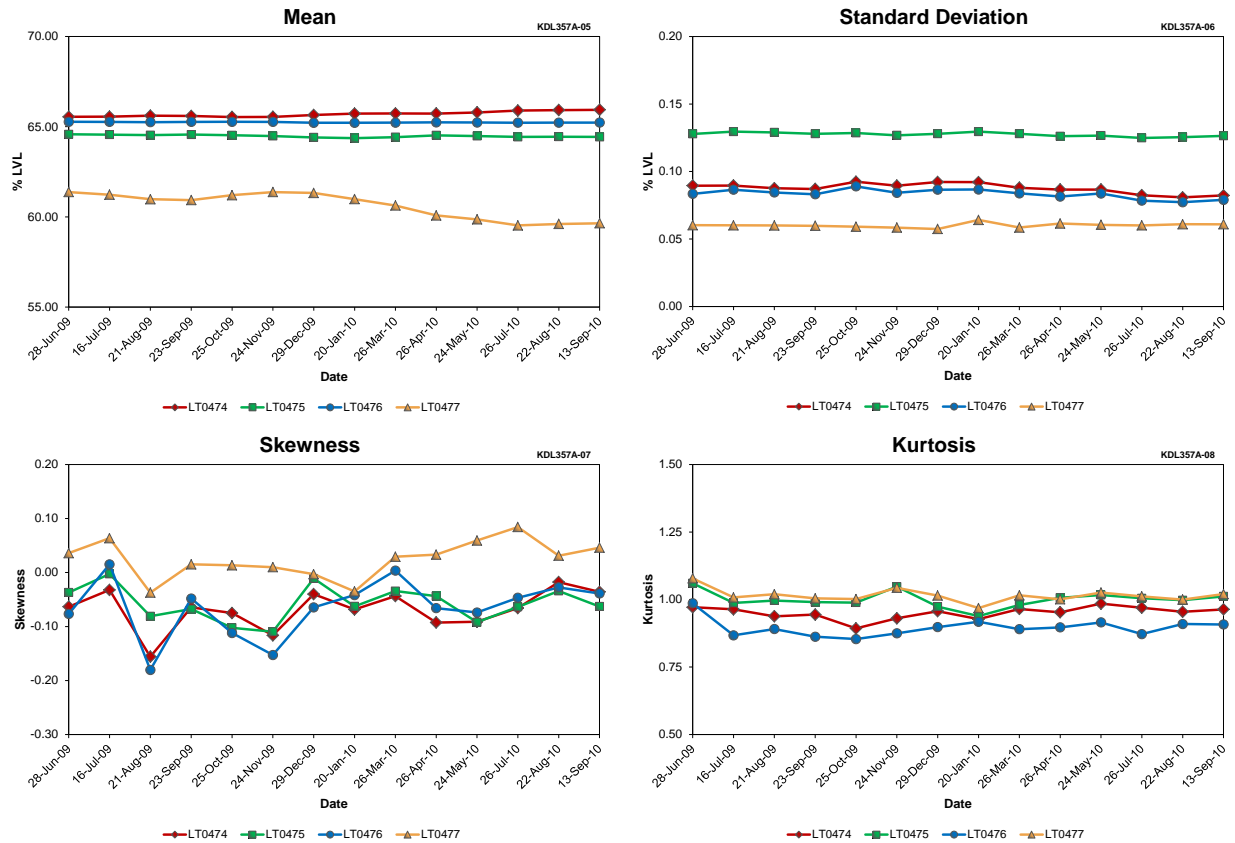


Figure B.17 SG A LEVEL Transient Deviation at Farley Unit 1 (Cycle 23)

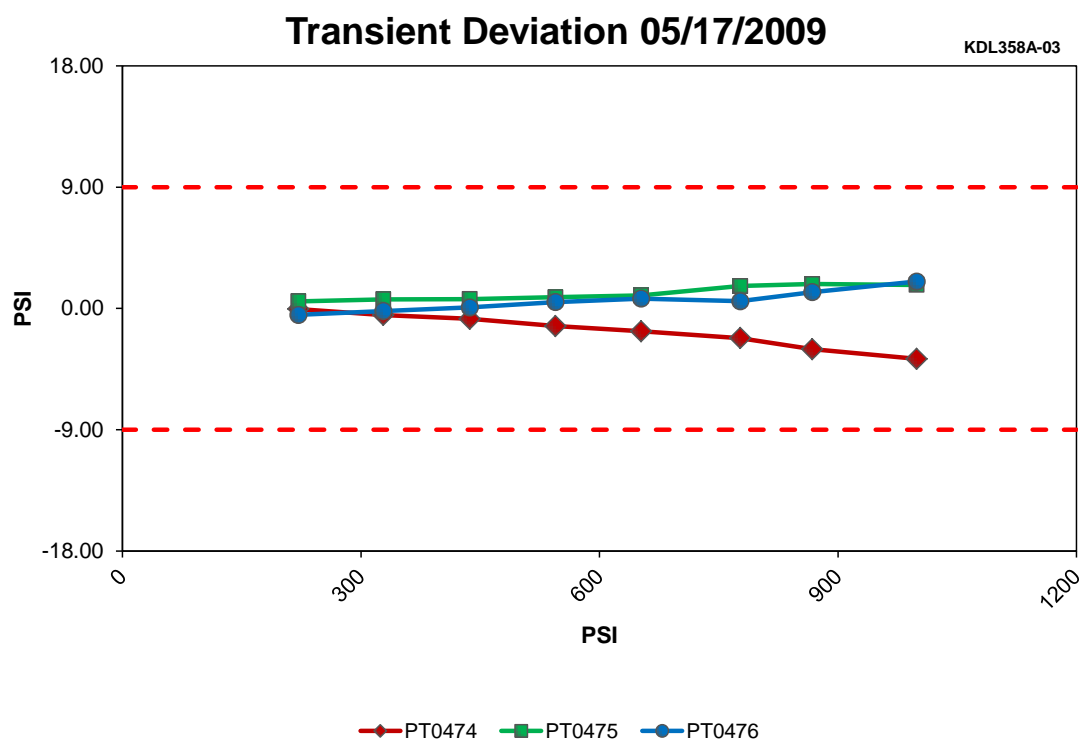




**Figure B.18 SG A LEVEL Data Quality Statistics at Farley Unit 1 (Cycle 23)**

**Table B.3 SG A LEVEL Data Quality for Farley Unit 1 (Cycle 23)**

Result Type	Tag Names			
	LT0474	LT0475	LT0476	LT0477
Mean	65.69	64.48	65.24	60.62
Std. Dev.	0.09	0.13	0.08	0.06
Skewness	-0.07	-0.06	-0.07	0.02
Kurtosis	0.95	1.00	0.90	1.02



**Figure B.19 SG A OUTLET PRESSURE Transient Deviation at Farley Unit 1 (Cycle 23)**

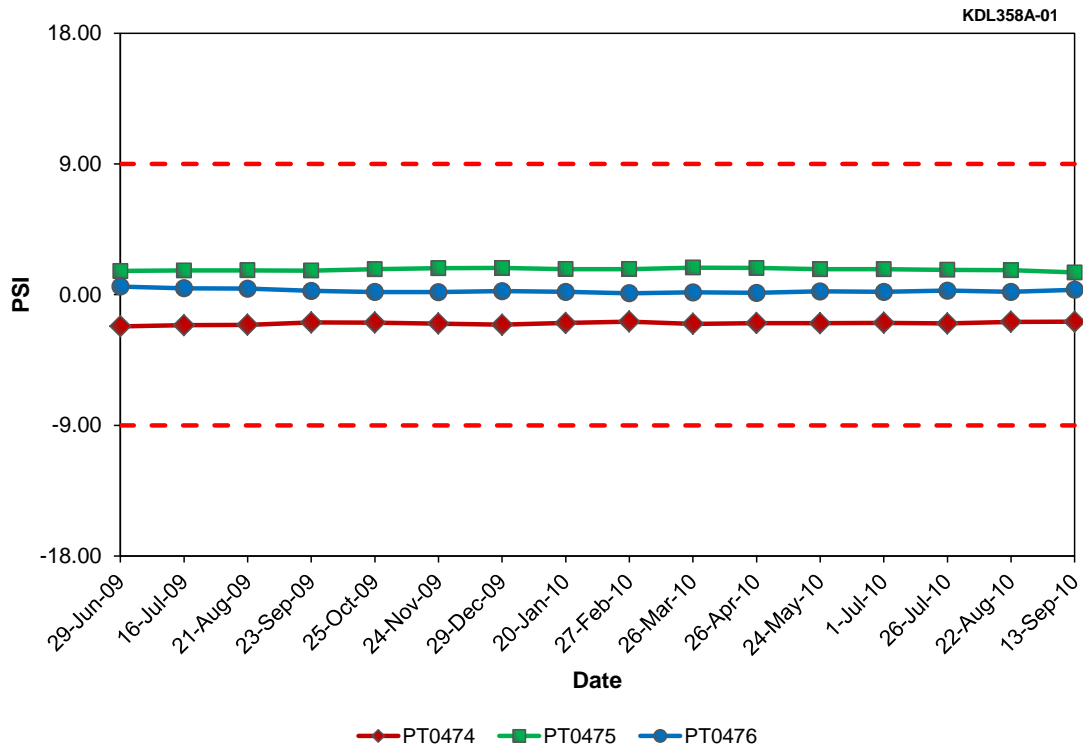


Figure B.20 SG A OUTLET PRESSURE Steady-State Deviation at Farley Unit 1 (Cycle 23)

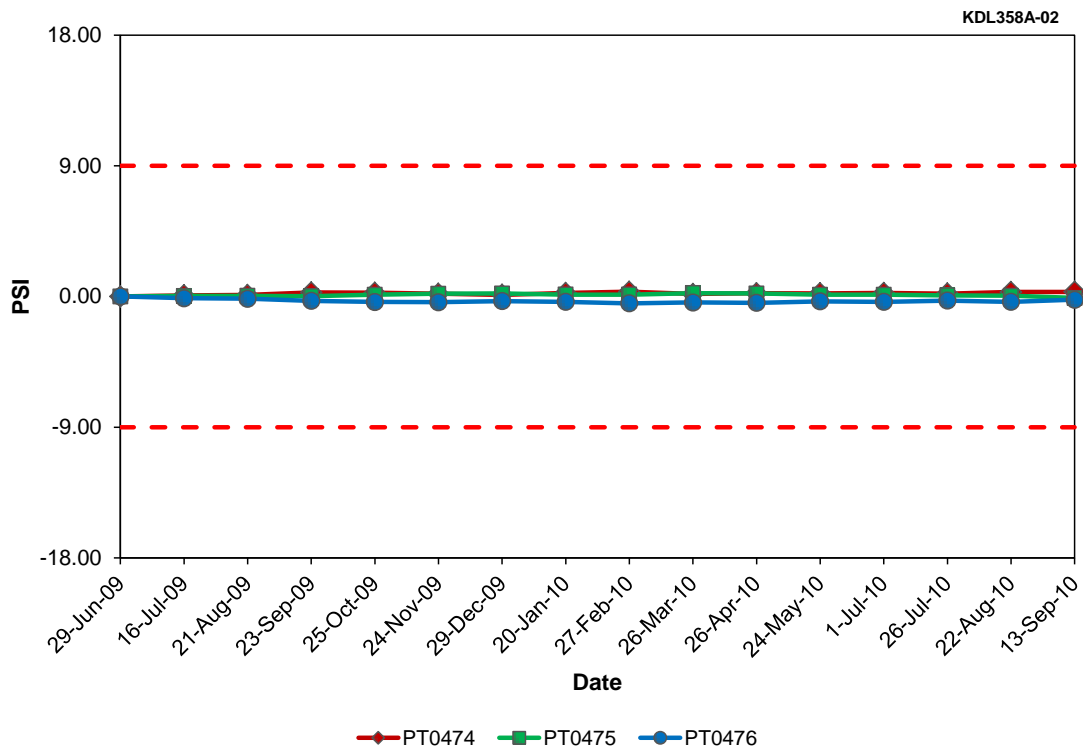
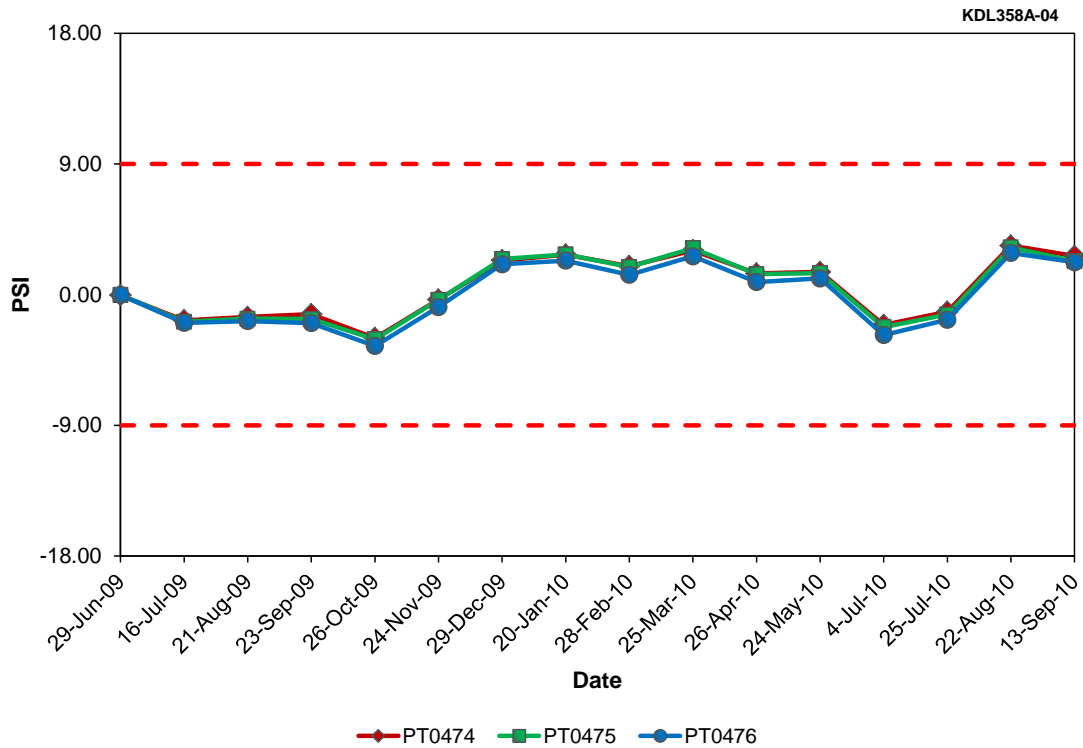
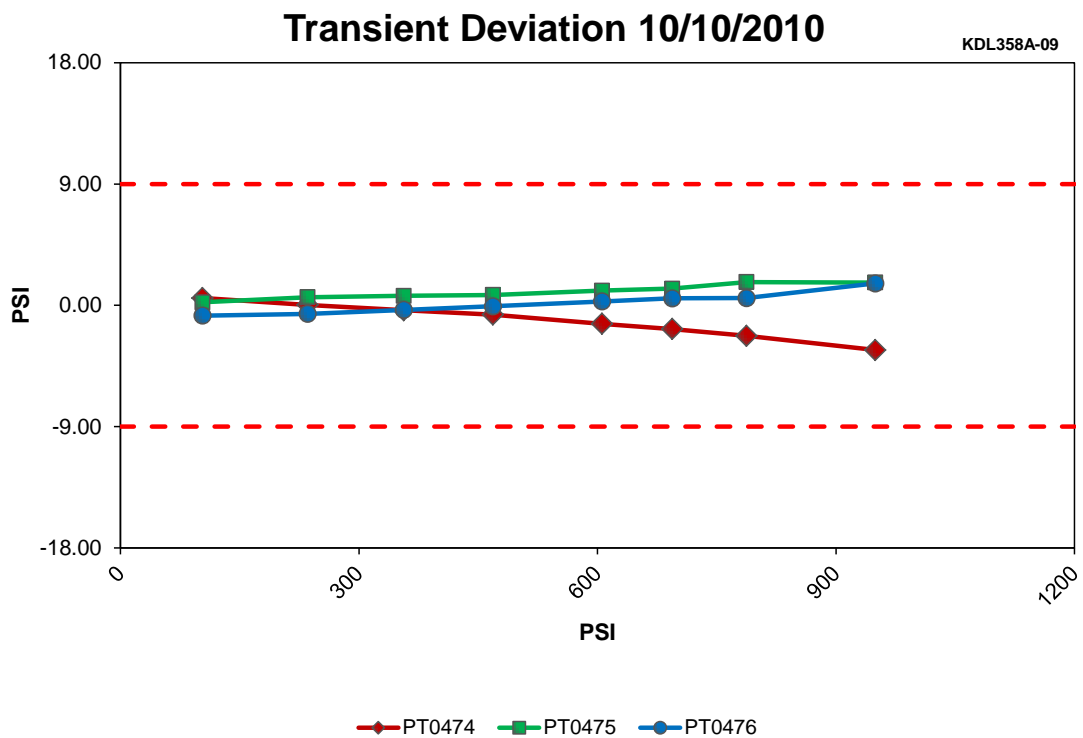


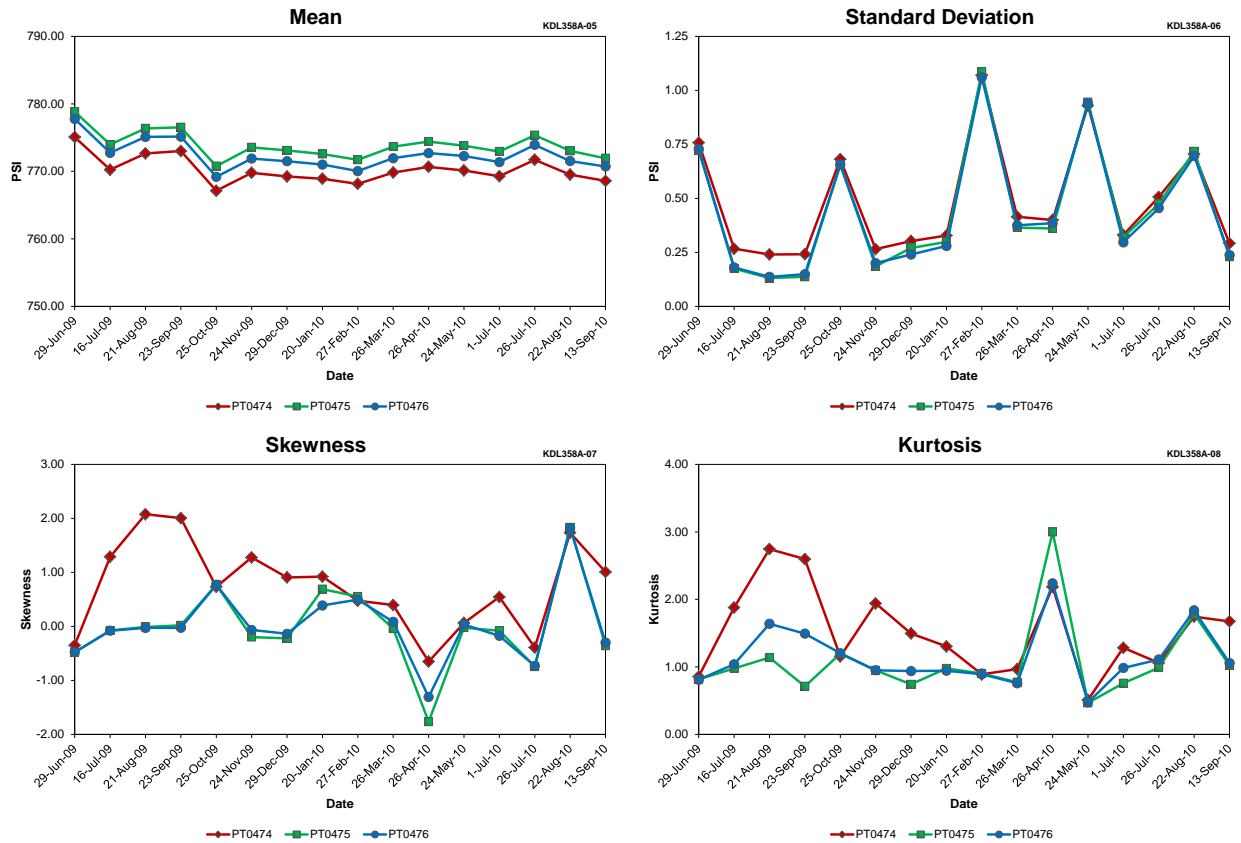
Figure B.21 SG A OUTLET PRESSURE Steady-State Drift at Farley Unit 1 (Cycle 23)



**Figure B.22 SG A OUTLET PRESSURE Steady-State Residual AAKR at Farley Unit 1 (Cycle 23)**



**Figure B.23 SG A OUTLET PRESSURE Transient Deviation at Farley Unit 1 (Cycle 23)**



**Figure B.24 SG A OUTLET PRESSURE Data Quality Statistics at Farley Unit 1 (Cycle 23)**

**Table B.4 SG A OUTLET PRESSURE Data Quality for Farley Unit 1 (Cycle 23)**

Result Type	Tag Names		
	PT0474	PT0475	PT0476
Mean	770.25	773.91	772.43
Std. Dev.	0.48	0.44	0.44
Skewness	0.75	-0.01	0.02
Kurtosis	1.52	1.07	1.15

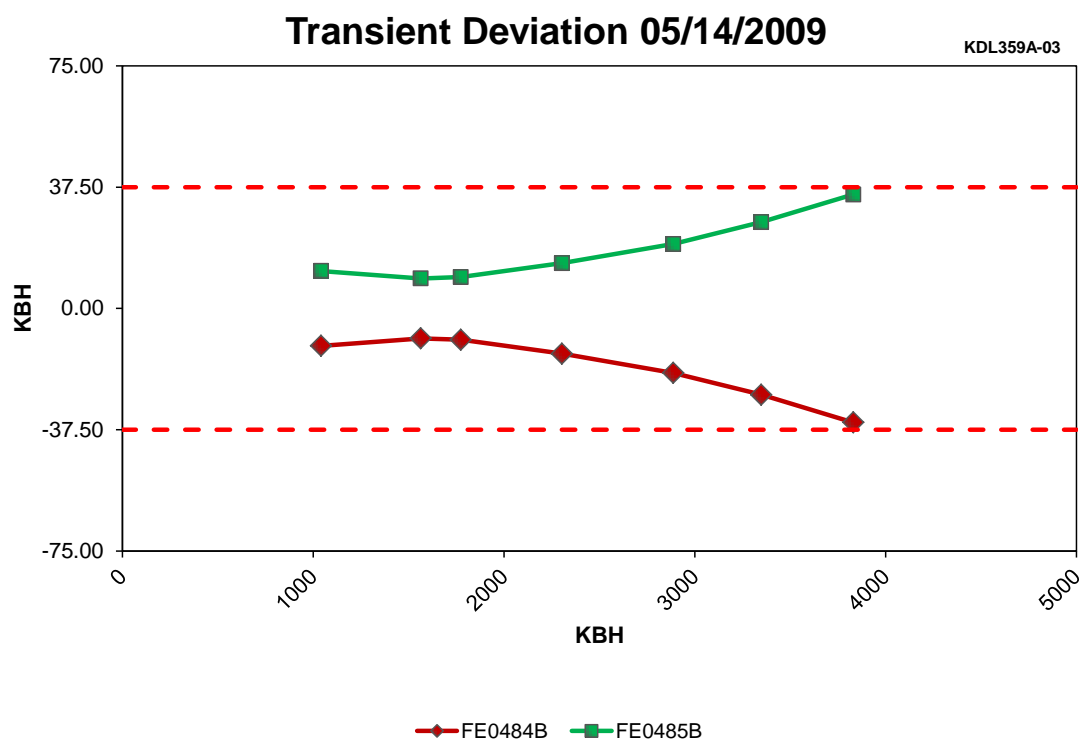
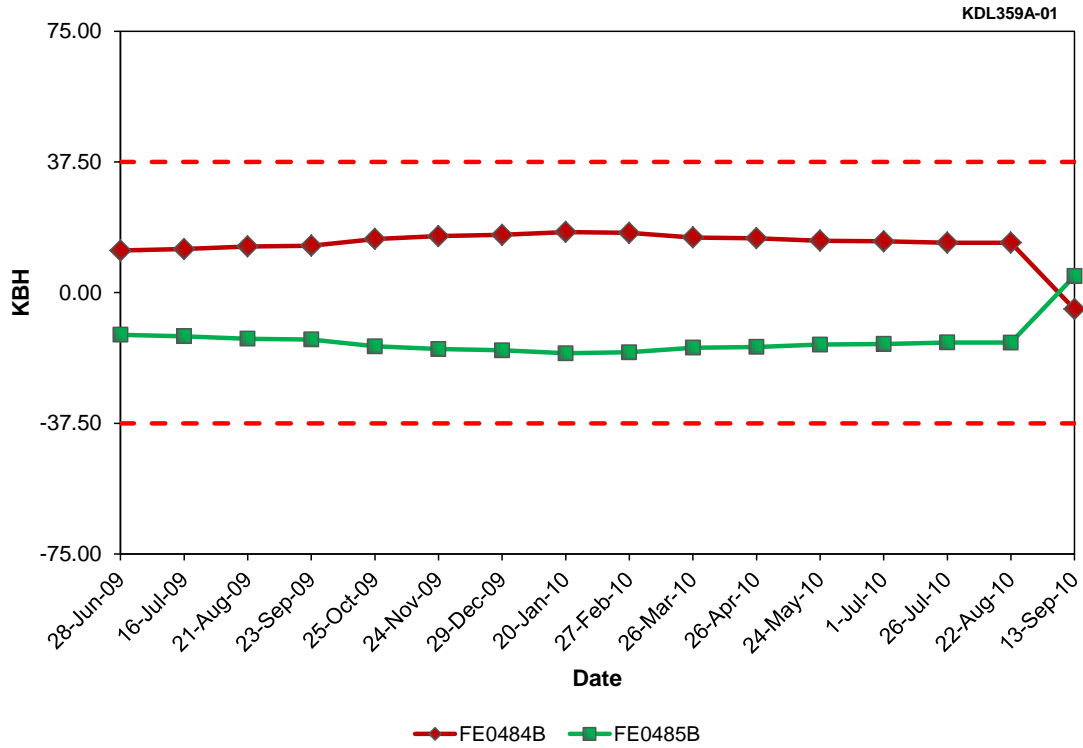
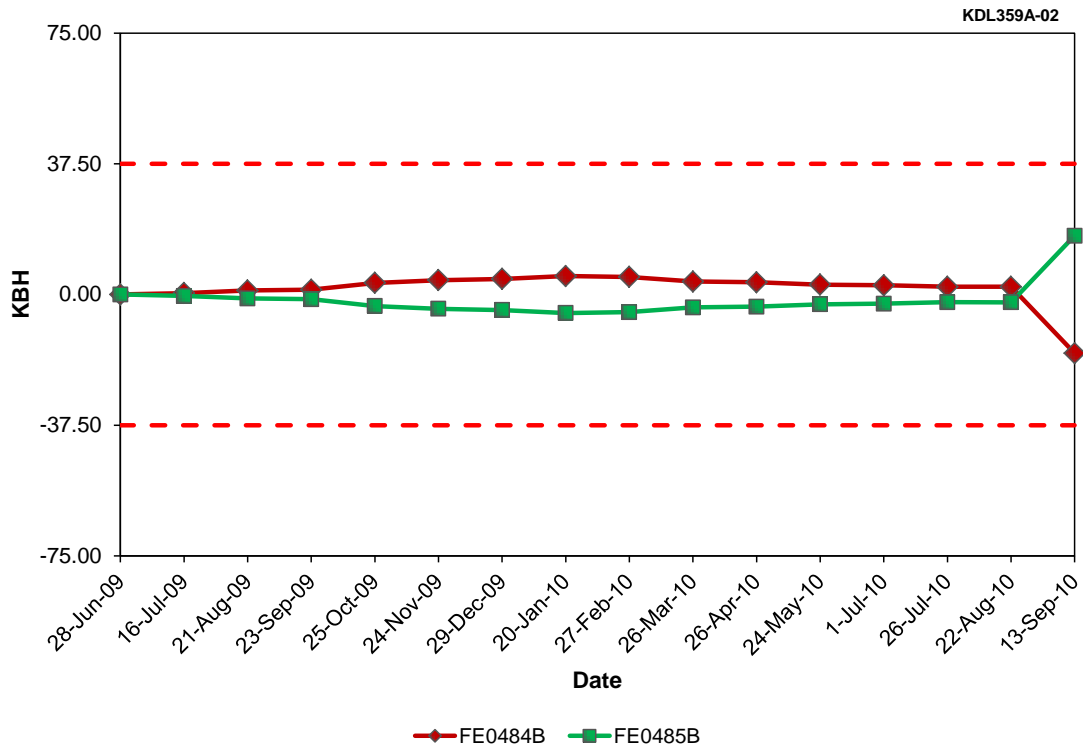


Figure B.25 SG B STEAM FLOW Transient Deviation at Farley Unit 1 (Cycle 23)



**Figure B.26 SG B STEAM FLOW Steady-State Deviation at Farley Unit 1 (Cycle 23)**



**Figure B.27 SG B STEAM FLOW Steady-State Drift at Farley Unit 1 (Cycle 23)**

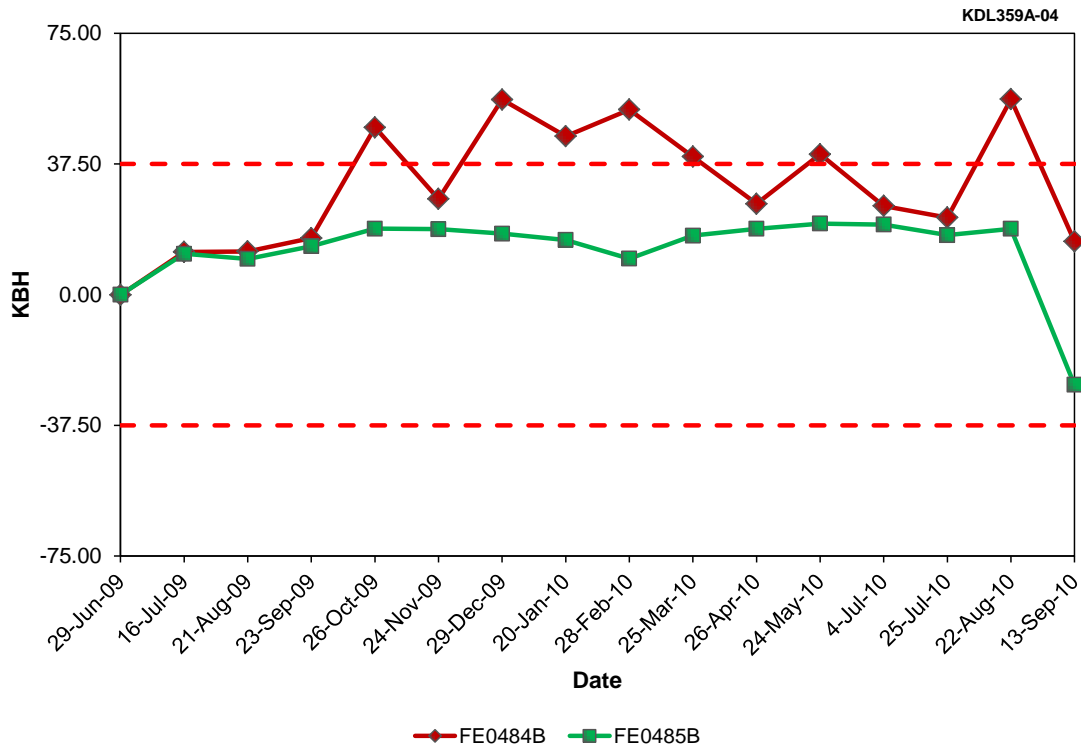


Figure B.28 SG B STEAM FLOW Steady-State Residual AAKR at Farley Unit 1 (Cycle 23)

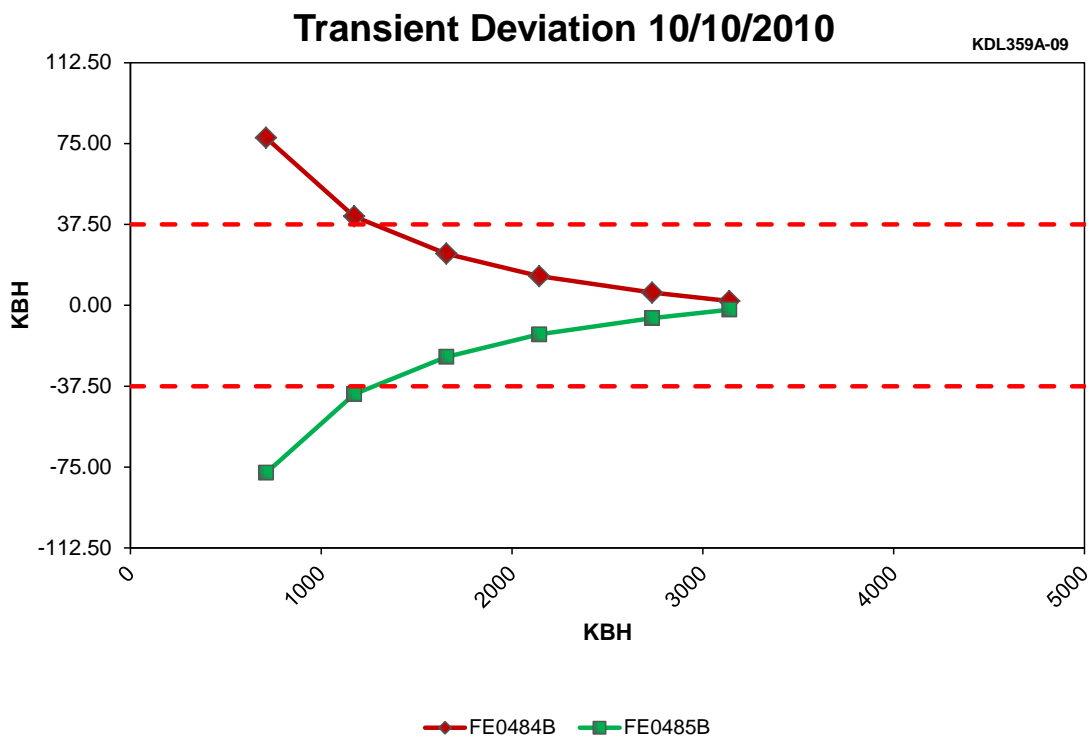
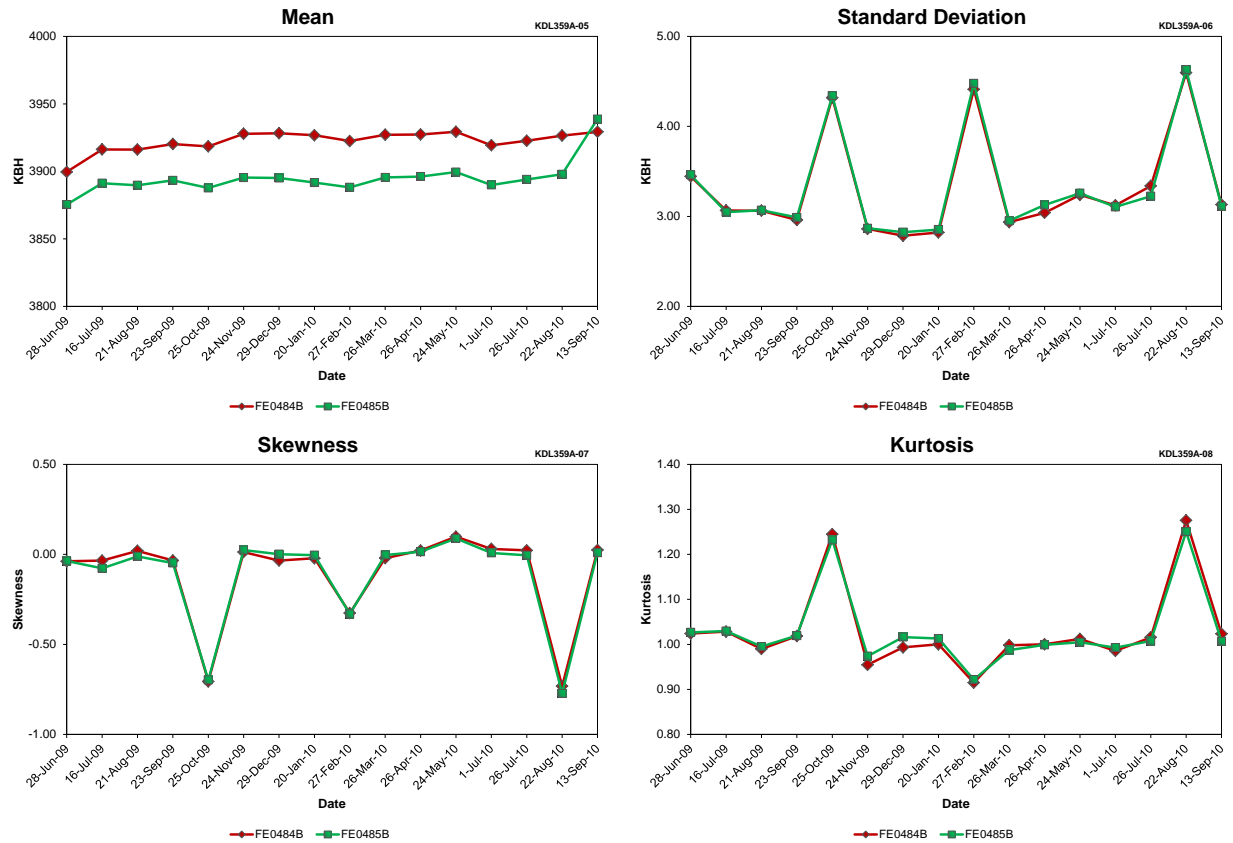


Figure B.29 SG B STEAM FLOW Transient Deviation at Farley Unit 1 (Cycle 23)





**Figure B.30 SG B STEAM FLOW Data Quality Statistics at Farley Unit 1 (Cycle 23)**

**Table B.5 SG B STEAM FLOW Data Quality for Farley Unit 1 (Cycle 23)**

Result Type	Tag Names	
	FE0484B	FE0485B
Mean	3922.35	3894.97
Std. Dev.	3.32	3.33
Skewness	-0.11	-0.12
Kurtosis	1.03	1.03

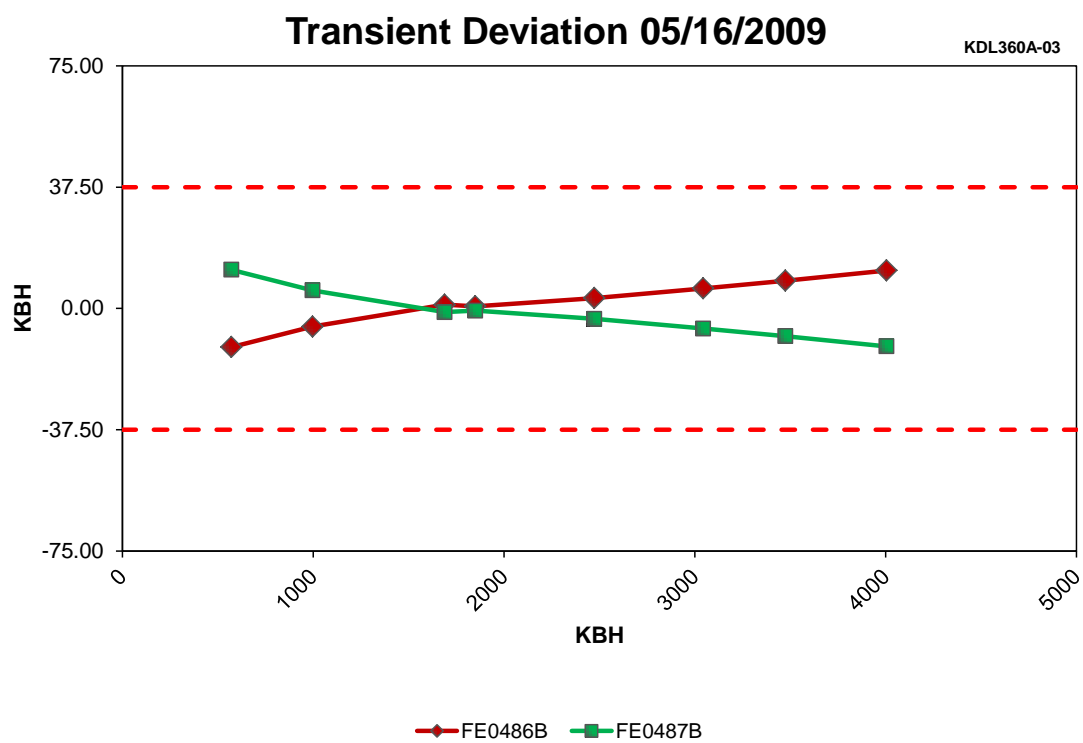
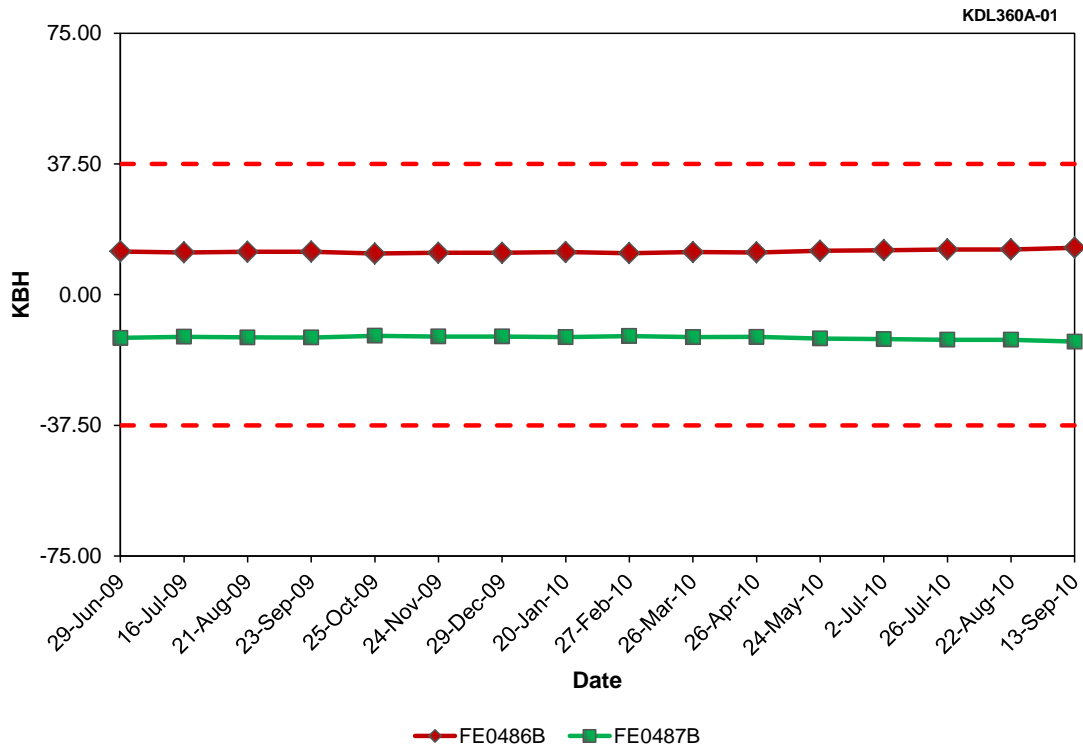
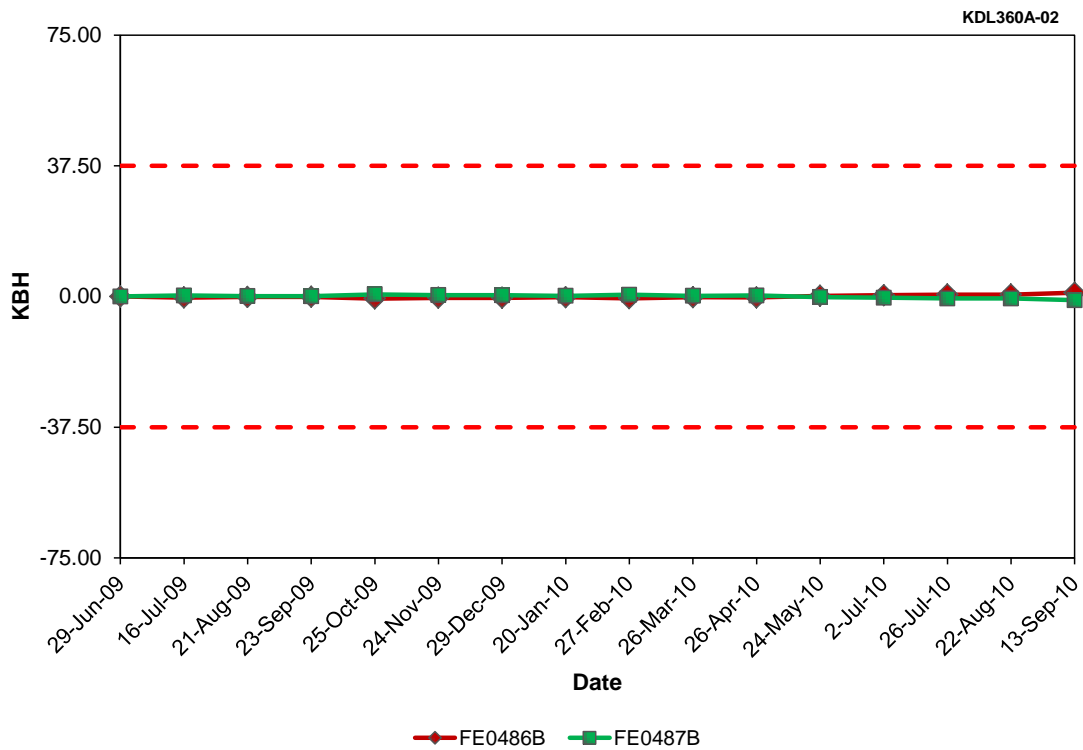


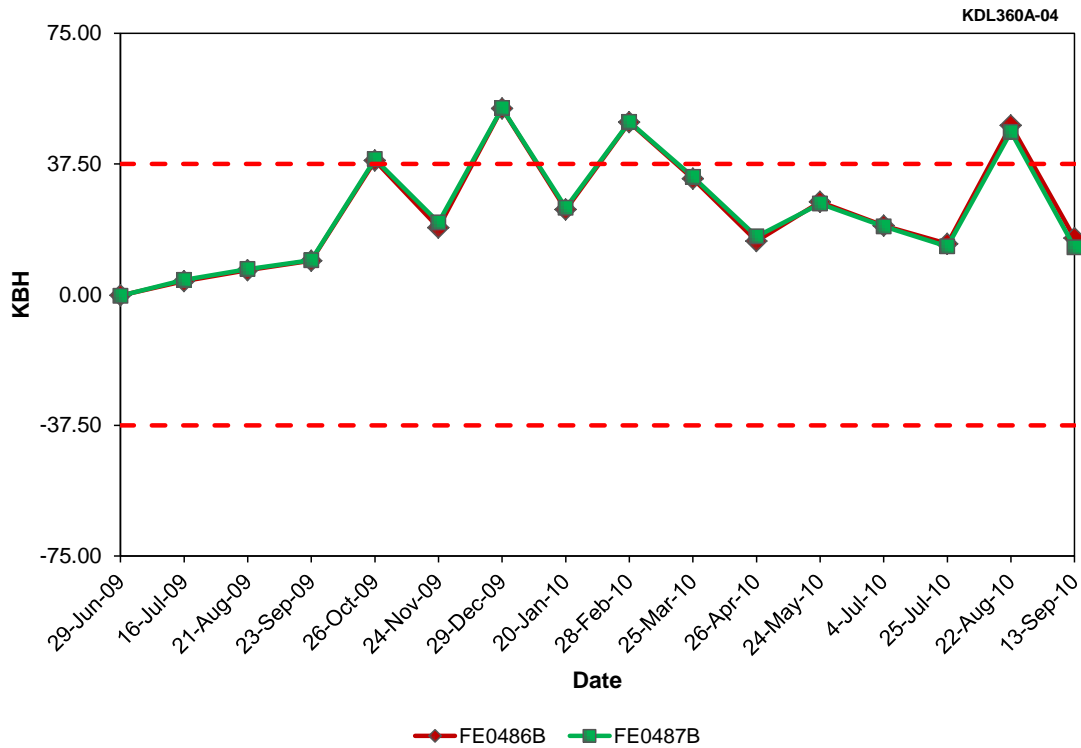
Figure B.31 FW FLOW TO SG B Transient Deviation at Farley Unit 1 (Cycle 23)



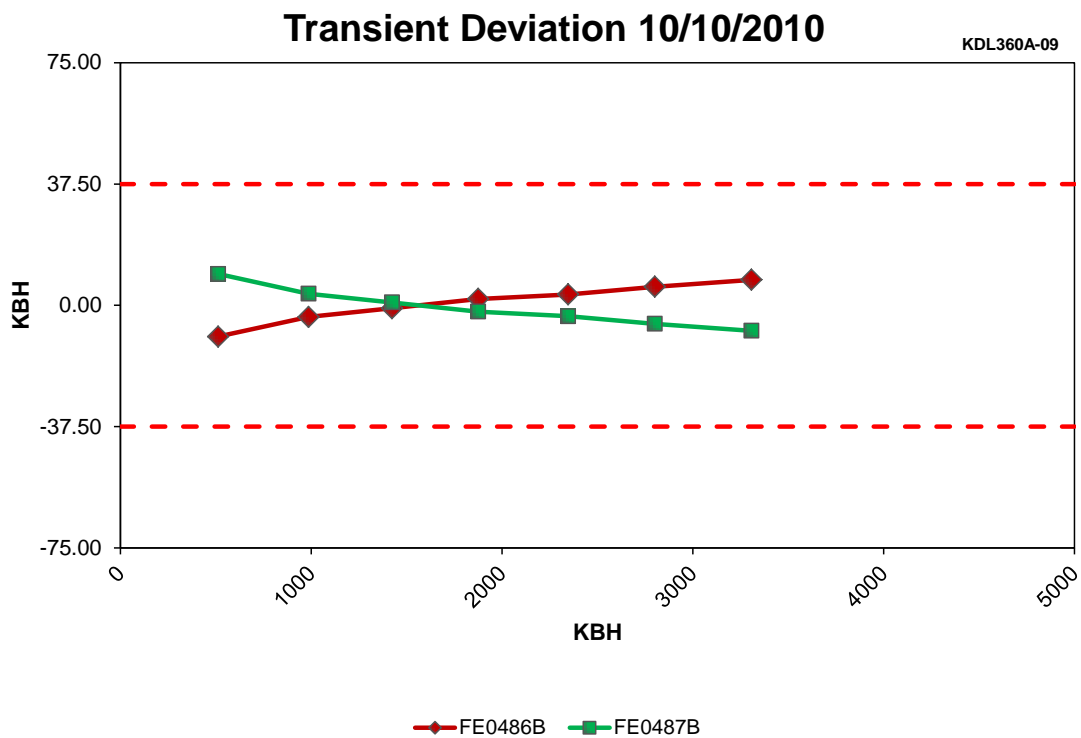
**Figure B.32 FW FLOW TO SG B Steady-State Deviation at Farley Unit 1 (Cycle 23)**



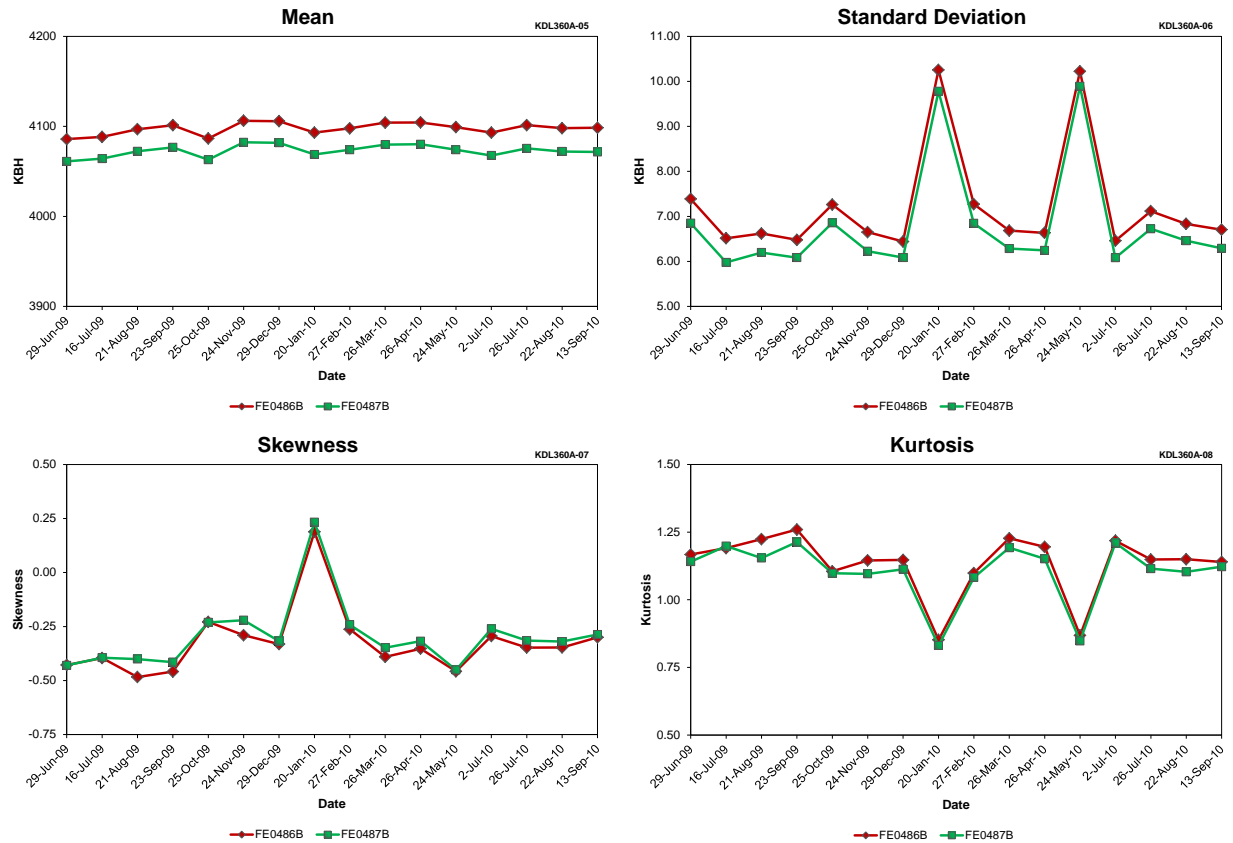
**Figure B.33 FW FLOW TO SG B Steady-State Drift at Farley Unit 1 (Cycle 23)**



**Figure B.34 FW FLOW TO SG B Steady-State Residual AAKR at Farley Unit 1 (Cycle 23)**



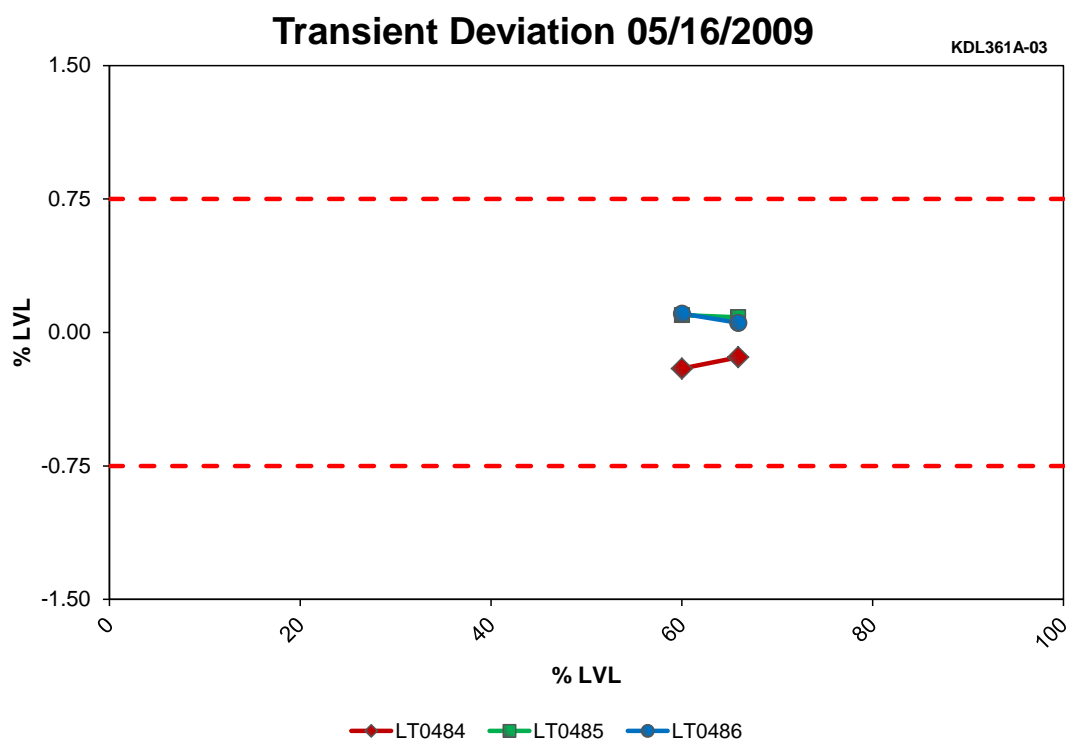
**Figure B.35 FW FLOW TO SG B Transient Deviation at Farley Unit 1 (Cycle 23)**



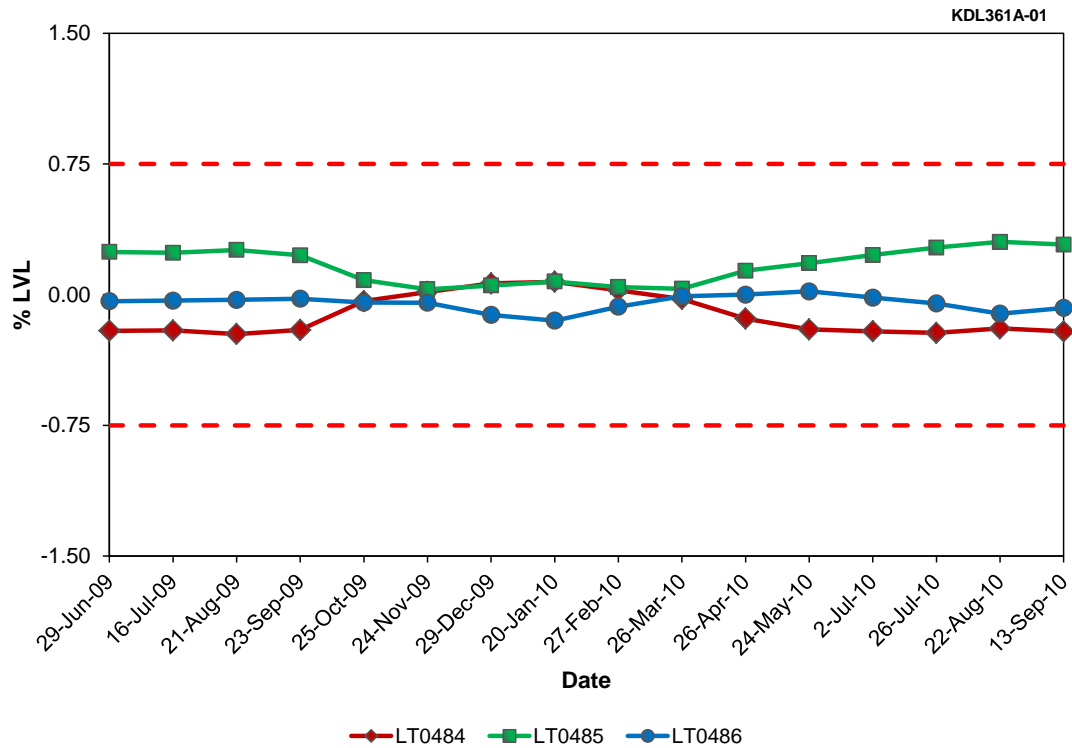
**Figure B.36 FW FLOW TO SG B Data Quality Statistics at Farley Unit 1 (Cycle 23)**

**Table B.6 FW FLOW TO SG B Data Quality for Farley Unit 1 (Cycle 23)**

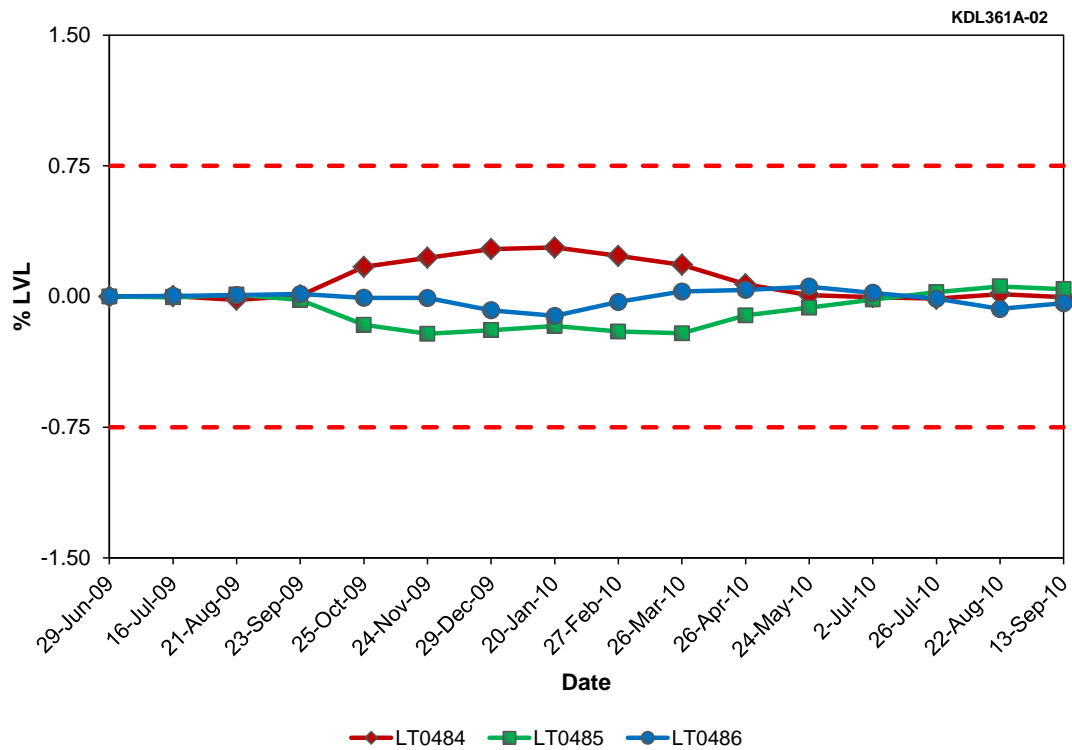
Result Type	Tag Names	
	FE0486B	FE0487B
Mean	4097.52	4072.79
Std. Dev.	7.22	6.80
Skewness	-0.32	-0.29
Kurtosis	1.13	1.10



**Figure B.37 SG B LEVEL Transient Deviation at Farley Unit 1 (Cycle 23)**



**Figure B.38 SG B LEVEL Steady-State Deviation at Farley Unit 1 (Cycle 23)**



**Figure B.39 SG B LEVEL Steady-State Drift at Farley Unit 1 (Cycle 23)**

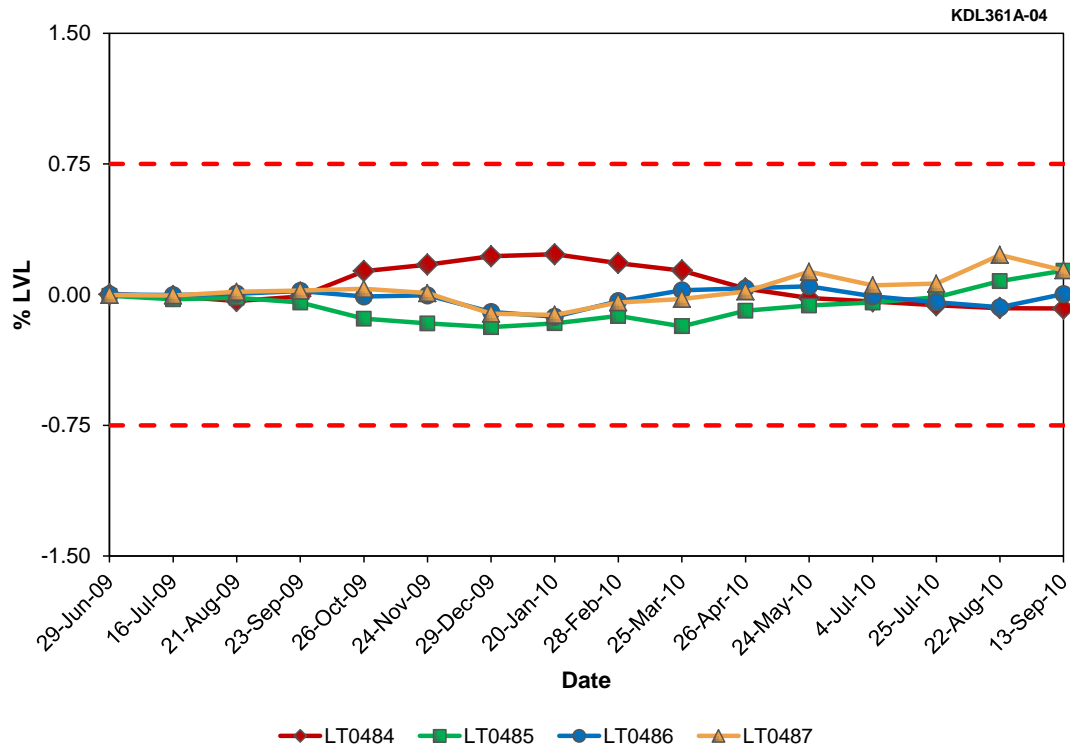


Figure B.40 SG B LEVEL Steady-State Residual AAKR at Farley Unit 1 (Cycle 23)

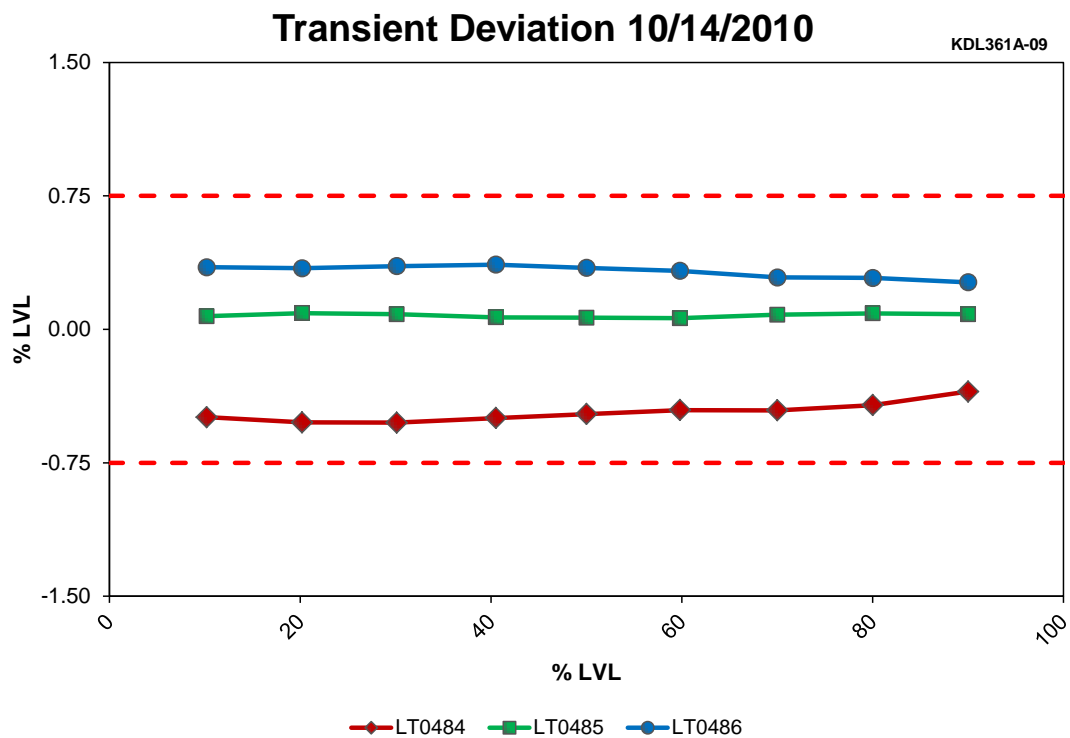
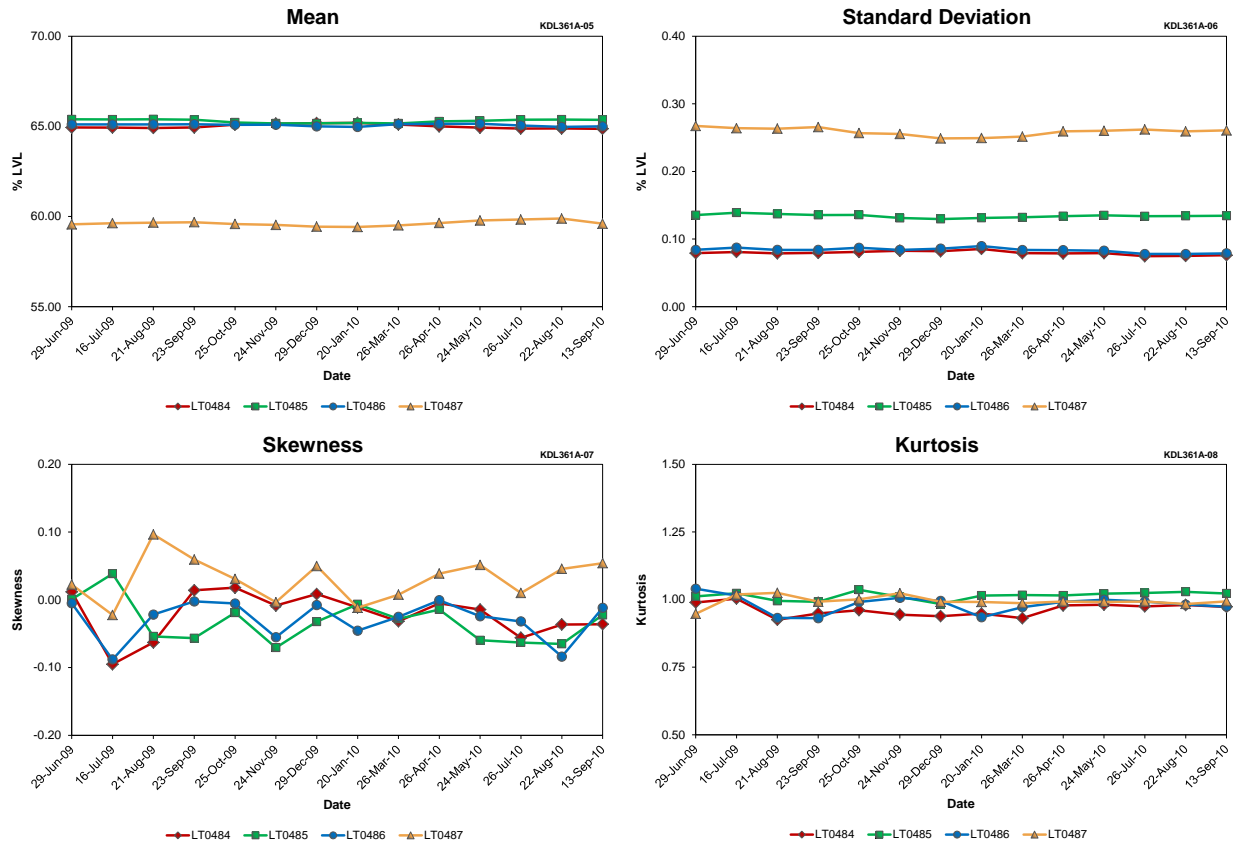


Figure B.41 SG B LEVEL Transient Deviation at Farley Unit 1 (Cycle 23)

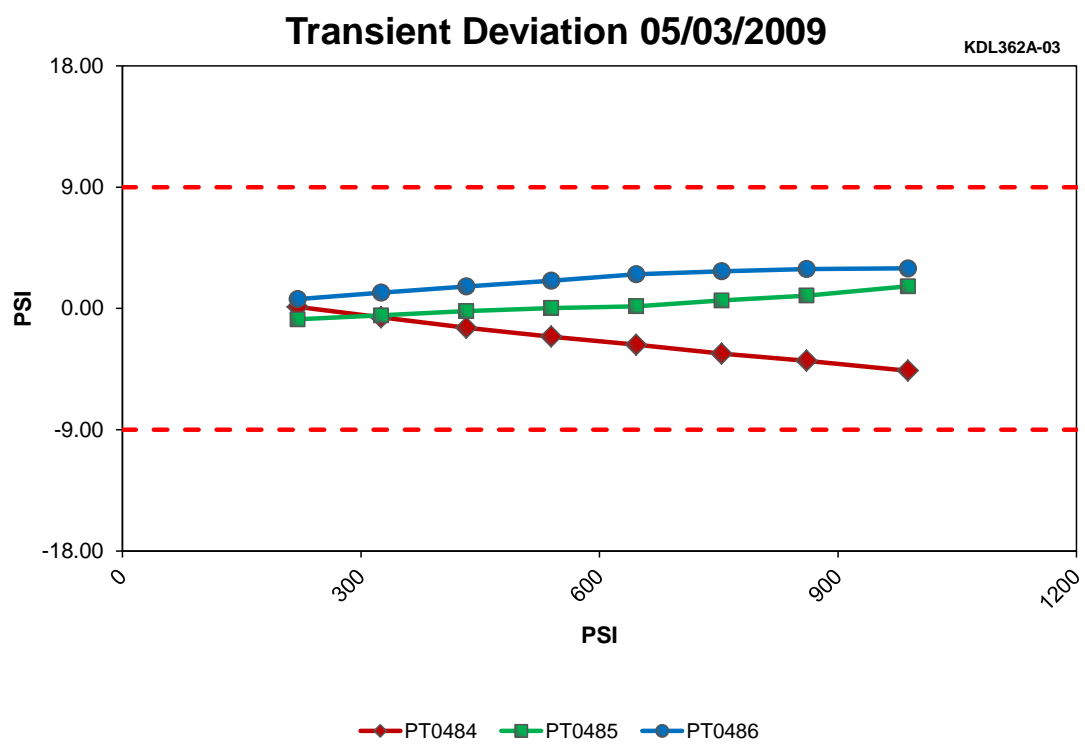




**Figure B.42 SG B LEVEL Data Quality Statistics at Farley Unit 1 (Cycle 23)**

**Table B.7 SG B LEVEL Data Quality for Farley Unit 1 (Cycle 23)**

Result Type	Tag Names			
	LT0484	LT0485	LT0486	LT0487
Mean	65.00	65.29	65.07	59.62
Std. Dev.	0.08	0.13	0.08	0.26
Skewness	-0.02	-0.03	-0.03	0.03
Kurtosis	0.96	1.01	0.98	0.99



**Figure B.43 SG B OUTLET PRESSURE Transient Deviation at Farley Unit 1 (Cycle 23)**

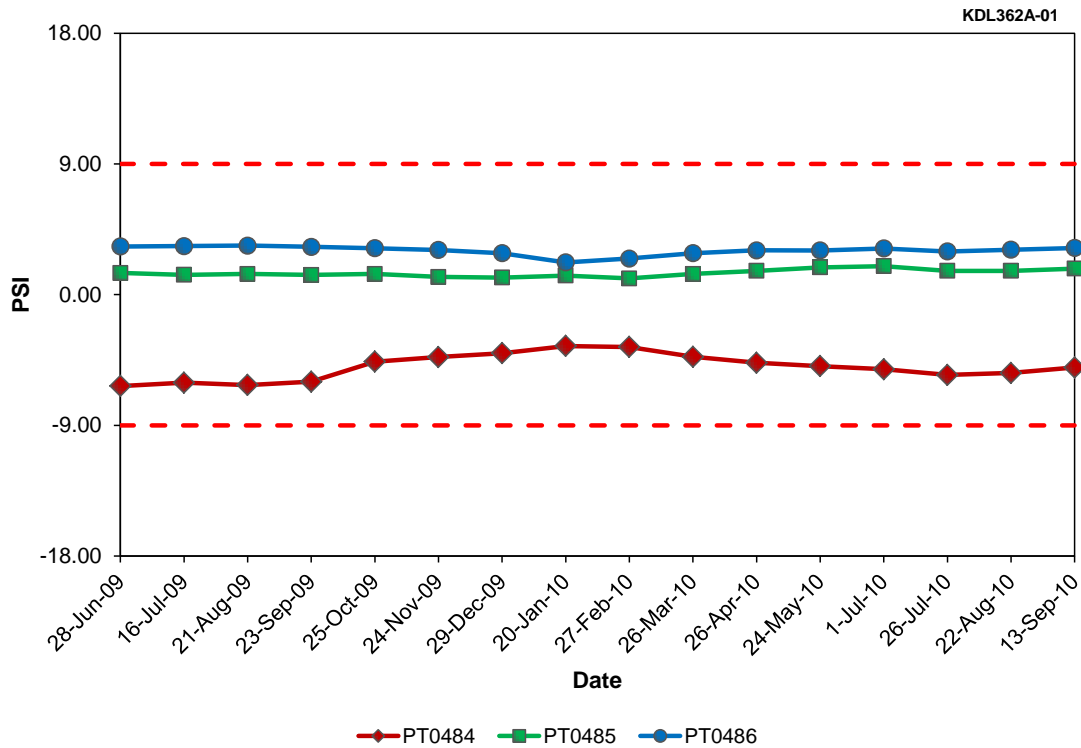


Figure B.44 SG B OUTLET PRESSURE Steady-State Deviation at Farley Unit 1 (Cycle 23)

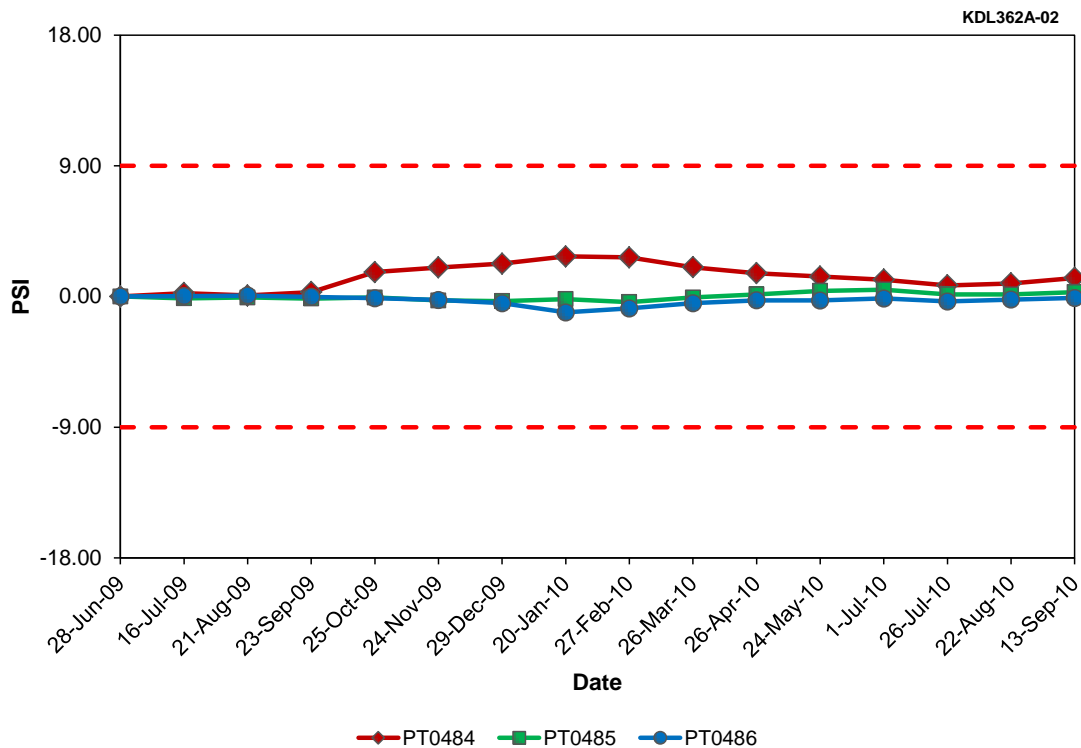


Figure B.45 SG B OUTLET PRESSURE Steady-State Drift at Farley Unit 1 (Cycle 23)

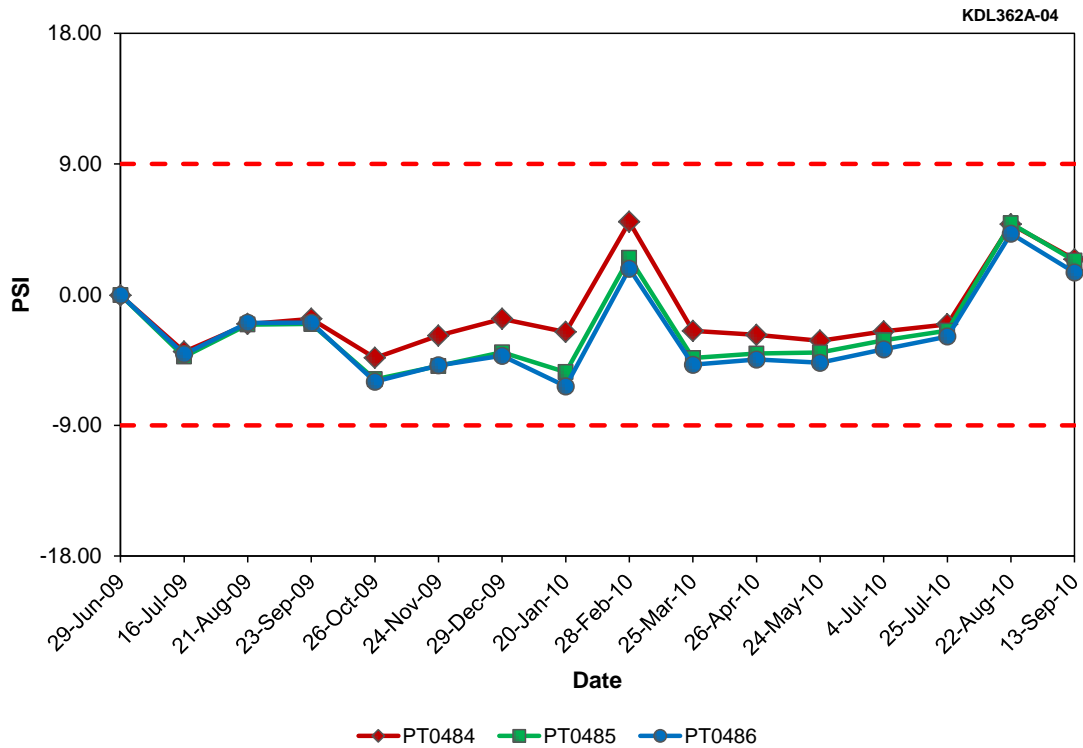


Figure B.46 SG B OUTLET PRESSURE Steady-State Residual AAKR at Farley Unit 1 (Cycle 23)

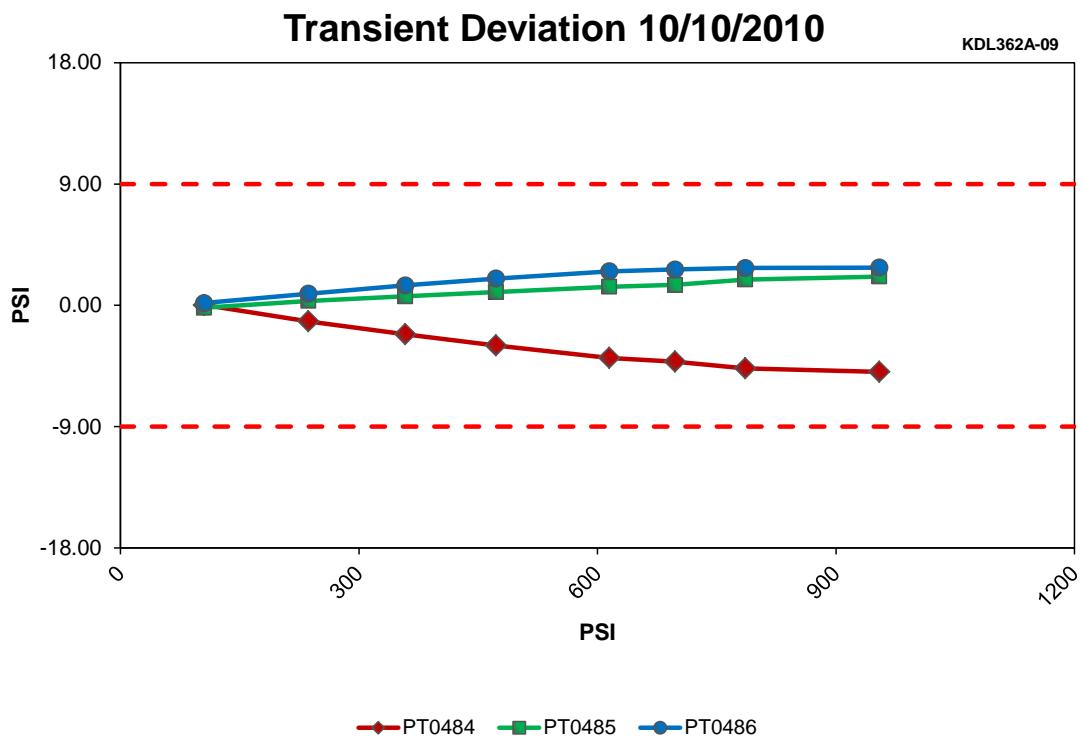
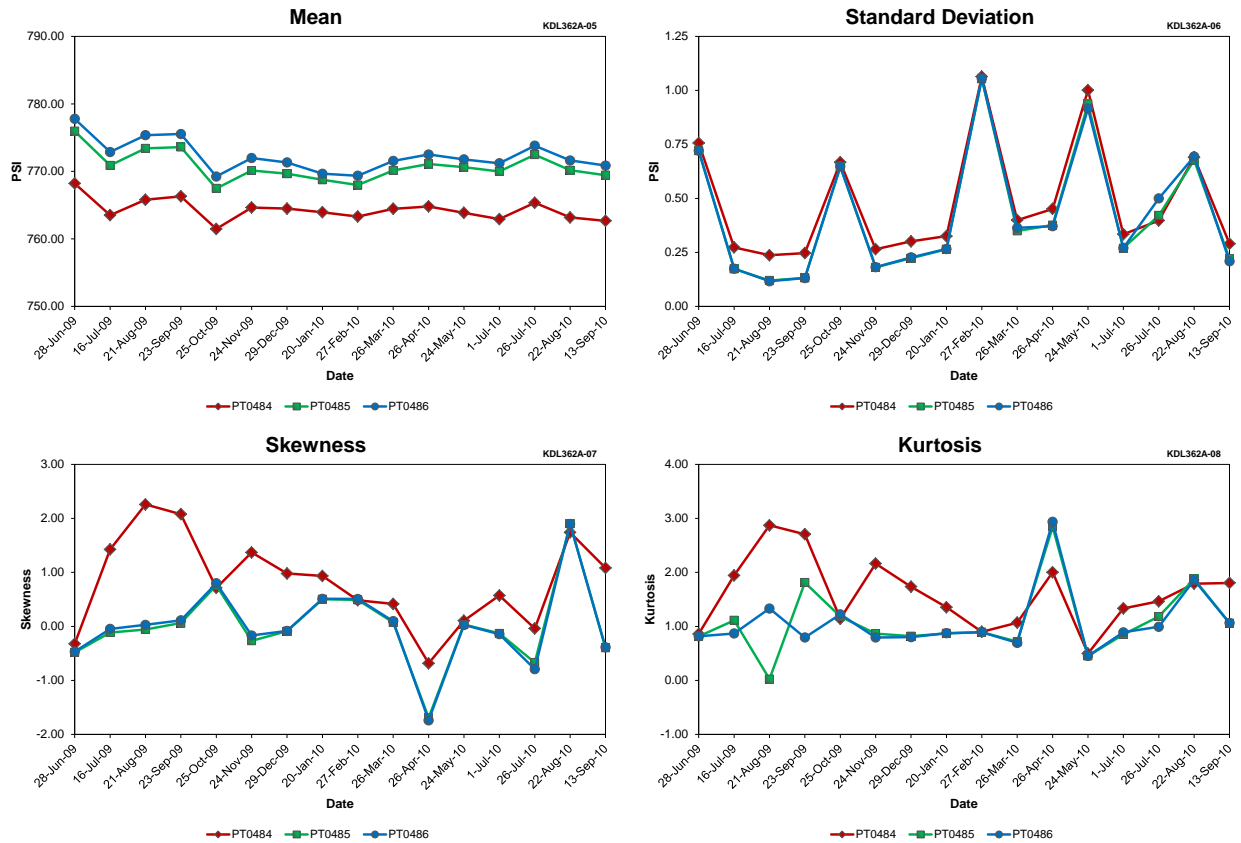


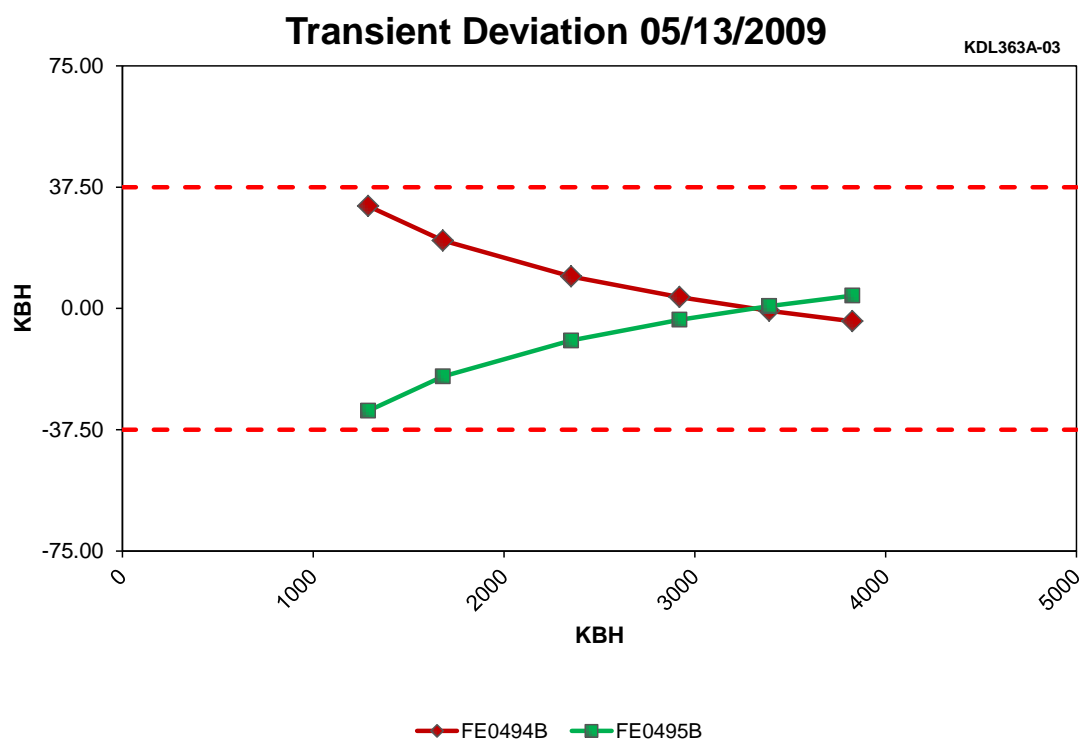
Figure B.47 SG B OUTLET PRESSURE Transient Deviation at Farley Unit 1 (Cycle 23)



**Figure B.48 SG B OUTLET PRESSURE Data Quality Statistics at Farley Unit 1 (Cycle 23)**

**Table B.8 SG B OUTLET PRESSURE Data Quality for Farley Unit 1 (Cycle 23)**

Result Type	Tag Names		
	PT0484	PT0485	PT0486
Mean	764.31	770.73	772.28
Std. Dev.	0.48	0.42	0.43
Skewness	0.82	0.00	0.01
Kurtosis	1.60	1.09	1.08



**Figure B.49 SG C STEAM FLOW Transient Deviation at Farley Unit 1 (Cycle 23)**

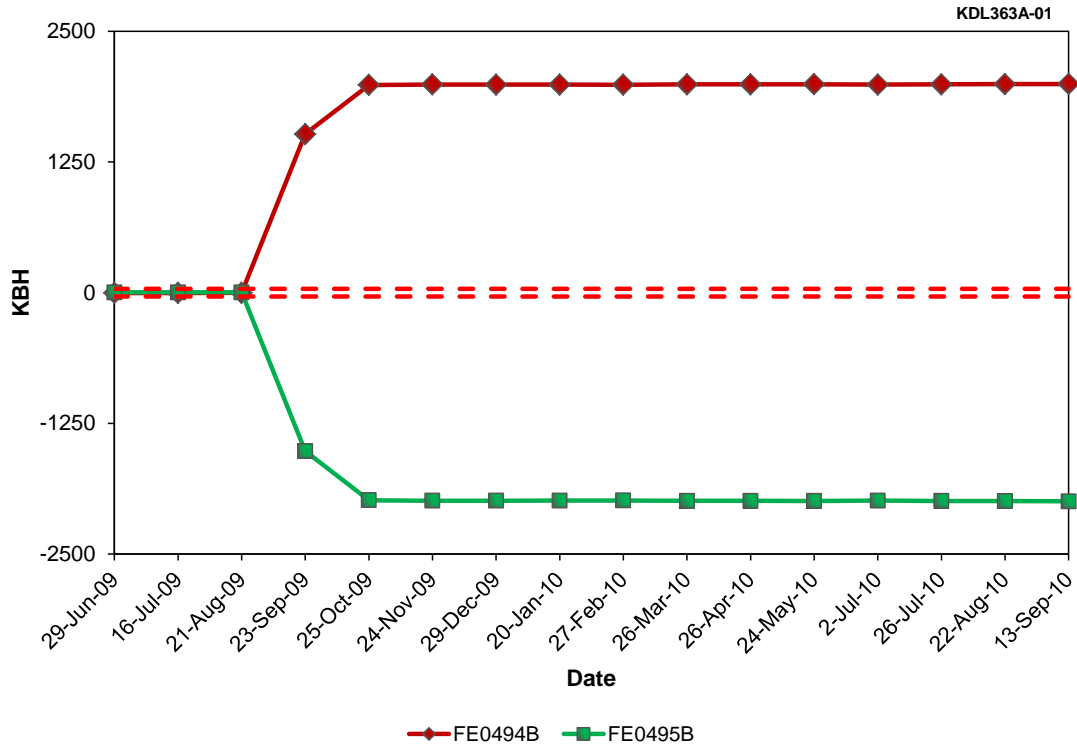


Figure B.50 SG C STEAM FLOW Steady-State Deviation at Farley Unit 1 (Cycle 23)

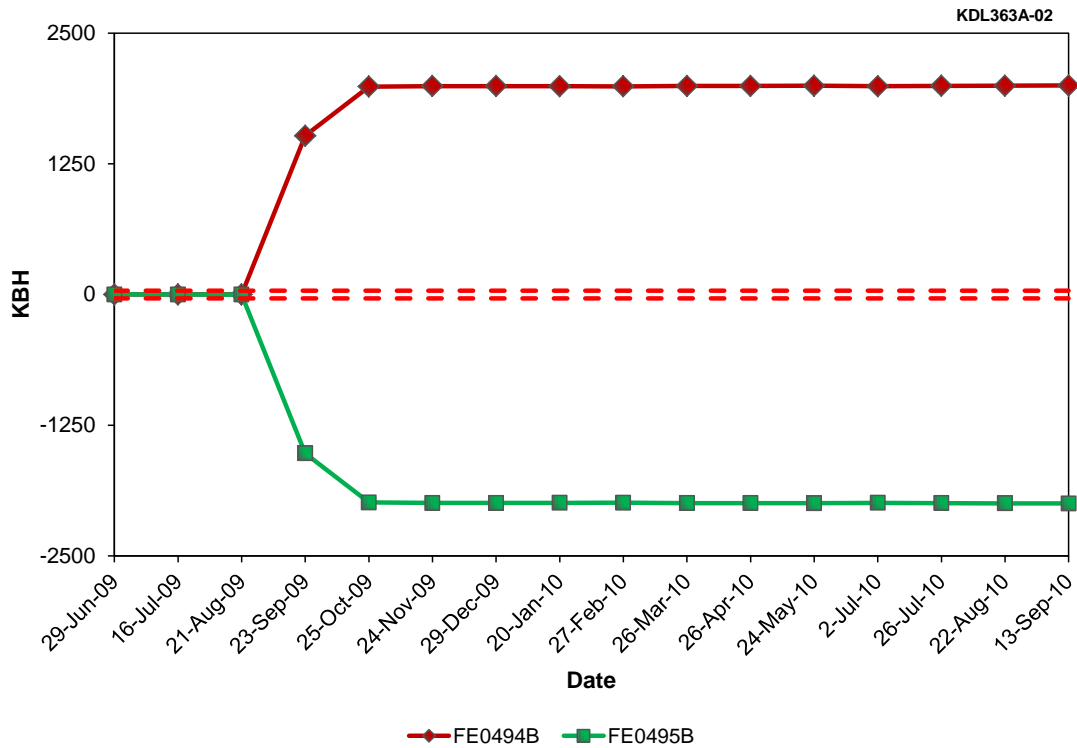


Figure B.51 SG C STEAM FLOW Steady-State Deviation at Farley Unit 1 (Cycle 23)

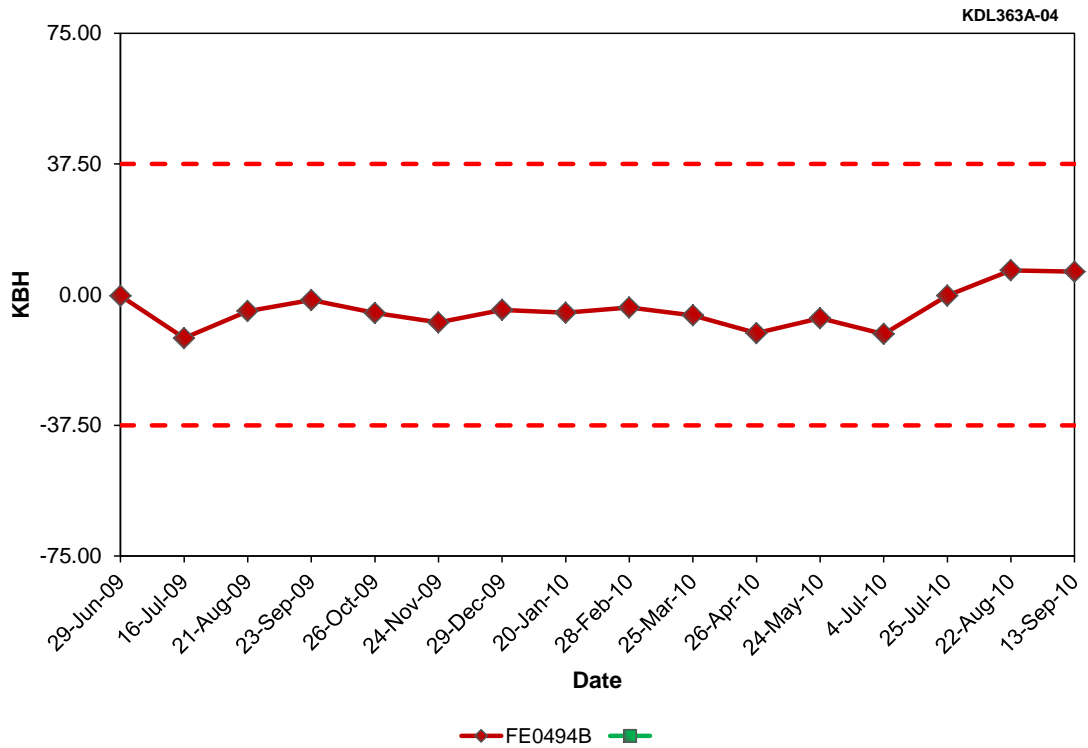


Figure B.52 SG C STEAM FLOW Steady-State Residual AAKR at Farley Unit 1 (Cycle 23)

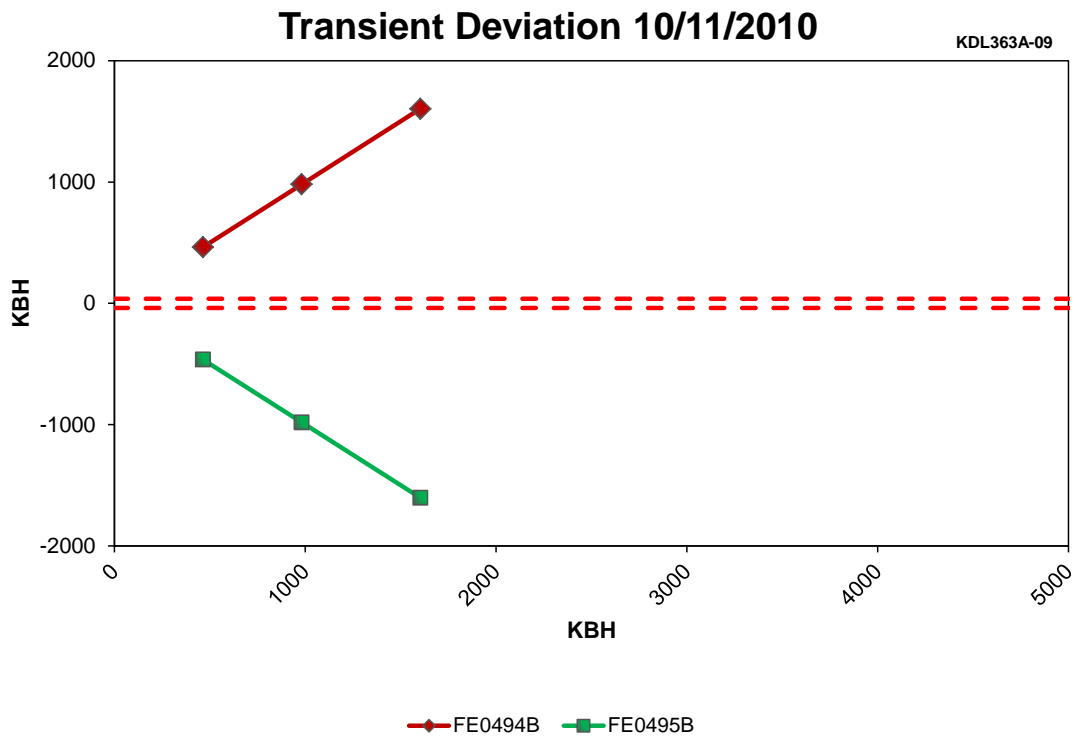
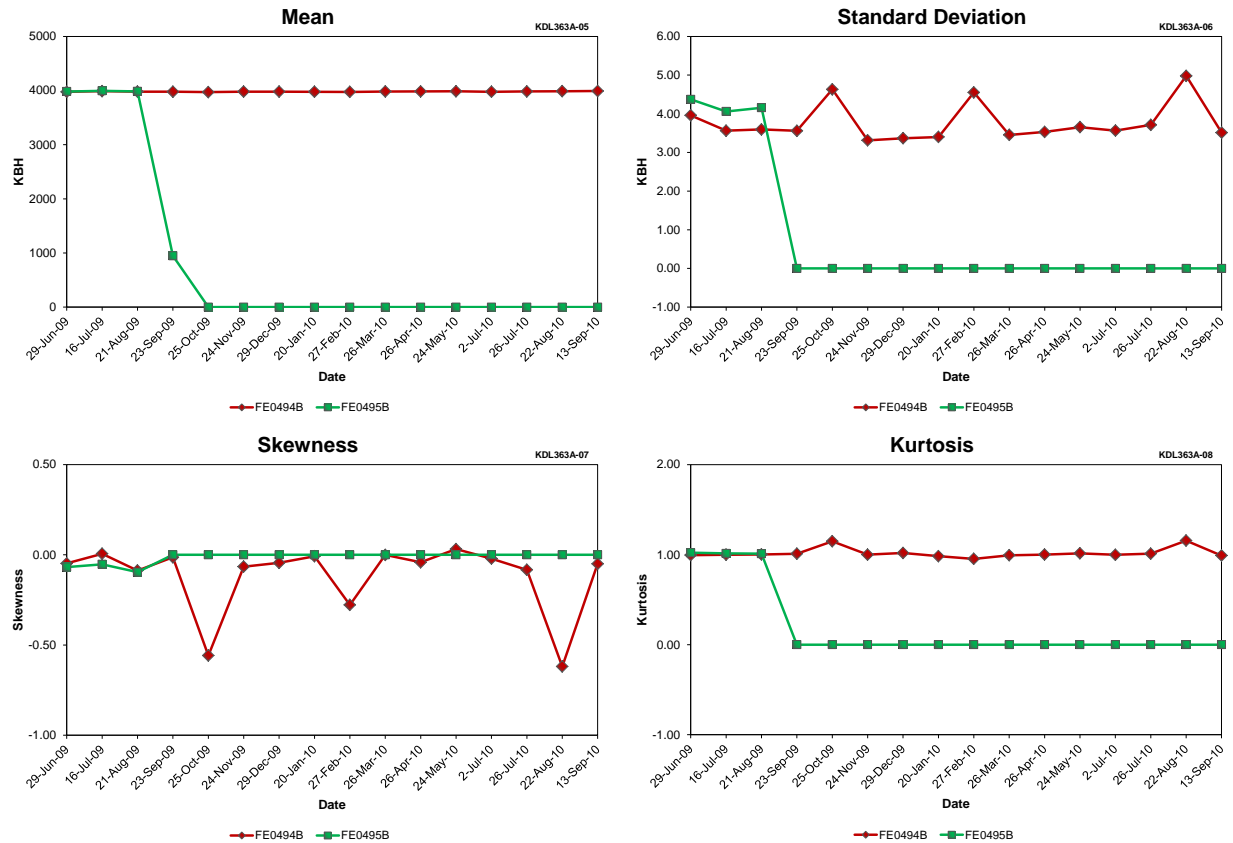


Figure B.53 SG C STEAM FLOW Transient Deviation at Farley Unit 1 (Cycle 23)

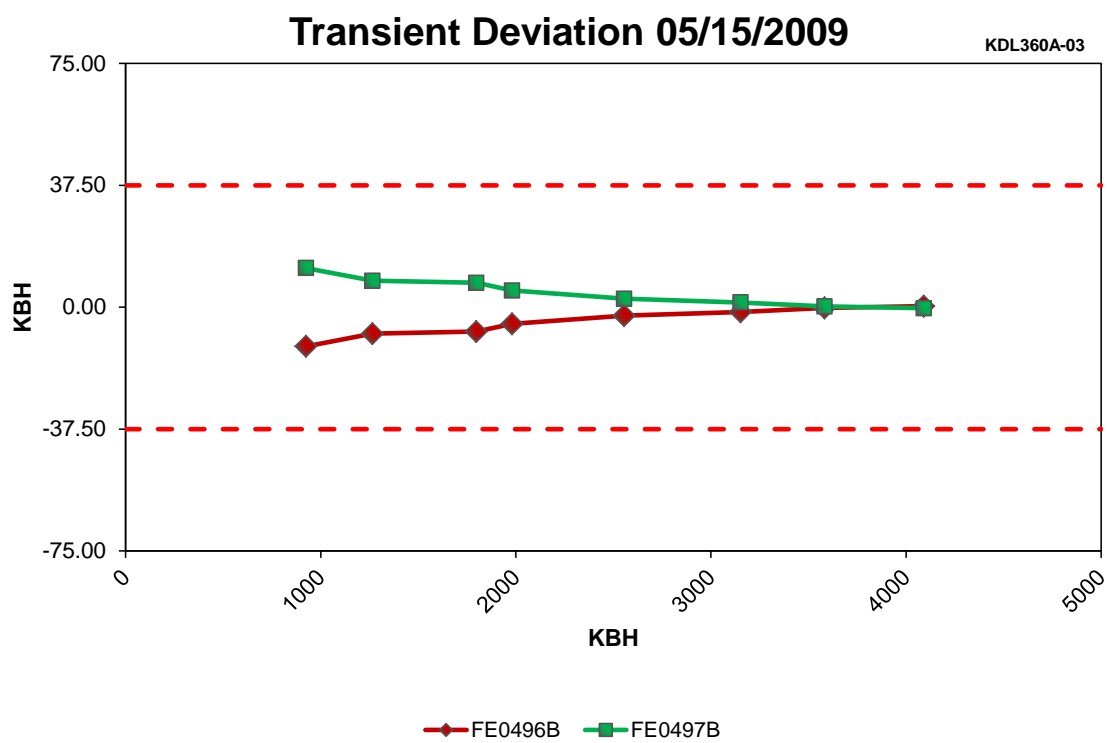




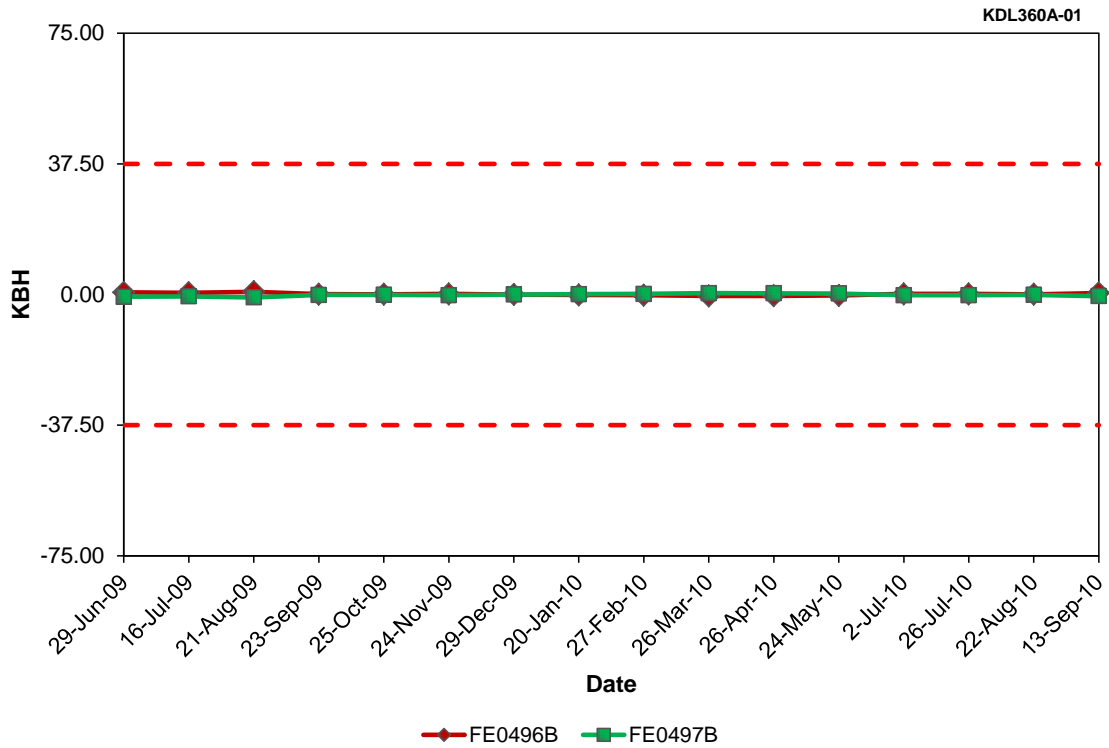
**Figure B.54 SG C STEAM FLOW Data Quality Statistics at Farley Unit 1 (Cycle 23)**

**Table B.9 SG C STEAM FLOW Data Quality for Farley Unit 1 (Cycle 23)**

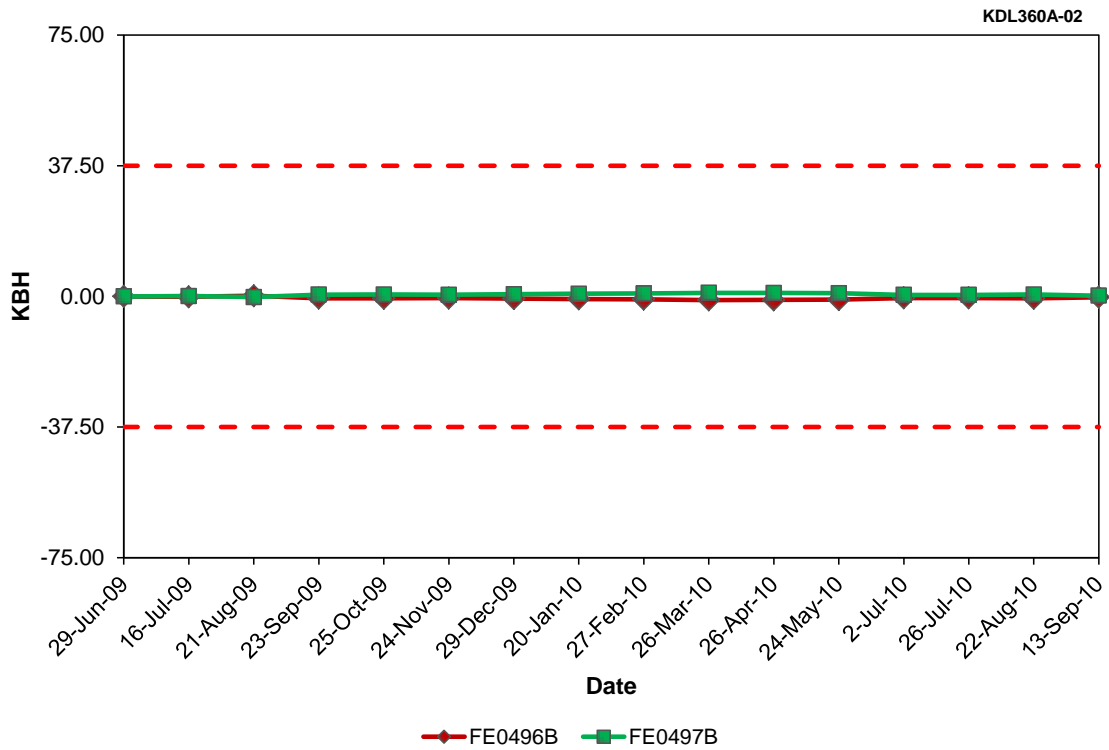
Result Type	Tag Names	
	FE0494B	FE0495B
Mean	3981.28	806.81
Std. Dev.	3.77	0.79
Skewness	-0.12	-0.01
Kurtosis	1.02	0.19



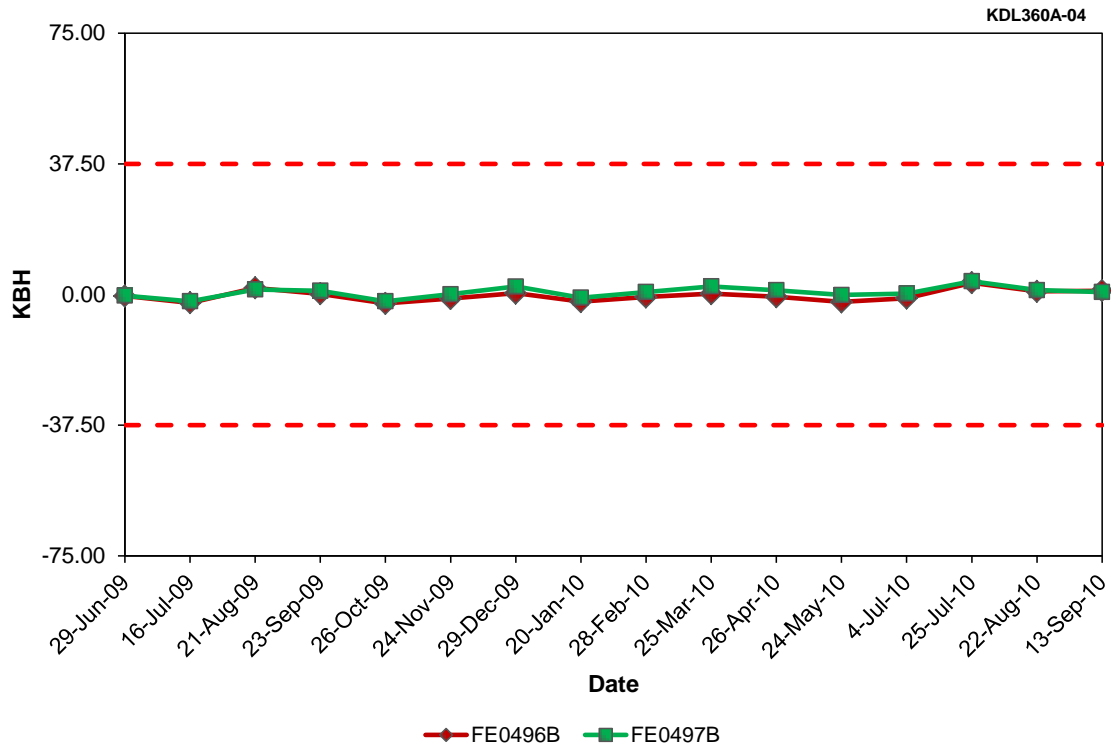
**Figure B.55 FW FLOW TO SG C Transient Deviation at Farley Unit 1 (Cycle 23)**



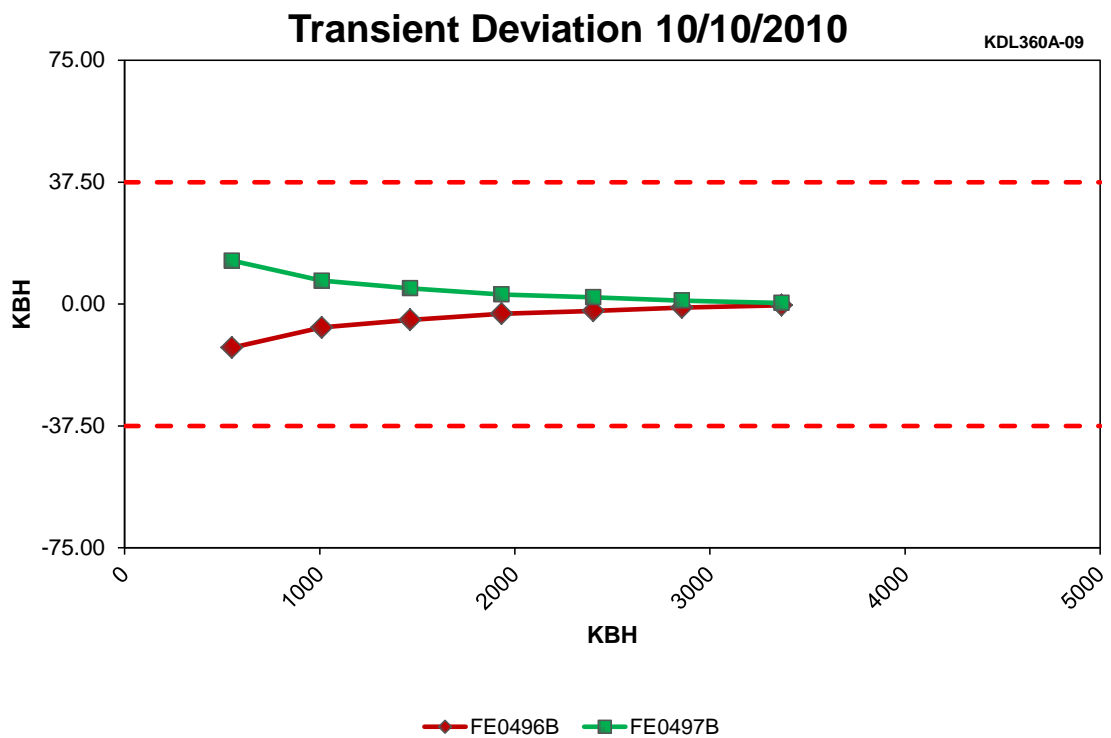
**Figure B.56 FW FLOW TO SG C Steady-State Deviation at Farley Unit 1 (Cycle 23)**



**Figure B.57 FW FLOW TO SG C Steady-State Drift at Farley Unit 1 (Cycle 23)**



**Figure B.58 FW FLOW TO SG C Steady-State Residual AAKR at Farley Unit 1 (Cycle 23)**



**Figure B.59 FW FLOW TO SG C Transient Deviation at Farley Unit 1 (Cycle 23)**

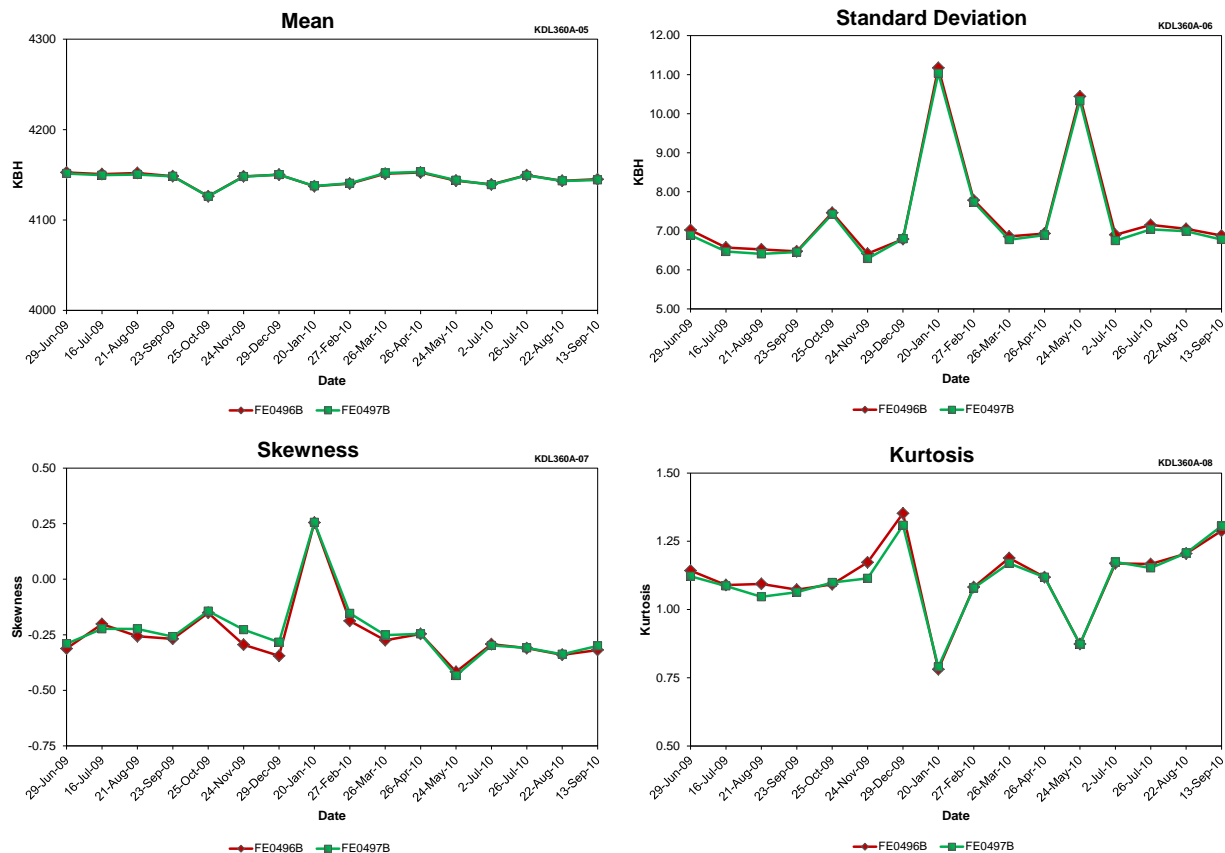
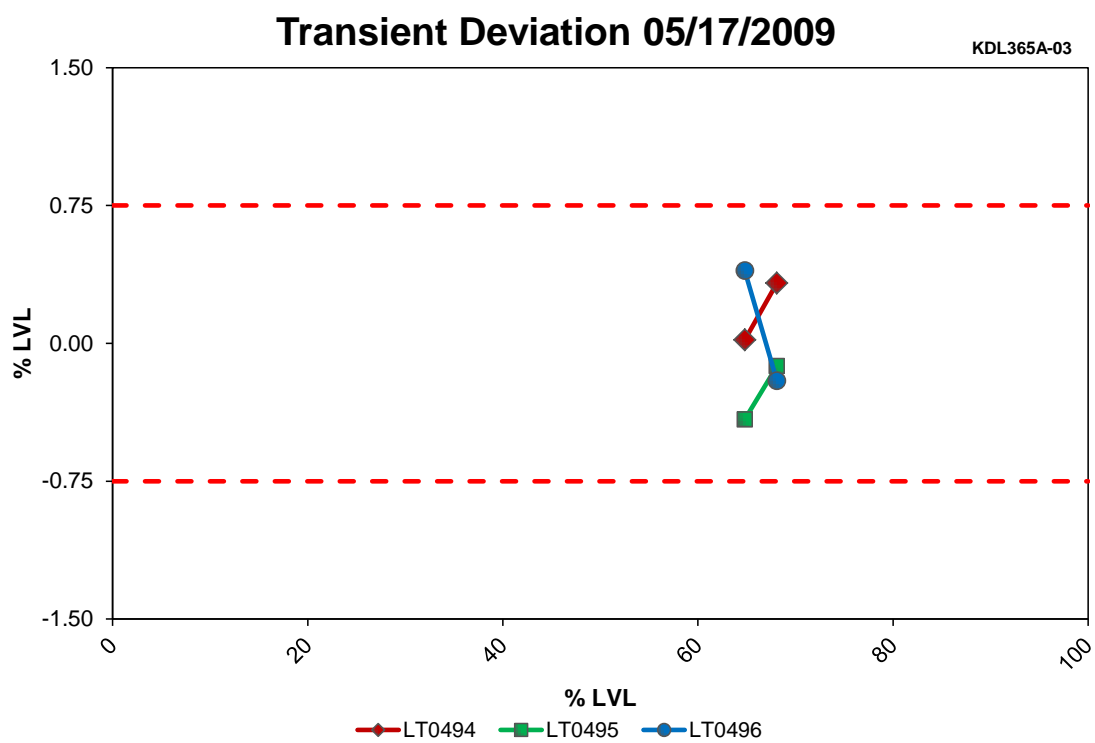


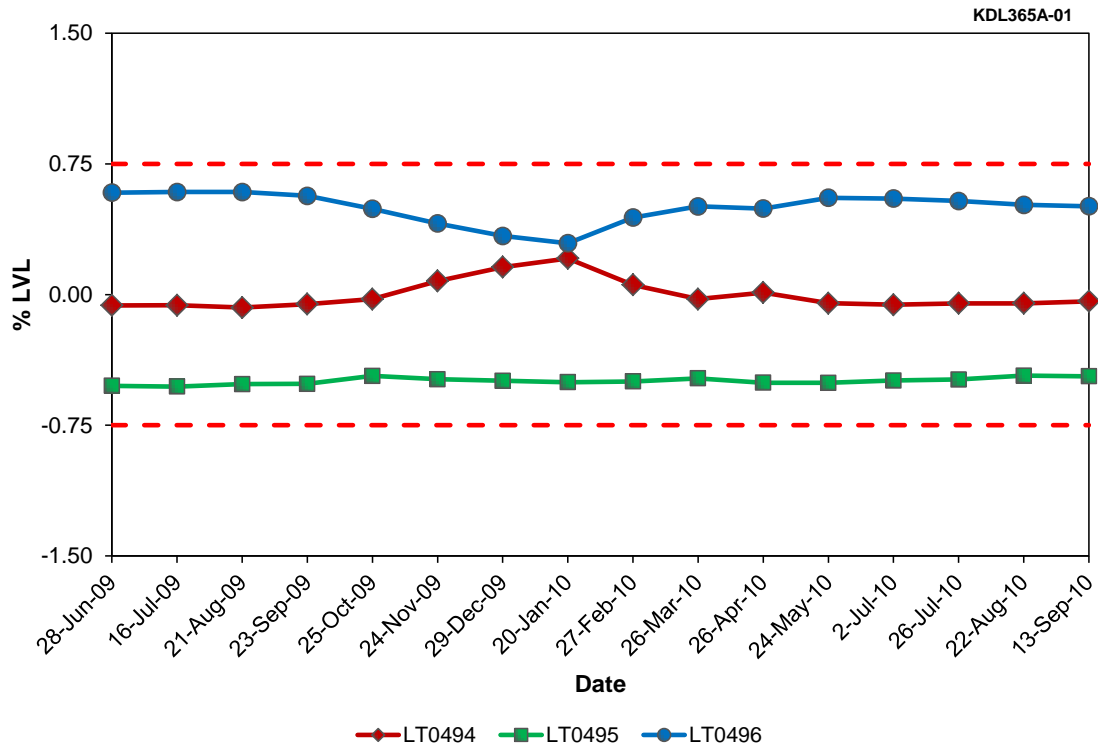
Figure B.60 FW FLOW TO SG C Data Quality Statistics at Farley Unit 1 (Cycle 23)

Table B.10 FW FLOW TO SG C Data Quality for Farley Unit 1 (Cycle 23)

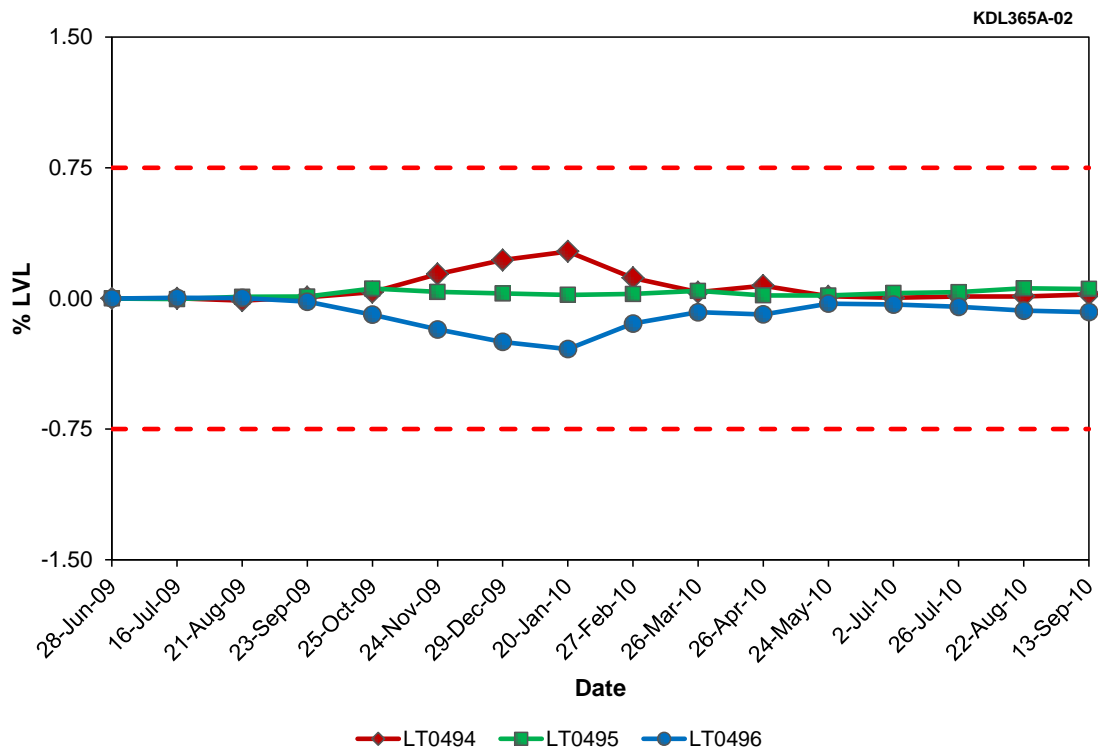
Result Type	Tag Names	
	FE0496B	FE0497B
Mean	4145.70	4145.46
Std. Dev.	7.40	7.31
Skewness	-0.25	-0.23
Kurtosis	1.12	1.11



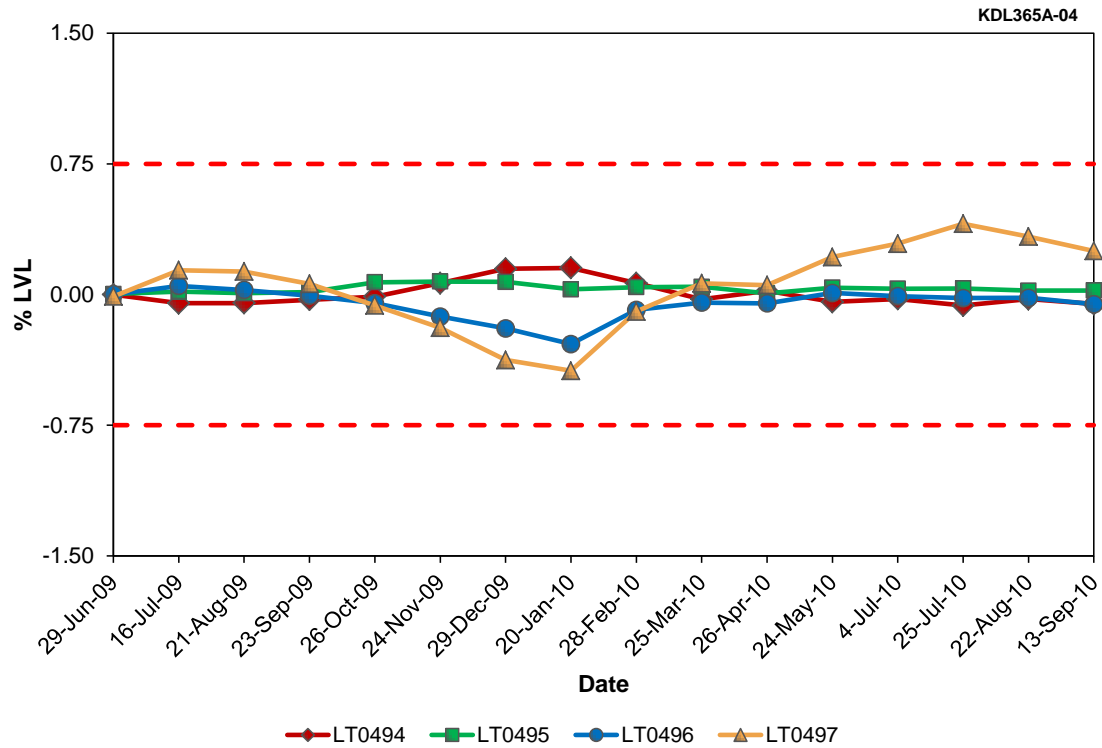
**Figure B.61 SG C LEVEL Transient Deviation at Farley Unit 1 (Cycle 23)**



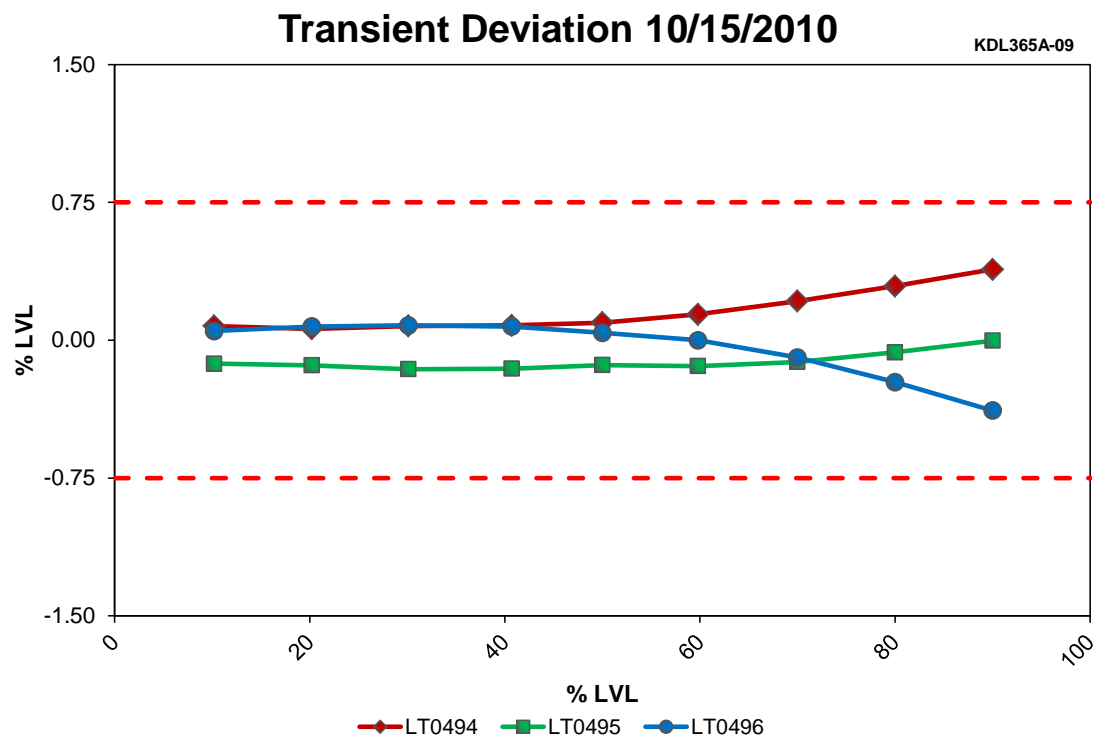
**Figure B.62 SG C LEVEL Steady-State Deviation at Farley Unit 1 (Cycle 23)**



**Figure B.63 SG C LEVEL Steady-State Drift at Farley Unit 1 (Cycle 23)**



**Figure B.64 SG C LEVEL Steady-State Residual AAKR at Farley Unit 1 (Cycle 23)**



**Figure B.65 SG C LEVEL Transient Deviation at Farley Unit 1 (Cycle 23)**



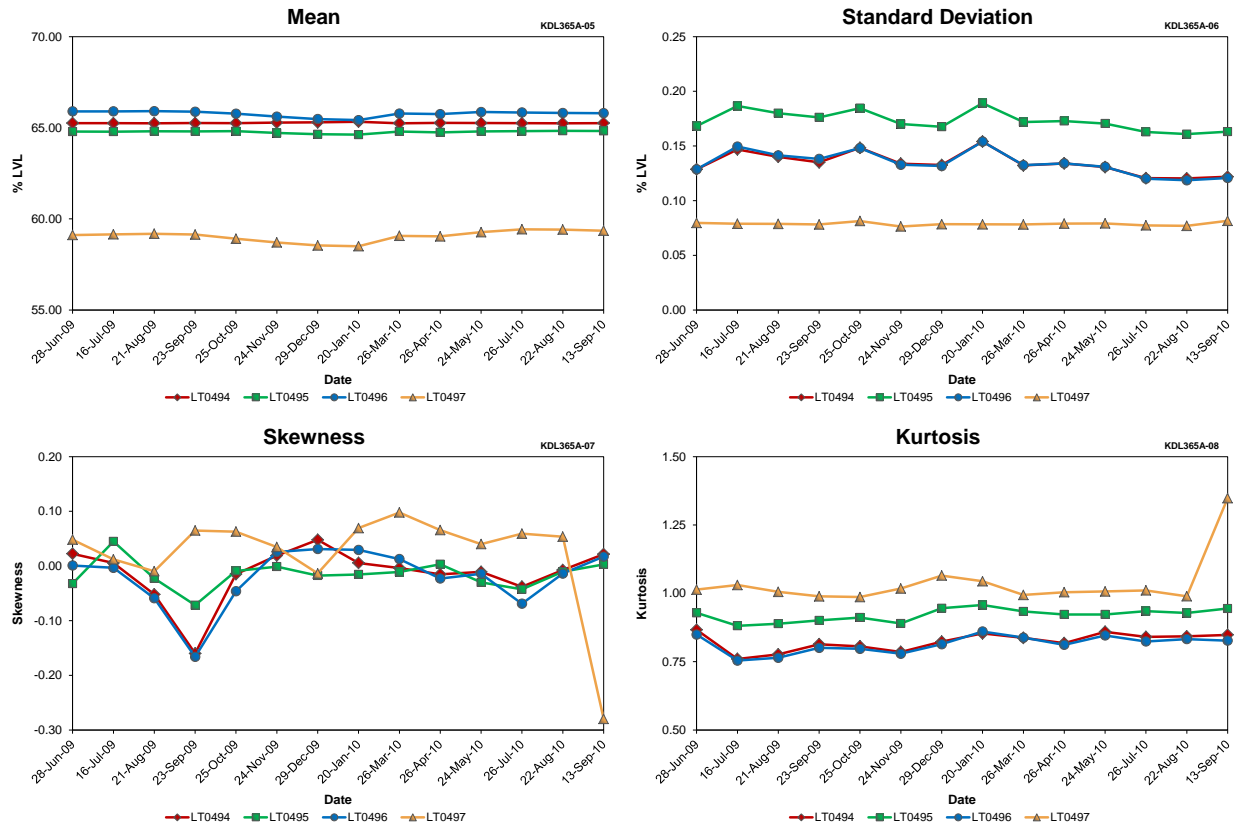


Figure B.66 SG C LEVEL Data Quality Statistics at Farley Unit 1 (Cycle 23)

Table B.11 SG C LEVEL Data Quality for Farley Unit 1 (Cycle 23)

Result Type	Tag Names			
	LT0494	LT0495	LT0496	LT0497
Mean	65.26	64.77	65.77	59.06
Std. Dev.	0.13	0.17	0.13	0.08
Skewness	-0.01	-0.02	-0.02	0.02
Kurtosis	0.82	0.92	0.81	1.04

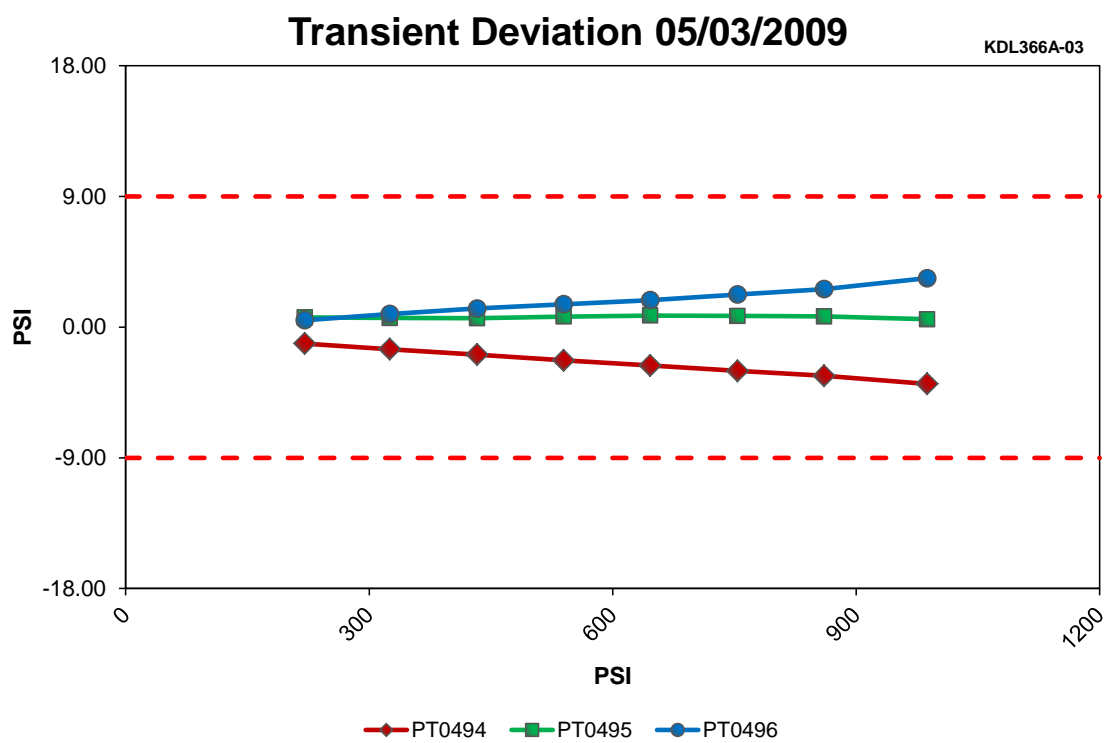
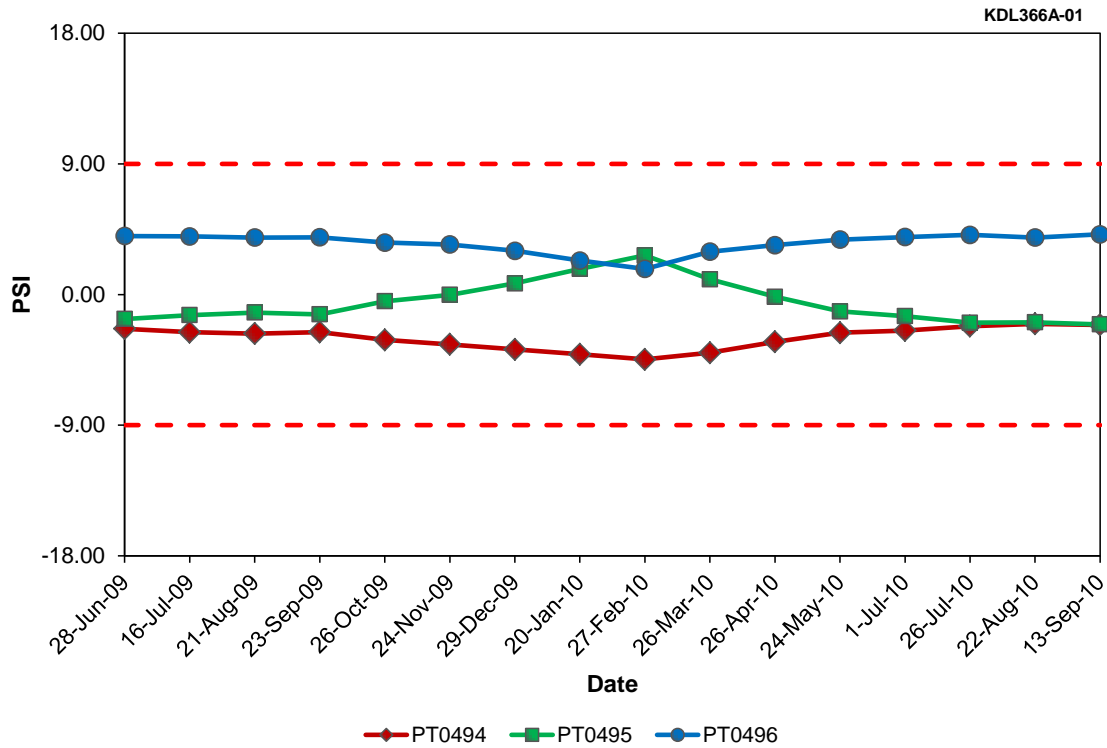
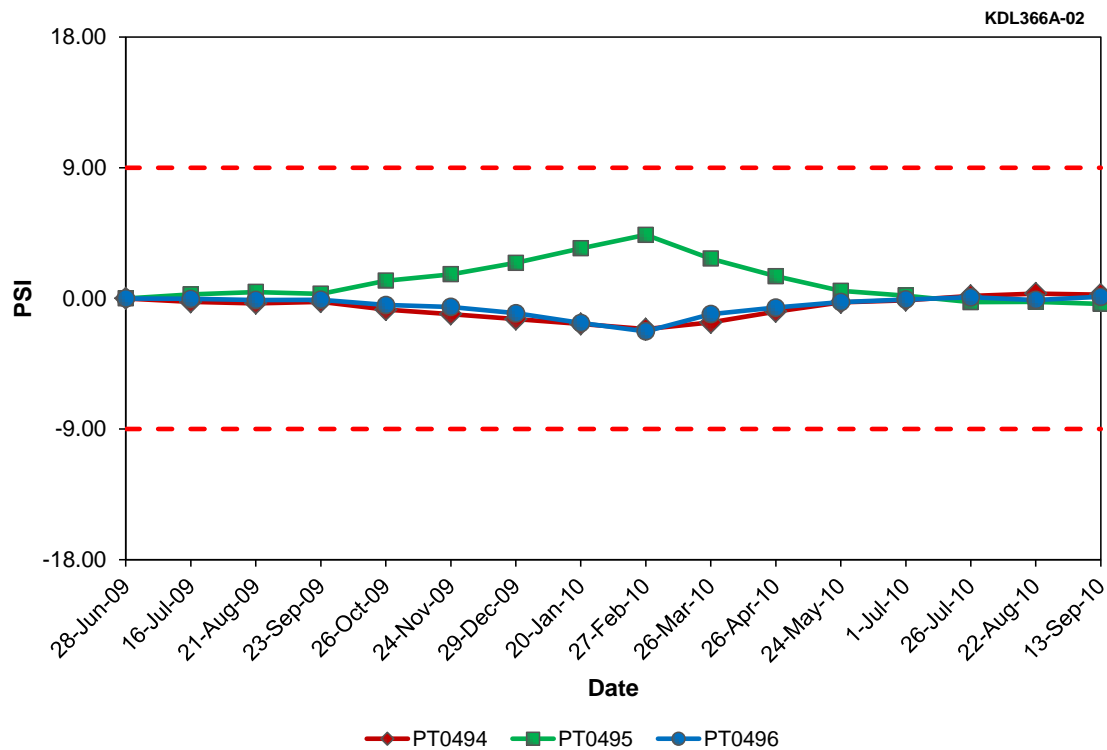


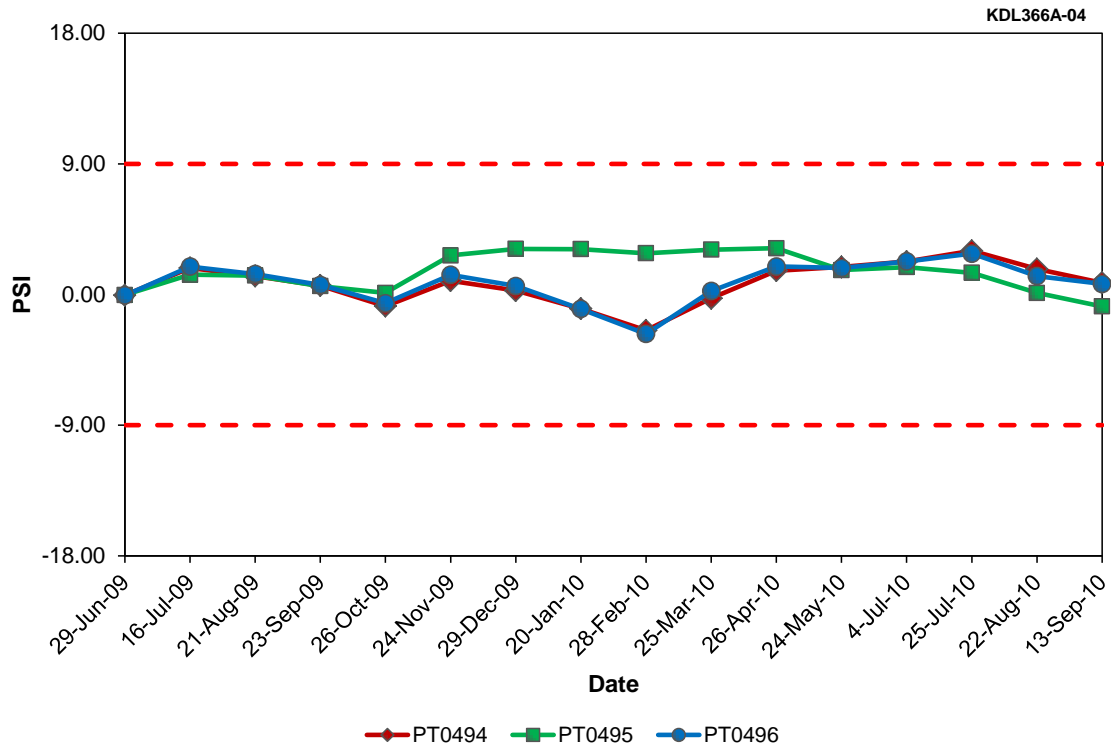
Figure B.67 SG C OUTLET PRESSURE Transient Deviation at Farley Unit 1 (Cycle 23)



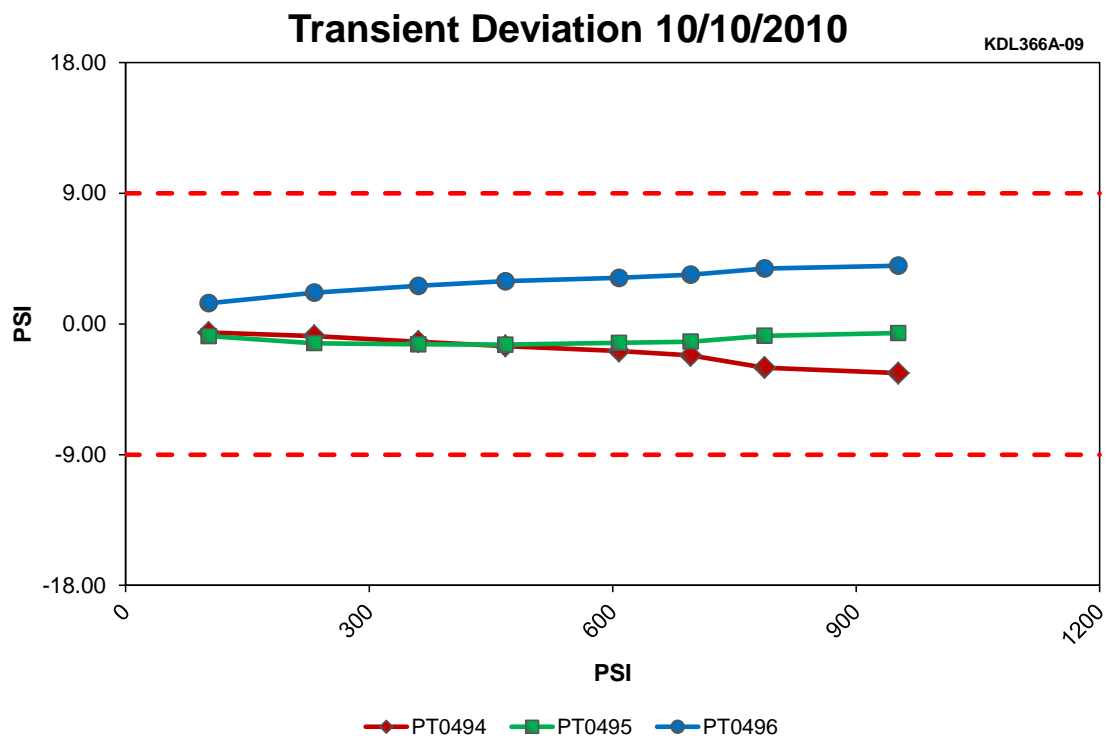
**Figure B.68 SG C OUTLET PRESSURE Steady-State Deviation at Farley Unit 1 (Cycle 23)**



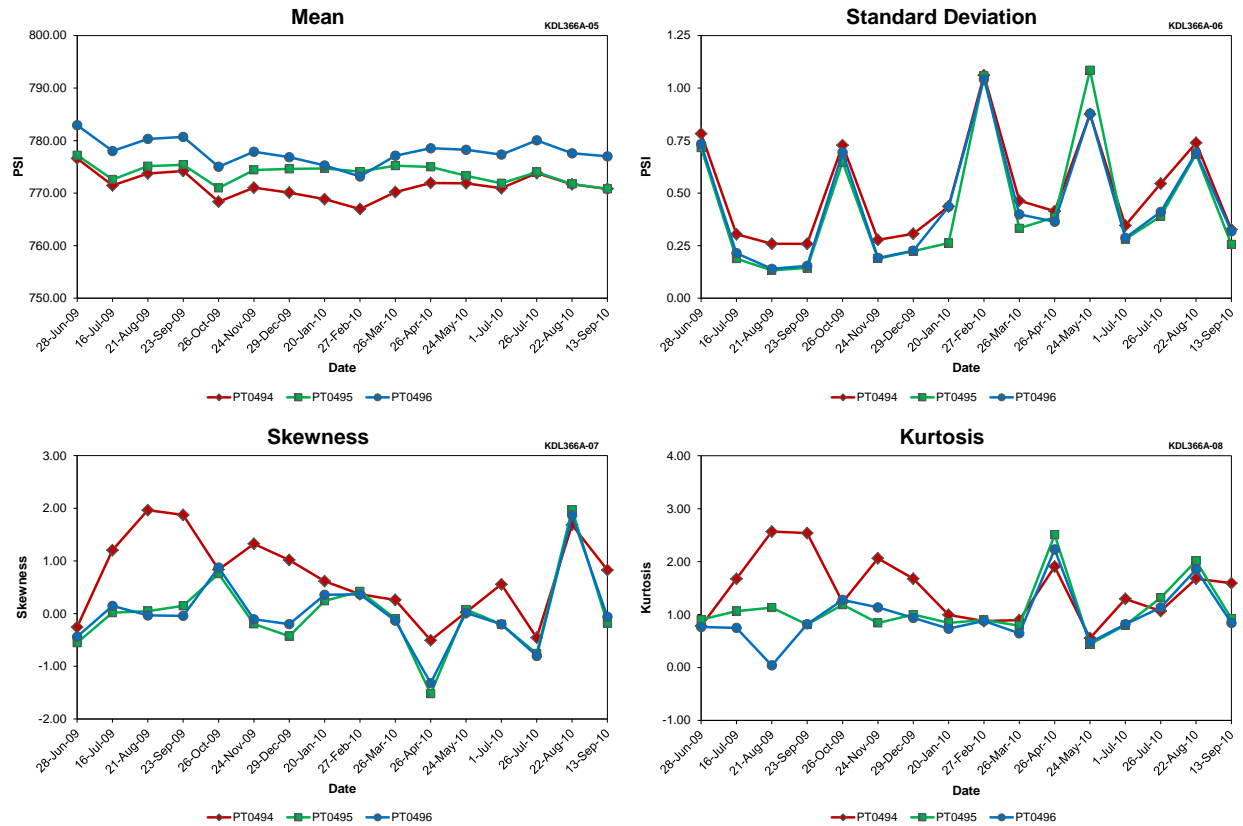
**Figure B.69 SG C OUTLET PRESSURE Steady-State Drift at Farley Unit 1 (Cycle 23)**



**Figure B.70 SG C OUTLET PRESSURE Steady-State Residual AAKR at Farley Unit 1 (Cycle 23)**



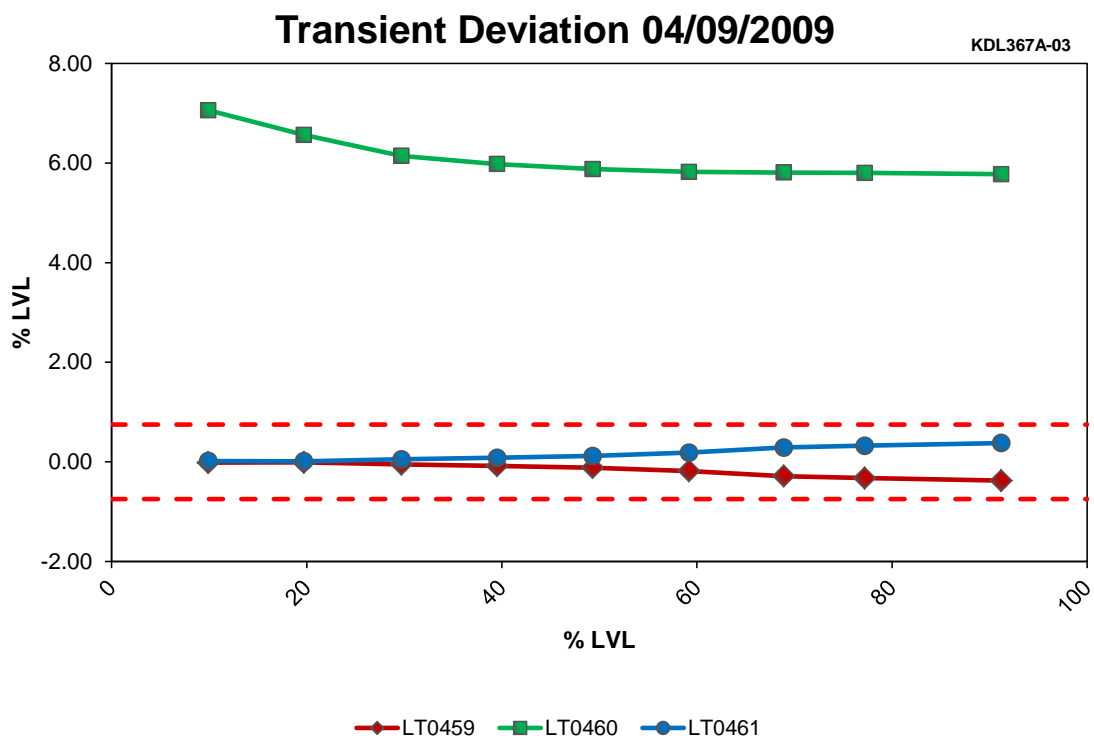
**Figure B.71 SG C OUTLET PRESSURE Transient Deviation at Farley Unit 1 (Cycle 23)**



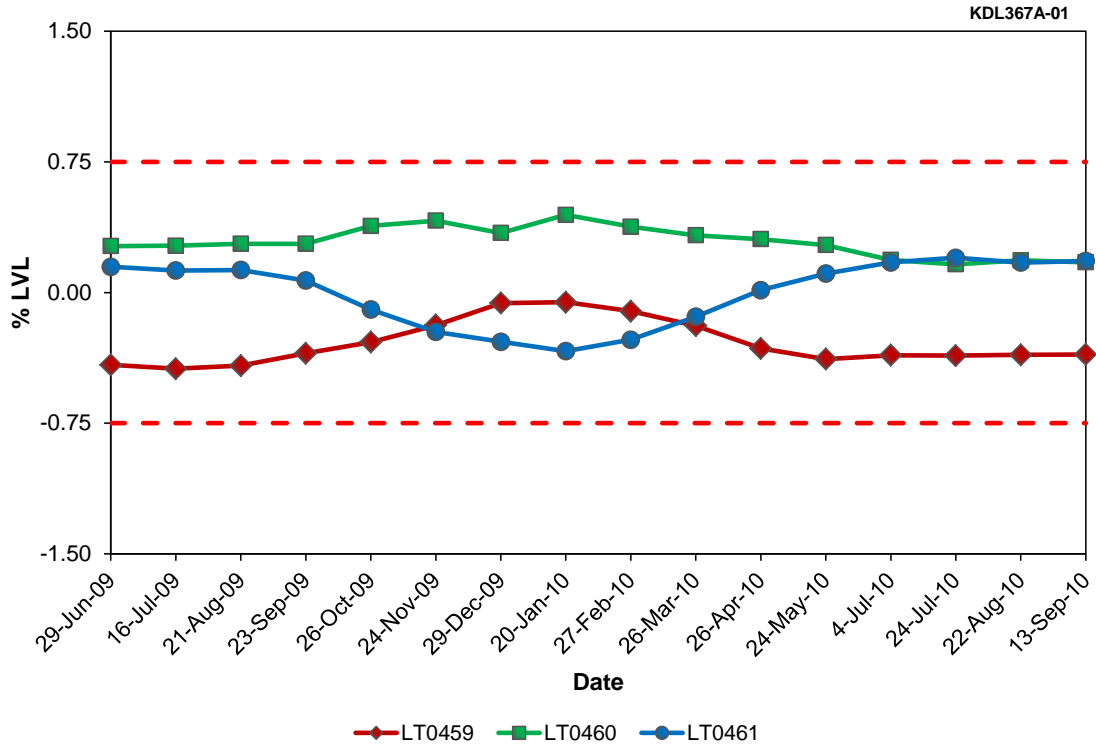
**Figure B.72 SG C OUTLET PRESSURE Data Quality Statistics at Farley Unit 1 (Cycle 23)**

**Table B.12 SG C OUTLET PRESSURE Data Quality for Farley Unit 1 (Cycle 23)**

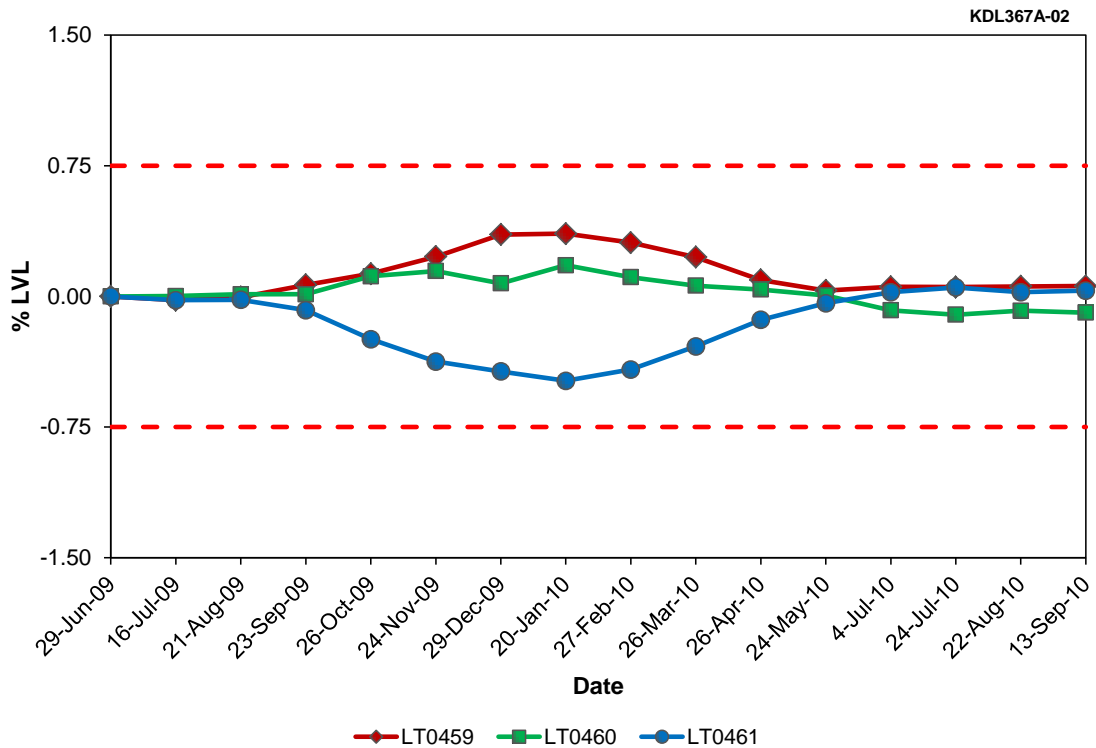
Result Type	Tag Names		
	PT0494	PT0495	PT0496
Mean	771.42	773.82	777.88
Std. Dev.	0.51	0.44	0.45
Skewness	0.71	-0.02	0.02
Kurtosis	1.46	1.09	0.96



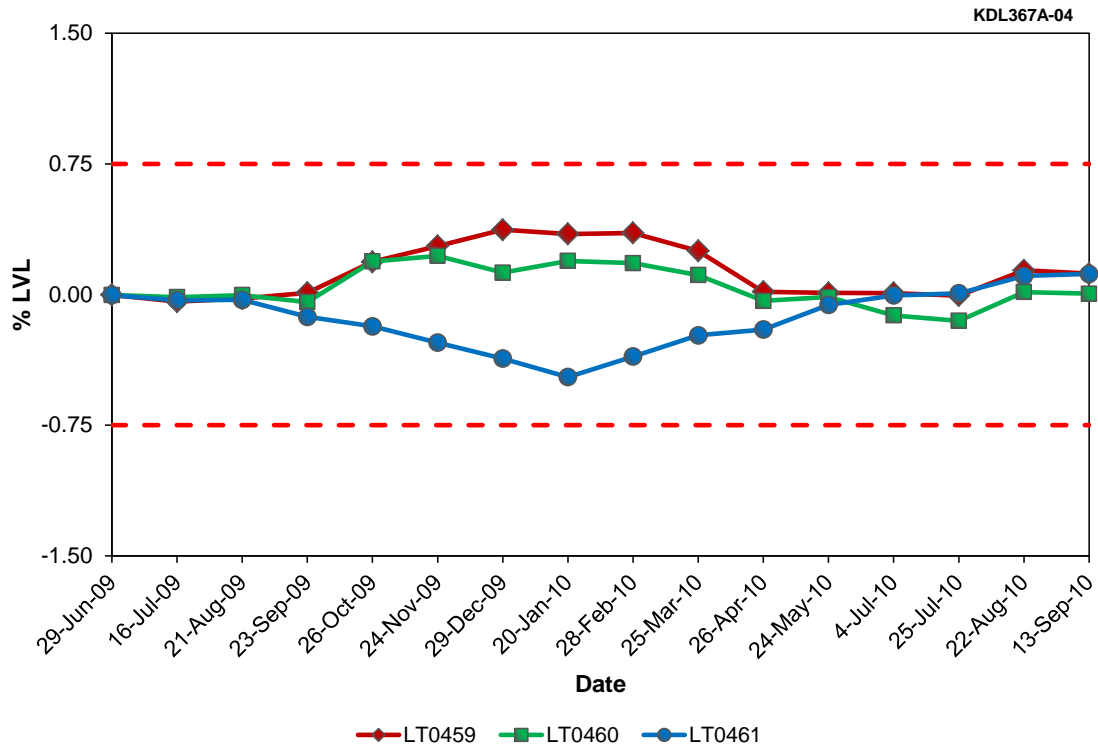
**Figure B.73 PRESSURIZER LEVEL Transient Deviation at Farley Unit 1 (Cycle 23)**



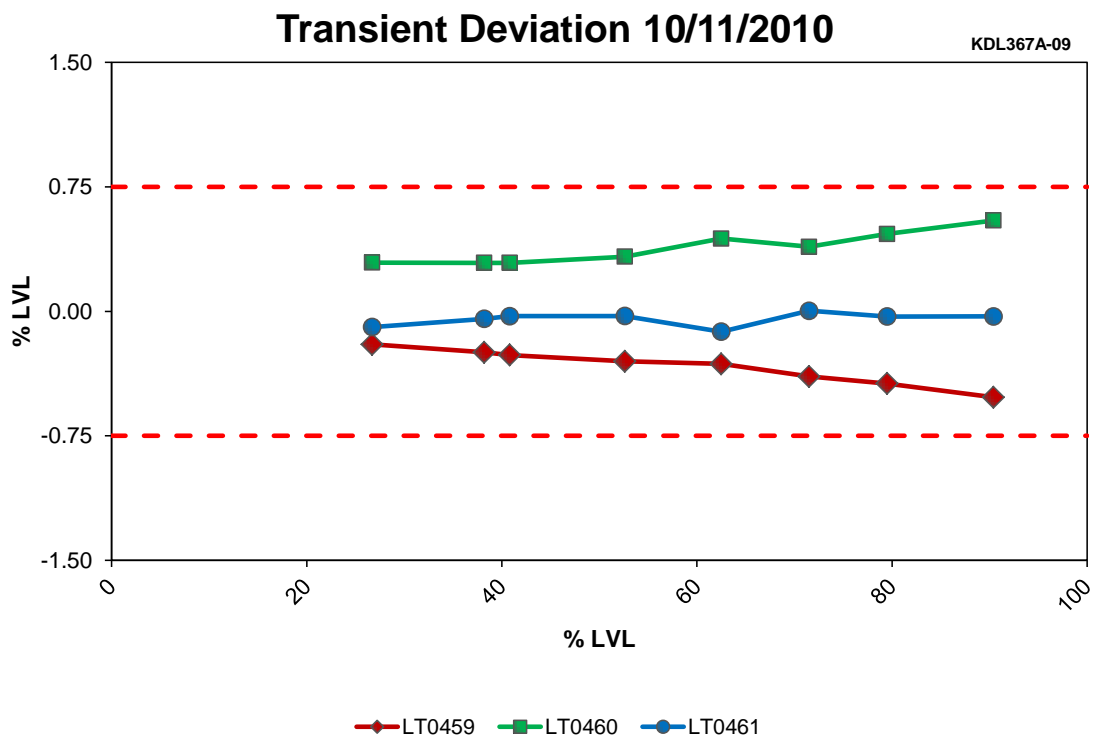
**Figure B.74 PRESSURIZER LEVEL Steady-State Deviation at Farley Unit 1 (Cycle 23)**



**Figure B.75 PRESSURIZER LEVEL Steady-State Drift at Farley Unit 1 (Cycle 23)**



**Figure B.76 PRESSURIZER LEVEL Steady-State Residual AAKR at Farley Unit 1 (Cycle 23)**



**Figure B.77 PRESSURIZER LEVEL Transient Deviation at Farley Unit 1 (Cycle 23)**



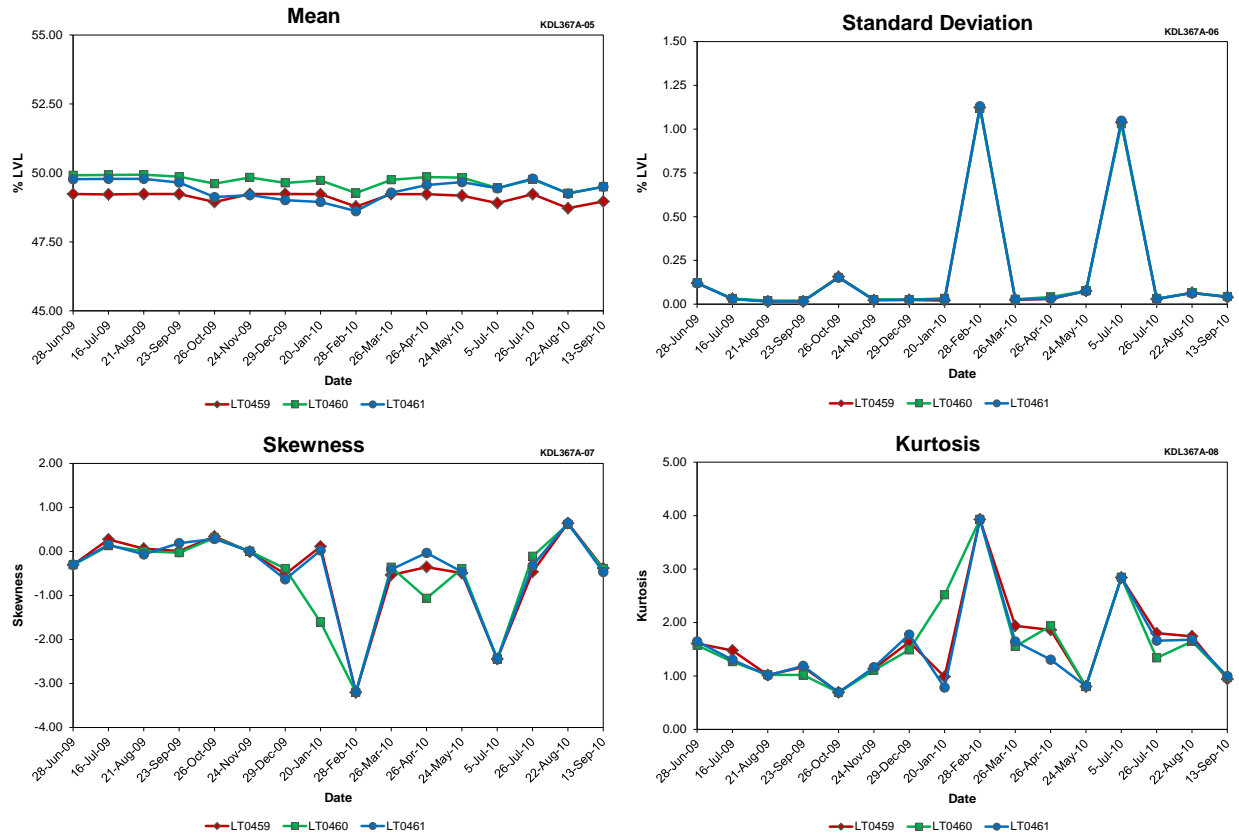
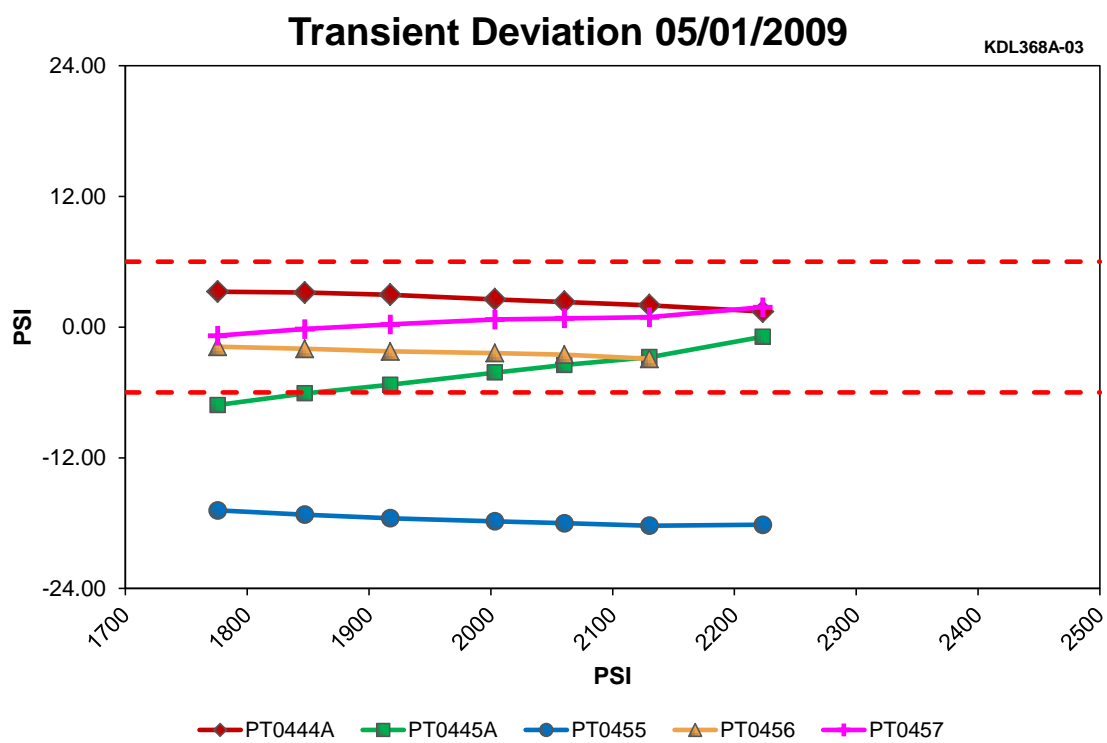


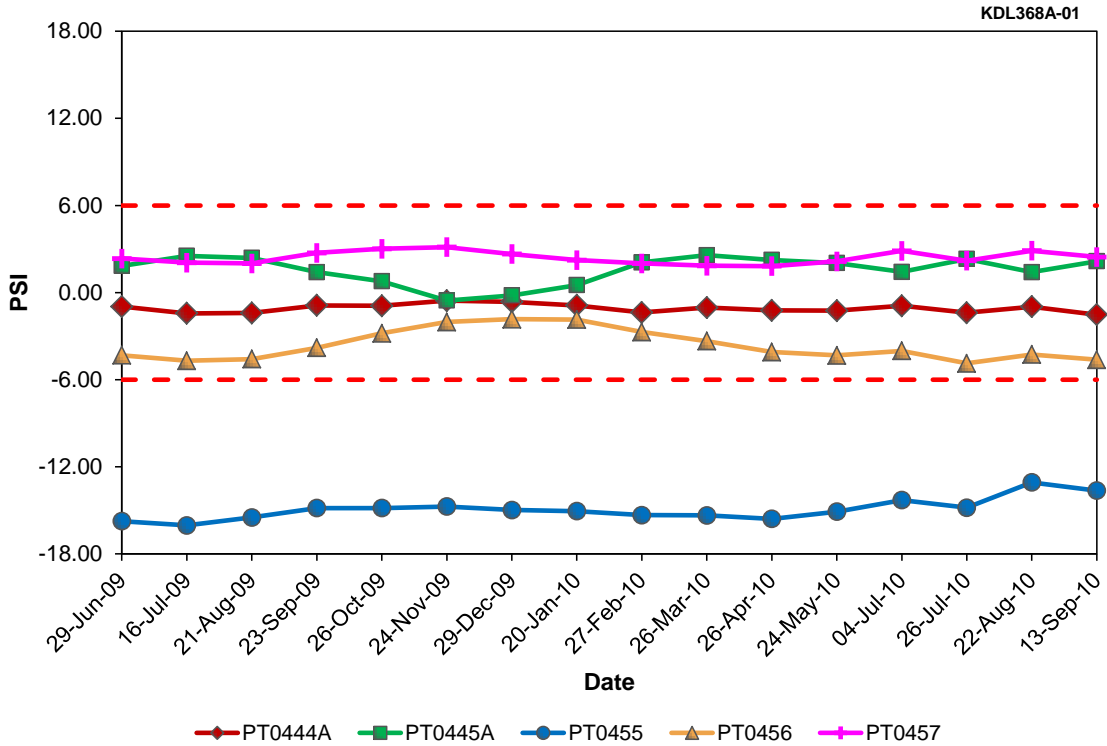
Figure B.78 PRESSURIZER LEVEL Data Quality Statistics at Farley Unit 1 (Cycle 23)

Table B.13 PRESSURIZER LEVEL Data Quality for Farley Unit 1 (Cycle 23)

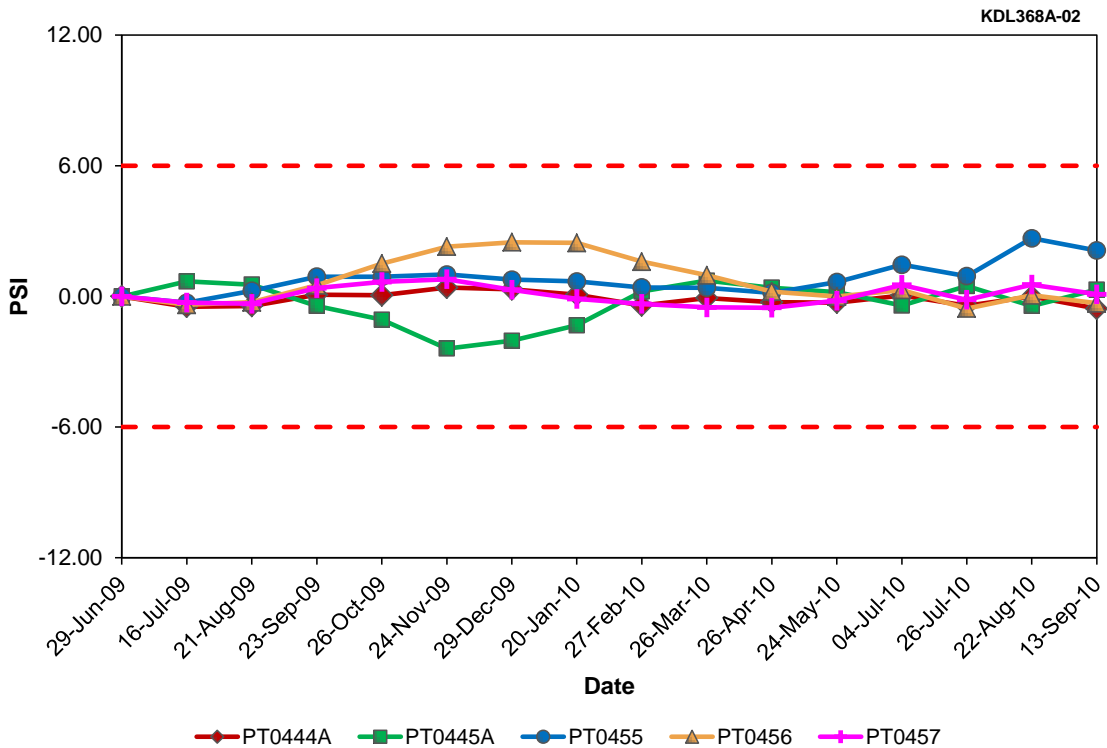
Result Type	Tag Names		
	LT0459	LT0460	LT0461
Mean	49.11	49.70	49.40
Std. Dev.	0.18	0.18	0.18
Skewness	-0.45	-0.58	-0.44
Kurtosis	1.60	1.61	1.53



**Figure B.79 PRESSURIZER PRESSURE Transient Deviation at Farley Unit 1 (Cycle 23)**



**Figure B.80 PRESSURIZER PRESSURE Steady-State Deviation at Farley Unit 1 (Cycle 23)**



**Figure B.81 PRESSURIZER PRESSURE Steady-State Drift at Farley Unit 1 (Cycle 23)**

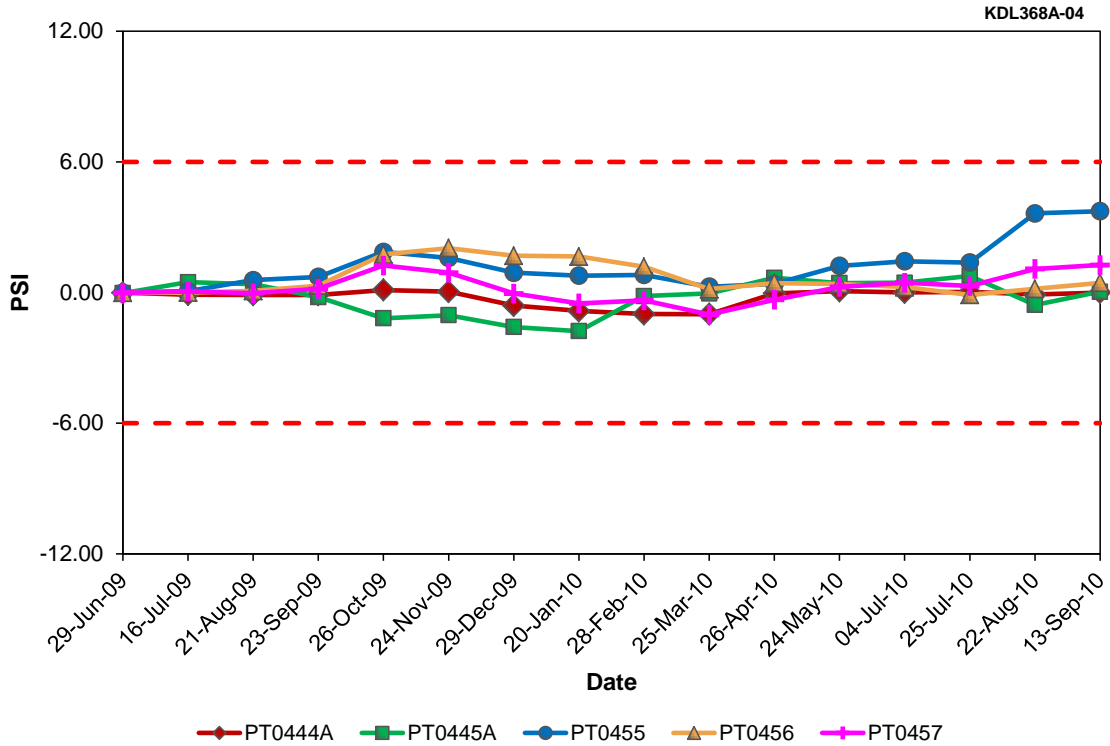


Figure B.82 PRESSURIZER PRESSURE Steady-State Residual AAKR at Farley Unit 1 (Cycle 23)

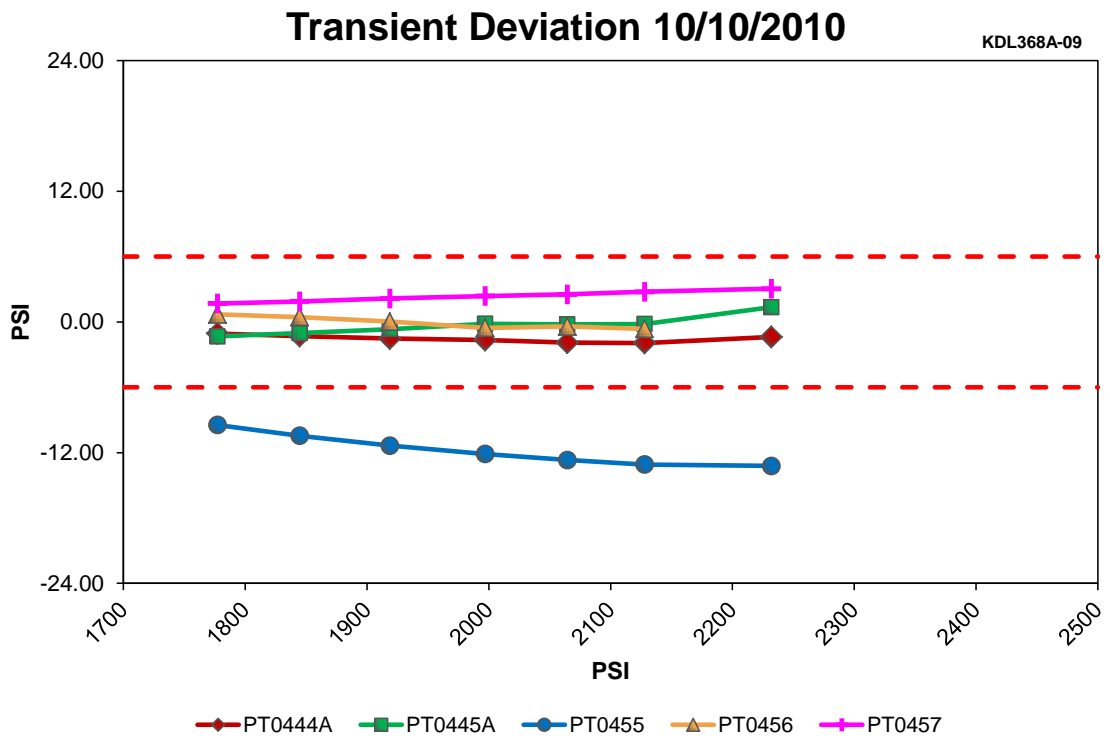
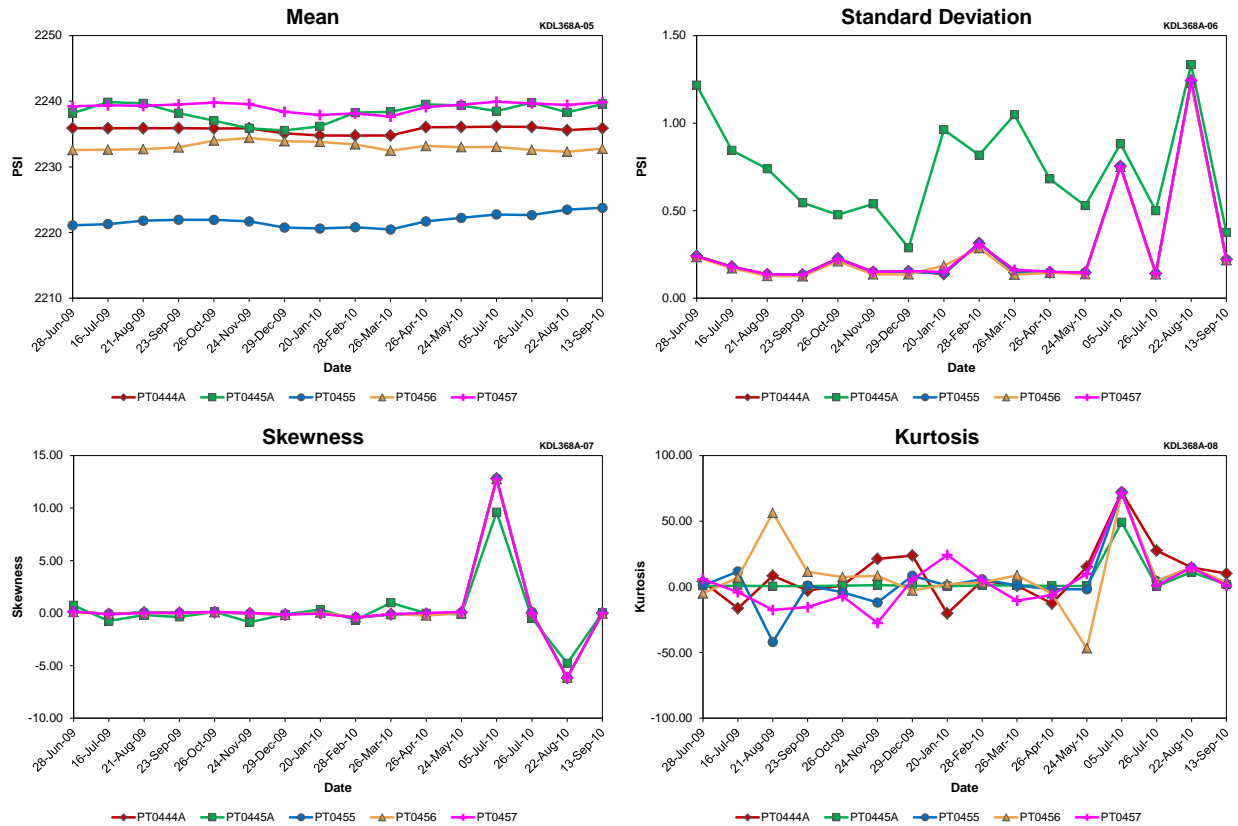


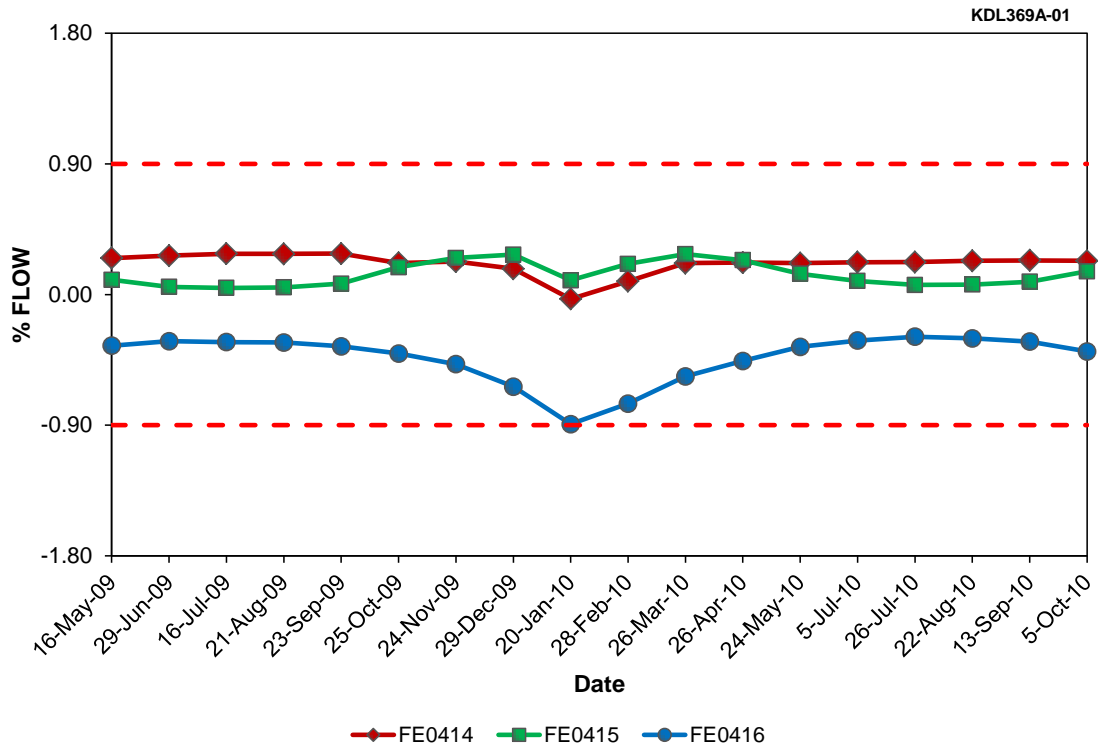
Figure B.83 PRESSURIZER PRESSURE Transient Deviation at Farley Unit 1 (Cycle 23)



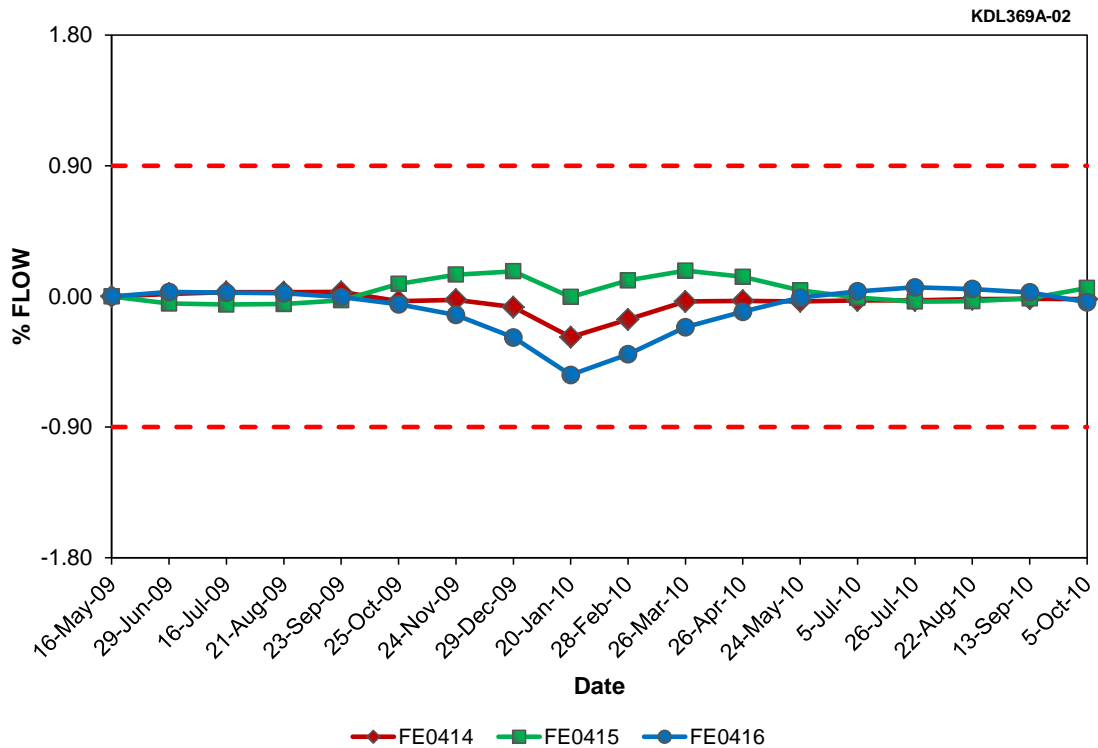
**Figure B.84 PRESSURIZER PRESSURE Data Quality Statistics at Farley Unit 1 (Cycle 23)**

**Table B.14 PRESSURIZER PRESSURE Data Quality for Farley Unit 1 (Cycle 23)**

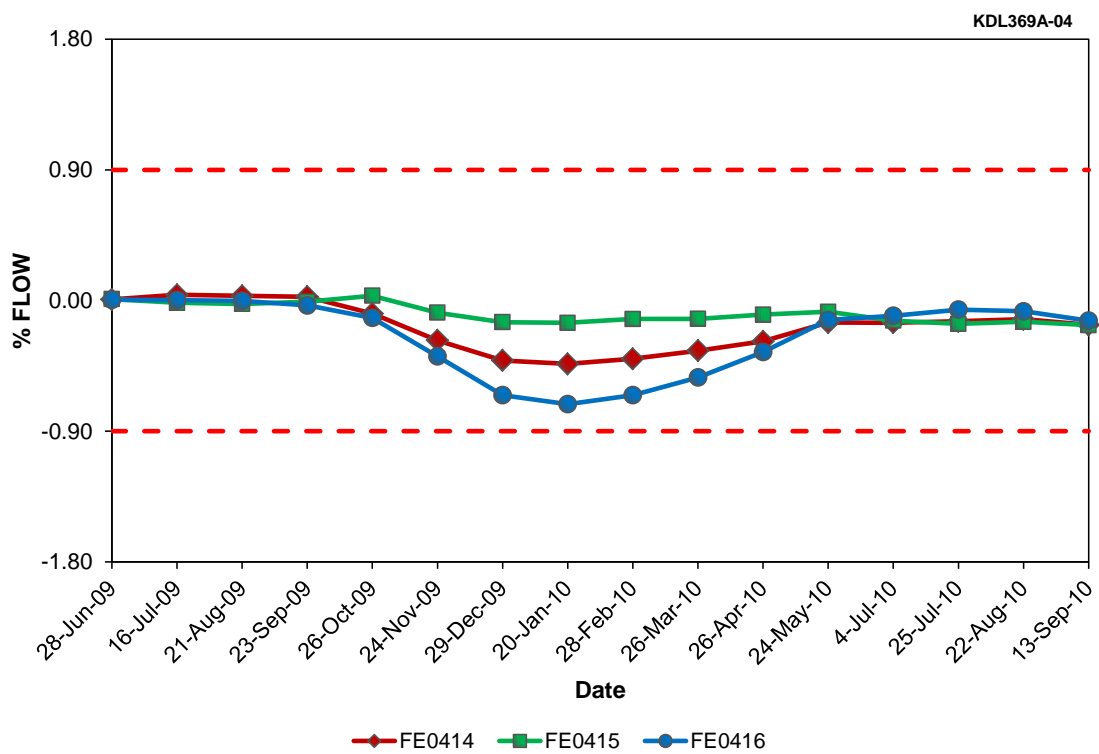
Result Type	Tag Names				
	PT0444A	PT0445A	PT0455	PT0456	PT0457
Mean	2235.66	2238.26	2221.81	2233.11	2239.15
Std. Dev.	0.28	0.74	0.28	0.27	0.28
Skewness	0.39	0.22	0.39	0.38	0.39
Kurtosis	9.53	4.55	3.84	8.73	3.17



**Figure B.85 RCS LOOP A FLOW Steady-State Deviation at Farley Unit 1 (Cycle 23)**



**Figure B.86 RCS LOOP A FLOW Steady-State Drift at Farley Unit 1 (Cycle 23)**



**Figure B.87 RCS LOOP A FLOW Steady-State Residual AAKR at Farley Unit 1 (Cycle 23)**

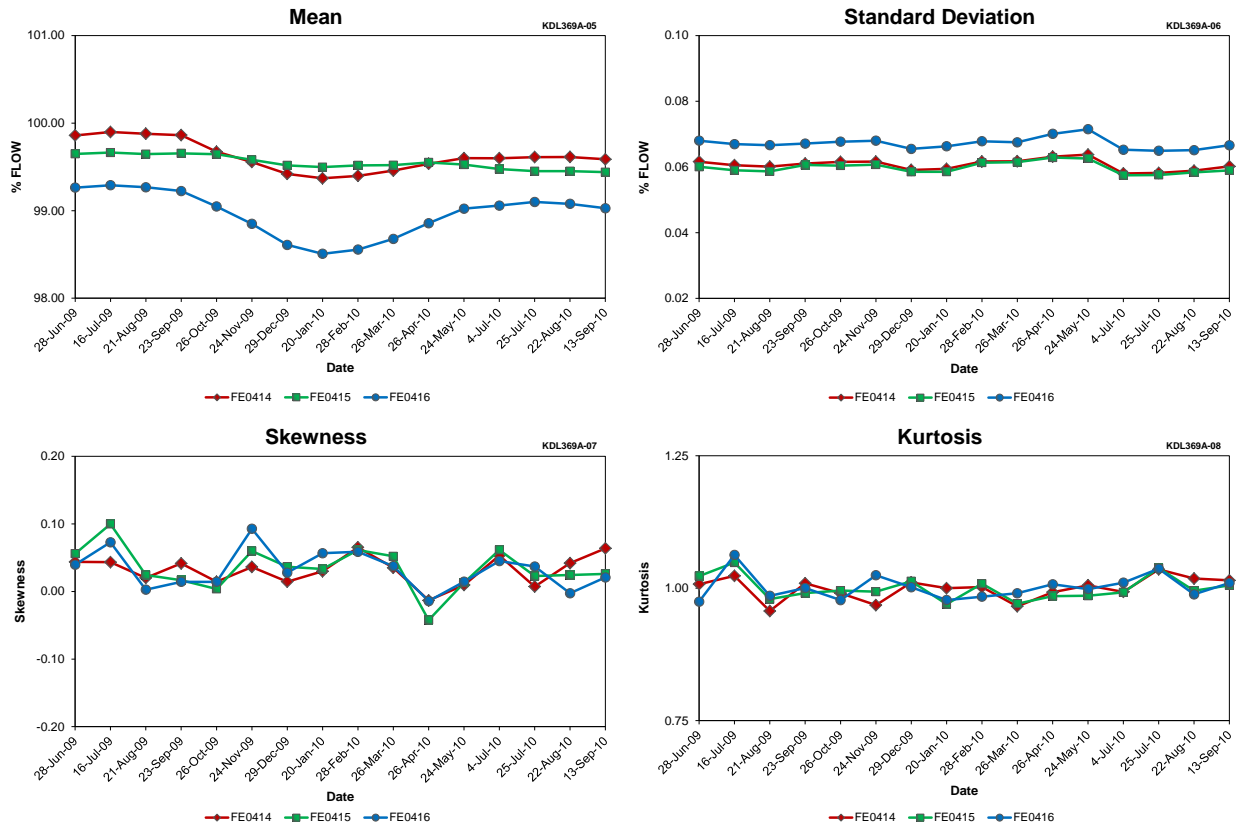


Figure B.88 RCS LOOP A FLOW Data Quality Statistics at Farley Unit 1 (Cycle 23)

Table B.15 RCS LOOP A FLOW Data Quality for Farley Unit 1 (Cycle 23)

Result Type	Tag Names		
	FE0414	FE0415	FE0416
Mean	99.62	99.55	98.96
Std. Dev.	0.06	0.06	0.07
Skewness	0.03	0.03	0.03
Kurtosis	1.00	1.00	1.00





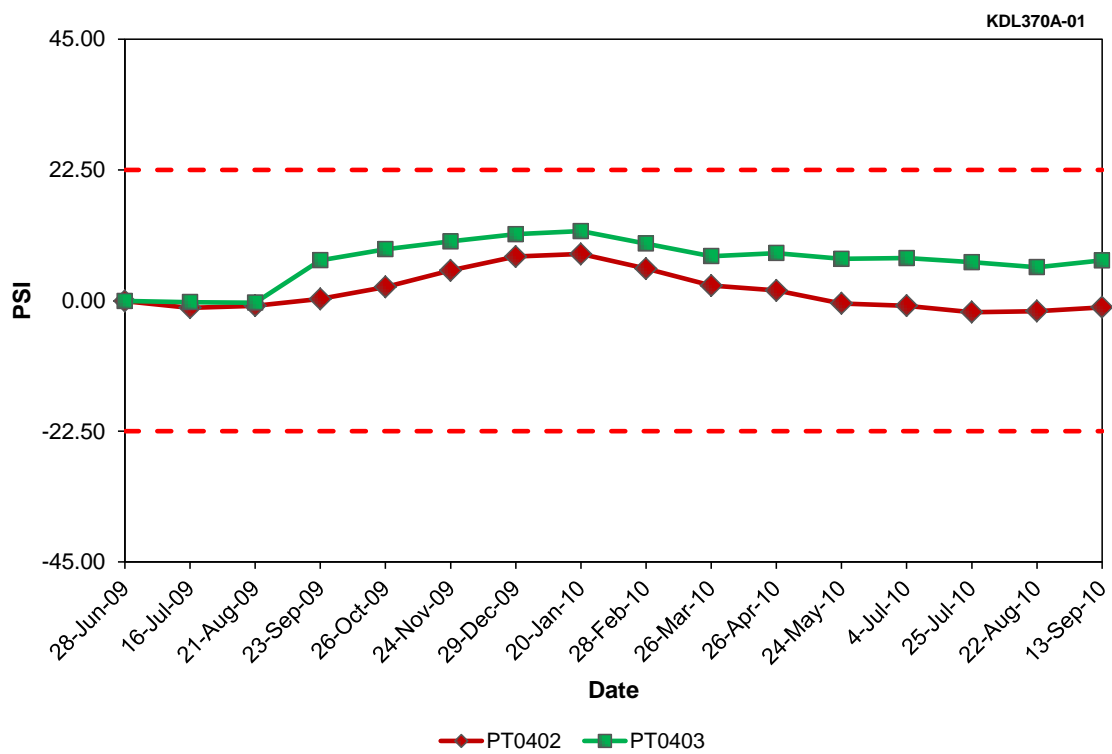
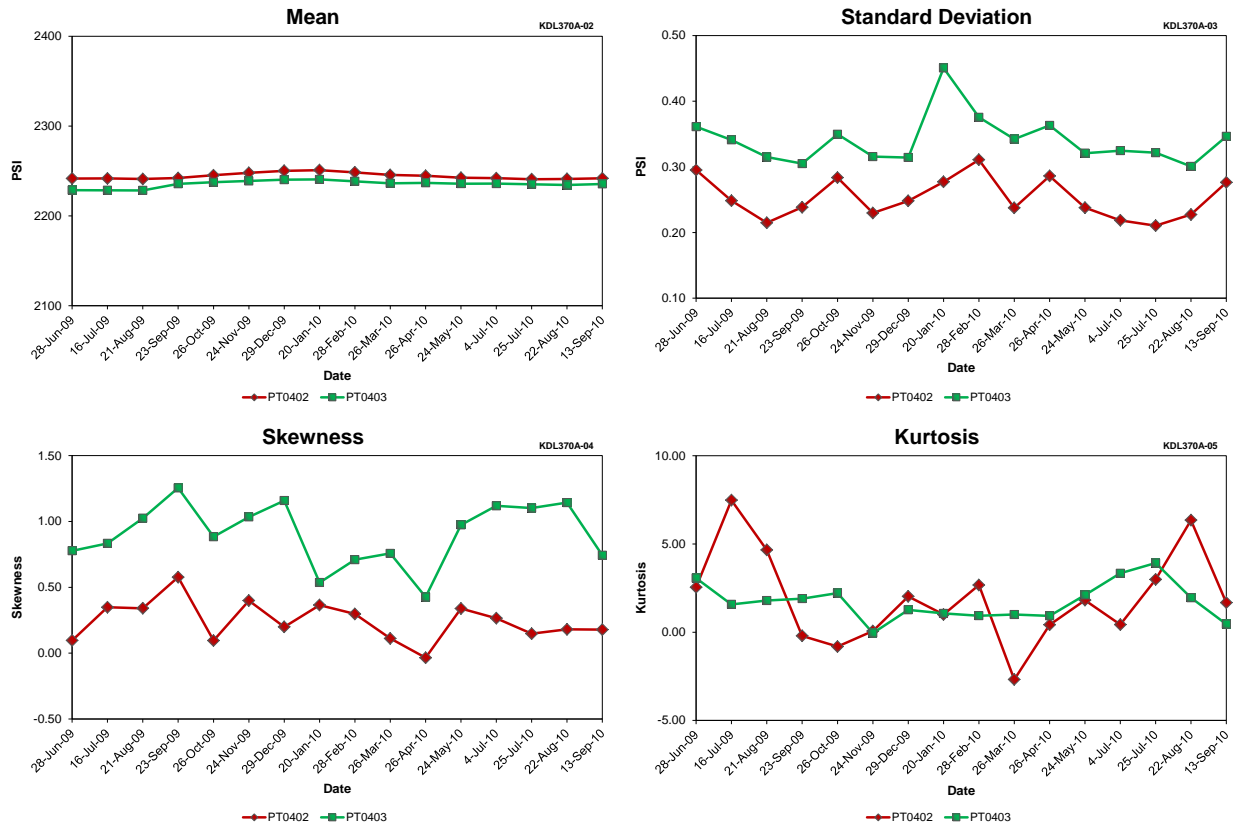


Figure B.89 RCS WIDE RANGE PRESSURE Steady-State Residual AAKR at Farley Unit 1 (Cycle 23)



**Figure B.90 RCS WIDE RANGE PRESSURE Data Quality Statistics at Farley Unit 1 (Cycle 23)**

**Table B.16 RCS WIDE RANGE PRESSURE Data Quality for Farley Unit 1 (Cycle 23)**

Result Type	Tag Names	
	PT0402	PT0403
Mean	2244.22	2235.42
Std. Dev.	0.25	0.34
Skewness	0.24	0.90
Kurtosis	1.90	1.72

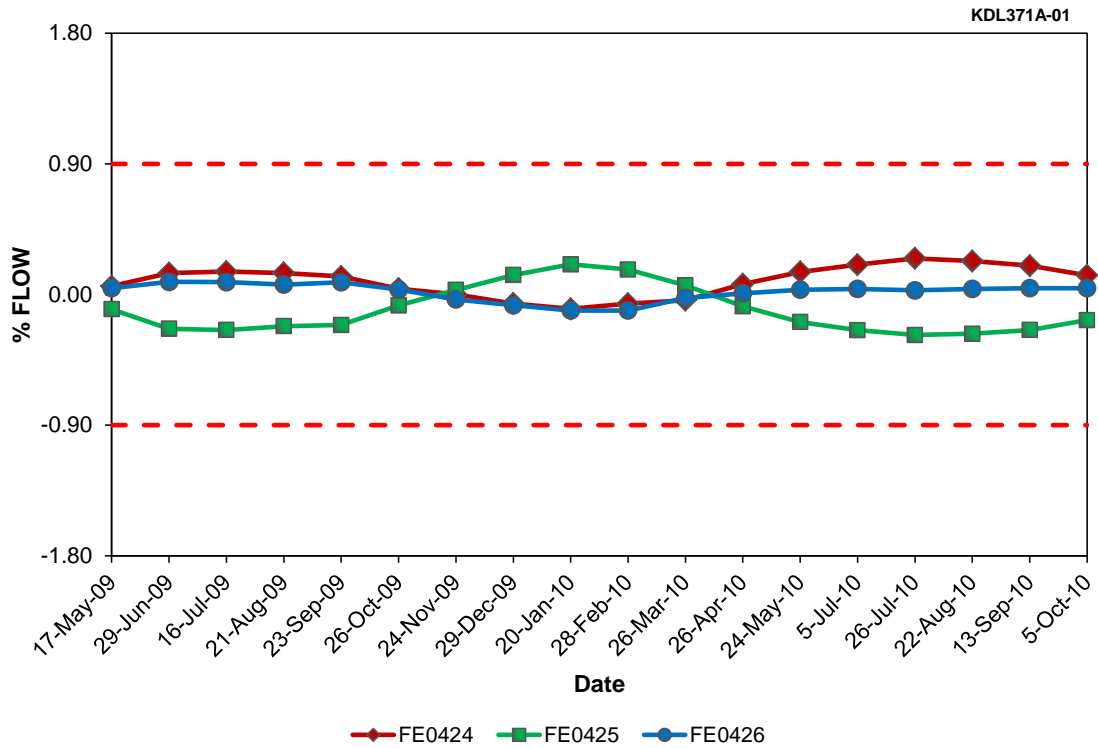


Figure B.91 RCS LOOP B FLOW Steady-State Deviation at Farley Unit 1 (Cycle 23)

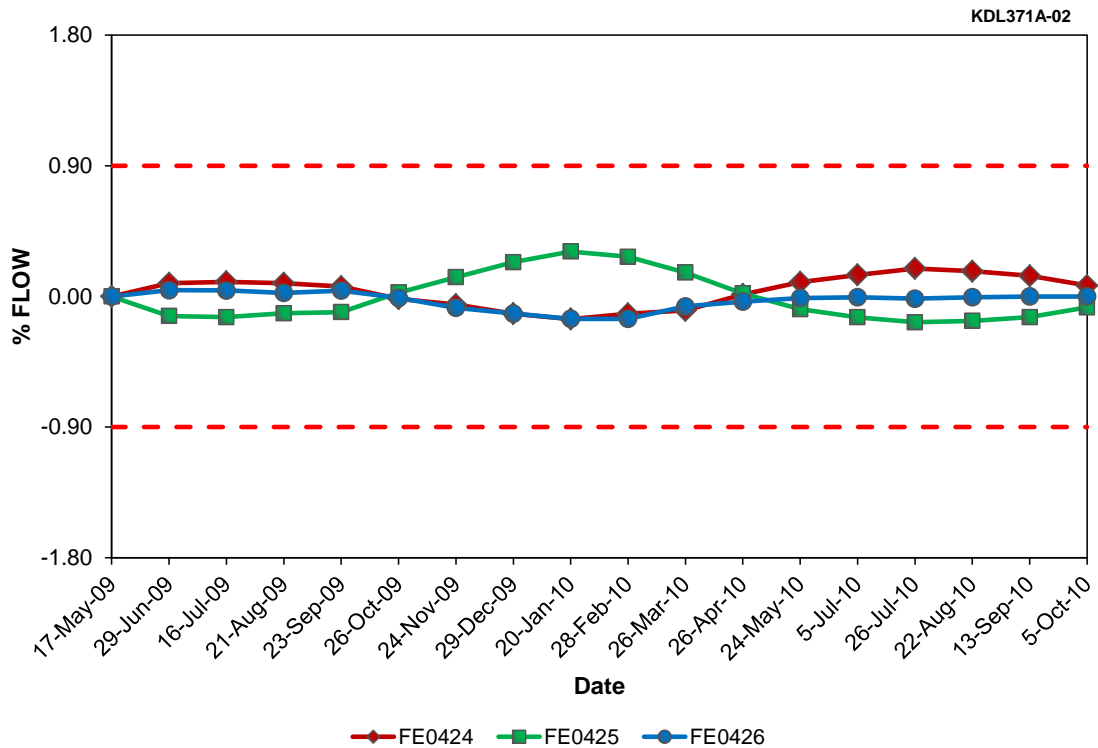
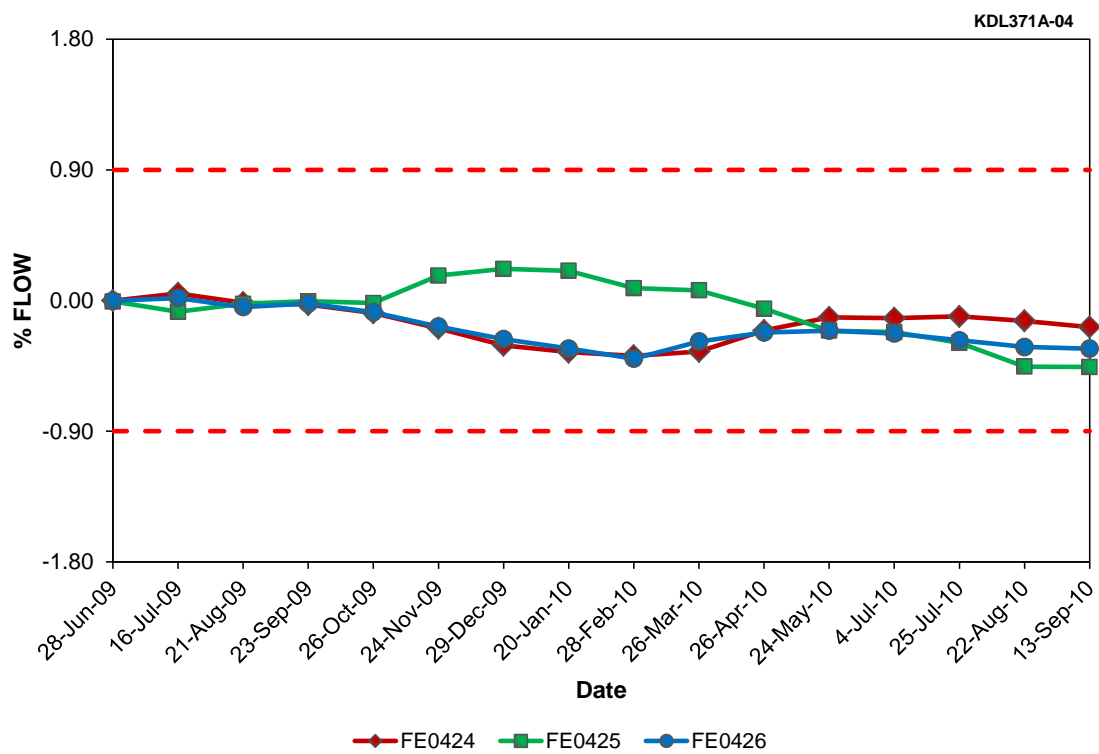
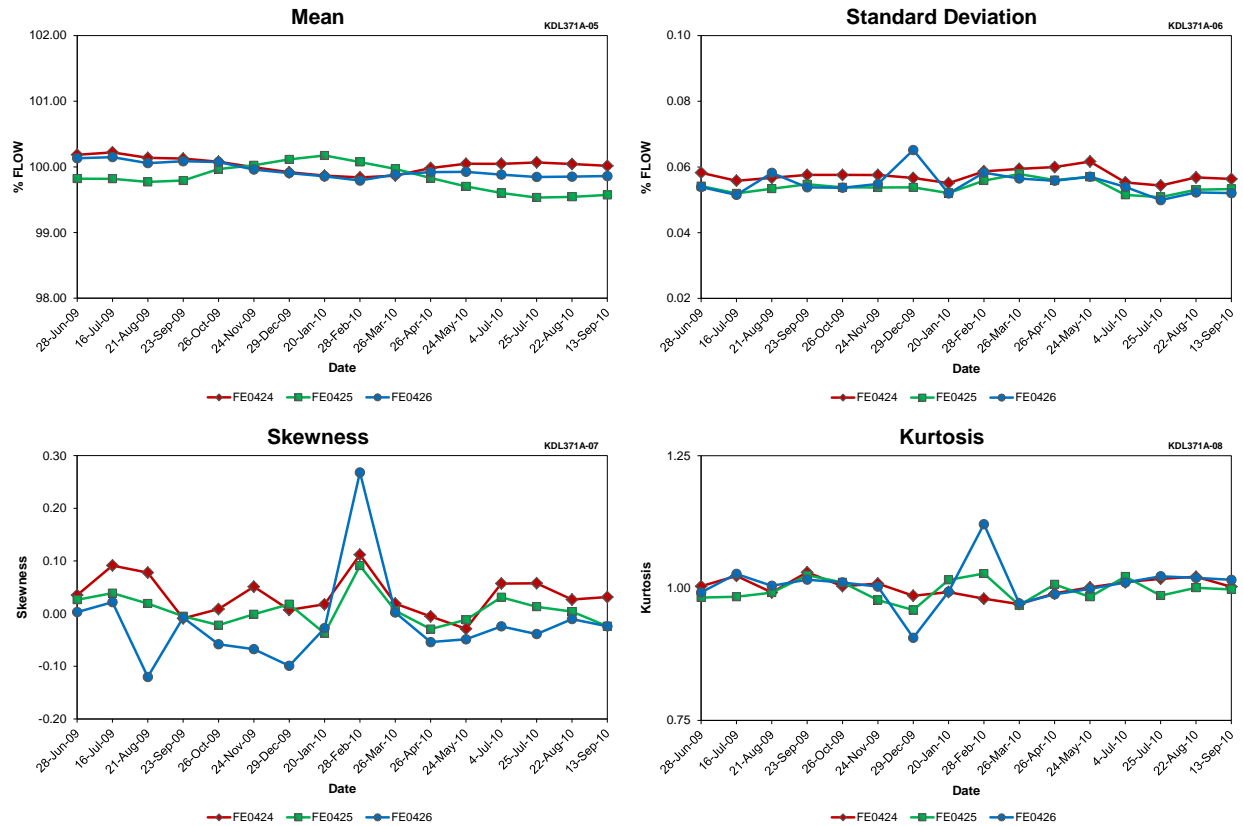


Figure B.92 RCS LOOP B FLOW Steady-State Drift at Farley Unit 1 (Cycle 23)



**Figure B.93 RCS LOOP B FLOW Steady-State Residual AAKR at Farley Unit 1 (Cycle 23)**



**Figure B.94 RCS LOOP B FLOW Data Quality Statistics at Farley Unit 1 (Cycle 23)**

**Table B.17 RCS LOOP B FLOW Data Quality for Farley Unit 1 (Cycle 23)**

Result Type	Tag Names		
	FE0424	FE0425	FE0426
Mean	100.03	99.83	99.95
Std. Dev.	0.06	0.05	0.05
Skewness	0.03	0.01	-0.02
Kurtosis	1.00	1.00	1.01



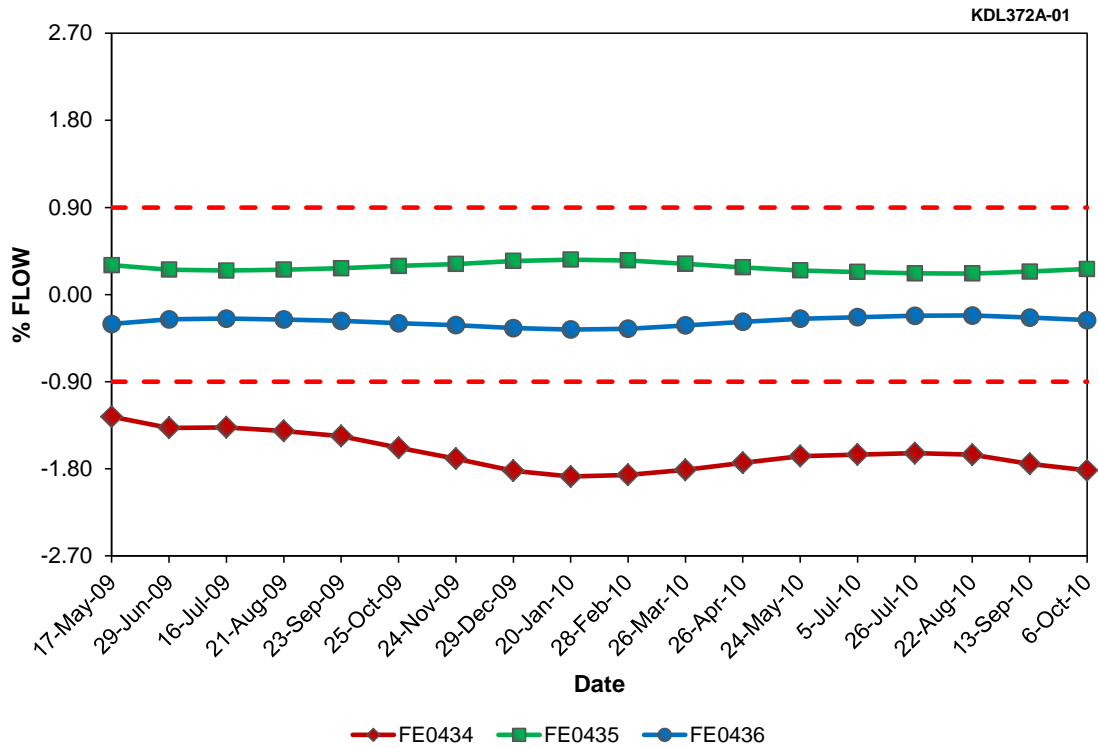


Figure B.95 RCS LOOP C FLOW Steady-State Deviation at Farley Unit 1 (Cycle 23)

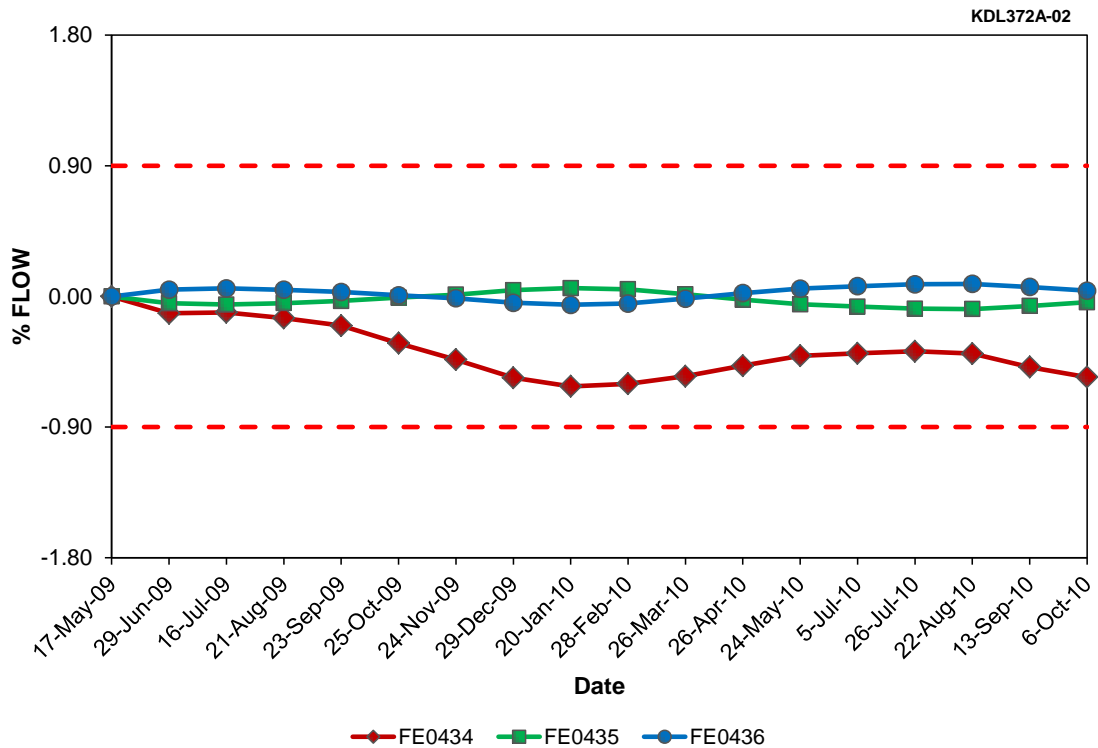


Figure B.96 RCS LOOP C FLOW Steady-State Drift at Farley Unit 1 (Cycle 23)



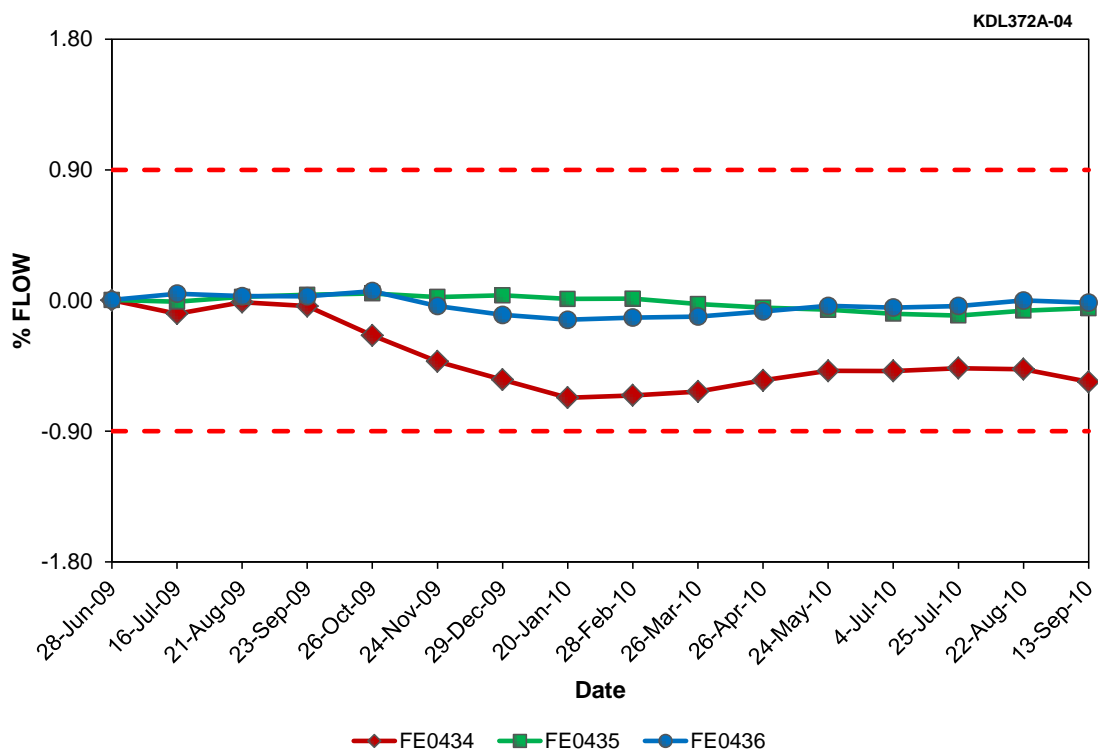


Figure B.97 RCS LOOP C FLOW Steady-State Residual AAKR at Farley Unit 1 (Cycle 23)

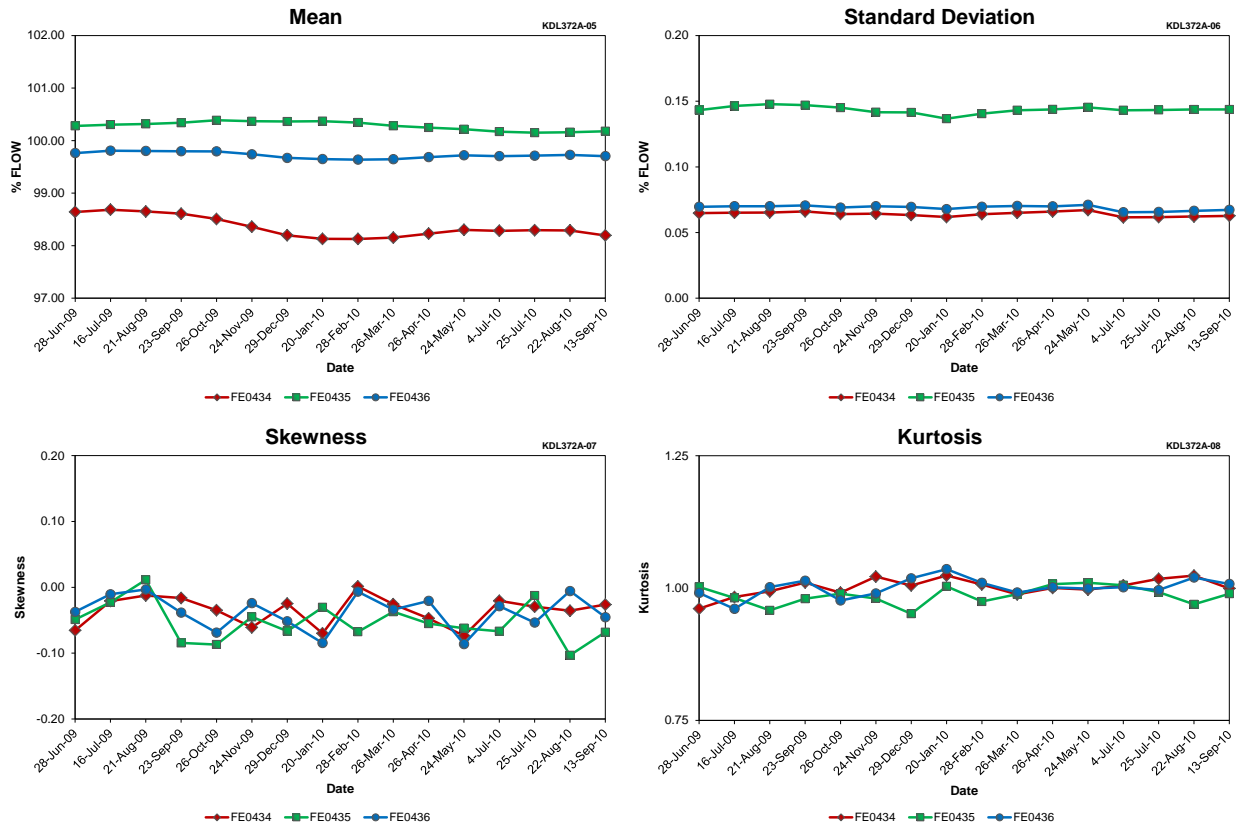


Figure B.98 RCS LOOP C FLOW Data Quality Statistics at Farley Unit 1 (Cycle 23)

Table B.18 RCS LOOP C FLOW Data Quality for Farley Unit 1 (Cycle 23)

Result Type	Tag Names		
	FE0434	FE0435	FE0436
Mean	98.35	100.28	99.72
Std. Dev.	0.06	0.14	0.07
Skewness	-0.04	-0.05	-0.04
Kurtosis	1.00	0.99	1.00



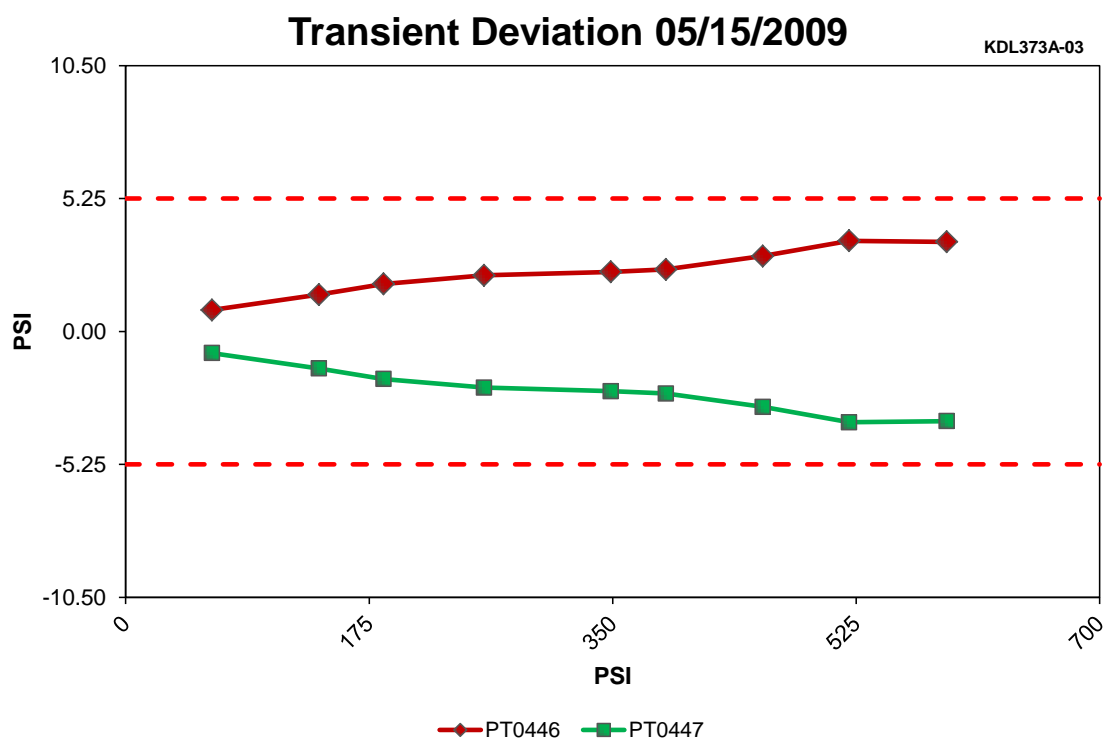
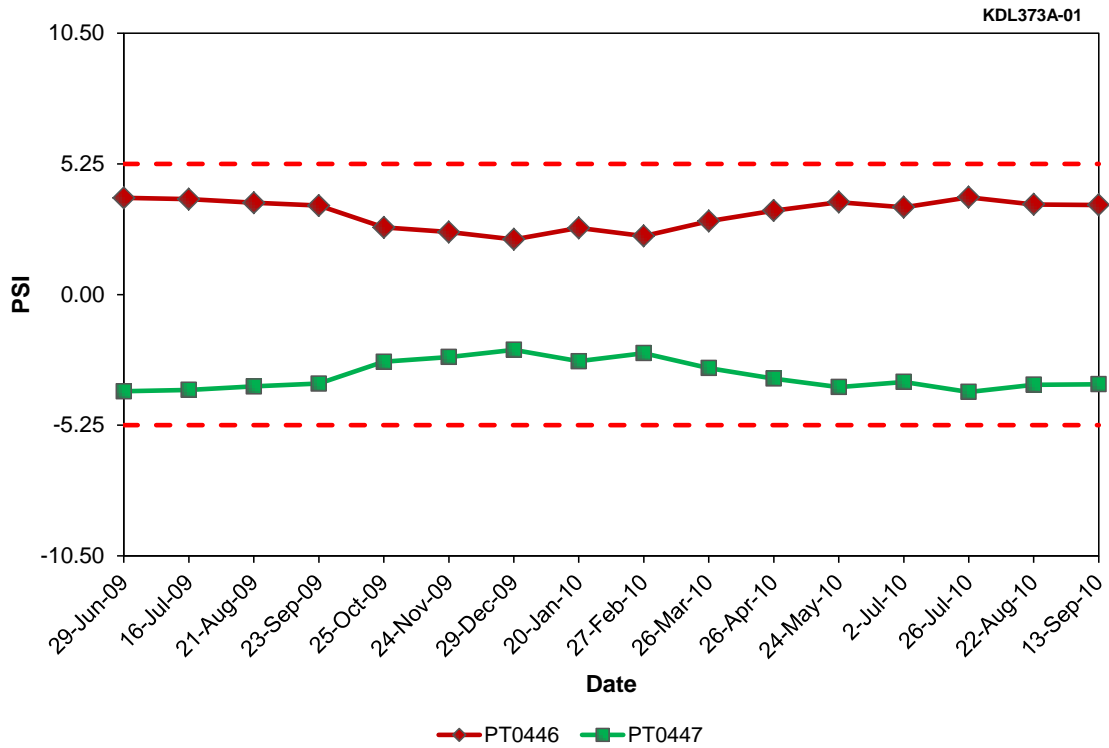
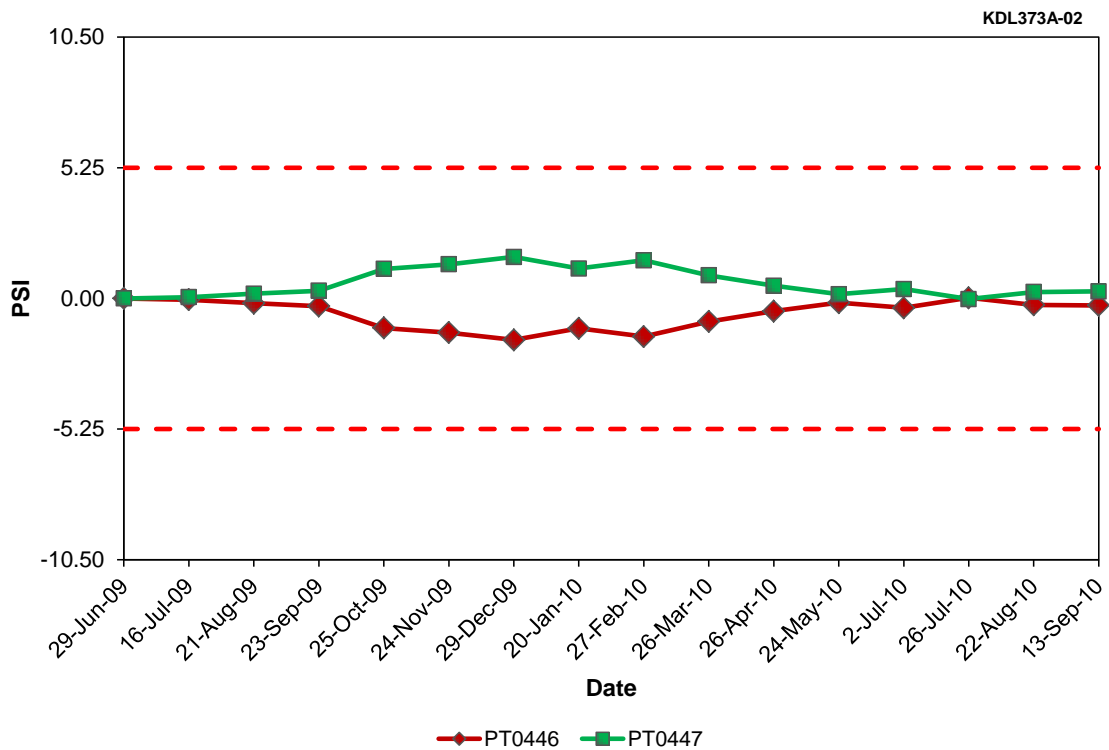


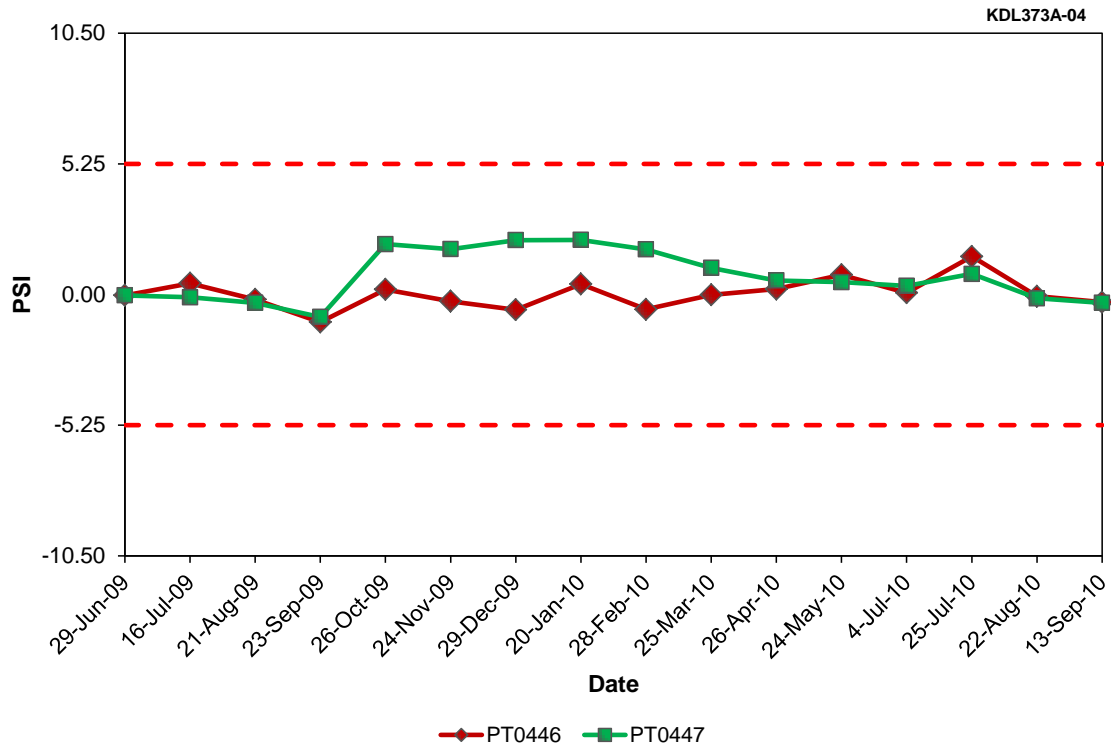
Figure B.99 TBIN FIRST STAGE PRESSURE Transient Deviation at Farley Unit 1 (Cycle 23)



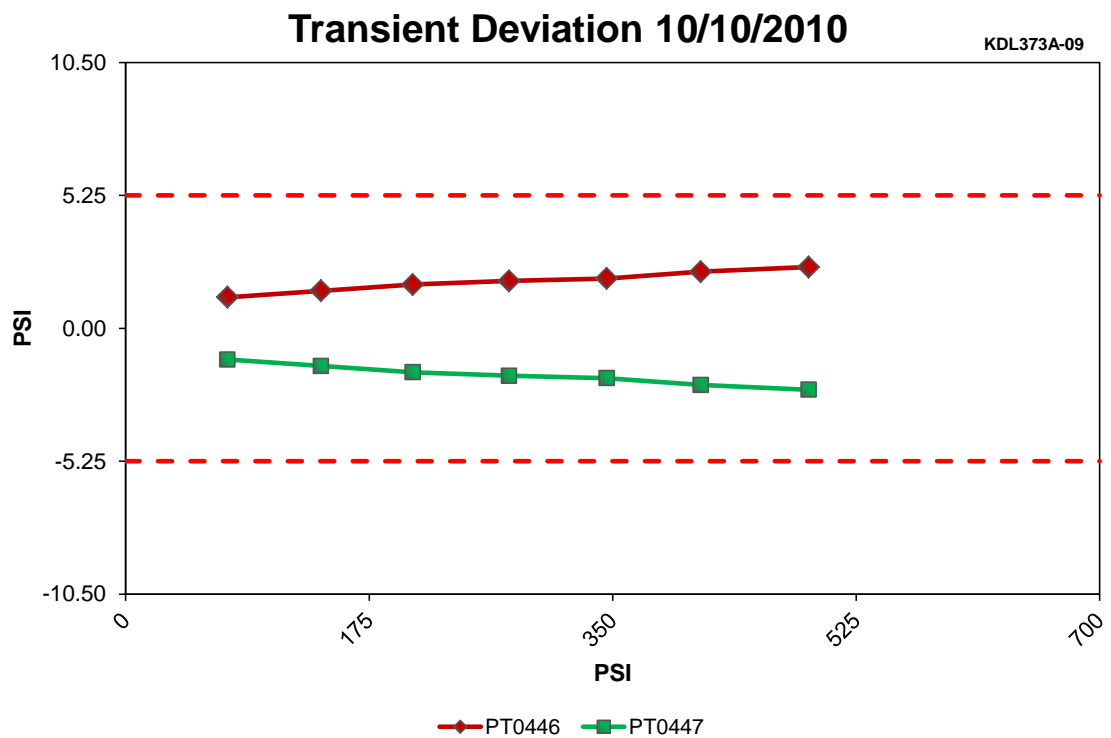
**Figure B.100 TBIN FIRST STAGE PRESSURE Steady-State Deviation at Farley Unit 1 (Cycle 23)**



**Figure B.101 TBIN FIRST STAGE PRESSURE Steady-State Drift at Farley Unit 1 (Cycle 23)**



**Figure B.102 TBIN FIRST STAGE PRESSURE Steady-State Residual AAKR at Farley Unit 1 (Cycle 23)**



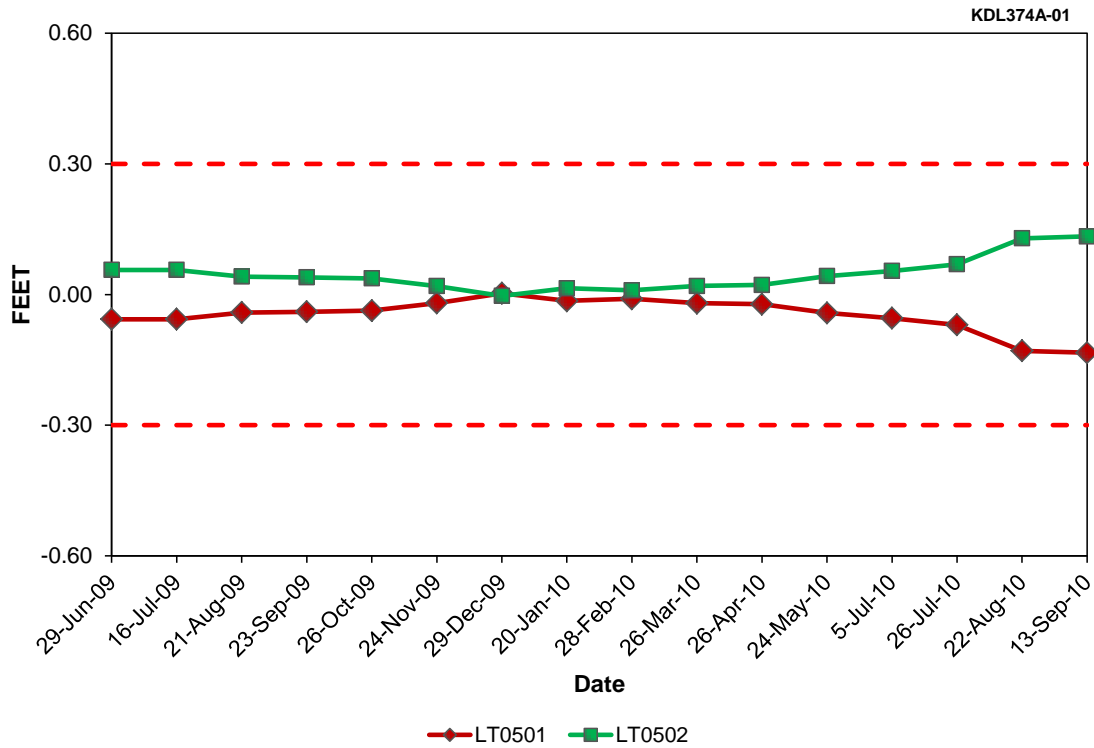
**Figure B.103 TBIN FIRST STAGE PRESSURE Transient Deviation at Farley Unit 1 (Cycle 23)**



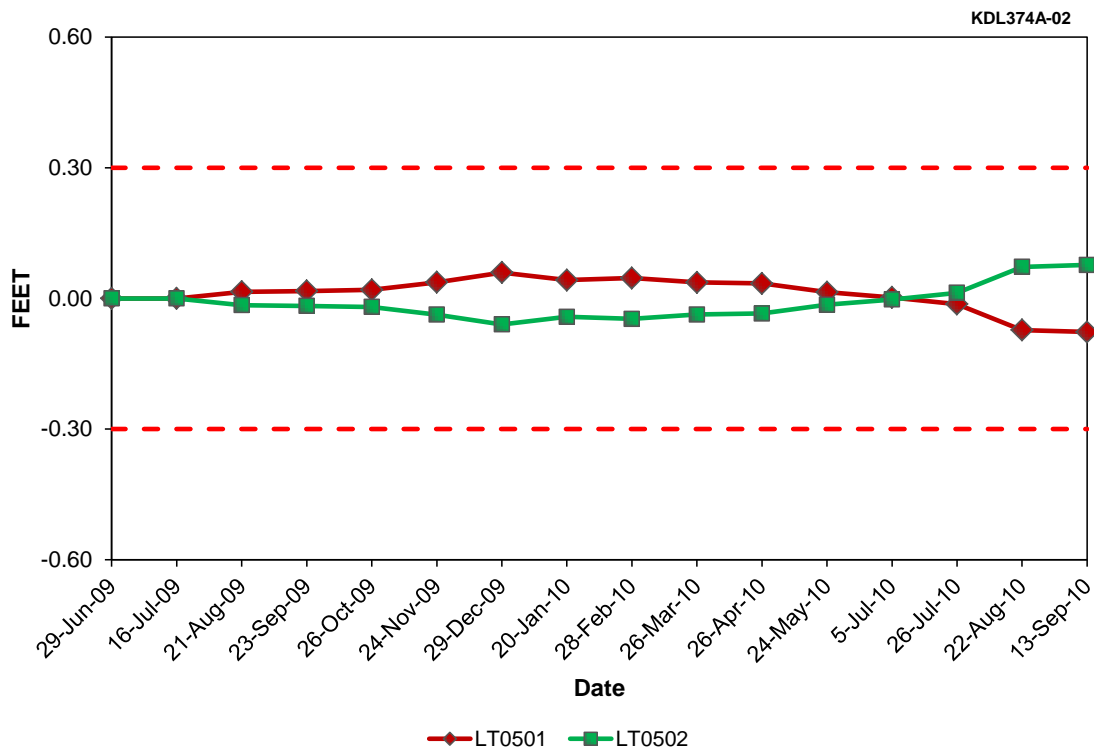
**Figure B.104 TBIN FIRST STAGE PRESSURE Data Quality Statistics at Farley Unit 1 (Cycle 23)**

**Table B.19 TBIN FIRST STAGE PRESSURE Data Quality for Farley Unit 1 (Cycle 23)**

Result Type	Tag Names	
	PT0446	PT0447
Mean	604.29	597.69
Std. Dev.	0.36	0.36
Skewness	-0.35	-0.35
Kurtosis	1.11	1.11

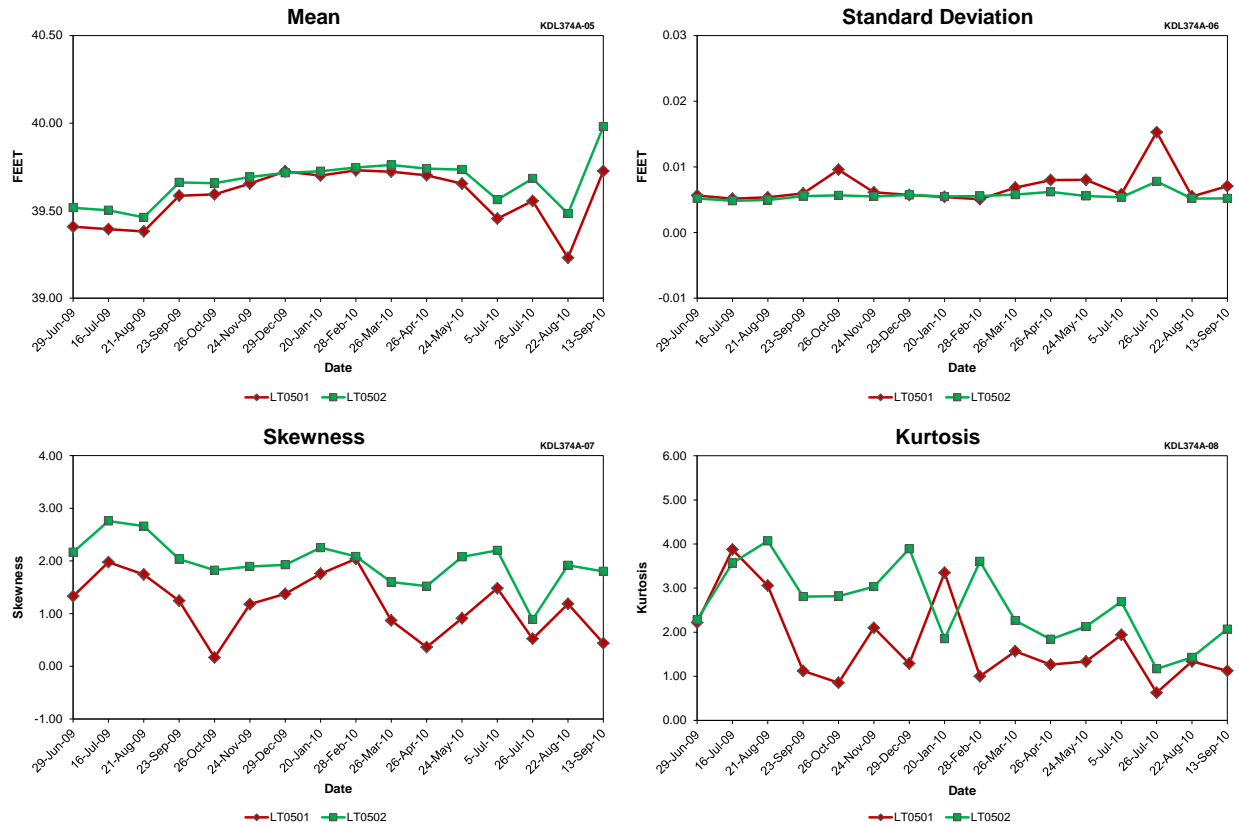


**Figure B.105 RWST LVL Steady-State Deviation at Farley Unit 1 (Cycle 23)**



**Figure B.106 RWST LVL Steady-State Deviation at Farley Unit 1 (Cycle 23)**

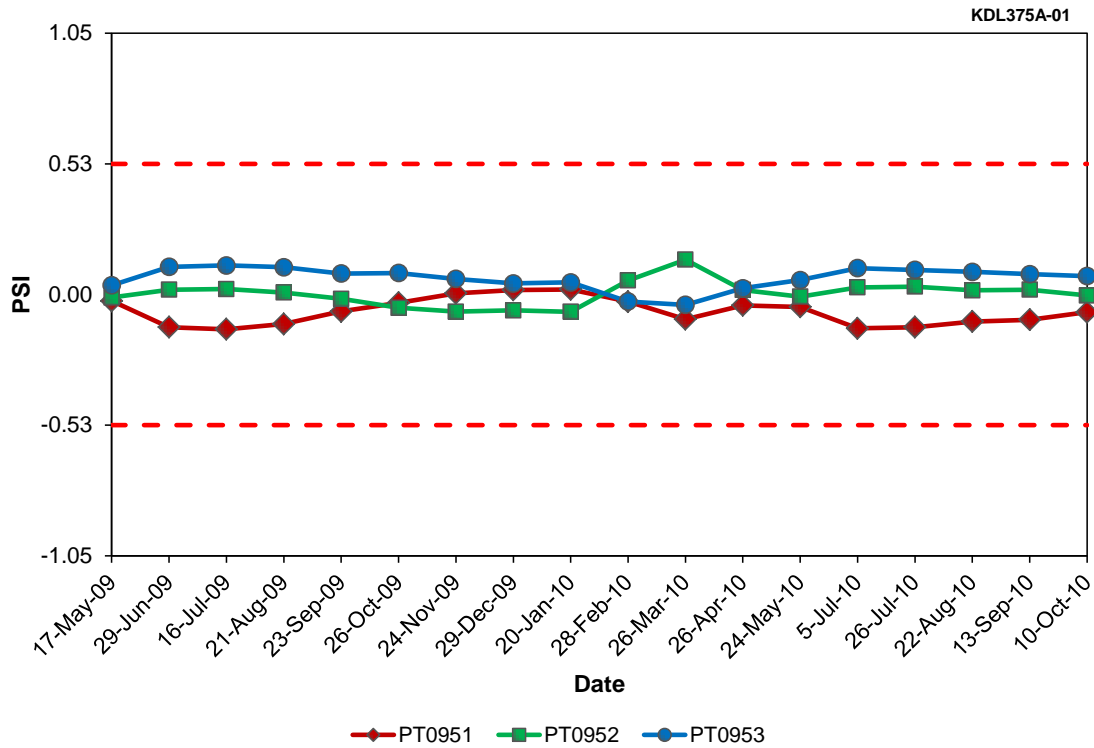




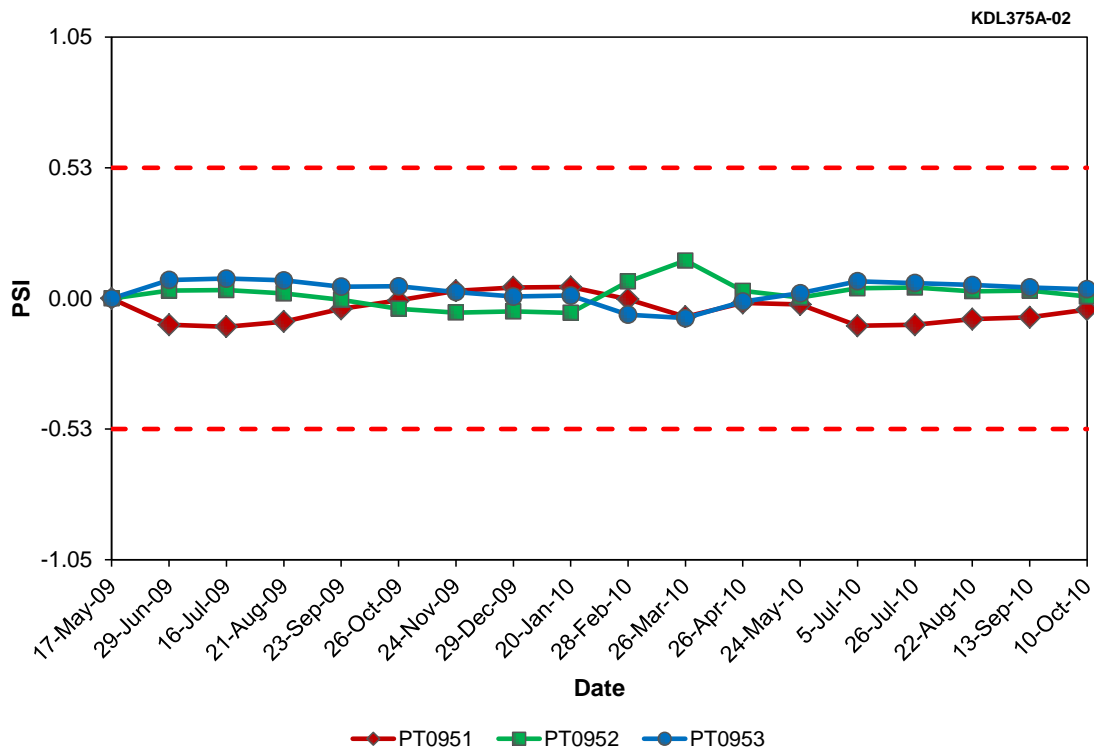
**Figure B.107 RWST LVL Data Quality Statistics at Farley Unit 1 (Cycle 23)**

**Table B.20 RWST LVL Data Quality for Farley Unit 1 (Cycle 23)**

Result Type	Tag Names	
	LT0501	LT0502
Mean	39.58	39.66
Std. Dev.	0.01	0.01
Skewness	1.16	1.98
Kurtosis	1.75	2.59



**Figure B.108 CTMT PSR Steady-State Deviation at Farley Unit 1 (Cycle 23)**



**Figure B.109 CTMT PSR Steady-State Drift at Farley Unit 1 (Cycle 23)**

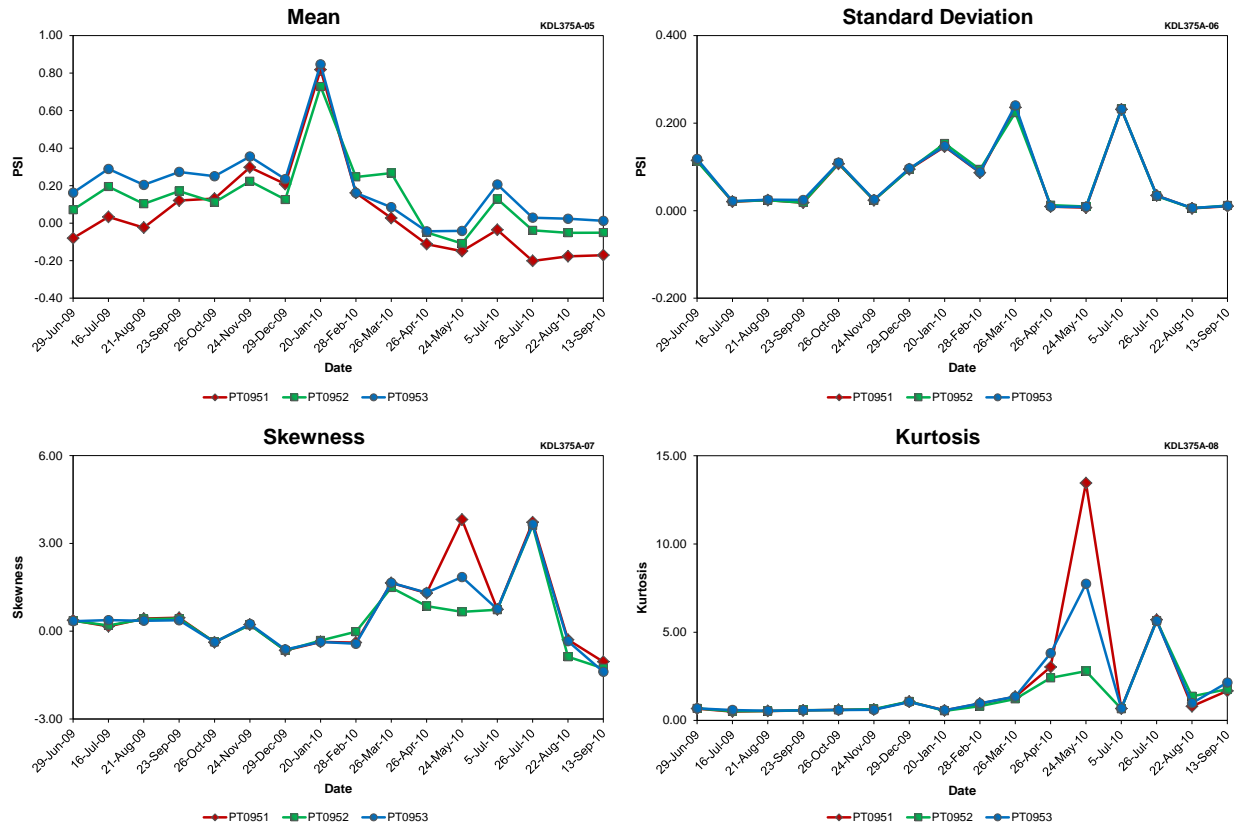


Figure B.110 CTMT PSR Data Quality Statistics at Farley Unit 1 (Cycle 23)

Table B.21 CTMT PSR Data Quality for Farley Unit 1 (Cycle 23)

Result Type	Tag Names		
	PT0951	PT0952	PT0953
Mean	0.05	0.13	0.19
Std. Dev.	0.07	0.07	0.07
Skewness	0.61	0.34	0.46
Kurtosis	2.05	1.37	1.78

Table B.22 OLM-NA Results

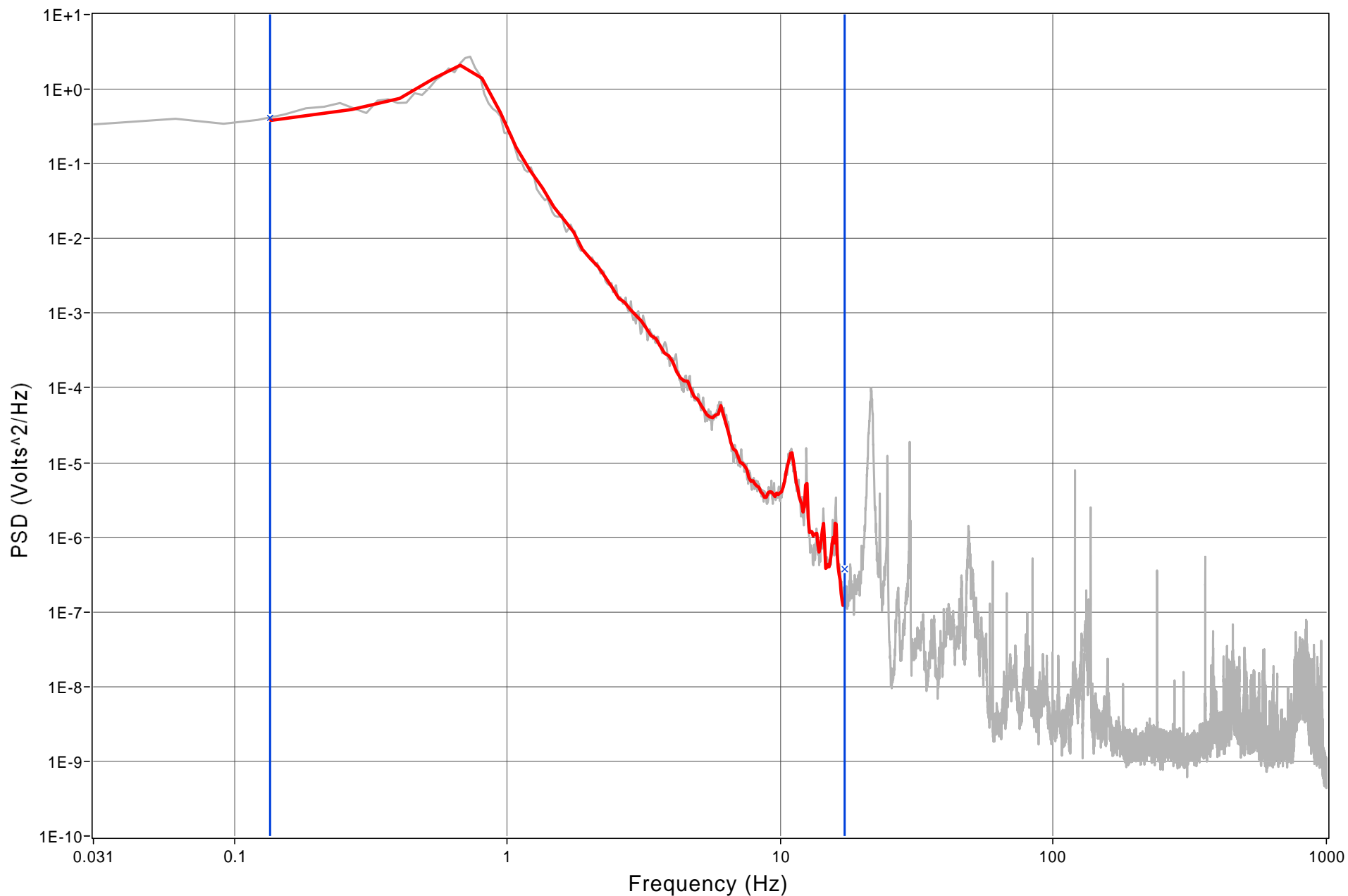
Item	Tag Name	Service	Filename	WB PSD Range (Hz)	Decimator	Trim Block Size	Trim Low Freq.	Trim High Freq.	AR Method	AR Order
1	FT476	FW FLOW	FNP1060004	0.0305 : 1000	364	256	0.0215	2.7472	Least-Squares	22
2	FT477	FW FLOW	FNP1060003	0.0305 : 1000	364	512	0.0107	2.7472	Least-Squares	23
3	FT486	FW FLOW	FNP1060004	0.0305 : 1000	364	256	0.0215	2.7472	Forward-Backward	11
4	FT487	FW FLOW	FNP1060003	0.0305 : 1000	364	512	0.0107	2.7472	Least-Squares	21
5	FT496	FW FLOW	FNP1060004	0.0305 : 1000	366	512	0.0107	2.7322	Forward-Backward	11
6	FT497	FW FLOW	FNP1060003	0.0305 : 1000	364	512	0.0107	2.7472	Least-Squares	24
7	LT474	SG LEVEL	FNP1060001	0.0305 : 1000	58	256	0.1347	17.2409	Forward-Backward	11
8	LT475	SG LEVEL	FNP1060002	0.0305 : 1000	58	256	0.1347	17.2409	Forward-Backward	11
9	LT476	SG LEVEL	FNP1060003	0.0305 : 1000	58	256	0.1347	17.2409	Forward-Backward	11
10	LT484	SG LEVEL	FNP1060001	0.0305 : 1000	58	256	0.1347	17.2409	Forward-Backward	11
11	LT485	SG LEVEL	FNP1060002	0.0305 : 1000	58	256	0.1347	17.2409	Forward-Backward	11
12	LT486	SG LEVEL	FNP1060003	0.0305 : 1000	58	256	0.1347	17.2409	Forward-Backward	11
13	LT494	SG LEVEL	FNP1060001	0.0305 : 1000	58	256	0.1347	17.2409	Forward-Backward	11
14	LT495	SG LEVEL	FNP1060002	0.0305 : 1000	58	256	0.1347	17.2409	Forward-Backward	11
15	LT496	SG LEVEL	FNP1060003	0.0305 : 1000	58	256	0.1347	17.2409	Forward-Backward	11
16	FT474	STM FLOW	FNP1060003	0.0305 : 1000	46	128	0.3397	21.7384	Least-Squares	18
17	FT475	STM FLOW	FNP1060004	0.0305 : 1000	29	128	0.5388	34.4817	Least-Squares	18
18	FT484	STM FLOW	FNP1060003	0.0305 : 1000	29	128	0.5388	34.4817	Forward-Backward	17
19	FT485	STM FLOW	FNP1060004	0.0305 : 1000	29	128	0.5388	34.4817	Forward-Backward	18
20	FT494	STM FLOW	FNP1060003	0.0305 : 1000	29	128	0.5388	34.4817	Forward-Backward	17
21	FT495	STM FLOW	FNP1060004	0.0305 : 1000	29	128	0.5388	34.4817	Forward-Backward	18



# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	LT474	SG LVL	FNP1060001.psd	11 : 256	0.134694	17.240854	Dynamic	23-Jun-2009 12:04:01

**PSD Window**

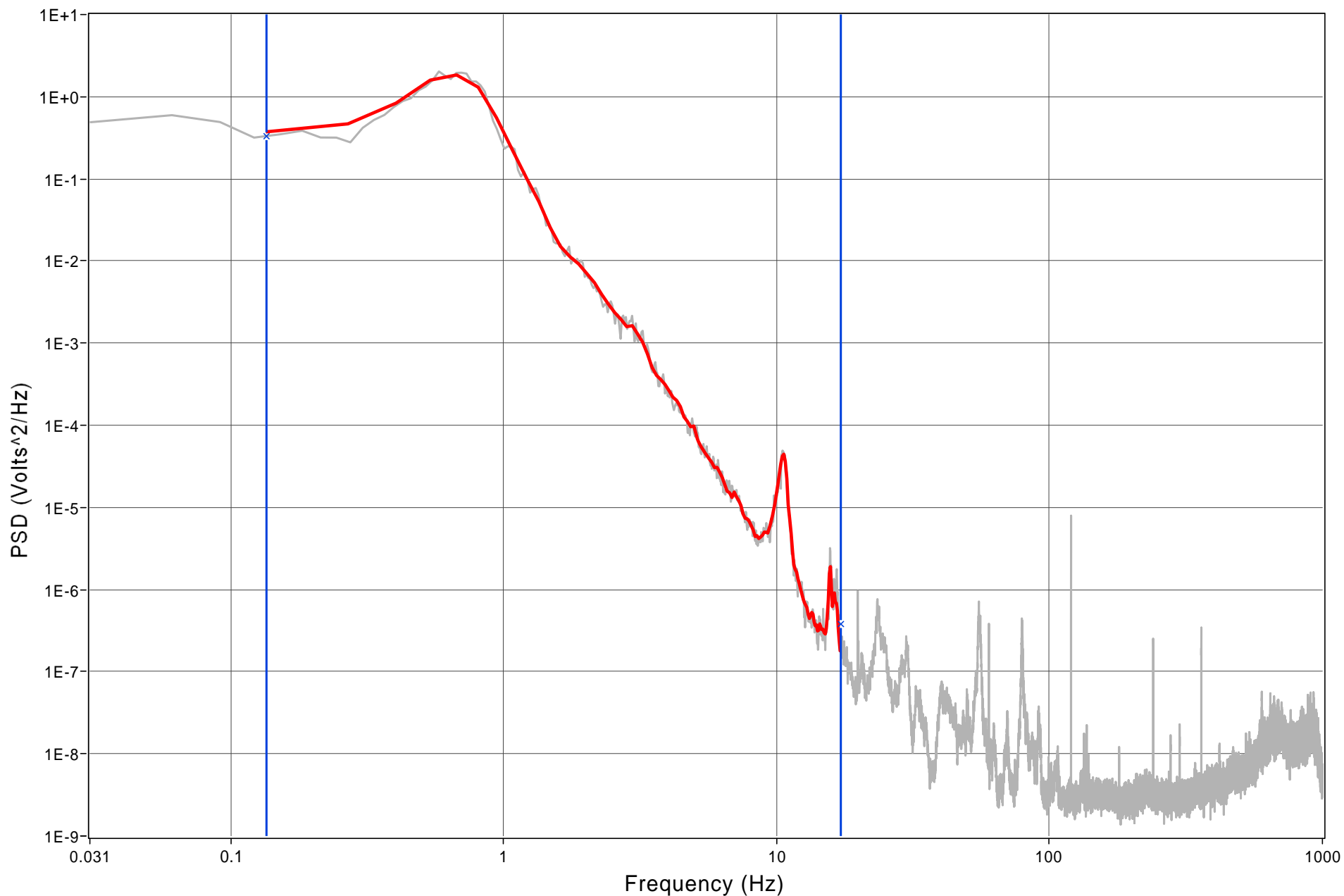




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	LT484	SG LVL	FNP1060001.psd	11 : 256	0.134694	17.240854	Dynamic	23-Jun-2009 12:04:01

**PSD Window**

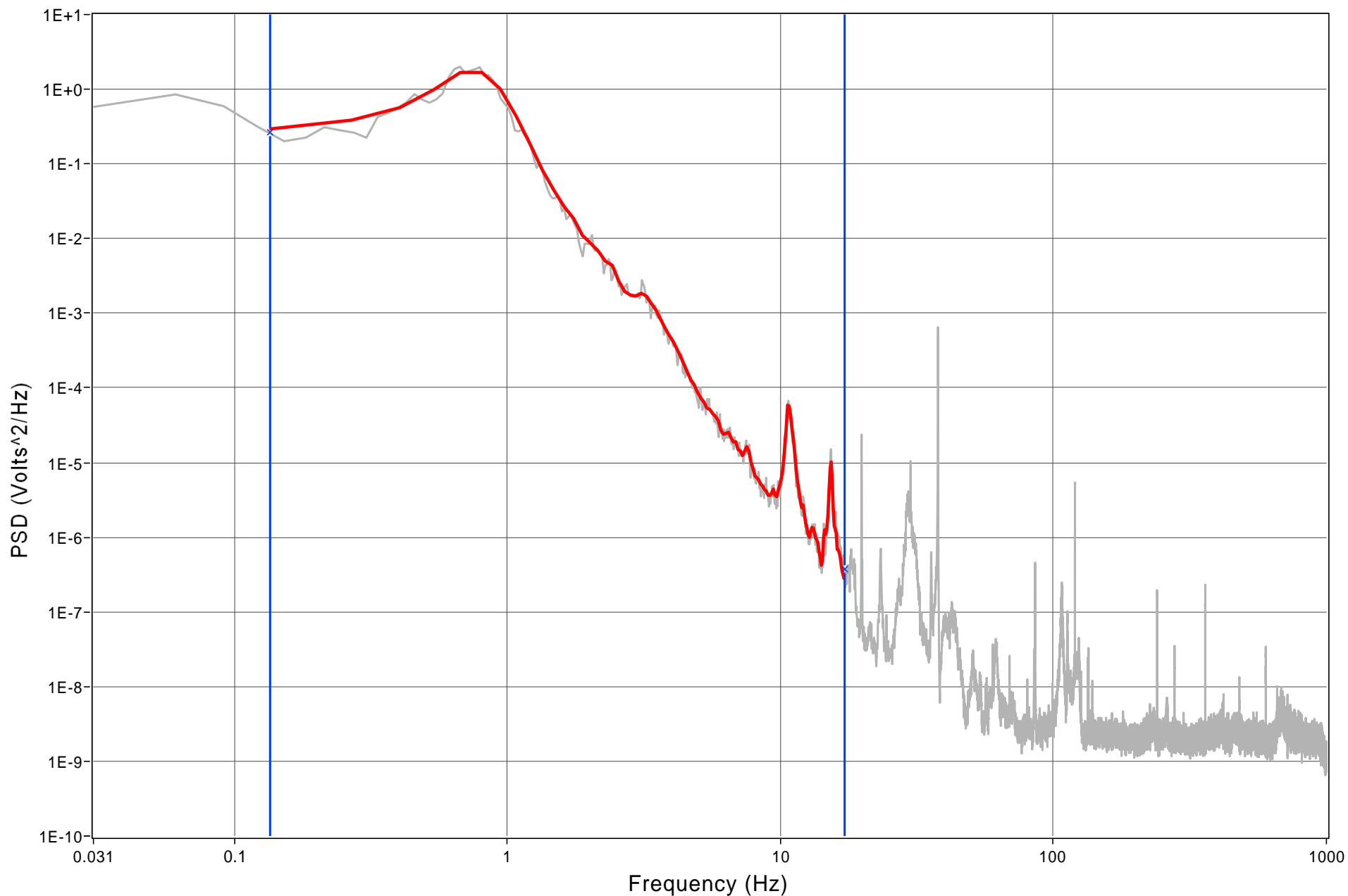




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	LT494	SG LVL	FNP1060001.psd	11 : 256	0.134694	17.240854	Dynamic	23-Jun-2009 12:04:01

## PSD Window

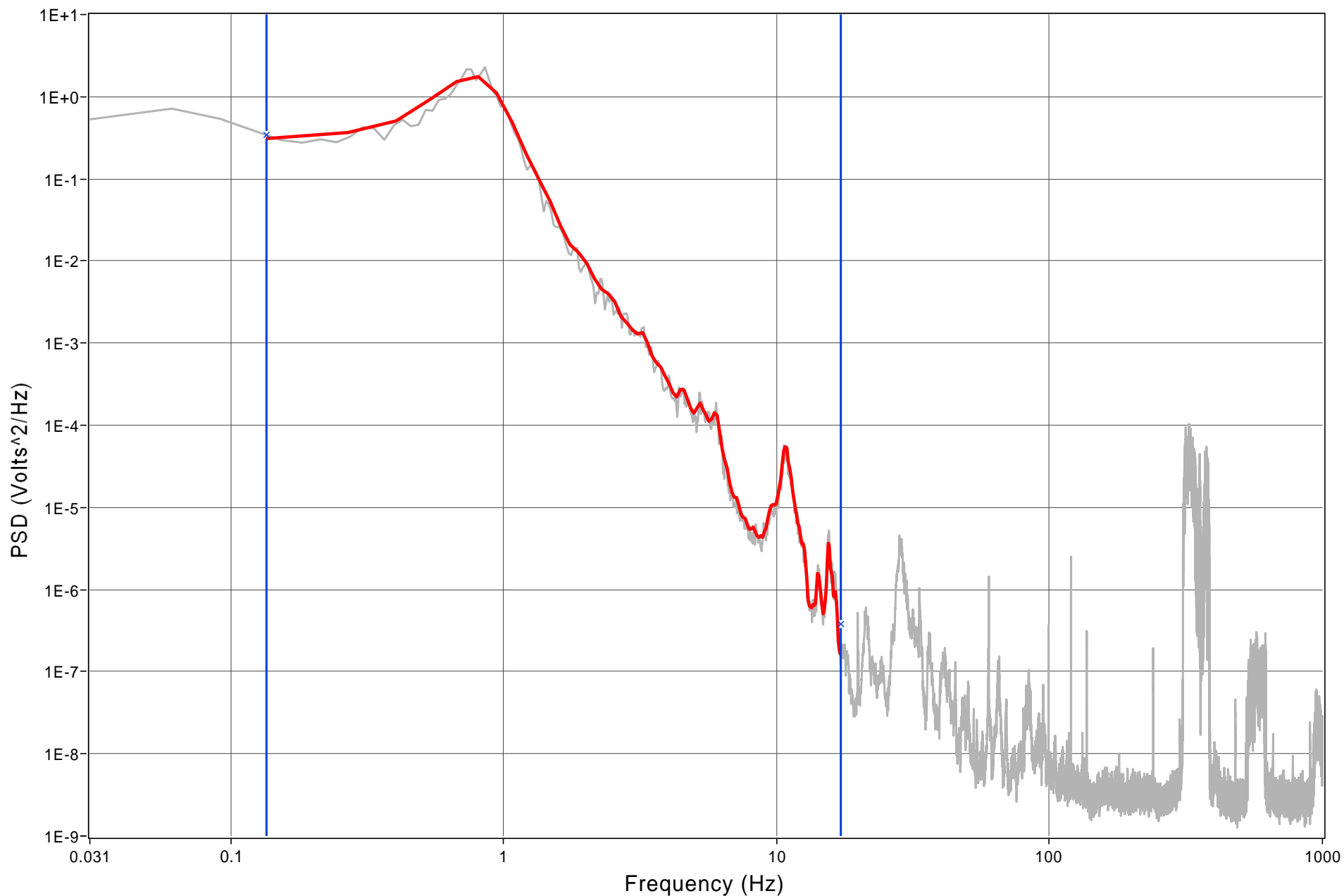




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	LT475	SG LVL	FNP1060002.psd	11 : 256	0.134694	17.240854	Dynamic	23-Jun-2009 12:04:01

**PSD Window**



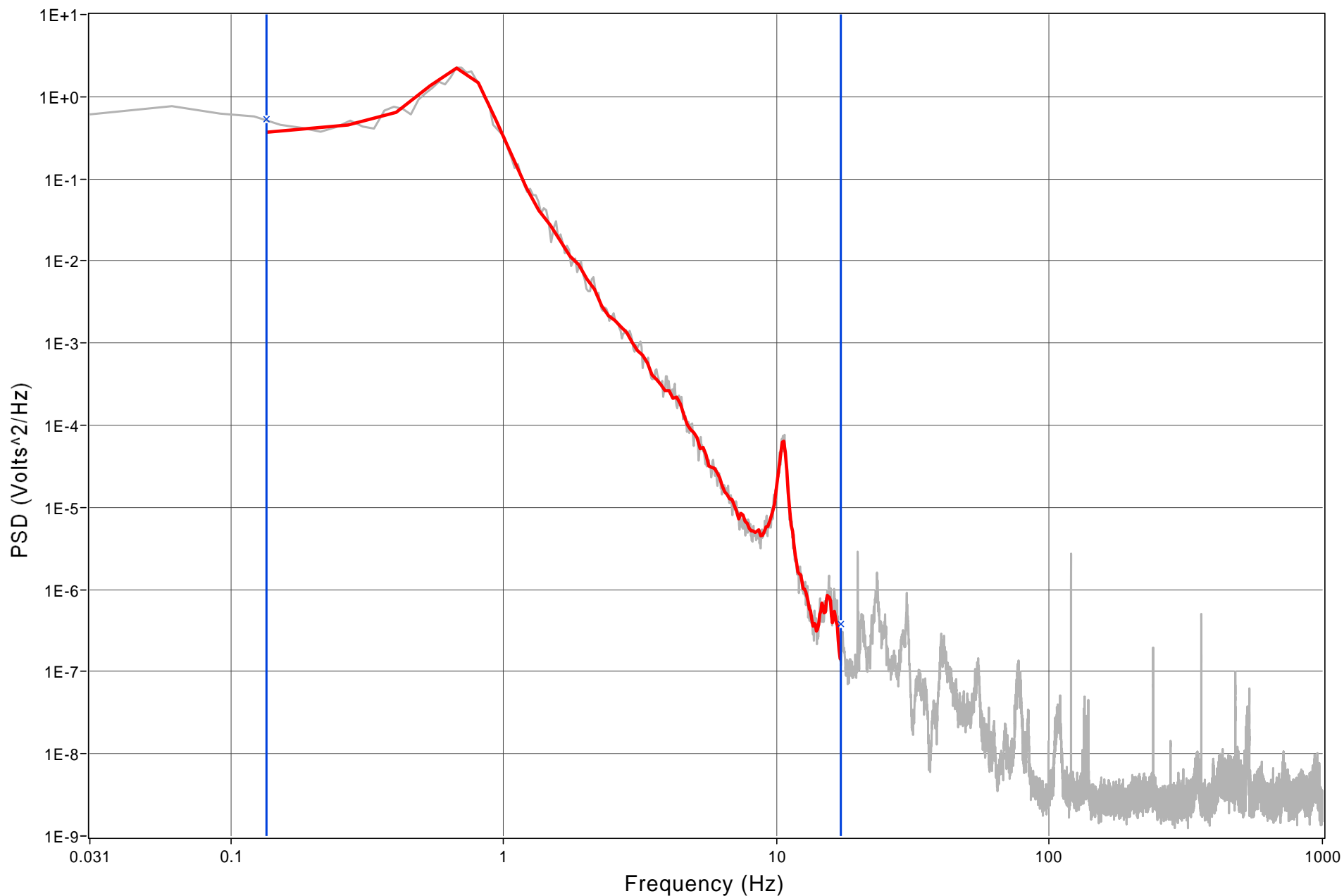




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	LT485	SG LVL	FNP1060002.psd	11 : 256	0.134694	17.240854	Dynamic	23-Jun-2009 12:04:01

**PSD Window**

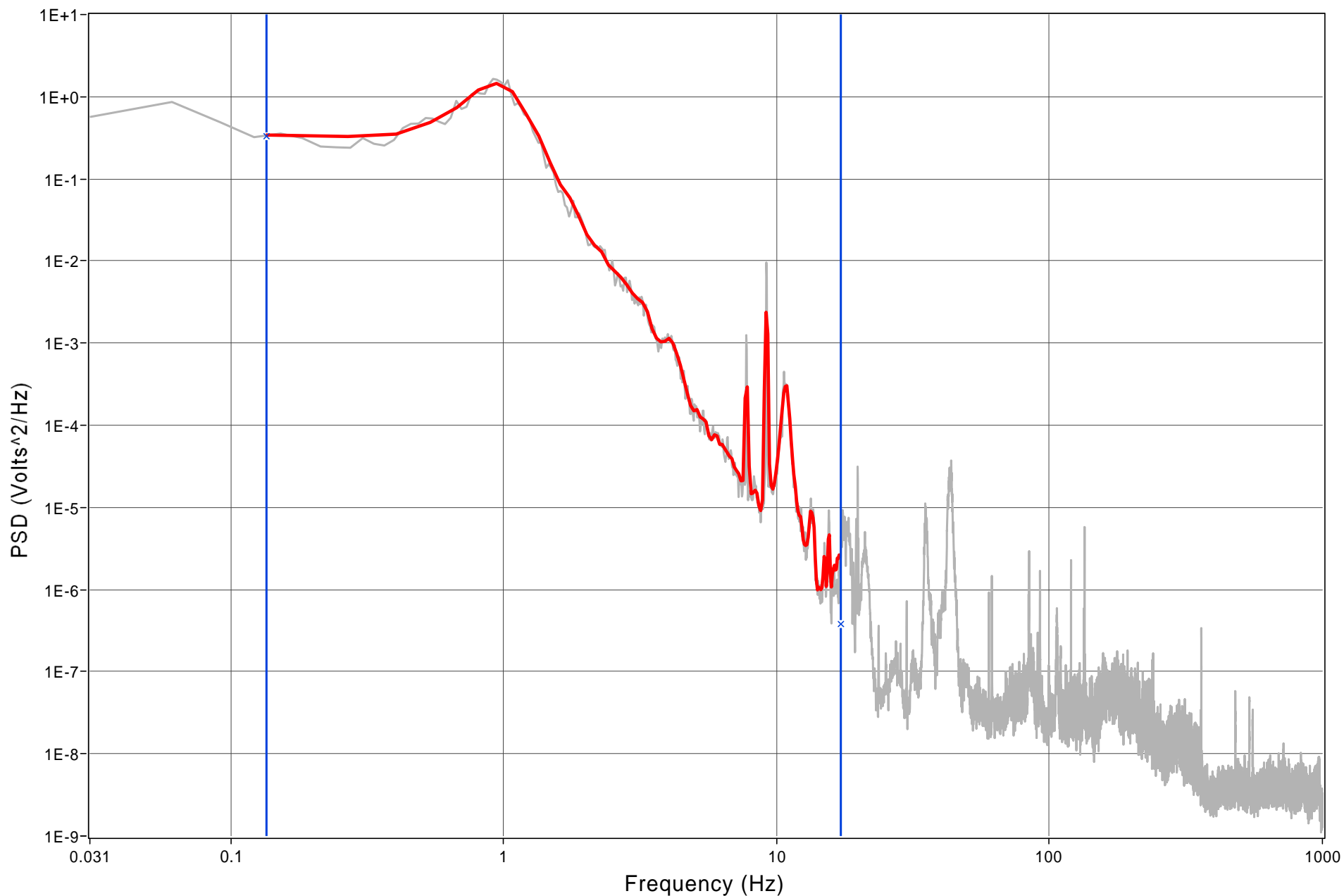




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	LT495	SG LVL	FNP1060002.psd	11 : 256	0.134694	17.240854	Dynamic	23-Jun-2009 12:04:01

**PSD Window**

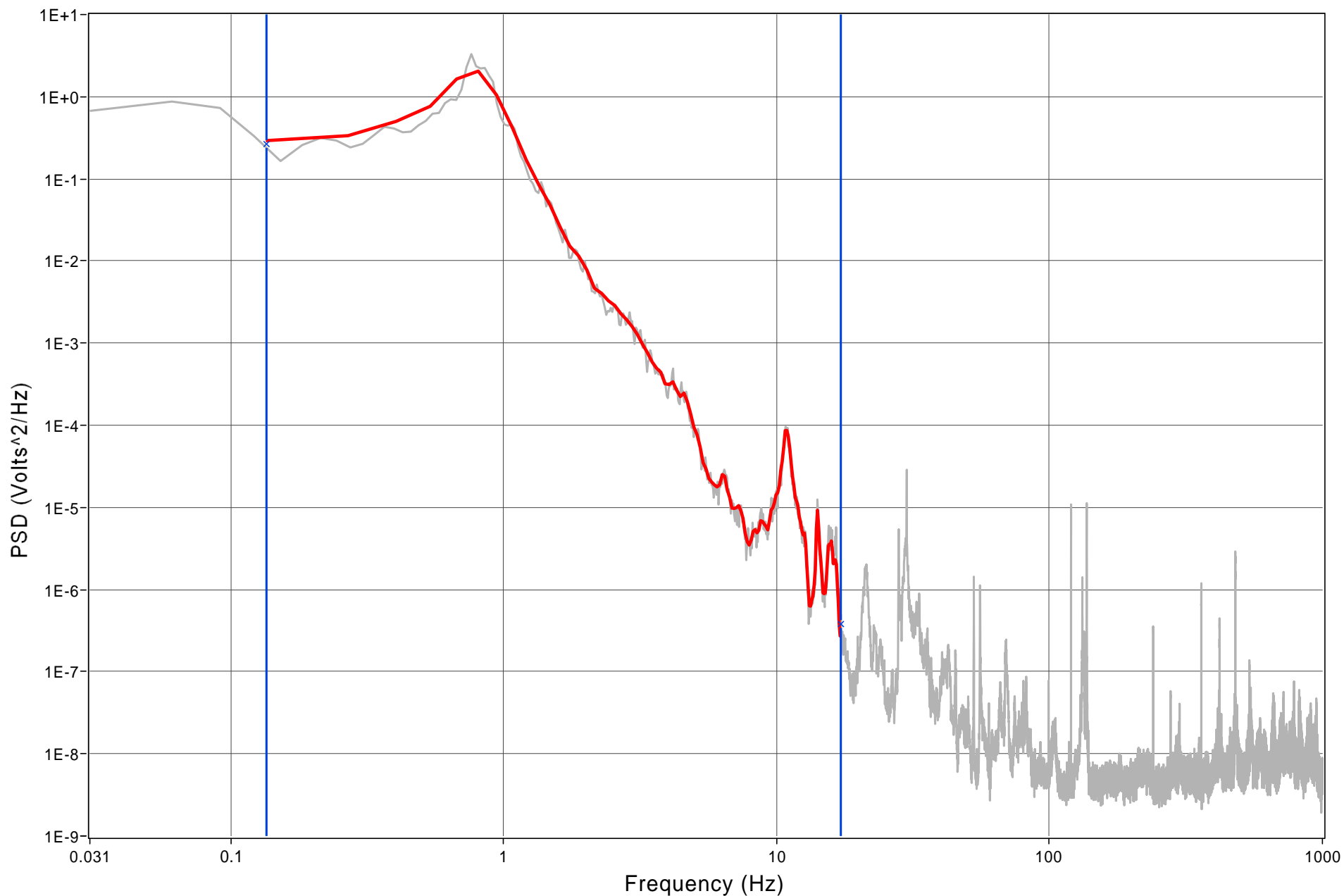




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	LT476	SG LVL	FNP1060003.psd	11 : 256	0.134694	17.240854	Dynamic	23-Jun-2009 12:04:01

**PSD Window**

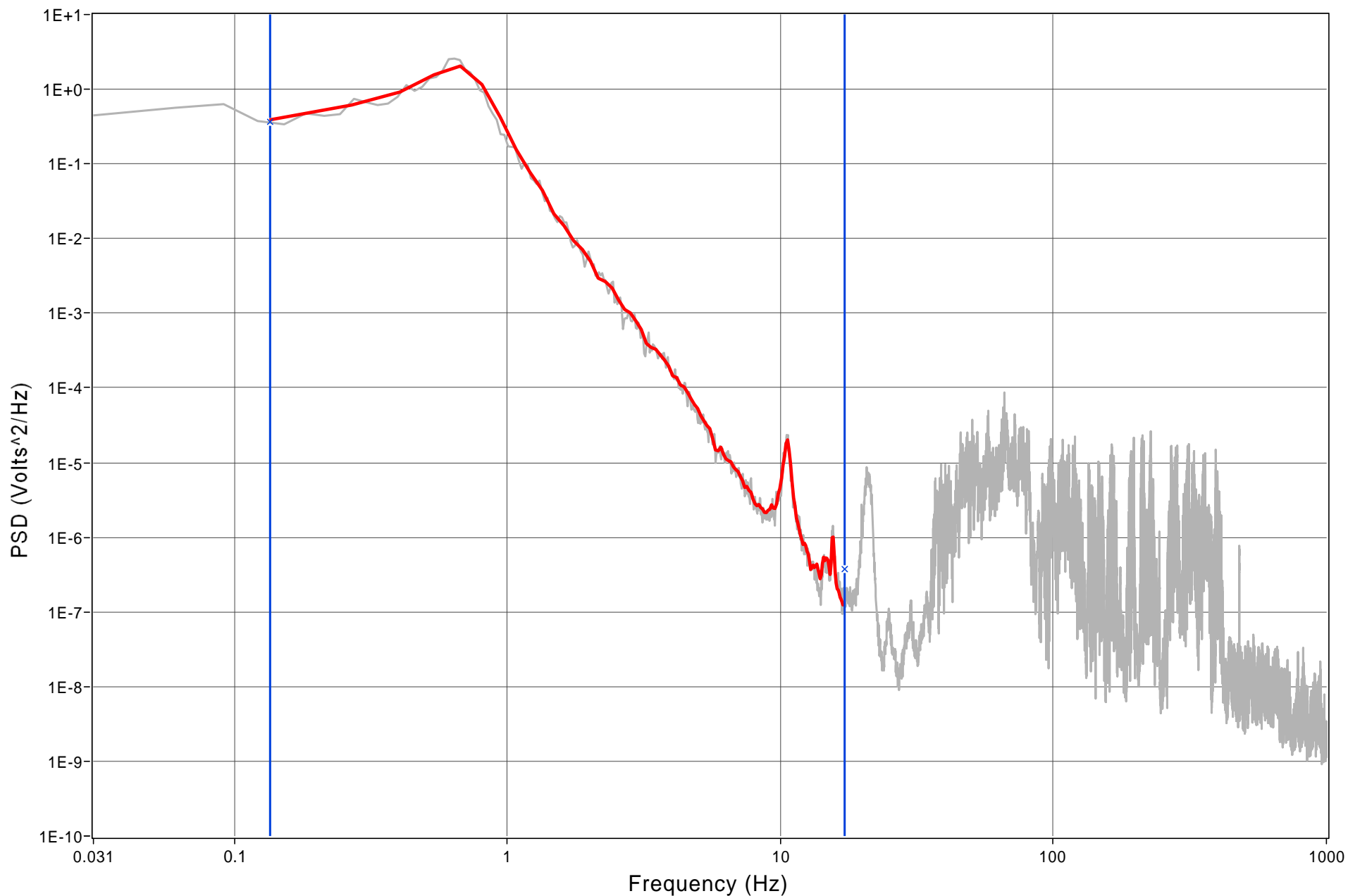




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	LT486	SG LVL	FNP1060003.psd	11 : 256	0.134694	17.240854	Dynamic	23-Jun-2009 12:04:01

PSD Window

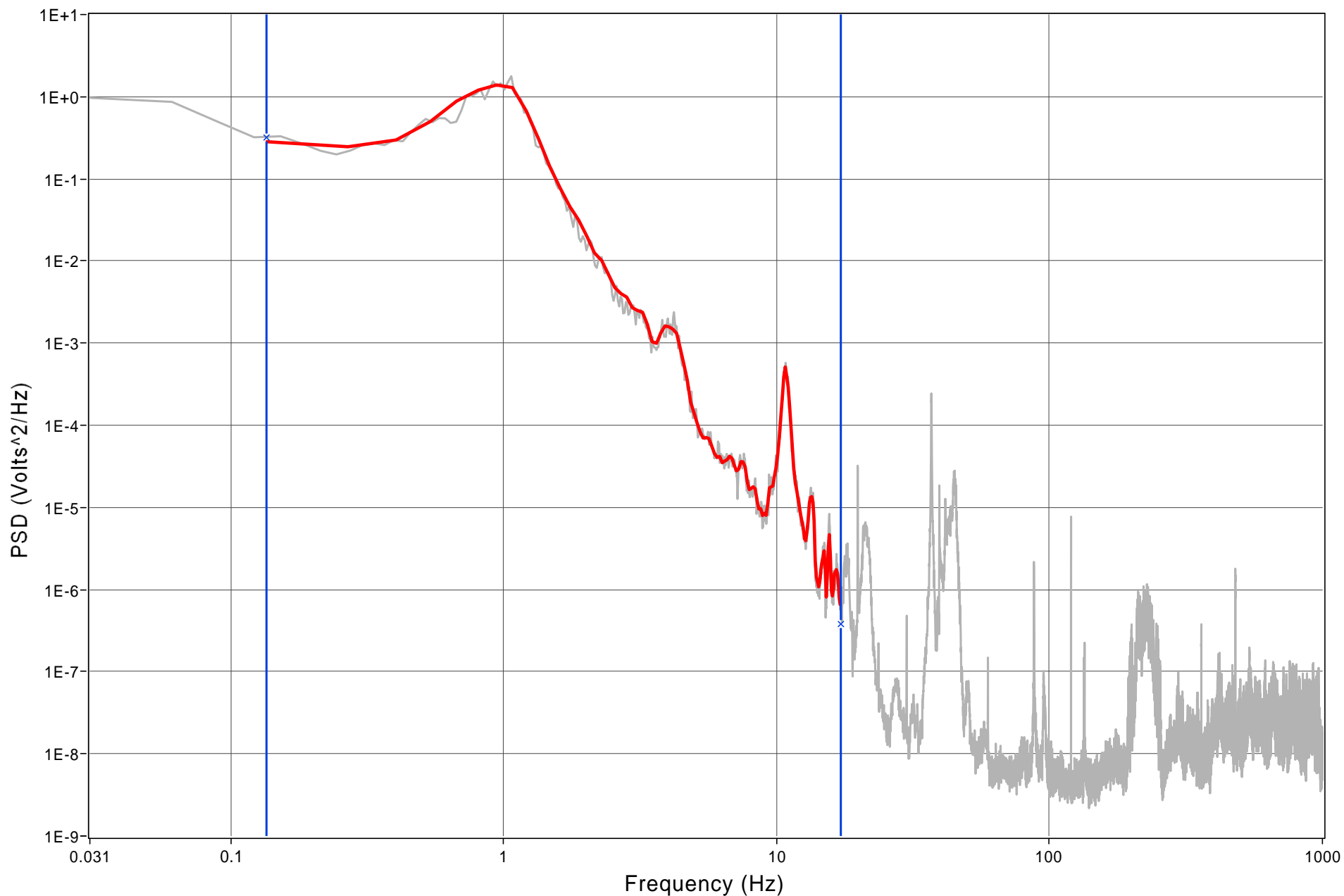




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	LT496	SG LVL	FNP1060003.psd	11 : 256	0.134694	17.240854	Dynamic	23-Jun-2009 12:04:01

**PSD Window**

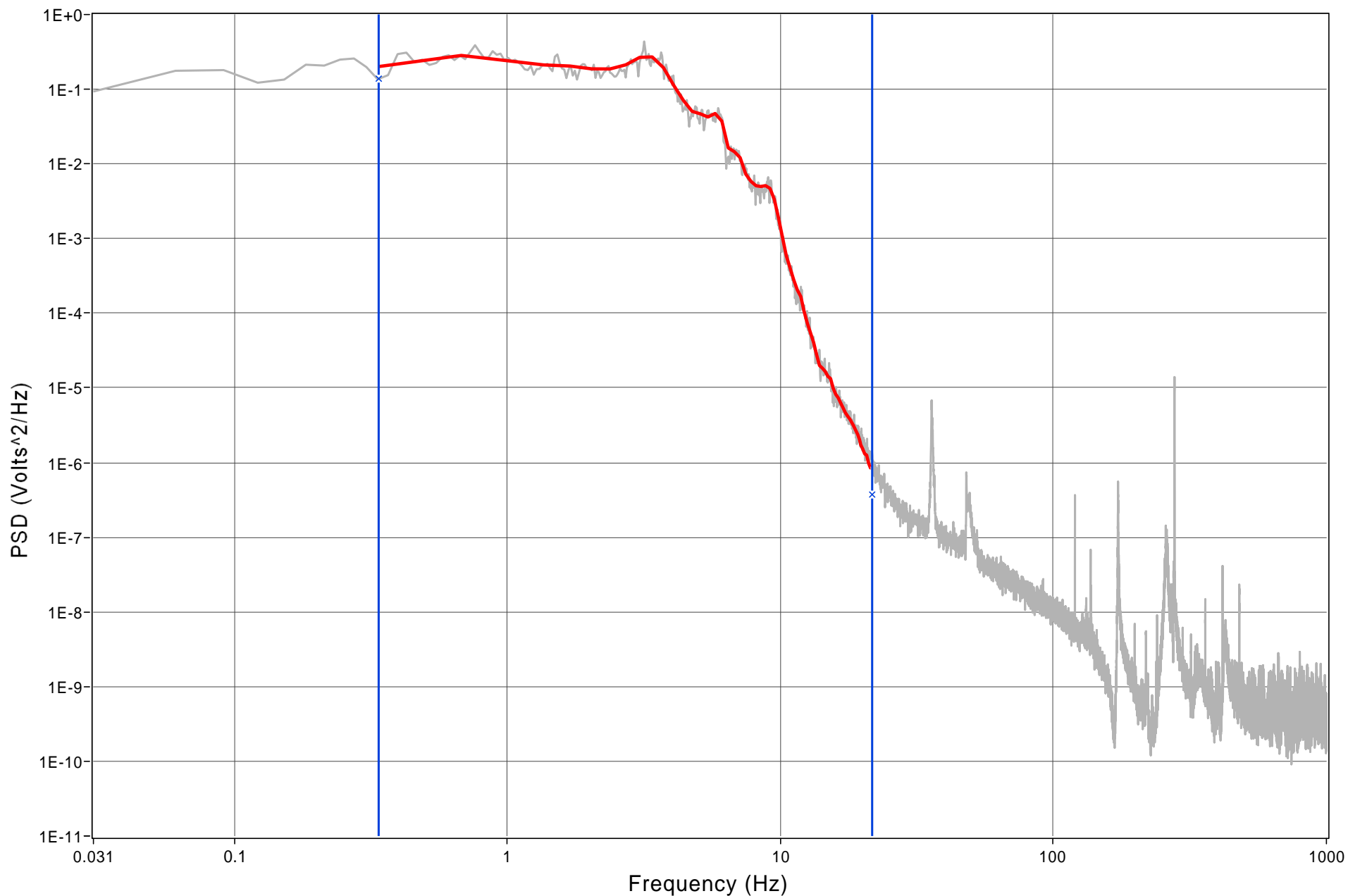




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	FT474	STM FLOW	FNP1060003.psd	11 : 128	0.339664	21.738468	Dynamic	23-Jun-2009 12:04:01

**PSD Window**

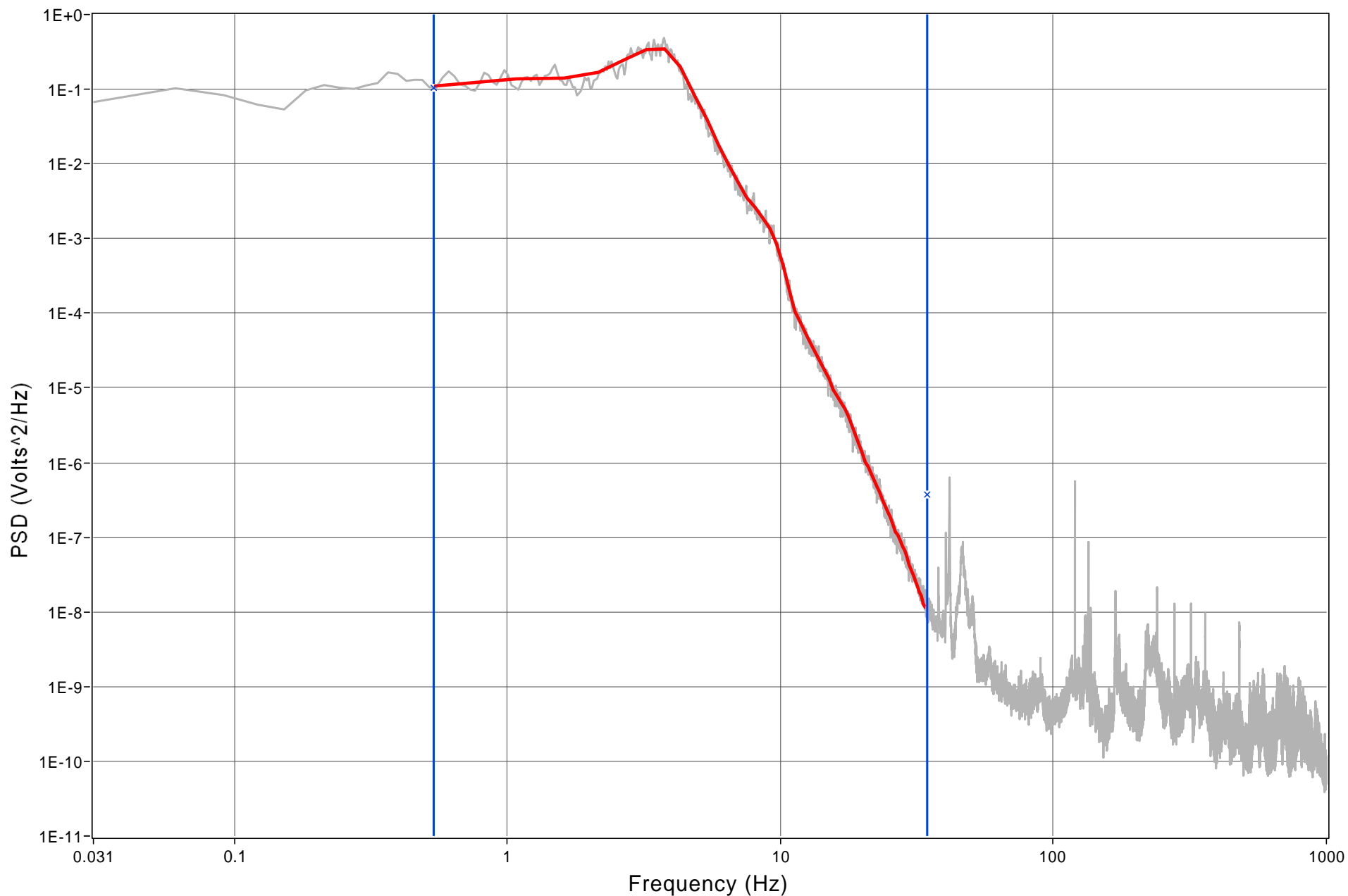




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	FT484	STM FLOW	FNP1060003.psd	11 : 128	0.538777	34.481708	Dynamic	23-Jun-2009 12:04:01

**PSD Window**

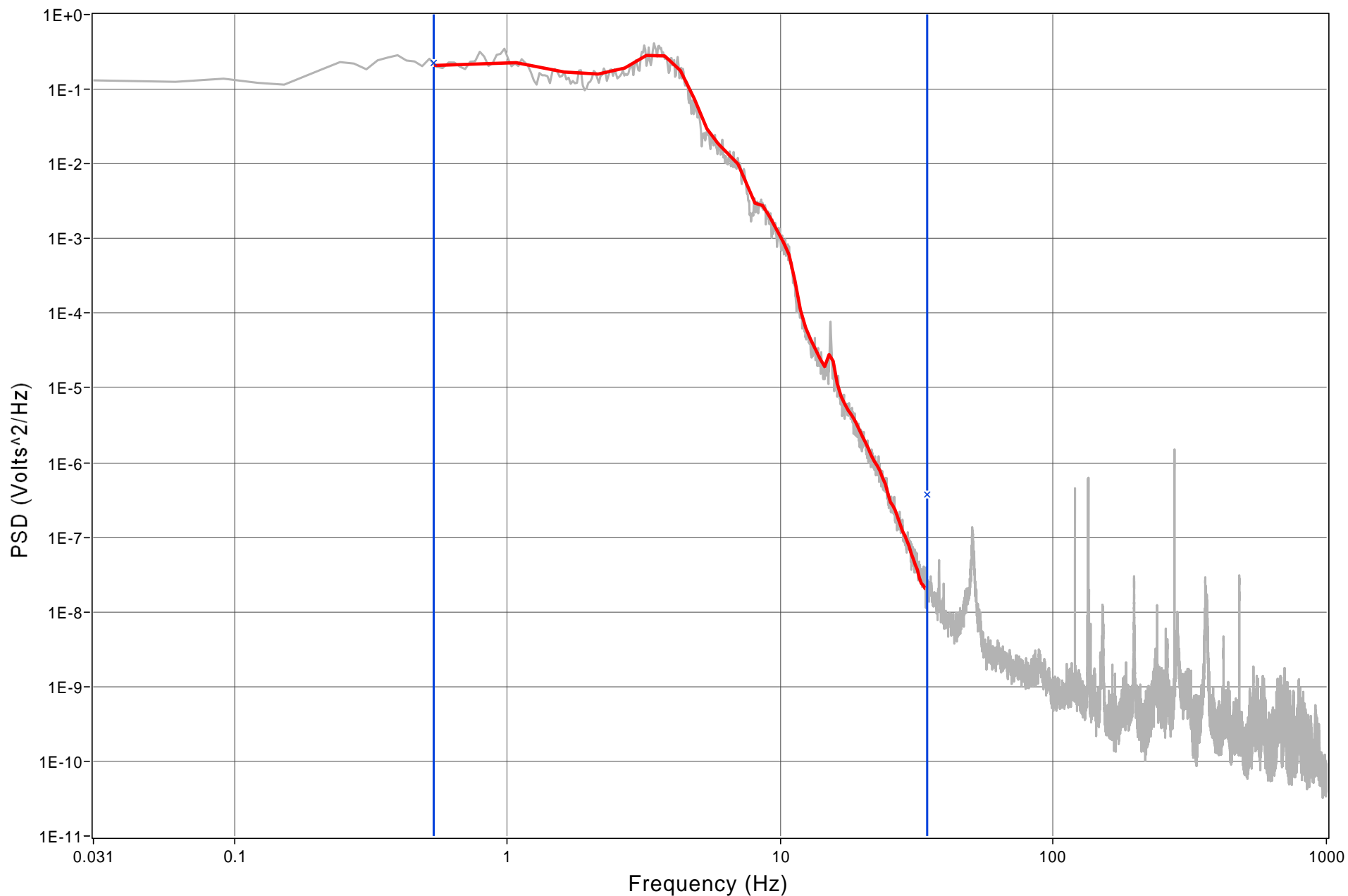




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	FT494	STM FLOW	FNP1060003.psd	11 : 128	0.538777	34.481708	Dynamic	23-Jun-2009 12:04:01

**PSD Window**



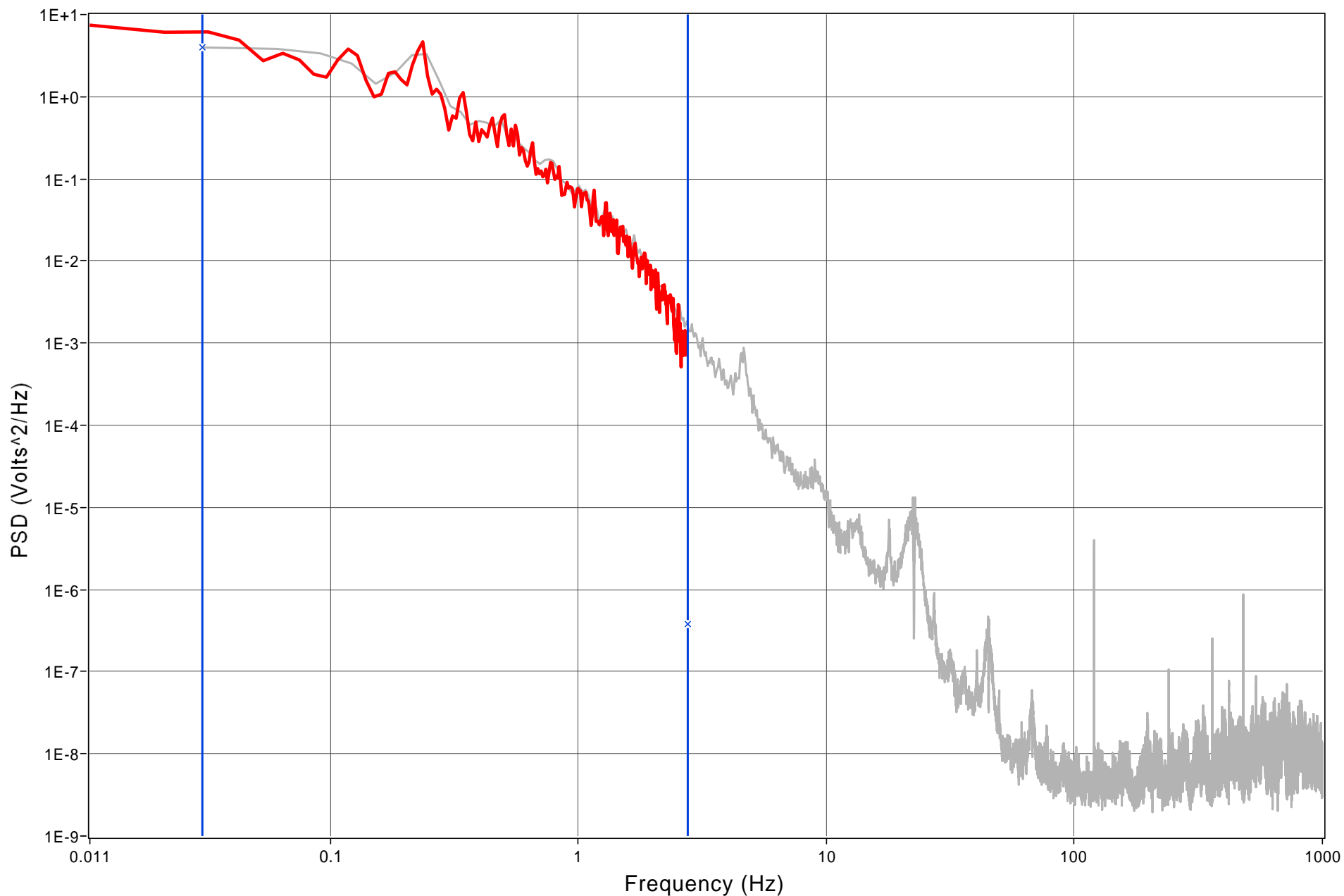




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	FT477	FW FLOW	FNP1060003.psd	11 : 512	0.010731	2.747169	Dynamic	23-Jun-2009 12:04:01

**PSD Window**

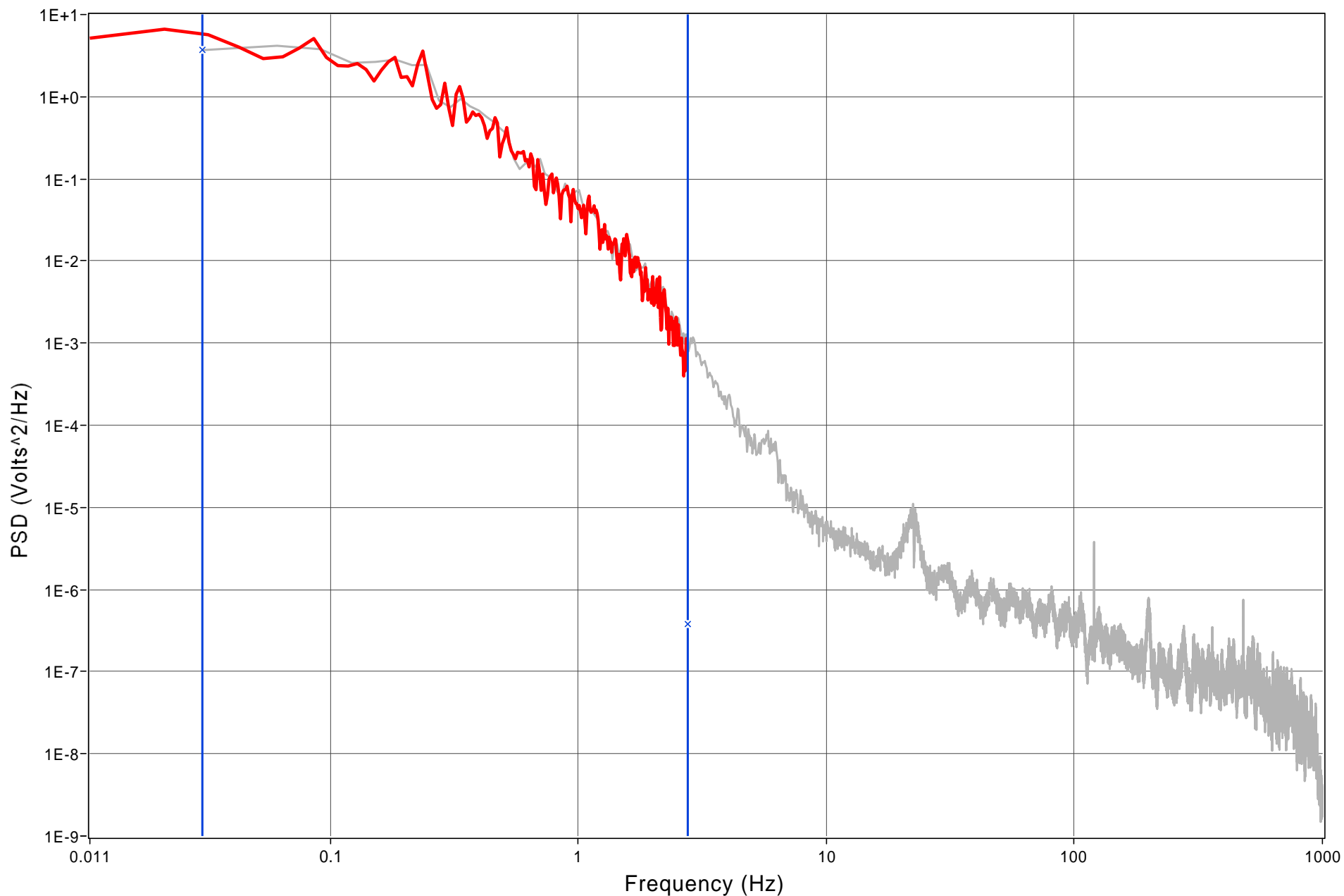




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	FT487	FW FLOW	FNP1060003.psd	11 : 512	0.010731	2.747169	Dynamic	23-Jun-2009 12:04:01

PSD Window

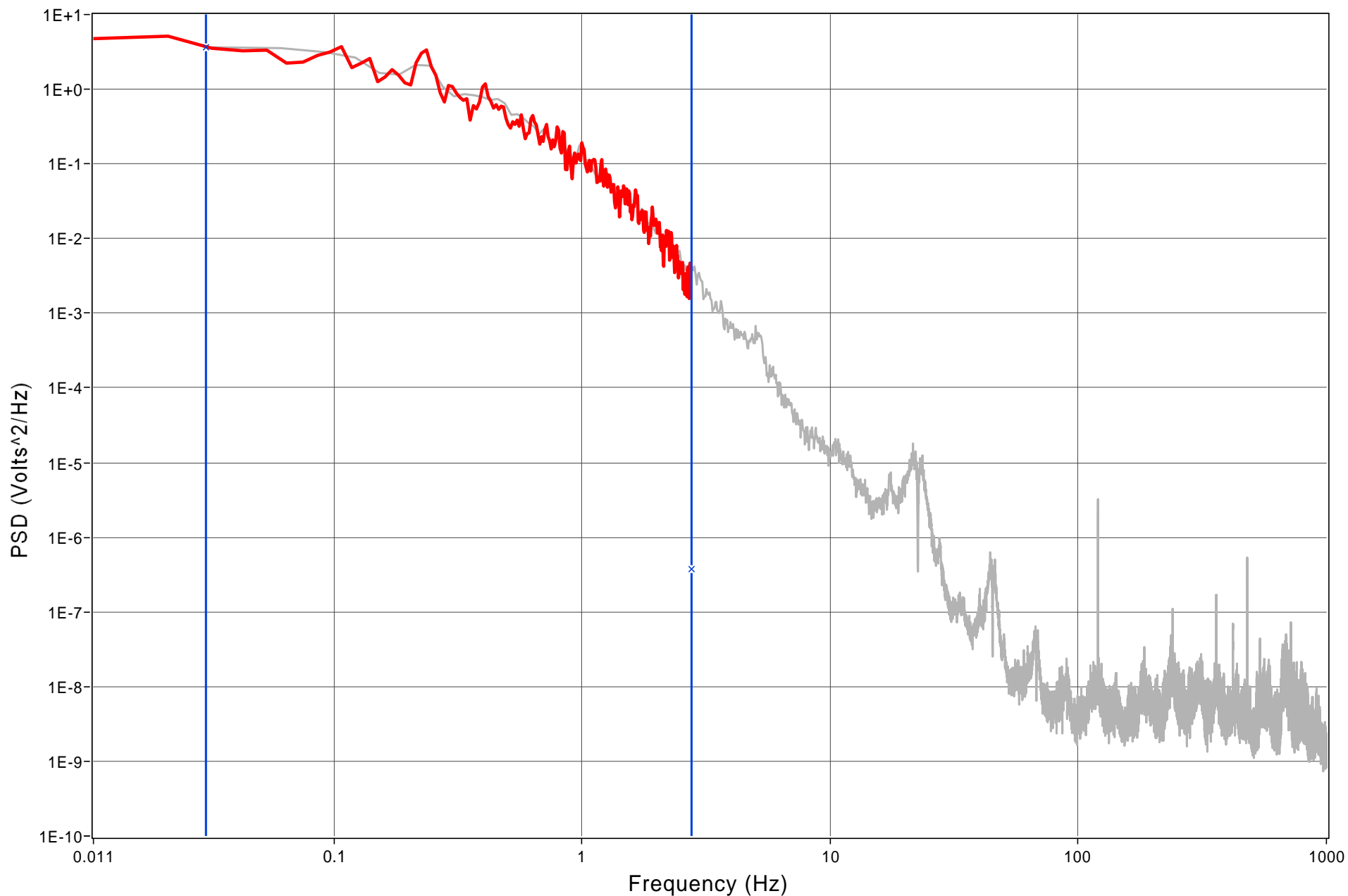




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	FT497	FW FLOW	FNP1060003.psd	11 : 512	0.010731	2.747169	Dynamic	23-Jun-2009 12:04:01

PSD Window

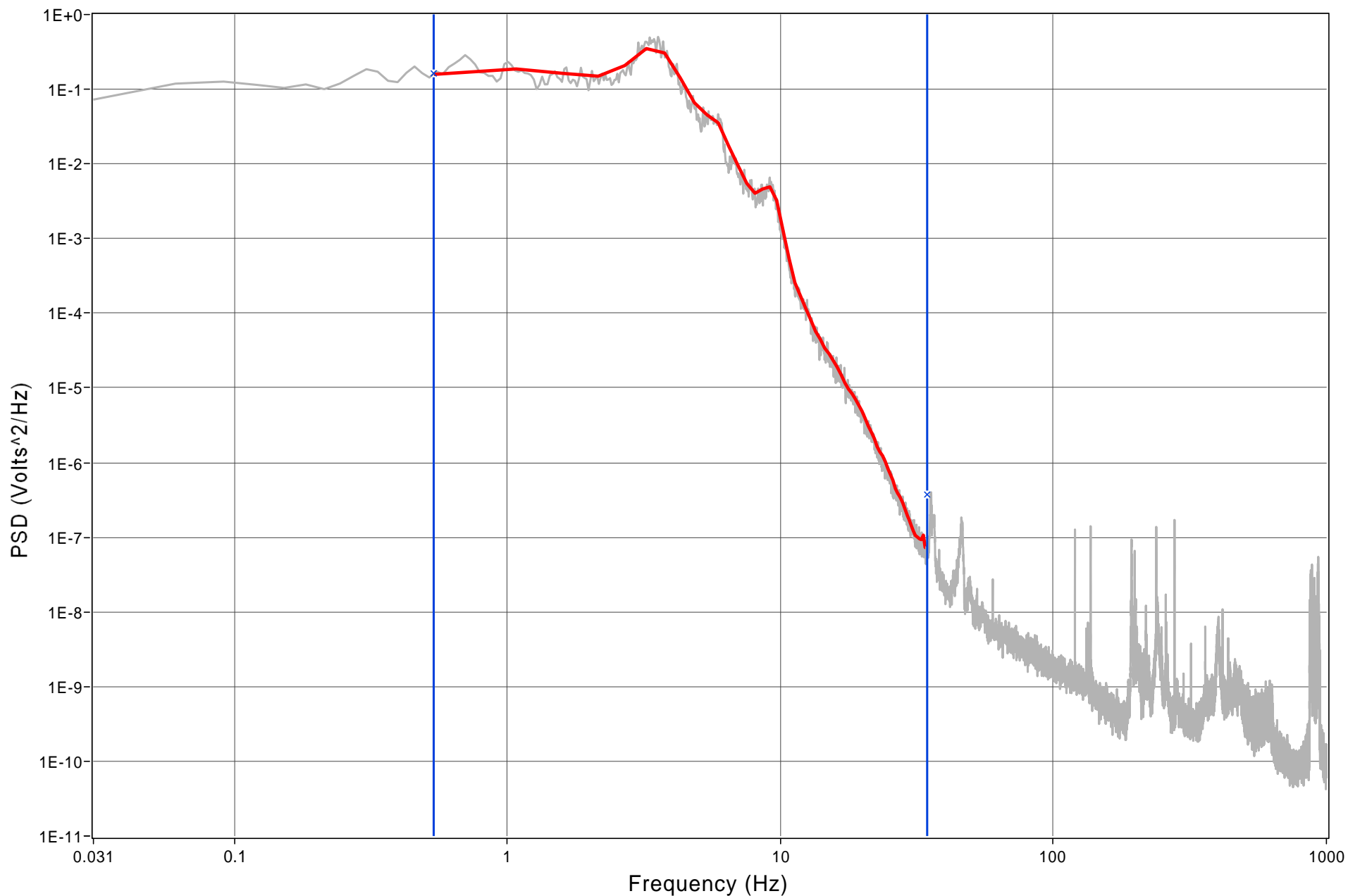




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	FT475	STM FLOW	FNP1060004.psd	11 : 128	0.538777	34.481708	Dynamic	23-Jun-2009 12:04:01

**PSD Window**

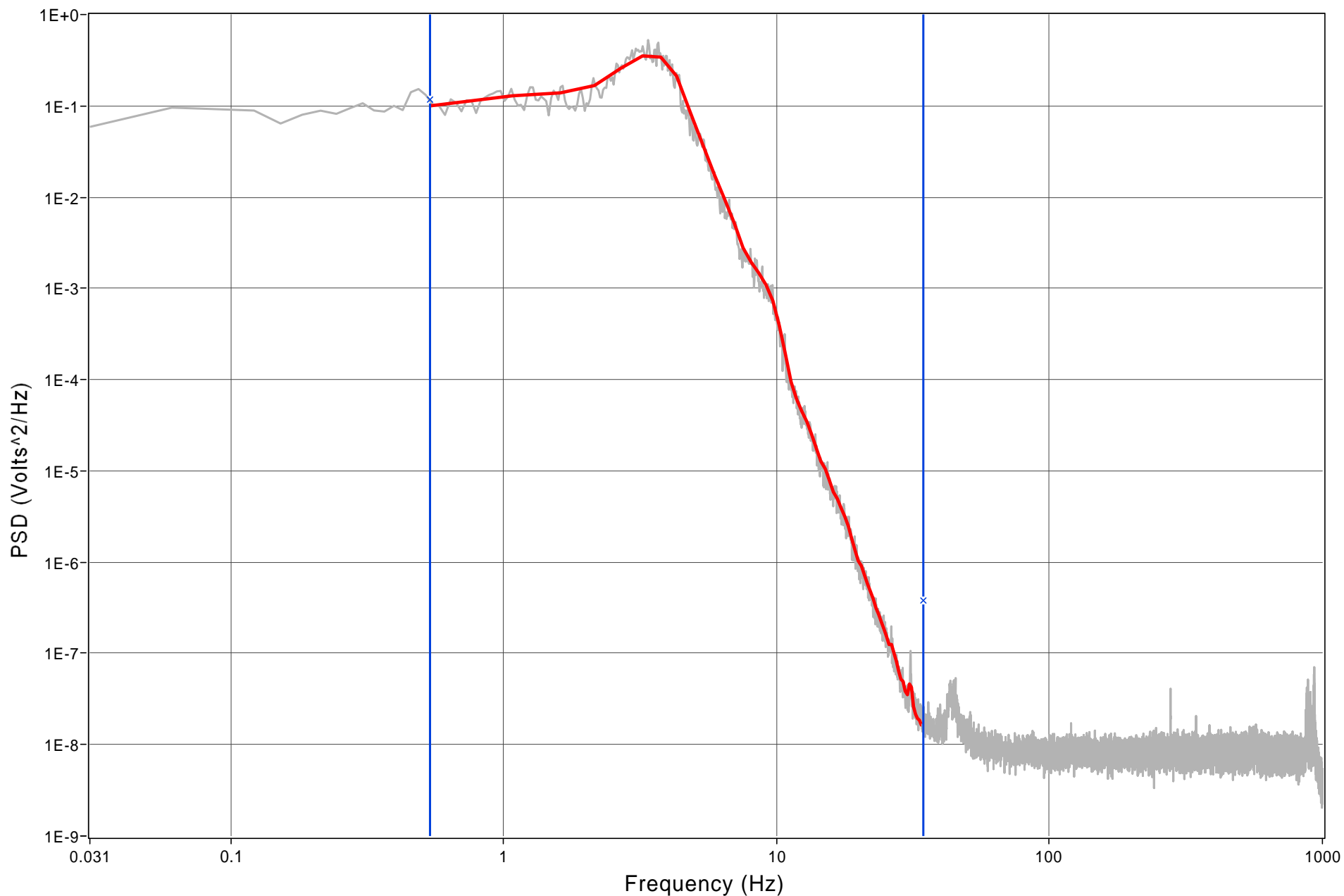




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	FT485	STM FLOW	FNP1060004.psd	11 : 128	0.538777	34.481708	Dynamic	23-Jun-2009 12:04:01

**PSD Window**

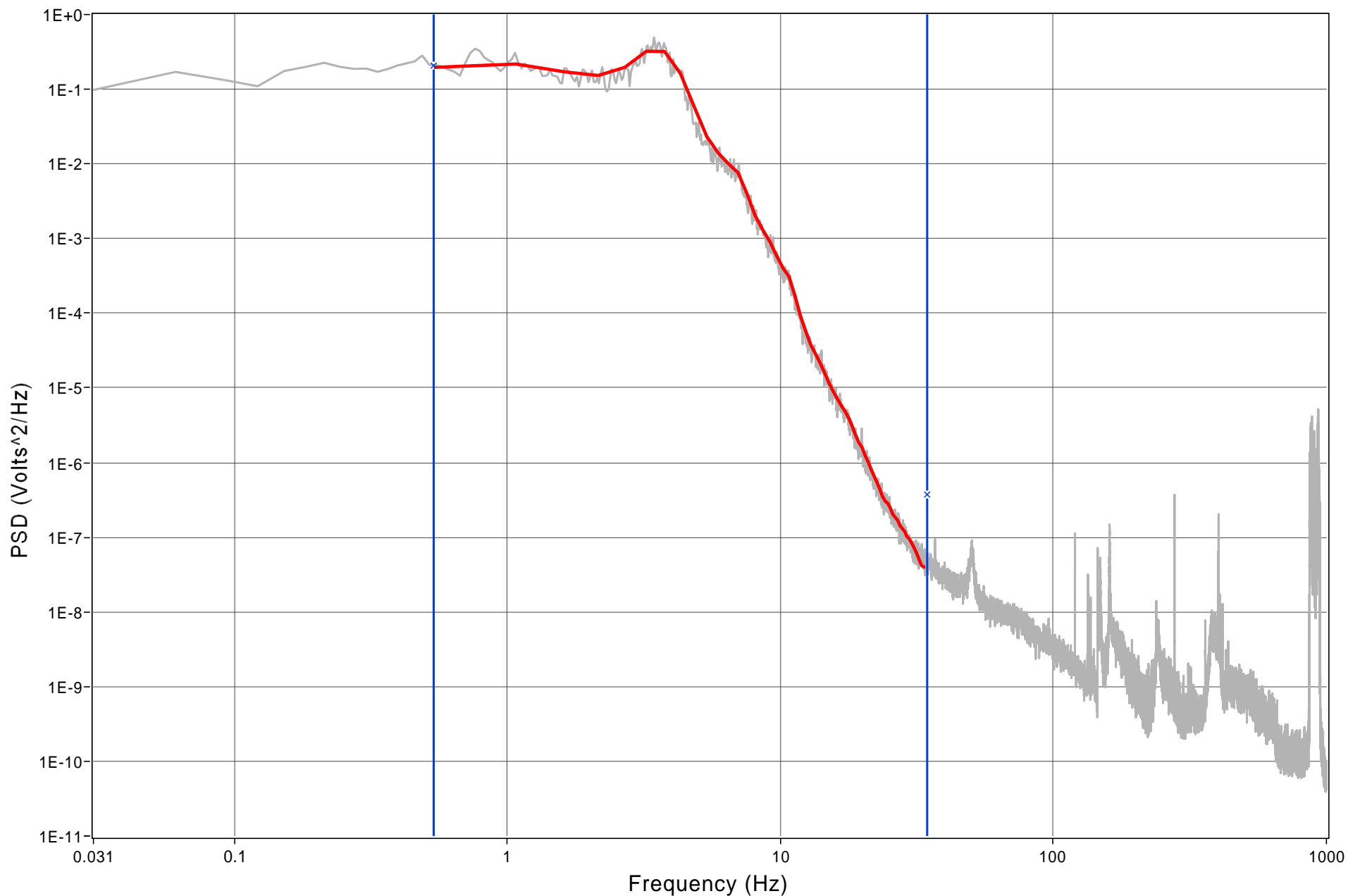




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	FT495	STM FLOW	FNP1060004.psd	11 : 128	0.538777	34.481708	Dynamic	23-Jun-2009 12:04:01

**PSD Window**

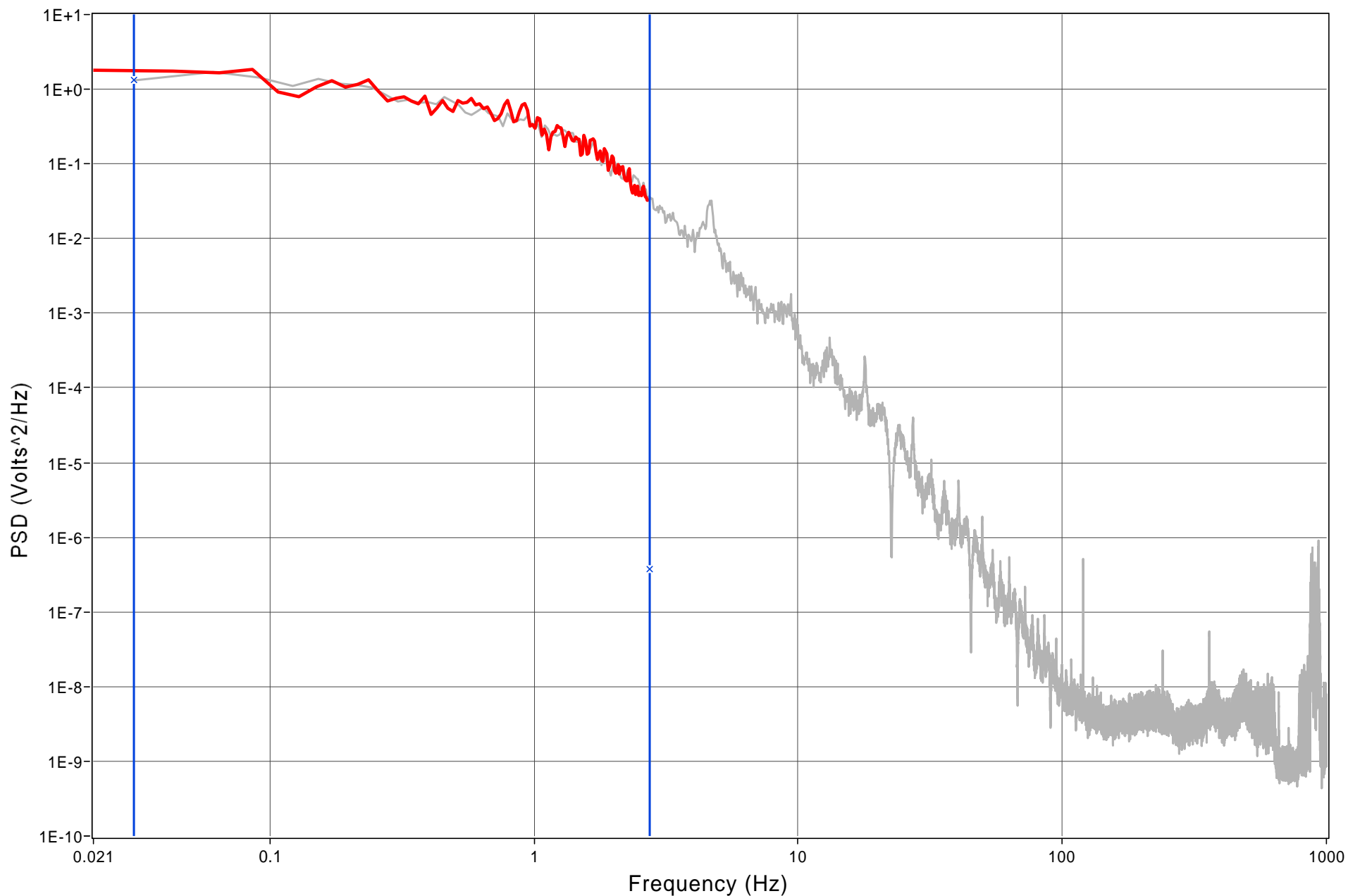




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	FT476	FW FLOW	FNP1060004.psd	11 : 256	0.021462	2.747169	Dynamic	23-Jun-2009 12:04:01

**PSD Window**

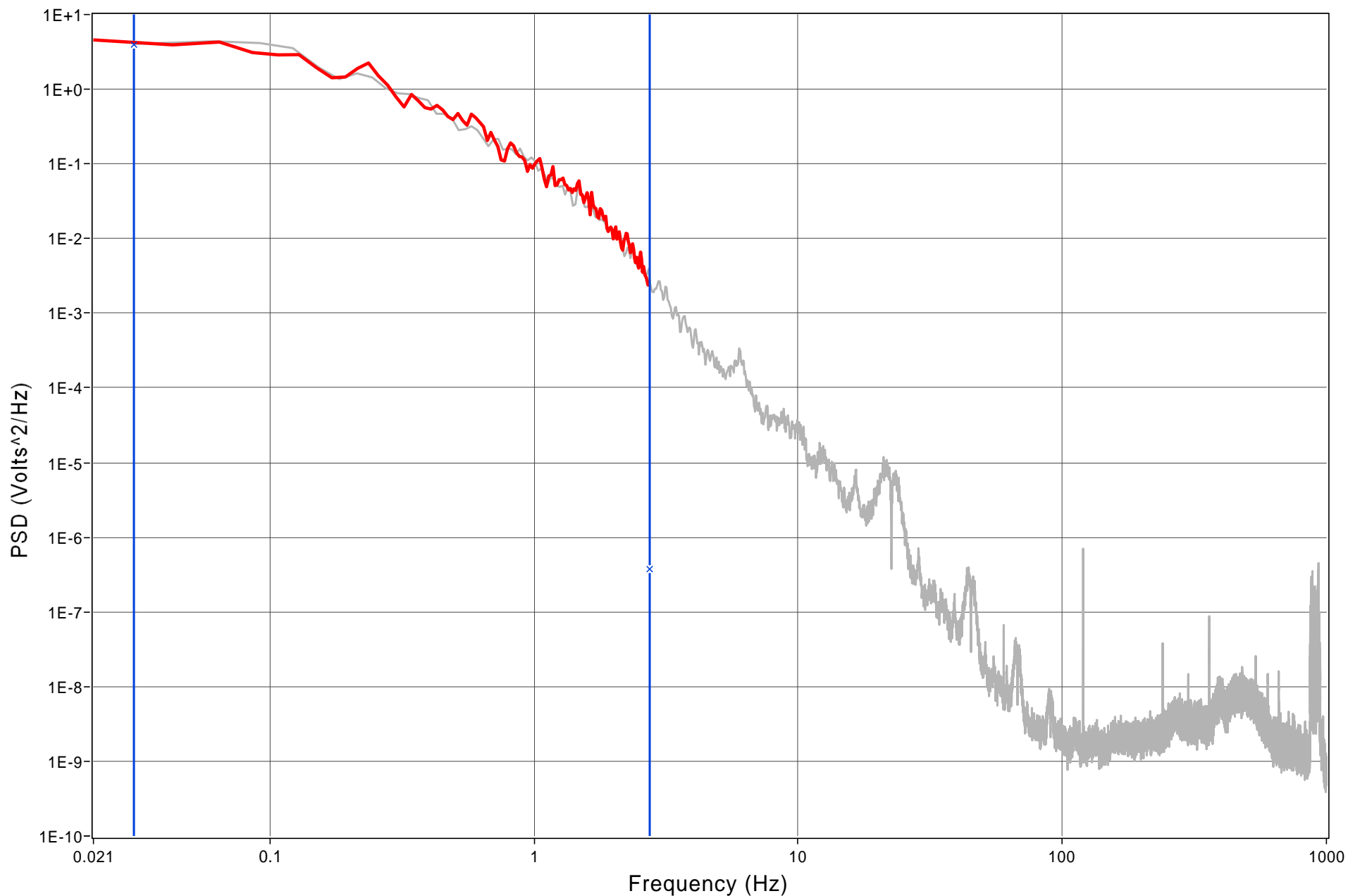




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	FT486	FW FLOW	FNP1060004.psd	11 : 256	0.021462	2.747169	Dynamic	23-Jun-2009 12:04:01

PSD Window



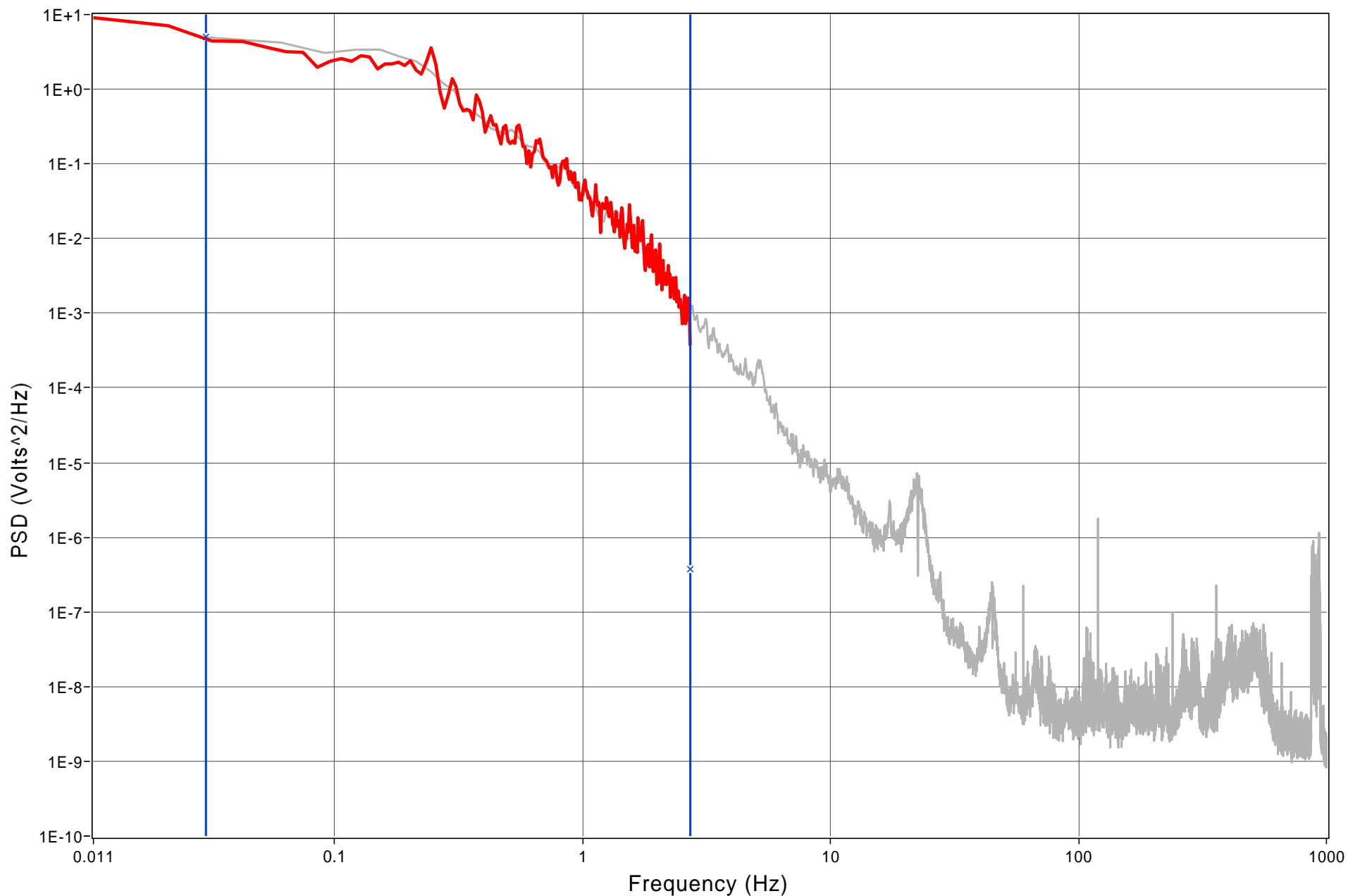




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 1	FT496	FW FLOW	FNP1060004.psd	11 : 512	0.010672	2.732157	Dynamic	23-Jun-2009 12:04:01

PSD Window

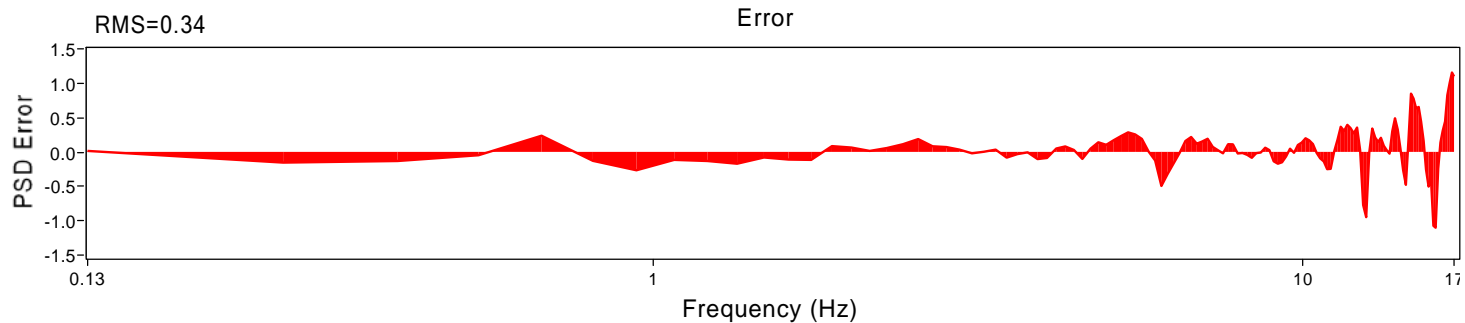
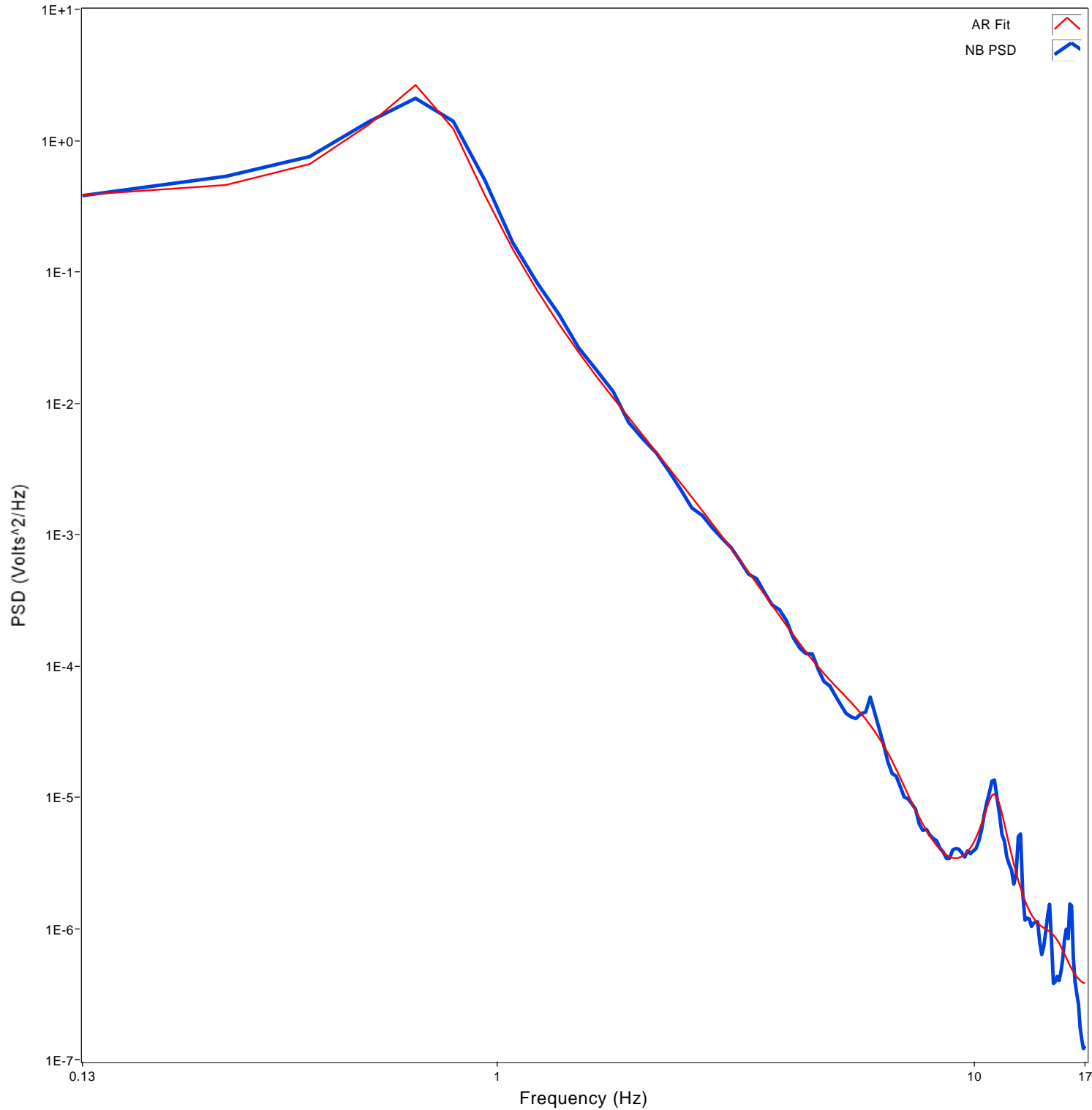




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	LT474	SG LVL	FNP1060001.psd	141 : 256	0.134694	17.240854	11	Forward-Backward	23-Jun-2009 12:04:01

NB PSD and AR PSD

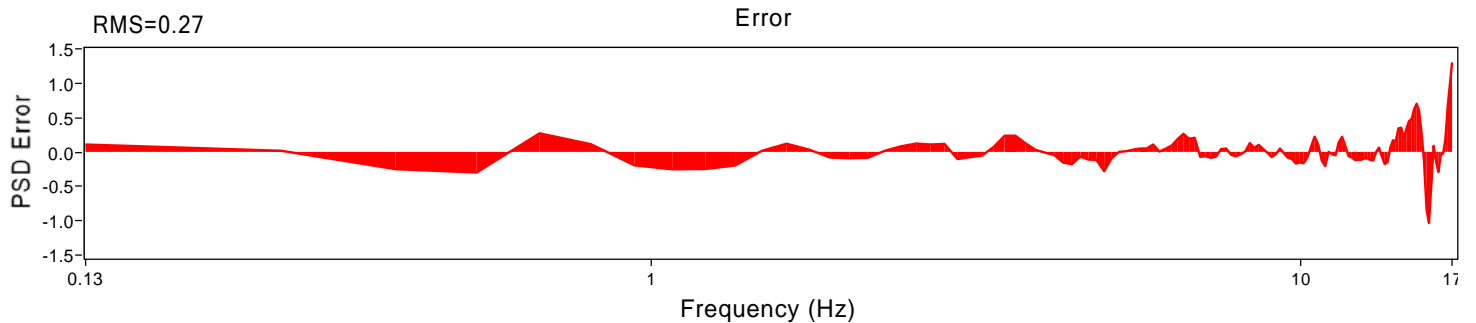
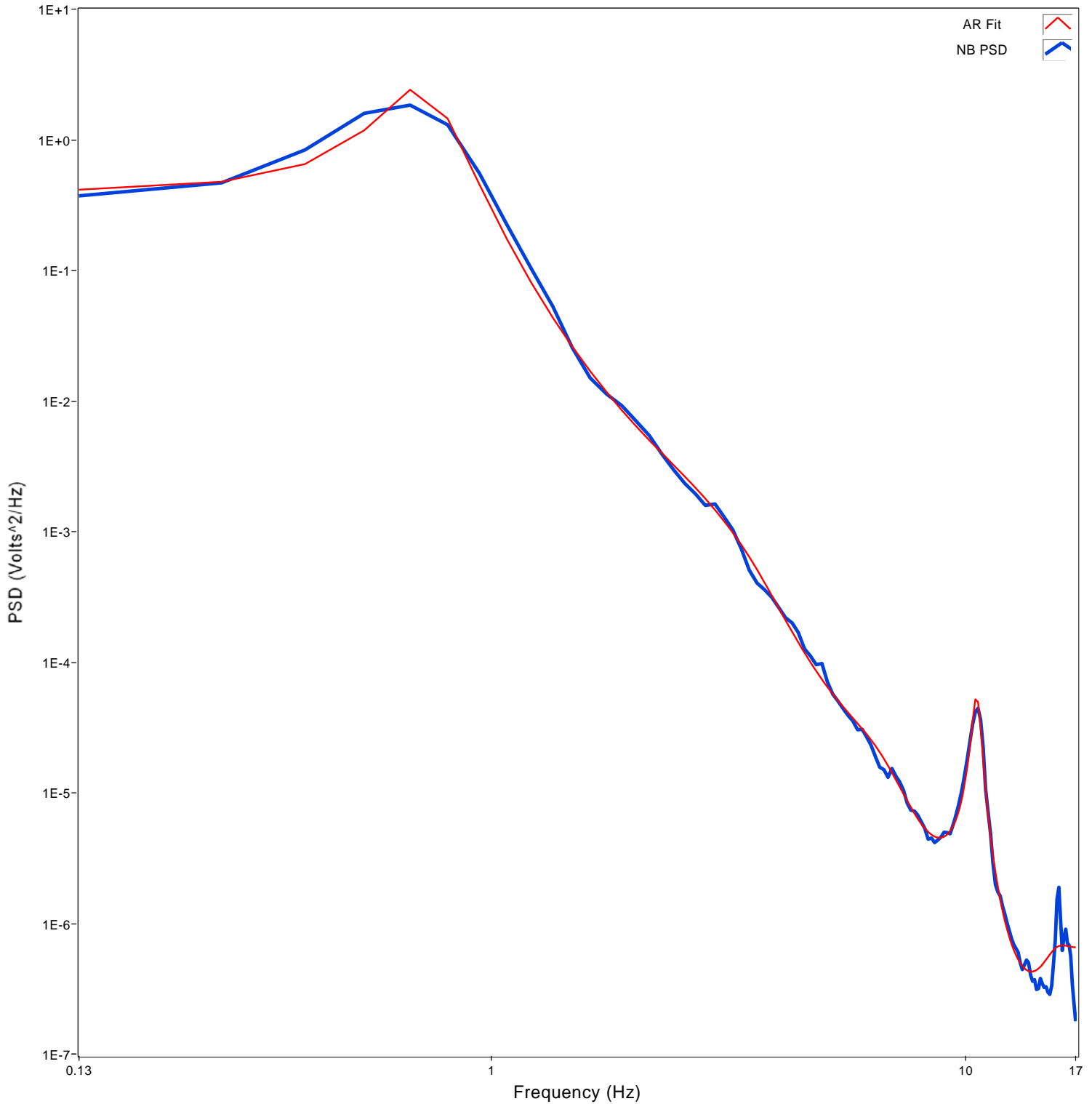




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	LT484	SG LVL	FNP1060001.psd	141 : 256	0.134694	17.240854	11	Forward-Backward	23-Jun-2009 12:04:01

NB PSD and AR PSD

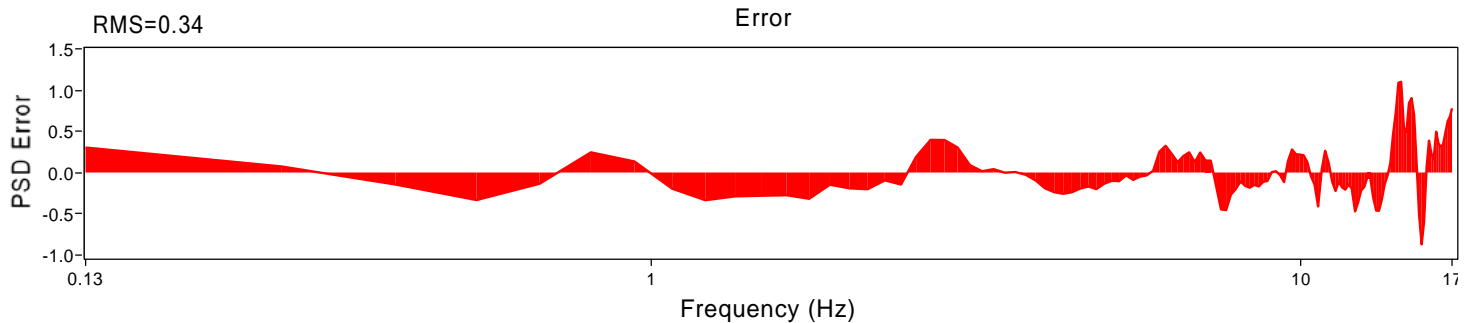
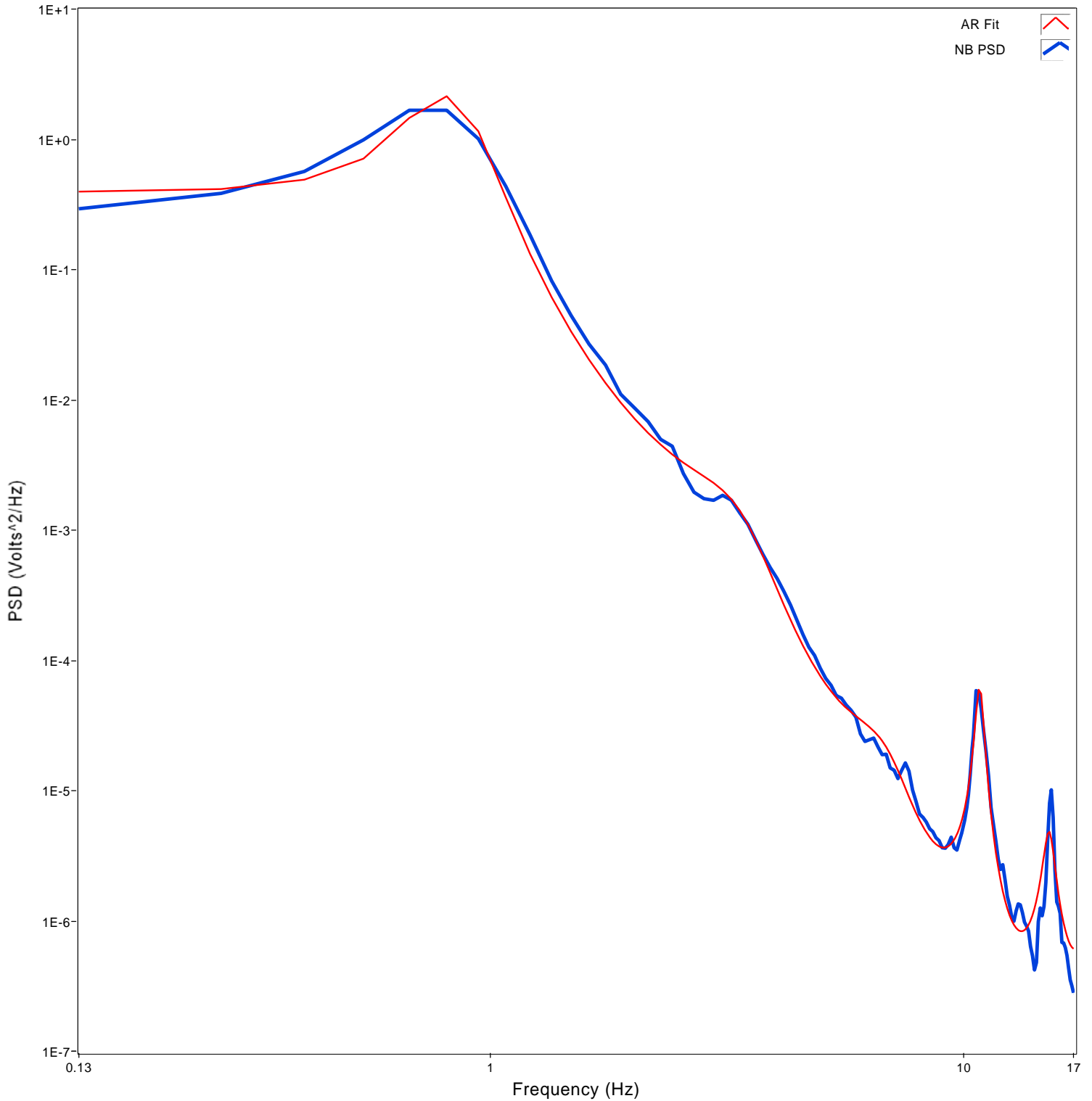




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	LT494	SG LVL	FNP1060001.psd	141 : 256	0.134694	17.240854	11	Forward-Backward	23-Jun-2009 12:04:01

NB PSD and AR PSD

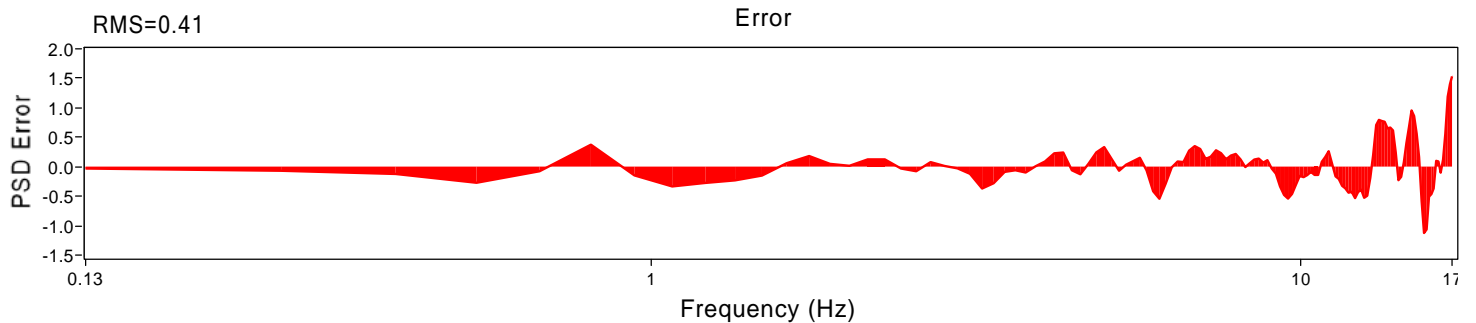
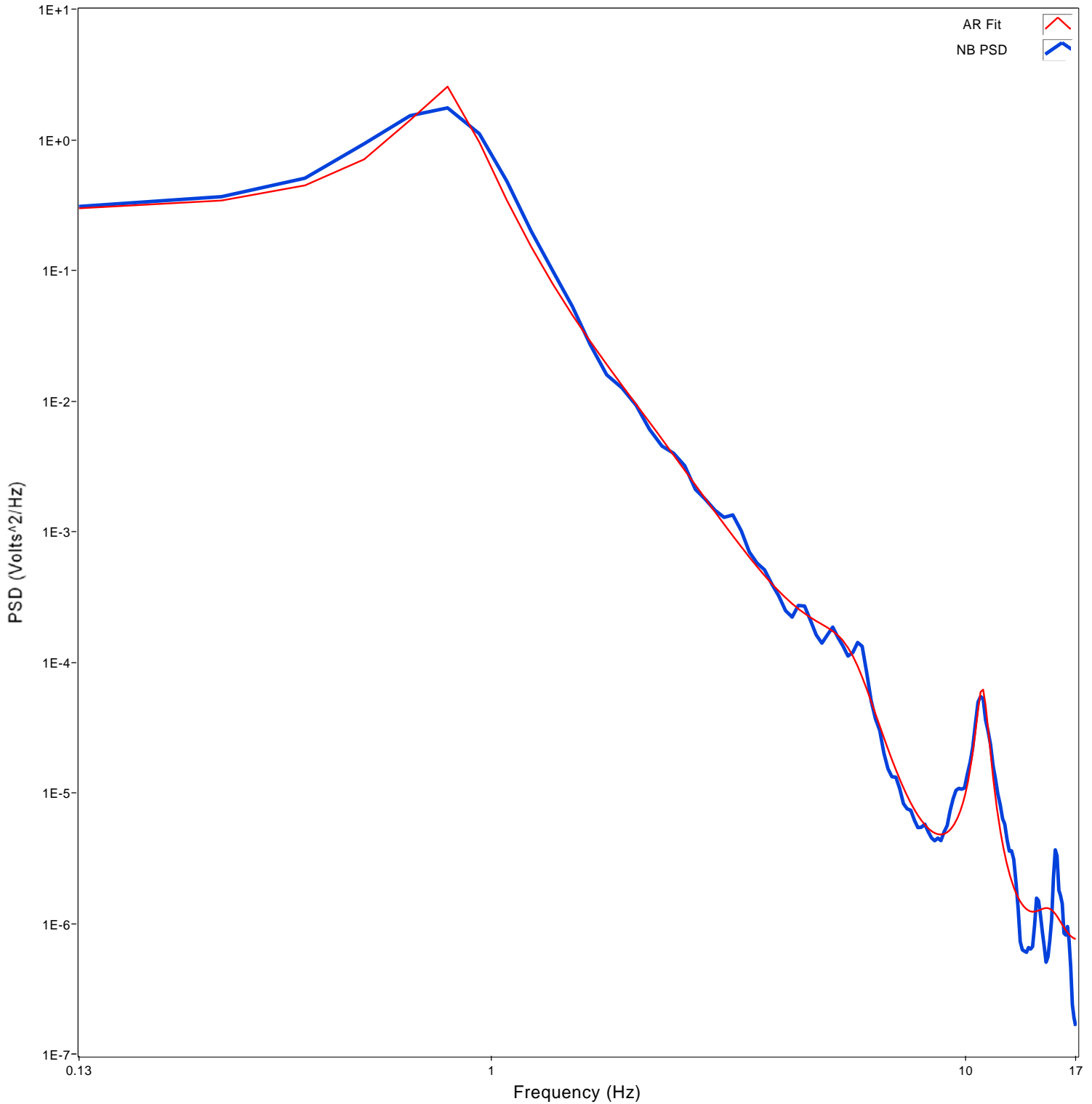




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	LT475	SG LVL	FNP1060002.psd	141 : 256	0.134694	17.240854	11	Forward-Backward	23-Jun-2009 12:04:01

NB PSD and AR PSD

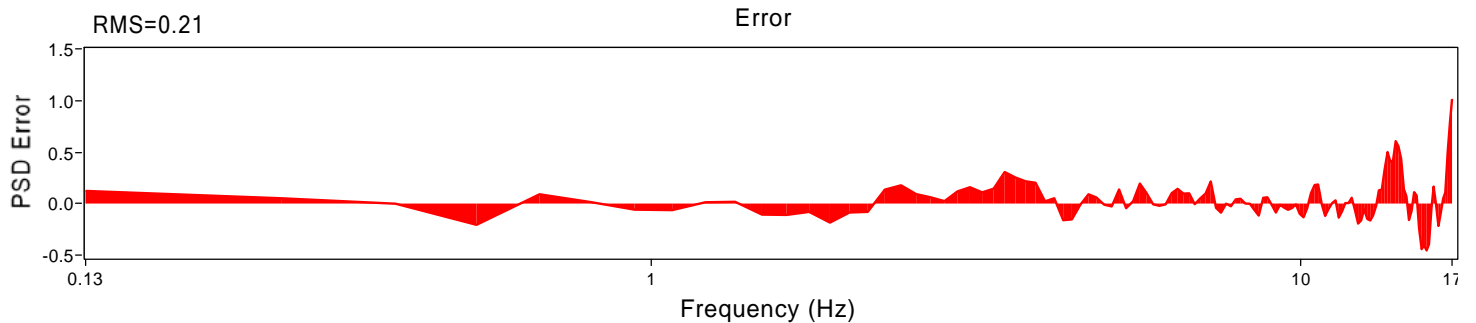
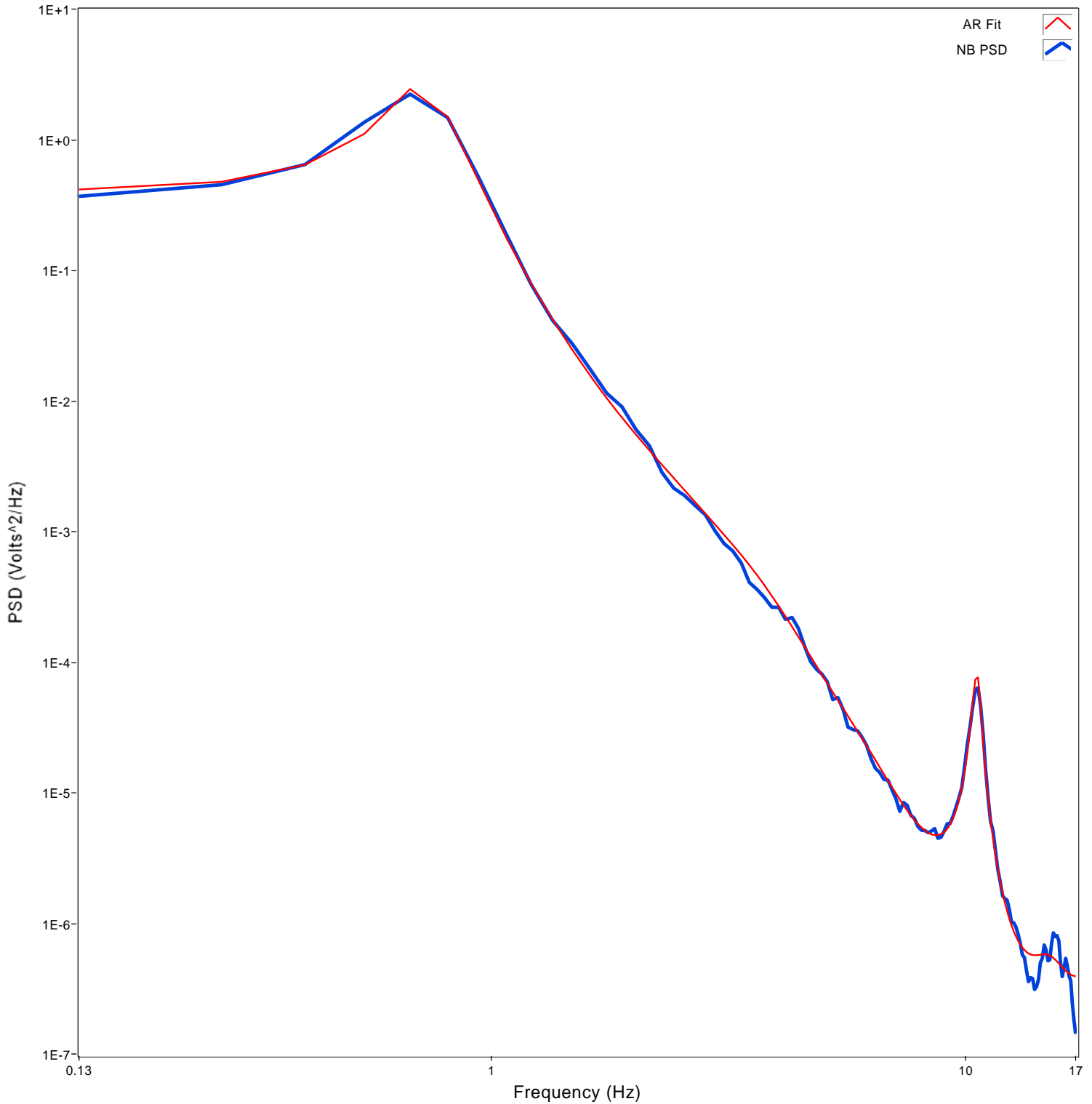




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	LT485	SG LVL	FNP1060002.psd	141 : 256	0.134694	17.240854	11	Forward-Backward	23-Jun-2009 12:04:01

NB PSD and AR PSD

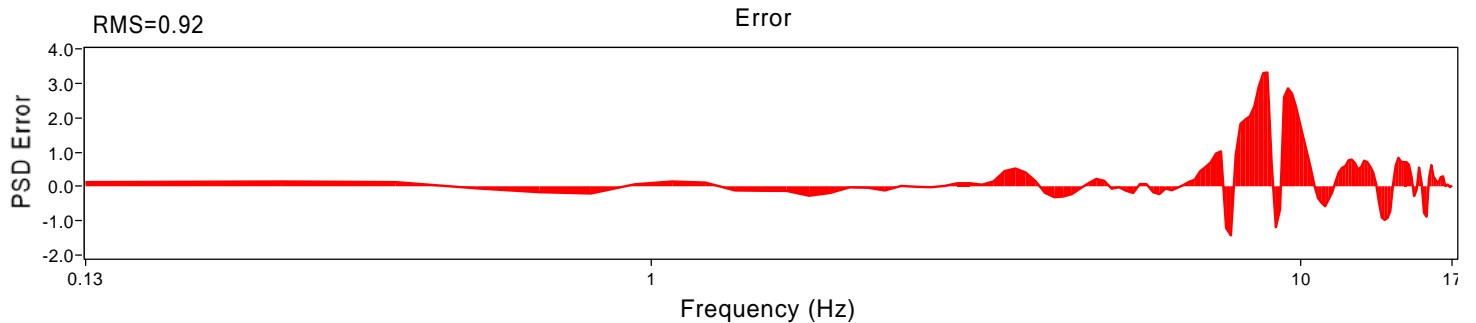
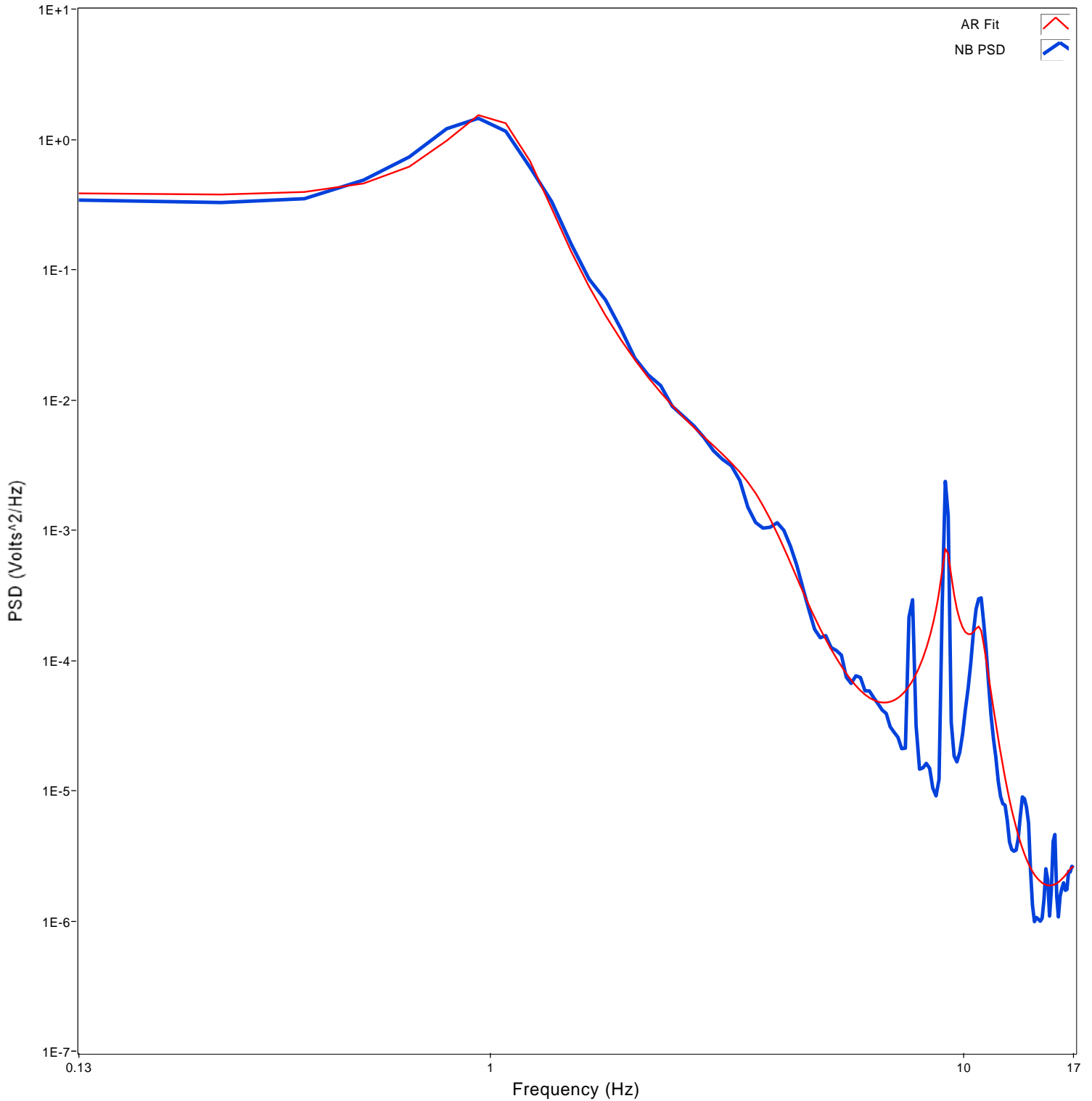




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	LT495	SG LVL	FNP1060002.psd	141 : 256	0.134694	17.240854	11	Forward-Backward	23-Jun-2009 12:04:01

NB PSD and AR PSD

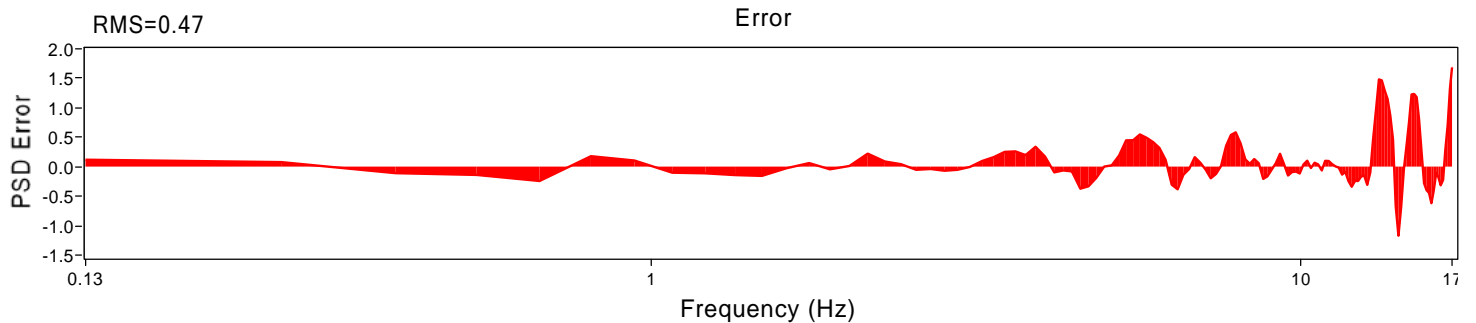
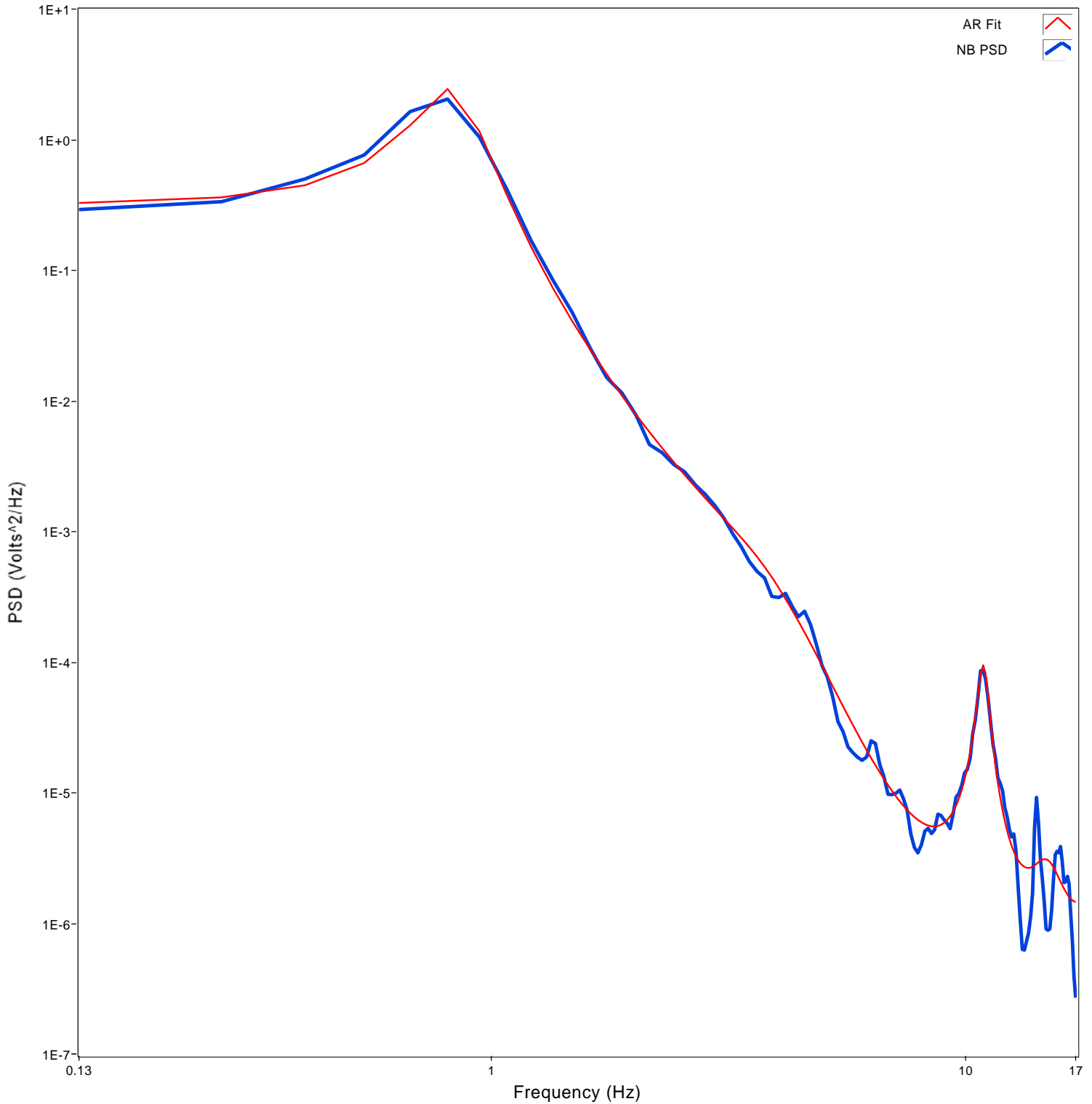




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	LT476	SG LVL	FNP1060003.psd	141 : 256	0.134694	17.240854	11	Forward-Backward	23-Jun-2009 12:04:01

NB PSD and AR PSD



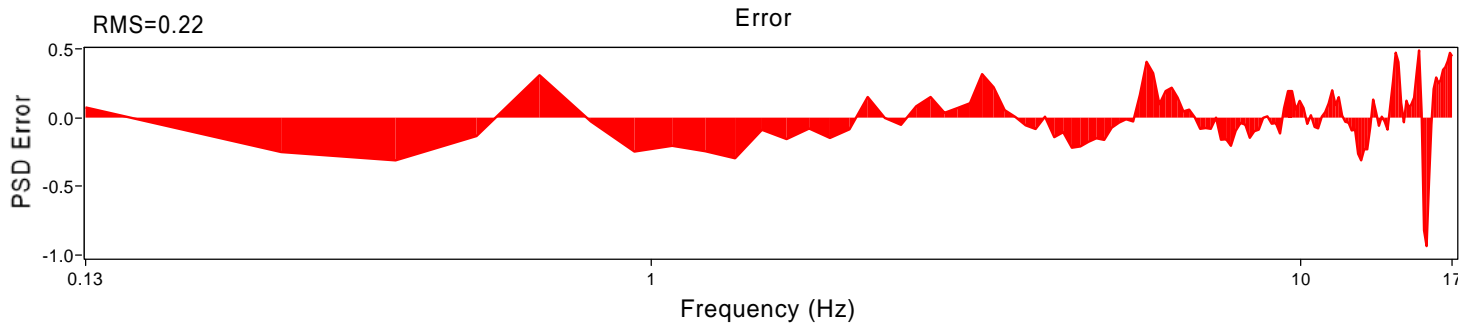
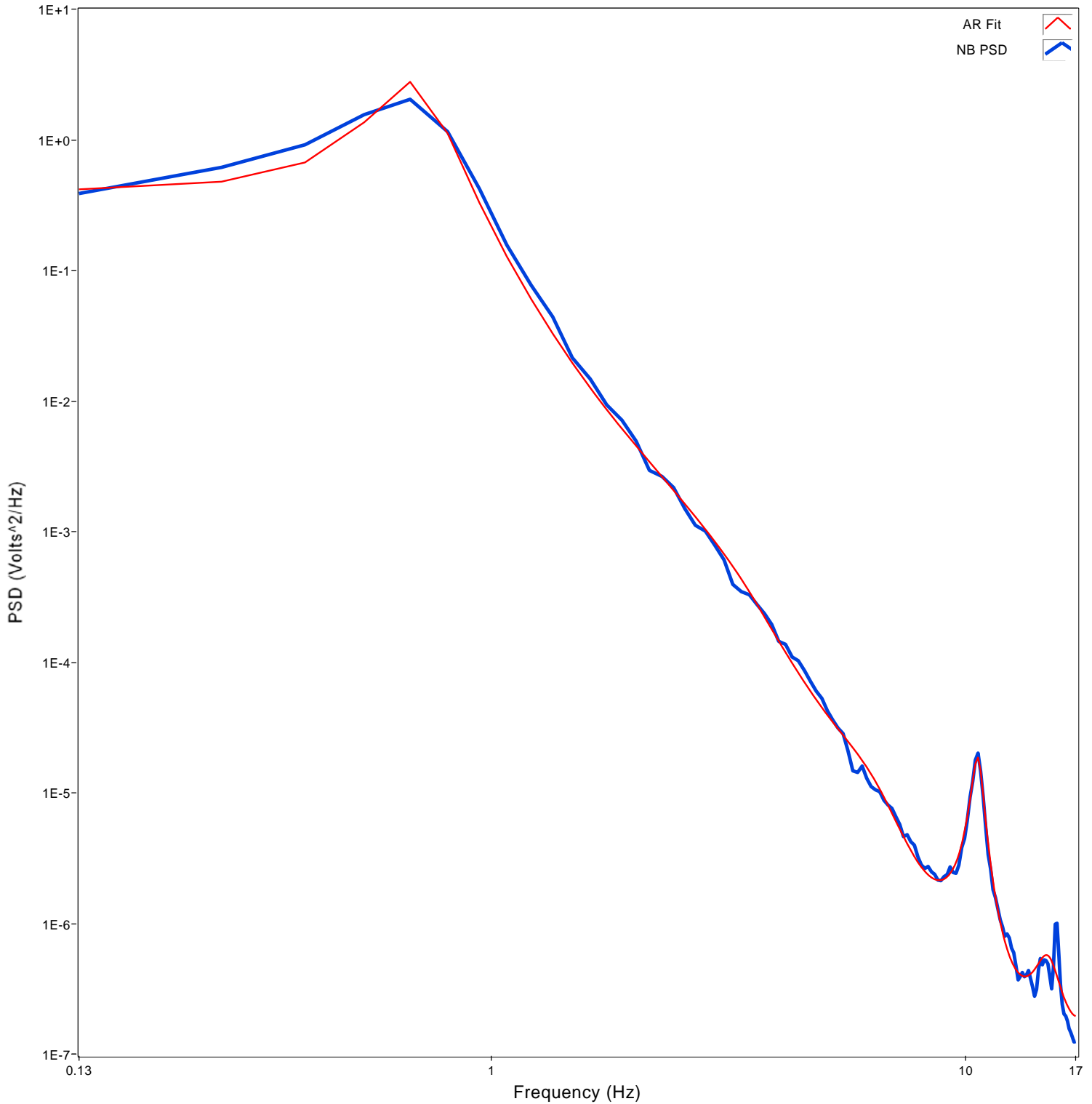




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	LT486	SG LVL	FNP1060003.psd	141 : 256	0.134694	17.240854	11	Forward-Backward	23-Jun-2009 12:04:01

NB PSD and AR PSD

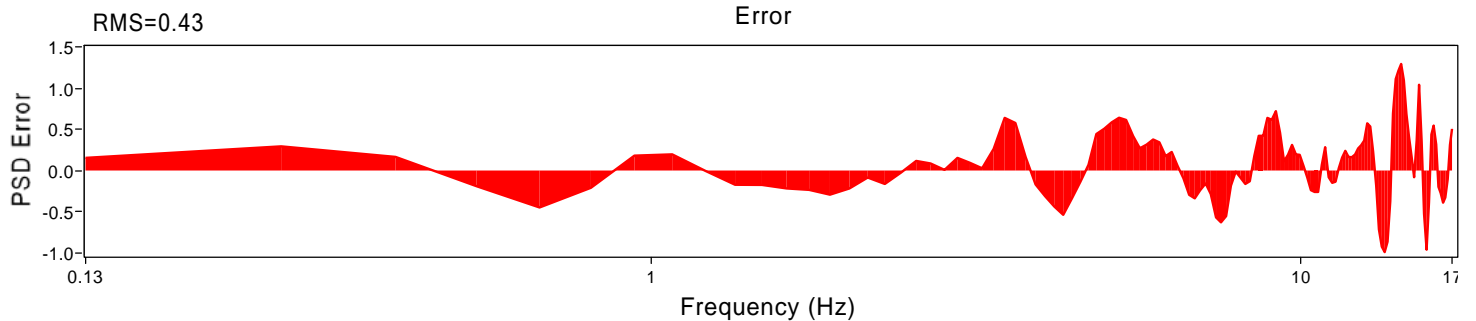
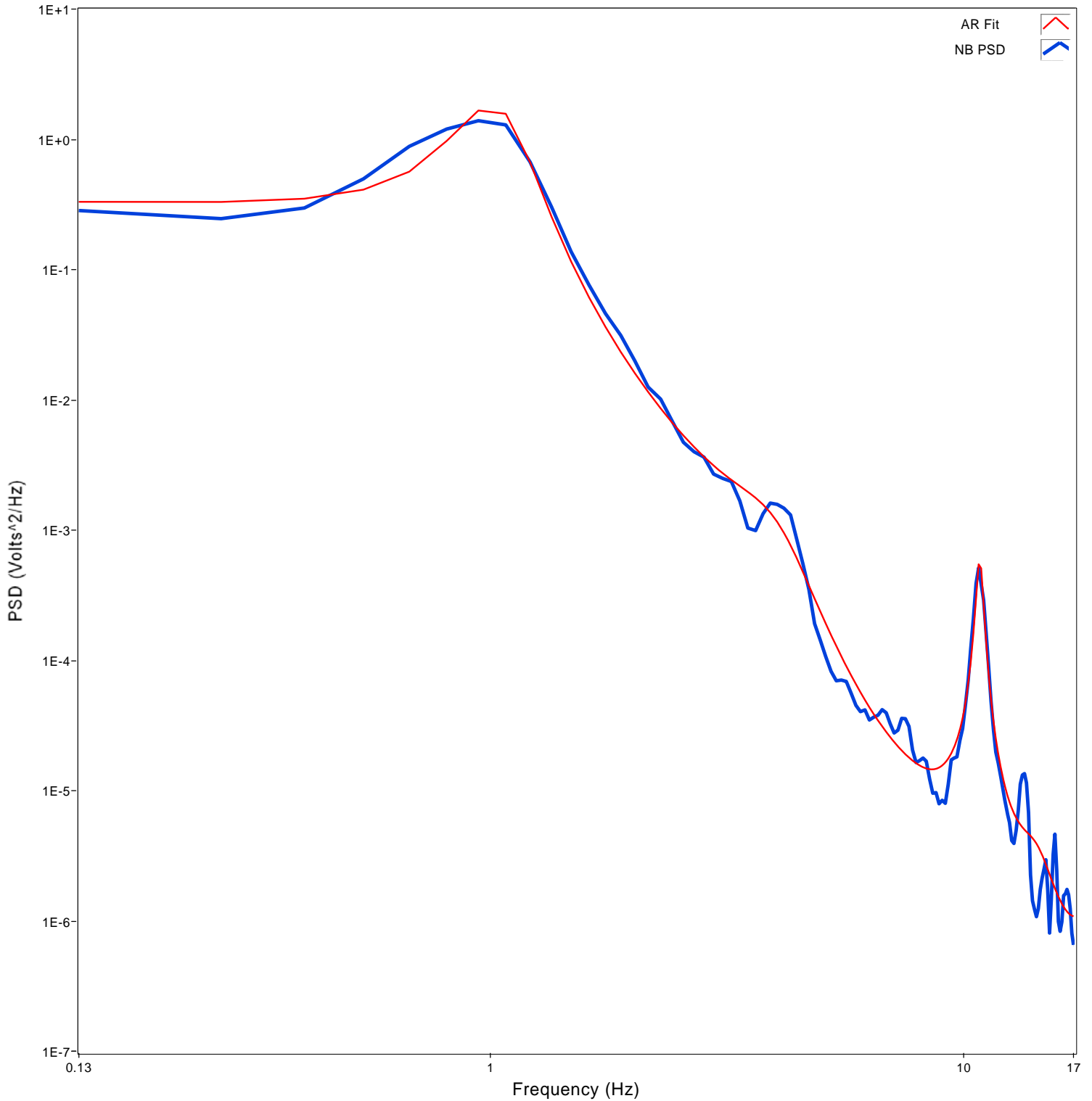




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	LT496	SG LVL	FNP1060003.psd	141 : 256	0.134694	17.240854	11	Forward-Backward	23-Jun-2009 12:04:01

NB PSD and AR PSD

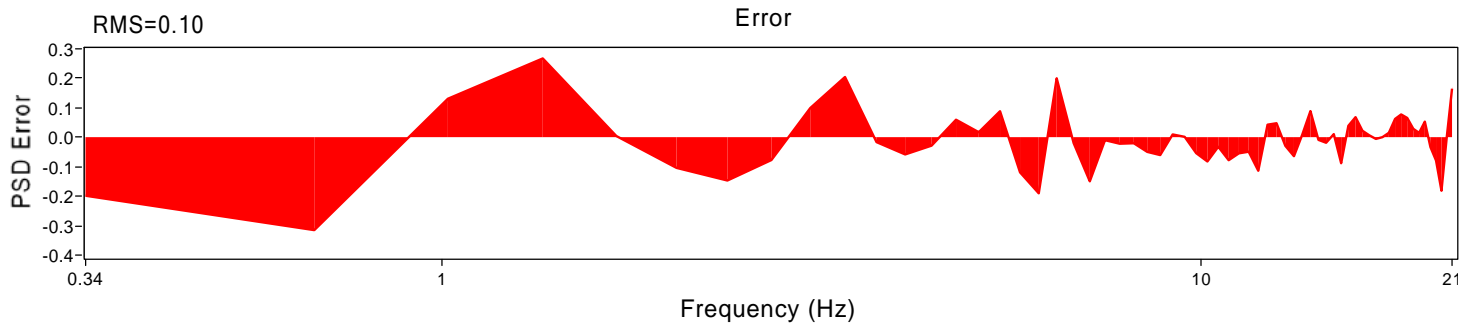
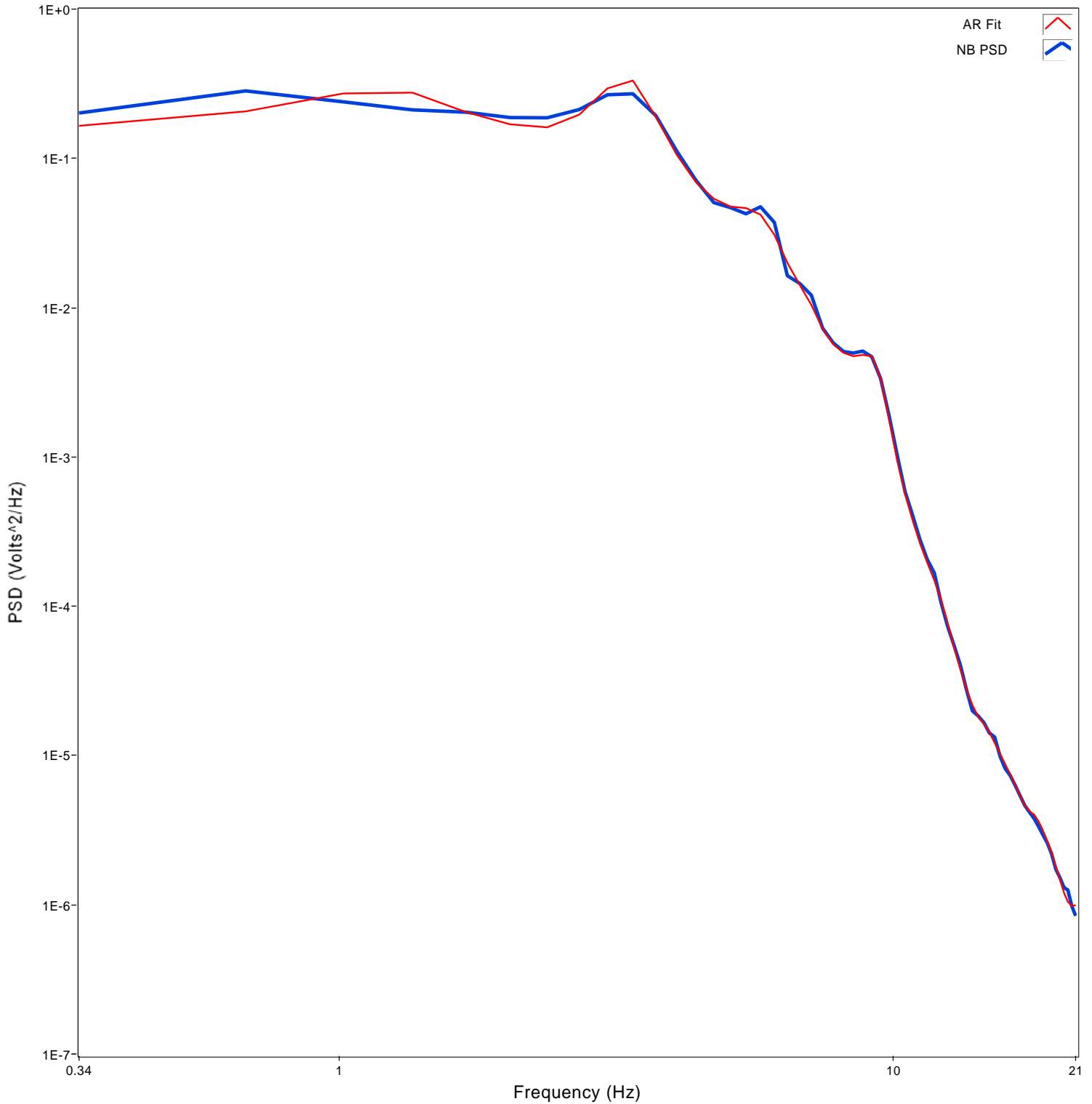




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT474	STM FLOW	FNP1060003.psd	355 : 256	0.339664	21.738468	18	Least-Squares	23-Jun-2009 12:04:01

NB PSD and AR PSD

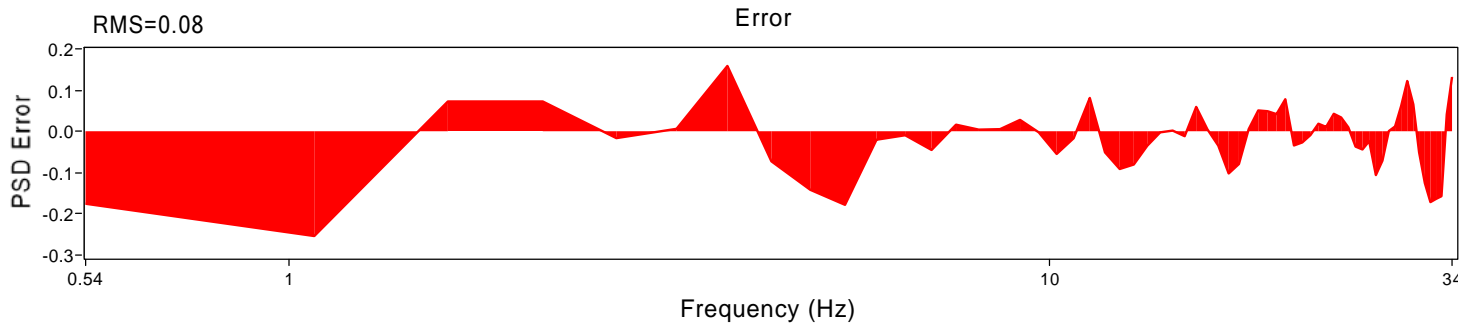
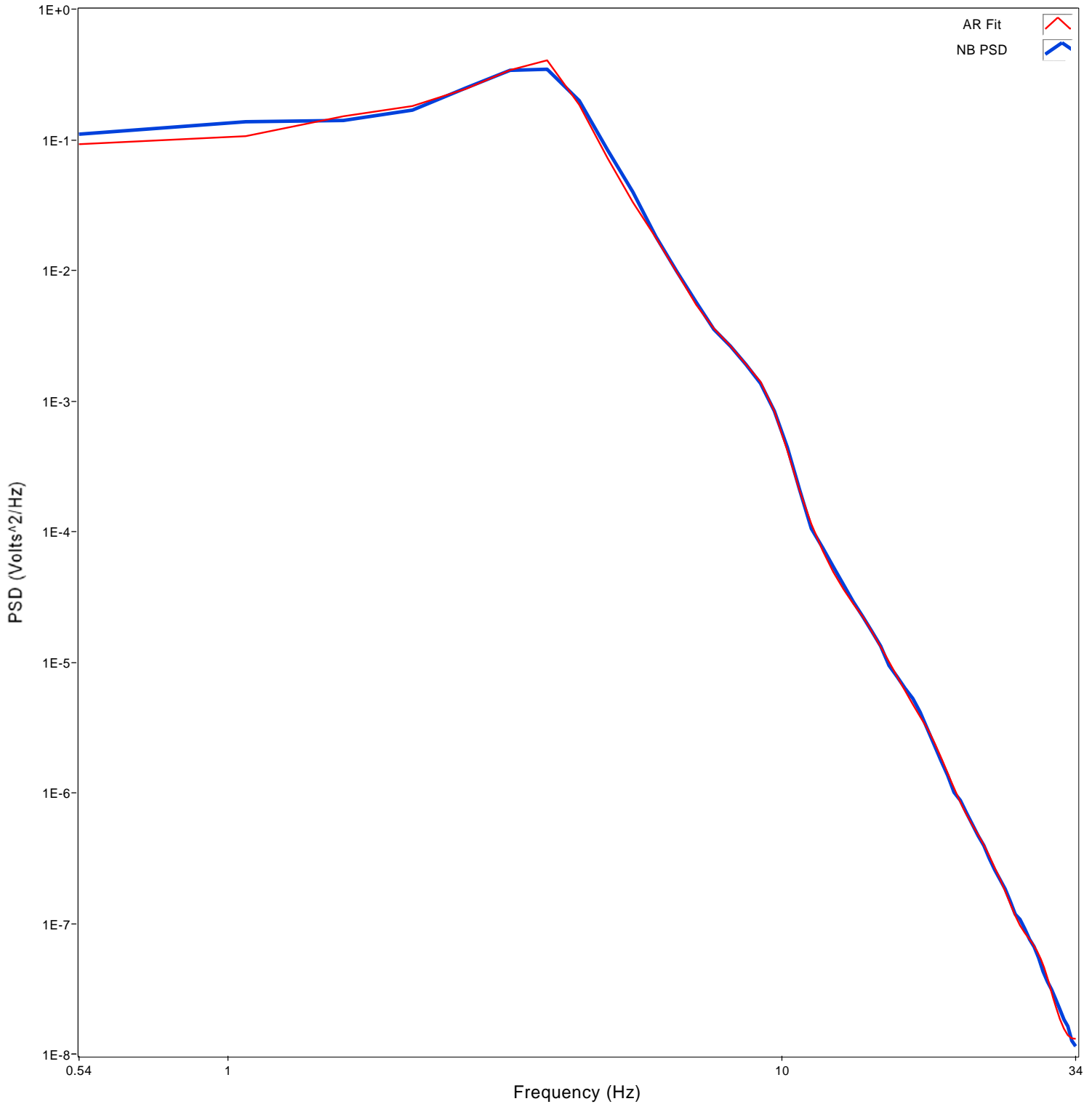




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT484	STM FLOW	FNP1060003.psd	564 : 256	0.538777	34.481708	17	Forward-Backward	23-Jun-2009 12:04:01

NB PSD and AR PSD

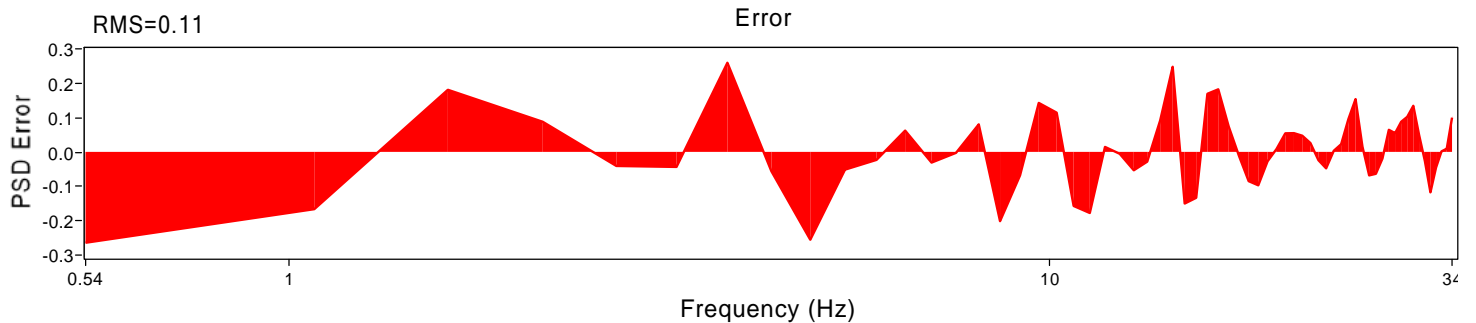
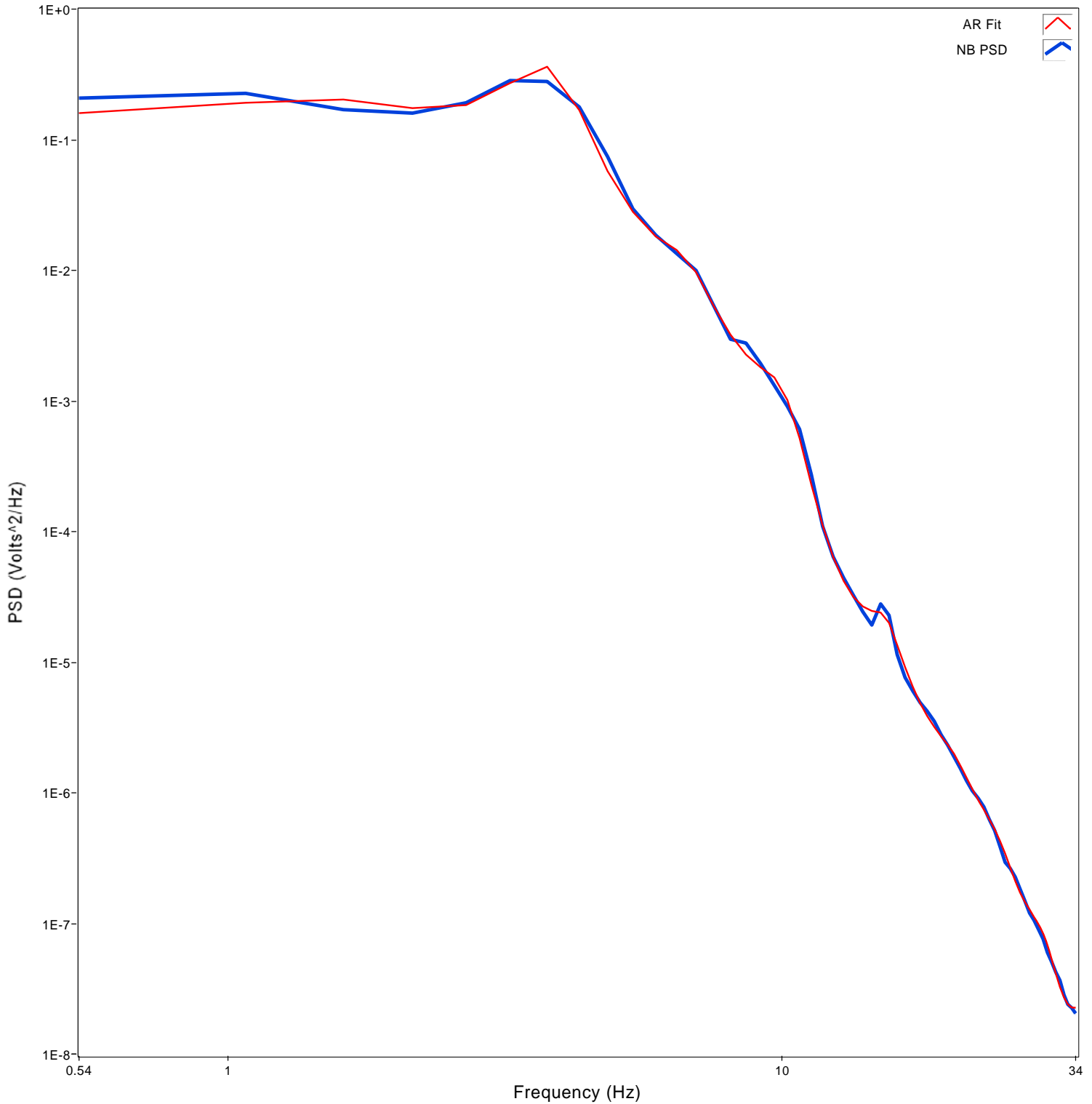




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT494	STM FLOW	FNP1060003.psd	564 : 256	0.538777	34.481708	17	Forward-Backward	23-Jun-2009 12:04:01

NB PSD and AR PSD

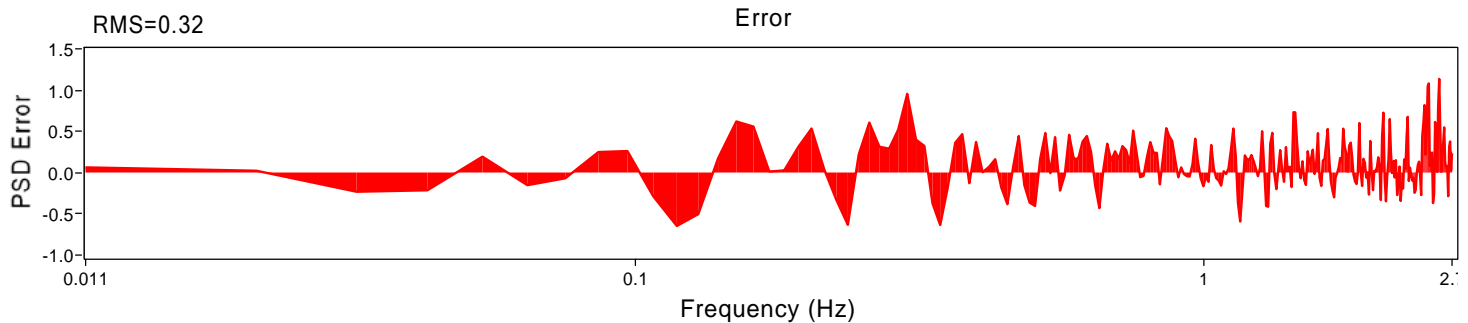
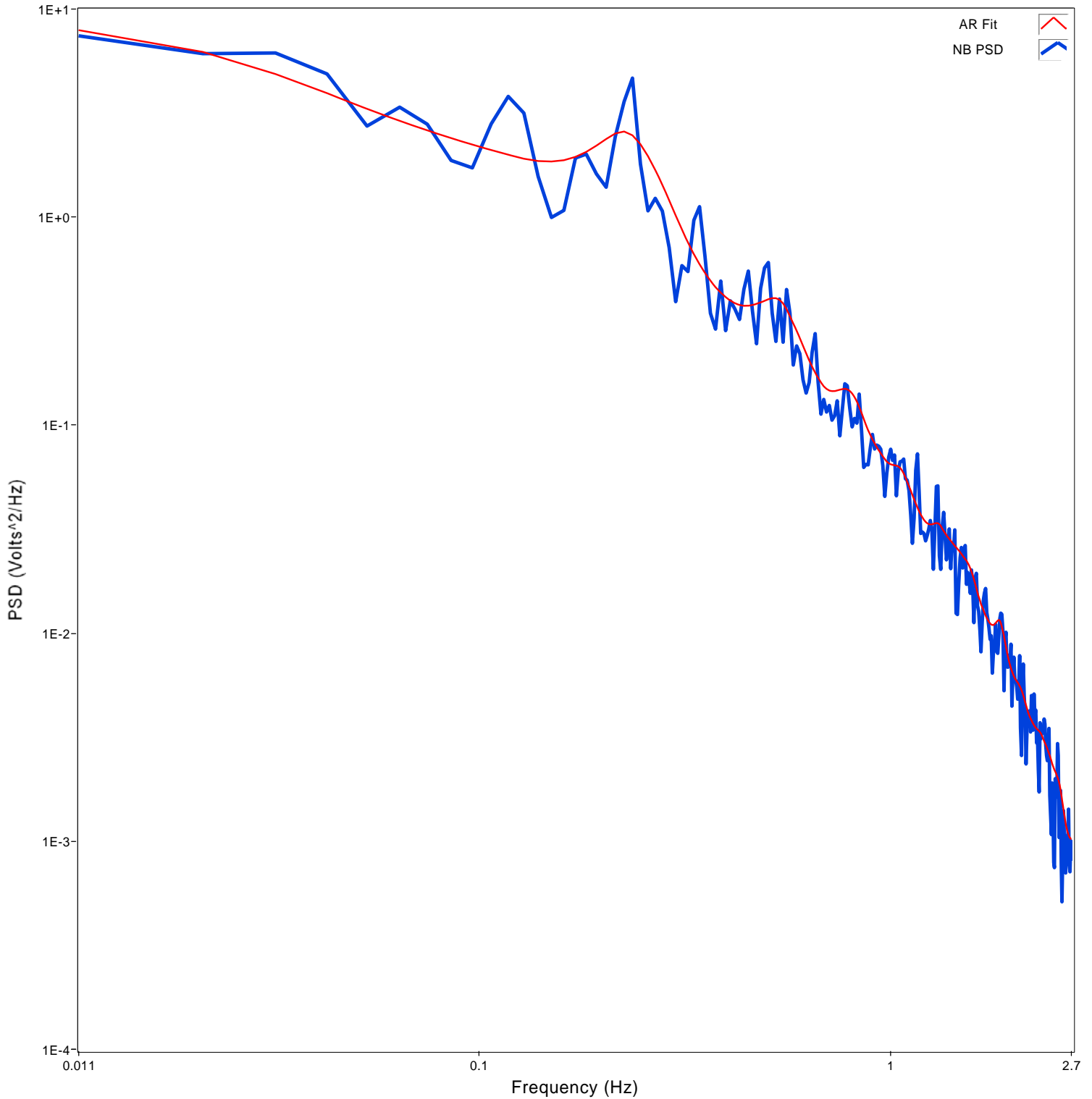




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT477	FW FLOW	FNP1060003.psd	11 : 256	0.010731	2.747169	23	Least-Squares	23-Jun-2009 12:04:01

NB PSD and AR PSD

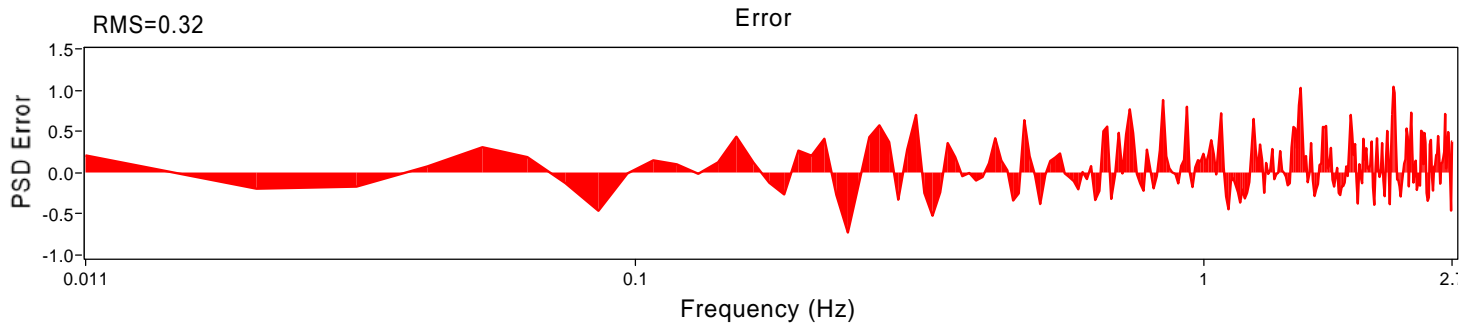
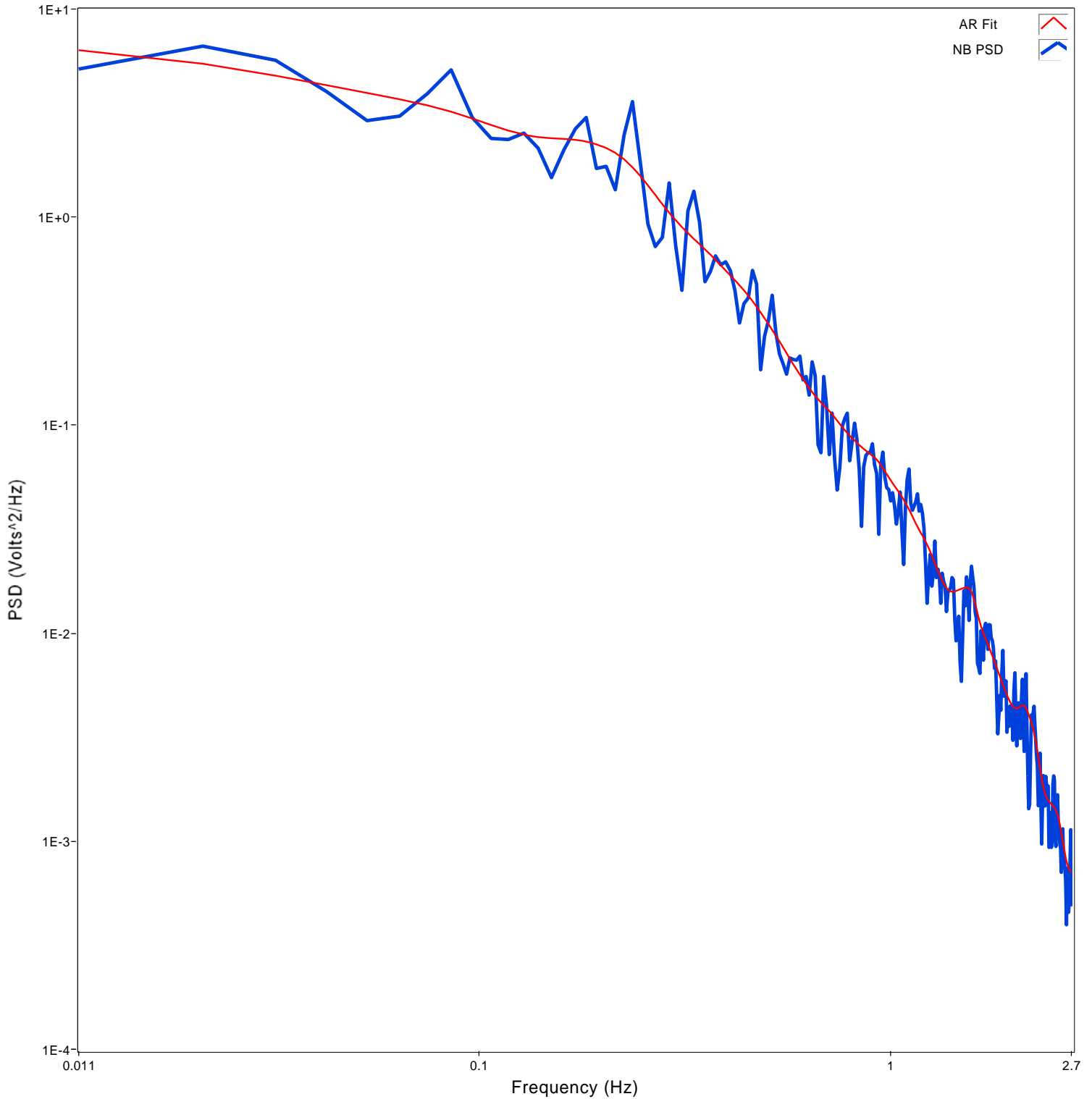




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT487	FW FLOW	FNP1060003.psd	11 : 256	0.010731	2.747169	21	Least-Squares	23-Jun-2009 12:04:01

NB PSD and AR PSD

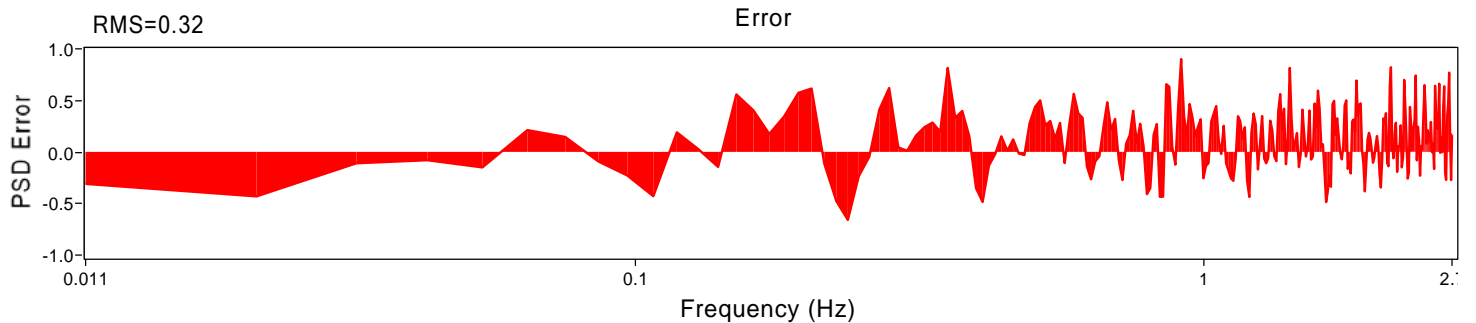
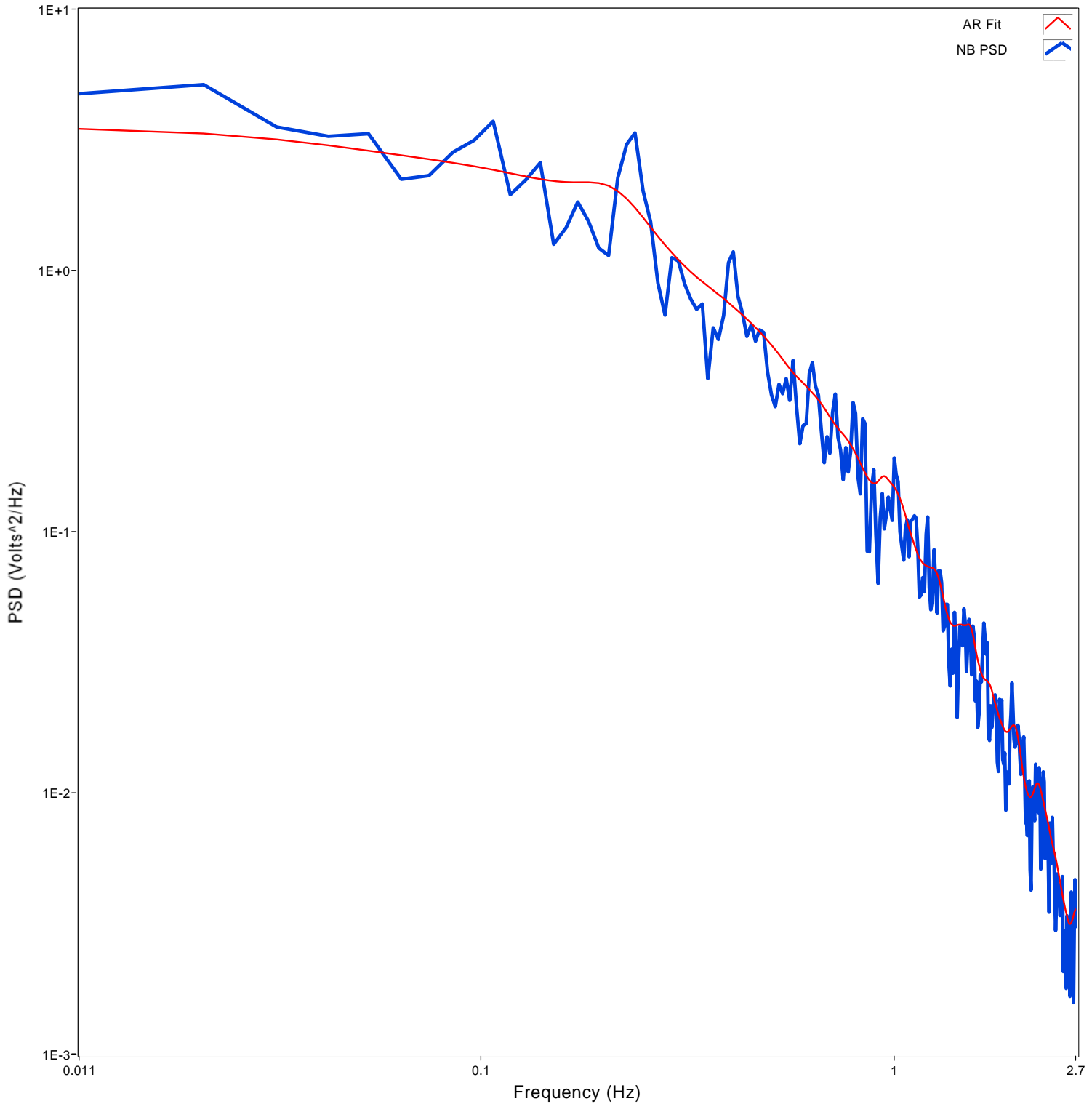




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT497	FW FLOW	FNP1060003.psd	11 : 256	0.010731	2.747169	24	Least-Squares	23-Jun-2009 12:04:01

NB PSD and AR PSD



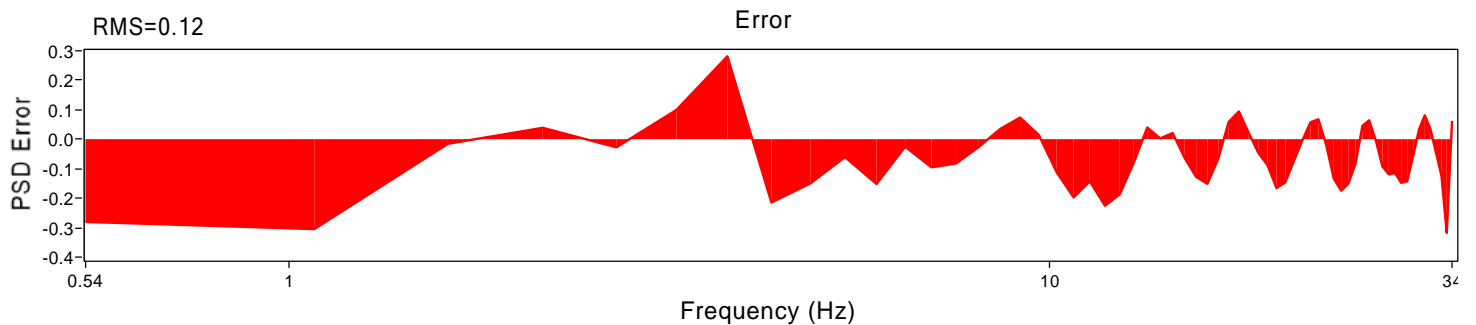
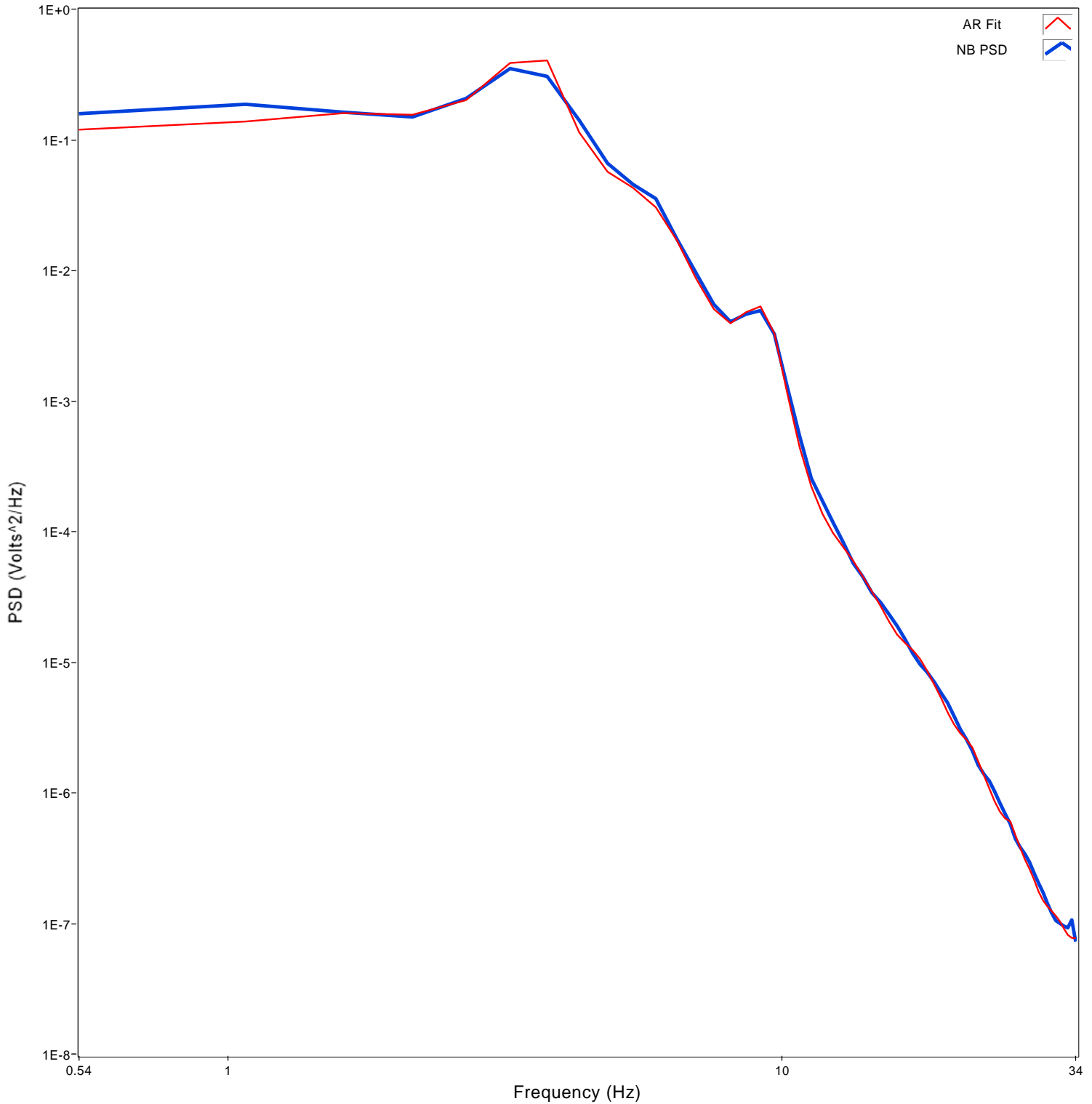




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT475	STM FLOW	FNP1060004.psd	564 : 256	0.538777	34.481708	18	Least-Squares	23-Jun-2009 12:04:01

NB PSD and AR PSD

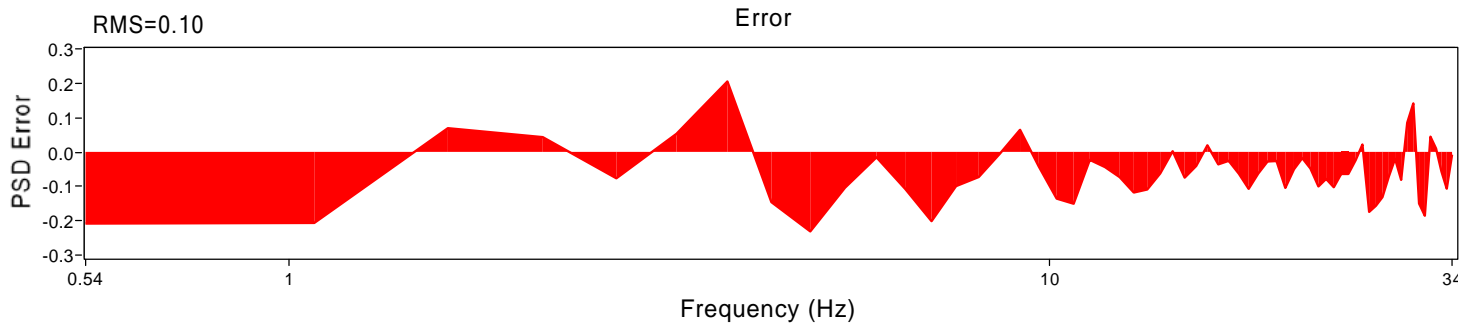
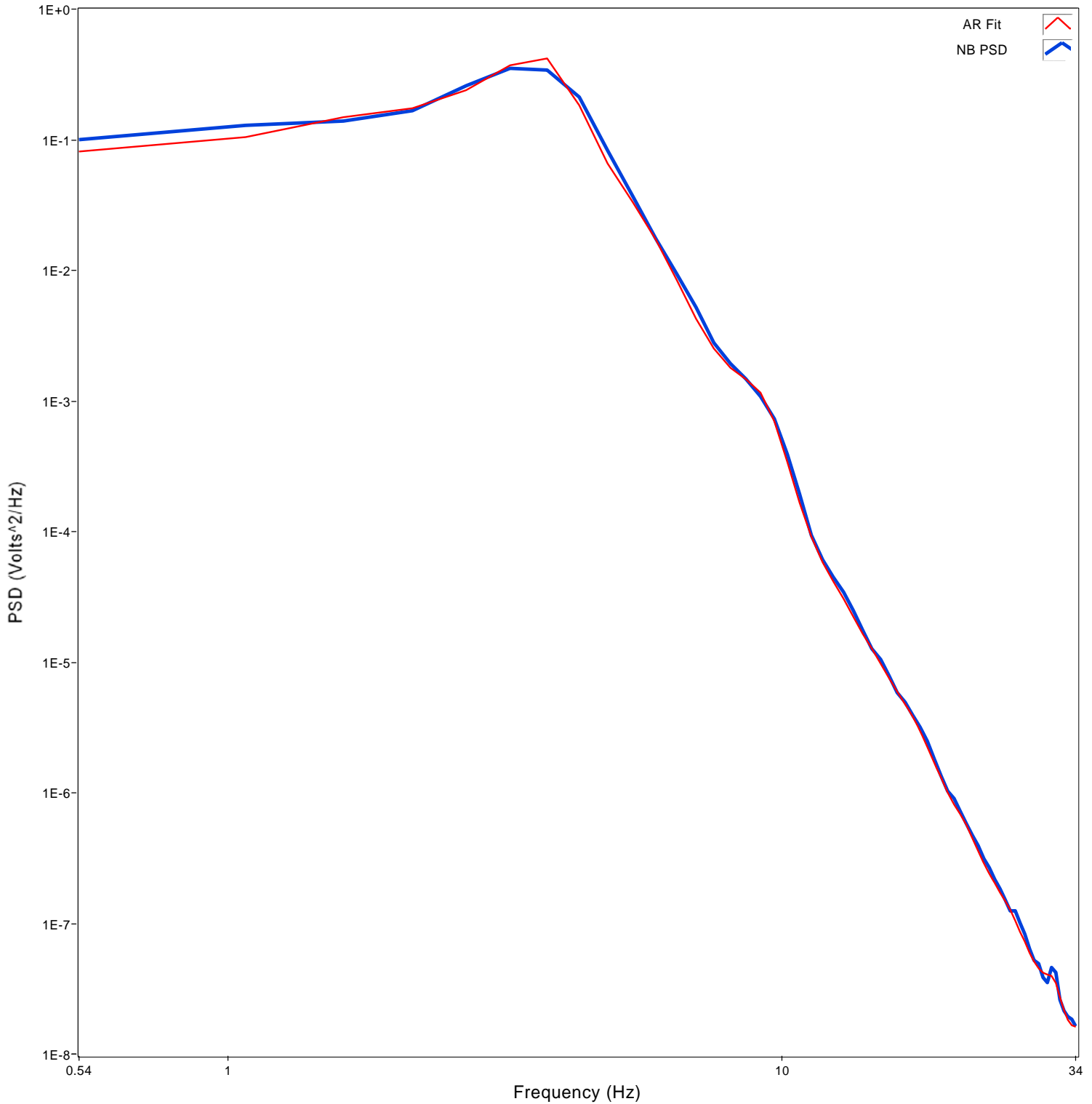




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT485	STM FLOW	FNP1060004.psd	564 : 256	0.538777	34.481708	18	Forward-Backward	23-Jun-2009 12:04:01

NB PSD and AR PSD

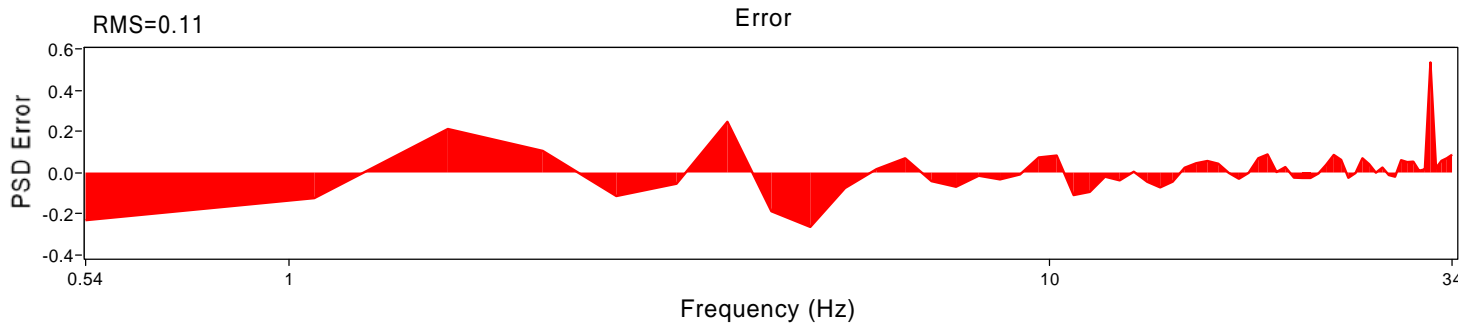
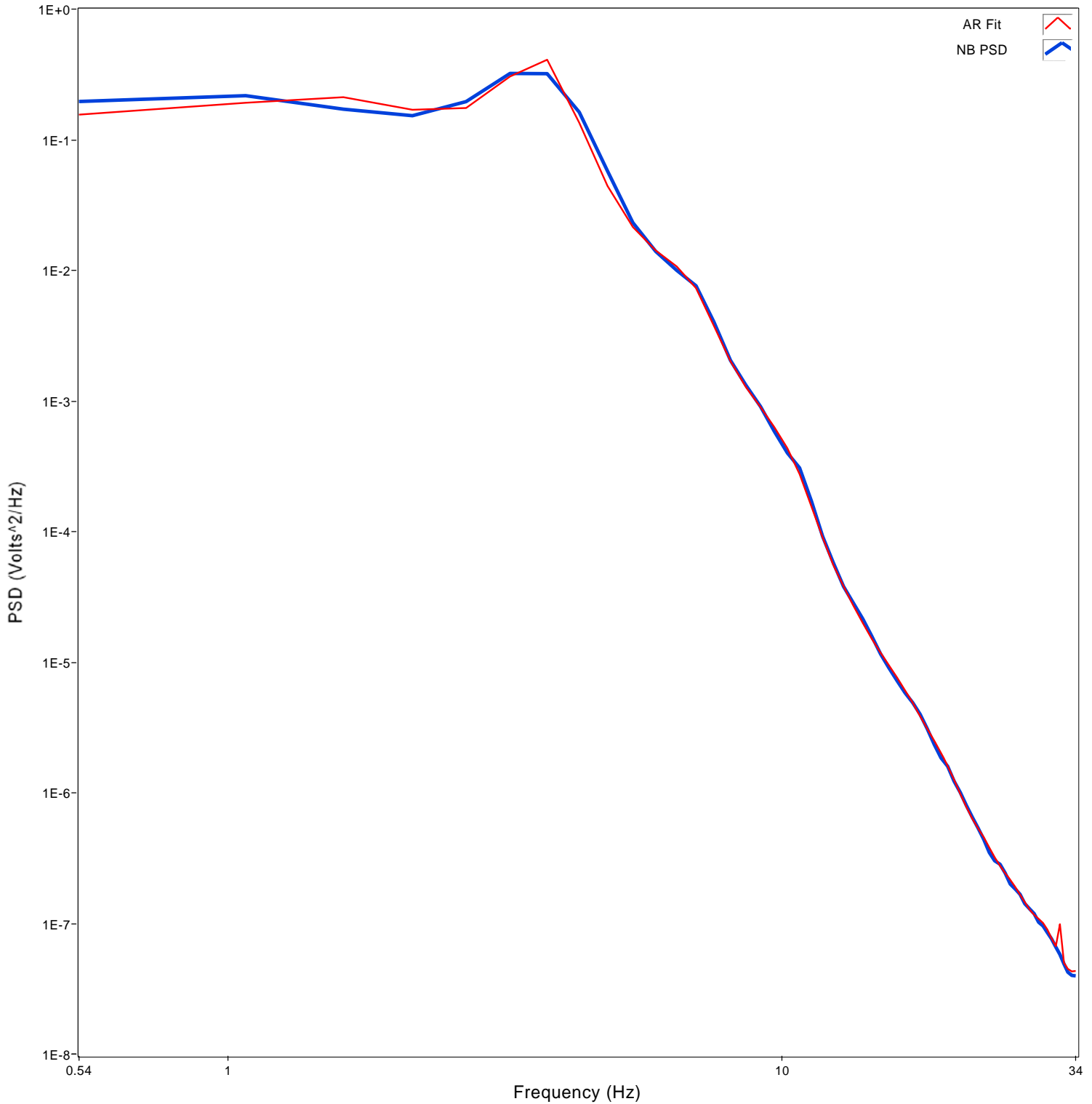




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT495	STM FLOW	FNP1060004.psd	564 : 256	0.538777	34.481708	18	Forward-Backward	23-Jun-2009 12:04:01

NB PSD and AR PSD

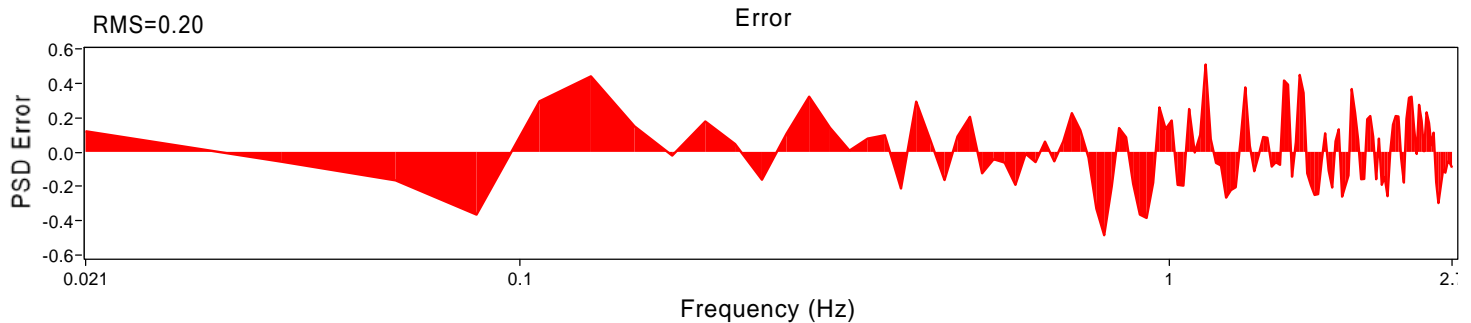
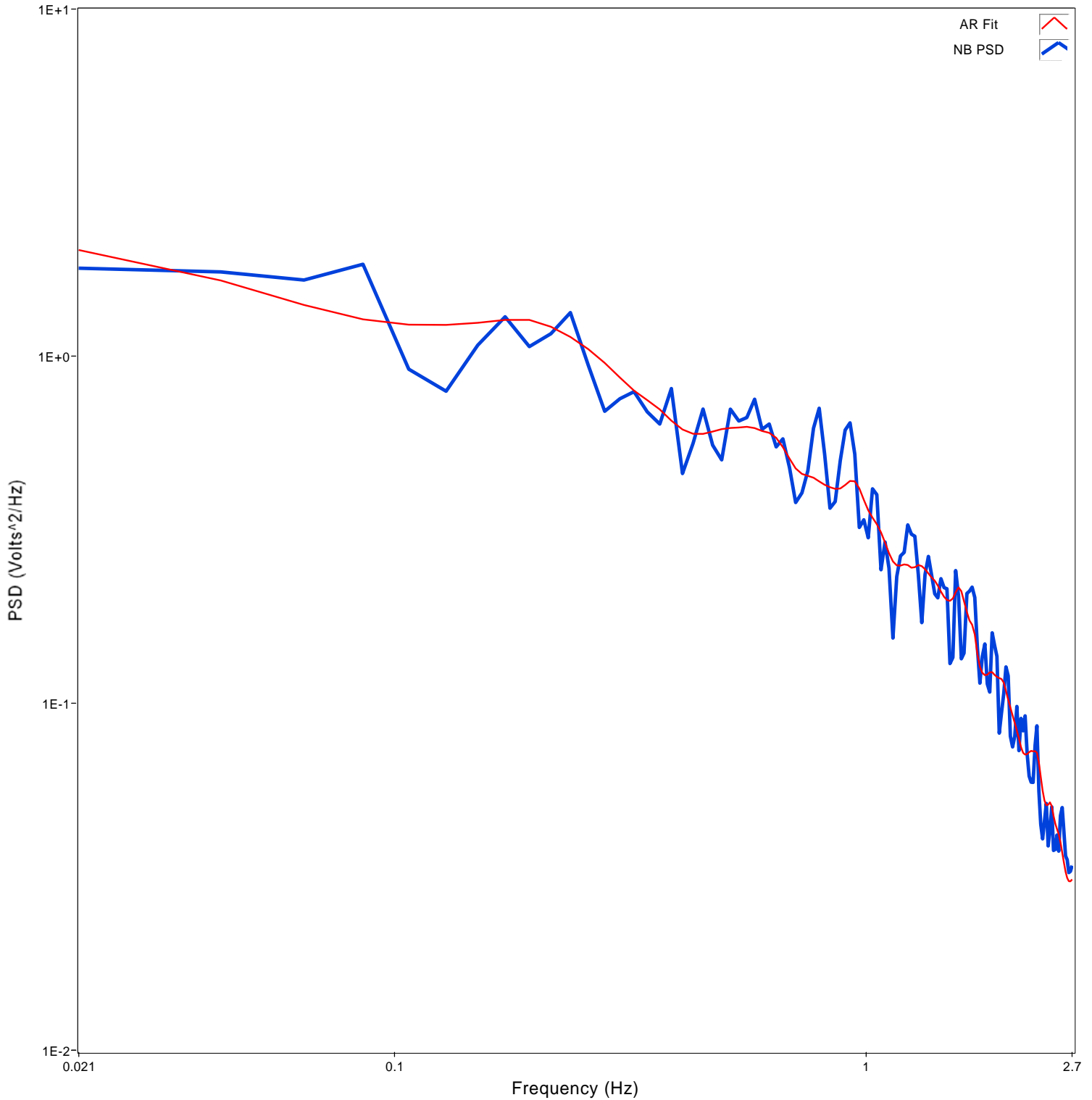




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT476	FW FLOW	FNP1060004.psd	22 : 256	0.021462	2.747169	22	Least-Squares	23-Jun-2009 12:04:01

NB PSD and AR PSD

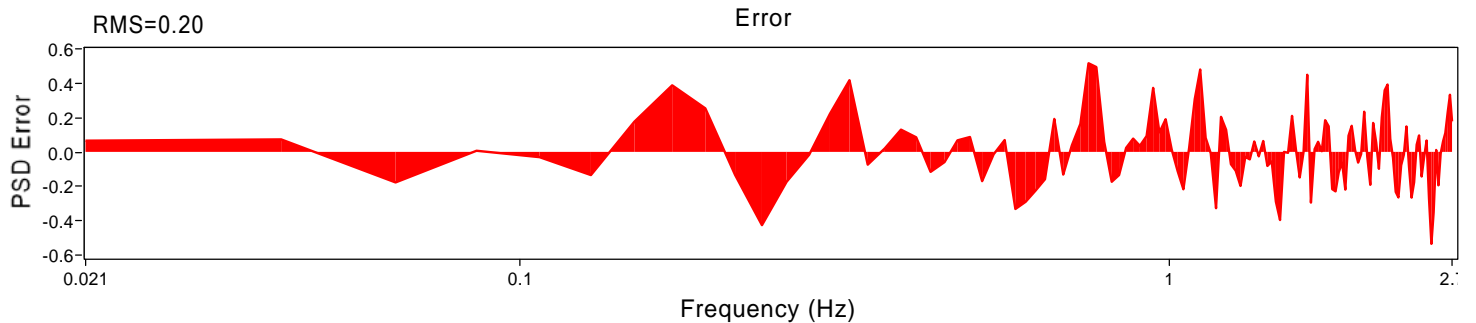
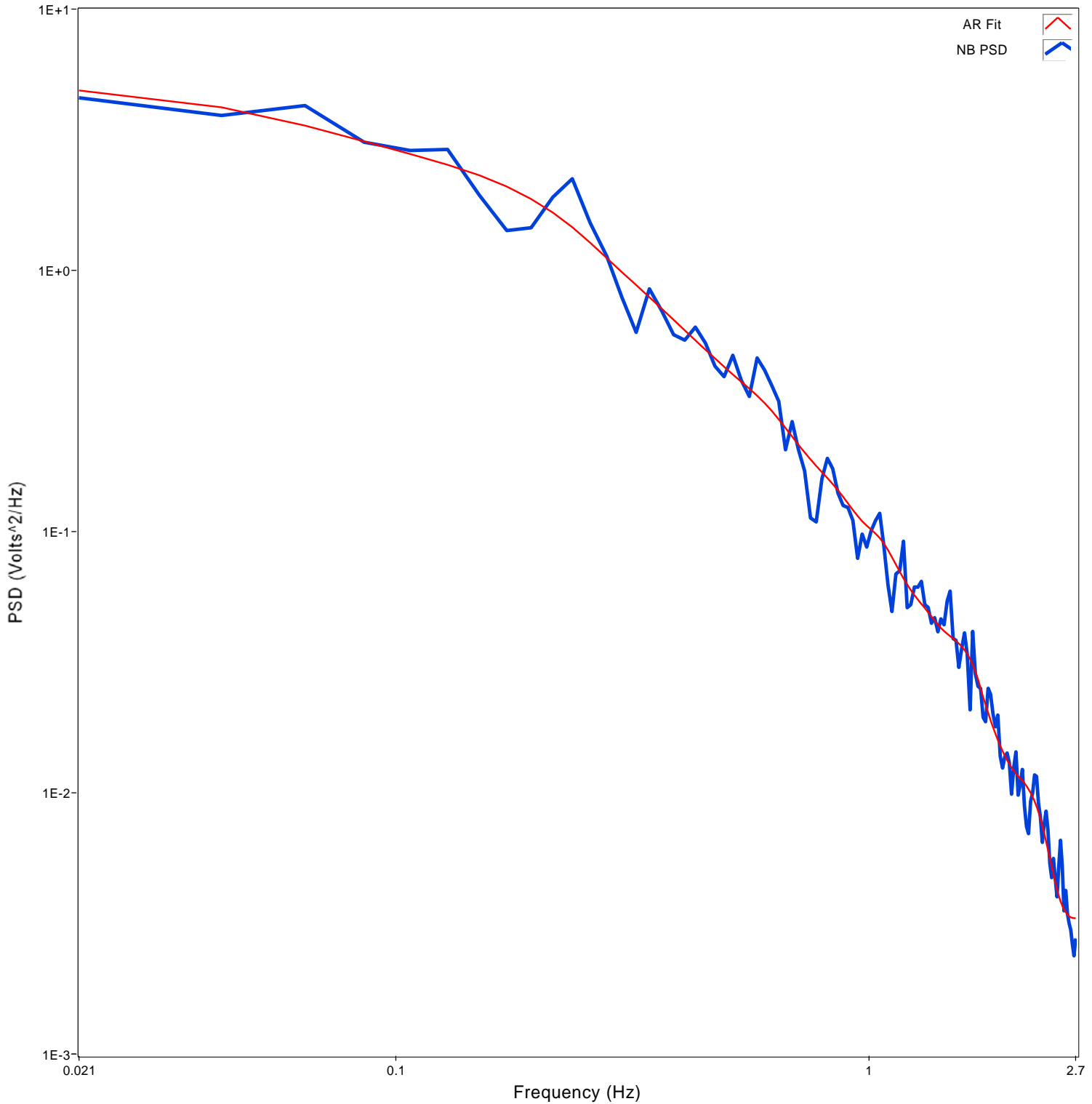




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT486	FW FLOW	FNP1060004.psd	22 : 256	0.021462	2.747169	11	Forward-Backward	23-Jun-2009 12:04:01

NB PSD and AR PSD

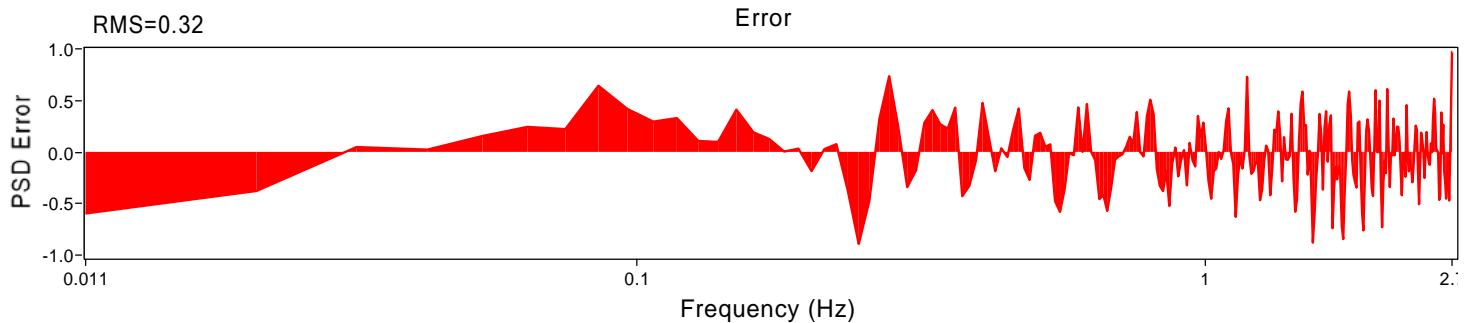
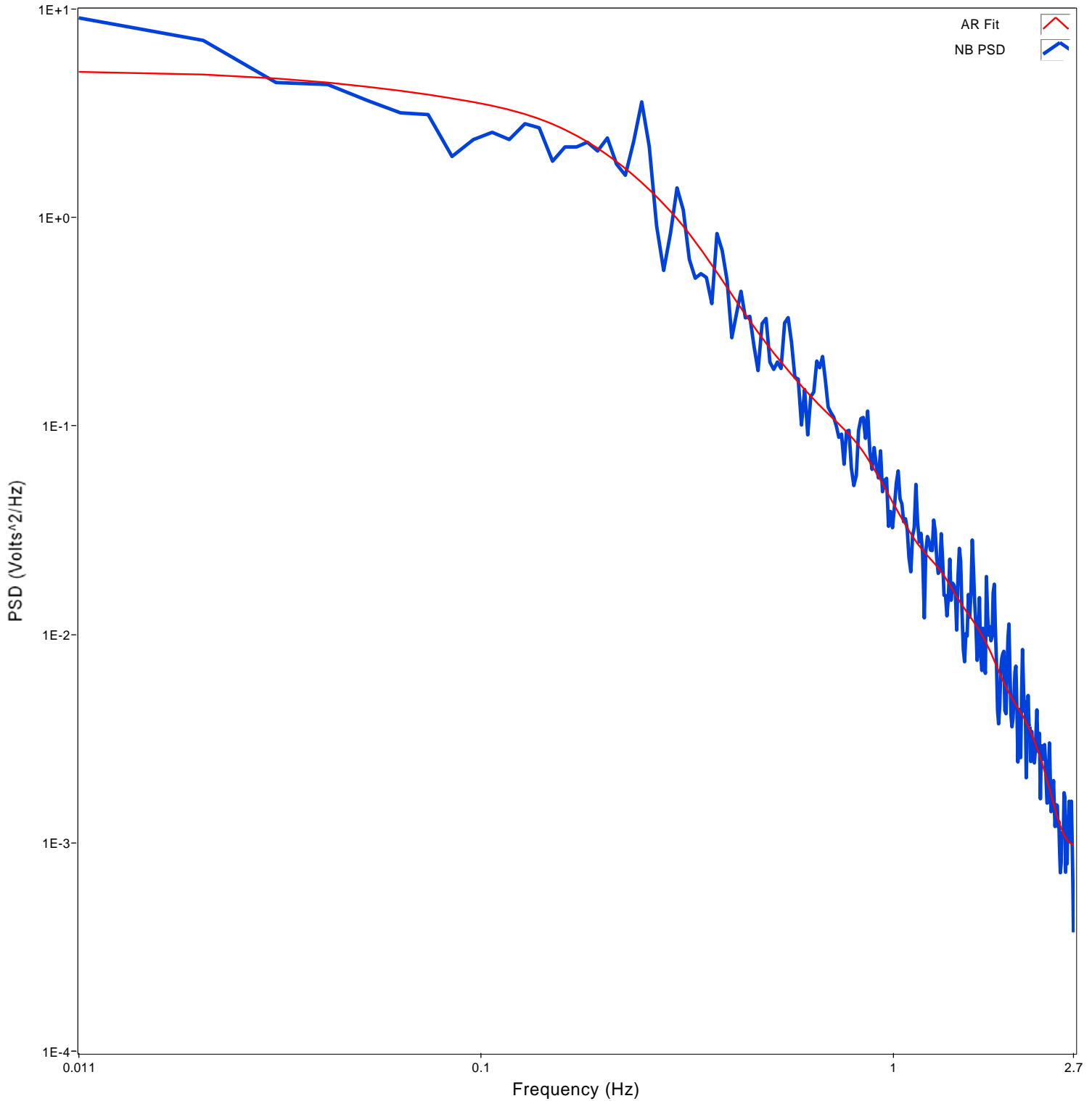




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT496	FW FLOW	FNP1060004.psd	11 : 256	0.010672	2.732157	11	Forward-Backward	23-Jun-2009 12:04:01

NB PSD and AR PSD

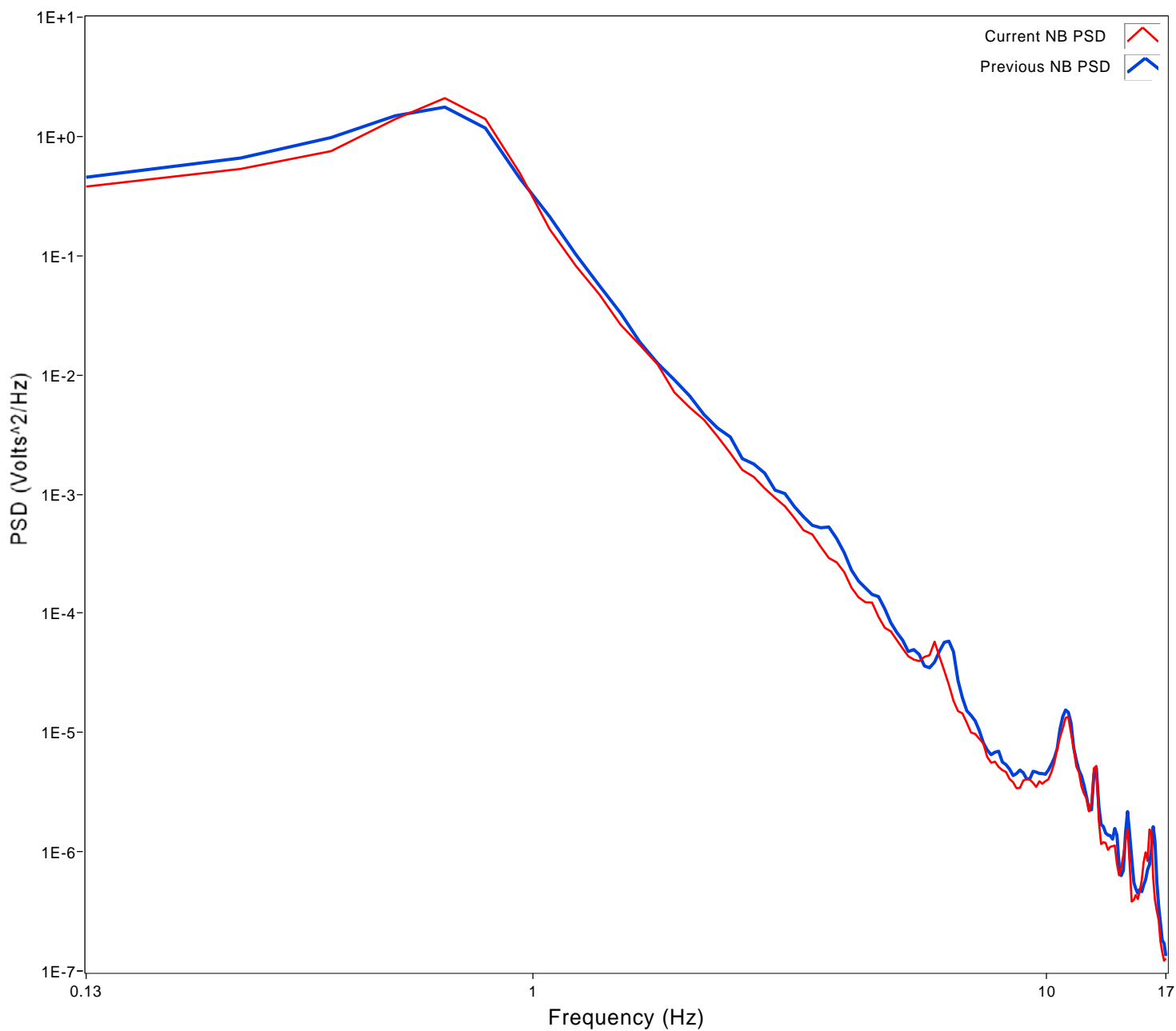




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

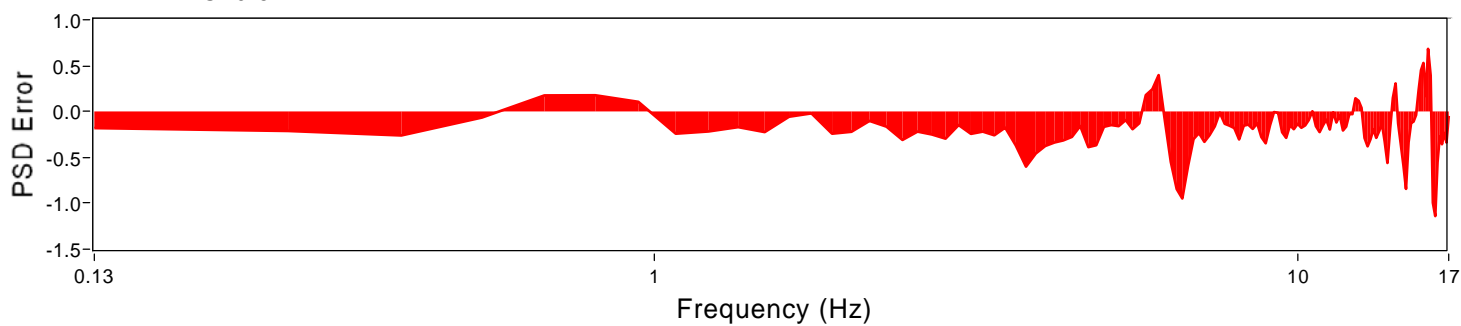
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	LT474	SG LVL	FNP1060001.psd	11 : 256	0.134694	17.240854	11	Forward-Backward	23-Jun-2009 12:04:01

Current NB PSD vs. Previous NP PSD



RMS=0.32

Compare Previous Error

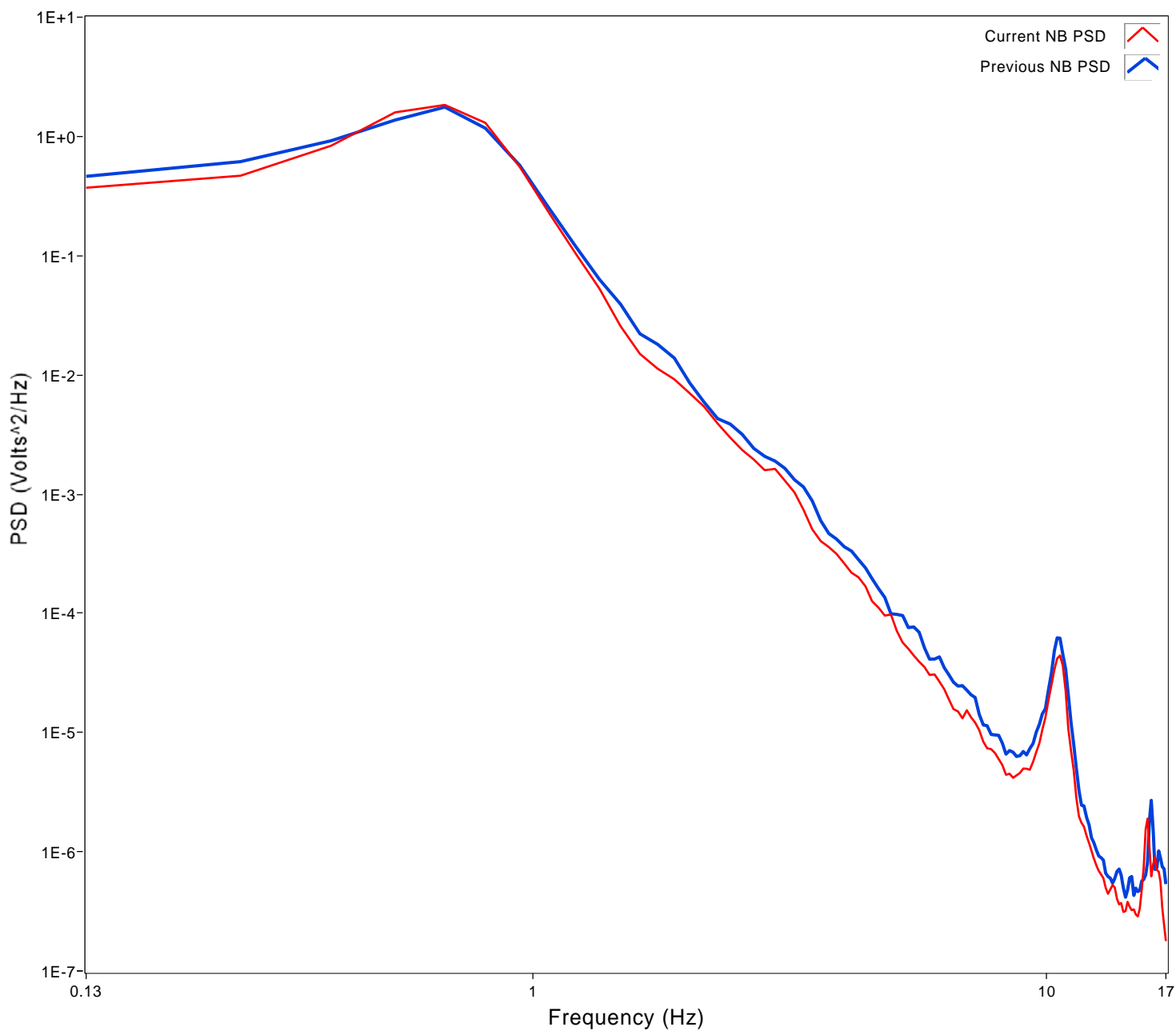




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

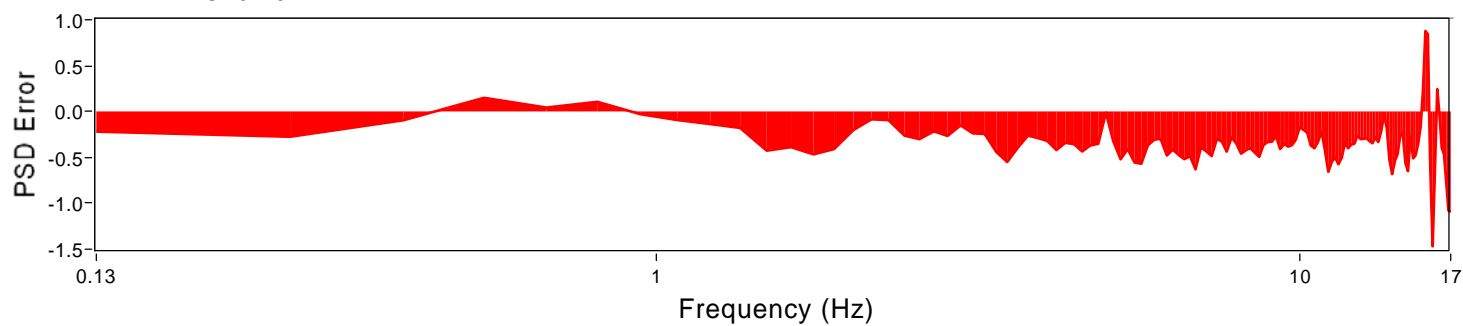
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	LT484	SG LVL	FNP1060001.psd	11 : 256	0.134694	17.240854	11	Forward-Backward	23-Jun-2009 12:04:01

Current NB PSD vs. Previous NP PSD



RMS=0.43

Compare Previous Error



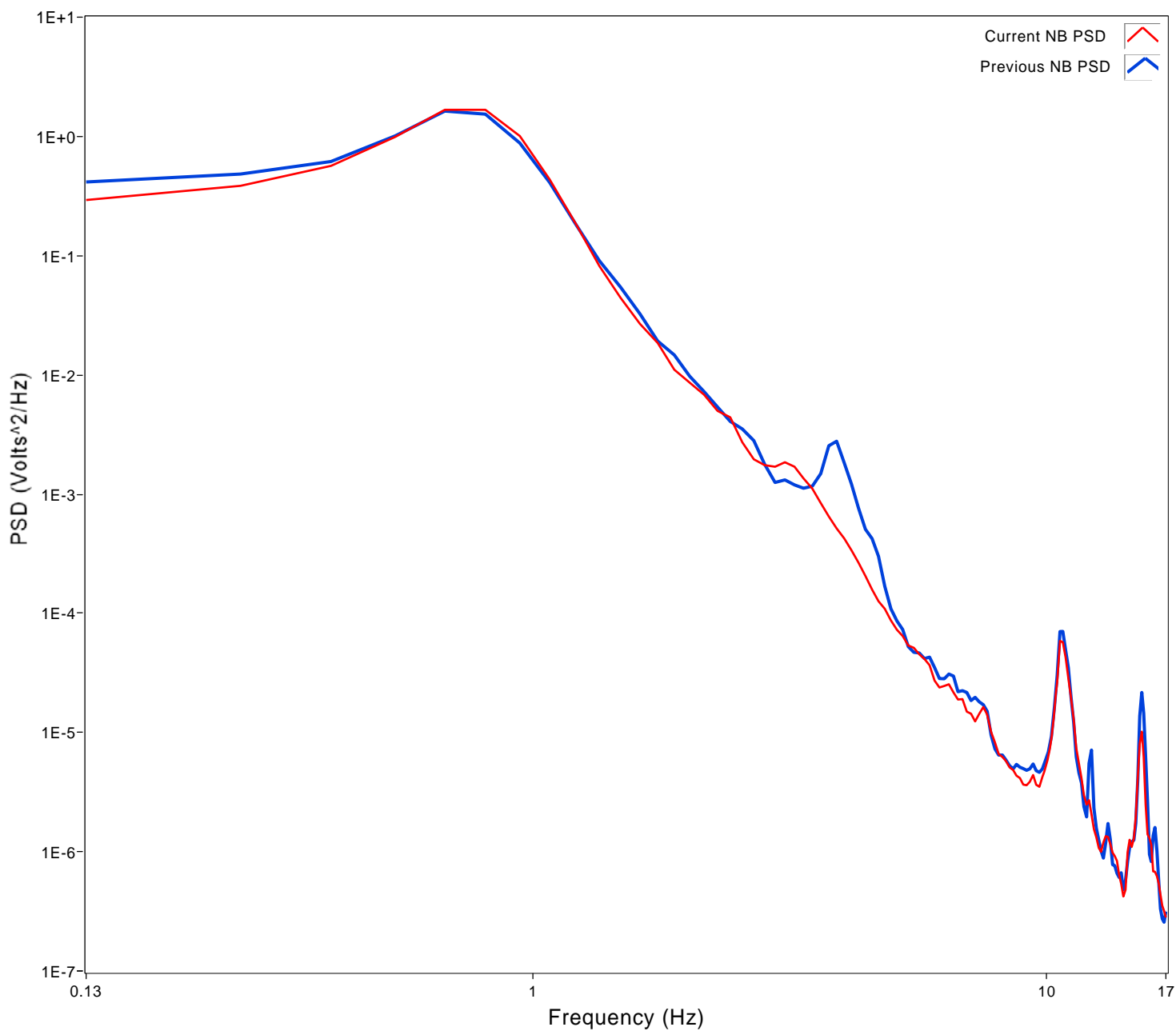




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

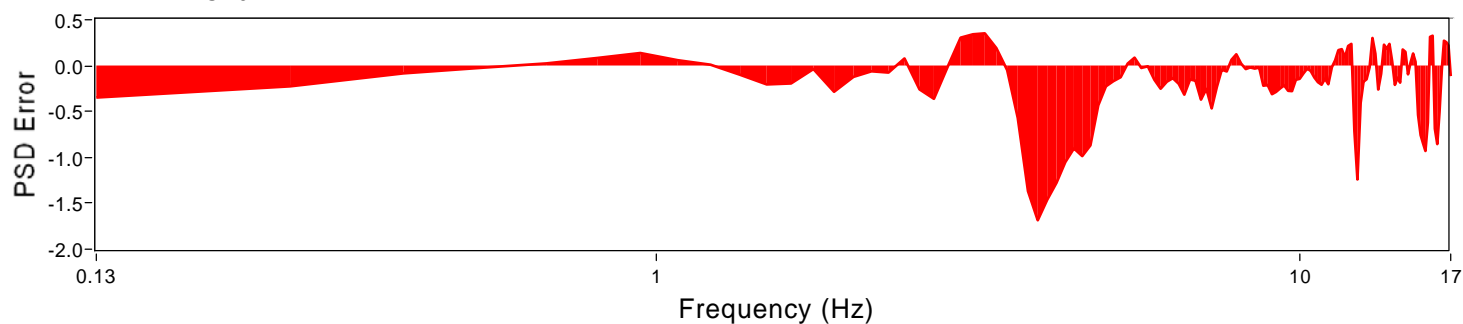
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	LT494	SG LVL	FNP1060001.psd	11 : 256	0.134694	17.240854	11	Forward-Backward	23-Jun-2009 12:04:01

Current NB PSD vs. Previous NP PSD



RMS=0.42

Compare Previous Error

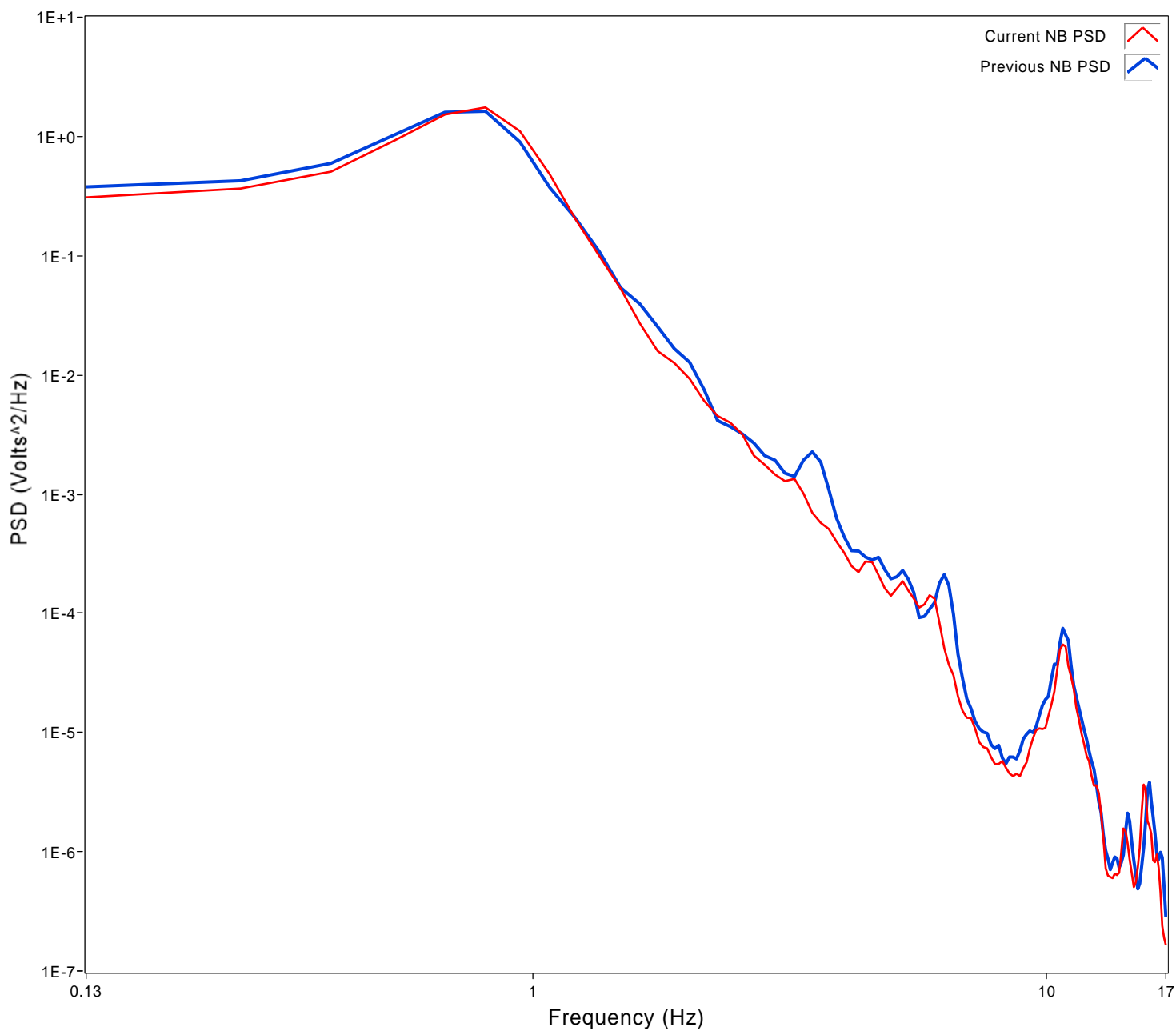




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

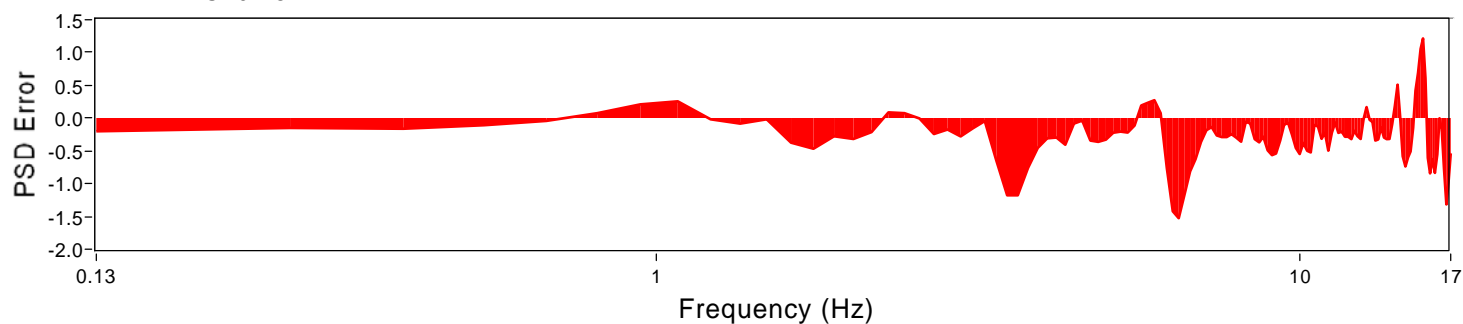
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	LT475	SG LVL	FNP1060002.psd	11 : 256	0.134694	17.240854	11	Forward-Backward	23-Jun-2009 12:04:01

Current NB PSD vs. Previous NP PSD



RMS=0.48

Compare Previous Error

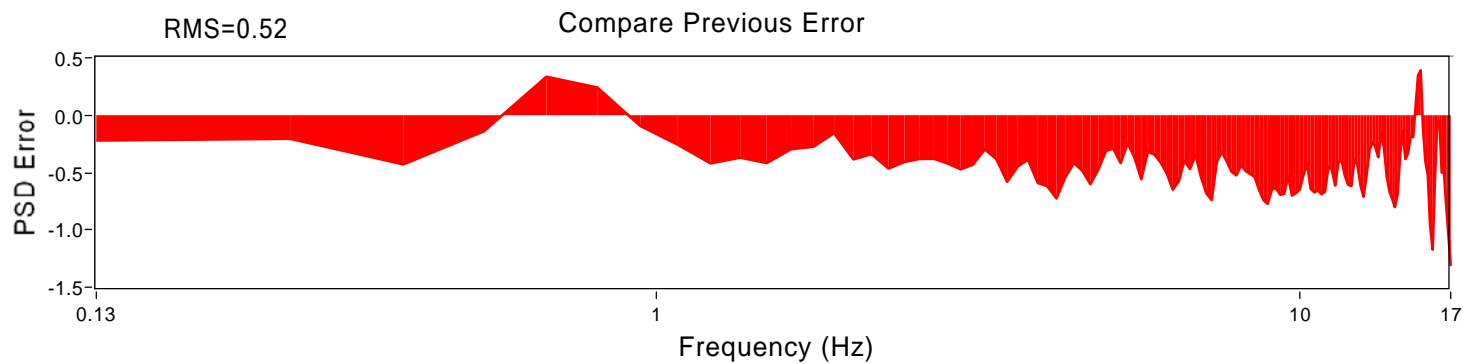
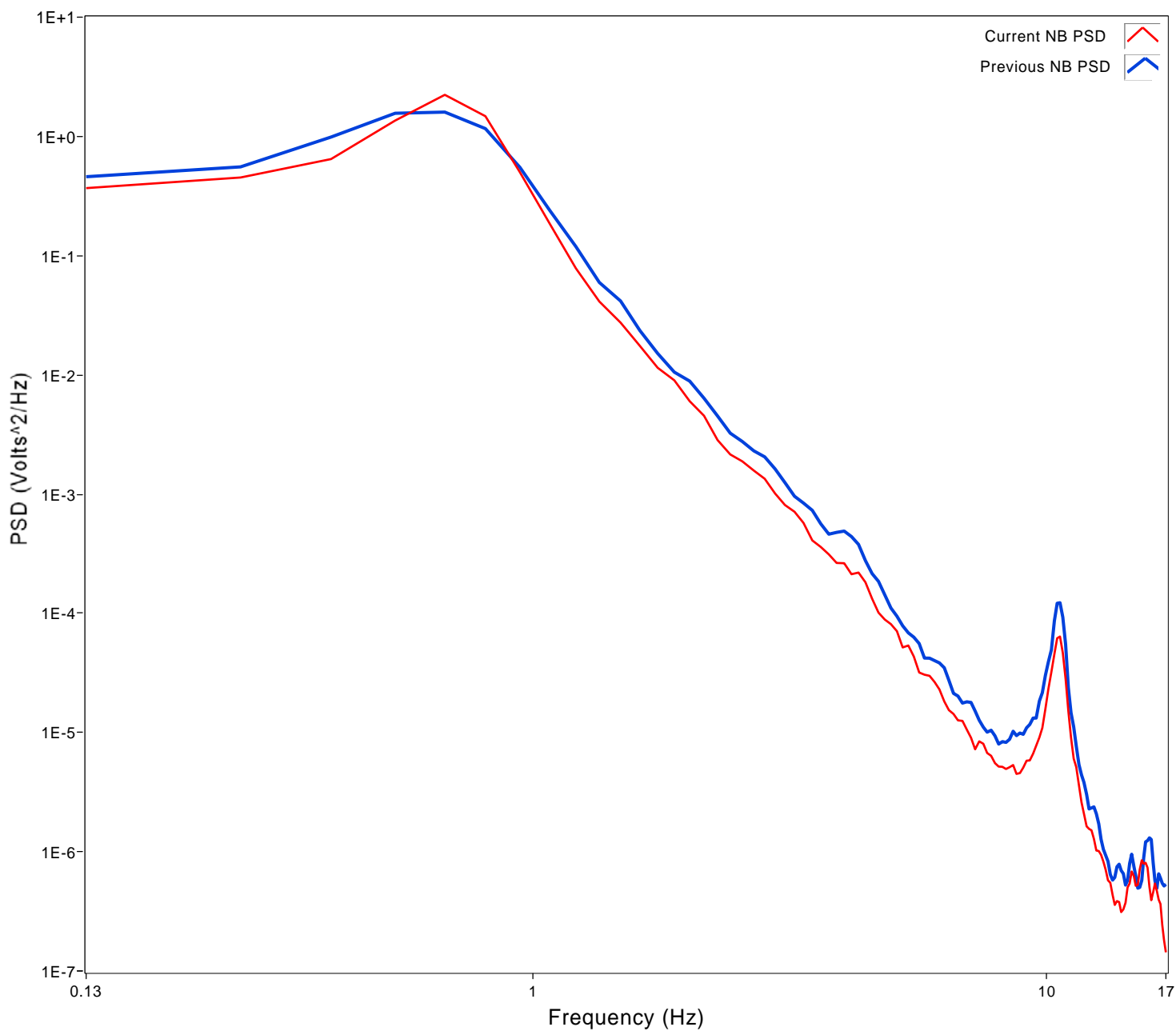




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	LT485	SG LVL	FNP1060002.psd	11 : 256	0.134694	17.240854	11	Forward-Backward	23-Jun-2009 12:04:01

Current NB PSD vs. Previous NP PSD

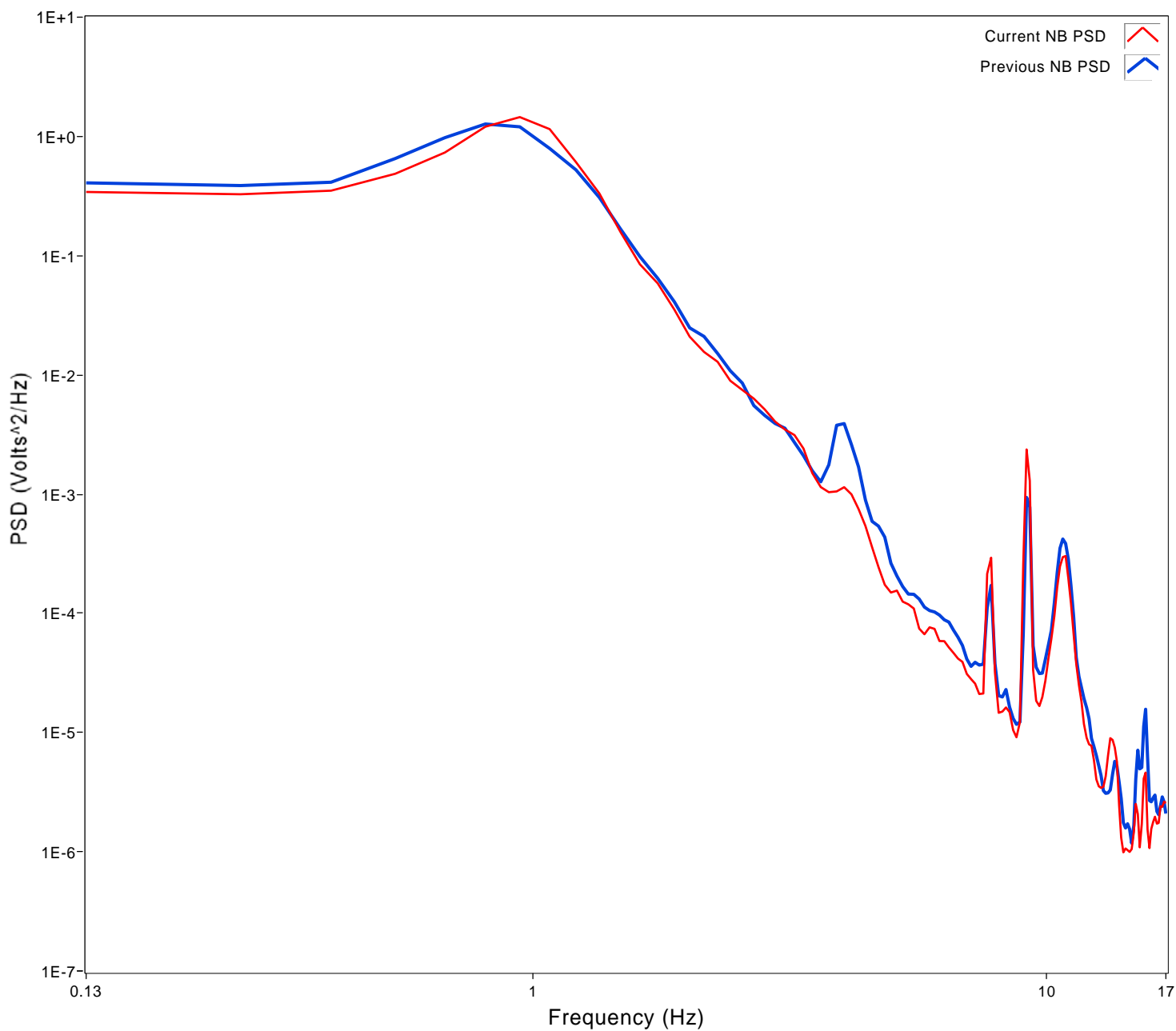




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

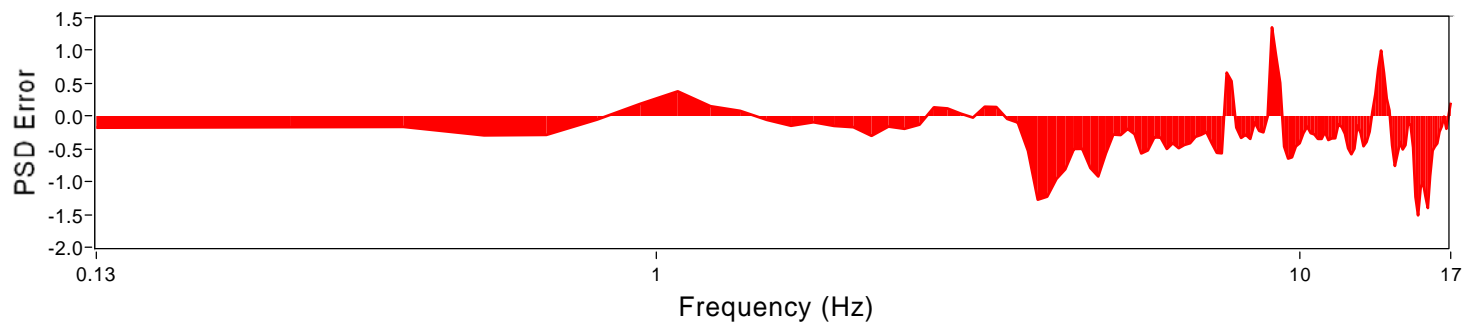
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	LT495	SG LVL	FNP1060002.psd	11 : 256	0.134694	17.240854	11	Forward-Backward	23-Jun-2009 12:04:01

Current NB PSD vs. Previous NP PSD



RMS=0.52

Compare Previous Error

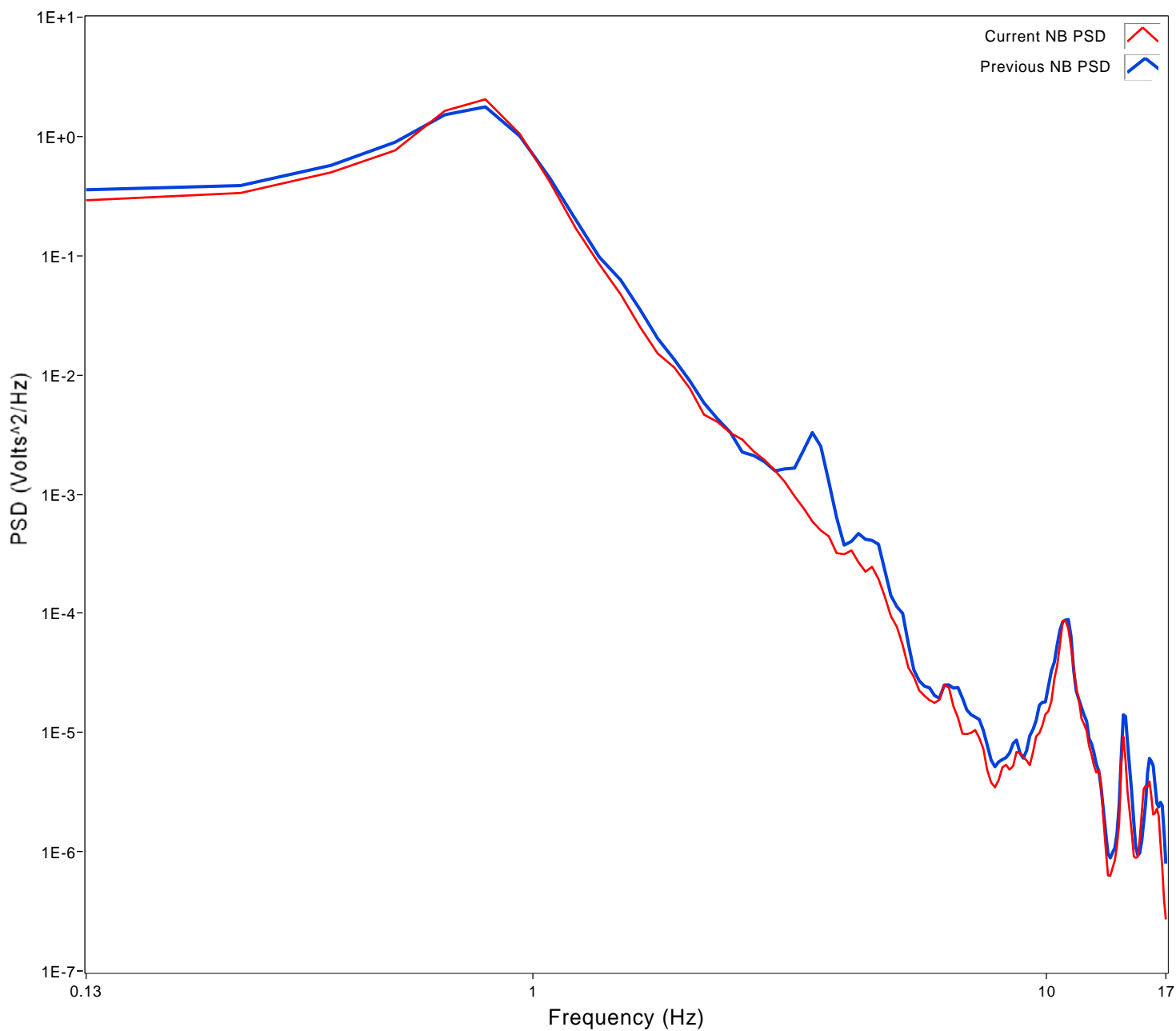




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

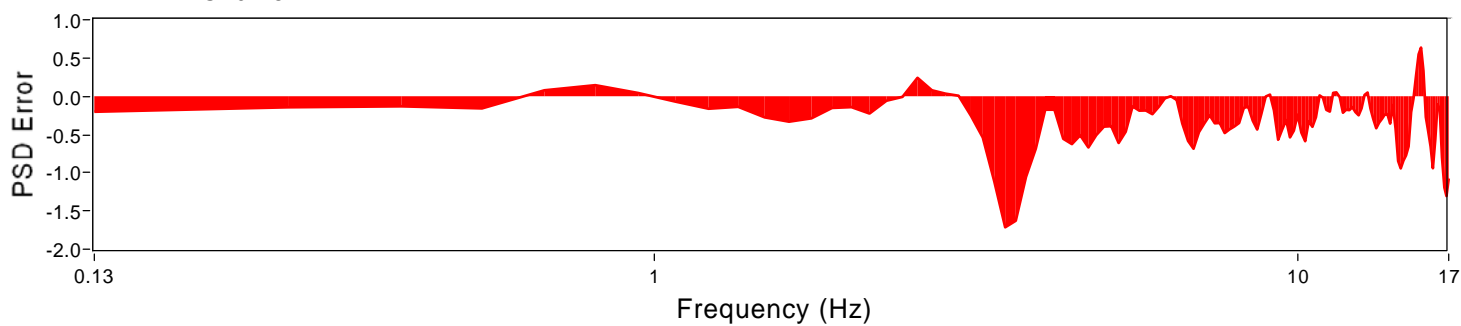
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	LT476	SG LVL	FNP1060003.psd	11 : 256	0.134694	17.240854	11	Forward-Backward	23-Jun-2009 12:04:01

Current NB PSD vs. Previous NP PSD



RMS=0.48

Compare Previous Error

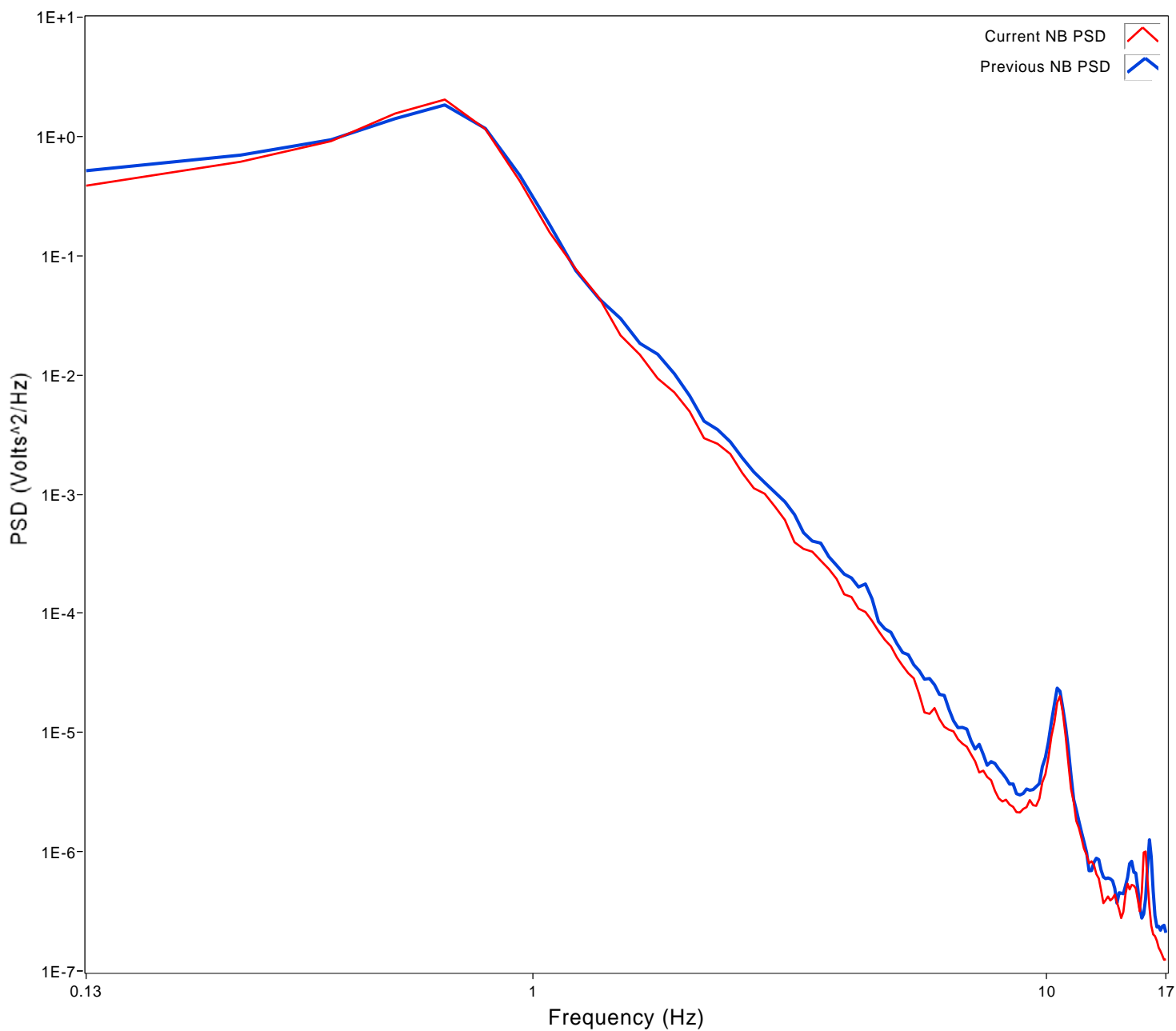




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

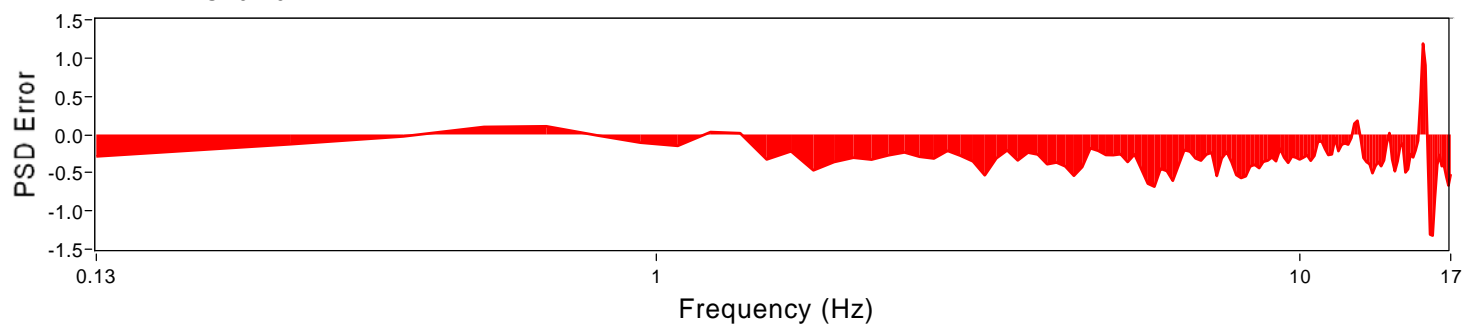
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	LT486	SG LVL	FNP1060003.psd	11 : 256	0.134694	17.240854	11	Forward-Backward	23-Jun-2009 12:04:01

Current NB PSD vs. Previous NP PSD



RMS=0.40

Compare Previous Error

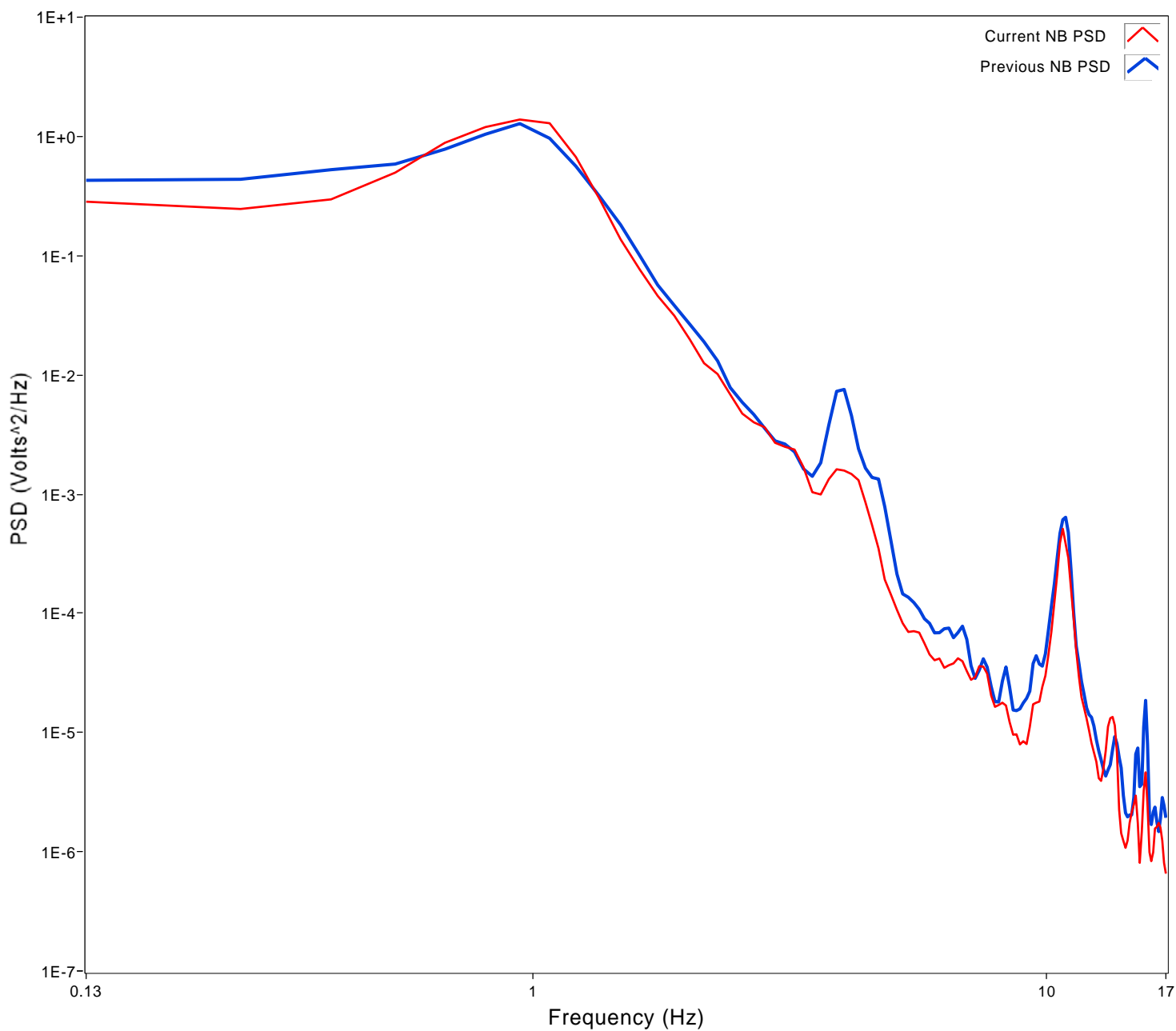




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

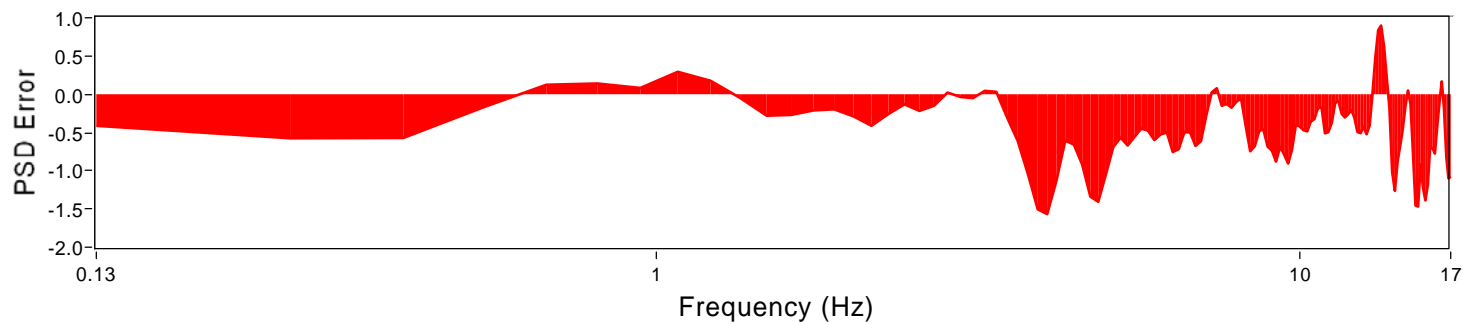
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	LT496	SG LVL	FNP1060003.psd	11 : 256	0.134694	17.240854	11	Forward-Backward	23-Jun-2009 12:04:01

Current NB PSD vs. Previous NP PSD



RMS=0.64

Compare Previous Error

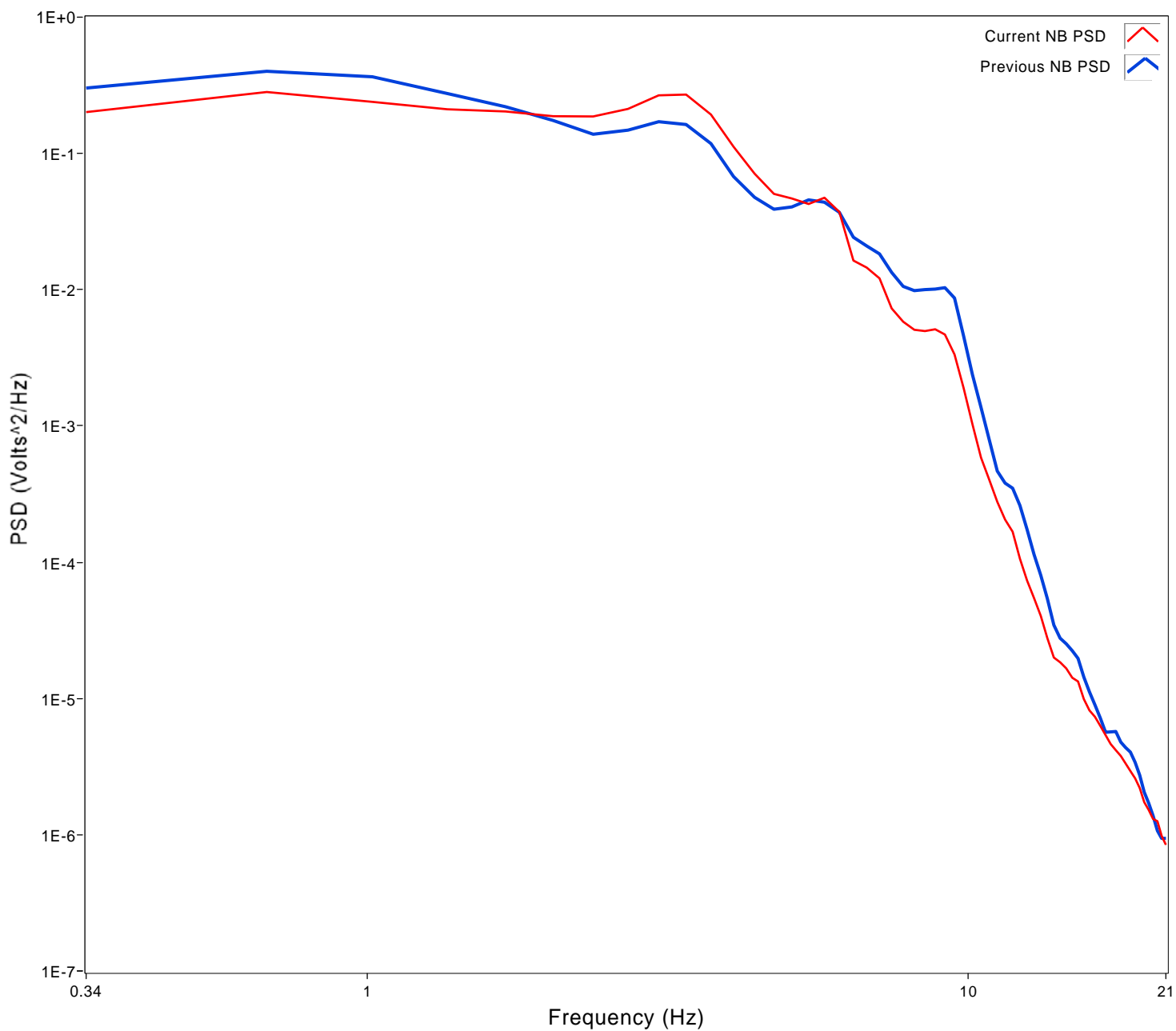




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

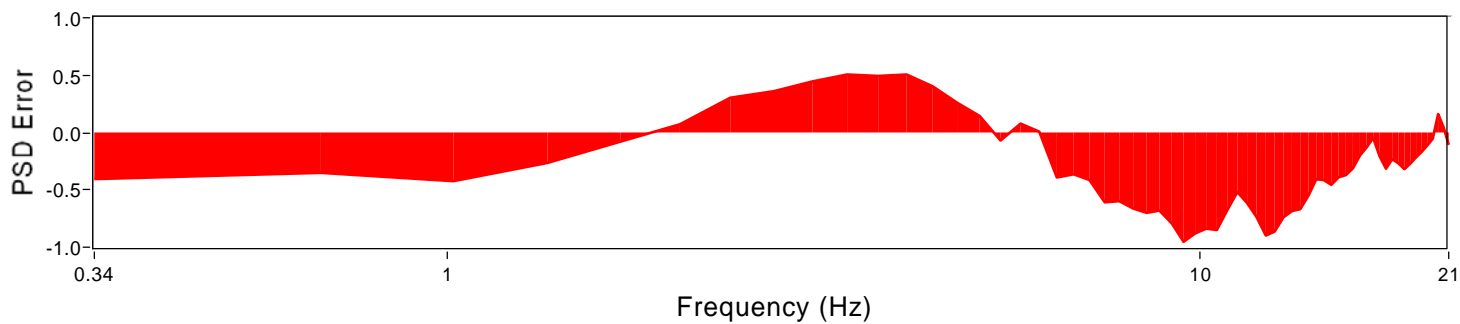
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT474	STM FLOW	FNP1060003.psd	11 : 128	0.339664	21.738468	18	Least-Squares	23-Jun-2009 12:04:01

Current NB PSD vs. Previous NP PSD



RMS=0.49

Compare Previous Error



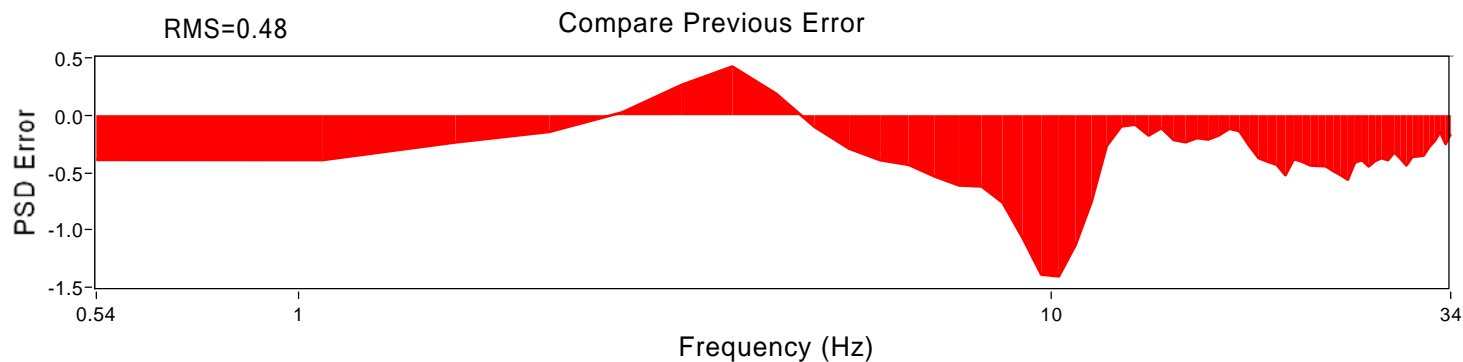
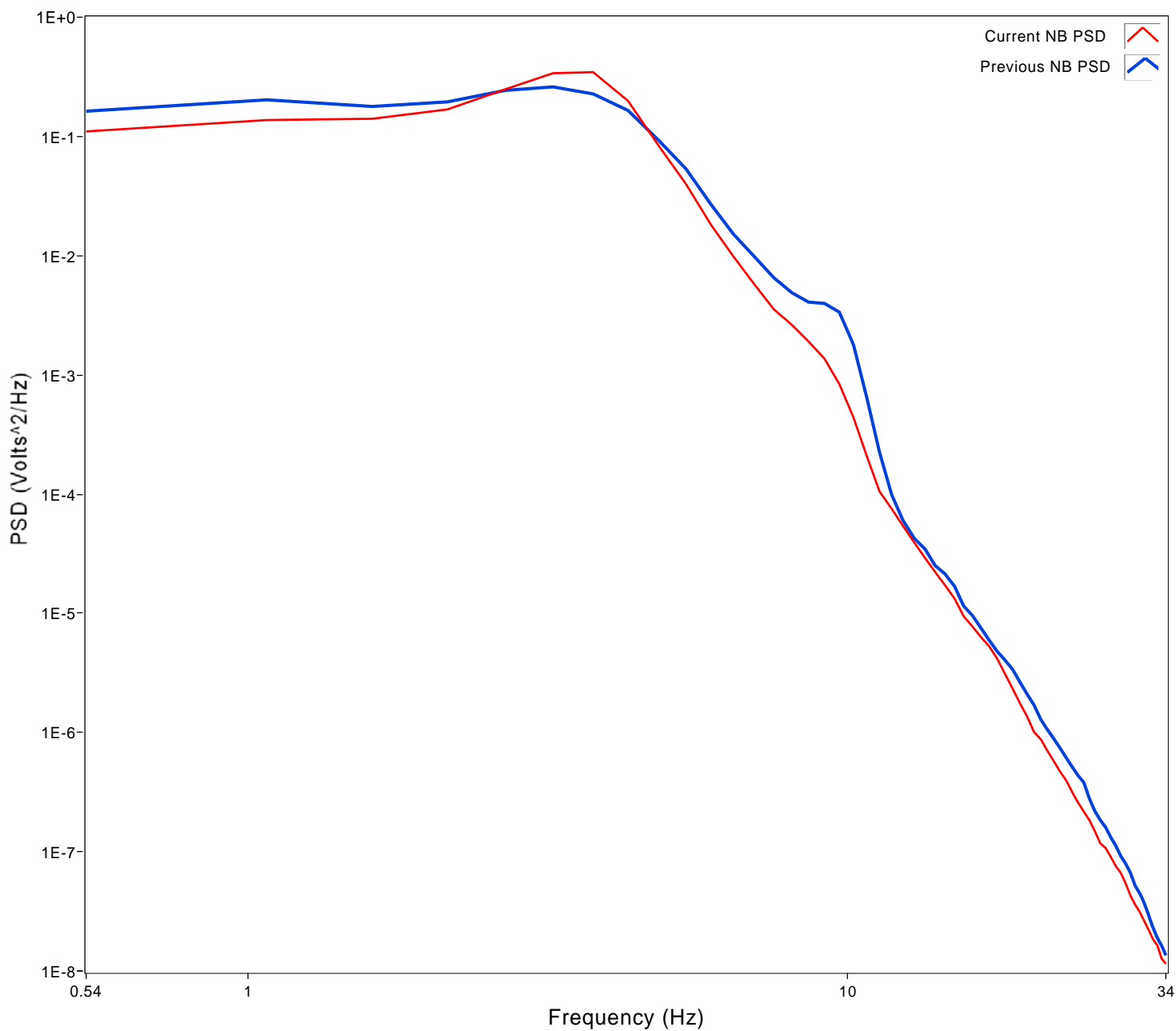




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT484	STM FLOW	FNP1060003.psd	11 : 128	0.538777	34.481708	17	Forward-Backward	23-Jun-2009 12:04:01

Current NB PSD vs. Previous NP PSD

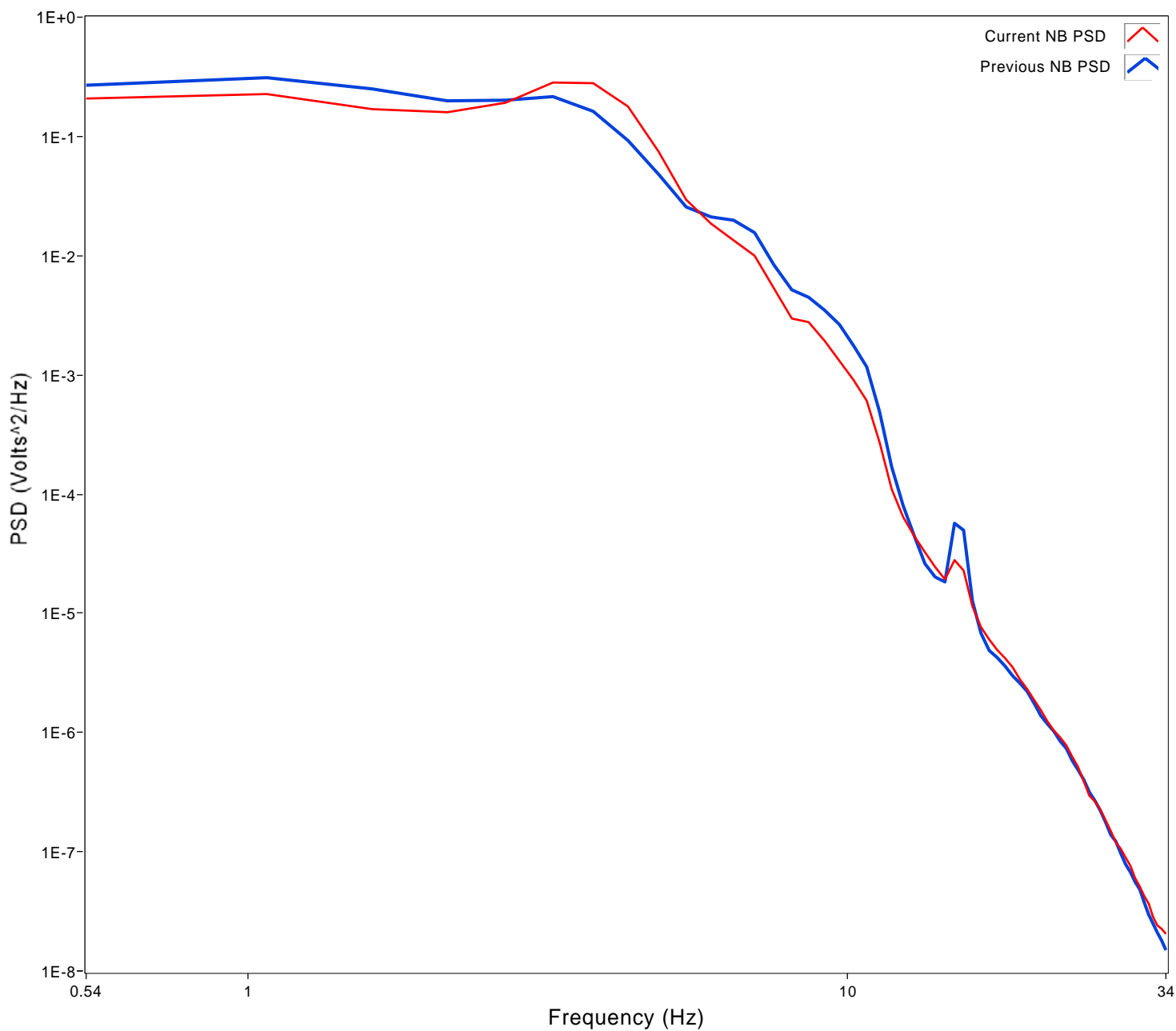




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

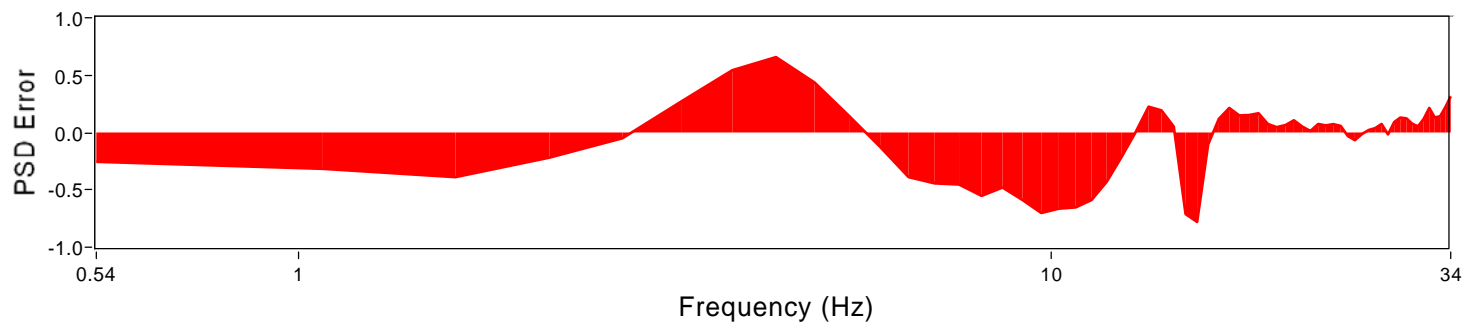
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT494	STM FLOW	FNP1060003.psd	11 : 128	0.538777	34.481708	17	Forward-Backward	23-Jun-2009 12:04:01

Current NB PSD vs. Previous NP PSD



RMS=0.32

Compare Previous Error

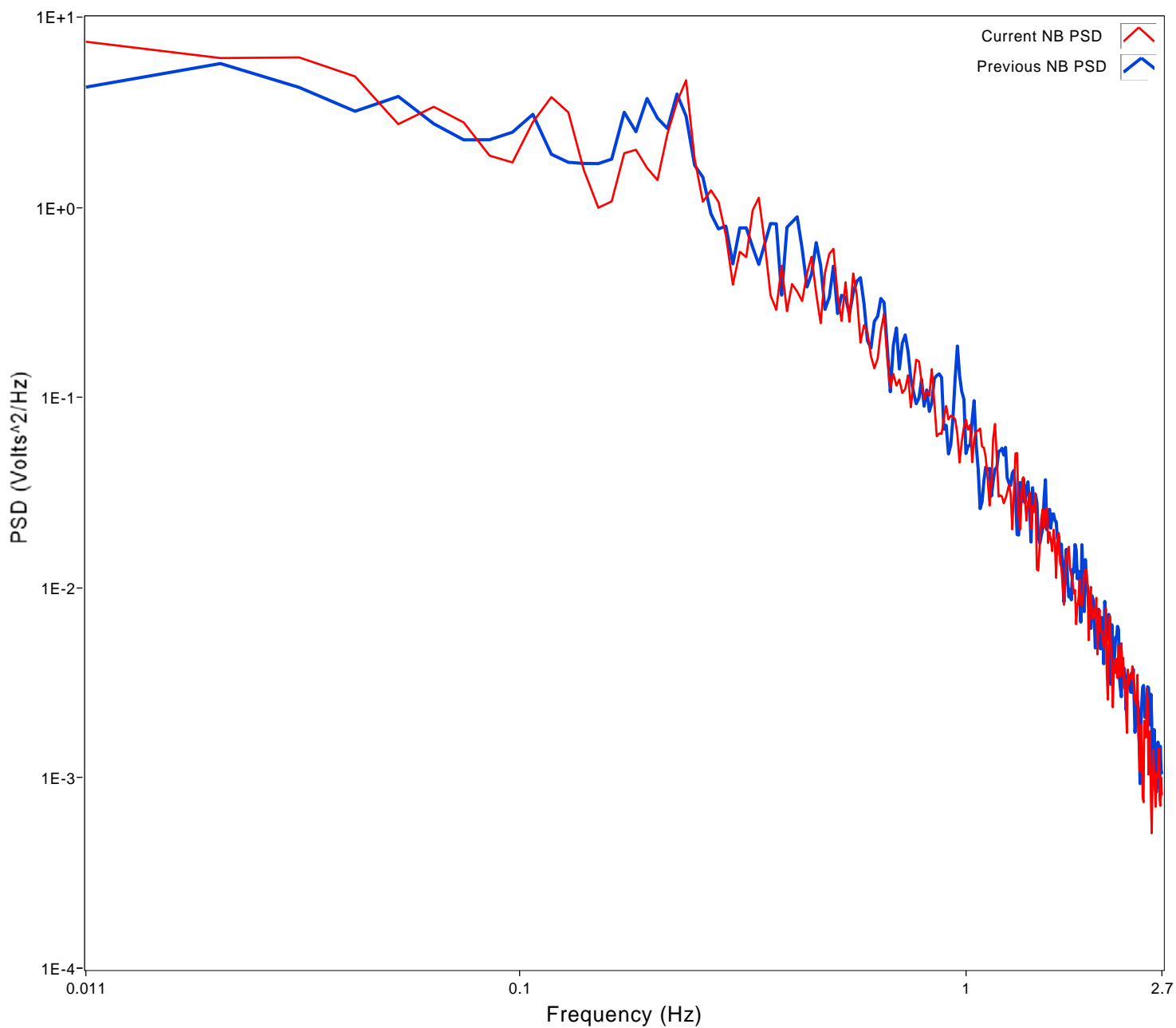




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

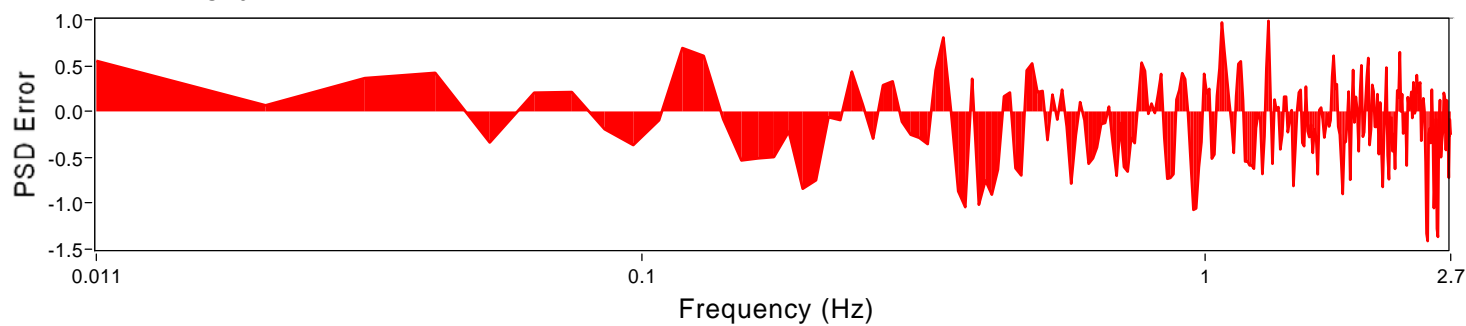
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT477	FW FLOW	FNP1060003.psd	11 : 512	0.010731	2.747169	23	Least-Squares	23-Jun-2009 12:04:01

Current NB PSD vs. Previous NP PSD



RMS=0.44

Compare Previous Error

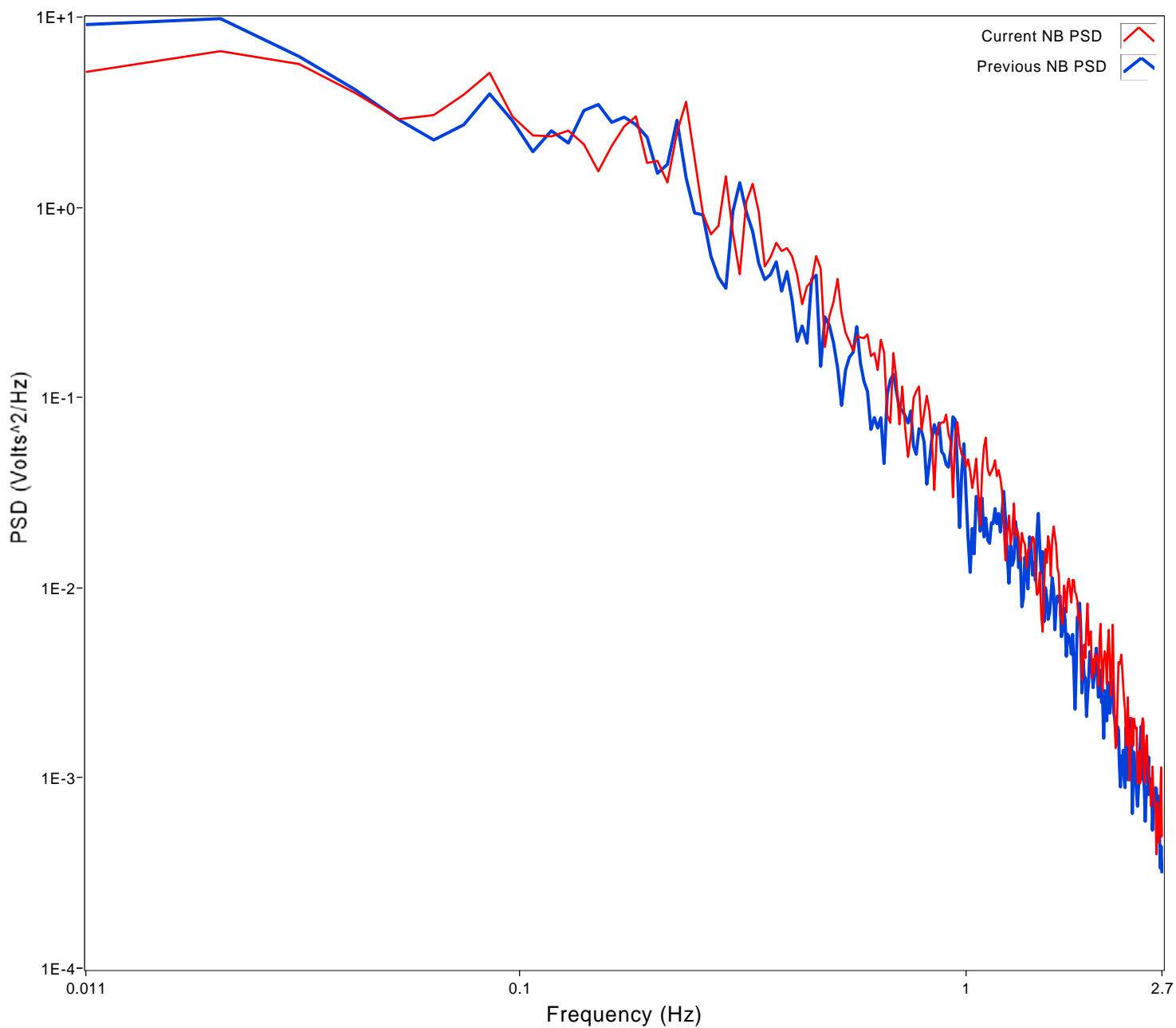




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

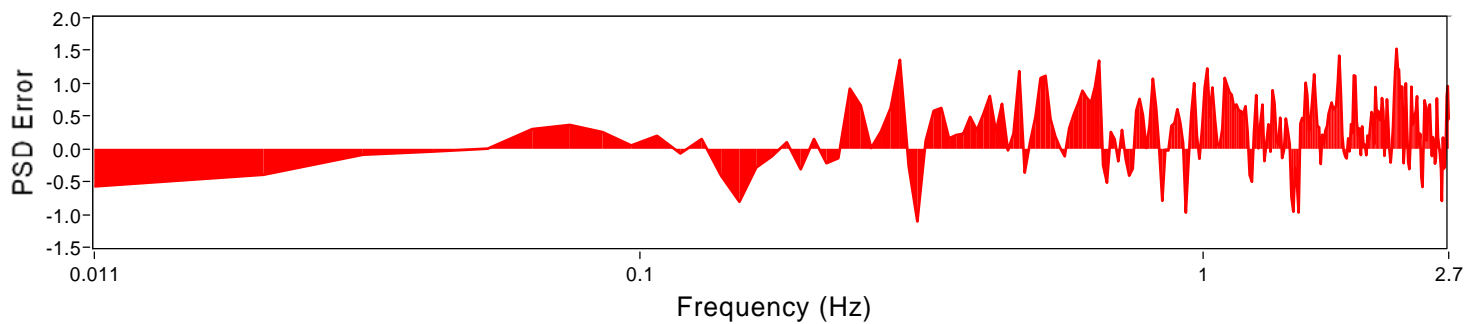
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT487	FW FLOW	FNP1060003.psd	11 : 512	0.010731	2.747169	21	Least-Squares	23-Jun-2009 12:04:01

Current NB PSD vs. Previous NP PSD



RMS=0.57

Compare Previous Error

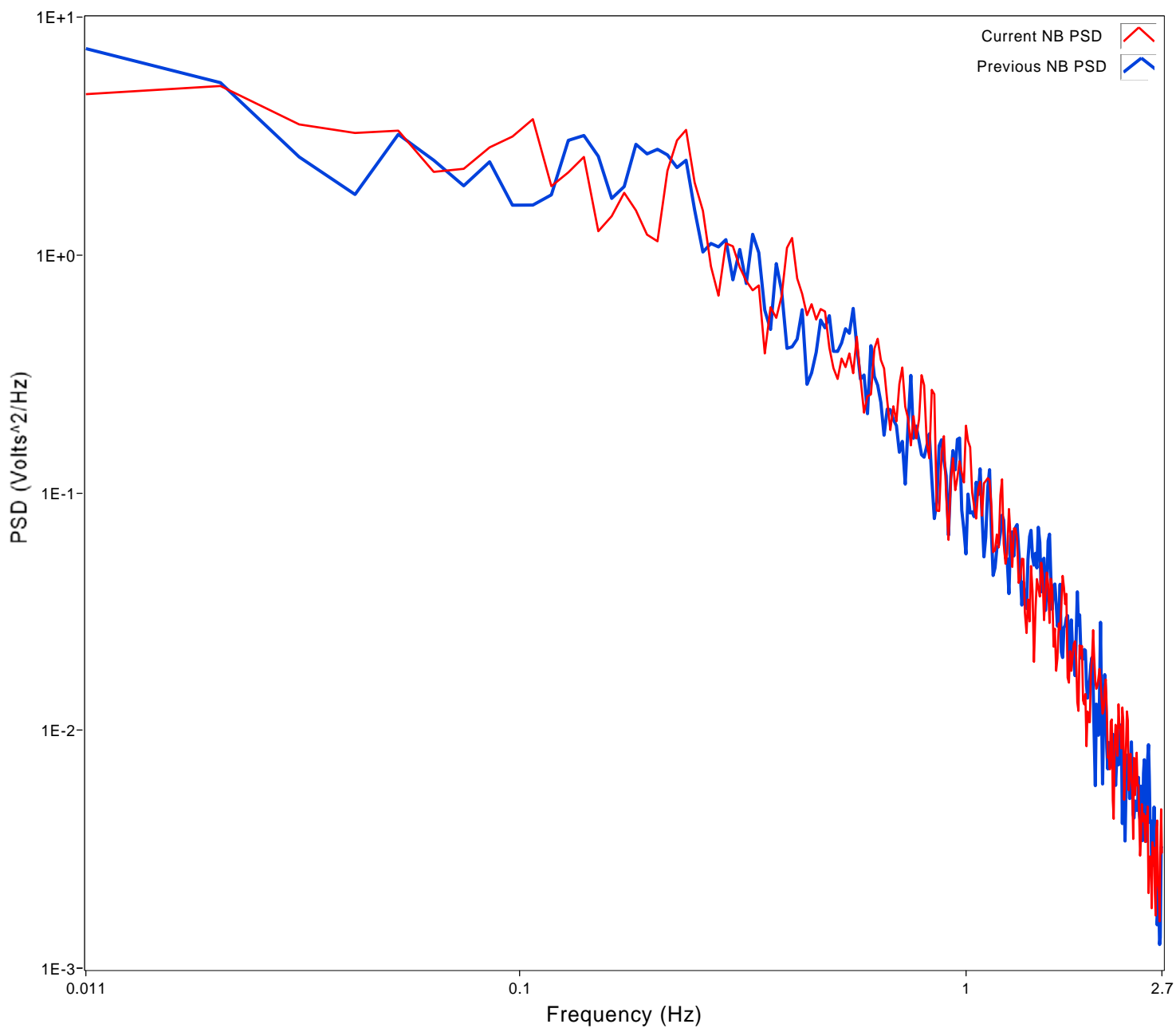




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

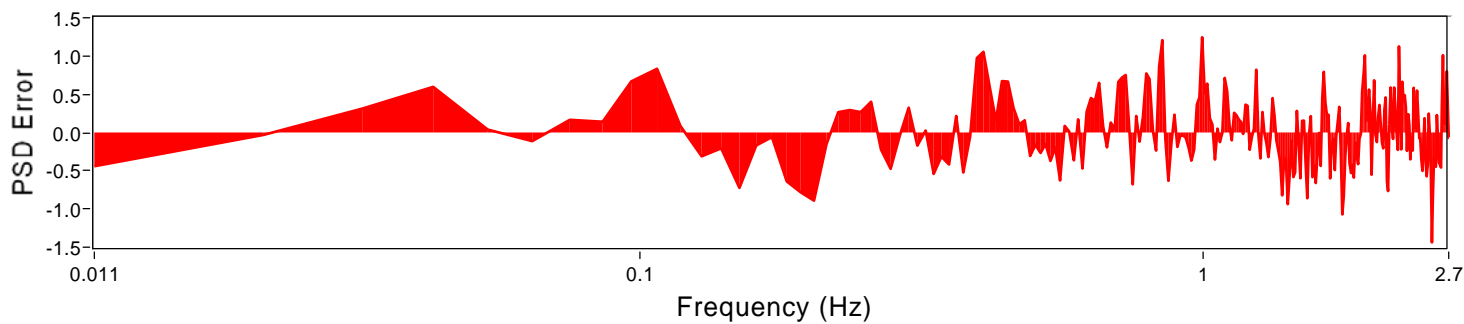
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT497	FW FLOW	FNP1060003.psd	11 : 512	0.010731	2.747169	24	Least-Squares	23-Jun-2009 12:04:01

Current NB PSD vs. Previous NP PSD



RMS=0.44

Compare Previous Error

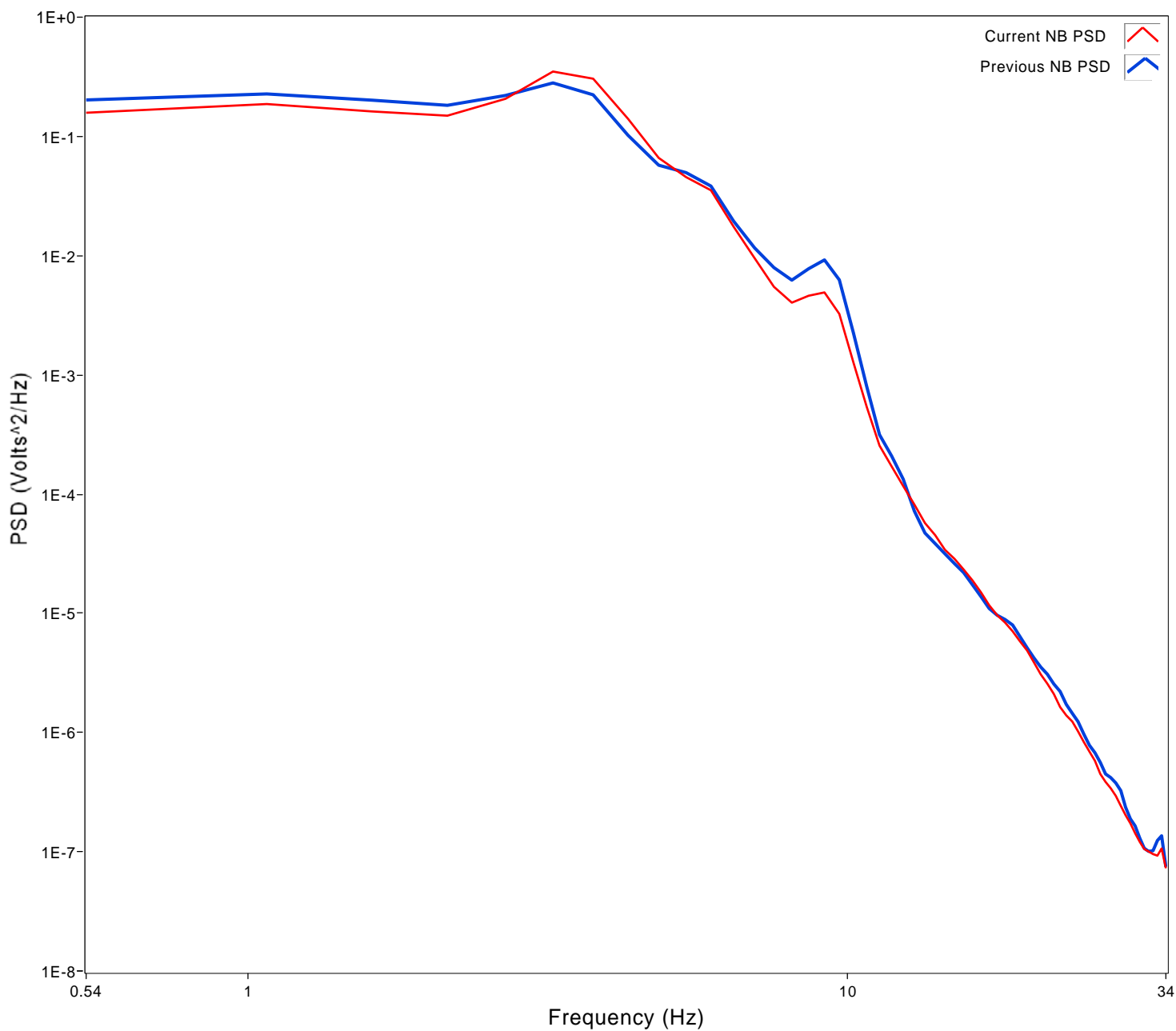




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

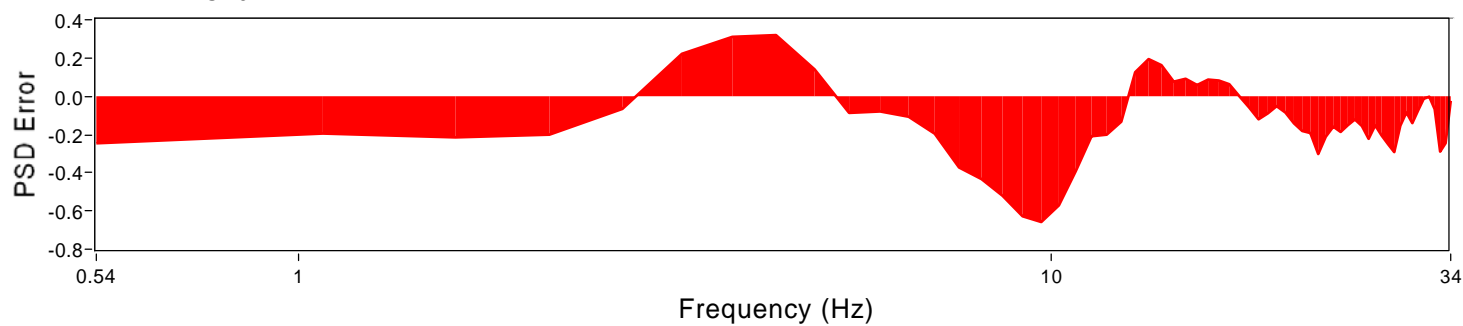
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT475	STM FLOW	FNP1060004.psd	11 : 128	0.538777	34.481708	18	Least-Squares	23-Jun-2009 12:04:01

Current NB PSD vs. Previous NP PSD



RMS=0.24

Compare Previous Error

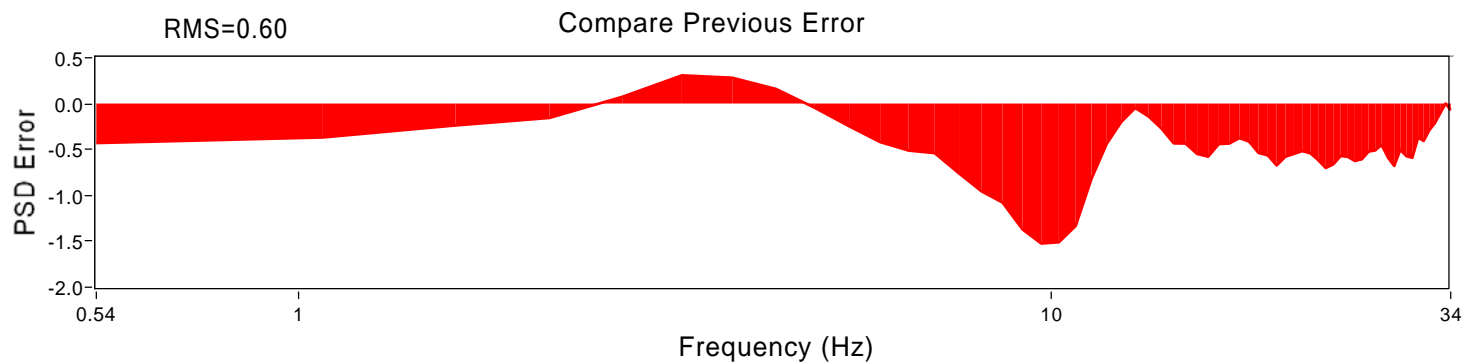
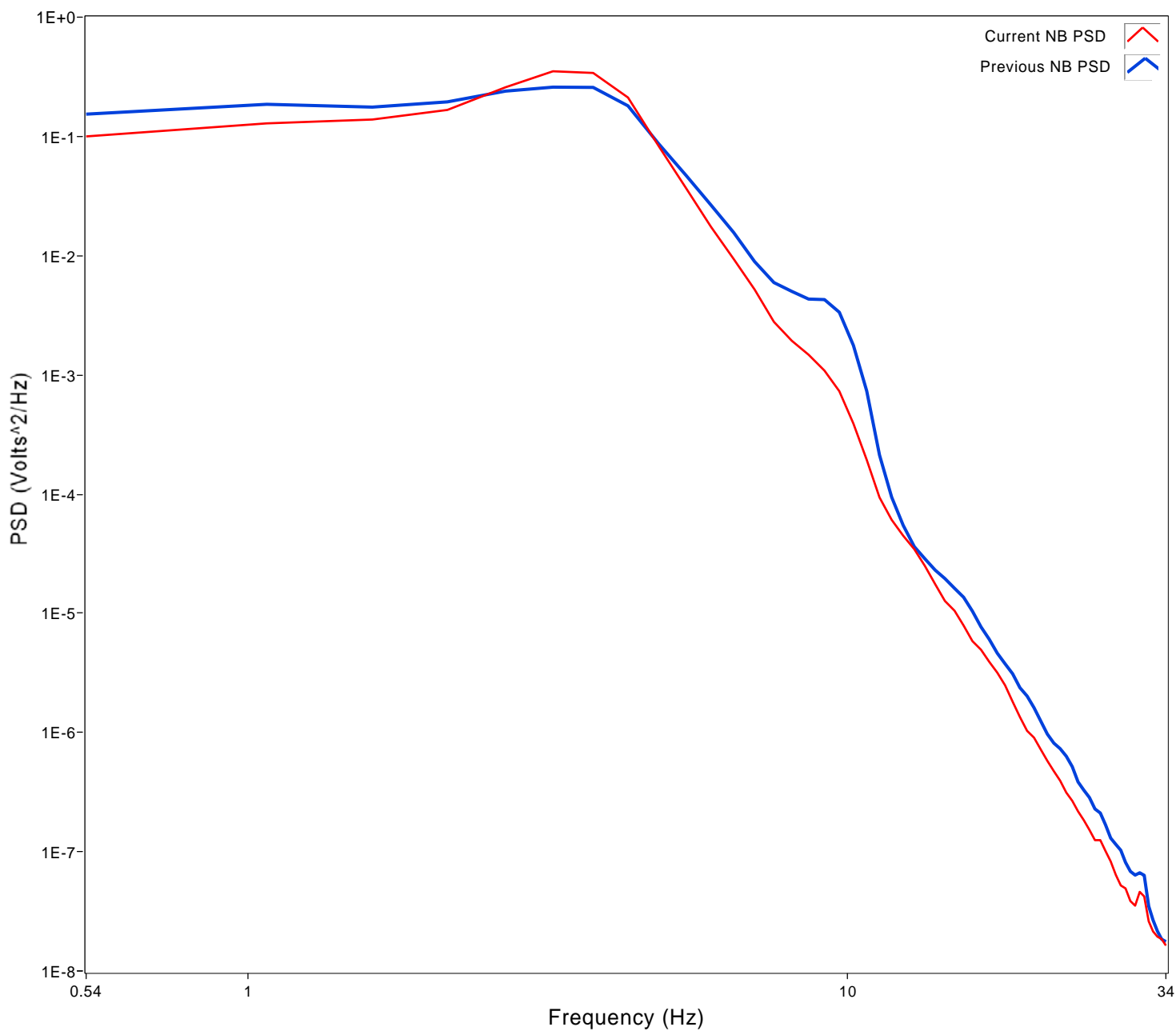




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT485	STM FLOW	FNP1060004.psd	11 : 128	0.538777	34.481708	18	Forward-Backward	23-Jun-2009 12:04:01

Current NB PSD vs. Previous NP PSD

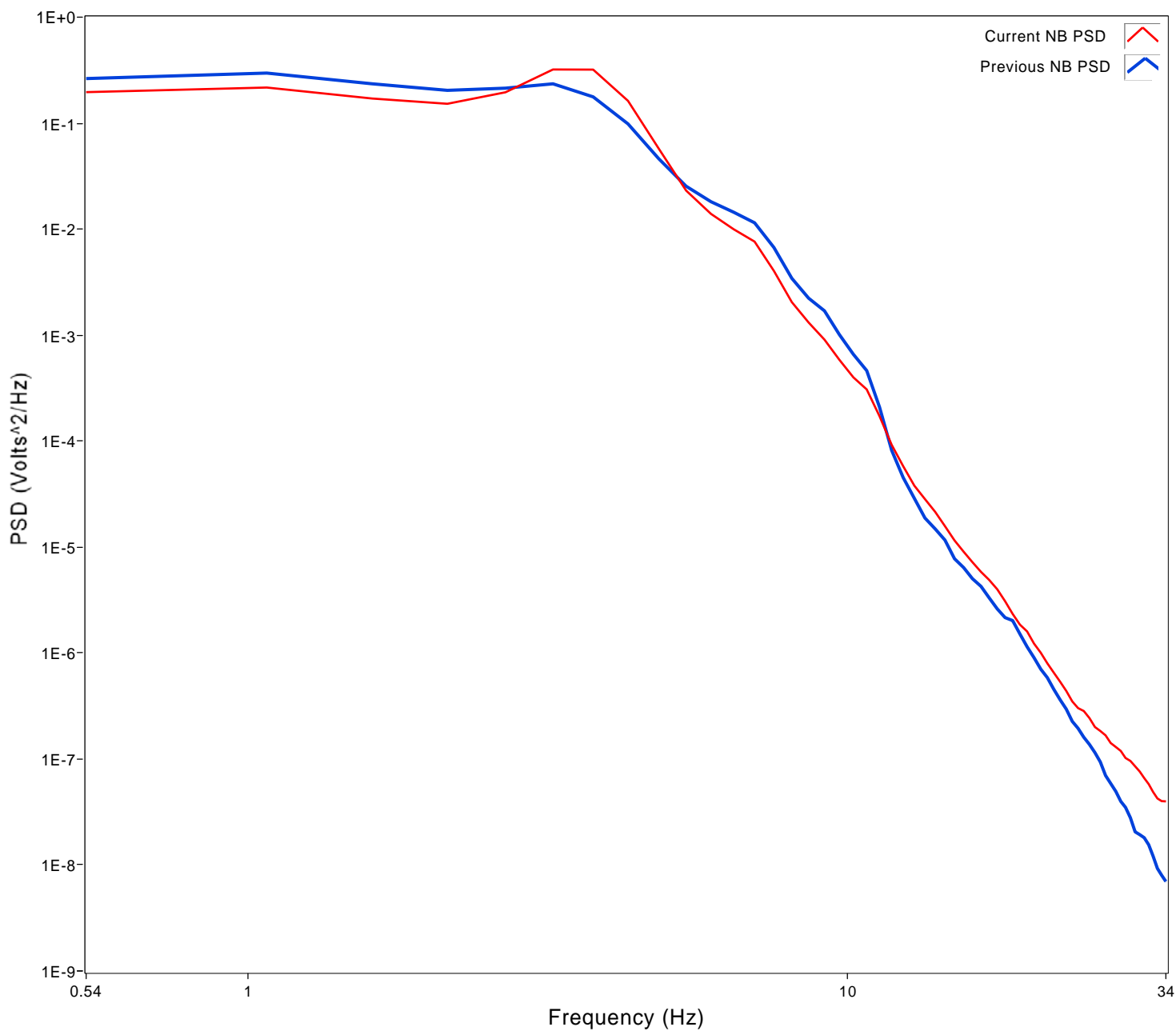




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

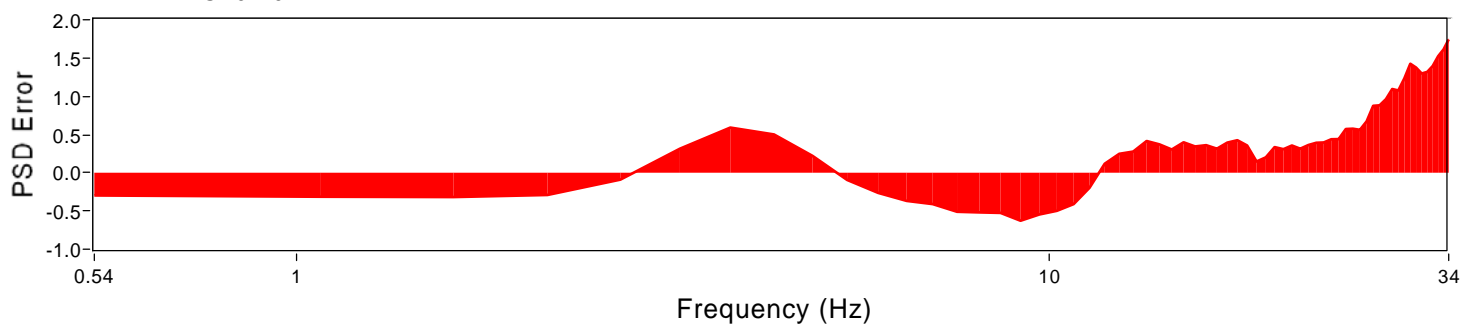
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT495	STM FLOW	FNP1060004.psd	11 : 128	0.538777	34.481708	18	Forward-Backward	23-Jun-2009 12:04:01

Current NB PSD vs. Previous NP PSD



RMS=0.70

Compare Previous Error



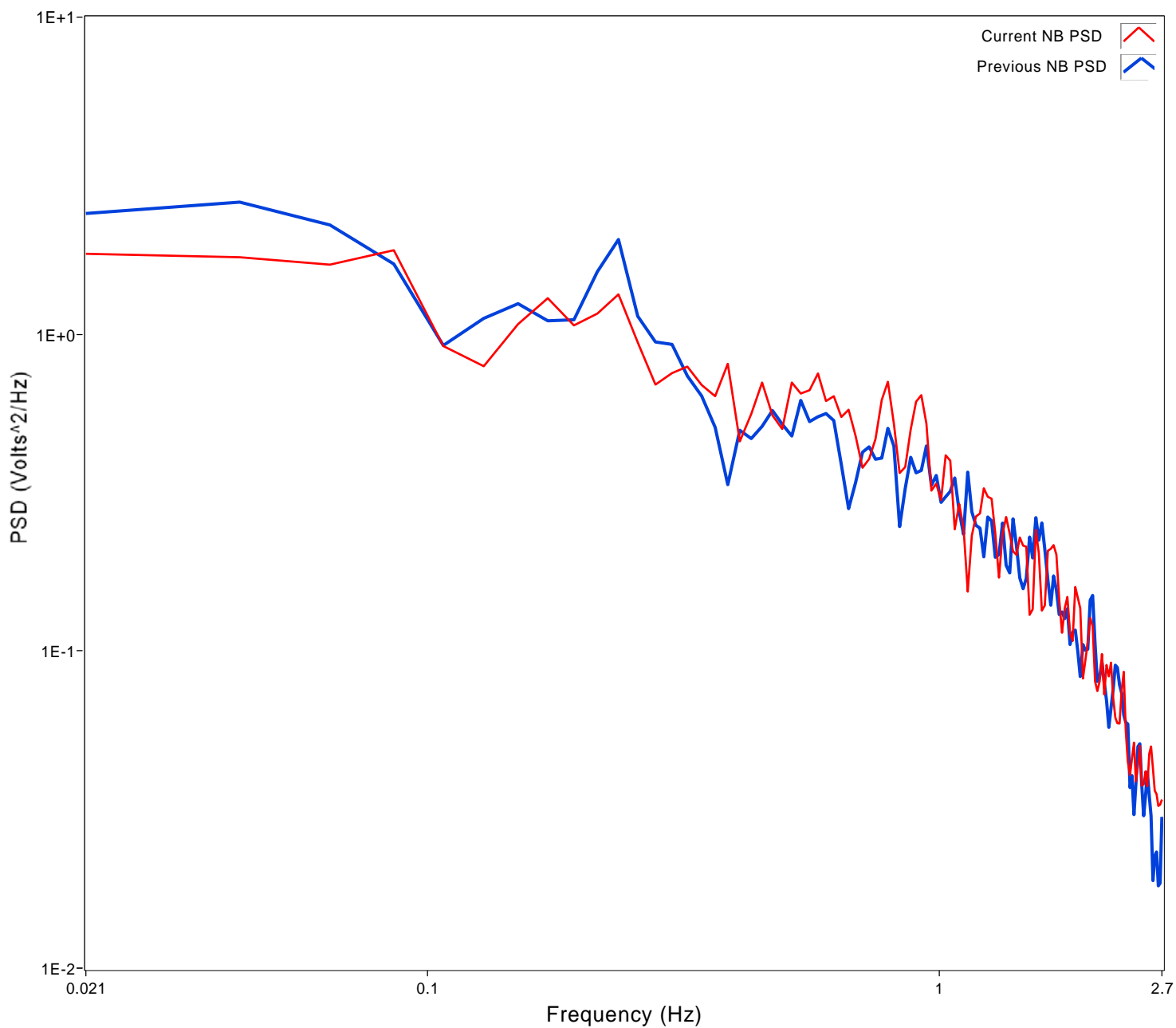




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

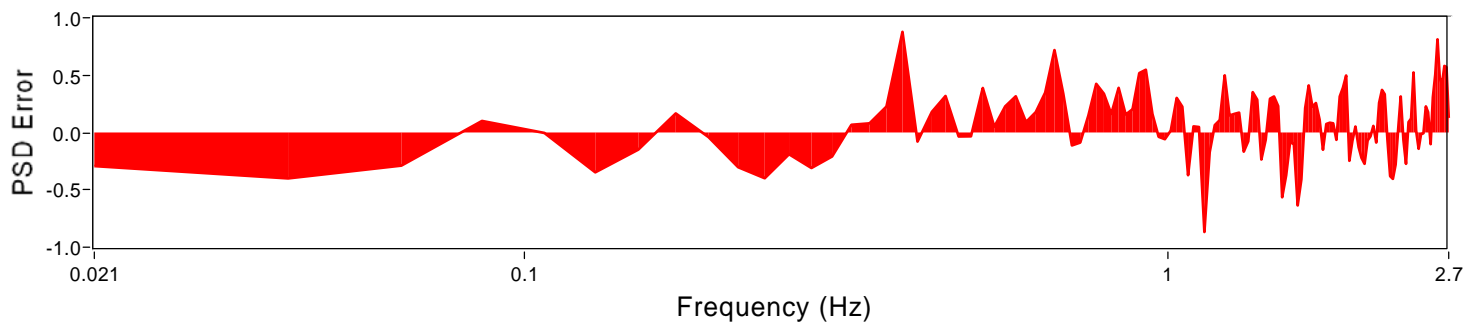
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT476	FW FLOW	FNP1060004.psd	11 : 256	0.021462	2.747169	22	Least-Squares	23-Jun-2009 12:04:01

Current NB PSD vs. Previous NP PSD



RMS=0.30

Compare Previous Error

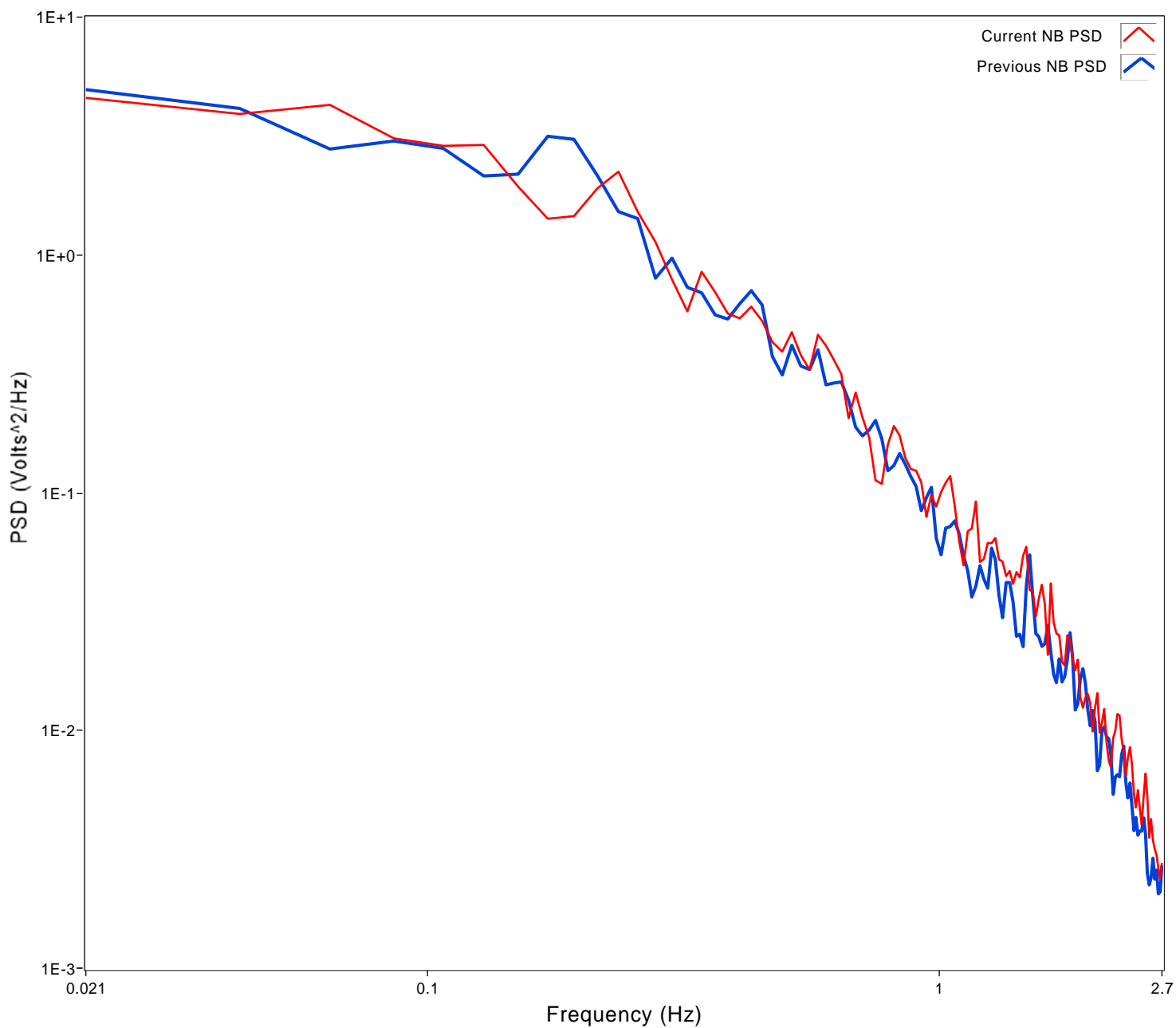




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

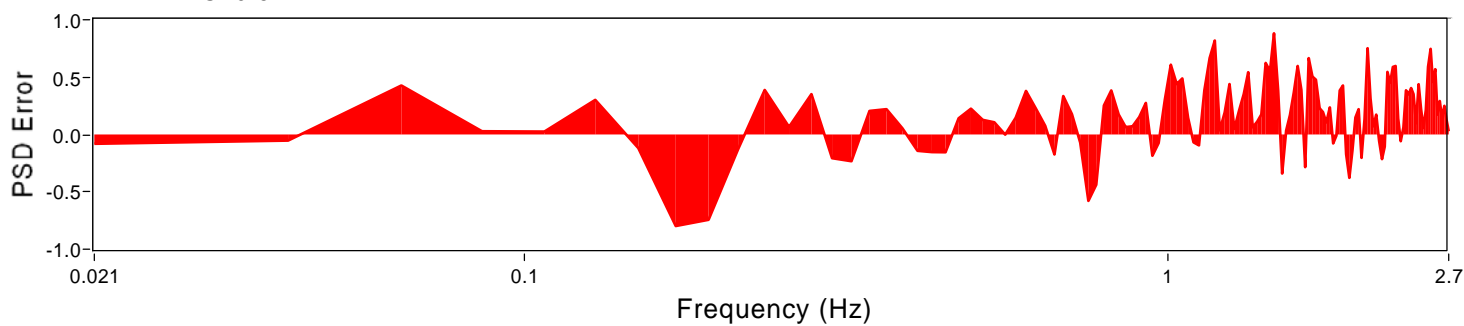
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT486	FW FLOW	FNP1060004.psd	11 : 256	0.021462	2.747169	11	Forward-Backward	23-Jun-2009 12:04:01

Current NB PSD vs. Previous NP PSD



RMS=0.34

Compare Previous Error

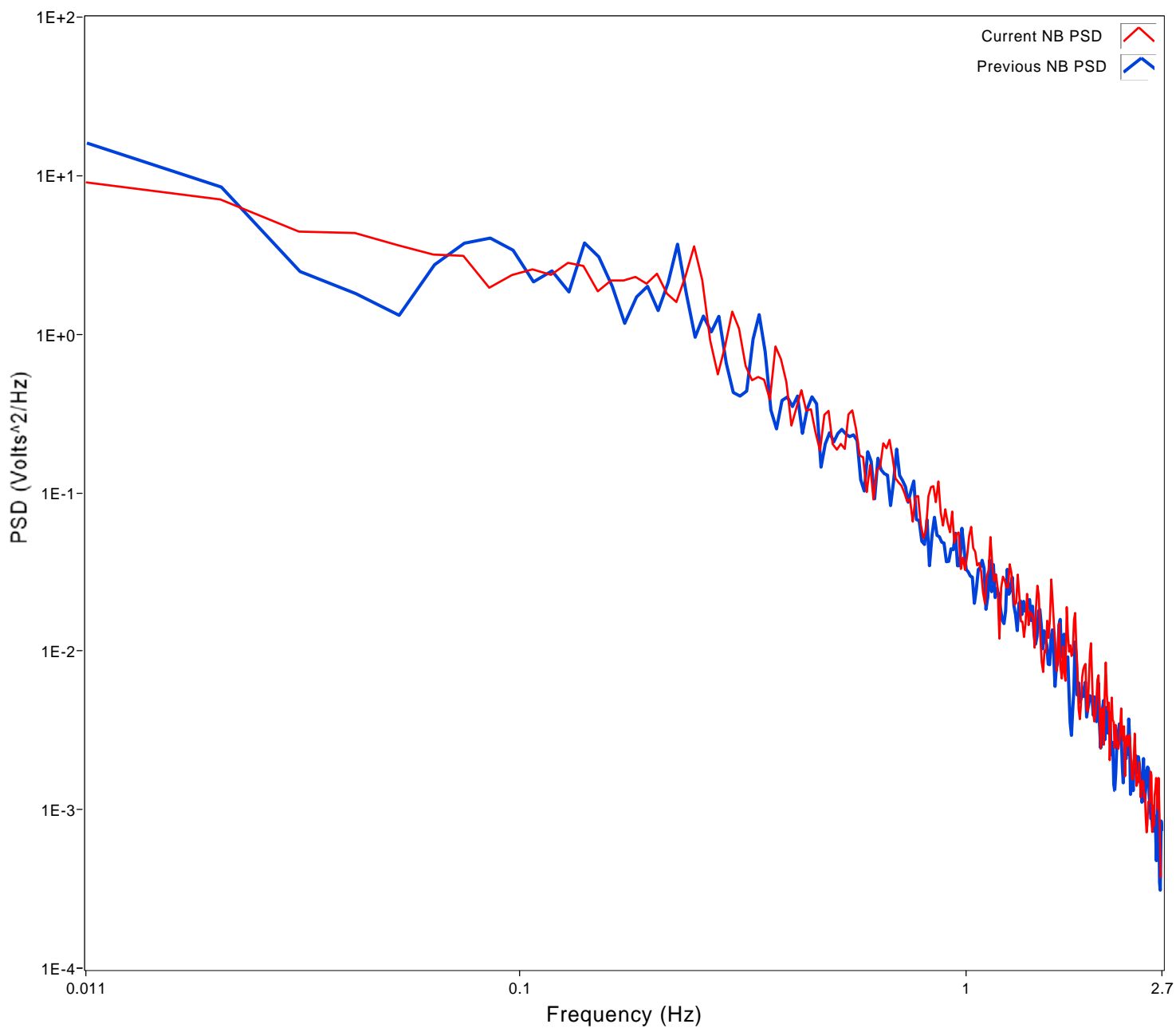




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

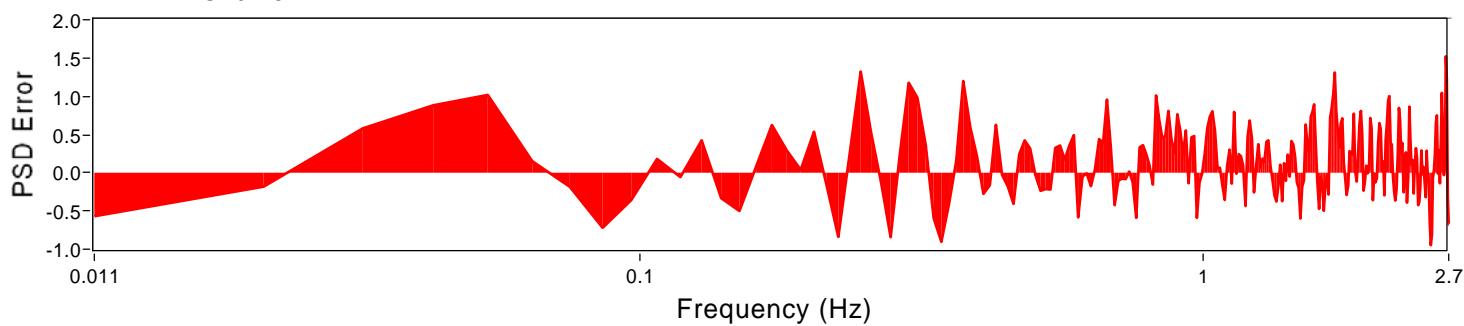
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 1	FT496	FW FLOW	FNP1060004.psd	11 : 512	0.010672	2.732157	11	Forward-Backward	23-Jun-2009 12:04:01

Current NB PSD vs. Previous NP PSD



RMS=0.48

Compare Previous Error



## **APPENDIX C**

### **Farley Unit 1 OLM Results (Cycle 24)**



Item	Tagname	Service	29 Nov 2010	25 Dec 2010	23 Jan 2011	9 Mar 2011	21 Mar 2011	16 Apr 2011	28 May 2011	6 Jun 2011	17 Jul 2011	Drift	Final	Comment
1	FE0474B	SG A STEAM FLOW	R										PASS	Only out in low range transient
2	FE0475B	SG A STEAM FLOW	R										PASS	Only out in low range transient
3	FE0476B	FW FLOW TO SG A											PASS	
4	FE0477B	FW FLOW TO SG A											PASS	
5	LT0474	SG A NARROW RANGE LEVEL											PASS	
6	LT0475	SG A NARROW RANGE LEVEL											PASS	
7	LT0476	SG A NARROW RANGE LEVEL											PASS	
8	LT0477	SG A WIDE RANGE LEVEL			M	M	M	M	M	M	M		FAIL	Low bias
9	PT0474	SG A OUTLET PRESSURE											PASS	
10	PT0475	SG A OUTLET PRESSURE											PASS	
11	PT0476	SG A OUTLET PRESSURE											PASS	
12	FE0484B	SG B STEAM FLOW	R										PASS	Only out in low range transient
13	FE0485B	SG B STEAM FLOW	R										PASS	Only out in low range transient
14	FE0486B	FW FLOW TO SG B											PASS	
15	FE0487B	FW FLOW TO SG B											PASS	
16	LT0484	SG B NARROW RANGE LEVEL											PASS	
17	LT0485	SG B NARROW RANGE LEVEL											PASS	
18	LT0486	SG B NARROW RANGE LEVEL											PASS	
19	LT0487	SG B WIDE RANGE LEVEL											PASS	
20	PT0484	SG B OUTLET PRESSURE											PASS	
21	PT0485	SG B OUTLET PRESSURE											PASS	
22	PT0486	SG B OUTLET PRESSURE											PASS	
23	FE0494B	SG C STEAM FLOW	R										PASS	Only out in low range transient
24	FE0495B	SG C STEAM FLOW	R										PASS	Only out in low range transient
25	FE0496B	FW FLOW TO SG C											PASS	
26	FE0497B	FW FLOW TO SG C											PASS	
27	LT0494	SG C NARROW RANGE LEVEL											PASS	
28	LT0495	SG C NARROW RANGE LEVEL											PASS	
29	LT0496	SG C NARROW RANGE LEVEL											PASS	
30	LT0497	SG C WIDE RANGE LEVEL											PASS	

*R = Exceeded Redundant Sensor Analysis Limits    M = Exceeded Model Analysis Limits    D = Exceeded Drift Limits*

**Table C.1 Farley Unit 1 OLM Results Summary (Cycle 24)**



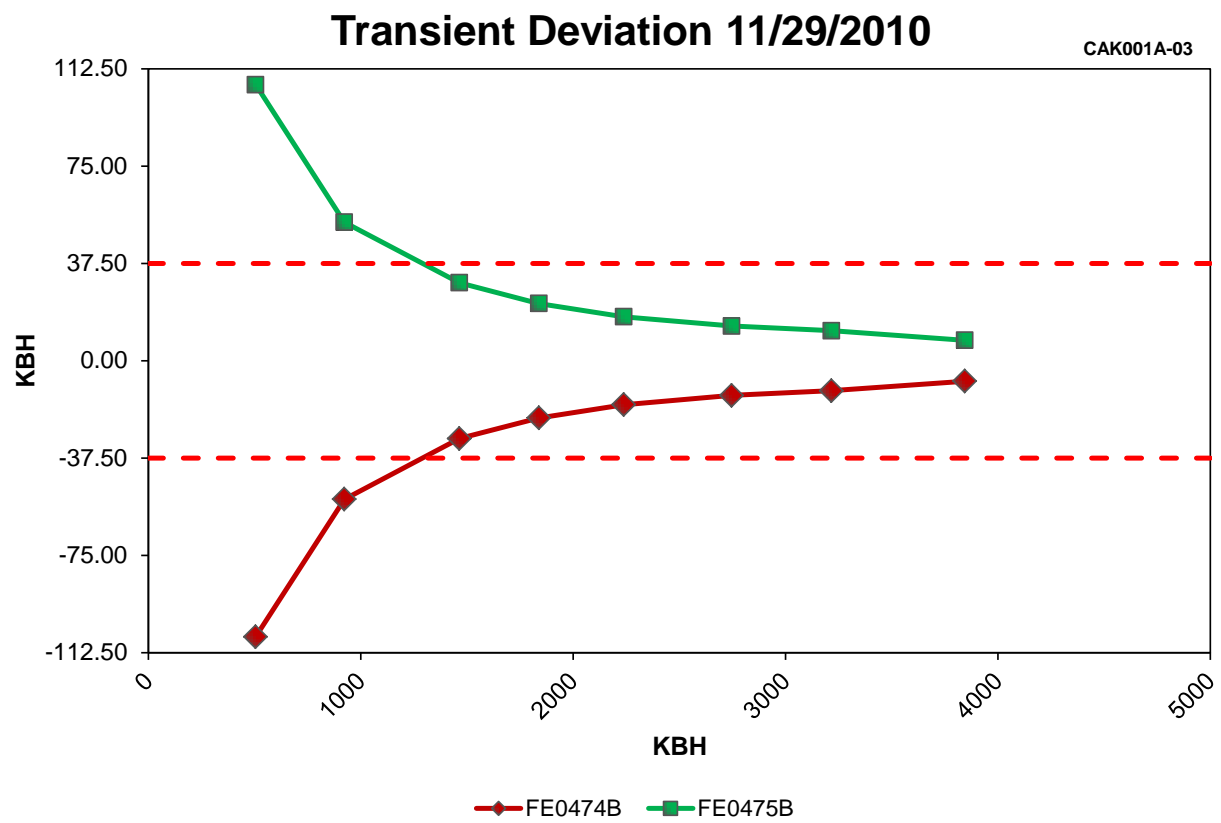
Item	Tagname	Service	29 Nov 2010	25 Dec 2010	23 Jan 2011	9 Mar 2011	21 Mar 2011	16 Apr 2011	28 May 2011	6 Jun 2011	17 Jul 2011	Drift	Final	Comment
31	PT0494	SG C OUTLET PRESSURE											PASS	
32	PT0495	SG C OUTLET PRESSURE											PASS	
33	PT0496	SG C OUTLET PRESSURE											PASS	
34	LT0459	PRESSURIZER LEVEL	R			R	R	R	R	R	R	D	FAIL	Low drift
35	LT0460	PRESSURIZER LEVEL					M	M	M	M	M		PASS	Process change
36	LT0461	PRESSURIZER LEVEL					M	M	M	M	M		PASS	Process change
37	PT0455	PRESSURIZER PRESSURE											PASS	
38	PT0456	PRESSURIZER PRESSURE	R	R	R	R	R	R	R	R	R		FAIL	High bias
39	PT0457	PRESSURIZER PRESSURE											PASS	
40	PT0444A	PRESSURIZER PRESSURE											PASS	
41	PT0445A	PRESSURIZER PRESSURE											PASS	
42	FE0414	RCS LOOP A FLOW											PASS	
43	FE0415	RCS LOOP A FLOW											PASS	
44	FE0416	RCS LOOP A FLOW		R	R	R	R	R	R	R	R		FAIL	Low bias
45	FE0424	RCS LOOP B FLOW											PASS	
46	FE0425	RCS LOOP B FLOW											PASS	
47	FE0426	RCS LOOP B FLOW											PASS	
48	FE0434	RCS LOOP C FLOW											PASS	
49	FE0435	RCS LOOP C FLOW											PASS	
50	FE0436	RCS LOOP C FLOW											PASS	
51	PT0402	RCS WIDE RANGE PRESSURE LOOP C											PASS	
52	PT0403	RCS WIDE RANGE PRESSURE LOOP A											PASS	
53	PT0446	TURBINE FIRST STAGE PRESSURE											PASS	
54	PT0447	TURBINE FIRST STAGE PRESSURE											PASS	
55	LT0501	RWST LEVEL											PASS	
56	LT0502	RWST LEVEL											PASS	
57	PT0951	CTMT PRESSURE											PASS	
58	PT0952	CTMT PRESSURE											PASS	
59	PT0953	CTMT PRESSURE											PASS	
60	PT0950Y	CTMT PSR EXT RANGE											PASS	
61	PT0950Z	CTMT PSR EXT RANGE											PASS	

*R = Exceeded Redundant Sensor Analysis Limits    M = Exceeded Model Analysis Limits    D = Exceeded Drift Limits*

**Table C.1 (continued) Farley Unit 1 OLM Results Summary (Cycle 24)**







**Figure C.1 SG A STEAM FLOW Transient Deviation at Farley Unit 1 (Cycle 24)**

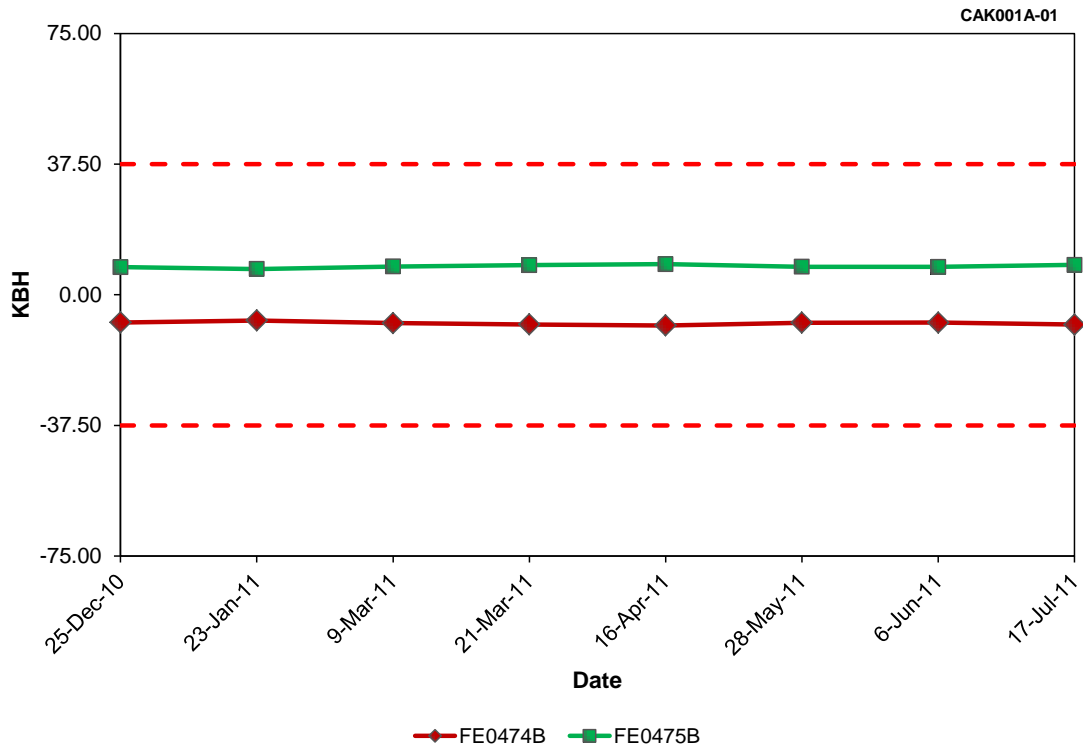


Figure C.2 SG A STEAM FLOW Steady-State Deviation at Farley Unit 1 (Cycle 24)

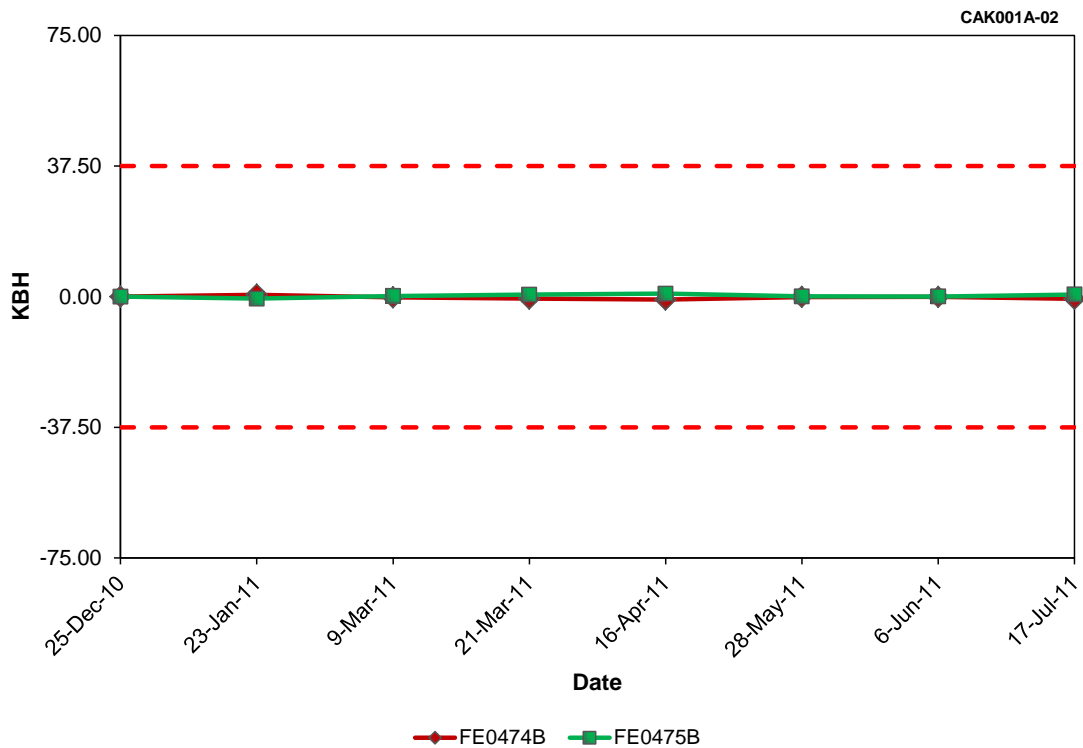


Figure C.3 SG A STEAM FLOW Steady-State Drift at Farley Unit 1 (Cycle 24)

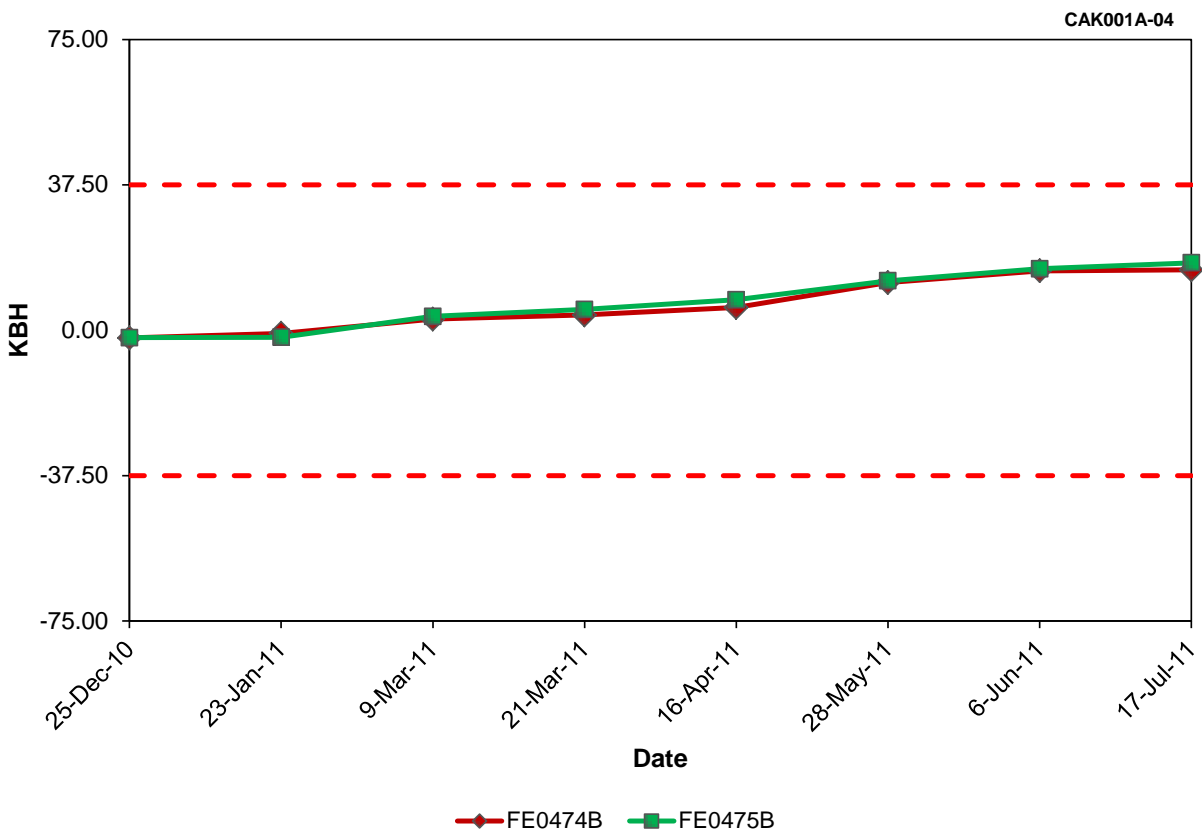
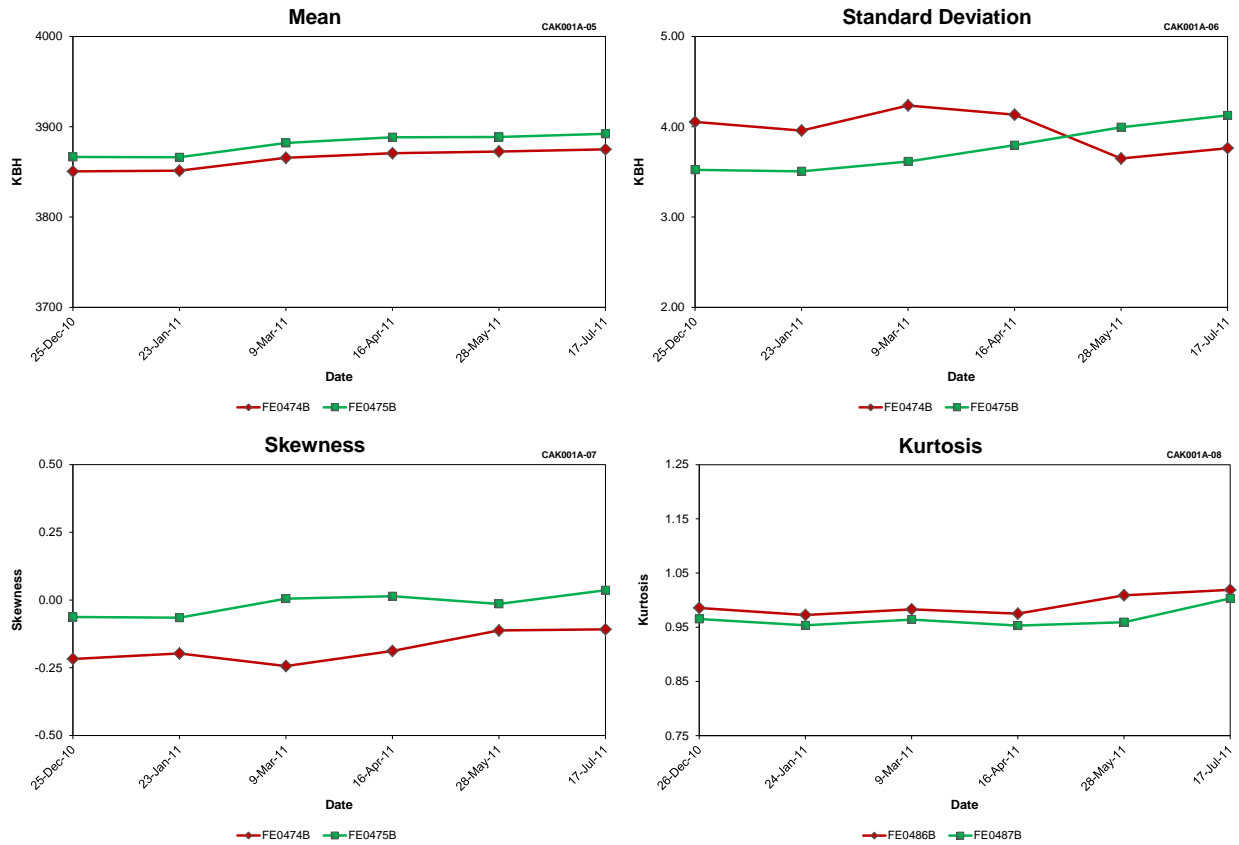


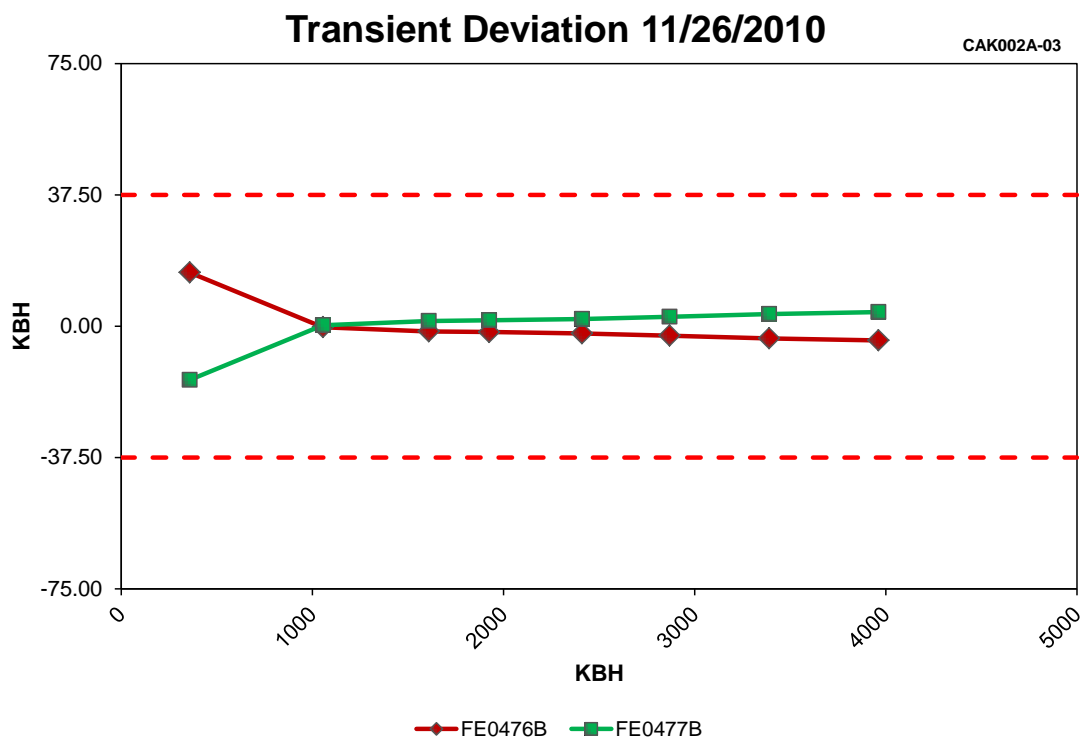
Figure C.4 SG A STEAM FLOW Steady-State Residual AAKR at Farley Unit 1 (Cycle 24)



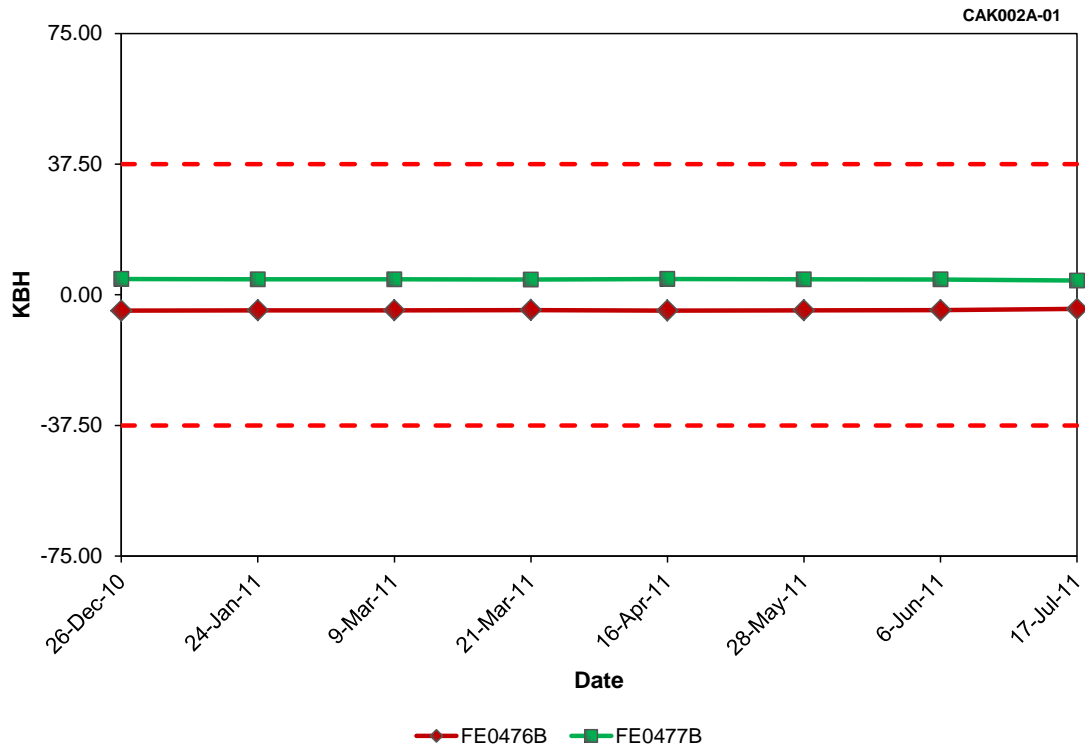
**Figure C.5 SG A STEAM FLOW Data Quality Statistics at Farley Unit 1 (Cycle 24)**

**Table C.1 SG A STEAM FLOW Data Quality for Farley Unit 1 (Cycle 24)**

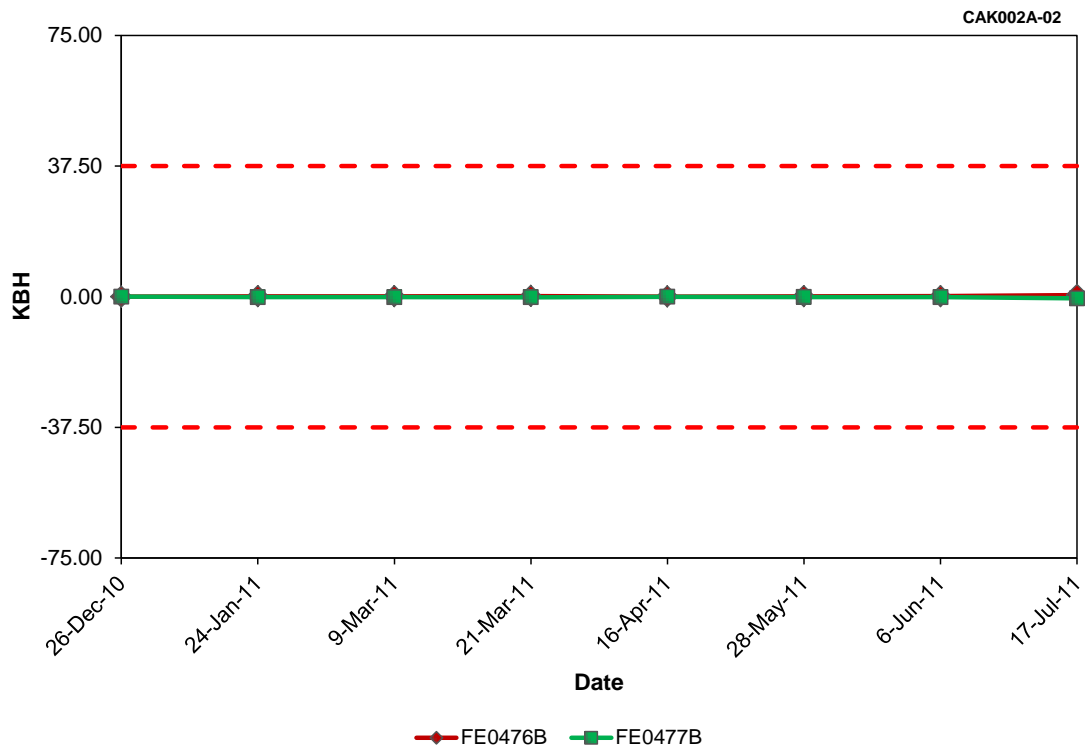
Result Type	Tag Names	
	FE0474B	FE0475B
Mean	3864.25	3880.62
Std. Dev.	3.96	3.76
Skewness	-0.18	-0.01
Kurtosis	0.99	0.97



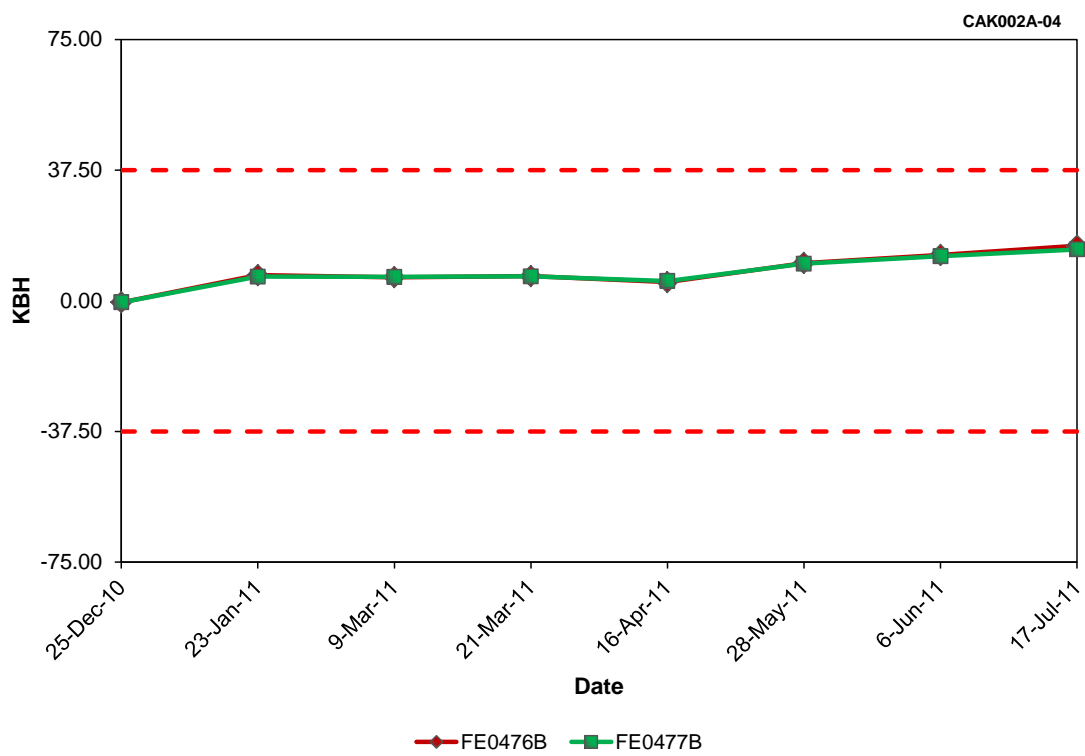
**Figure C.6 FW FLOW TO SG A Transient Deviation at Farley Unit 1 (Cycle 24)**



**Figure C.7 FW FLOW TO SG A Steady-State Deviation at Farley Unit 1 (Cycle 24)**

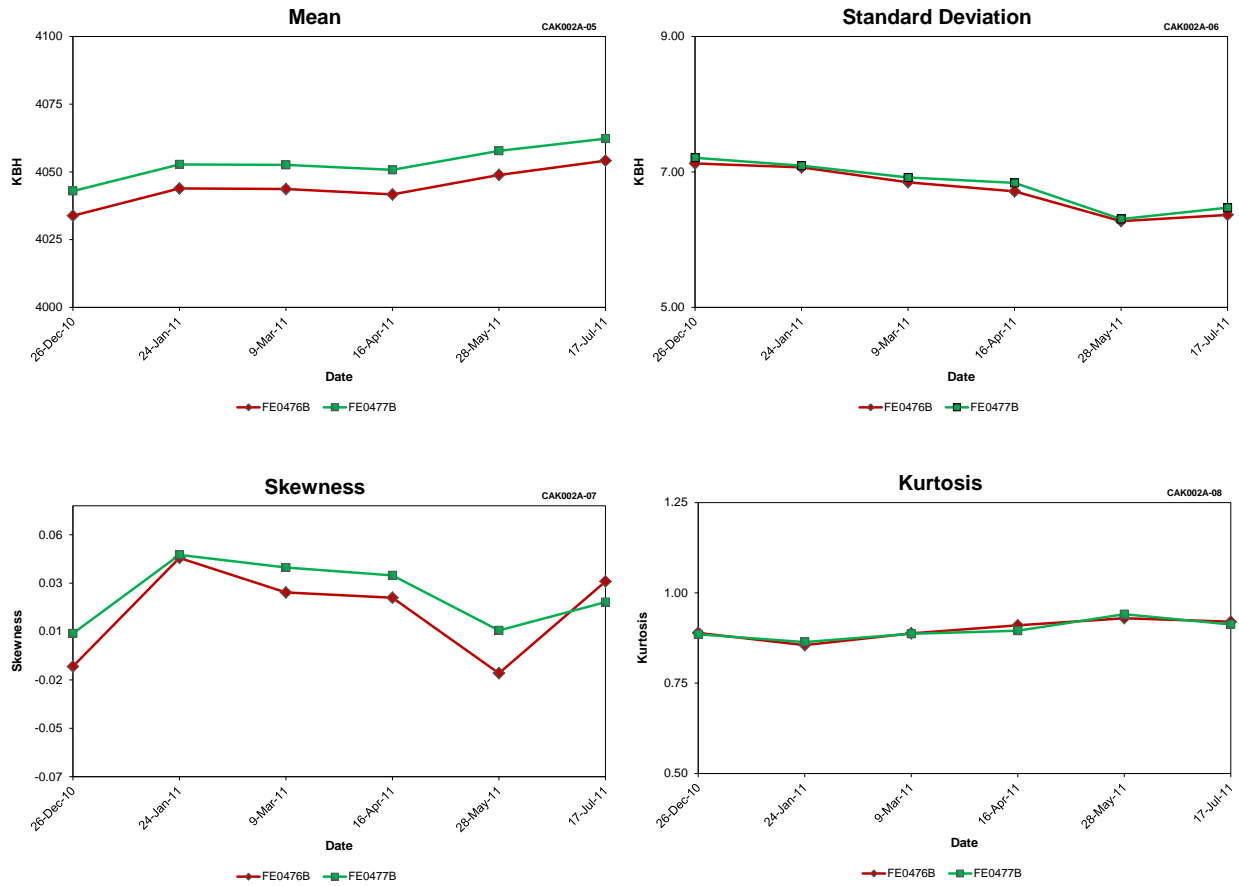


**Figure C.8 FW FLOW TO SG A Steady-State Drift at Farley Unit 1 (Cycle 24)**



**Figure C.9 FW FLOW TO SG A Steady-State Residual AAKR at Farley Unit 1 (Cycle 24)**





**Figure C.10 FW FLOW TO SG A Data Quality Statistics at Farley Unit 1 (Cycle 24)**

**Table C.2 FW FLOW TO SG A Data Quality for Farley Unit 1 (Cycle 24)**

Result Type	Tag Names	
	FE0476B	FE0477B
Mean	4044.35	4053.18
Std. Dev.	6.73	6.80
Skewness	0.02	0.02
Kurtosis	0.90	0.90

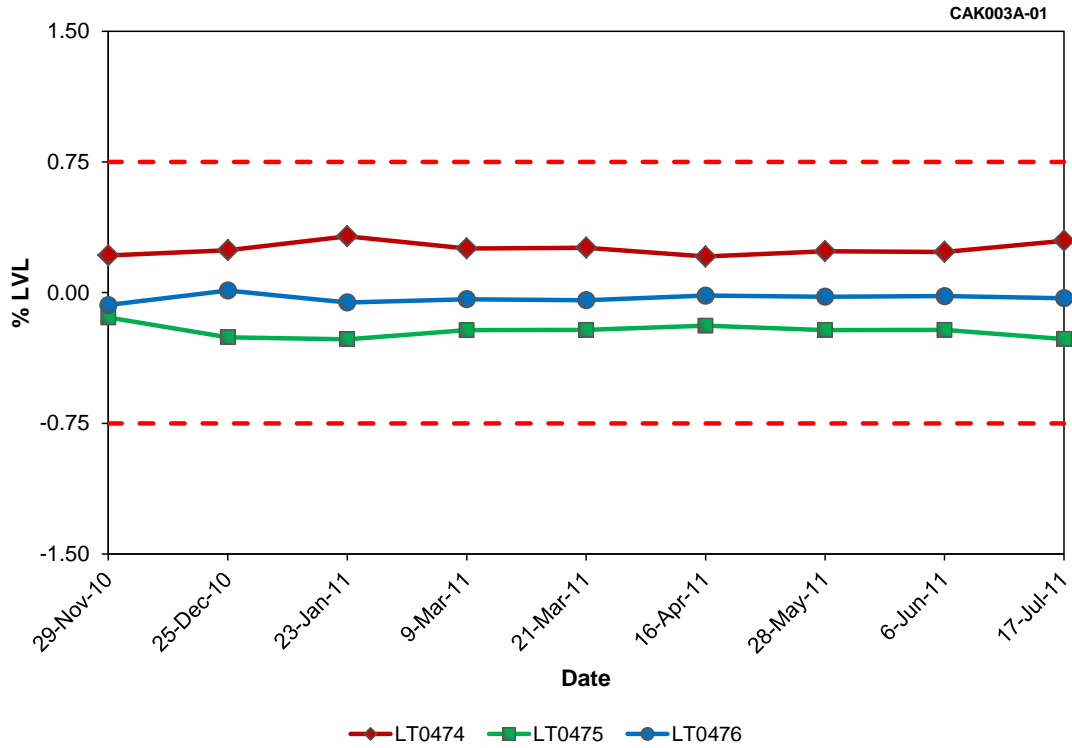


Figure C.11 SG A LEVEL Steady-State Deviation at Farley Unit 1 (Cycle 24)

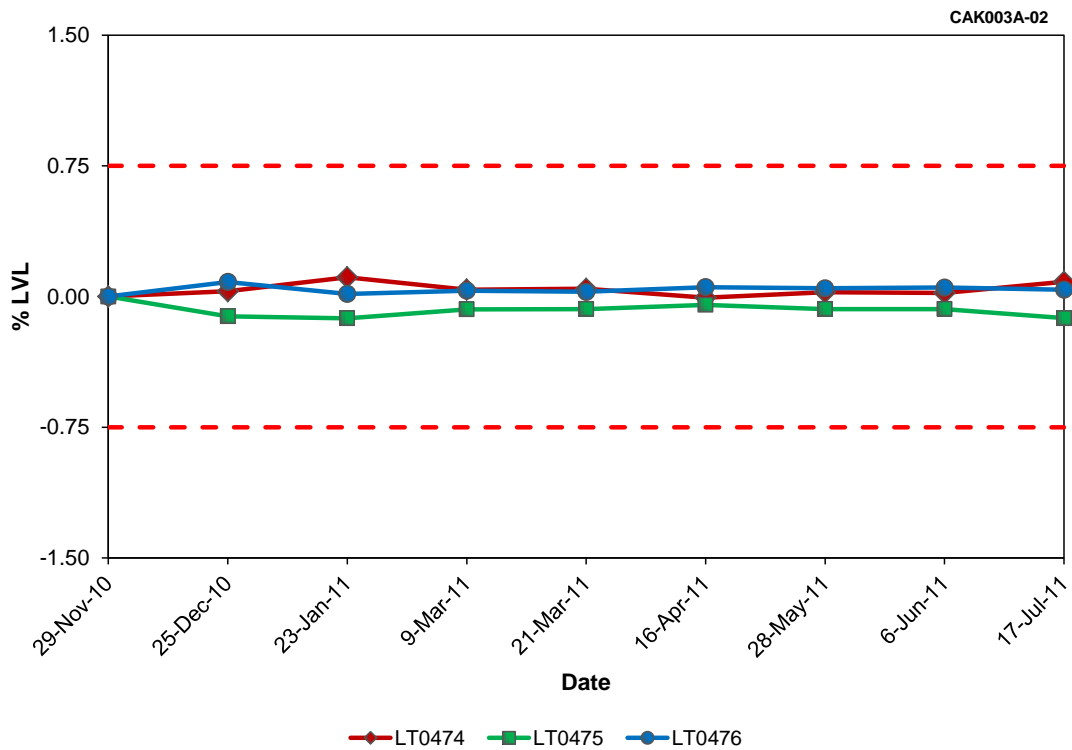


Figure C.12 SG A LEVEL Steady-State Drift at Farley Unit 1 (Cycle 24)

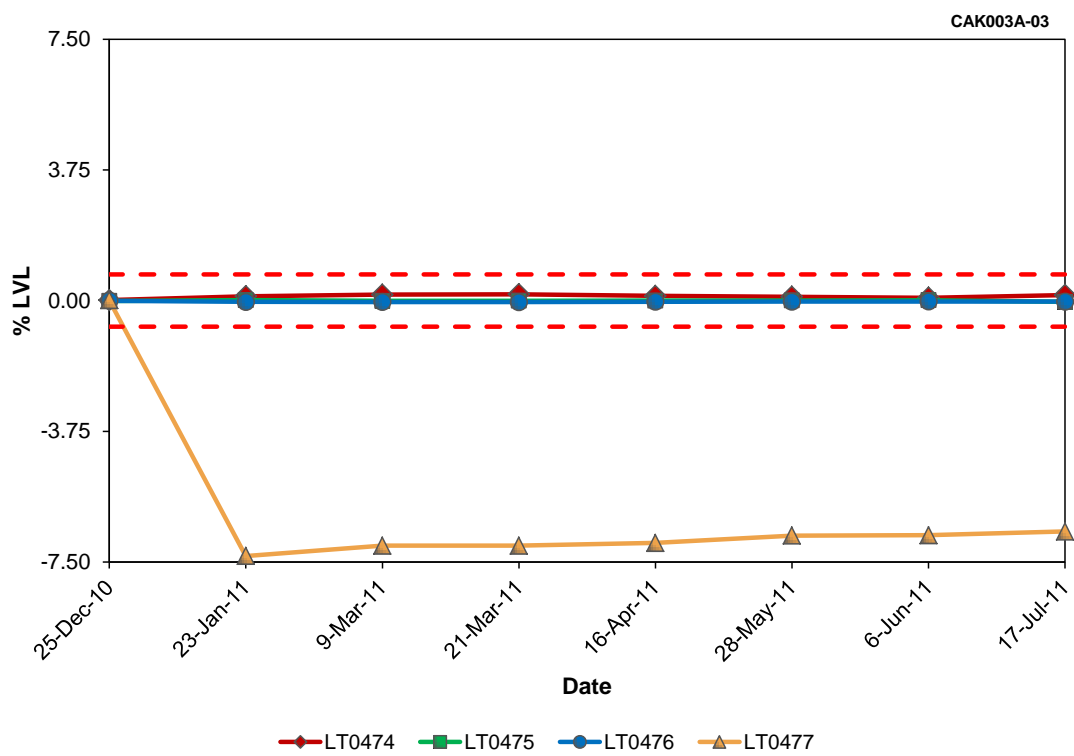
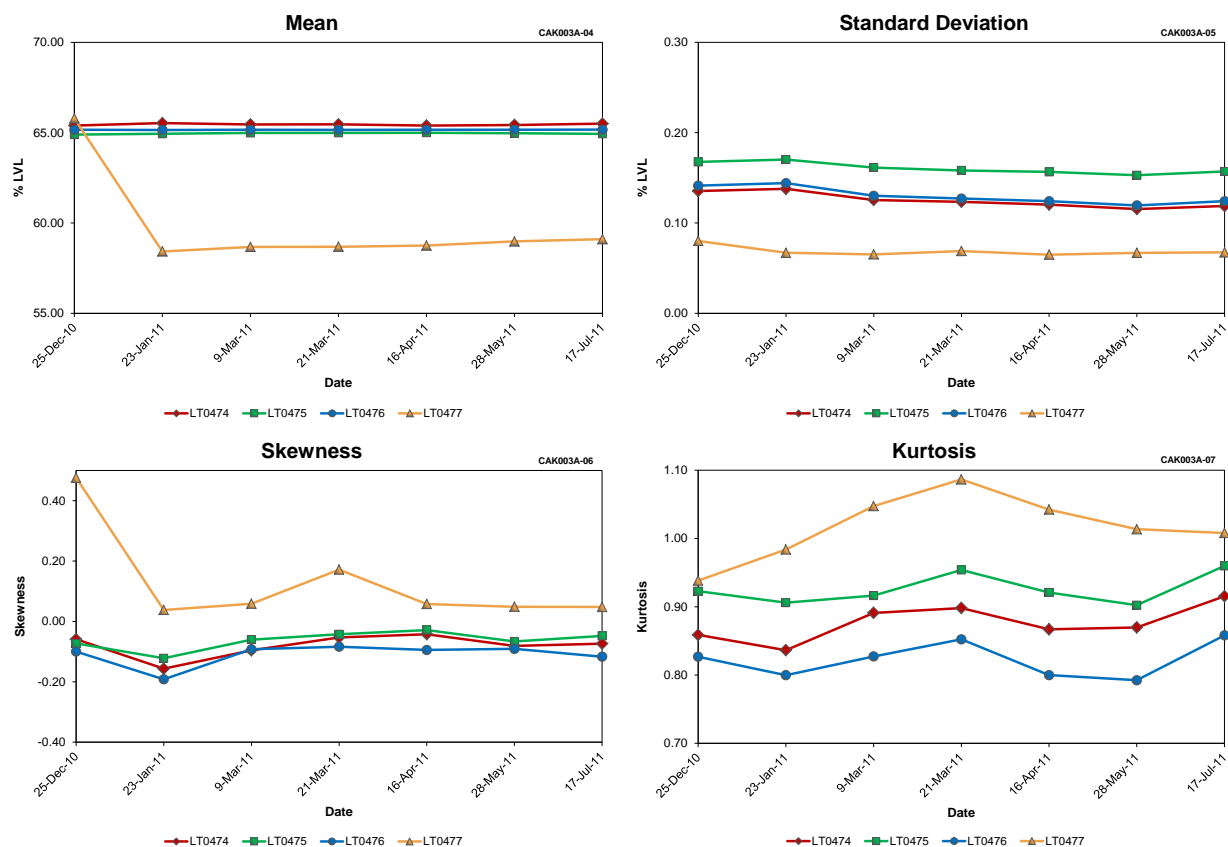


Figure C.13 SG A LEVEL Steady-State Residual AAKR at Farley Unit 1 (Cycle 24)

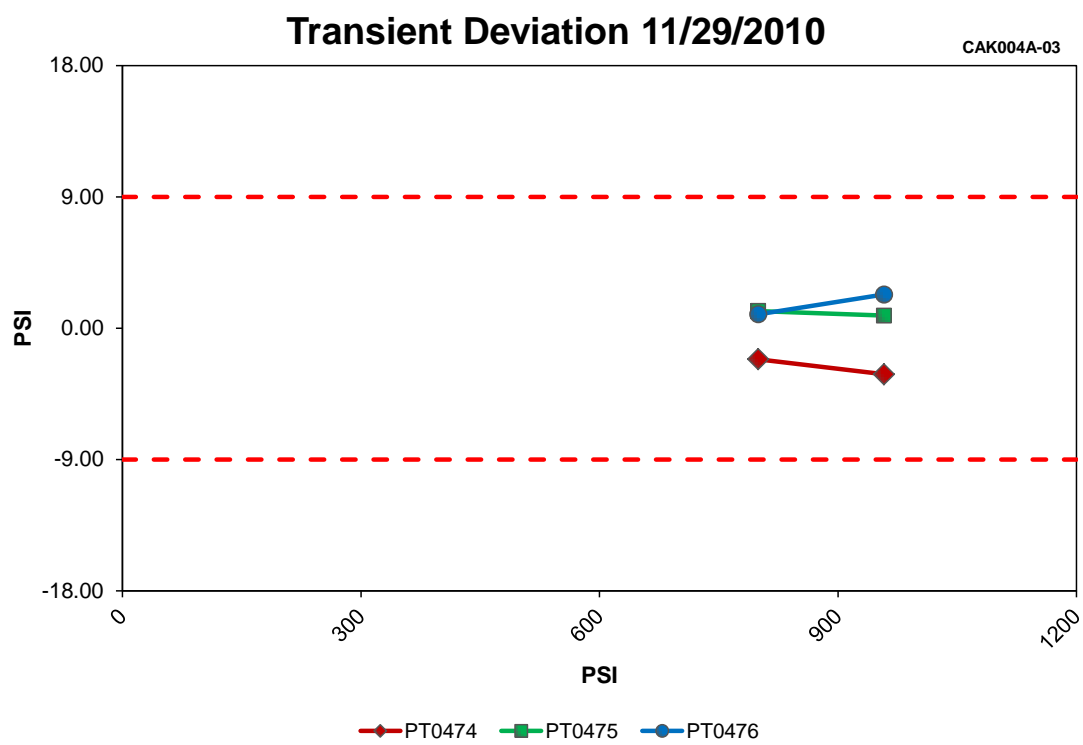


**Figure C.14 SG A LEVEL Data Quality Statistics at Farley Unit 1 (Cycle 24)**

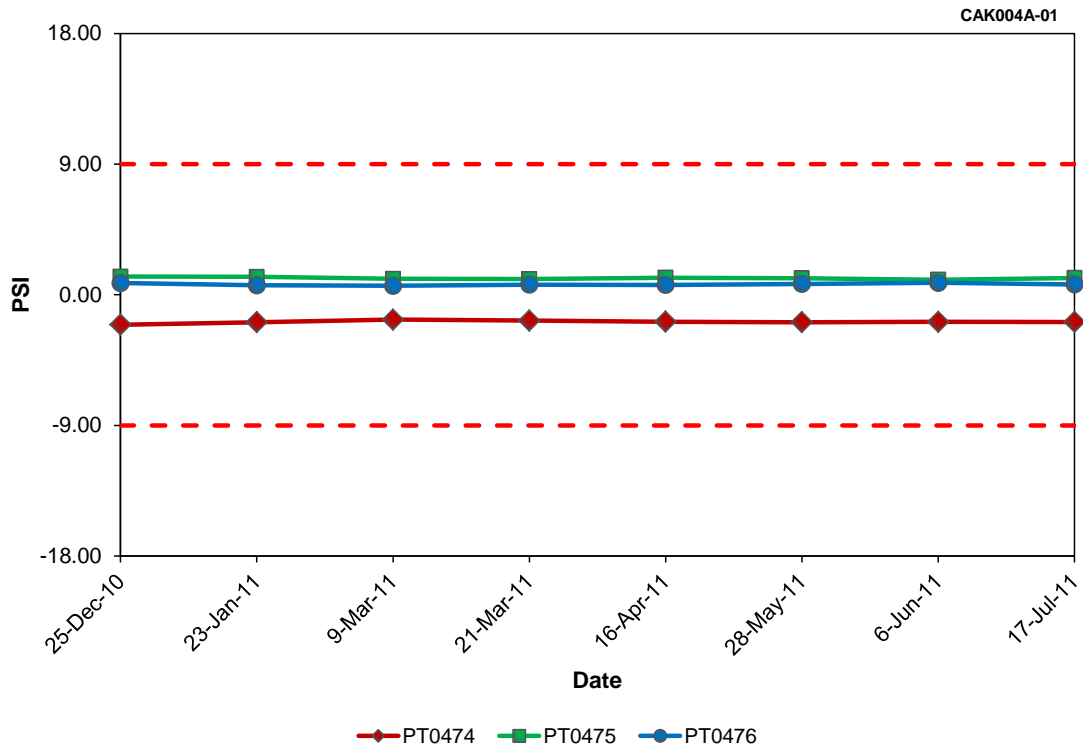
**Table C.3 SG A LEVEL Data Quality for Farley Unit 1 (Cycle 24)**

Result Type	Tag Names			
	LT0474	LT0475	LT0476	LT0477
Mean	65.45	64.96	65.16	59.77
Std. Dev.	0.13	0.16	0.13	0.07
Skewness	-0.08	-0.06	-0.11	0.13
Kurtosis	0.88	0.93	0.82	1.02

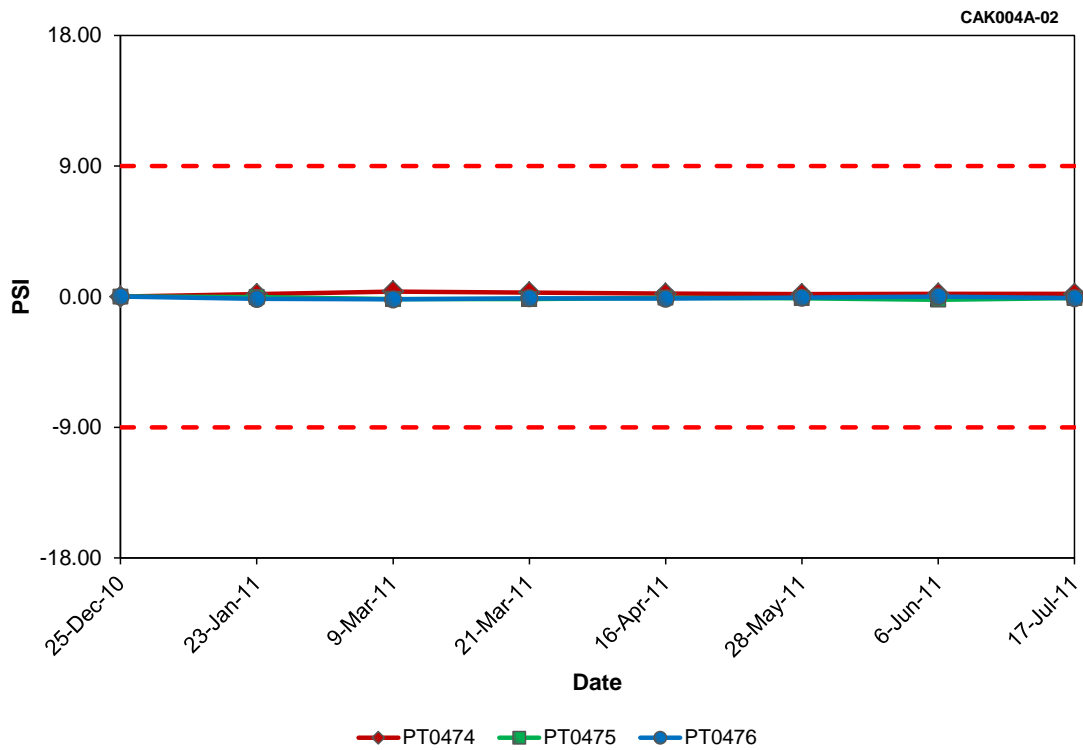




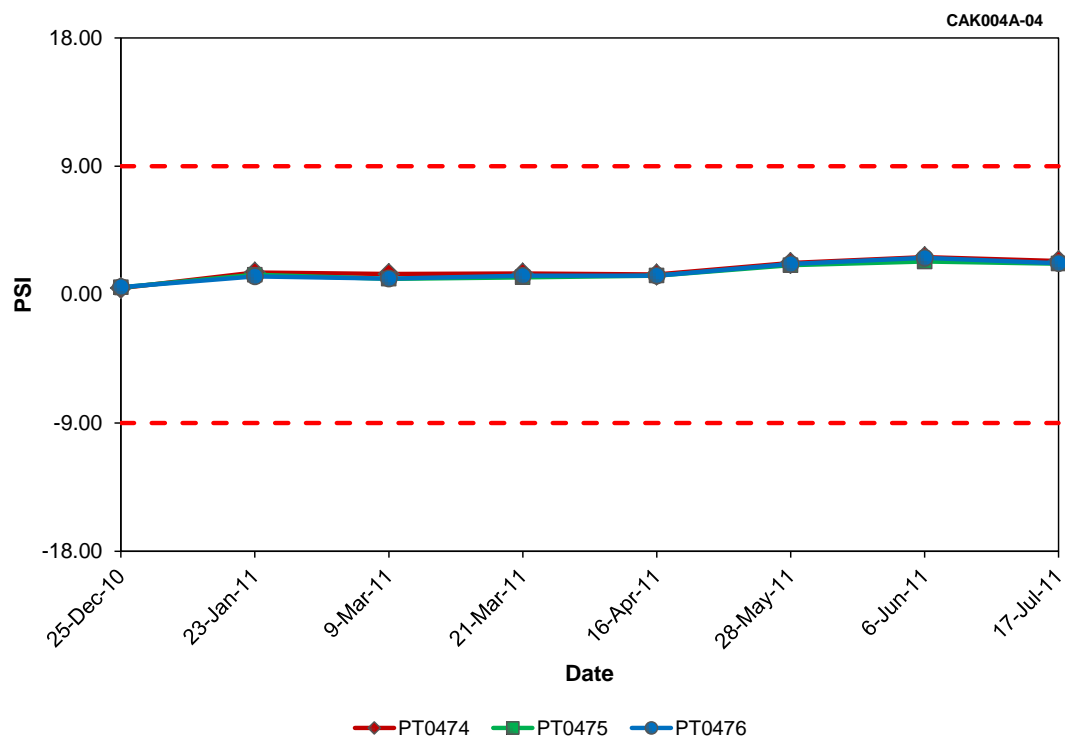
**Figure C.15 SG A OUTLET PRESSURE Transient Deviation at Farley Unit 1 (Cycle 24)**



**Figure C.16 SG A OUTLET PRESSURE Steady-State Deviation at Farley Unit 1 (Cycle 24)**

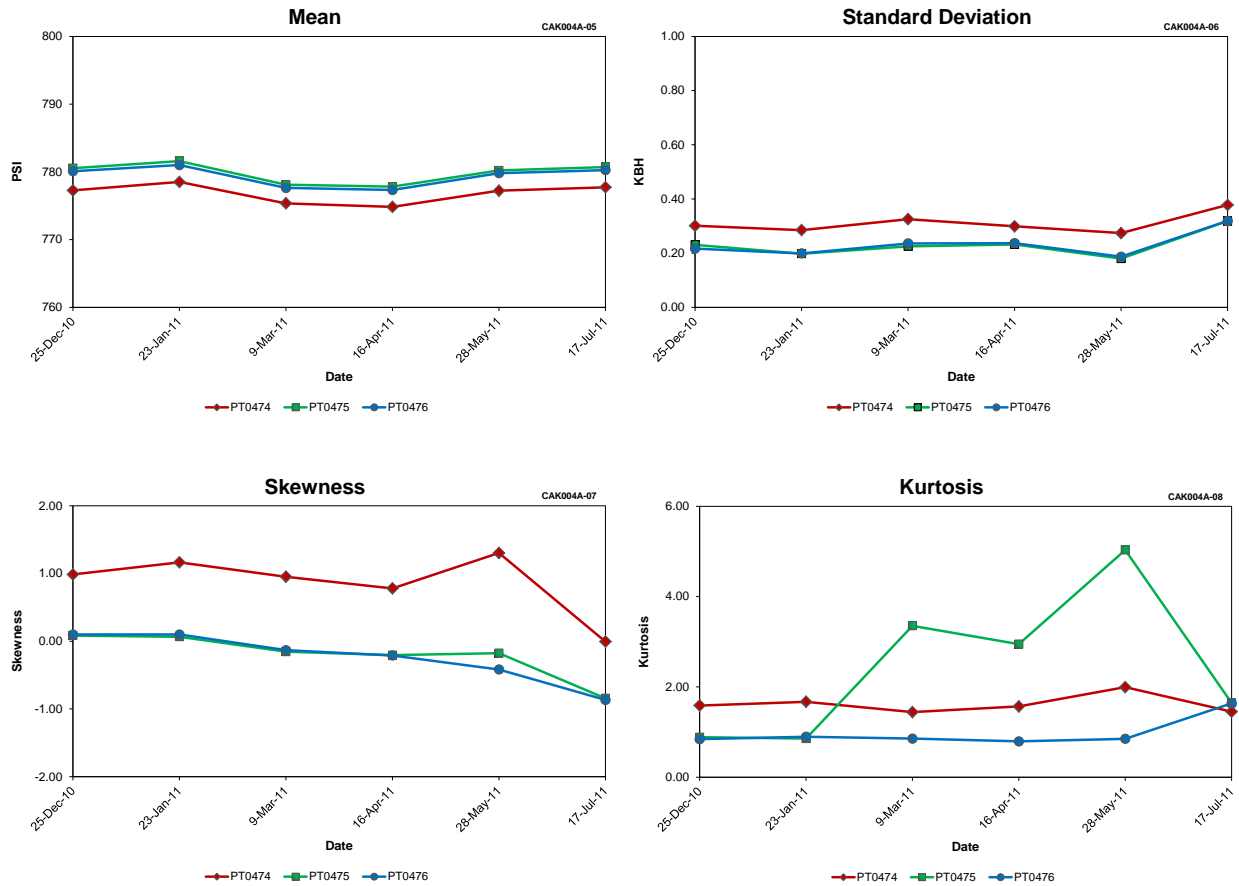


**Figure C.17 SG A OUTLET PRESSURE Steady-State Drift at Farley Unit 1 (Cycle 24)**



**Figure C.18 SG A OUTLET PRESSURE Steady-State Residual AAKR at Farley Unit 1 (Cycle 24)**

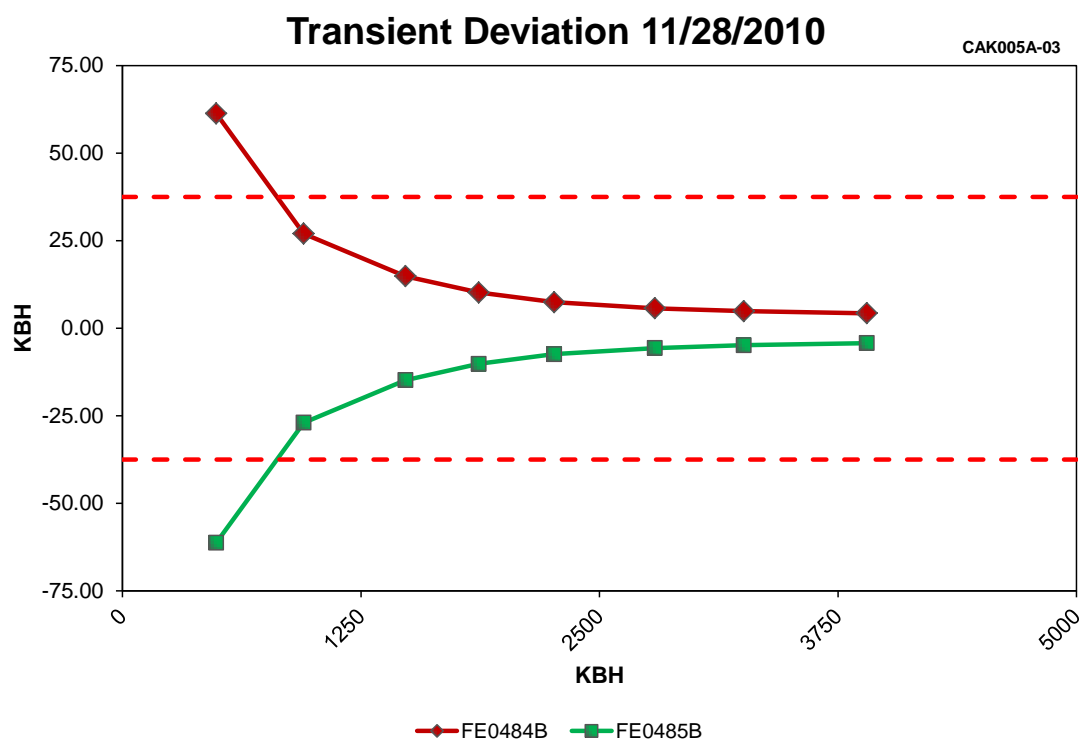




**Figure C.19 SG A OUTLET PRESSURE Data Quality Statistics at Farley Unit 1 (Cycle 24)**

**Table C.4 SG A OUTLET PRESSURE Data Quality for Farley Unit 1 (Cycle 24)**

Result Type	Tag Names		
	PT0474	PT0475	PT0476
Mean	776.82	779.83	779.36
Std. Dev.	0.31	0.23	0.23
Skewness	0.86	-0.21	-0.24
Kurtosis	1.62	2.45	0.98



**Figure C.20 SG B STEAM FLOW Transient Deviation at Farley Unit 1 (Cycle 24)**

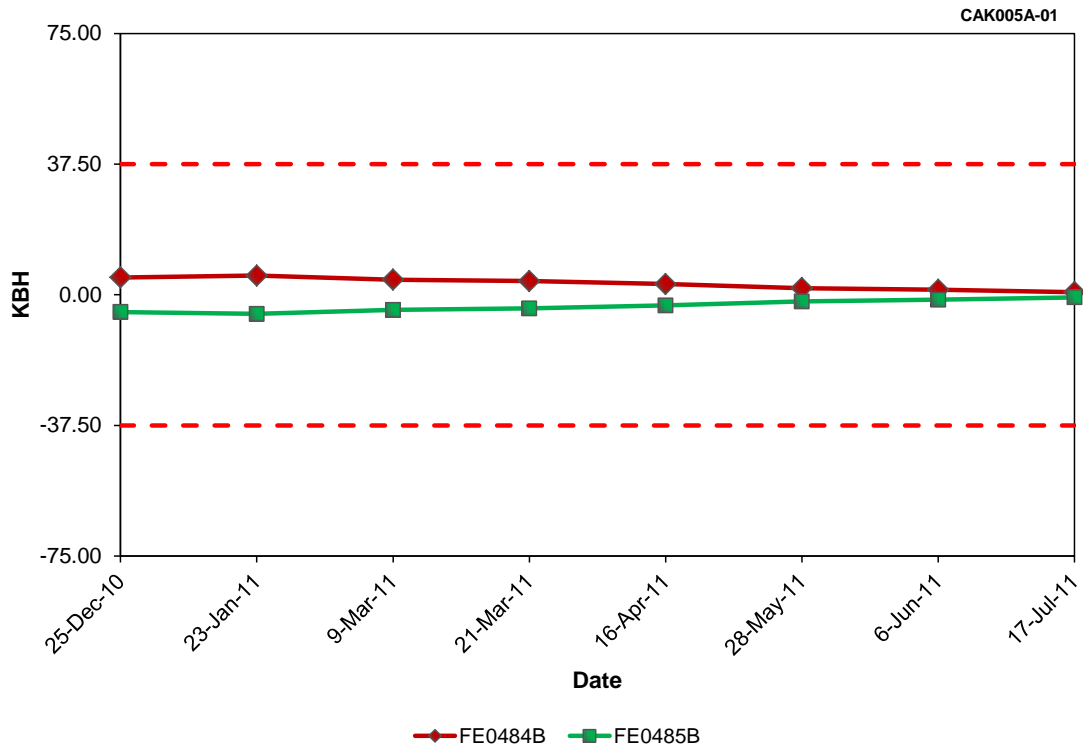


Figure C.21 SG B STEAM FLOW Steady-State Deviation at Farley Unit 1 (Cycle 24)

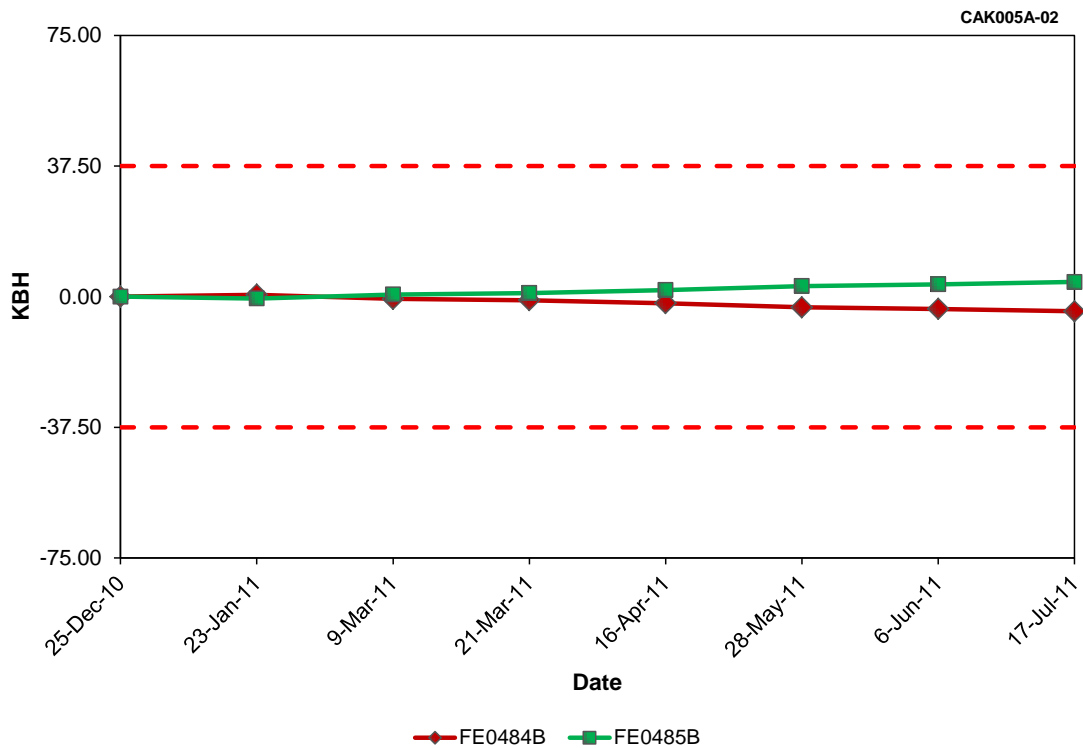


Figure C.22 SG B STEAM FLOW Steady-State Drift at Farley Unit 1 (Cycle 24)

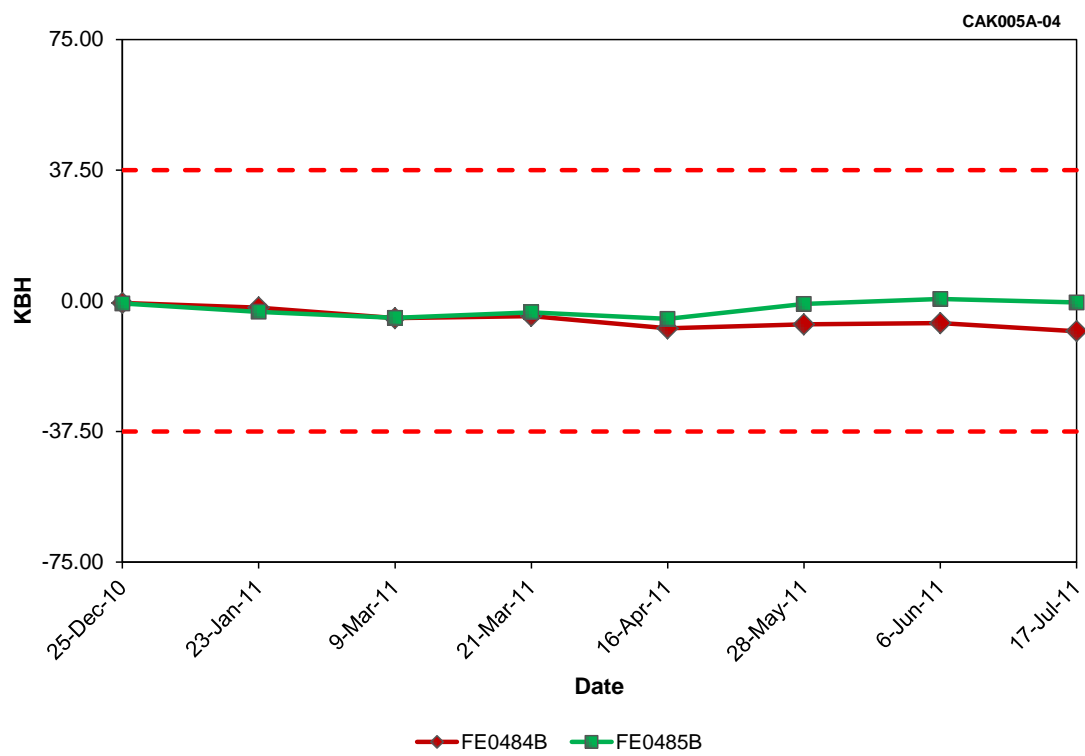
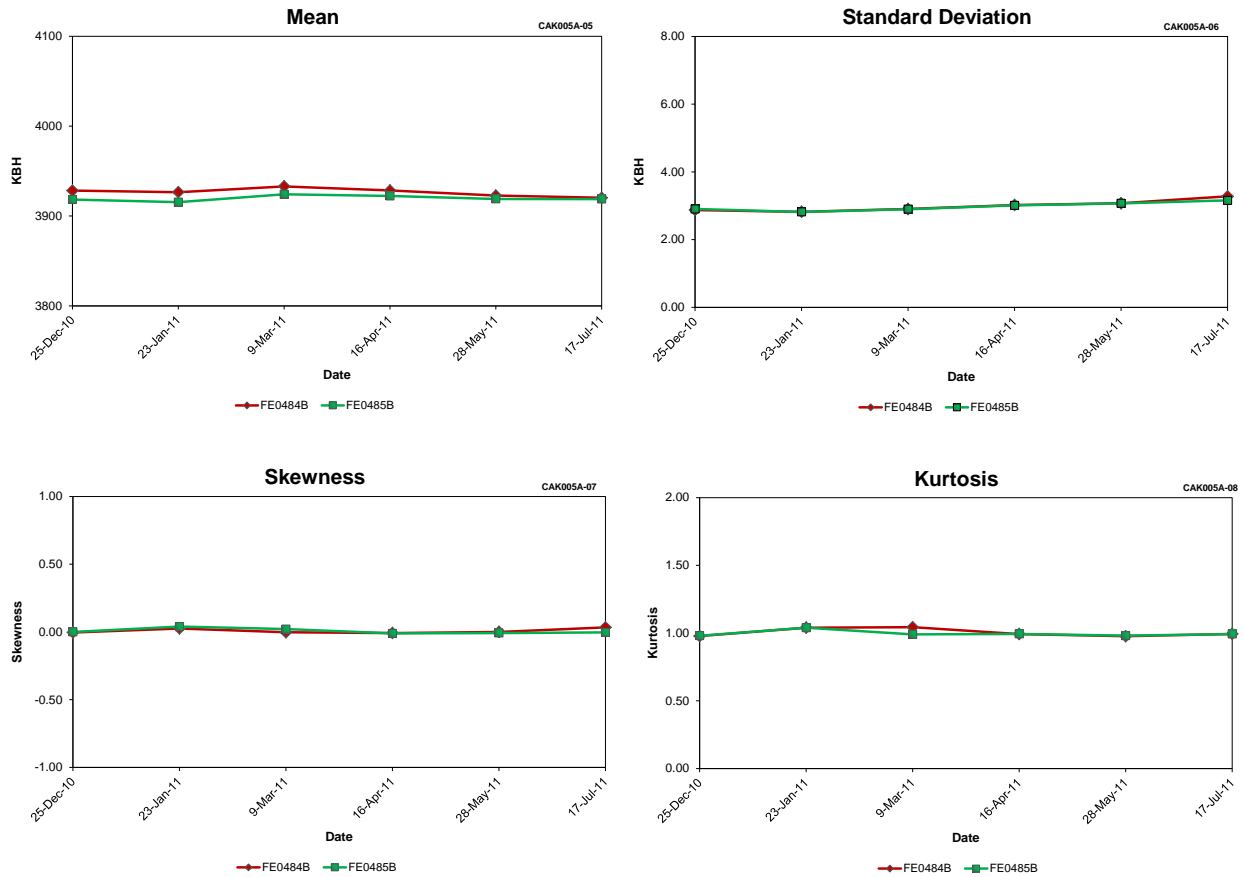


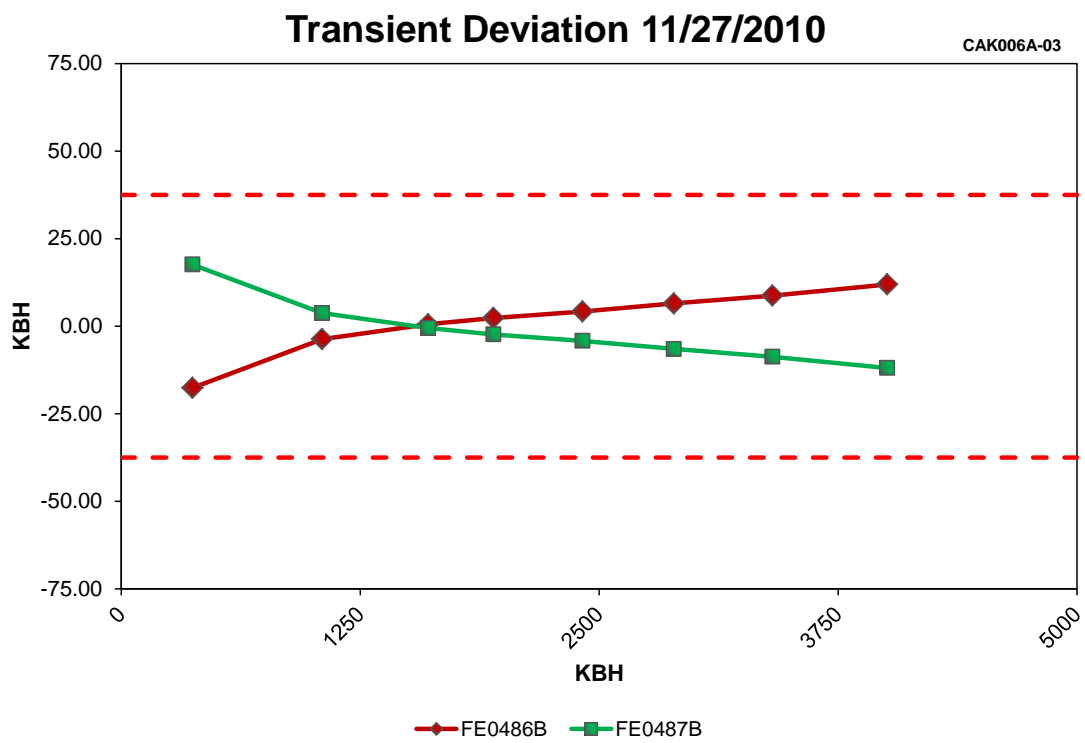
Figure C.23 SG B STEAM FLOW Steady-State Residual AAKR at Farley Unit 1 (Cycle 24)



**Figure C.24 SG B STEAM FLOW Data Quality Statistics at Farley Unit 1 (Cycle 24)**

**Table C.5 SG B STEAM FLOW Data Quality for Farley Unit 1 (Cycle 24)**

Result Type	Tag Names	
	FE0484B	FE0485B
Mean	3926.53	3919.69
Std. Dev.	3.00	2.98
Skewness	0.01	0.01
Kurtosis	1.00	1.00



**Figure C.25 FW FLOW TO SG B Transient Deviation at Farley Unit 1 (Cycle 24)**

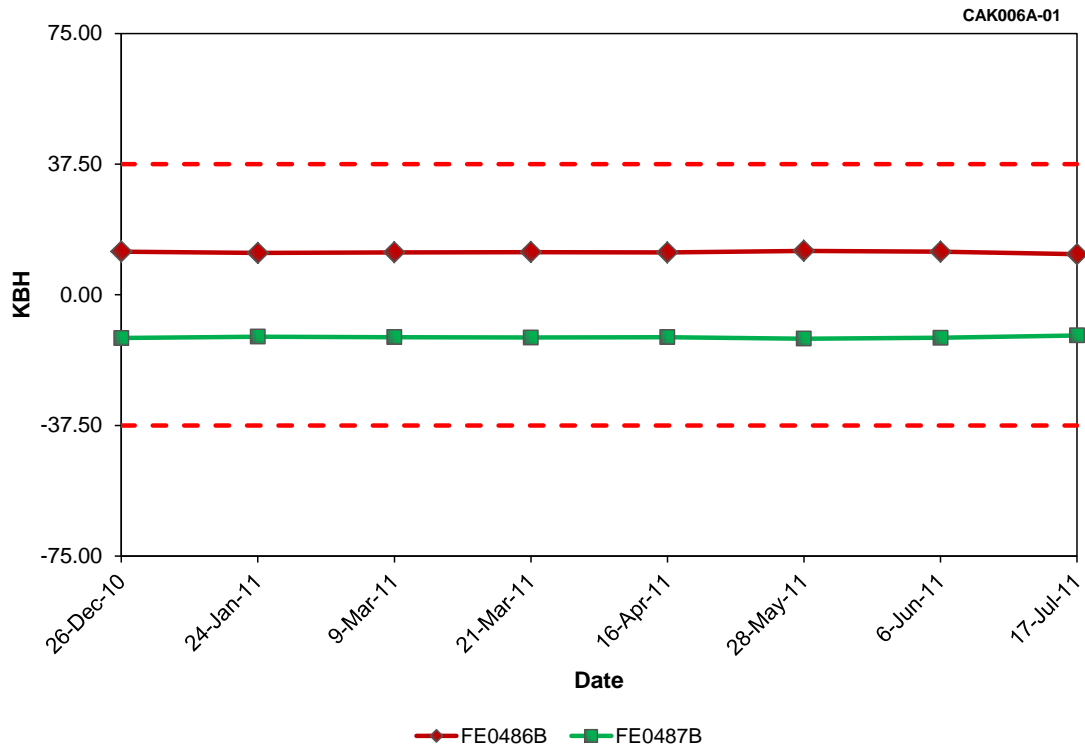


Figure C.26 FW FLOW TO SG B Steady-State Deviation at Farley Unit 1 (Cycle 24)

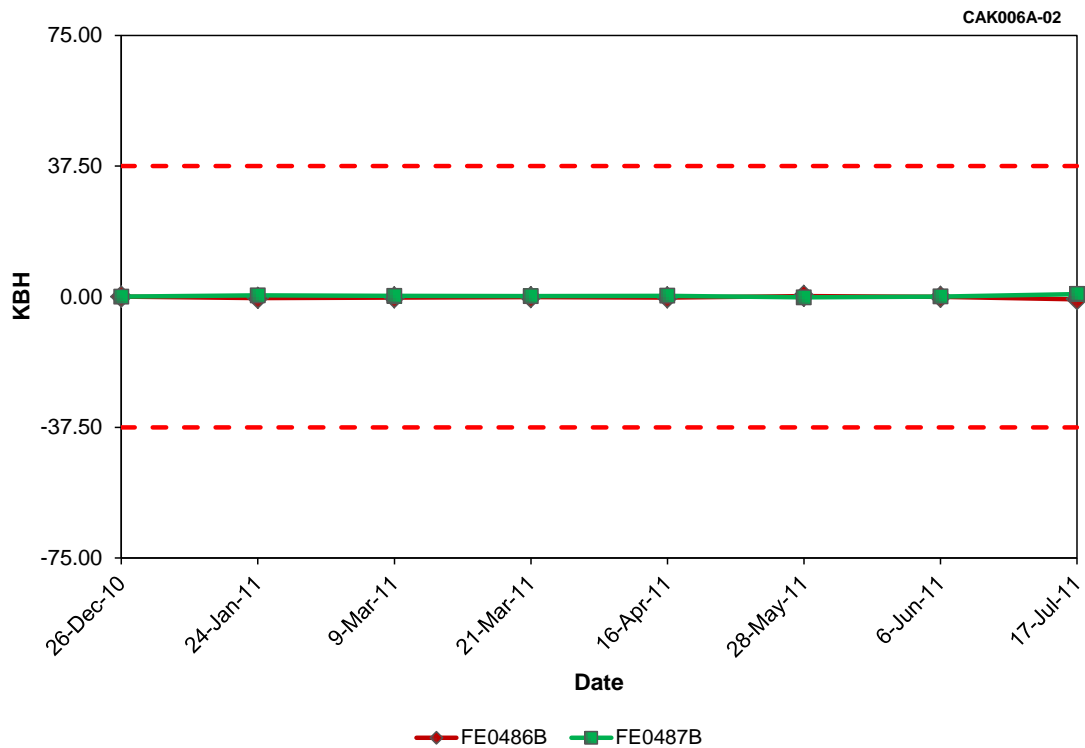
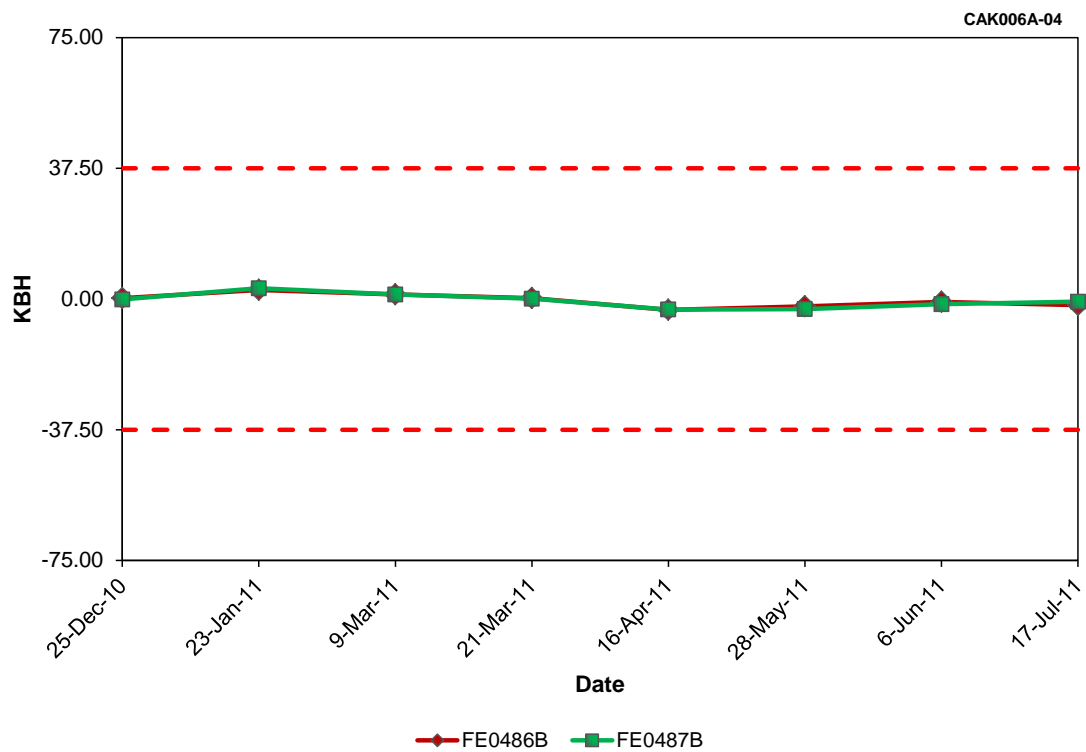


Figure C.27 FW FLOW TO SG B Steady-State Drift at Farley Unit 1 (Cycle 24)



**Figure C.28 FW FLOW TO SG B Steady-State Residual AAKR at Farley Unit 1 (Cycle 24)**



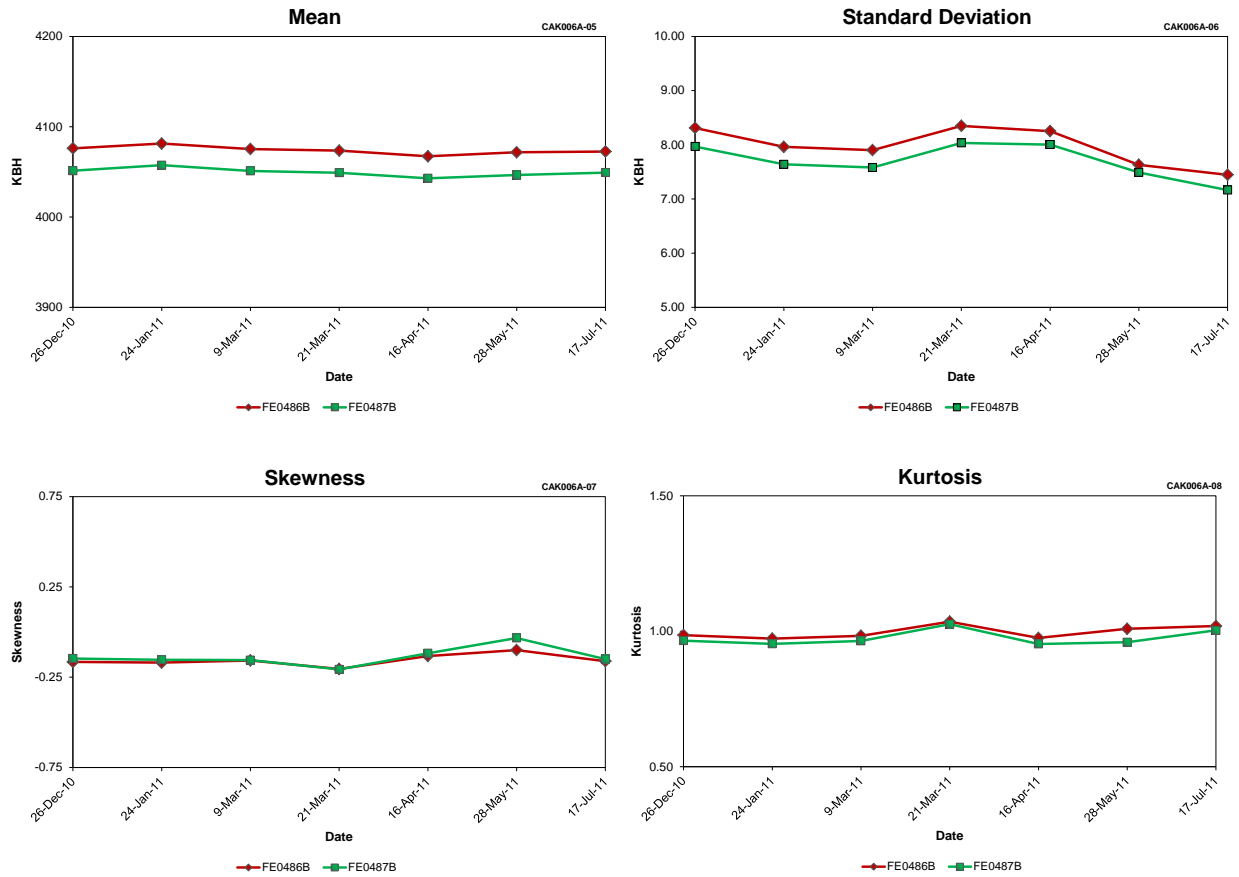


Figure C.29 FW FLOW TO SG B Data Quality Statistics at Farley Unit 1 (Cycle 24)

Table C.6 FW FLOW TO SG B Data Quality for Farley Unit 1 (Cycle 24)

Result Type	Tag Names	
	FE0486B	FE0487B
Mean	4073.98	4049.65
Std. Dev.	7.98	7.70
Skewness	-0.16	-0.14
Kurtosis	1.00	0.97

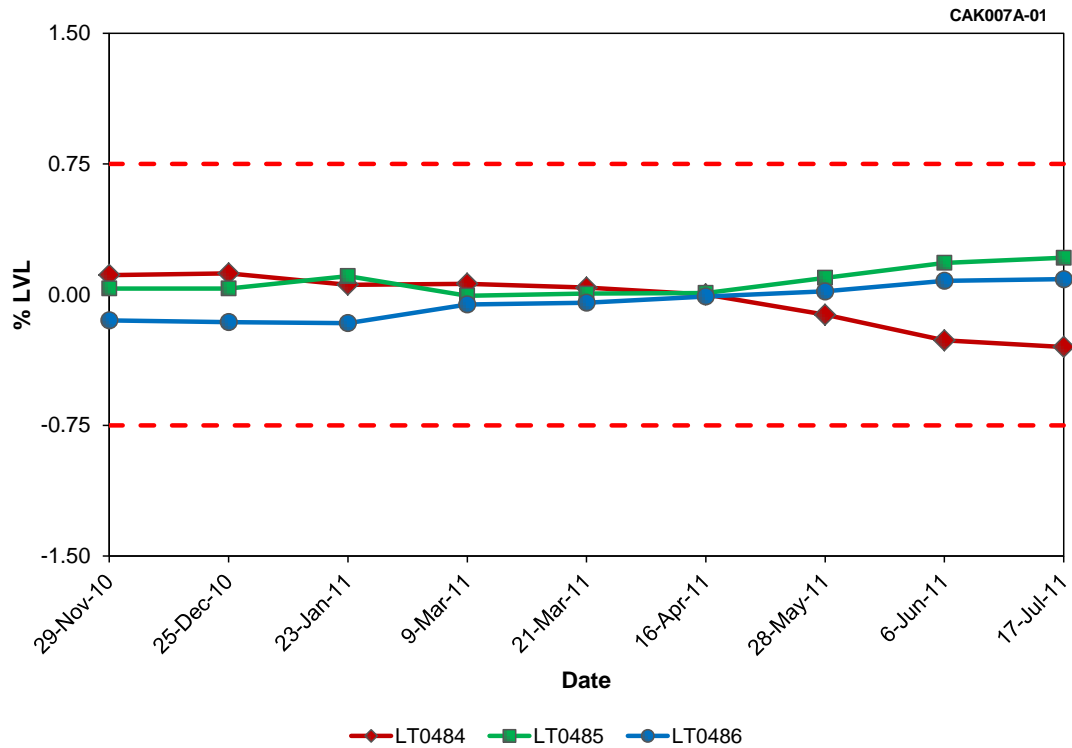


Figure C.30 SG B LEVEL Steady-State Deviation at Farley Unit 1 (Cycle 24)

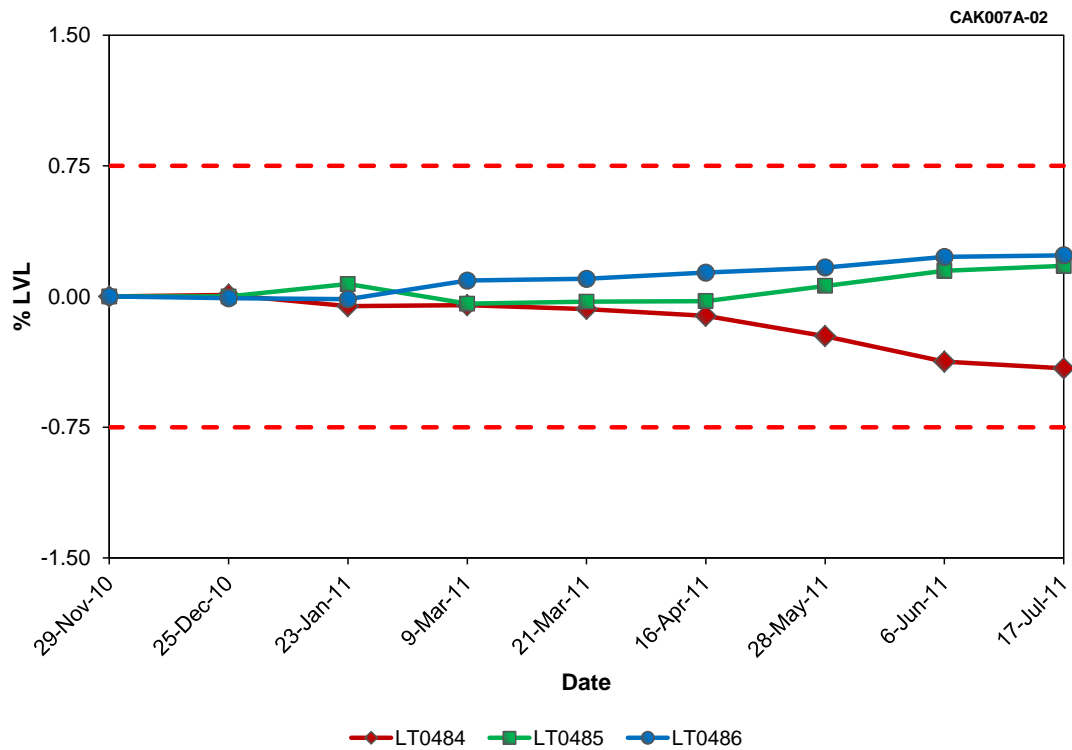


Figure C.31 SG B LEVEL Steady-State Drift at Farley Unit 1 (Cycle 24)

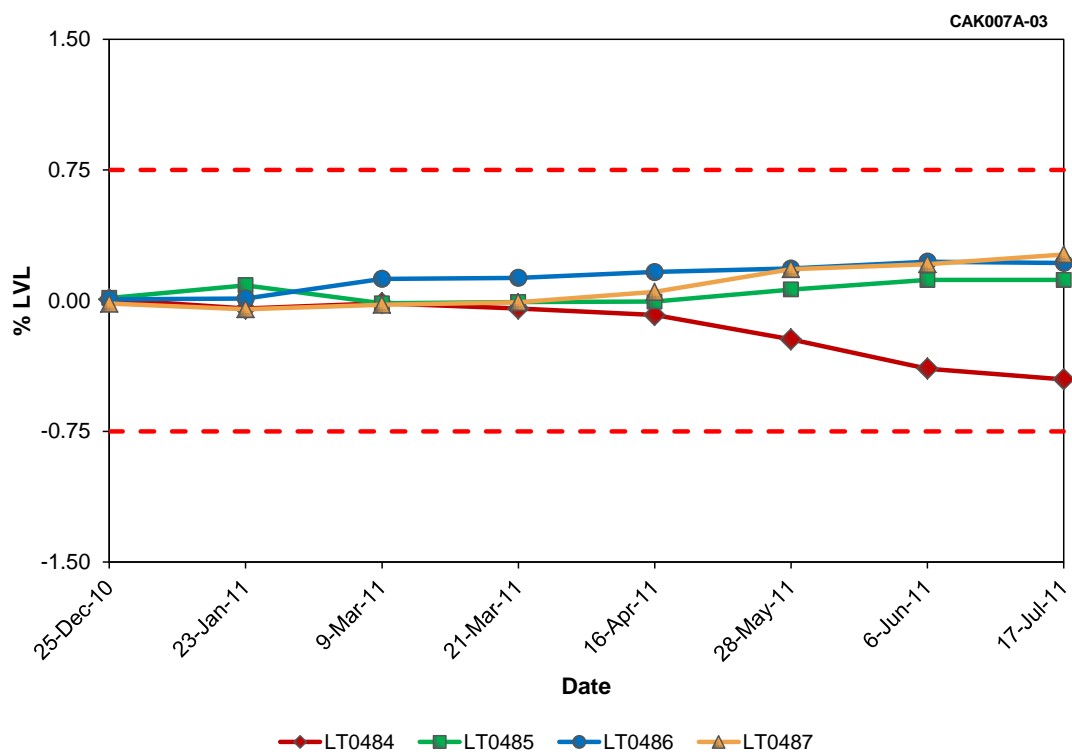
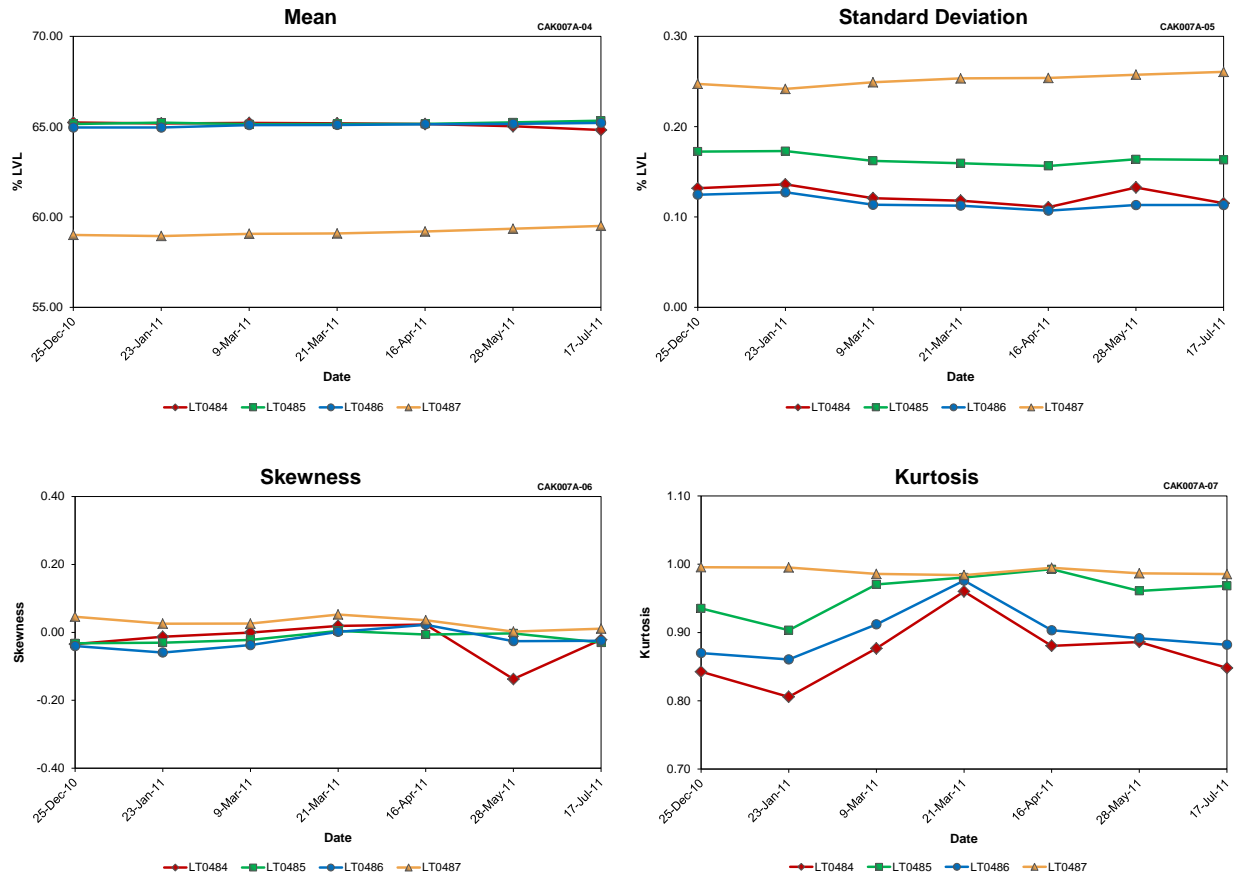


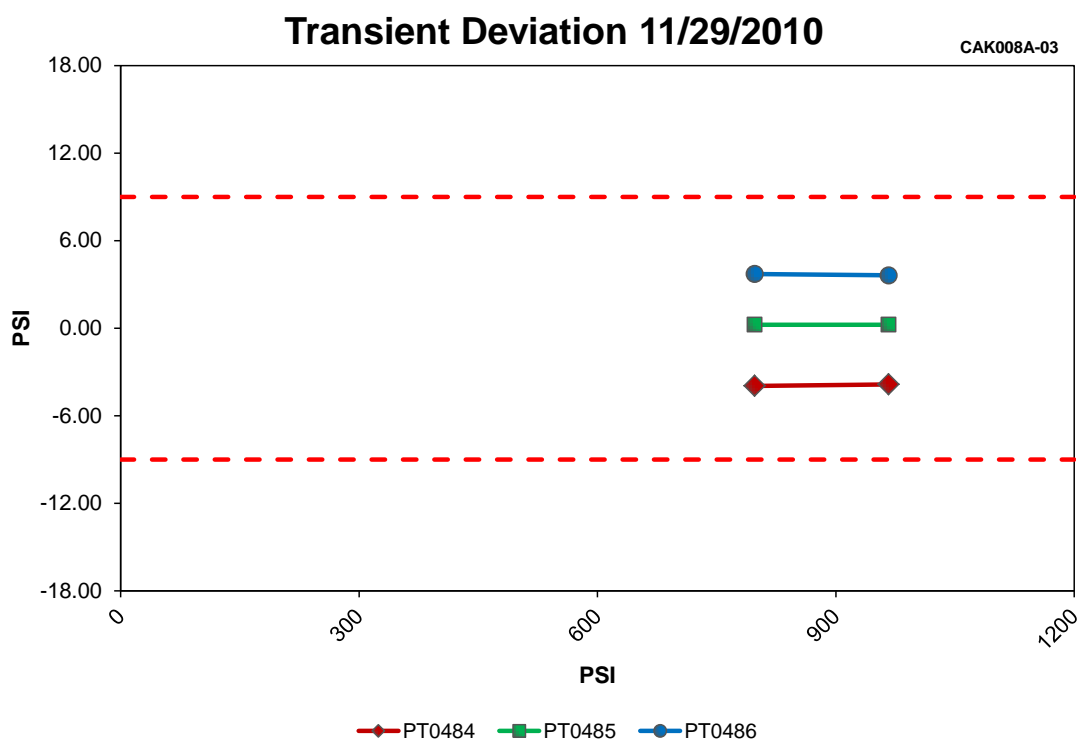
Figure C.32 SG B LEVEL Steady-State Residual AAKR at Farley Unit 1 (Cycle 24)



**Figure C.33 SG B LEVEL Data Quality Statistics at Farley Unit 1 (Cycle 24)**

**Table C.7 SG B LEVEL Data Quality for Farley Unit 1 (Cycle 24)**

Result Type	Tag Names			
	LT0484	LT0485	LT0486	LT0487
Mean	65.11	65.19	65.08	59.17
Std. Dev.	0.12	0.16	0.12	0.25
Skewness	-0.02	-0.02	-0.02	0.03
Kurtosis	0.87	0.96	0.90	0.99



**Figure C.34 SG B OUTLET PRESSURE Transient Deviation at Farley Unit 1 (Cycle 24)**

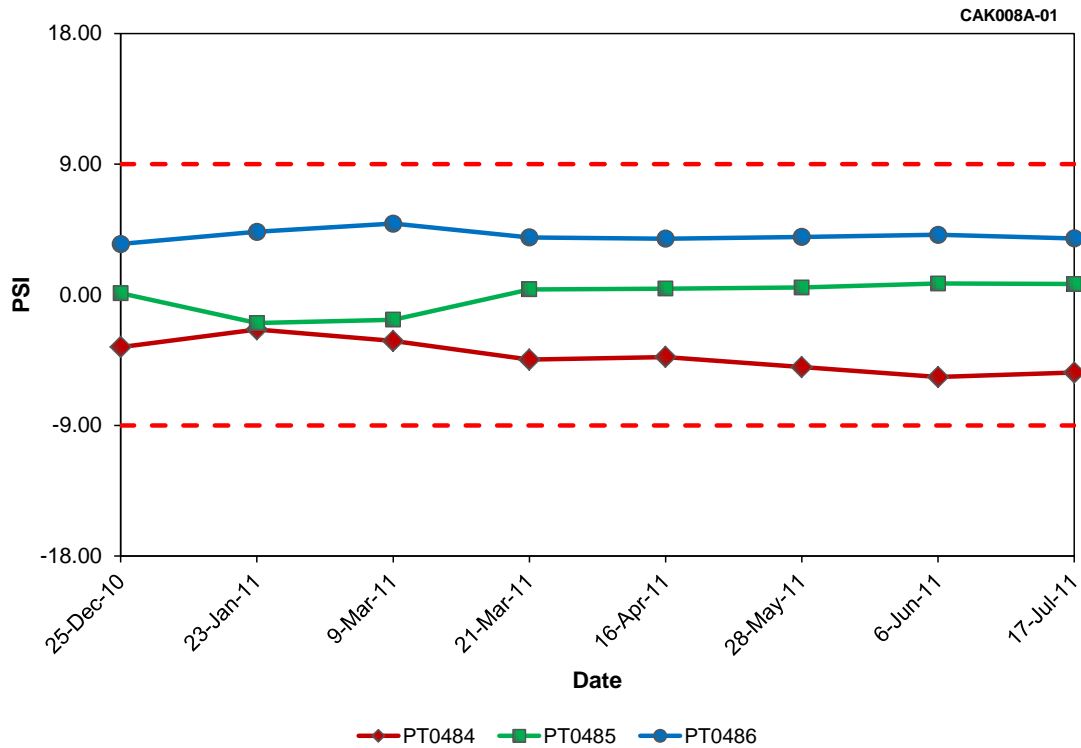


Figure C.35 SG B OUTLET PRESSURE Steady-State Deviation at Farley Unit 1 (Cycle 24)

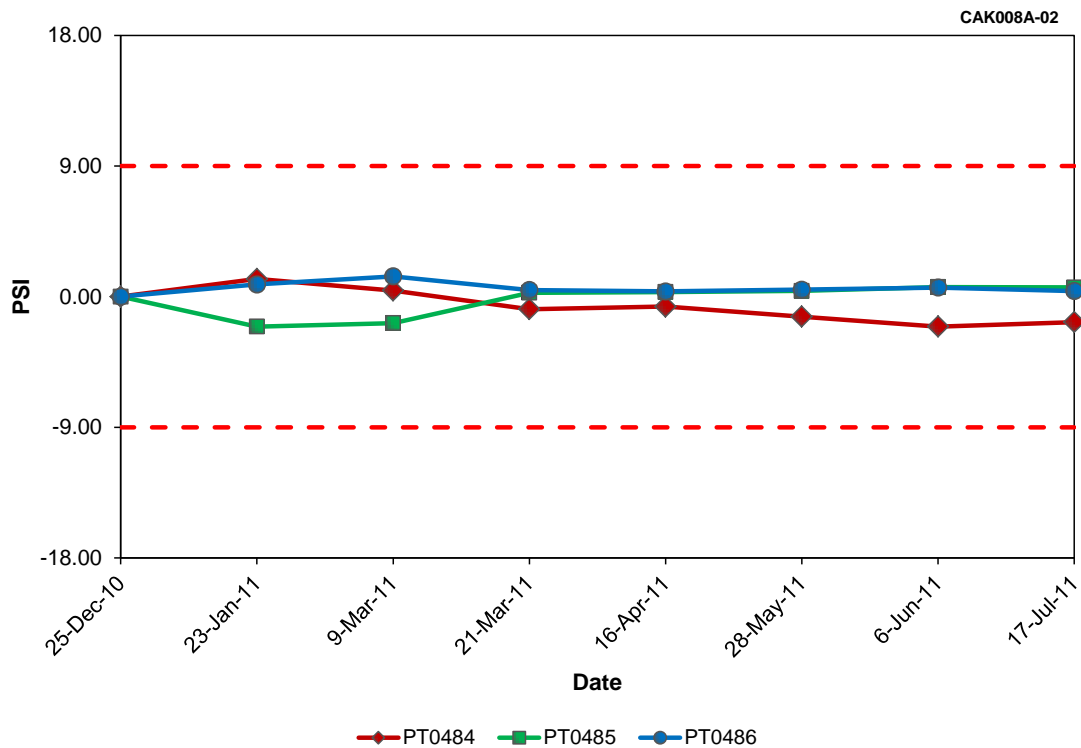


Figure C.36 SG B OUTLET PRESSURE Steady-State Drift at Farley Unit 1 (Cycle 24)

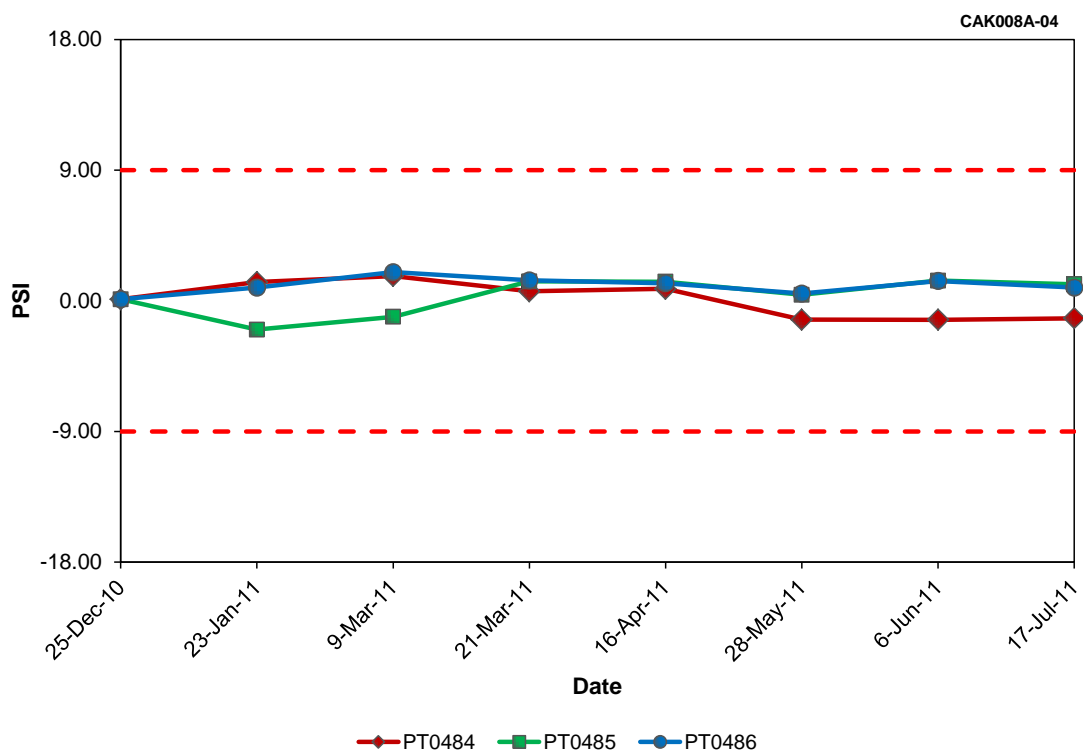
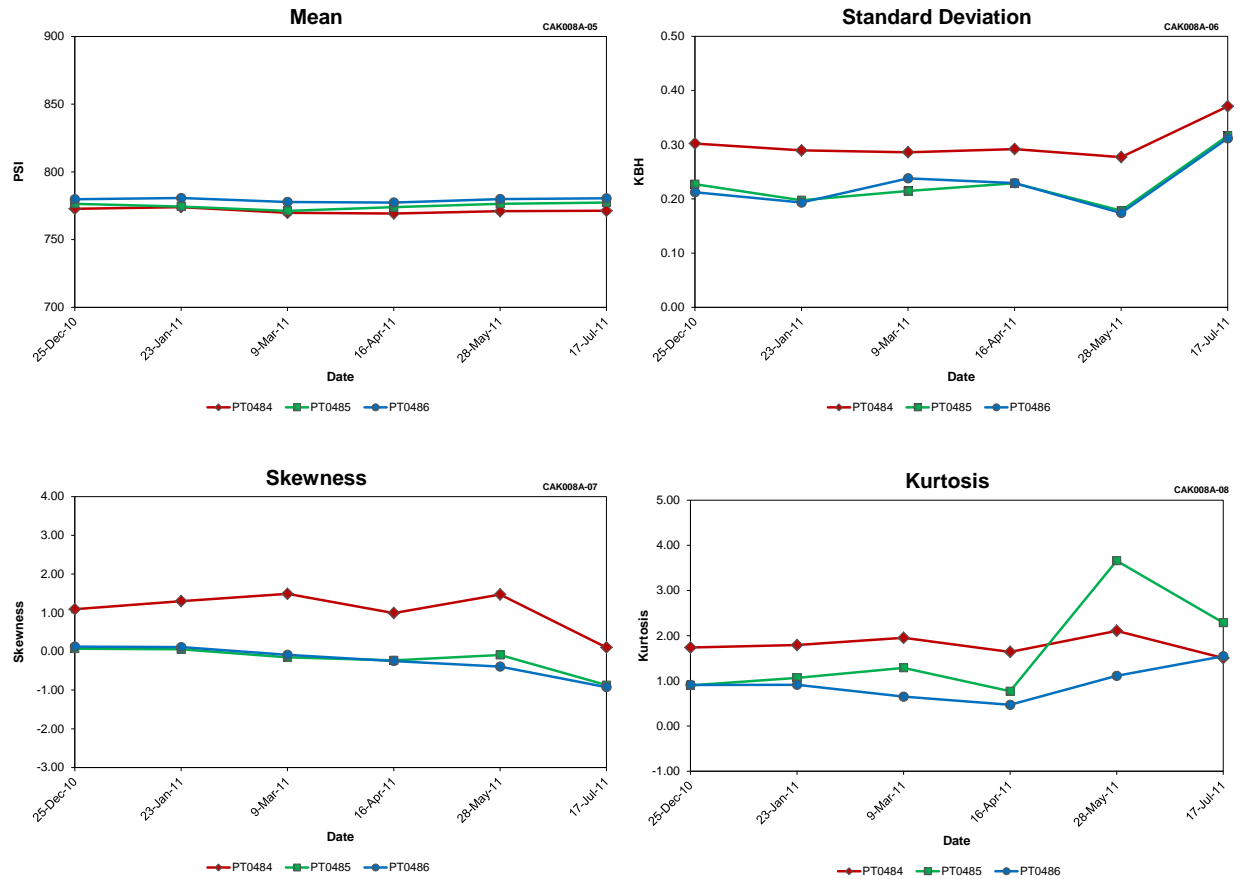


Figure C.37 SG B OUTLET PRESSURE Steady-State Residual AAKR at Farley Unit 1 (Cycle 24)

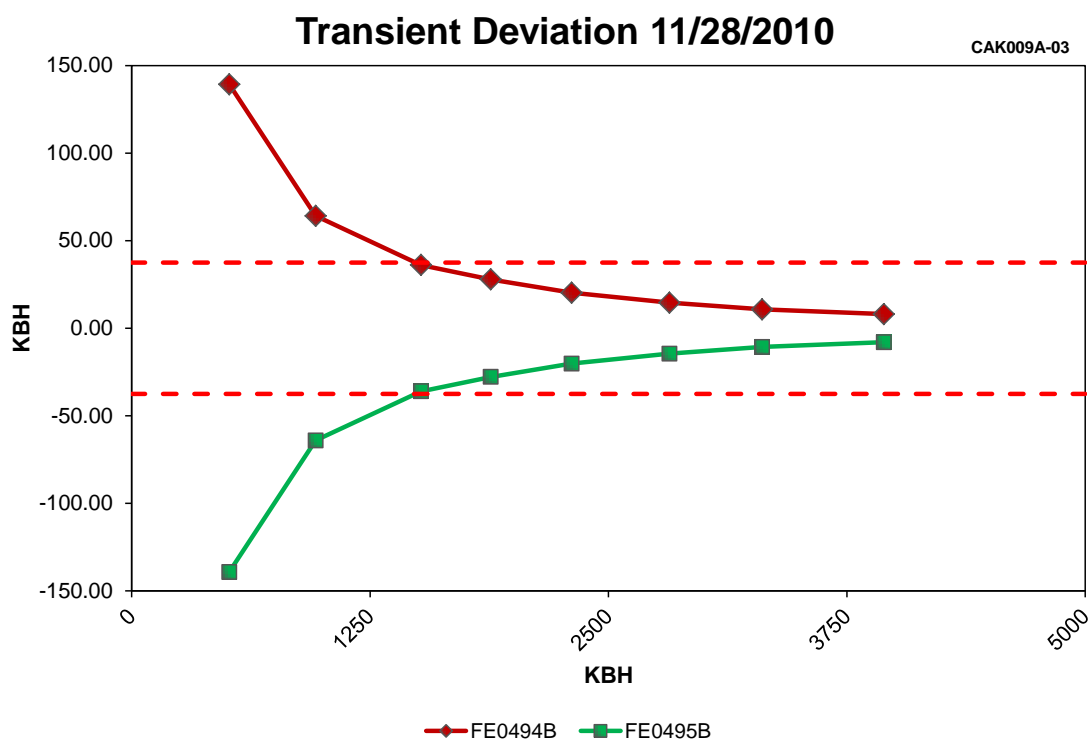


**Figure C.38 SG B OUTLET PRESSURE Data Quality Statistics at Farley Unit 1 (Cycle 24)**

**Table C.8 SG B OUTLET PRESSURE Data Quality for Farley Unit 1 (Cycle 24)**

Result Type	Tag Names		
	PT0484	PT0485	PT0486
Mean	771.35	774.95	779.35
Std. Dev.	0.30	0.23	0.23
Skewness	1.07	-0.20	-0.24
Kurtosis	1.79	1.66	0.93





**Figure C.39 SG C STEAM FLOW Transient Deviation at Farley Unit 1 (Cycle 24)**

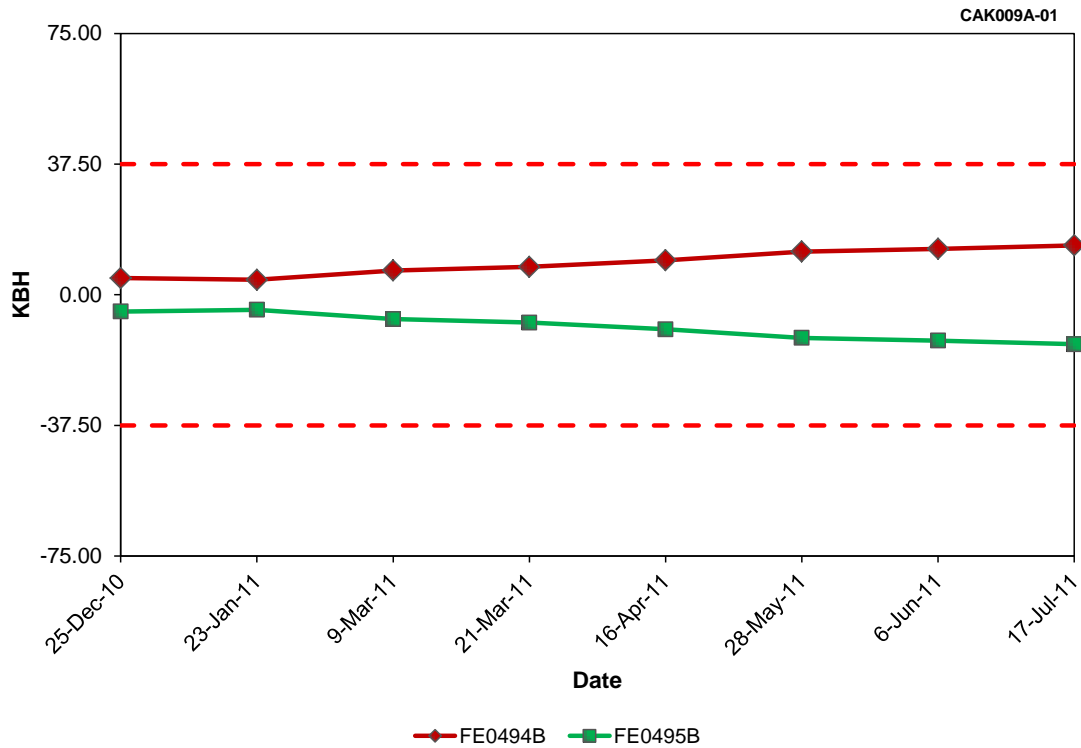


Figure C.40 SG C STEAM FLOW Steady-State Deviation at Farley Unit 1 (Cycle 24)

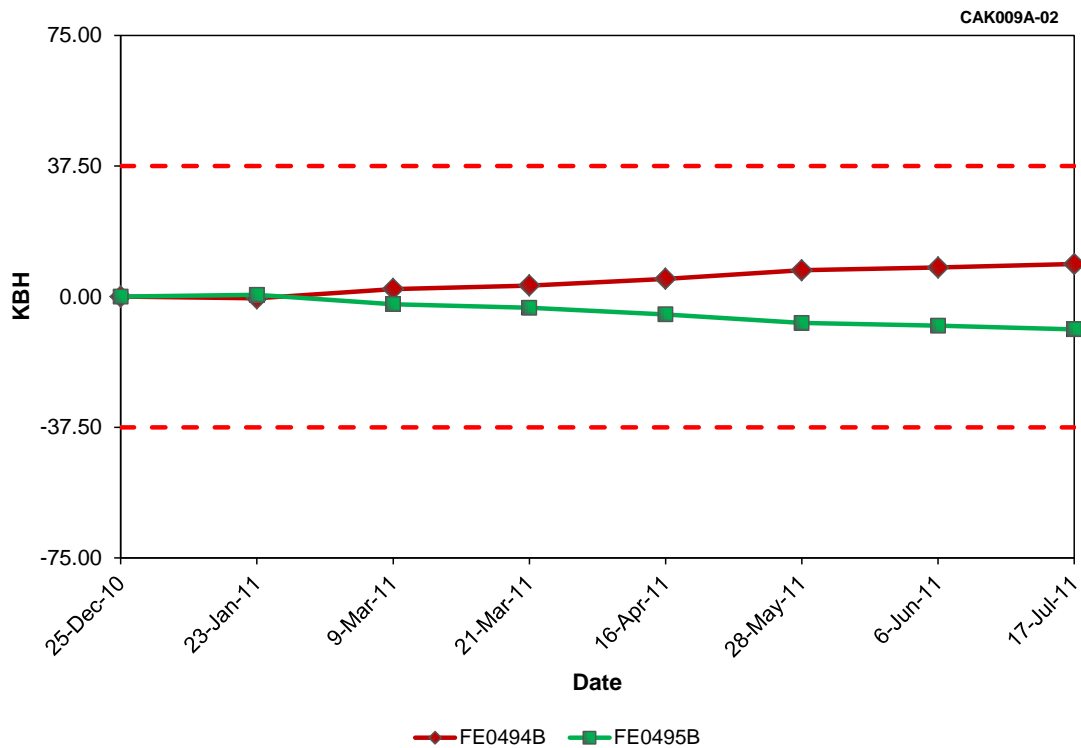
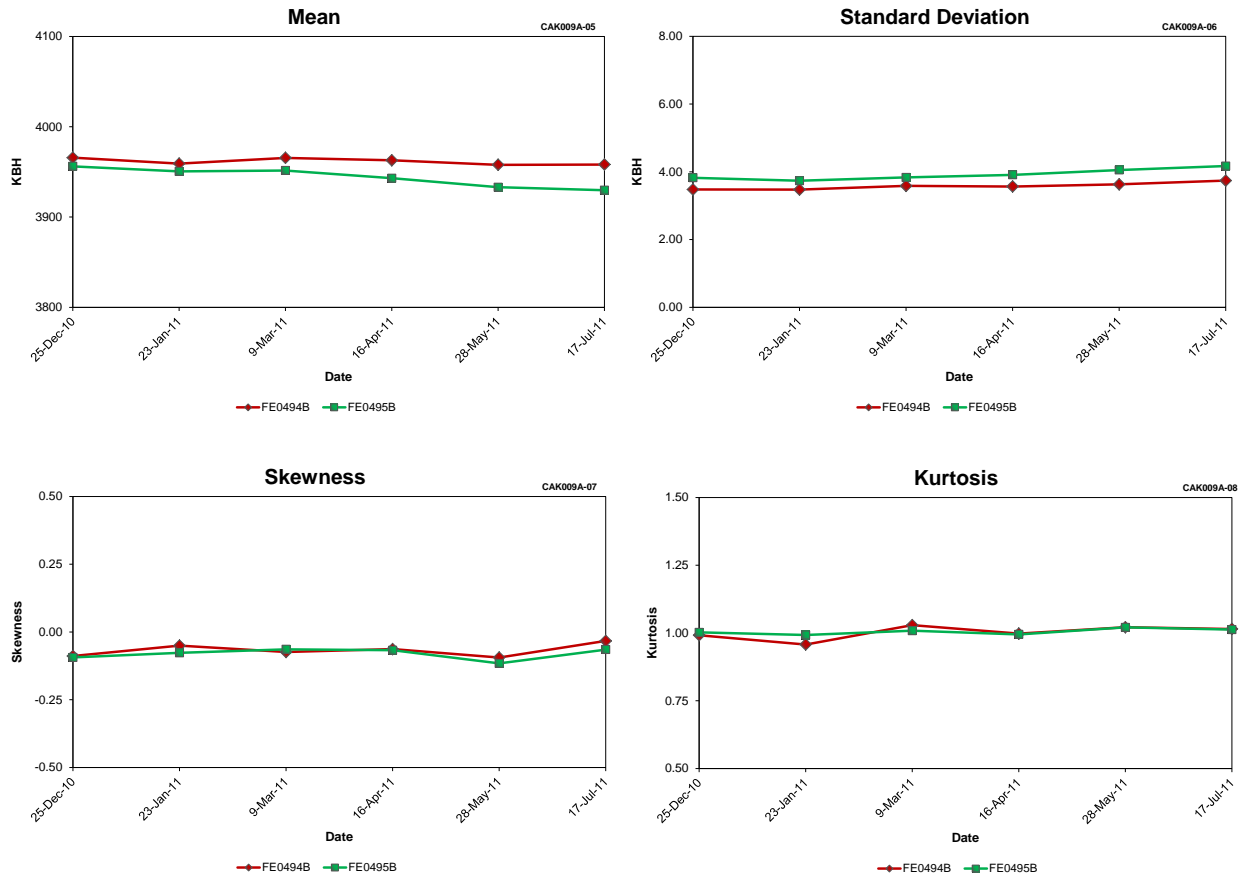


Figure C.41 SG C STEAM FLOW Steady-State Drift at Farley Unit 1 (Cycle 24)



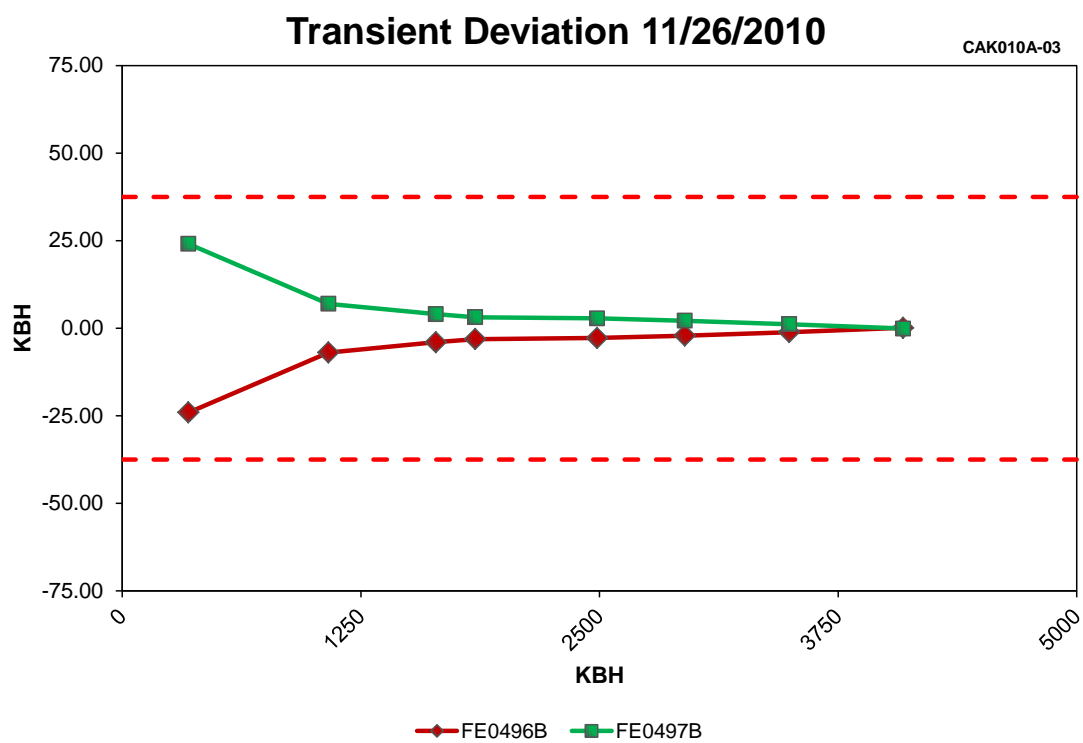
**Figure C.42 SG C STEAM FLOW Steady-State Residual AAKR at Farley Unit 1 (Cycle 24)**



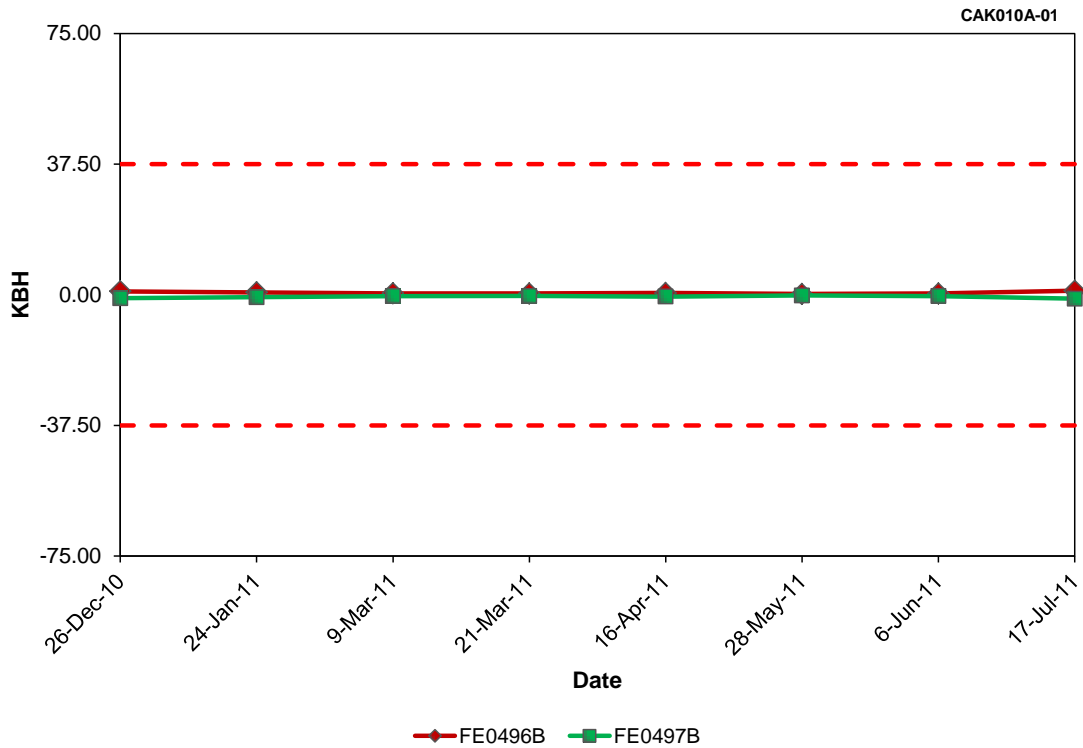
**Figure C.43 SG C STEAM FLOW Data Quality Statistics at Farley Unit 1 (Cycle 24)**

**Table C.9 SG C STEAM FLOW Data Quality for Farley Unit 1 (Cycle 24)**

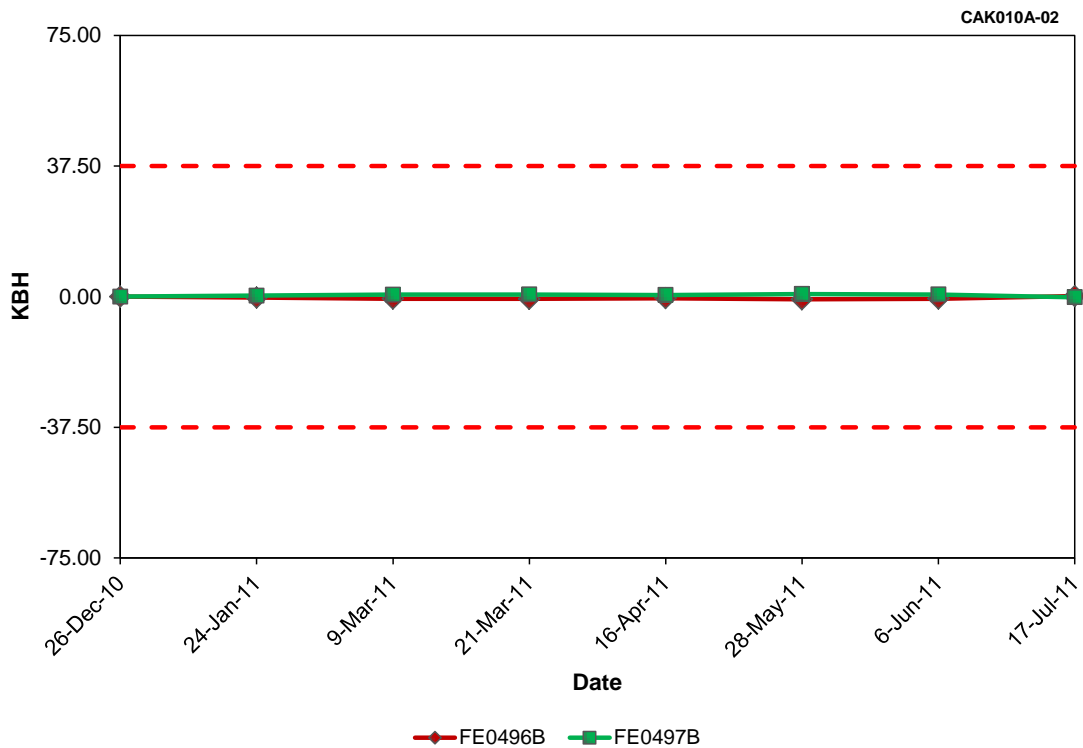
Result Type	Tag Names	
	FE0494B	FE0495B
Mean	3961.53	3943.99
Std. Dev.	3.58	3.92
Skewness	-0.07	-0.08
Kurtosis	1.00	1.01



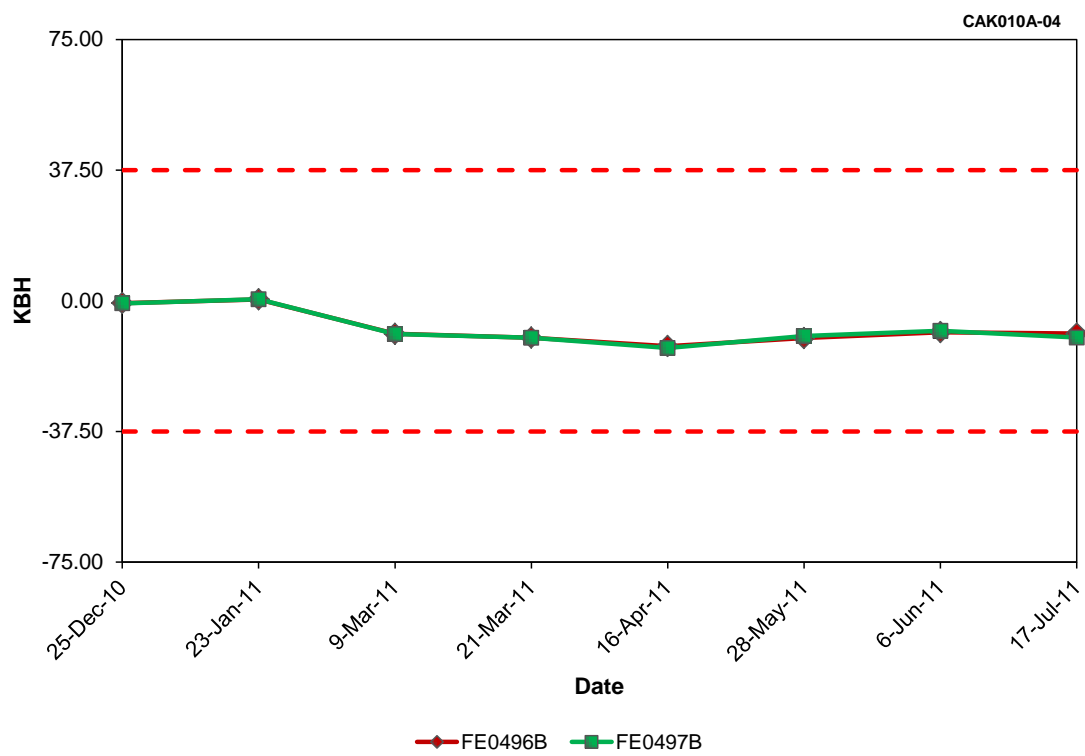
**Figure C.44 FW FLOW TO SG C Transient Deviation at Farley Unit 1 (Cycle 24)**



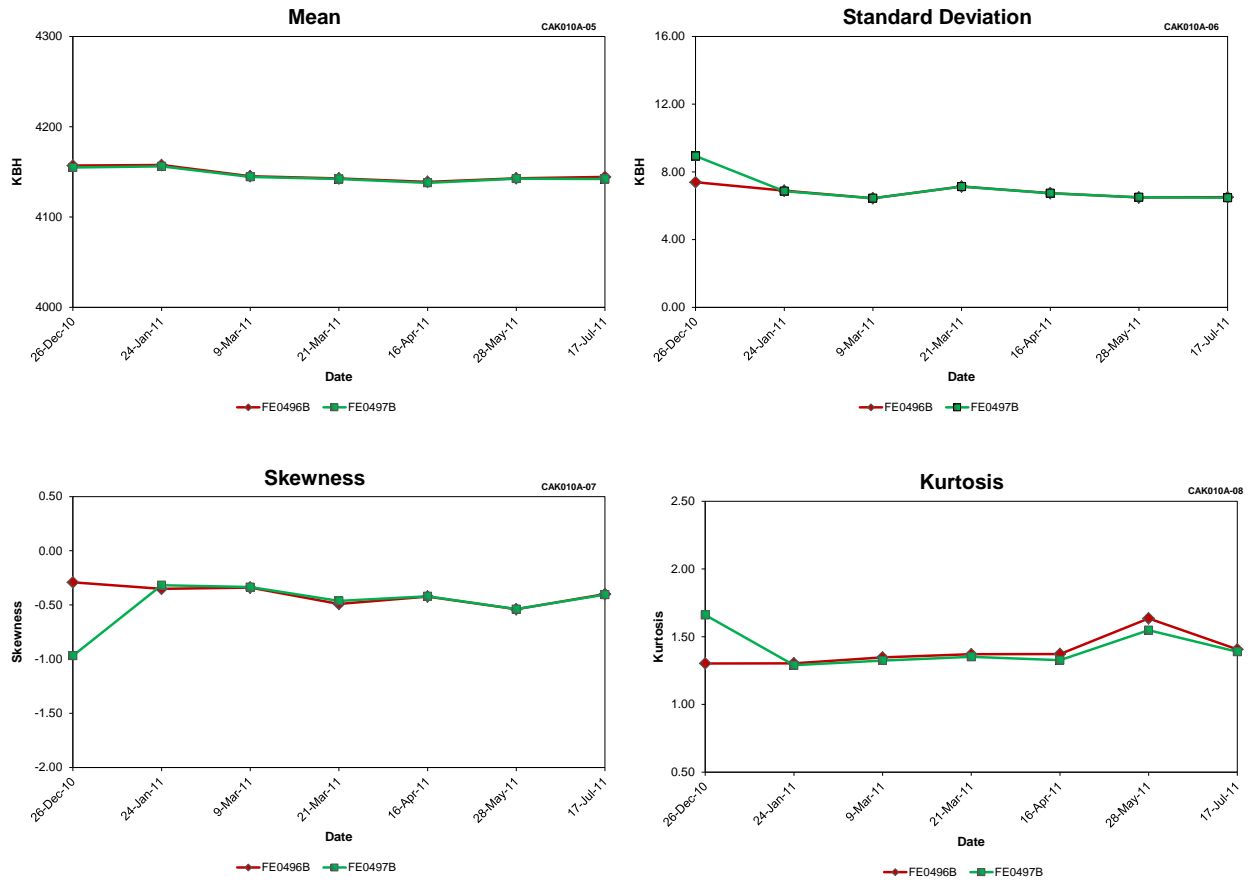
**Figure C.45 FW FLOW TO SG C Steady-State Deviation at Farley Unit 1 (Cycle 24)**



**Figure C.46 FW FLOW TO SG C Steady-State Drift at Farley Unit 1 (Cycle 24)**



**Figure C.47 FW FLOW TO SG C Steady-State Residual AAKR at Farley Unit 1 (Cycle 24)**



**Figure C.48 FW FLOW TO SG C Data Quality Statistics at Farley Unit 1 (Cycle 24)**

**Table C.10 FW FLOW TO SG C Data Quality for Farley Unit 1 (Cycle 24)**

Result Type	Tag Names	
	FE0496B	FE0497B
Mean	4146.96	4145.71
Std. Dev.	6.80	7.01
Skewness	-0.41	-0.49
Kurtosis	1.39	1.41



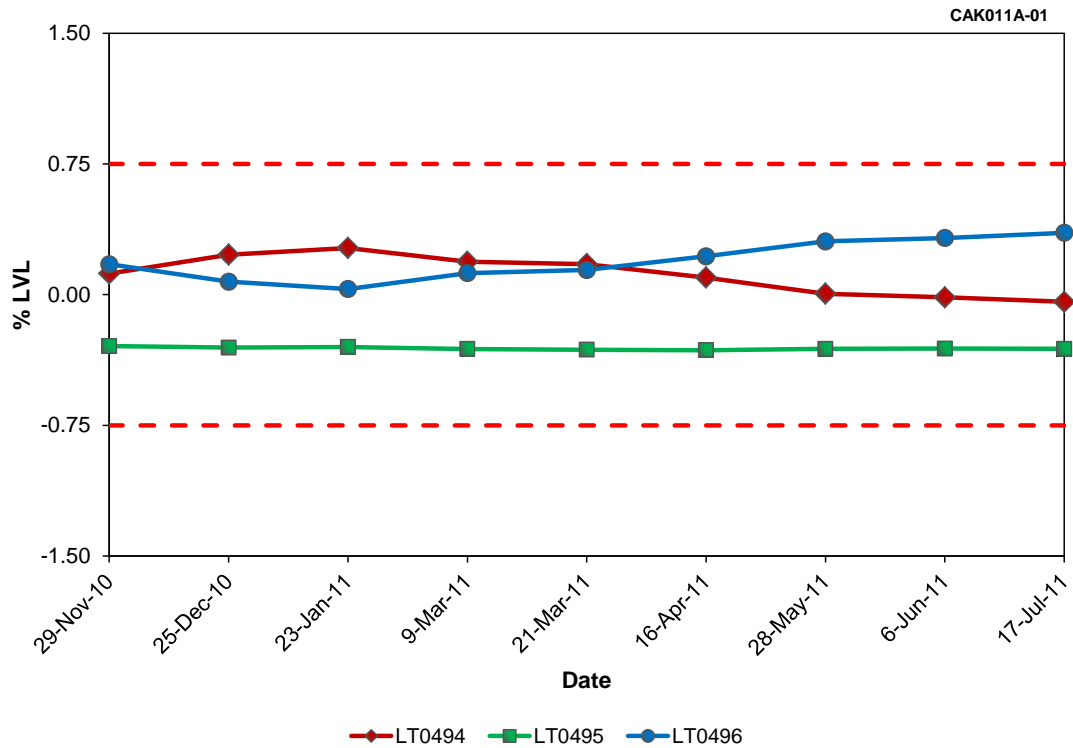


Figure C.49 SG C LEVEL Steady-State Deviation at Farley Unit 1 (Cycle 24)

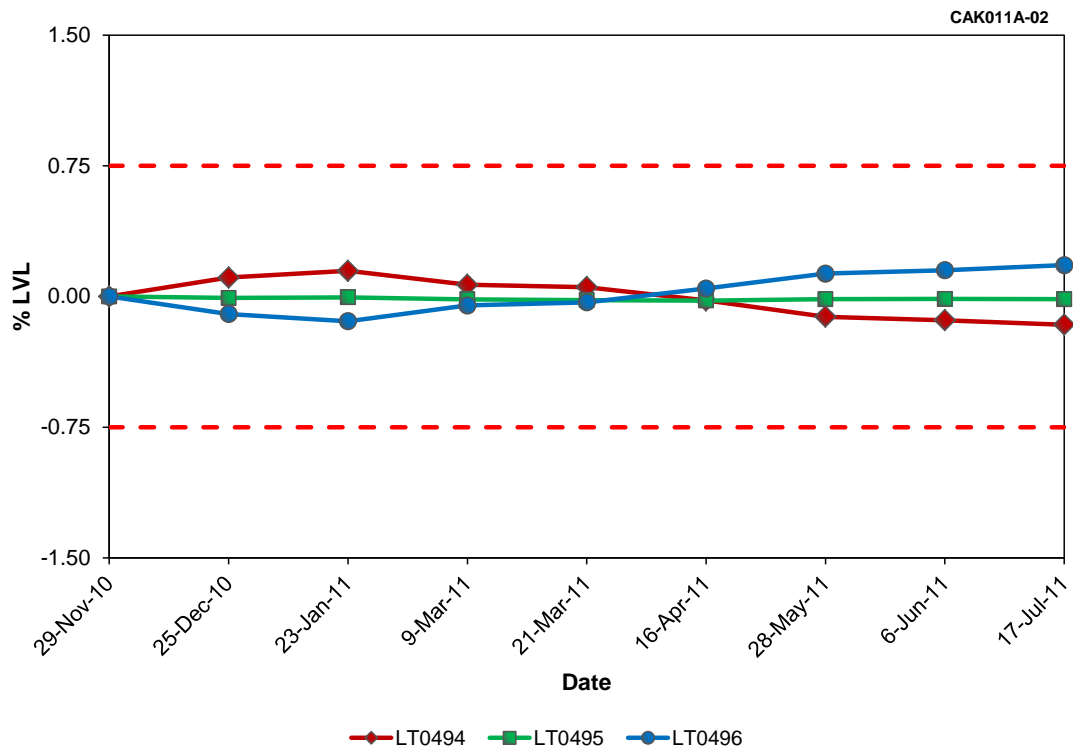


Figure C.50 SG C LEVEL Steady-State Drift at Farley Unit 1 (Cycle 24)

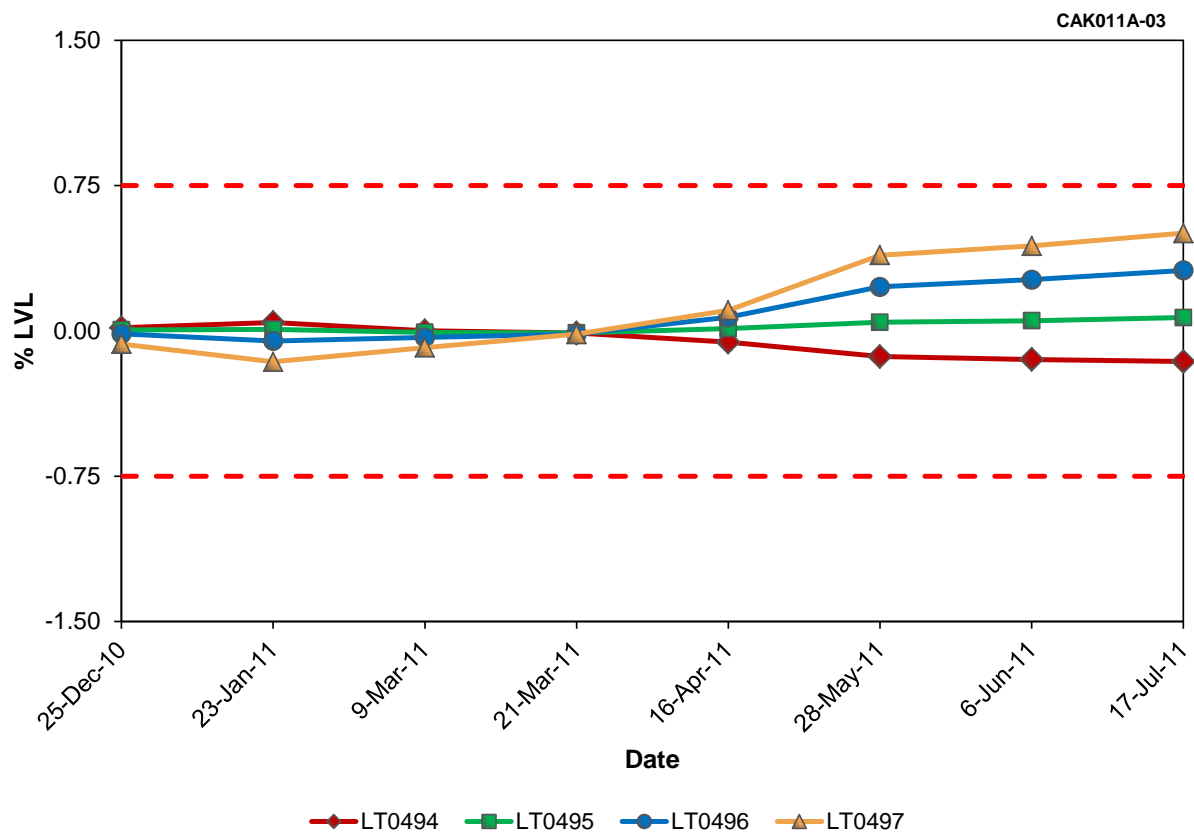
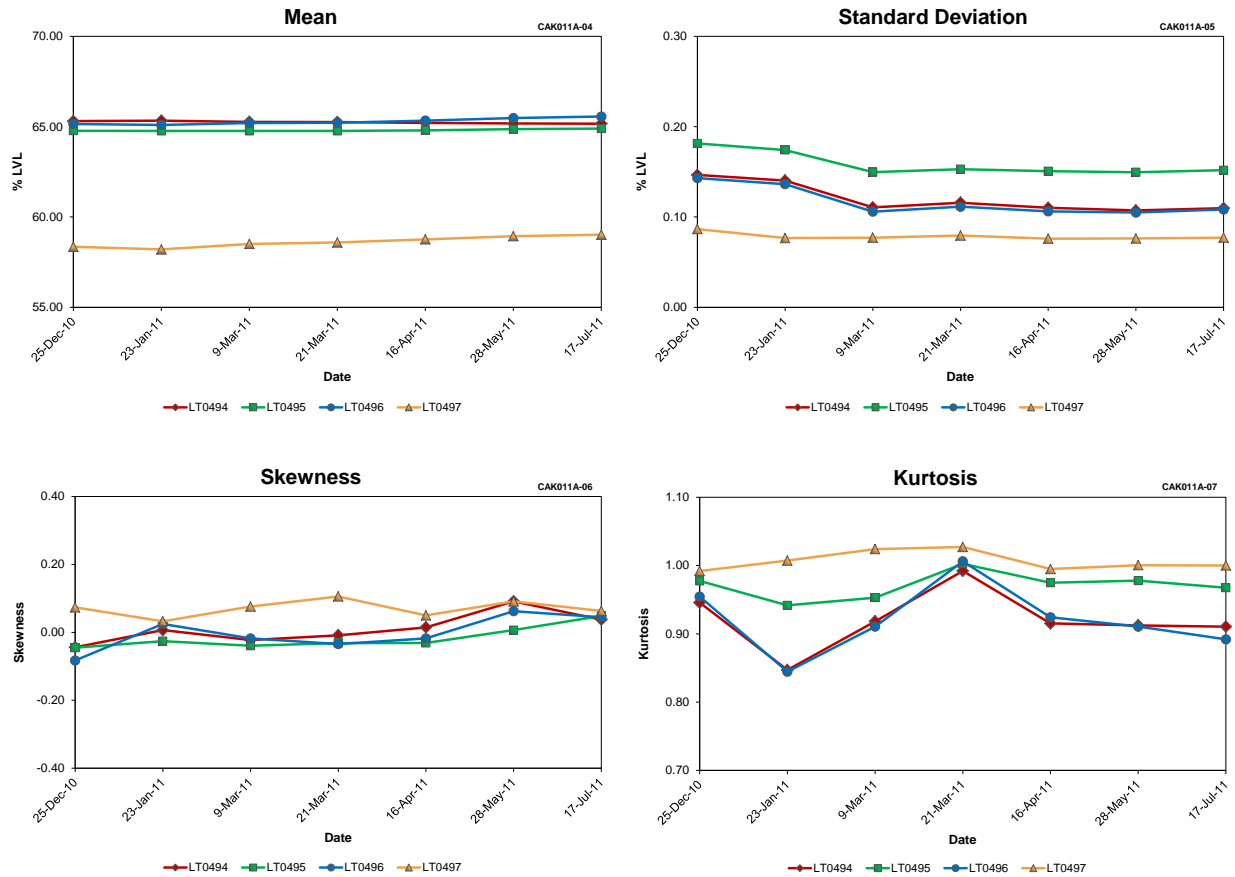


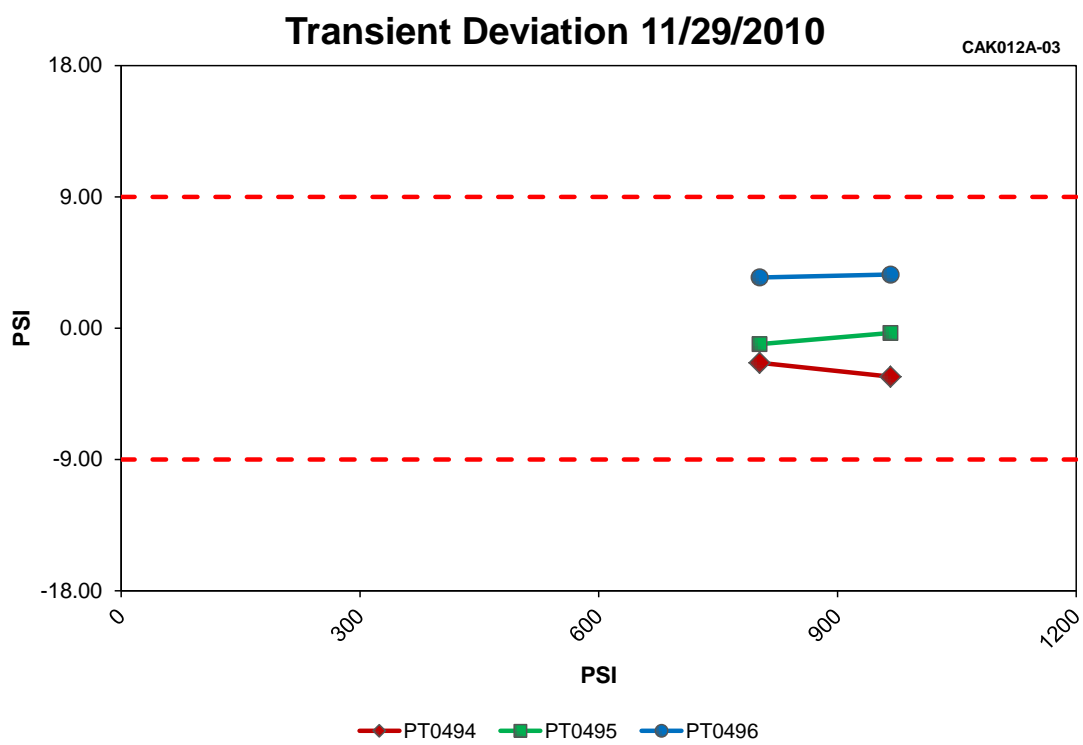
Figure C.51 SG C LEVEL Steady-State Residual AAKR at Farley Unit 1 (Cycle 24)



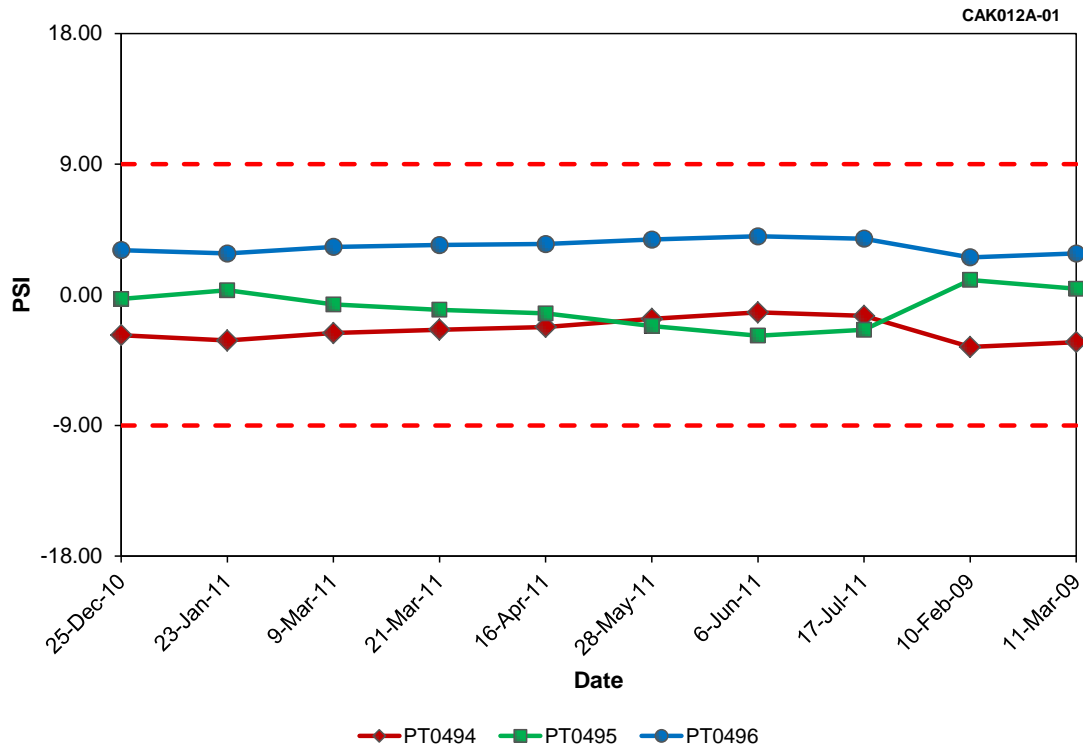
**Figure C.52 SG C LEVEL Data Quality Statistics at Farley Unit 1 (Cycle 24)**

**Table C.11 SG C LEVEL Data Quality for Farley Unit 1 (Cycle 24)**

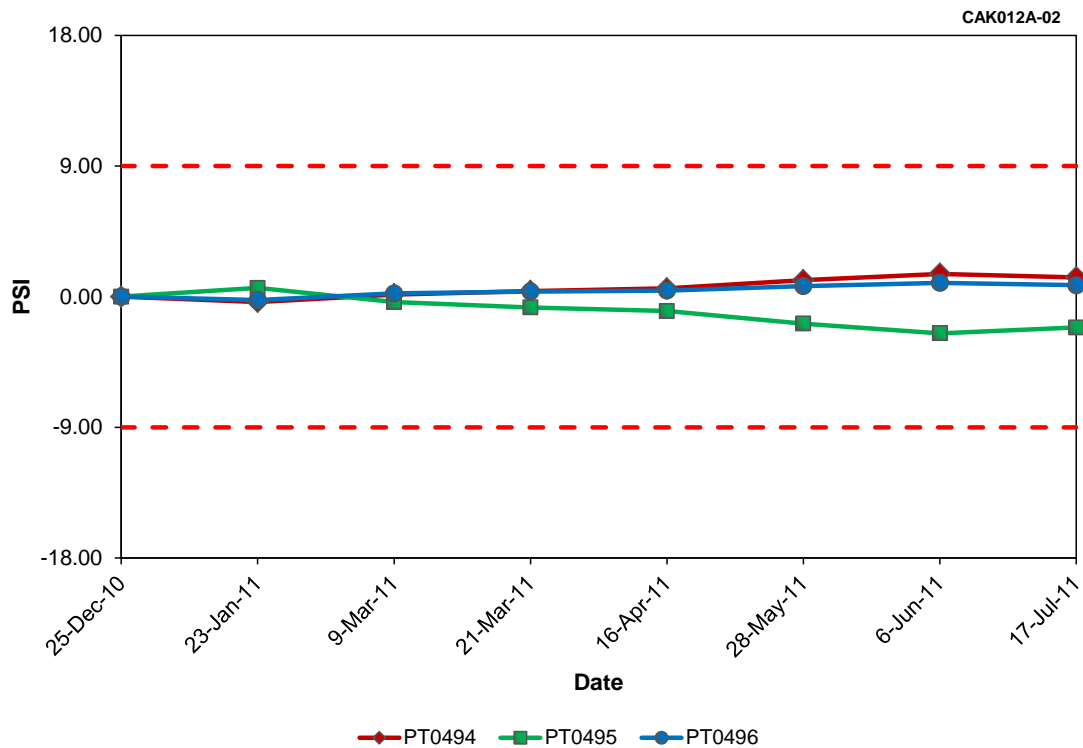
Result Type	Tag Names			
	LT0494	LT0495	LT0496	LT0497
Mean	65.24	64.80	65.29	58.62
Std. Dev.	0.12	0.16	0.12	0.08
Skewness	0.01	-0.02	0.00	0.07
Kurtosis	0.92	0.97	0.92	1.01



**Figure C.53 SG C OUTLET PRESSURE at Farley Unit 1 (Cycle 24)**



**Figure C.54 SG C OUTLET PRESSURE Steady-State Deviation at Farley Unit 1 (Cycle 24)**



**Figure C.55 SG C OUTLET PRESSURE Steady-State Drift at Farley Unit 1 (Cycle 24)**

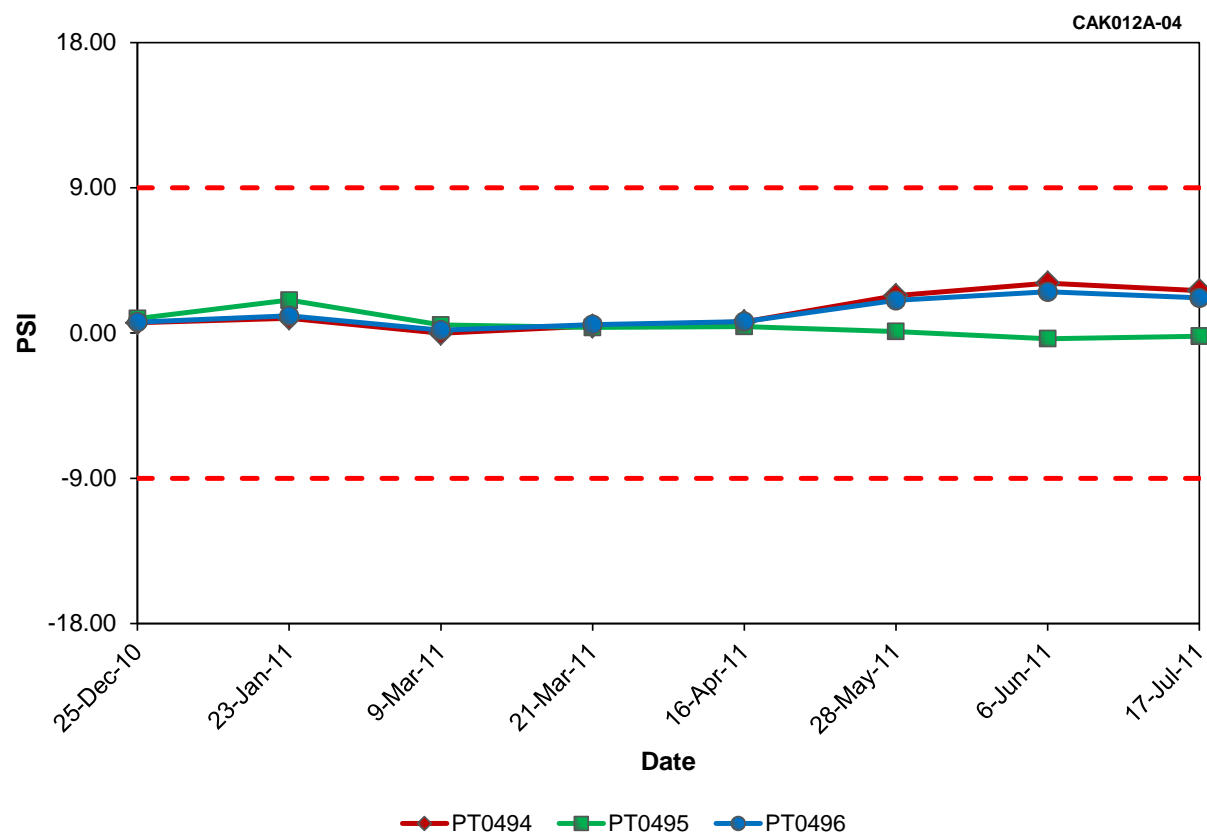
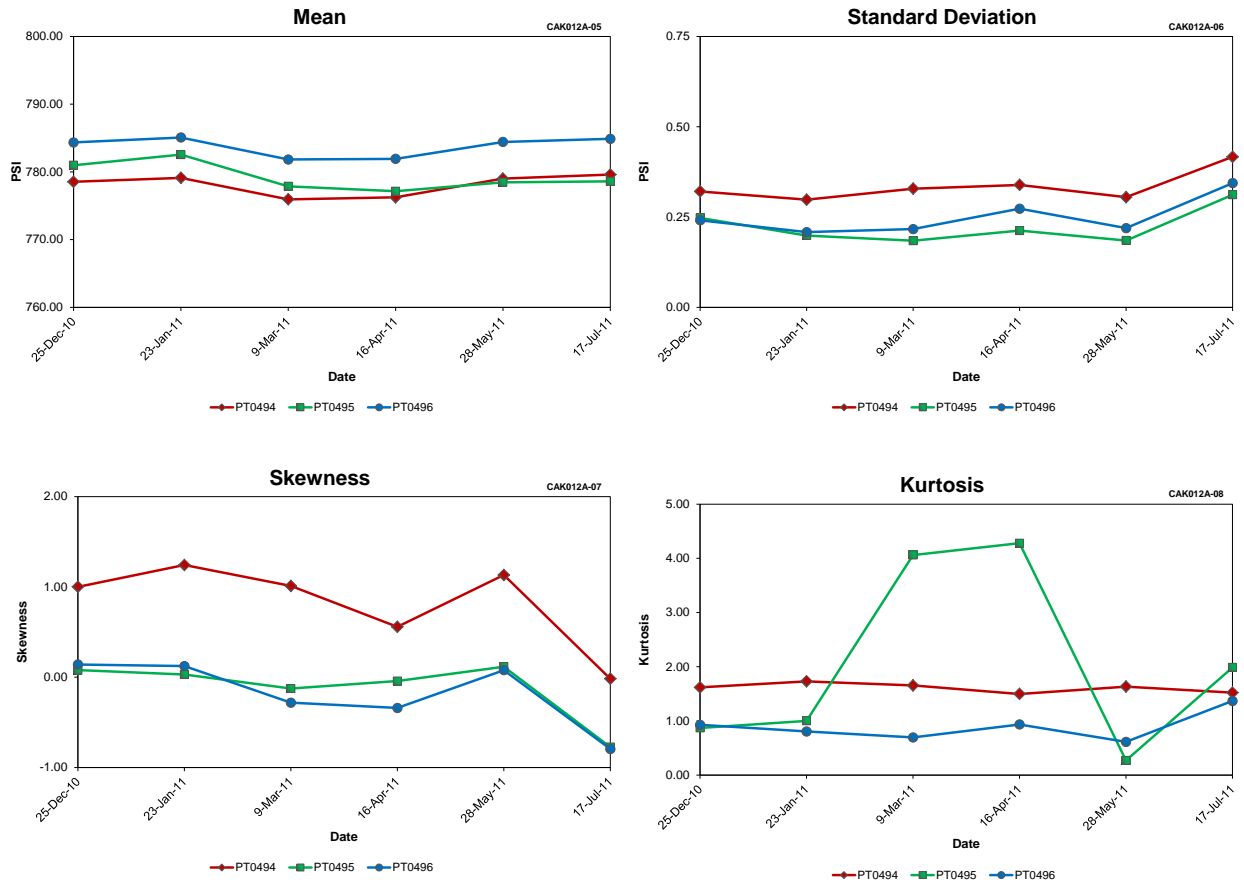


Figure C.56 SG C OUTLET PRESSURE Steady-State Residual AAKR at Farley Unit 1 (Cycle 24)



**Figure C.57 SG C OUTLET PRESSURE Data Quality Statistics at Farley Unit 1 (Cycle 24)**

**Table C.12 SG C OUTLET PRESSURE Data Quality for Farley Unit 1 (Cycle 24)**

Result Type	Tag Names		
	PT0494	PT0495	PT0496
Mean	778.08	779.27	783.75
Std. Dev.	0.33	0.22	0.25
Skewness	0.82	-0.12	-0.18
Kurtosis	1.61	2.08	0.89

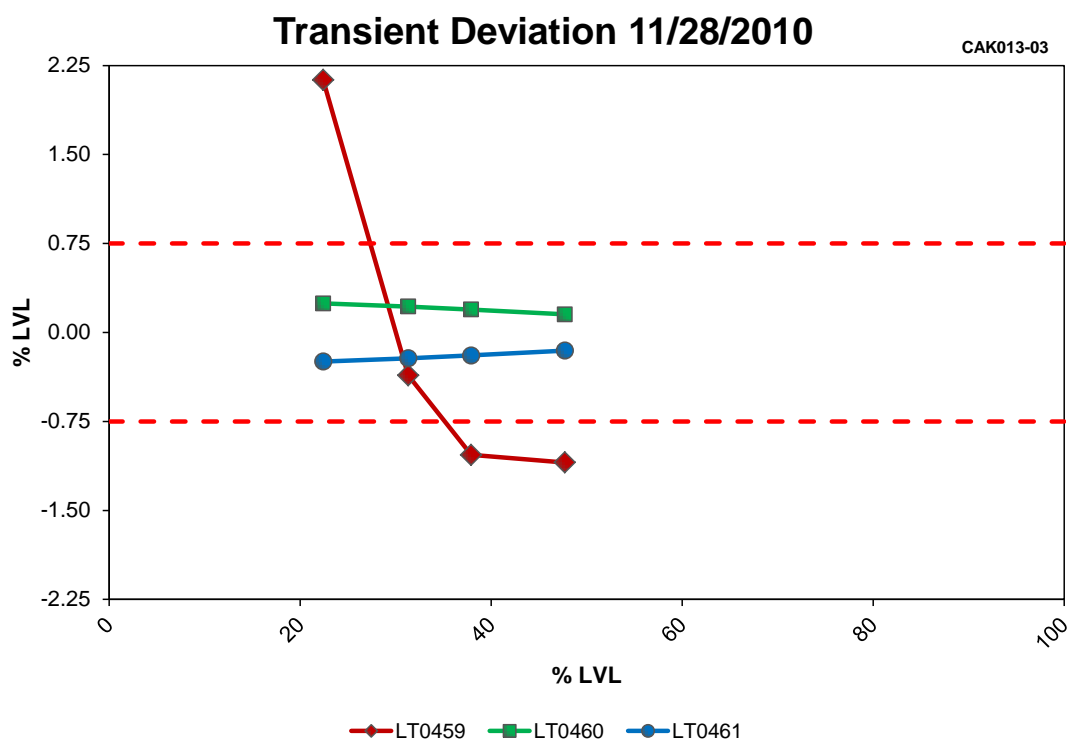


Figure C.58 PRESSURIZER LEVEL at Farley Unit 1 (Cycle 24)



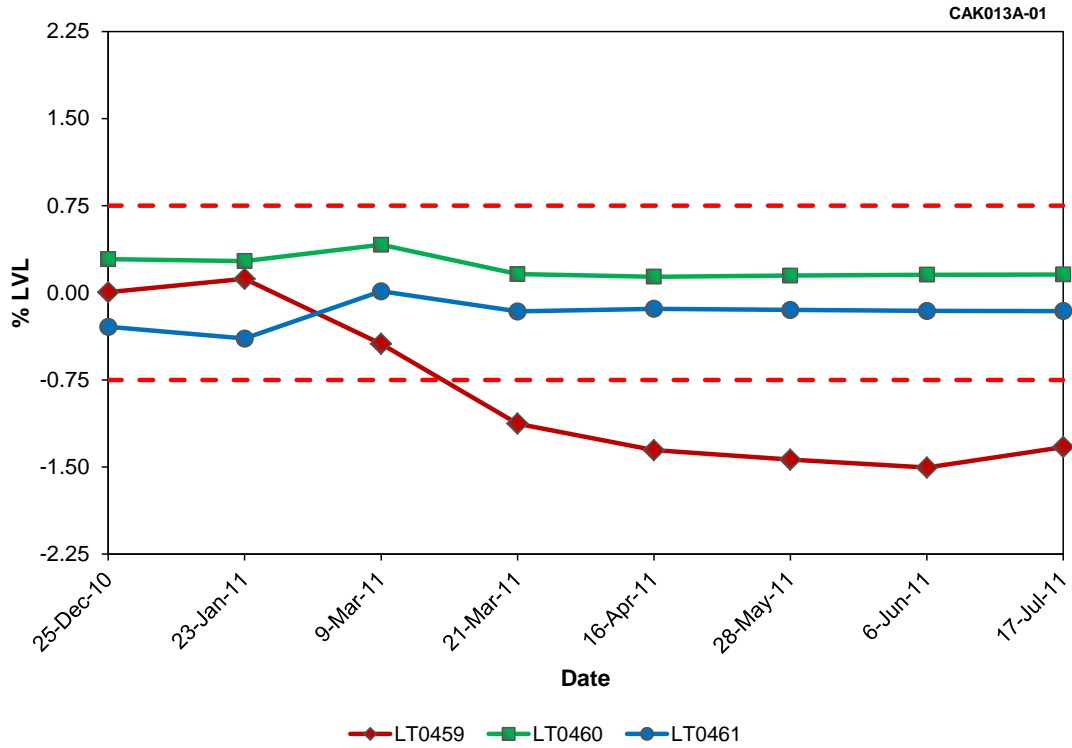


Figure C.59 PRESSURIZER LEVEL Steady-State Deviation at Farley Unit 1 (Cycle 24)

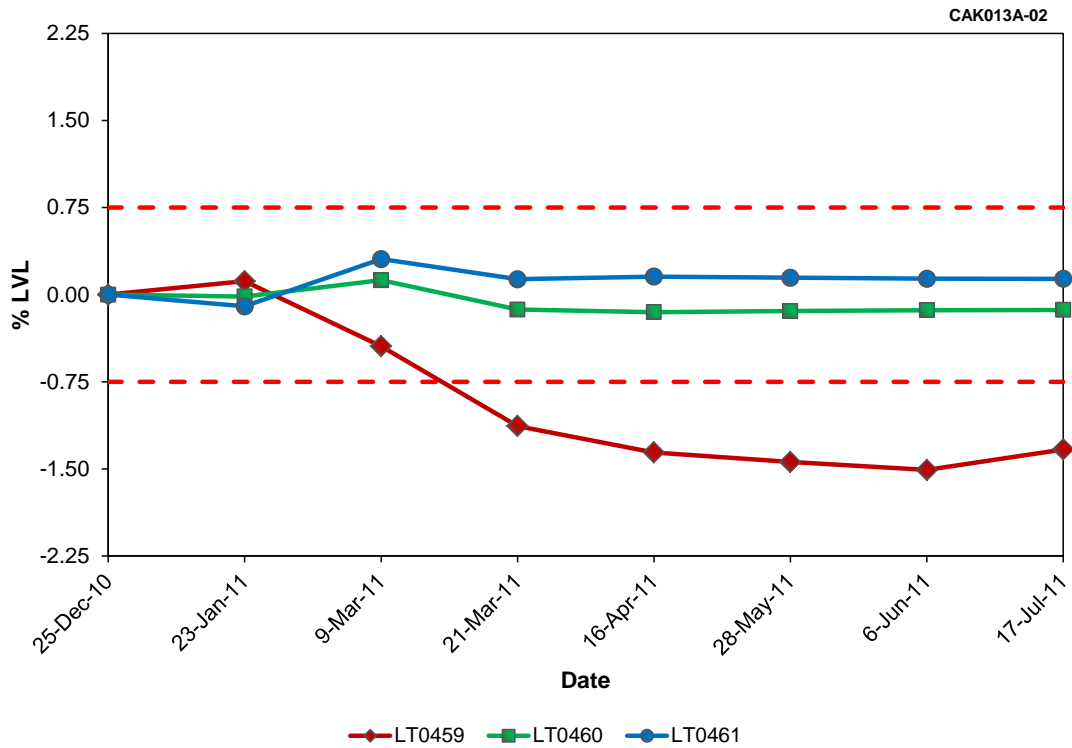
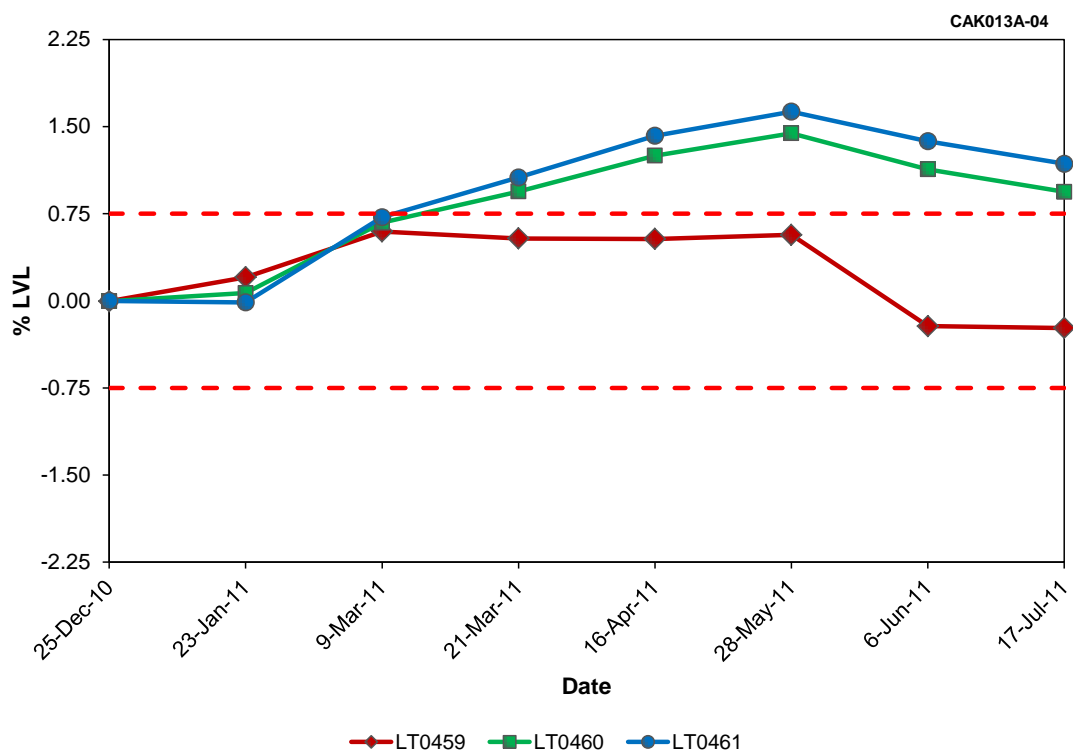
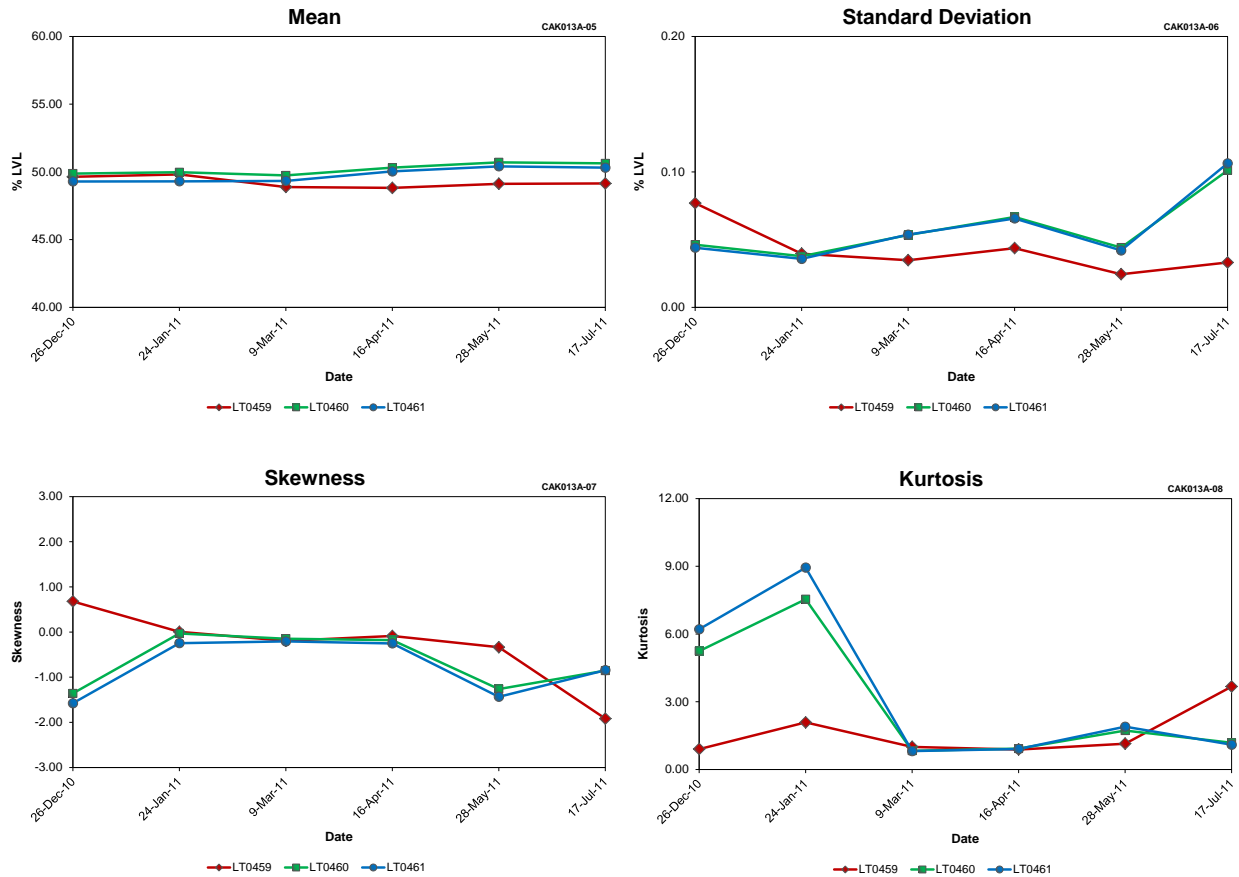


Figure C.60 PRESSURIZER LEVEL Steady-State Drift at Farley Unit 1 (Cycle 24)



**Figure C.61 PRESSURIZER LEVEL Steady-State Residual AAKR at Farley Unit 1 (Cycle 24)**



**Figure C.62 PRESSURIZER LEVEL Data Quality Statistics at Farley Unit 1 (Cycle 24)**

**Table C.13 PRESSURIZER LEVEL Data Quality for Farley Unit 1 (Cycle 24)**

Result Type	Tag Names		
	LT0459	LT0460	LT0461
Mean	49.24	50.20	49.78
Std. Dev.	0.04	0.06	0.06
Skewness	-0.31	-0.64	-0.76
Kurtosis	1.62	2.91	3.31

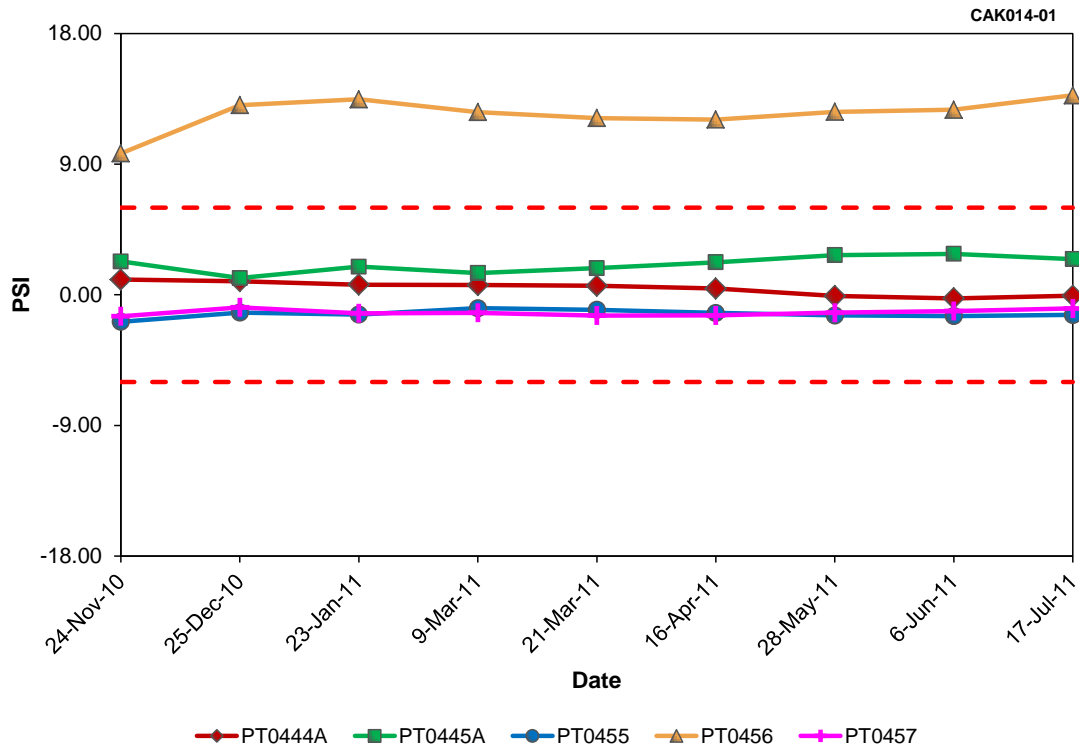


Figure C.63 PRESSURIZER PRESSURE Steady-State Deviation at Farley Unit 1 (Cycle 24)

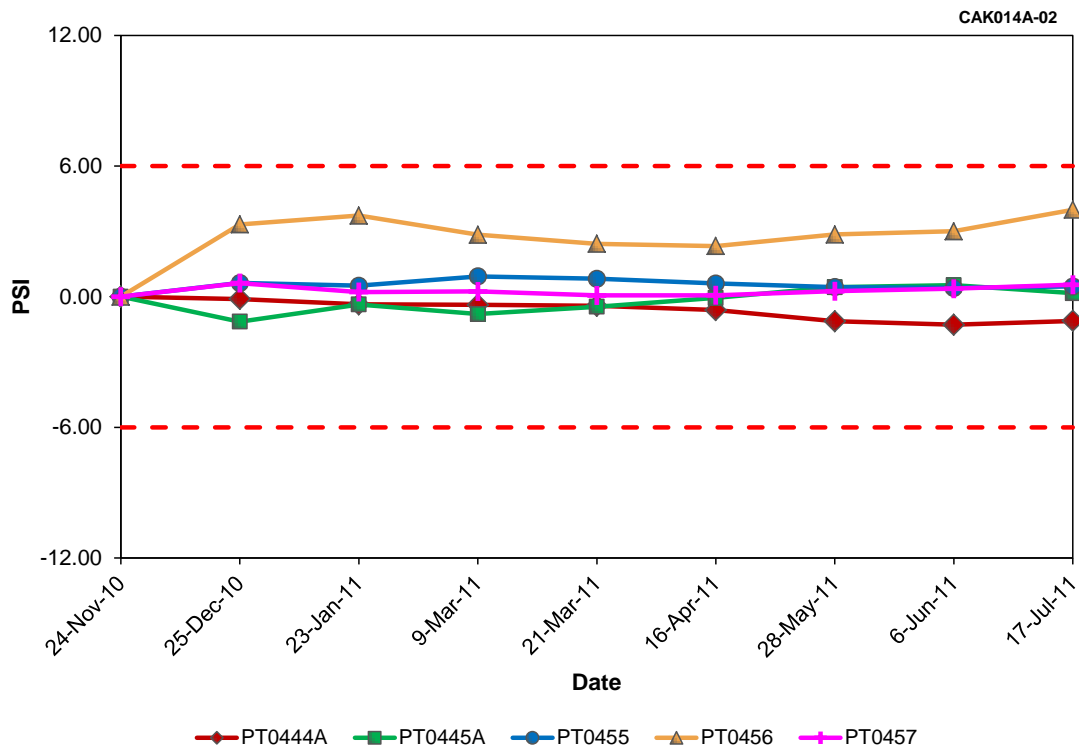
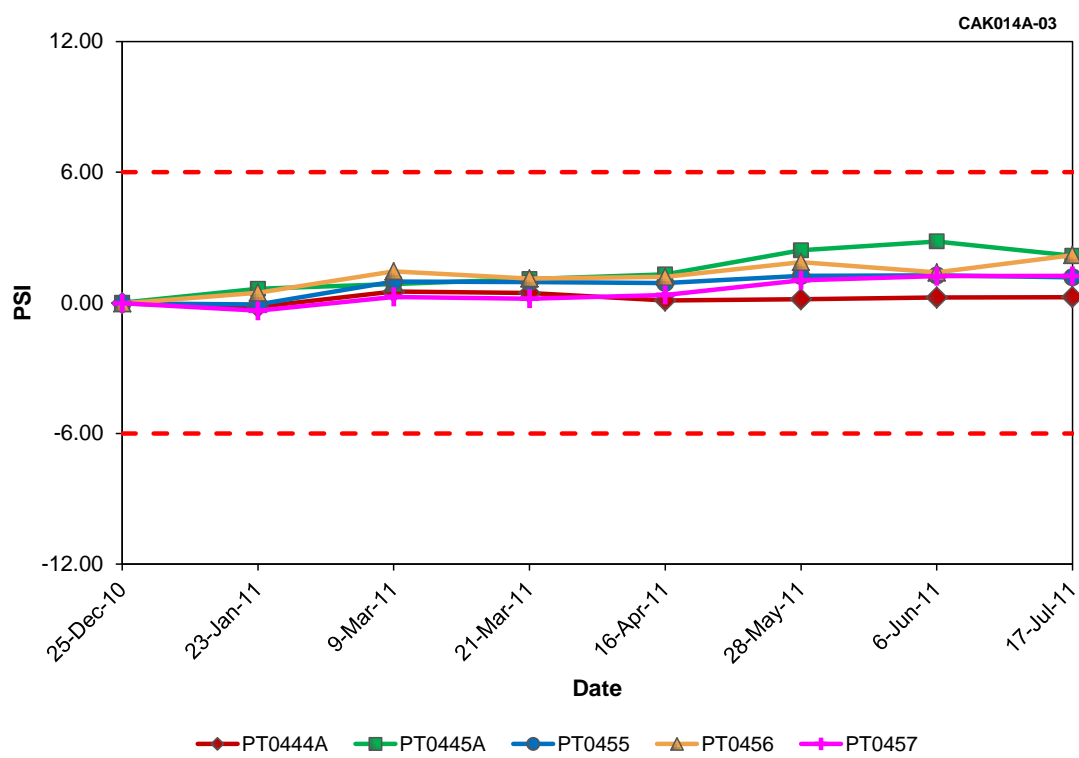


Figure C.64 PRESSURIZER PRESSURE Steady-State Drift at Farley Unit 1 (Cycle 24)



**Figure C.65 PRESSURIZER PRESSURE Steady-State Residual AAKR at Farley Unit 1 (Cycle 24)**

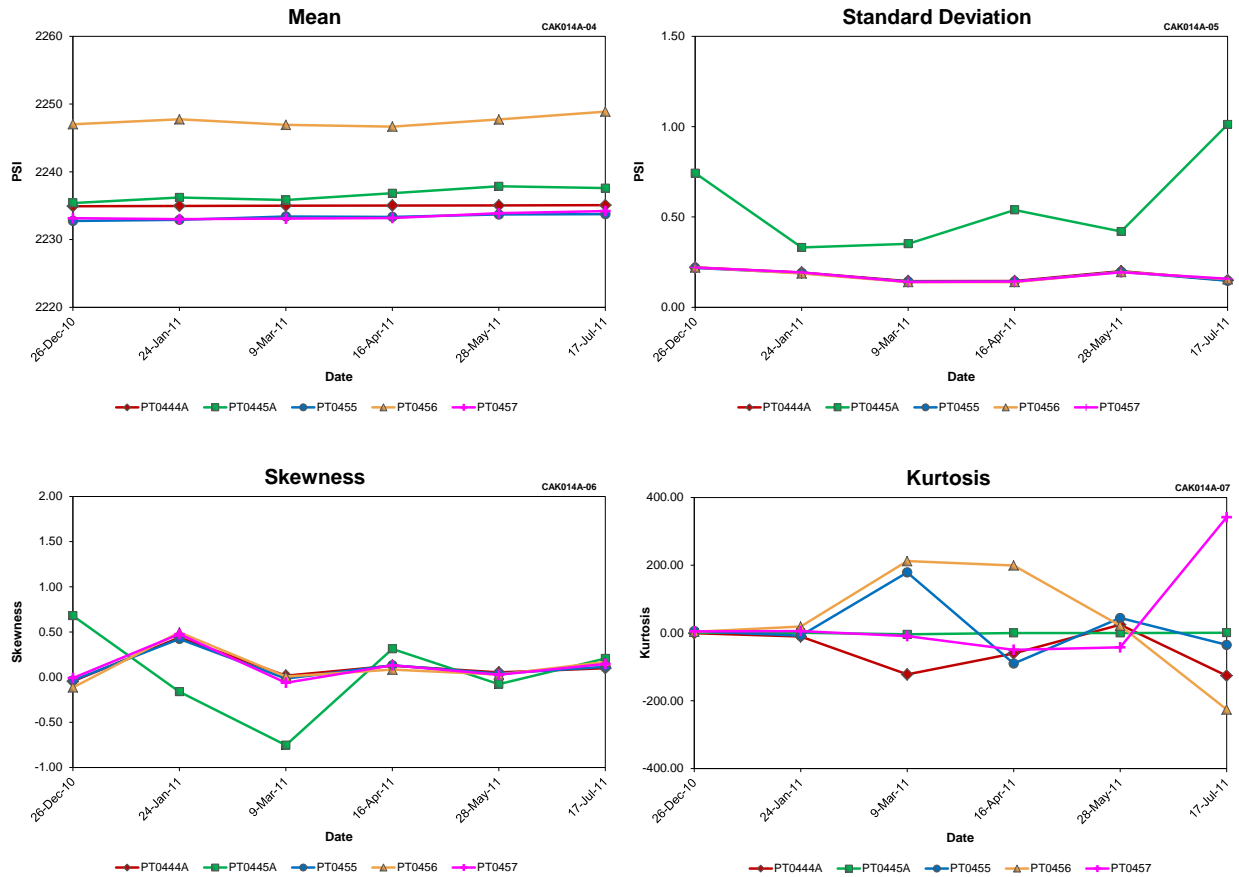


Figure C.66 PRESSURIZER PRESSURE Data Quality Statistics at Farley Unit 1 (Cycle 24)

Table C.14 PRESSURIZER PRESSURE Data Quality for Farley Unit 1 (Cycle 24)

Result Type	Tag Names				
	PT0444A	PT0445A	PT0455	PT0456	PT0457
Mean	2235.01	2236.62	2233.32	2247.50	2233.42
Std. Dev.	0.18	0.57	0.17	0.17	0.17
Skewness	0.11	0.03	0.11	0.11	0.12
Kurtosis	-49.14	-0.22	15.98	38.34	41.94



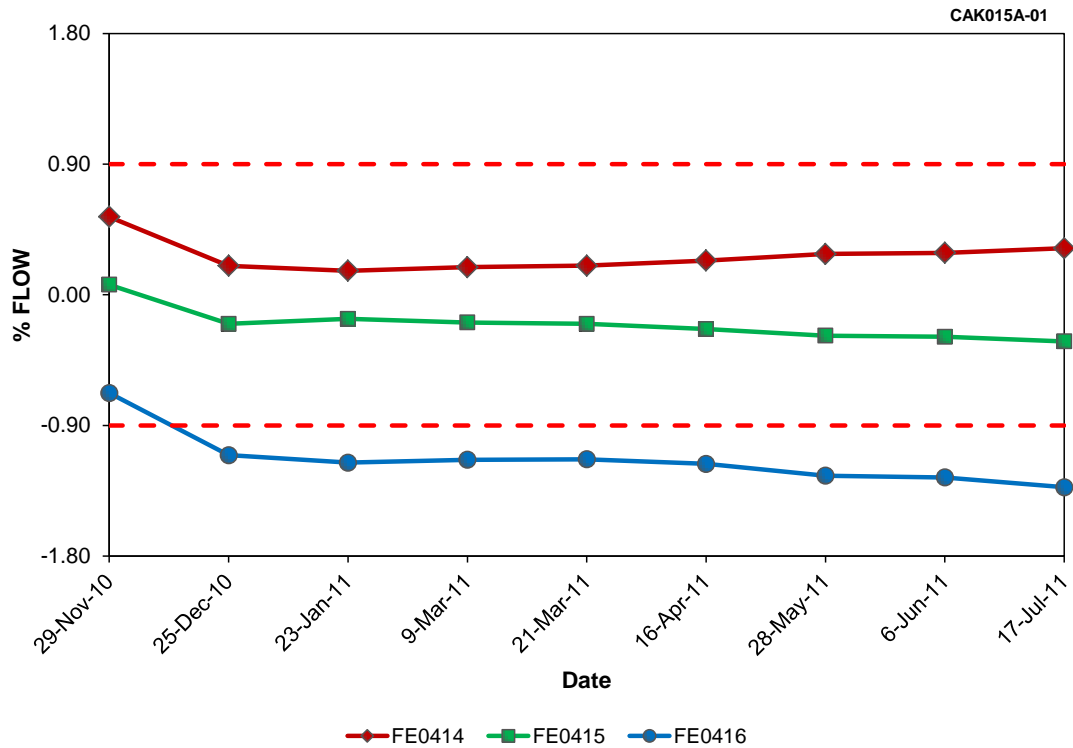


Figure C.67 RCS LOOP A FLOW Steady-State Deviation at Farley Unit 1 (Cycle 24)

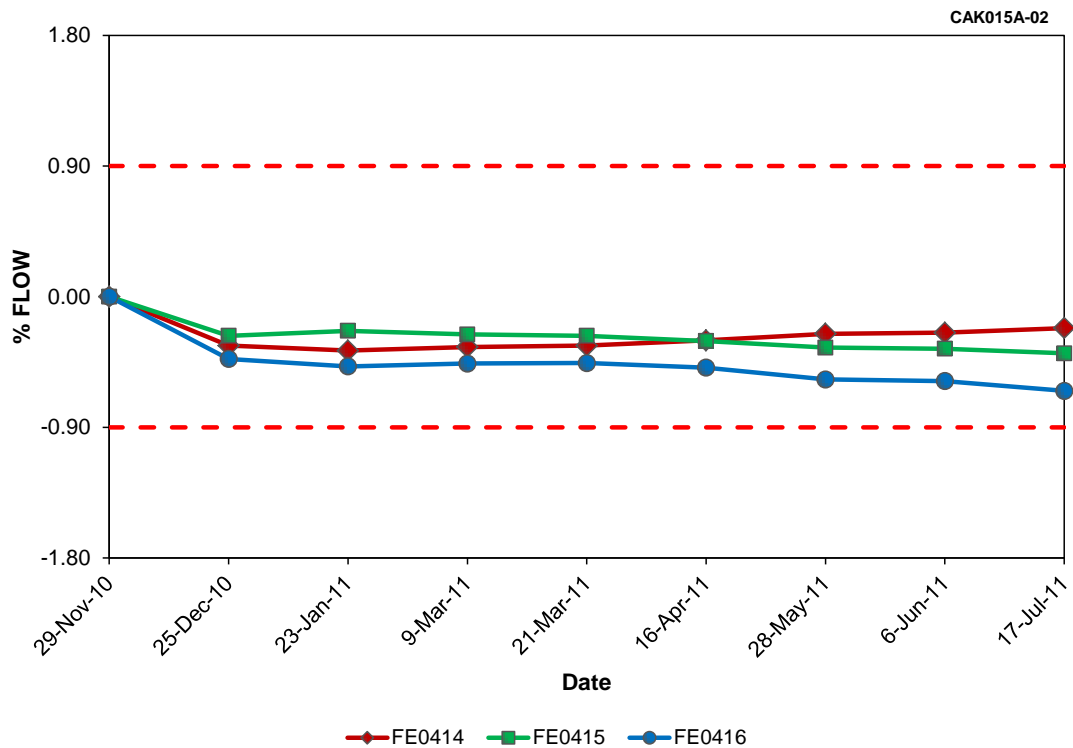


Figure C.68 RCS LOOP A FLOW Steady-State Drift at Farley Unit 1 (Cycle 24)



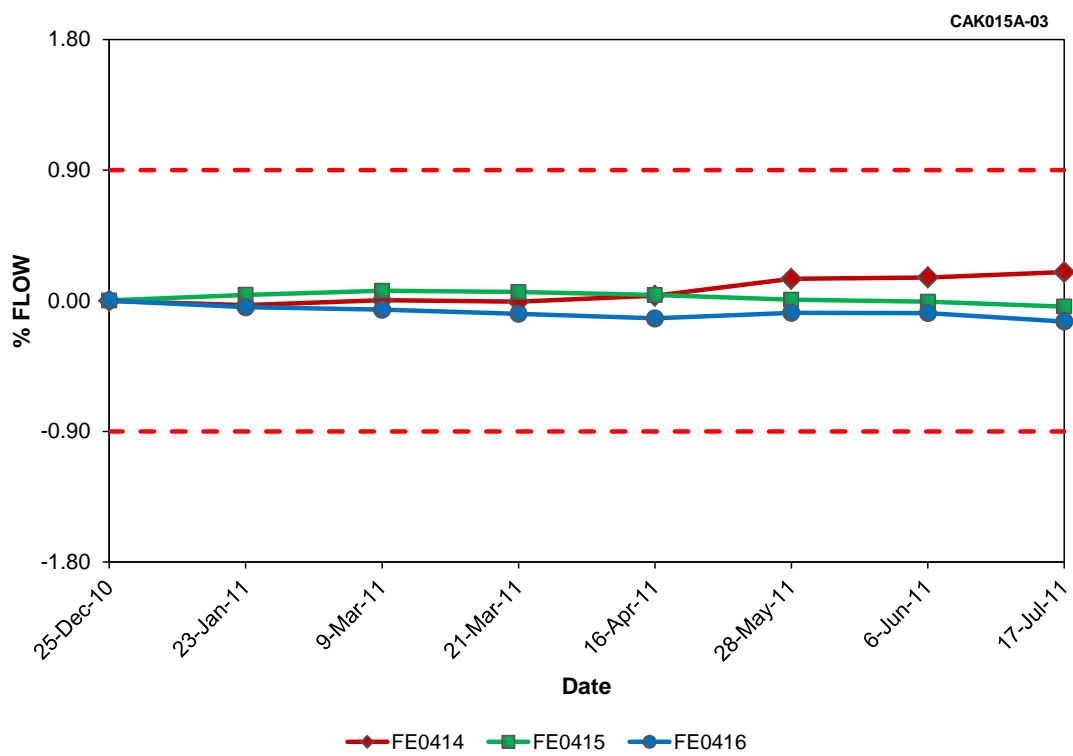
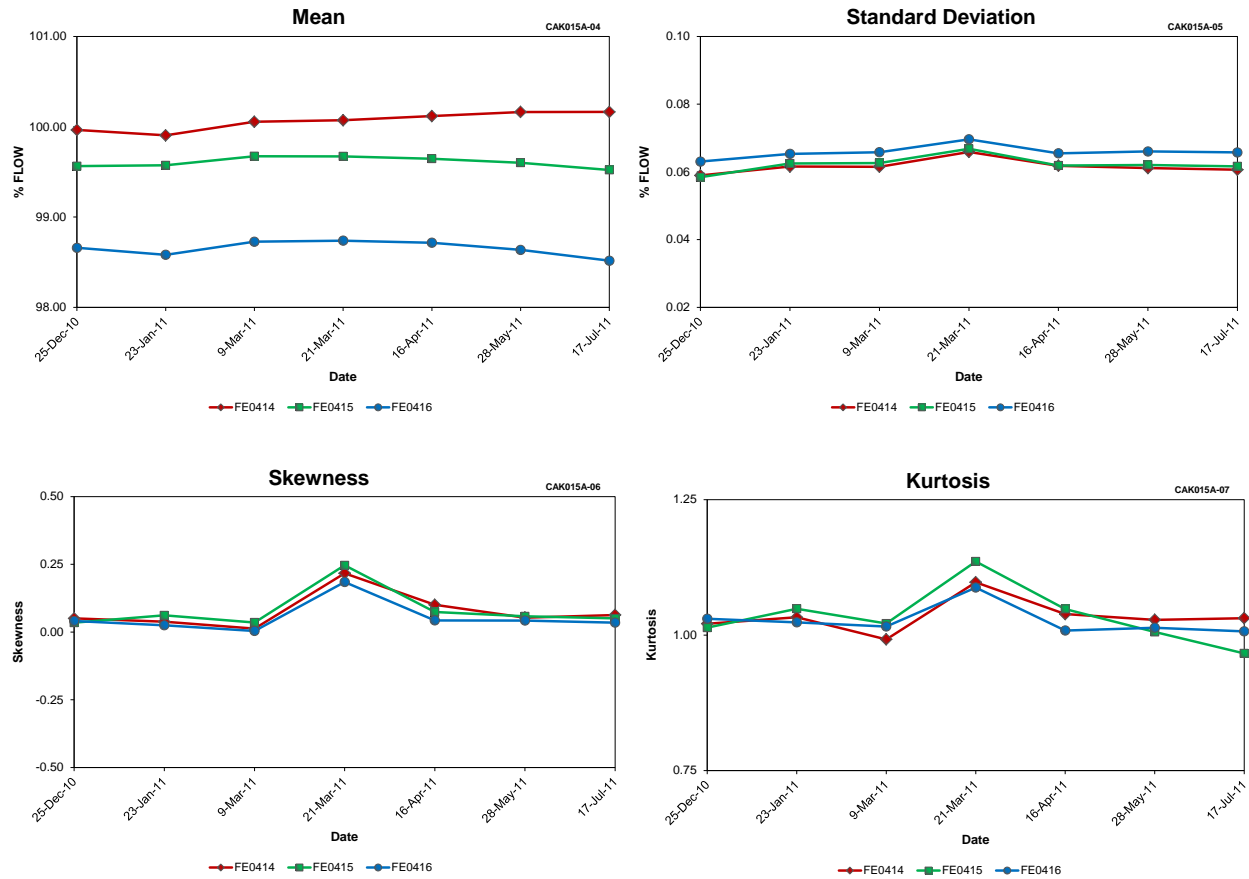


Figure C.69 RCS LOOP A FLOW Steady-State Residual AAKR at Farley Unit 1 (Cycle 24)

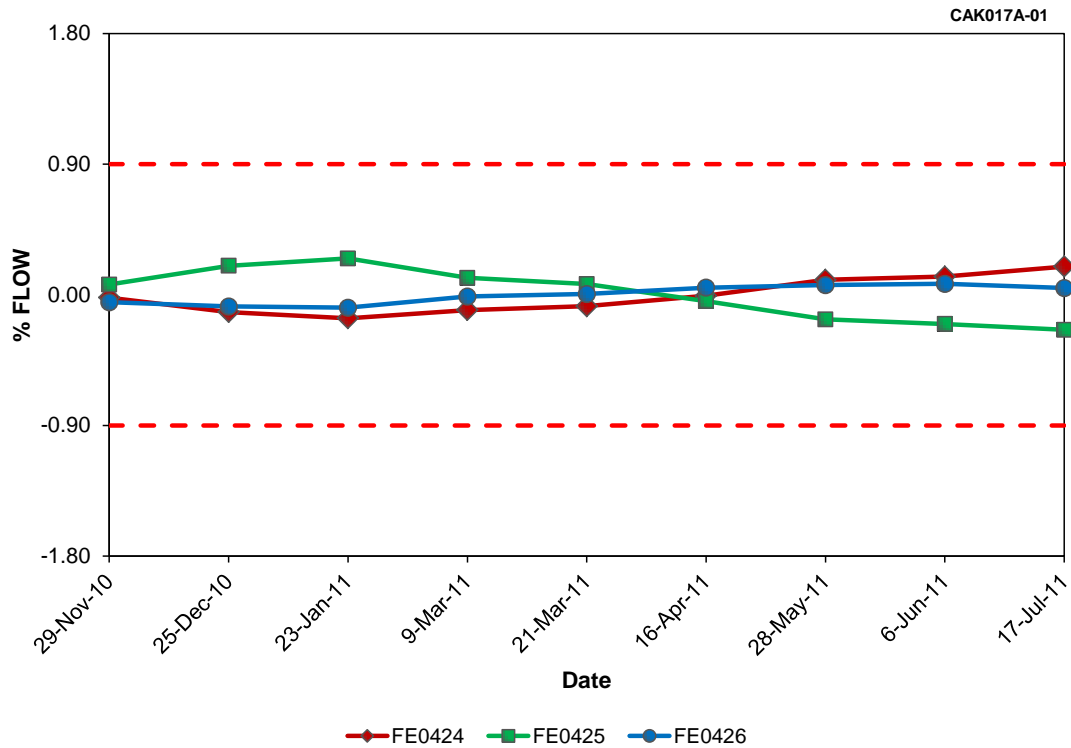


**Figure C.70 RCS LOOP A FLOW Data Quality Statistics at Farley Unit 1 (Cycle 24)**

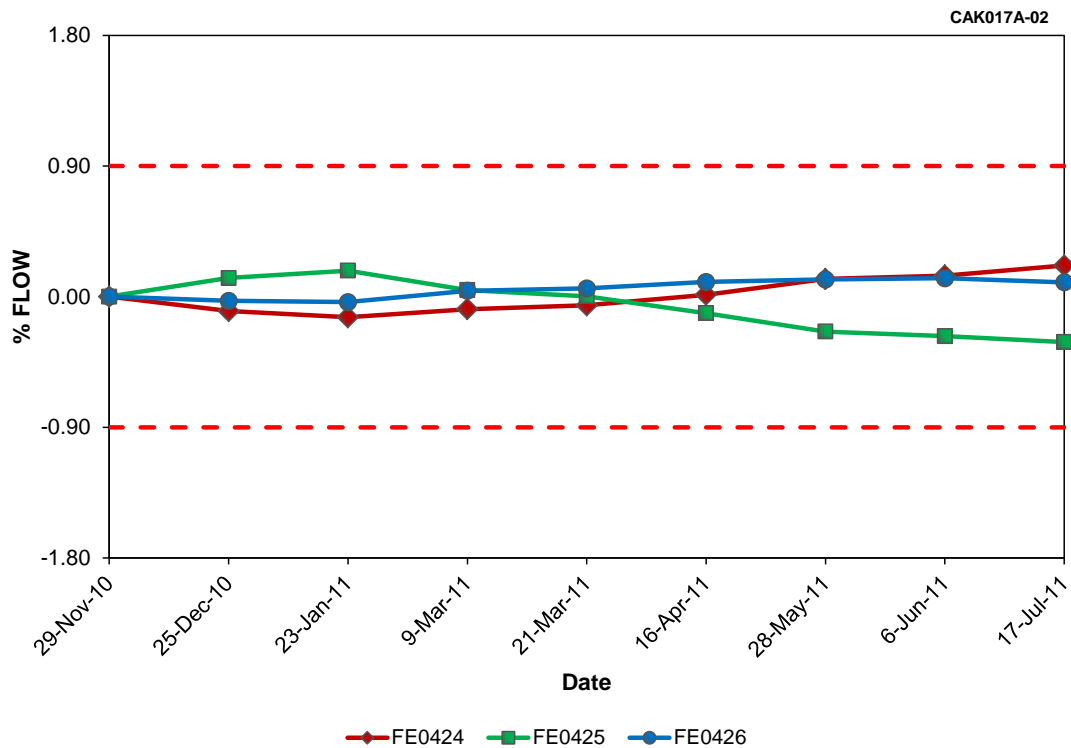
**Table C.15 RCS LOOP A FLOW Data Quality for Farley Unit 1 (Cycle 24)**

Result Type	Tag Names		
	FE0414	FE0415	FE0416
Mean	100.06	99.61	98.65
Std. Dev.	0.06	0.06	0.07
Skewness	0.08	0.08	0.05
Kurtosis	1.03	1.03	1.03





**Figure C.71 RCS LOOP B FLOW Steady-State Deviation at Farley Unit 1 (Cycle 24)**



**Figure C.72 RCS LOOP B FLOW Steady-State Drift at Farley Unit 1 (Cycle 24)**

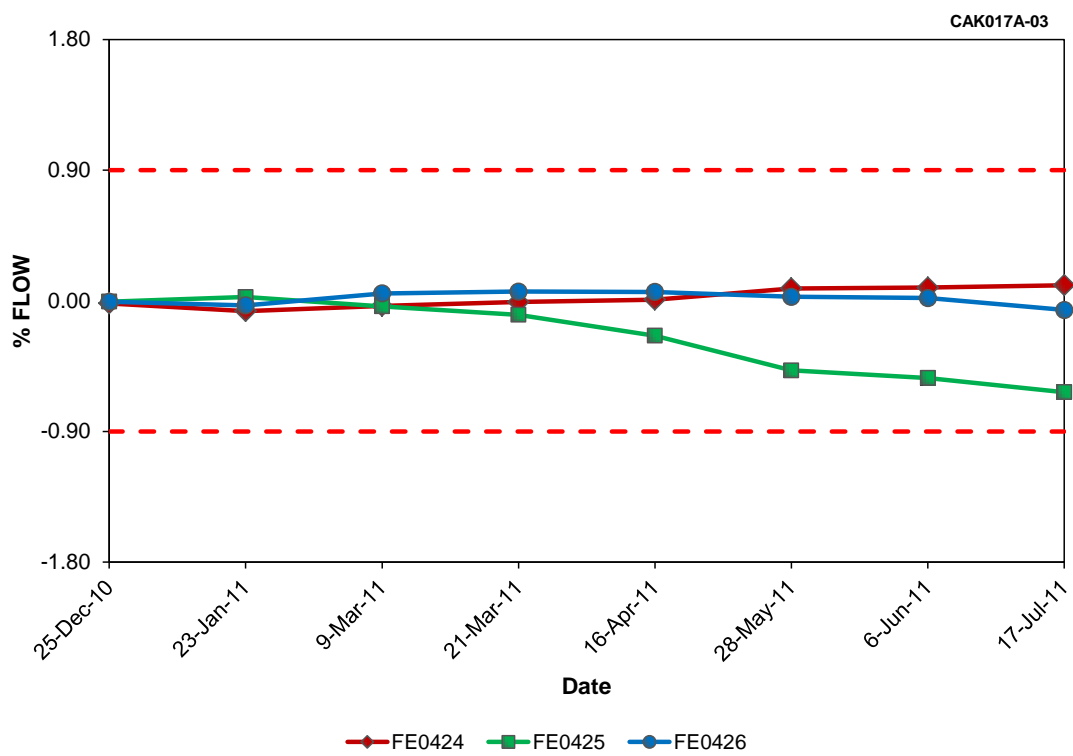
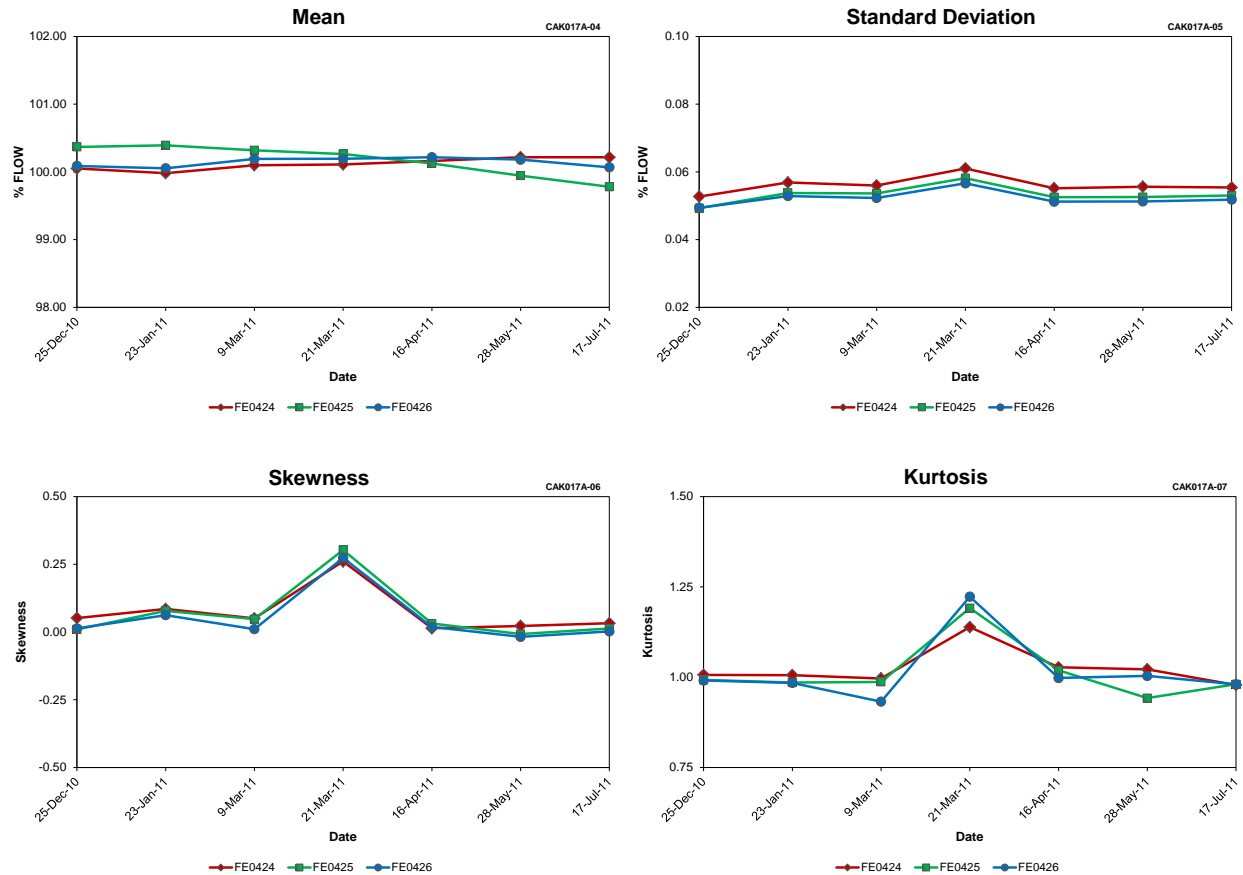


Figure C.73 RCS LOOP B FLOW Steady-State Residual AAKR at Farley Unit 1 (Cycle 24)



**Figure C.74 RCS LOOP B FLOW Data Quality Statistics at Farley Unit 1 (Cycle 24)**

**Table C.16 RCS LOOP B FLOW Data Quality for Farley Unit 1 (Cycle 24)**

Result Type	Tag Names		
	FE0424	FE0425	FE0426
Mean	100.12	100.17	100.14
Std. Dev.	0.06	0.05	0.05
Skewness	0.07	0.07	0.05
Kurtosis	1.02	1.01	1.02



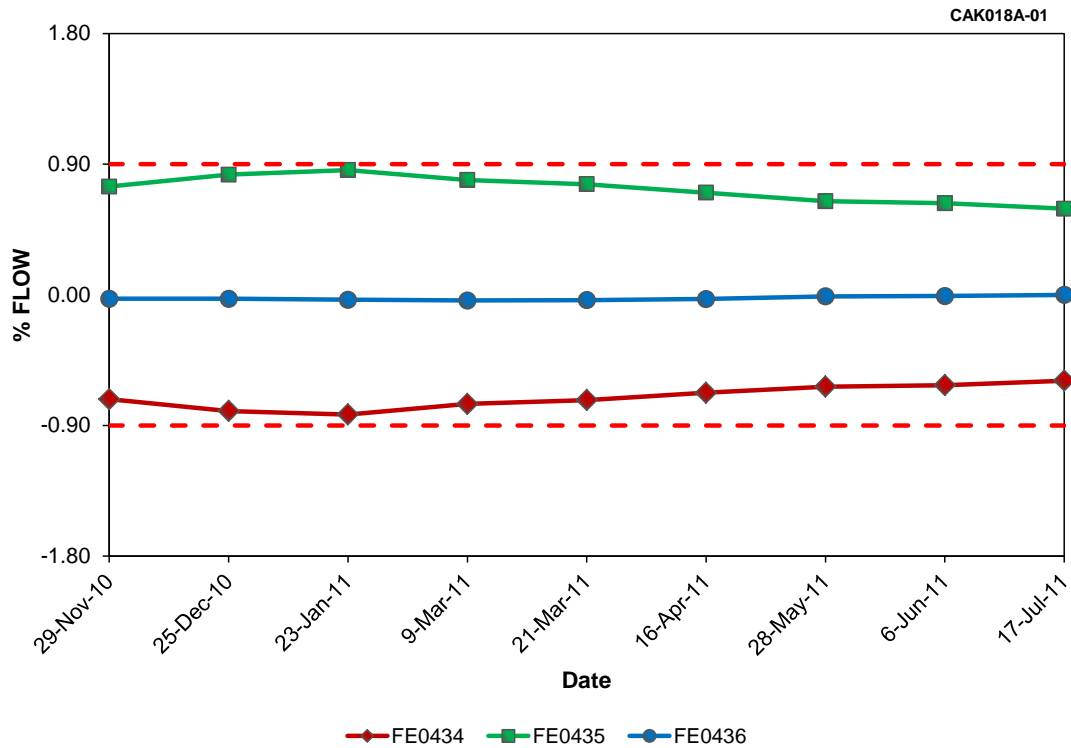


Figure C.75 RCS LOOP C FLOW Steady-State Deviation at Farley Unit 1 (Cycle 24)

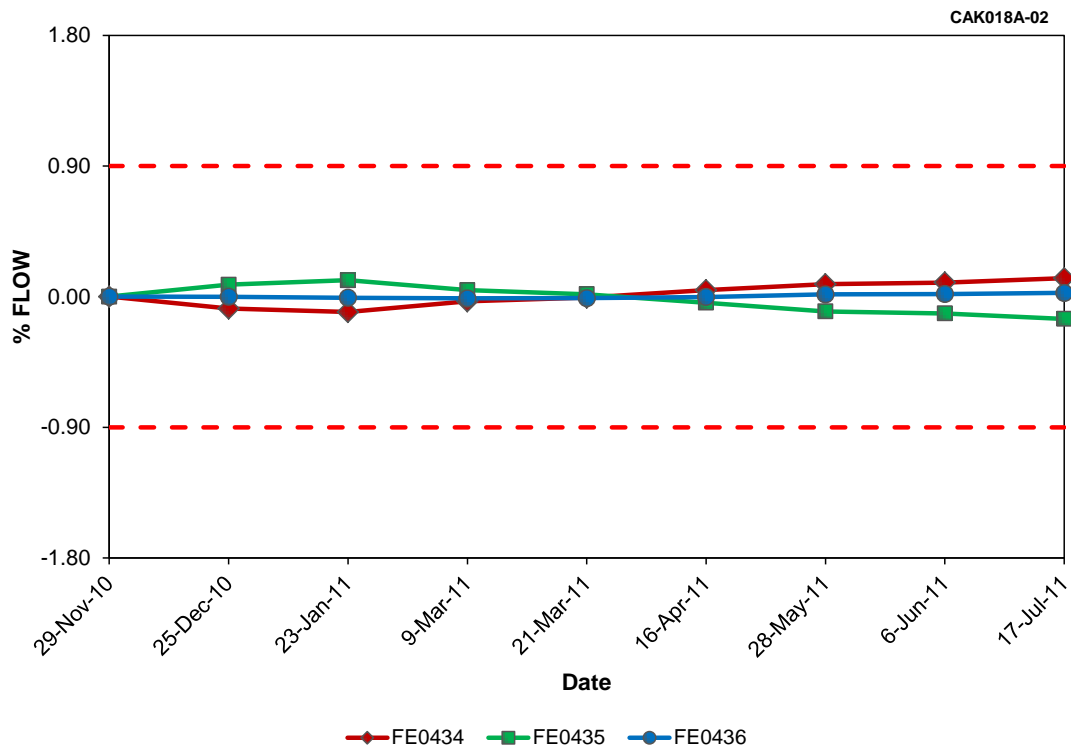


Figure C.76 RCS LOOP C FLOW Steady-State Drift at Farley Unit 1 (Cycle 24)



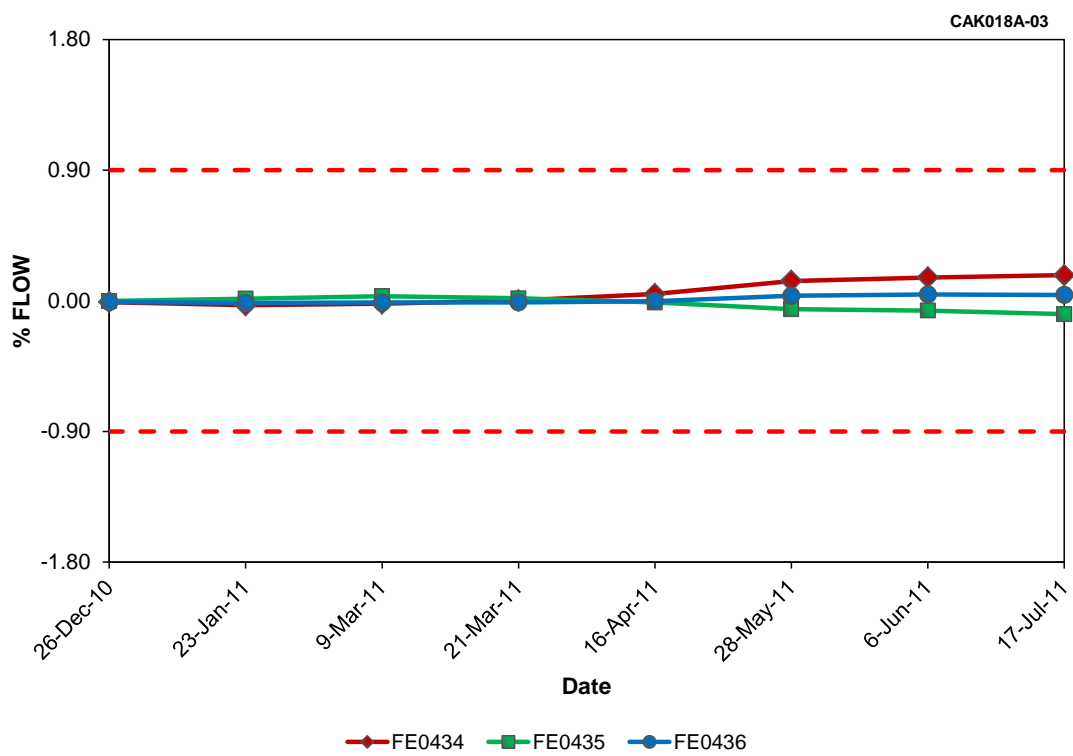


Figure C.77 RCS LOOP C FLOW Steady-State Residual AAKR at Farley Unit 1 (Cycle 24)

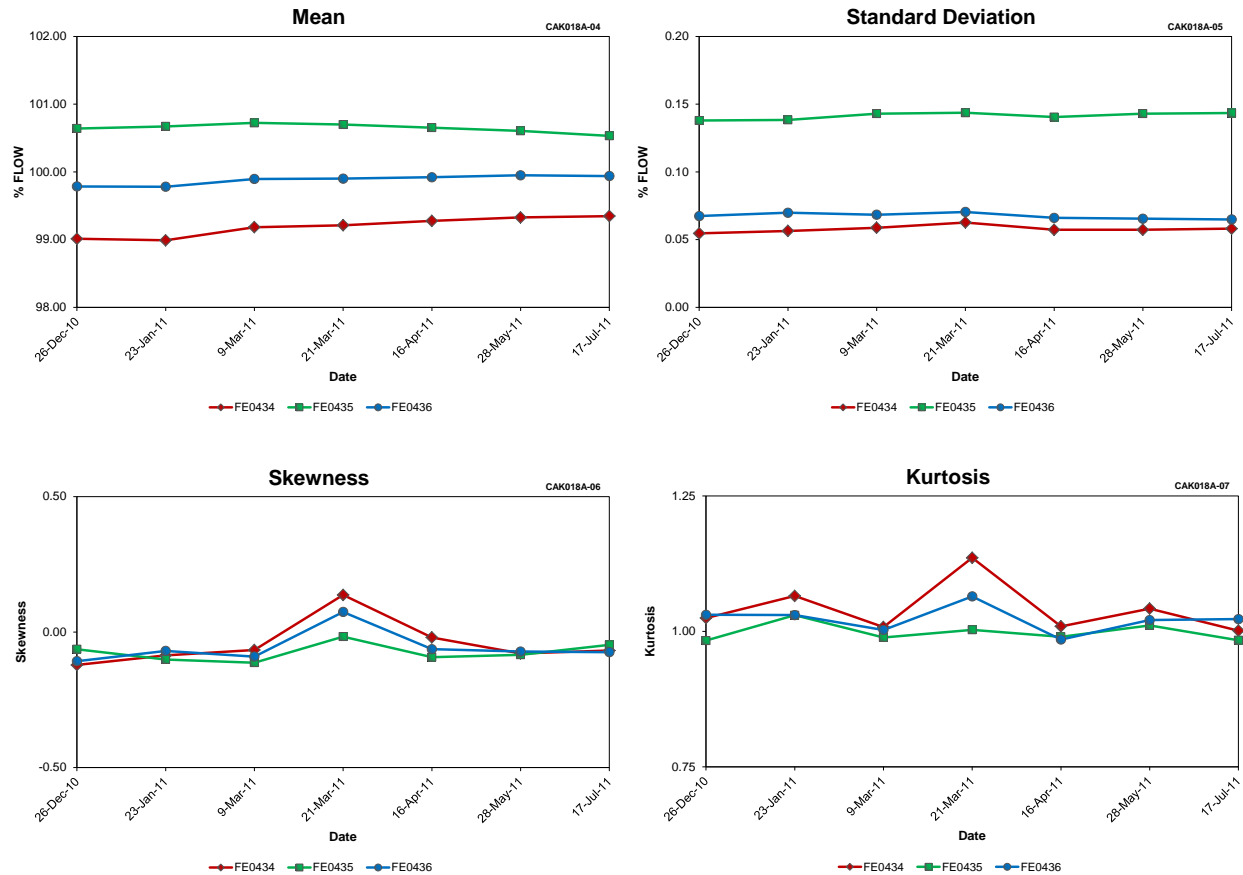


Figure C.78 RCS LOOP C FLOW Data Quality Statistics at Farley Unit 1 (Cycle 24)

Table C.17 RCS LOOP C FLOW Data Quality for Farley Unit 1 (Cycle 24)

Result Type	Tag Names		
	FE0434	FE0435	FE0436
Mean	99.19	100.65	99.88
Std. Dev.	0.06	0.14	0.07
Skewness	-0.04	-0.07	-0.06
Kurtosis	1.04	1.00	1.02



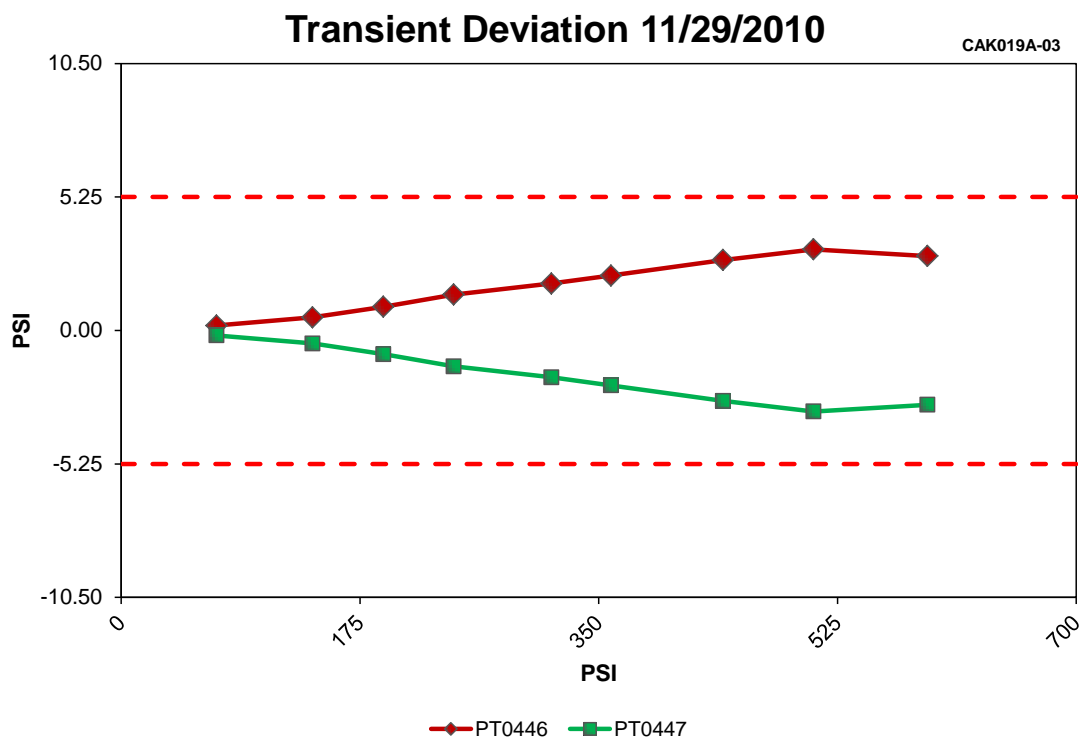


Figure C.79 TBIN FIRST STAGE PRESSURE at Farley Unit 1 (Cycle 24)

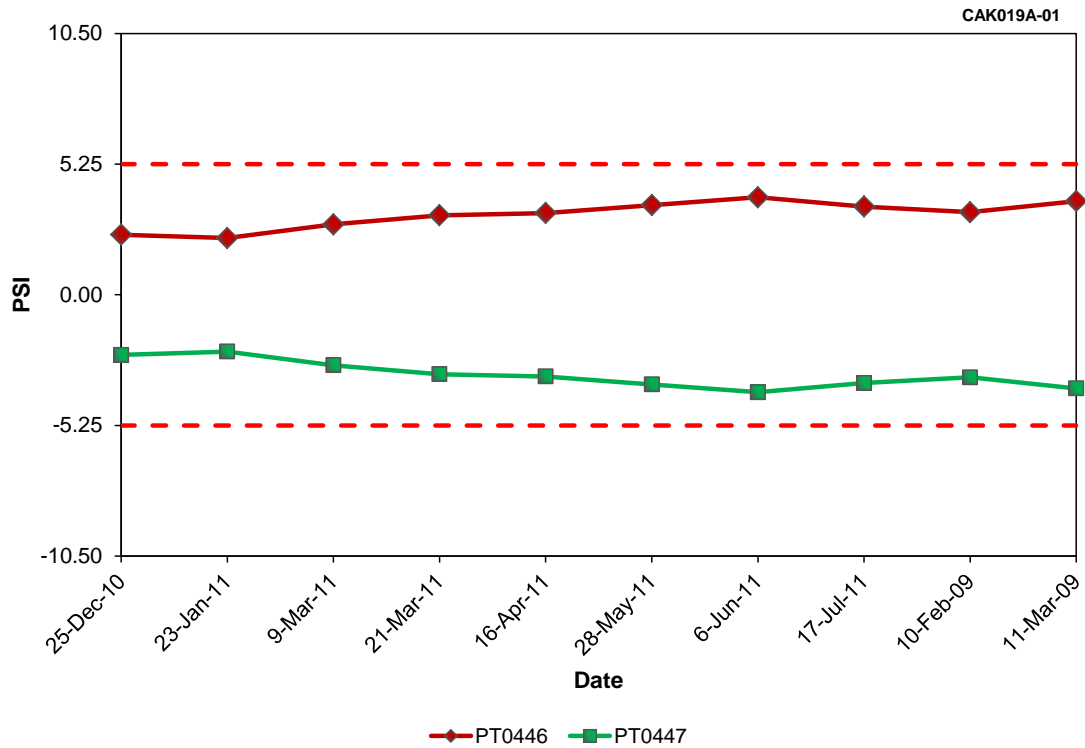


Figure C.80 TBIN FIRST STAGE PRESSURE Steady-State Deviation at Farley Unit 1 (Cycle 24)

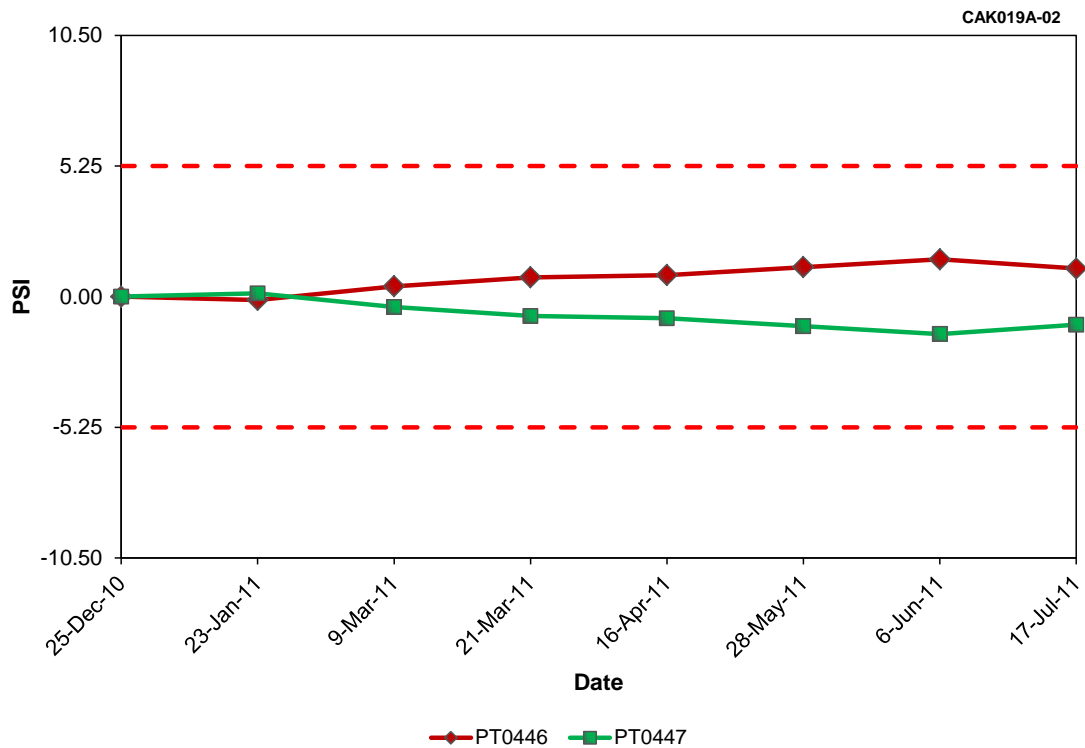


Figure C.81 TBIN FIRST STAGE PRESSURE Steady-State Drift at Farley Unit 1 (Cycle 24)

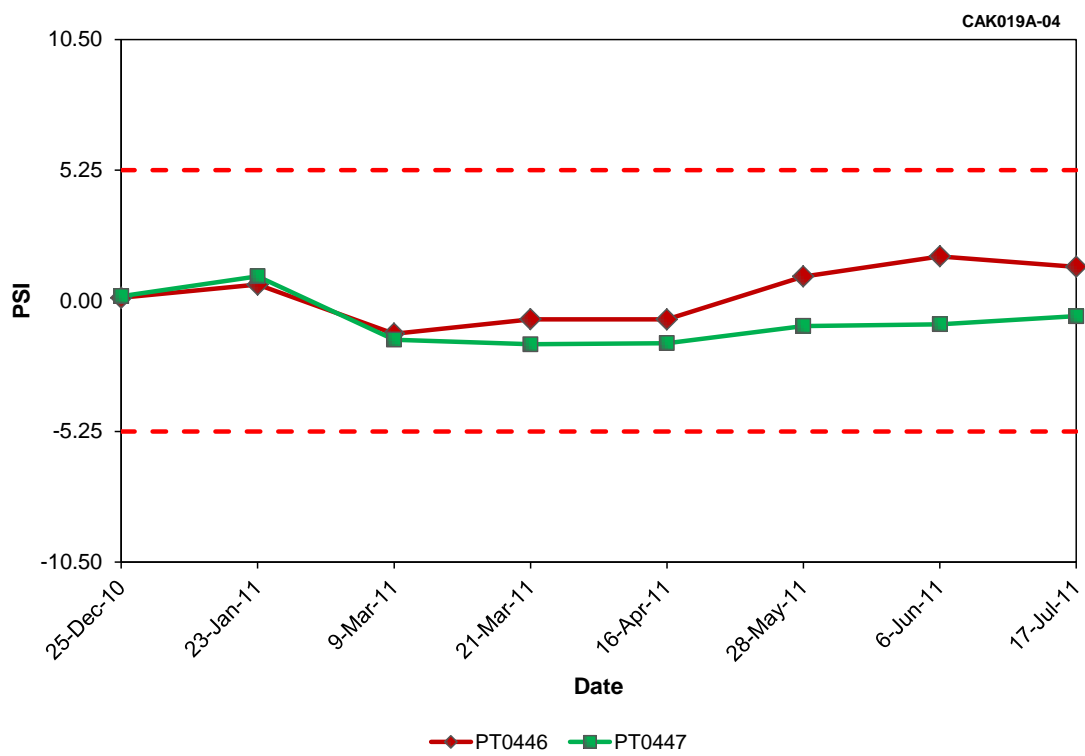
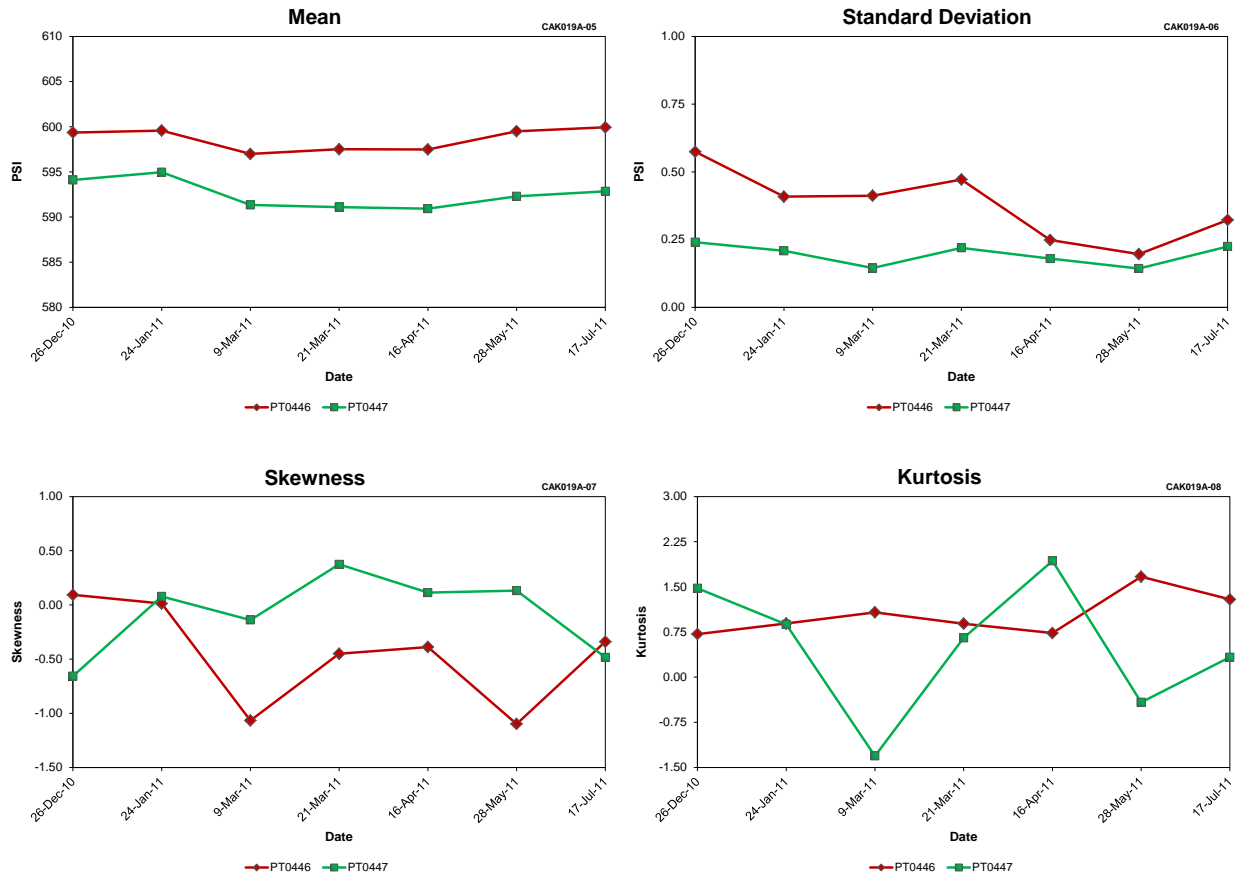


Figure C.82 TBIN FIRST STAGE PRESSURE Steady-State Residual AAKR at Farley Unit 1 (Cycle 24)



**Figure C.83 TBIN FIRST STAGE PRESSURE Data Quality Statistics at Farley Unit 1 (Cycle 24)**

**Table C.18 TBIN FIRST STAGE PRESSURE Data Quality for Farley Unit 1 (Cycle 24)**

Result Type	Tag Names	
	PT0446	PT0447
Mean	598.62	592.51
Std. Dev.	0.38	0.19
Skewness	-0.46	-0.08
Kurtosis	1.04	0.51

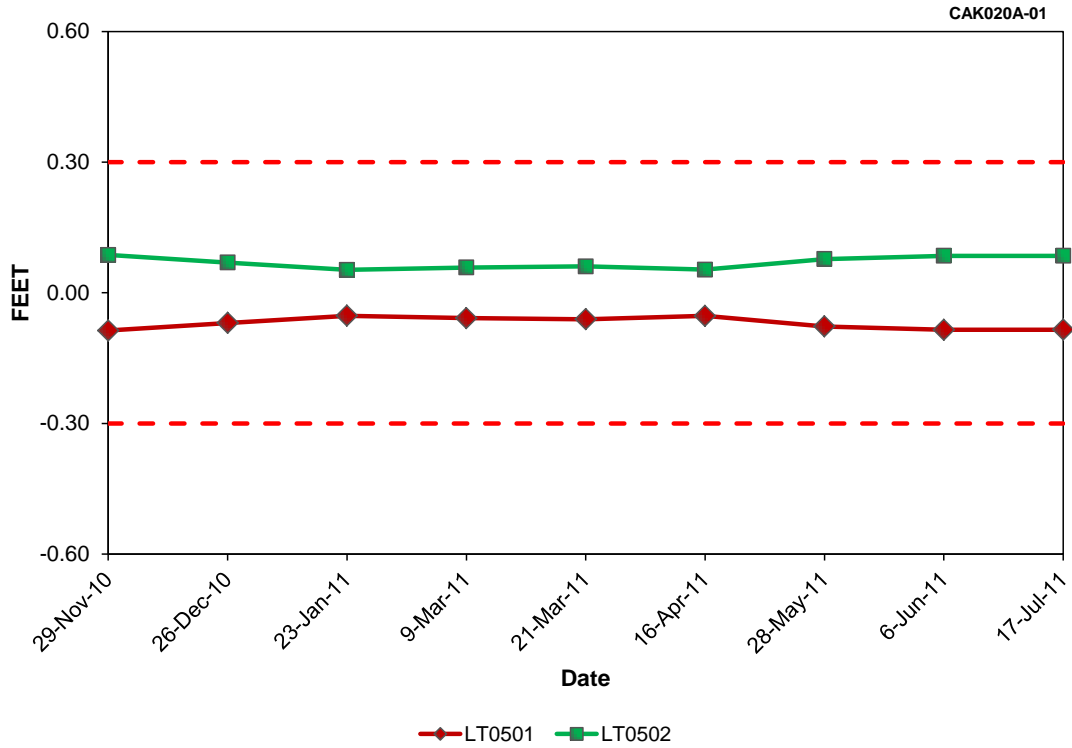


Figure C.84 RWST LVL Steady-State Deviation at Farley Unit 1 (Cycle 24)

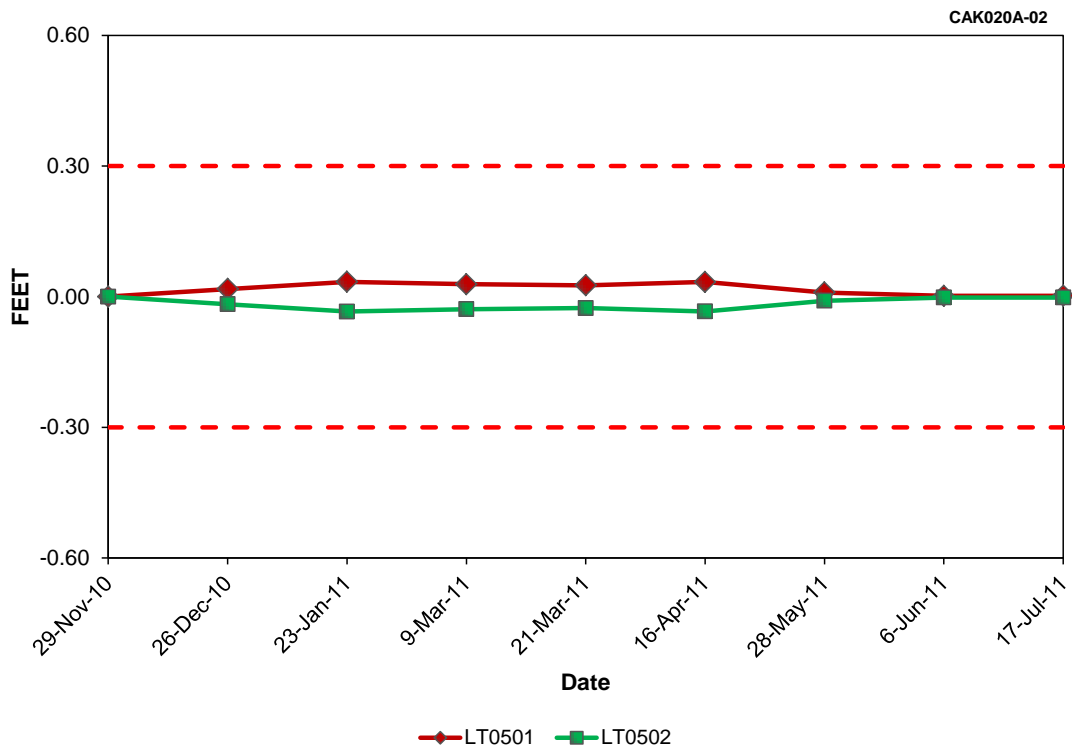


Figure C.85 RWST LVL Steady-State Drift at Farley Unit 1 (Cycle 24)



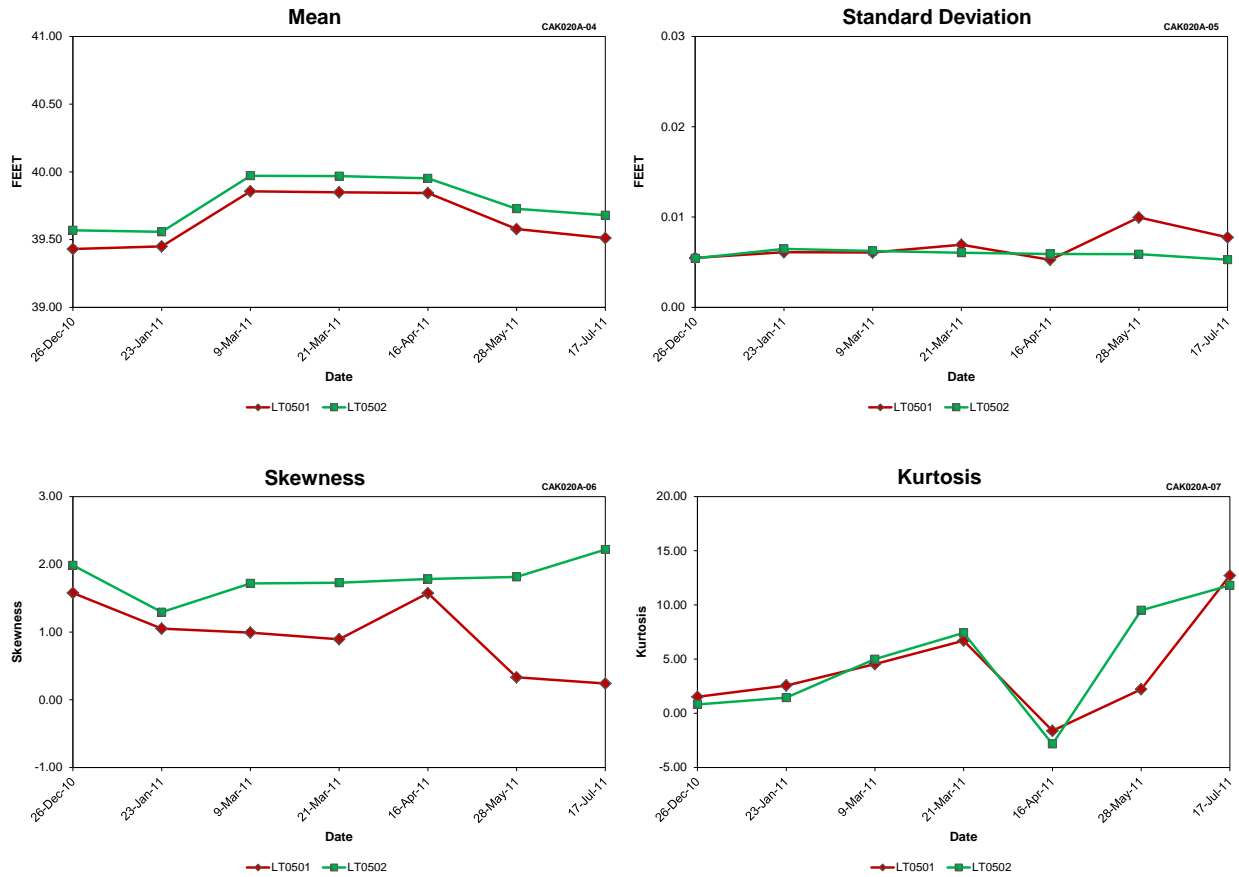


Figure C.86 RWST LVL Data Quality Statistics at Farley Unit 1 (Cycle 24)

Table C.19 RWST LVL Data Quality for Farley Unit 1 (Cycle 24)

Result Type	Tag Names	
	LT0501	LT0502
Mean	39.65	39.78
Std. Dev.	0.01	0.01
Skewness	0.95	1.79
Kurtosis	4.09	4.74

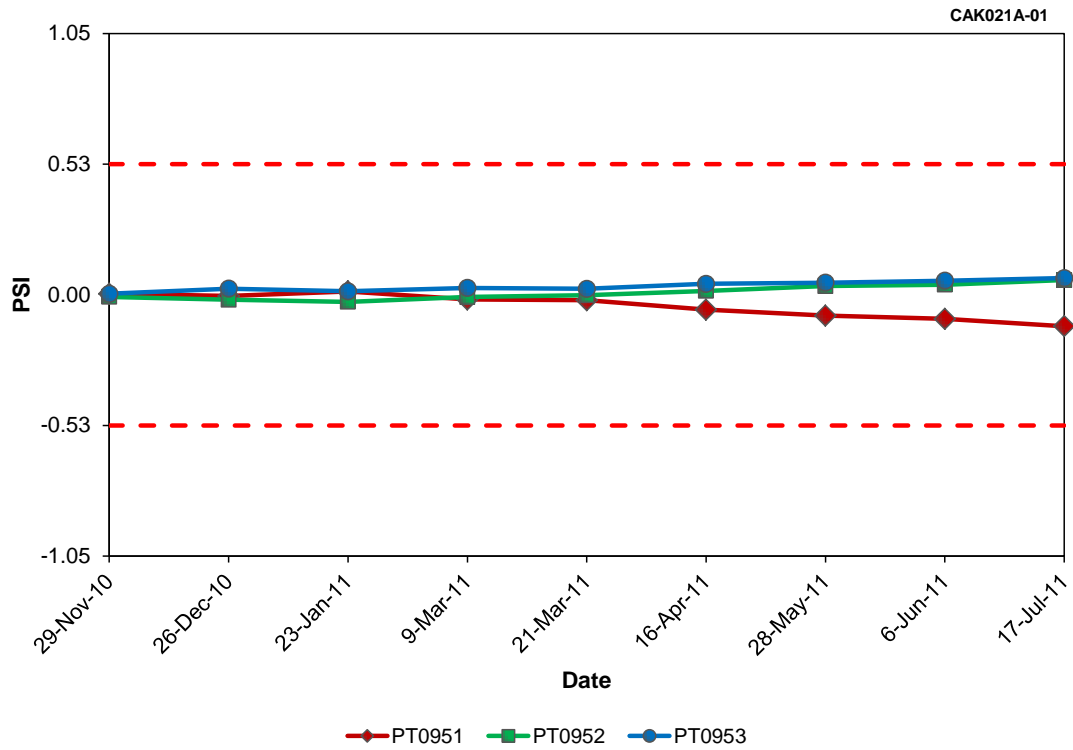


Figure C.87 CTMT PSR Steady-State Deviation at Farley Unit 1 (Cycle 24)

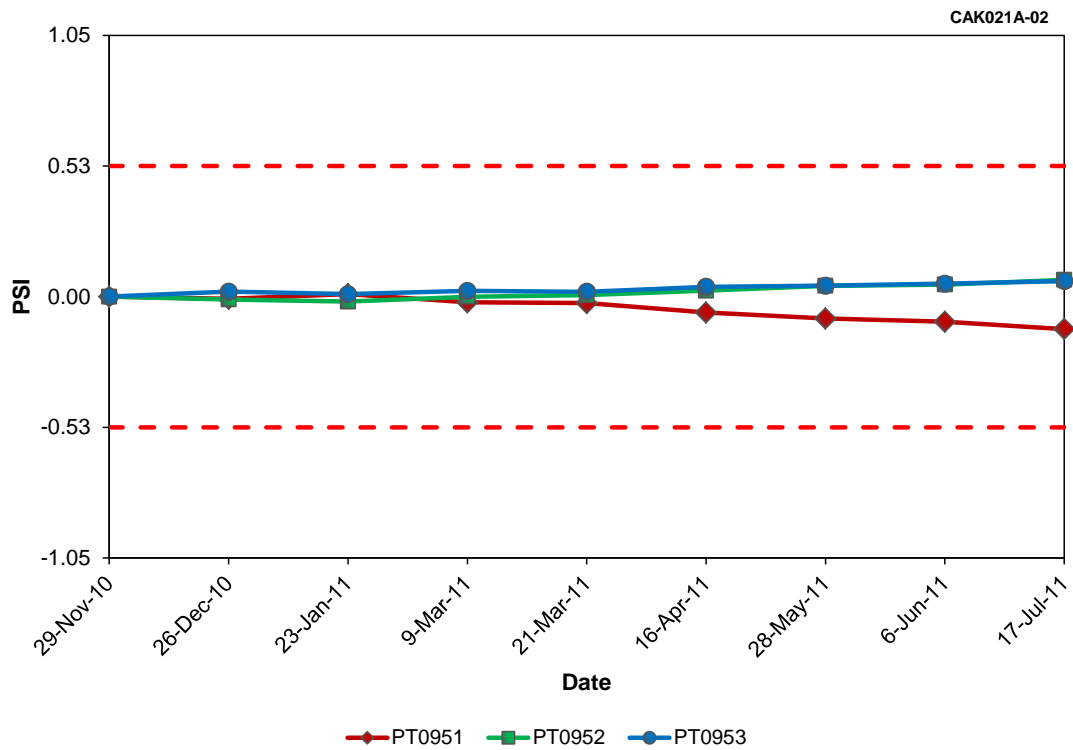


Figure C.88 CTMT PSR Steady-State Drift at Farley Unit 1 (Cycle 24)

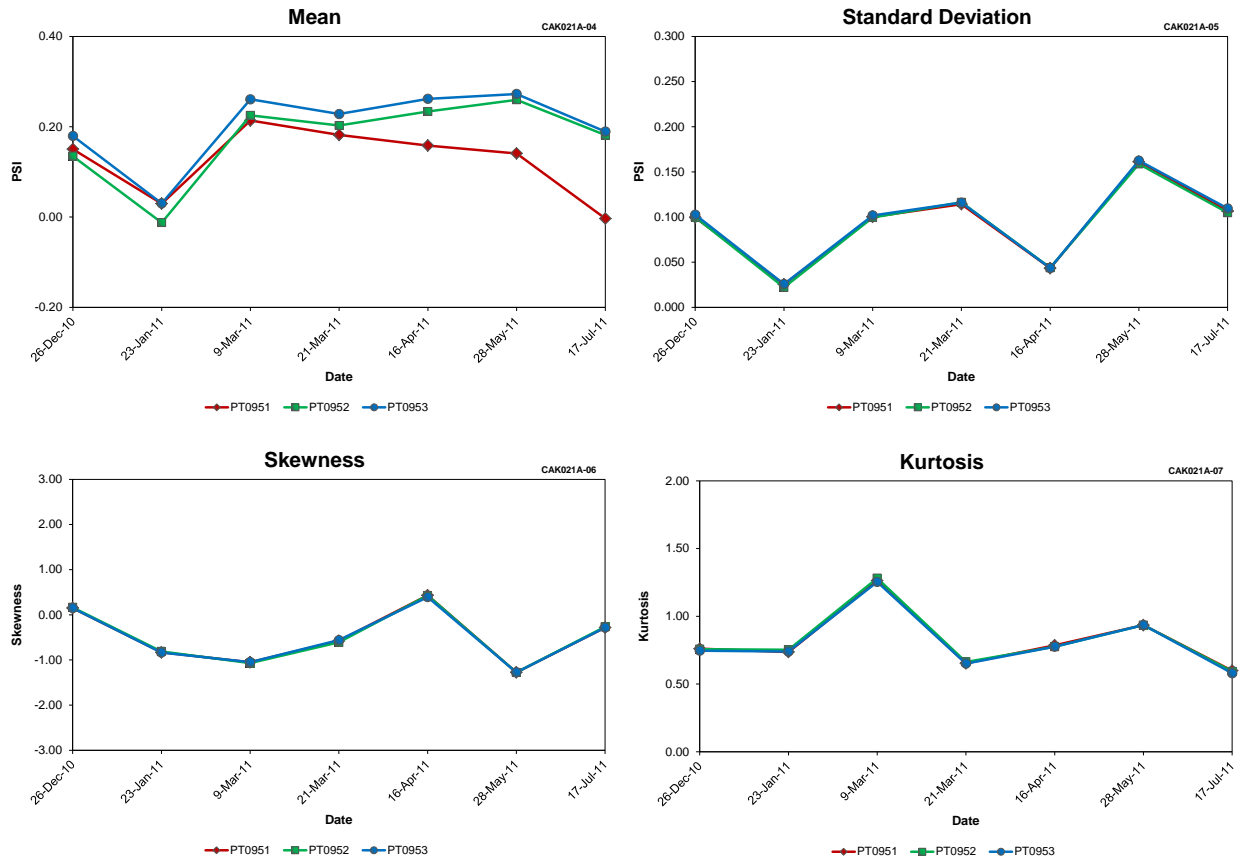


Figure C.89 CTMT PSR Data Quality Statistics at Farley Unit 1 (Cycle 24)

Table C.20 CTMT PSR Data Quality for Farley Unit 1 (Cycle 24)

Result Type	Tag Names		
	PT0951	PT0952	PT0953
Mean	0.12	0.17	0.20
Std. Dev.	0.09	0.09	0.09
Skewness	-0.49	-0.49	-0.49
Kurtosis	0.82	0.82	0.81

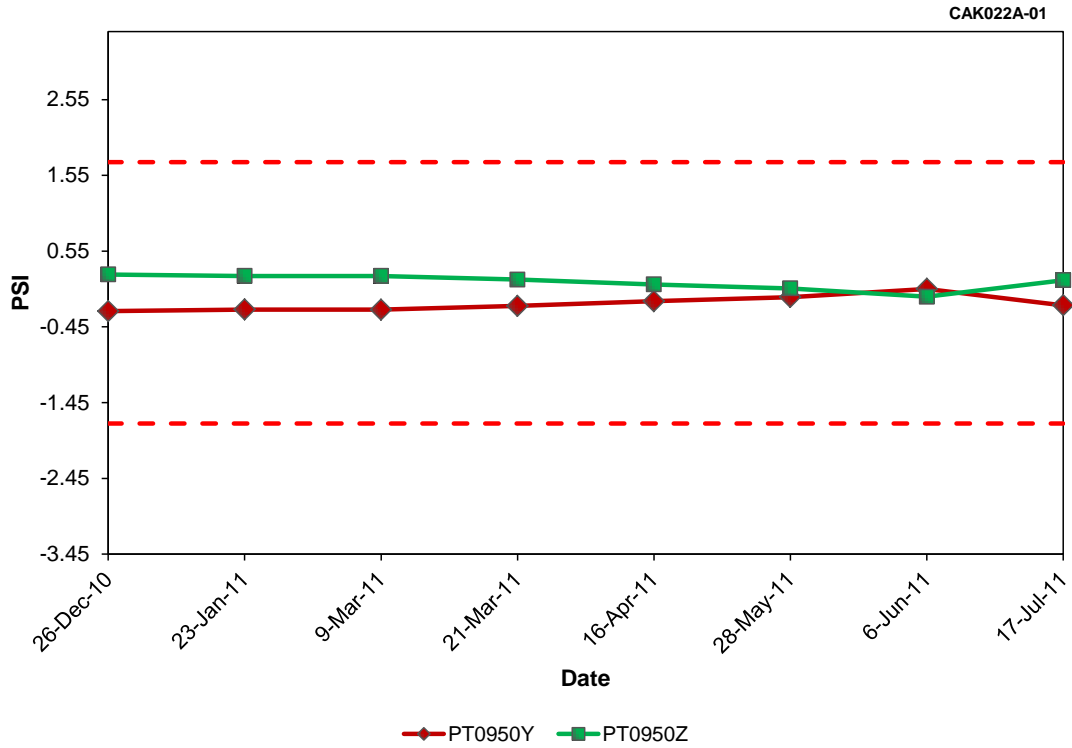


Figure C.90 CTMT PSR EXT RANGE Steady-State Deviation at Farley Unit 1 (Cycle 24)

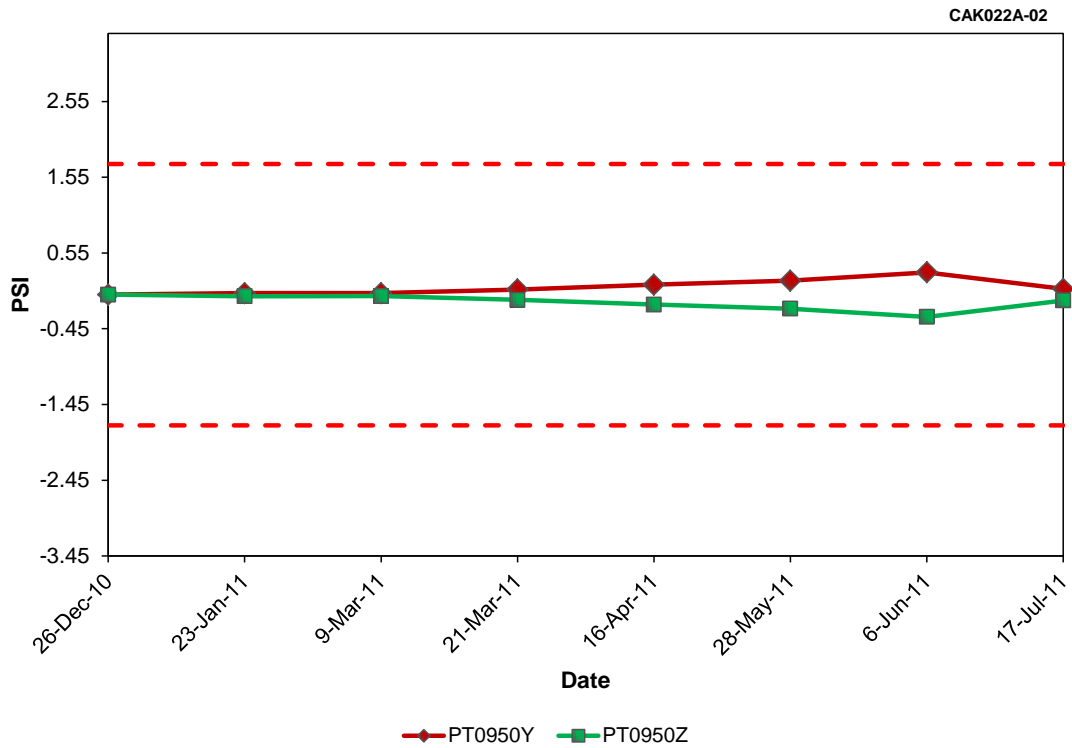
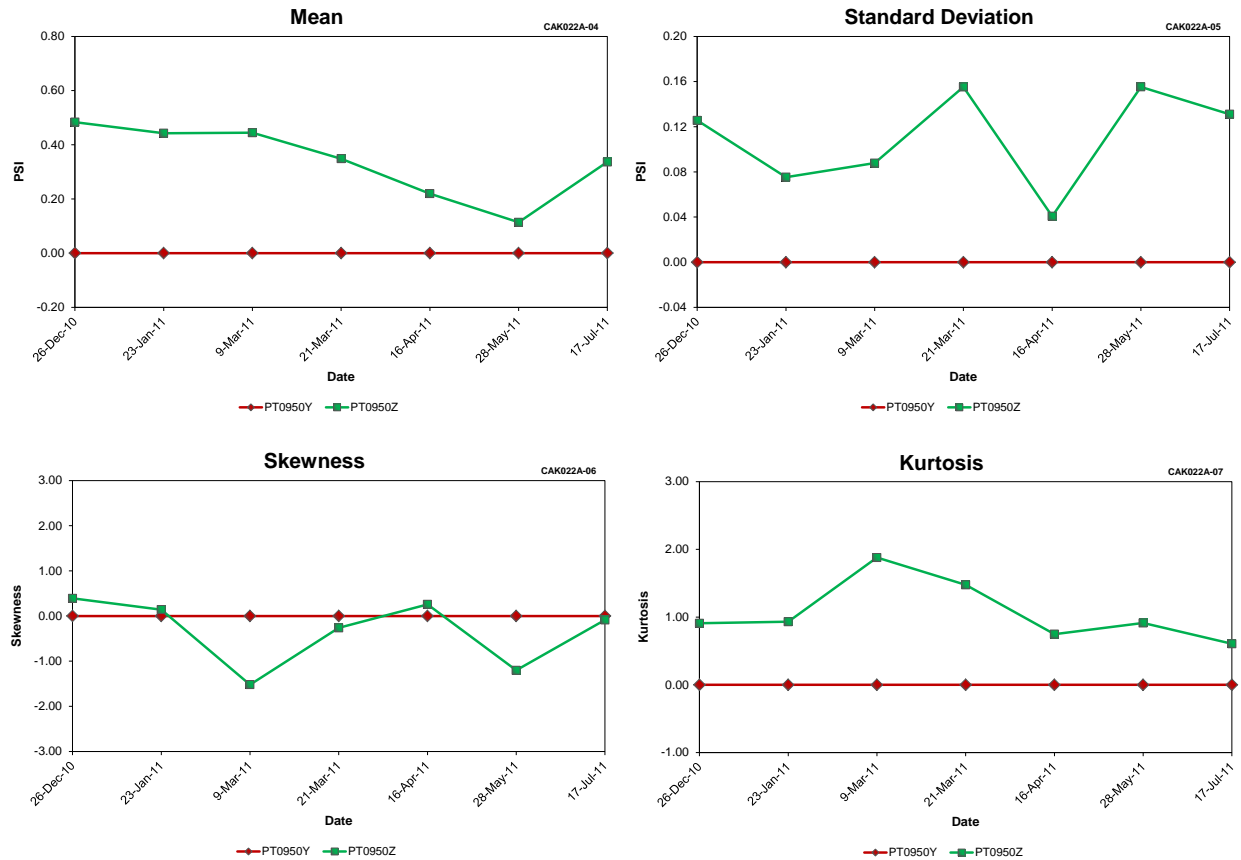


Figure C.91 CTMT PSR EXT RANGE Steady-State Drift at Farley Unit 1 (Cycle 24)



**Figure C.92 CTMT PSR EXT RANGE Data Quality Statistics at Farley Unit 1 (Cycle 24)**

**Table C.21 CTMT PSR EXT RANGE Data Quality for Farley Unit 1 (Cycle 24)**

Result Type	Tag Names	
	PT0950Y	PT0950Z
Mean	0.00	0.34
Std. Dev.	0.00	0.11
Skewness	0.00	-0.33
Kurtosis	0.00	1.07

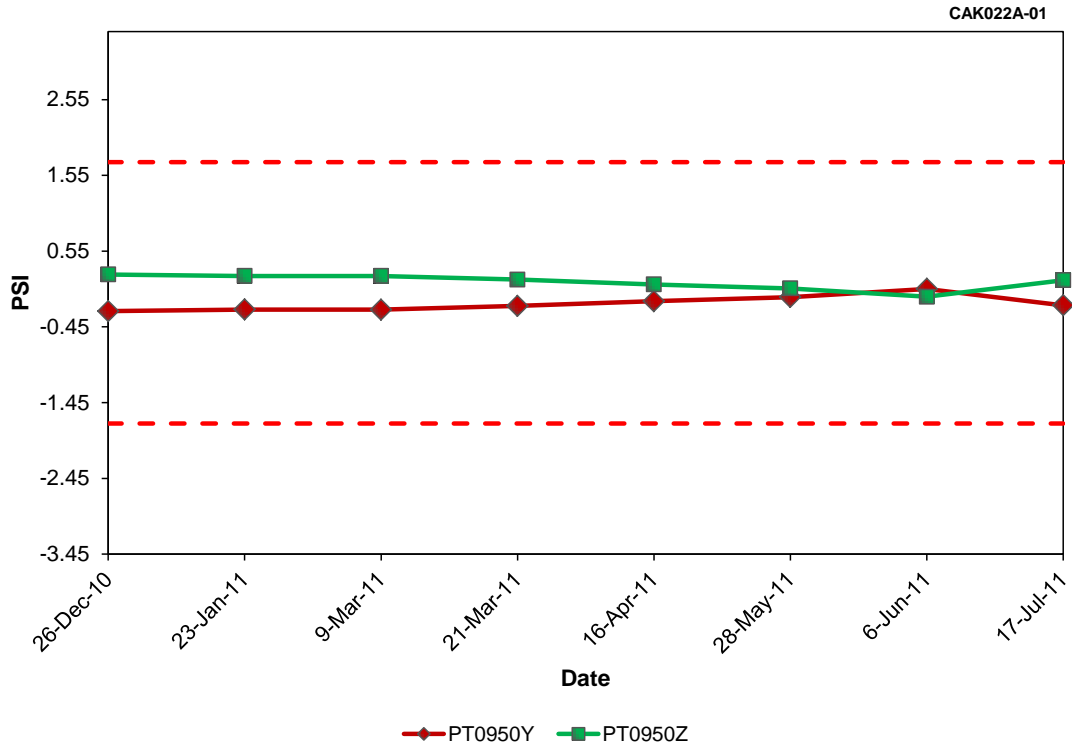


Figure C.90 CTMT PSR EXT RANGE Steady-State Deviation at Farley Unit 1 (Cycle 24)

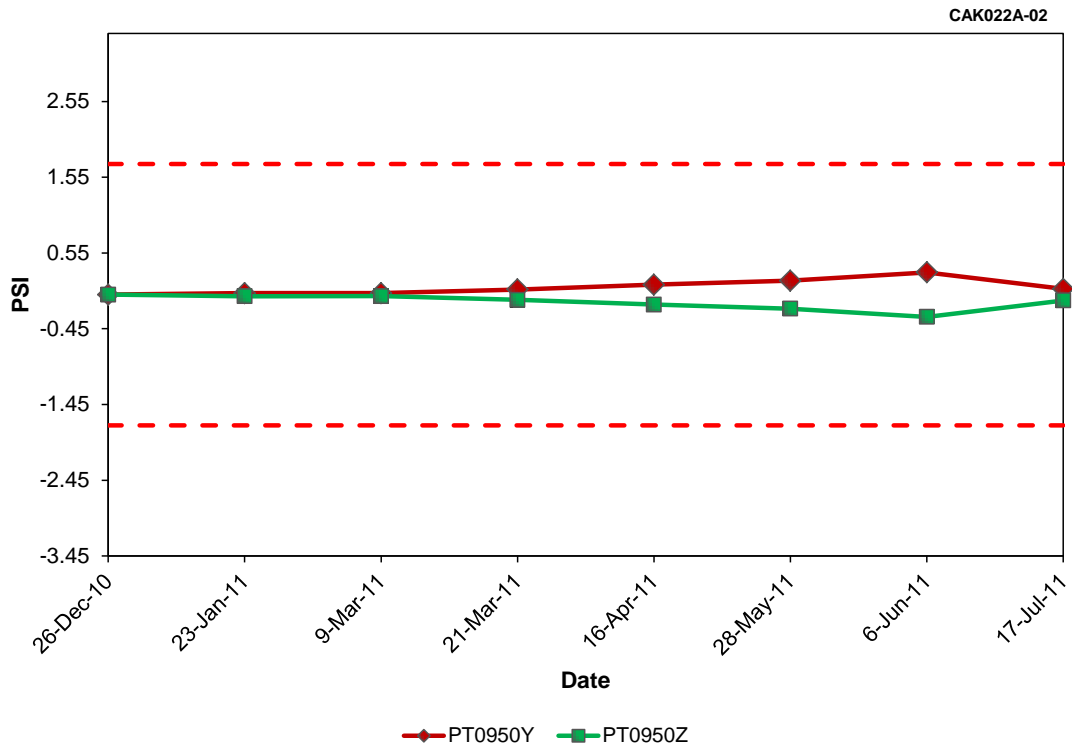


Figure C.91 CTMT PSR EXT RANGE Steady-State Drift at Farley Unit 1 (Cycle 24)

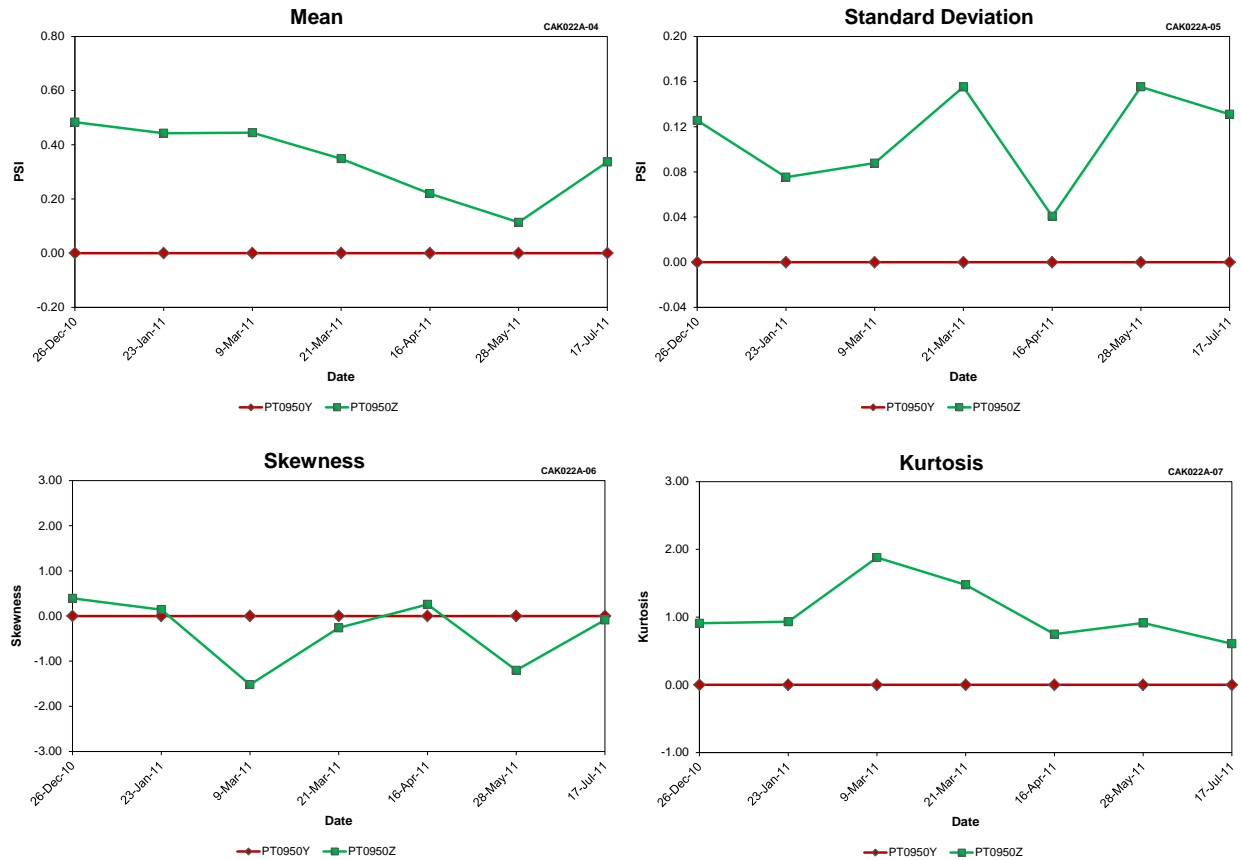


Figure C.92 CTMT PSR EXT RANGE Data Quality Statistics at Farley Unit 1 (Cycle 24)

Result Type	Tag Names	
	PT0950Y	PT0950Z
Mean	0.00	0.34
Std. Dev.	0.00	0.11
Skewness	0.00	-0.33
Kurtosis	0.00	1.07

Table C.21 CTMT PSR EXT RANGE Data Quality for Farley Unit 1 (Cycle 24)

## **APPENDIX D**

### **Farley Unit 2 OLM Results (Cycle 20)**





Item	Tagname	Service	23 Aug 2009	22 Sep 2009	23 Oct 2009	23 Nov 2009	31 Dec 2009	16 Jan 2010	22 Feb 2010	22 Mar 2010	4 Apr 2010	Drift	Final	Comment
1	FE0474B	SG A STEAM FLOW											PASS	
2	FE0475B	SG A STEAM FLOW											PASS	
3	FE0476B	FW FLOW TO SG A											PASS	
4	FE0477B	FW FLOW TO SG A											PASS	
5	LT0474	SG A NARROW RANGE LEVEL											PASS	
6	LT0475	SG A NARROW RANGE LEVEL											PASS	
7	LT0476	SG A NARROW RANGE LEVEL											PASS	
8	LT0477	SG A WIDE RANGE LEVEL						M	M				FAIL	Drift over cycle
9	PT0474	SG A OUTLET PRESSURE											PASS	
10	PT0475	SG A OUTLET PRESSURE											PASS	
11	PT0476	SG A OUTLET PRESSURE			R	R	R	R	R	R	R		FAIL	Low bias
12	FE0484B	SG B STEAM FLOW									R		PASS	Only out in low range transient
13	FE0485B	SG B STEAM FLOW									R		PASS	Only out in low range transient
14	FE0486B	FW FLOW TO SG B											PASS	
15	FE0487B	FW FLOW TO SG B											PASS	
16	LT0484	SG B NARROW RANGE LEVEL											PASS	
17	LT0485	SG B NARROW RANGE LEVEL									R		FAIL	High bias in shutdown data
18	LT0486	SG B NARROW RANGE LEVEL											PASS	
19	LT0487	SG B WIDE RANGE LEVEL											PASS	
20	PT0484	SG B OUTLET PRESSURE											PASS	
21	PT0485	SG B OUTLET PRESSURE											PASS	
22	PT0486	SG B OUTLET PRESSURE											PASS	
23	FE0494B	SG C STEAM FLOW									R		PASS	Only out in low range transient
24	FE0495B	SG C STEAM FLOW									R		PASS	Only out in low range transient
25	FE0496B	FW FLOW TO SG C											PASS	
26	FE0497B	FW FLOW TO SG C											PASS	
27	LT0494	SG C NARROW RANGE LEVEL											PASS	
28	LT0495	SG C NARROW RANGE LEVEL											PASS	
29	LT0496	SG C NARROW RANGE LEVEL											PASS	
30	LT0497	SG C WIDE RANGE LEVEL							M				FAIL	Drift over cycle

*R = Exceeded Redundant Sensor Analysis Limits    M = Exceeded Model Analysis Limits    D = Exceeded Drift Limits*

**Table D.1 Farley Unit 2 OLM Results Summary (Cycle 20)**



Item	Tagname	Service	23 Aug 2009	22 Sep 2009	23 Oct 2009	23 Nov 2009	31 Dec 2009	16 Jan 2010	22 Feb 2010	22 Mar 2010	4 Apr 2010	Drift	Final	Comment
31	PT0494	SG C OUTLET PRESSURE											PASS	
32	PT0495	SG C OUTLET PRESSURE											PASS	
33	PT0496	SG C OUTLET PRESSURE											PASS	
34	LT0459	PRESSURIZER LEVEL											PASS	
35	LT0460	PRESSURIZER LEVEL											PASS	
36	LT0461	PRESSURIZER LEVEL									R		FAIL	Low bias in shutdown data
37	PT0455	PRESSURIZER PRESSURE			M	R,M	R,M	R,M	R,M	R,M		D	PASS	Drift during cycle. Good in shutdown.
38	PT0456	PRESSURIZER PRESSURE						M	M				PASS	Drift during cycle. Good in shutdown.
39	PT0457	PRESSURIZER PRESSURE			M		R,M	R,M	R,M			D	PASS	Drift during cycle. Good in shutdown.
40	PT0444A	PRESSURIZER PRESSURE											PASS	
41	PT0445A	PRESSURIZER PRESSURE											PASS	
42	FE0414	RCS LOOP A FLOW											PASS	
43	FE0415	RCS LOOP A FLOW											PASS	
44	FE0416	RCS LOOP A FLOW	R	R	R	R	R	R	R	R			FAIL	Low bias
45	FE0424	RCS LOOP B FLOW											PASS	
46	FE0425	RCS LOOP B FLOW						M	M				PASS	Process change
47	FE0426	RCS LOOP B FLOW											PASS	
48	FE0434	RCS LOOP C FLOW											PASS	
49	FE0435	RCS LOOP C FLOW											PASS	
50	FE0436	RCS LOOP C FLOW											PASS	
51	PT0402	RCS WIDE RANGE PRESSURE LOOP C											PASS	
52	PT0403	RCS WIDE RANGE PRESSURE LOOP A											PASS	
53	PT0446	TURBINE FIRST STAGE PRESSURE											PASS	
54	PT0447	TURBINE FIRST STAGE PRESSURE											PASS	
55	LT0501	RWST LEVEL											PASS	
56	LT0502	RWST LEVEL											PASS	
57	PT0951	CTMT PRESSURE											PASS	
58	PT0952	CTMT PRESSURE											PASS	
59	PT0953	CTMT PRESSURE											PASS	
60	PT0950Y	CTMT PRESSURE EXTENDED RANGE											PASS	
61	PT0950Z	CTMT PRESSURE EXTENDED RANGE											PASS	

*R = Exceeded Redundant Sensor Analysis Limits    M = Exceeded Model Analysis Limits    D = Exceeded Drift Limits*

**Table D.1 (continued) Farley Unit 2 OLM Results Summary (Cycle 20)**



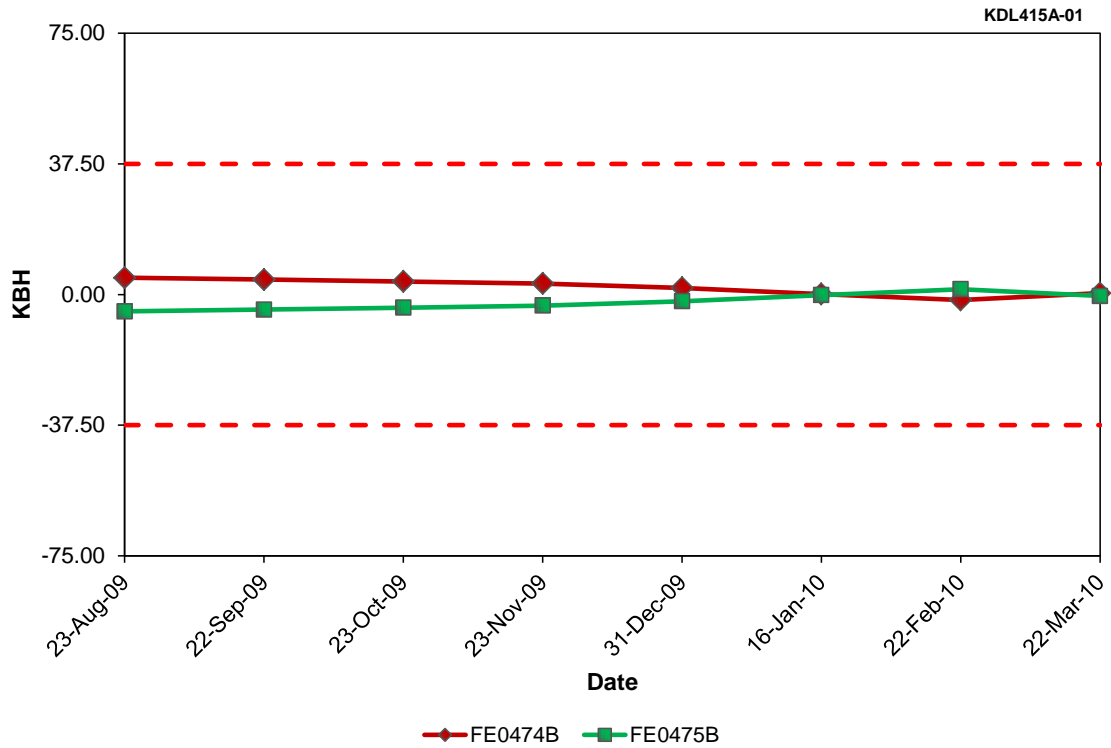


Figure D.1 SG A STEAM FLOW Steady-State Deviation at Farley Unit 2 (Cycle 20)

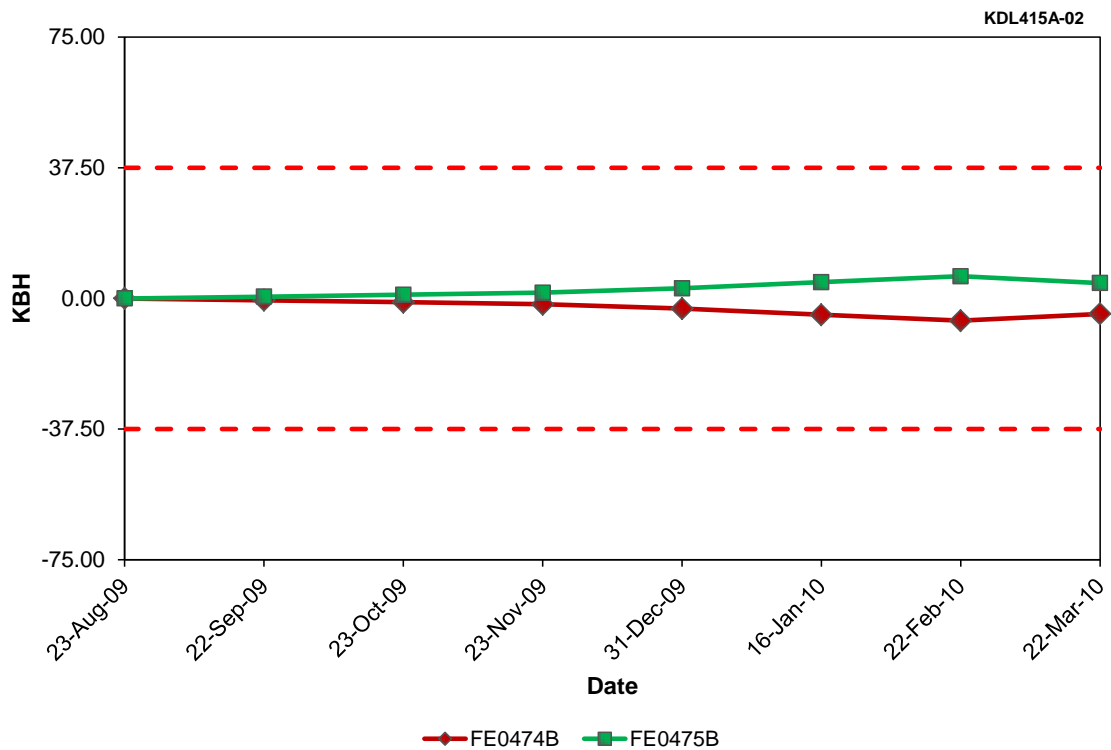


Figure D.2 SG A STEAM FLOW Steady-State Drift at Farley Unit 2 (Cycle 20)

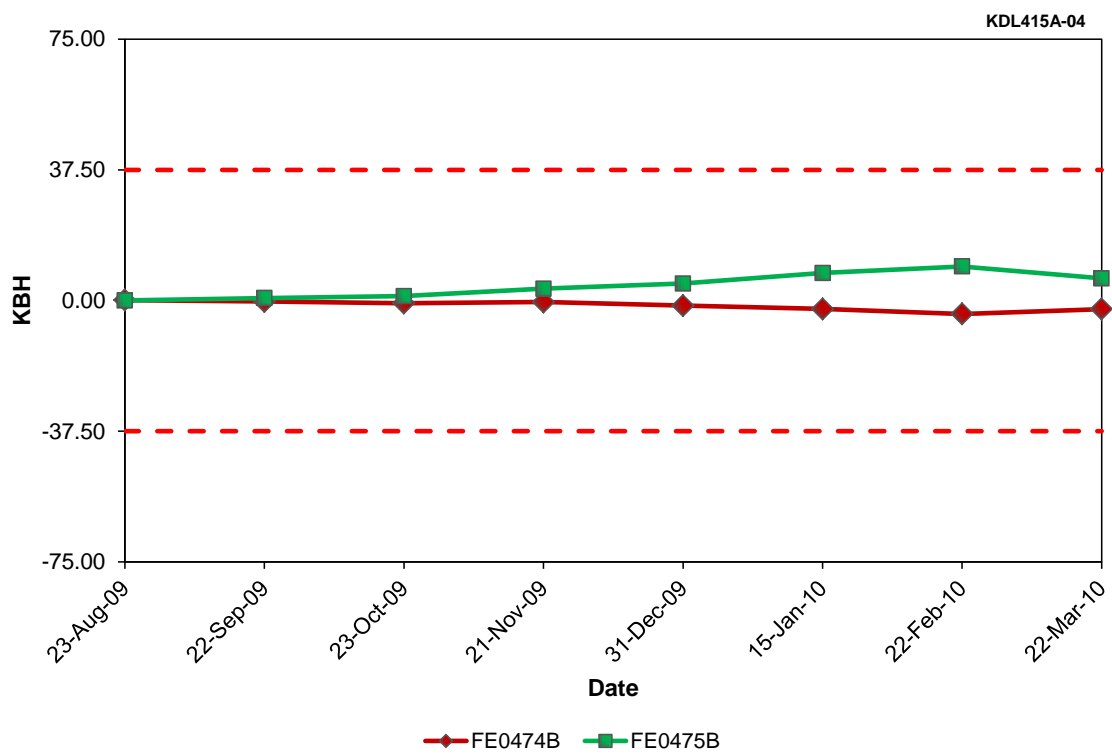


Figure D.3 SG A STEAM FLOW Steady-State Residual AAKR at Farley Unit 2 (Cycle 20)

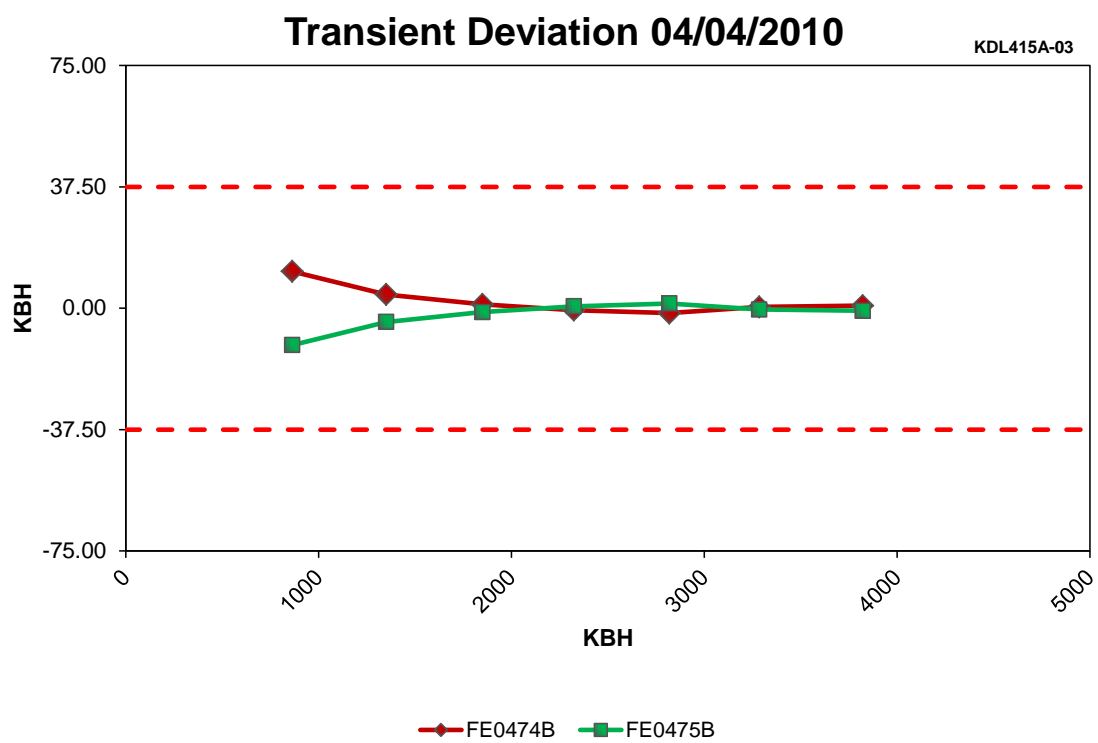
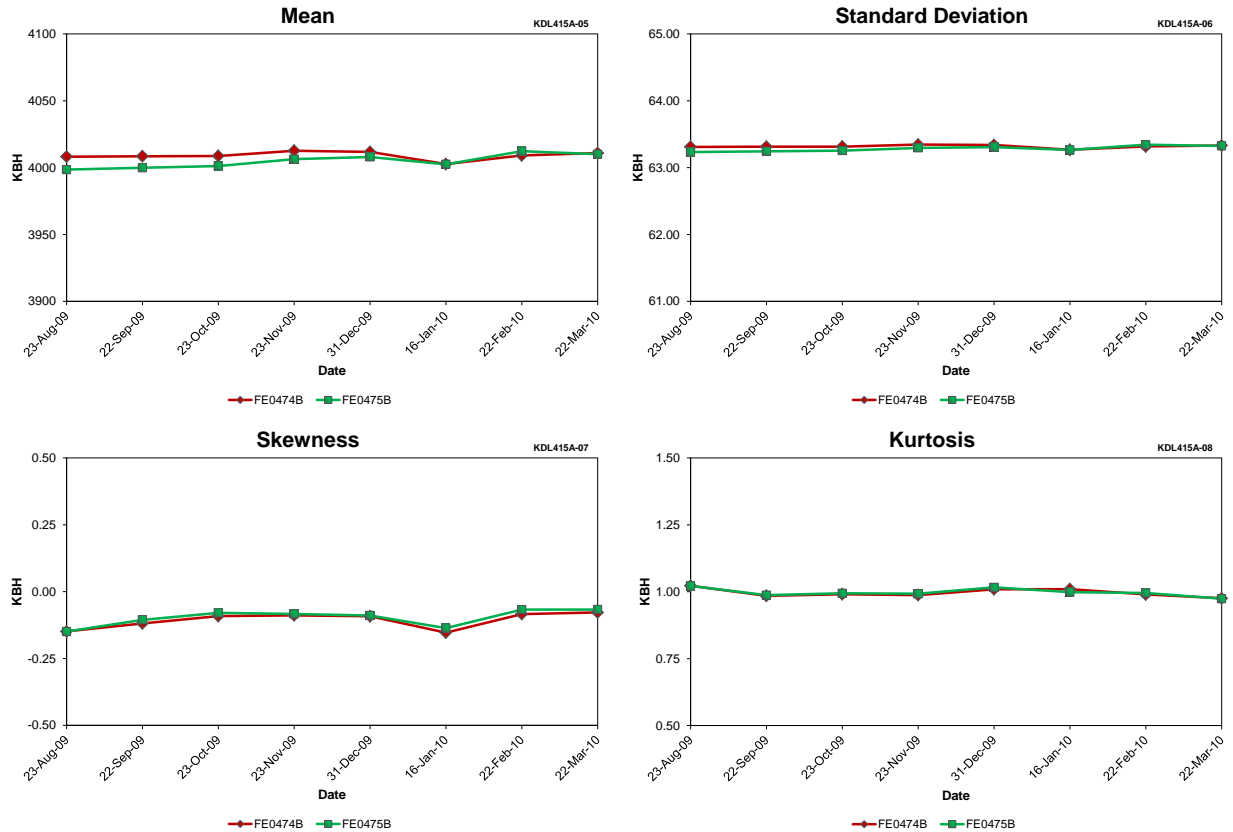


Figure D.4 SG A STEAM FLOW Transient Deviation at Farley Unit 2 (Cycle 20)





**Figure D.5 SG A STEAM FLOW Data Quality Statistics at Farley Unit 2 (Cycle 20)**

**Table D.1 SG A STEAM FLOW Data Quality for Farley Unit 2 (Cycle 20)**

Result Type	Tag Names	
	FE0474B	FE0475B
Mean	4009.08	4004.86
Std. Dev.	63.32	63.28
Skewness	-0.11	-0.10
Kurtosis	1.00	1.00

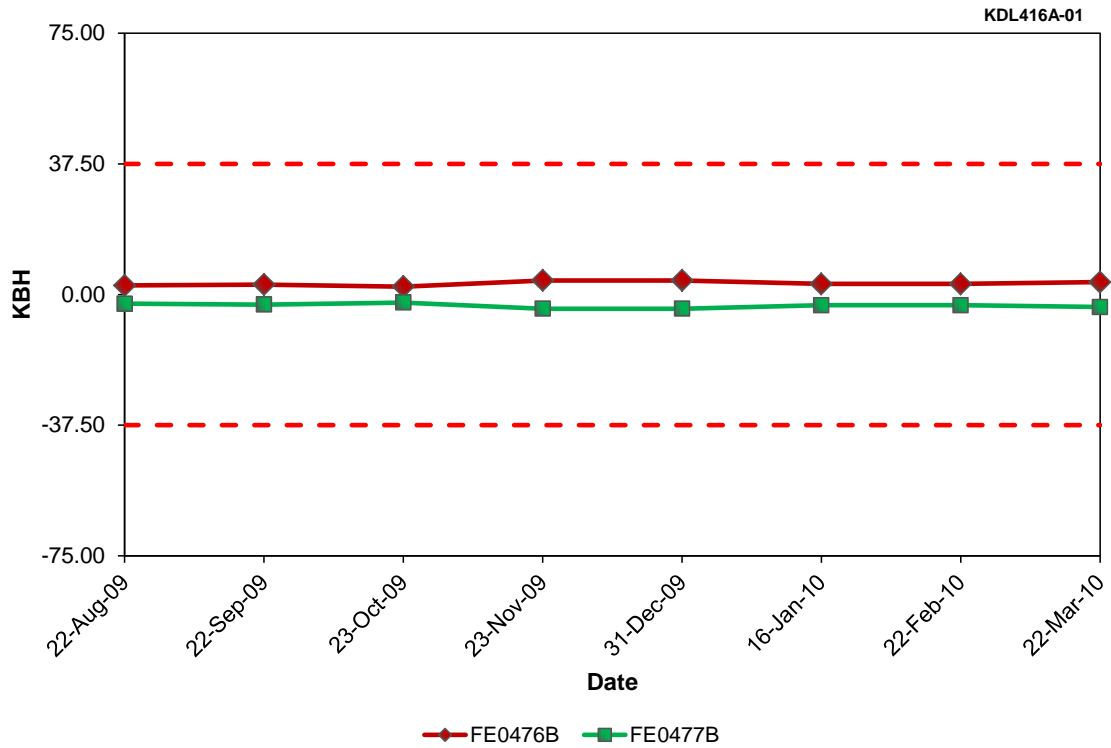


Figure D.6 FW FLOW TO SG A Steady-State Deviation at Farley Unit 2 (Cycle 20)

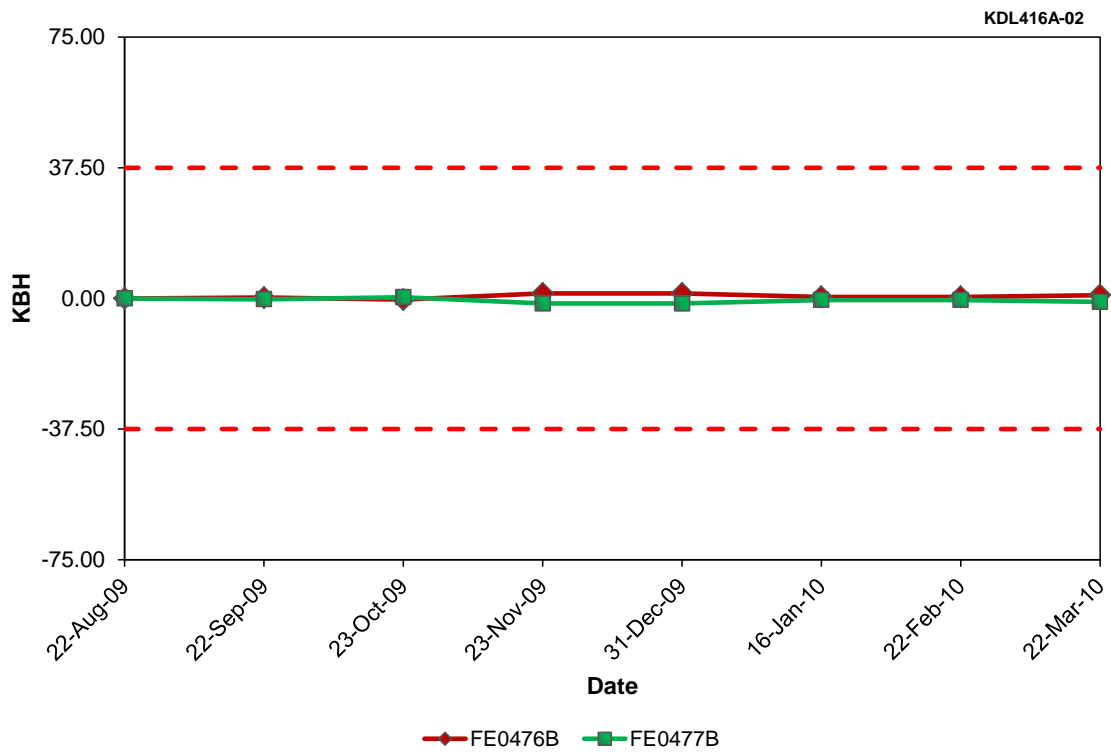
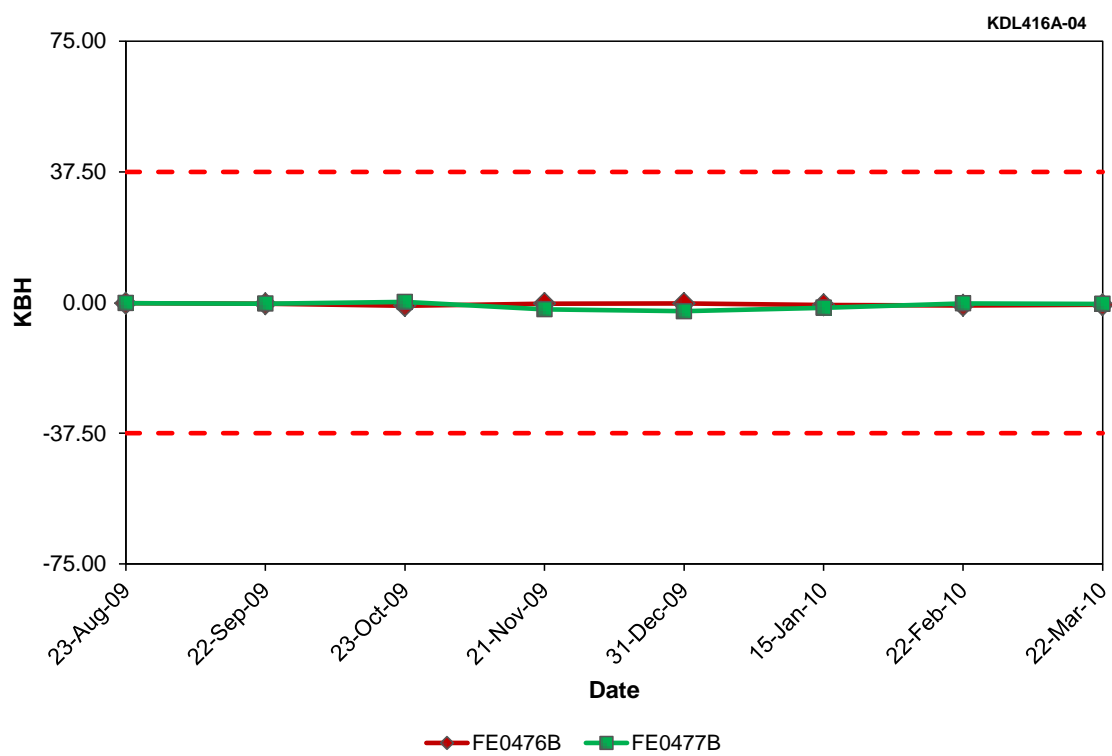


Figure D.7 FW FLOW TO SG A Steady-State Drift at Farley Unit 2 (Cycle 20)



**Figure D.8 FW FLOW TO SG A Steady-State Residual AAKR at Farley Unit 2 (Cycle 20)**

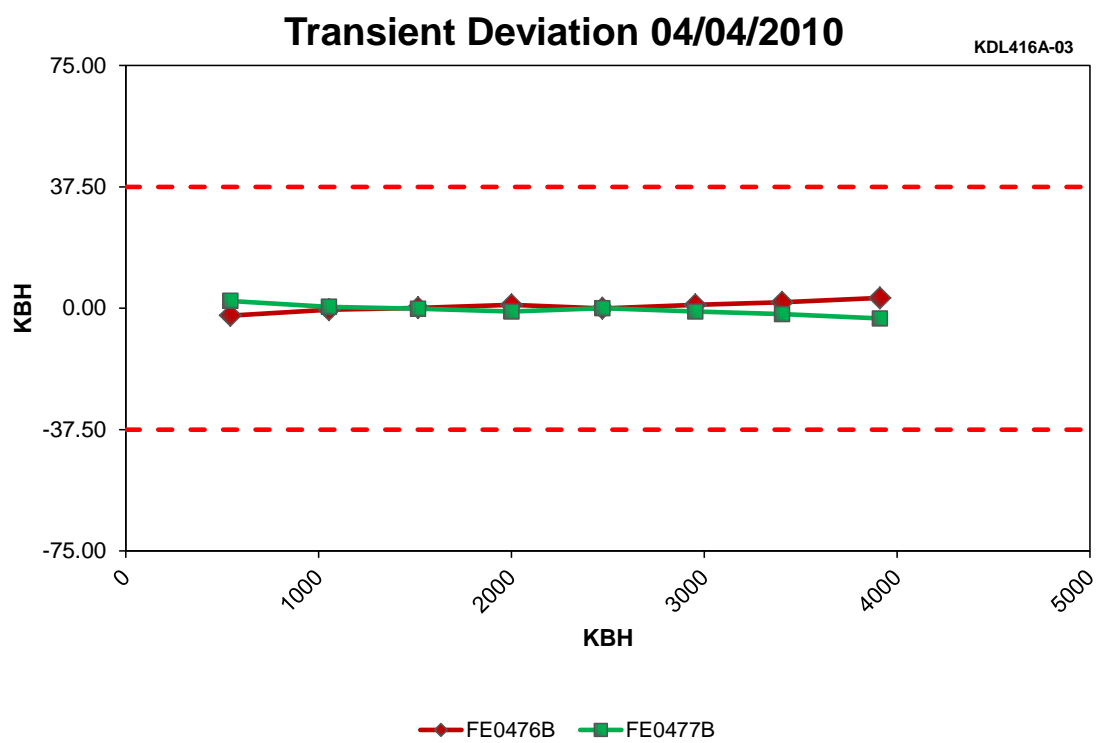


Figure D.8 FW FLOW TO SG A Transient Deviation at Farley Unit 2 (Cycle 20)

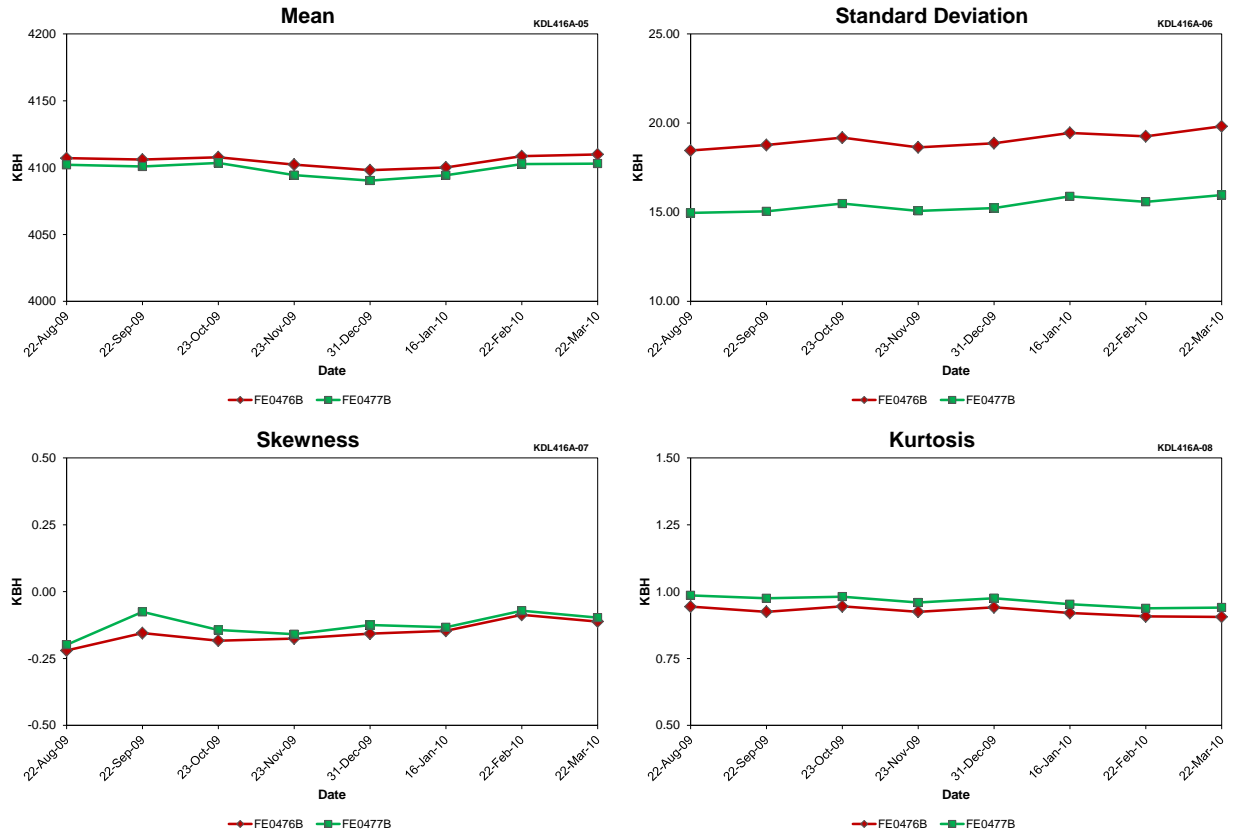


Figure D.9 FW FLOW TO SG A Data Quality Statistics at Farley Unit 2 (Cycle 20)

Table D.2 FW FLOW TO SG A Data Quality for Farley Unit 2 (Cycle 20)

Result Type	Tag Names	
	FE0476B	FE0477B
Mean	4105.00	4098.91
Std. Dev.	19.06	15.40
Skewness	-0.15	-0.13
Kurtosis	0.93	0.96

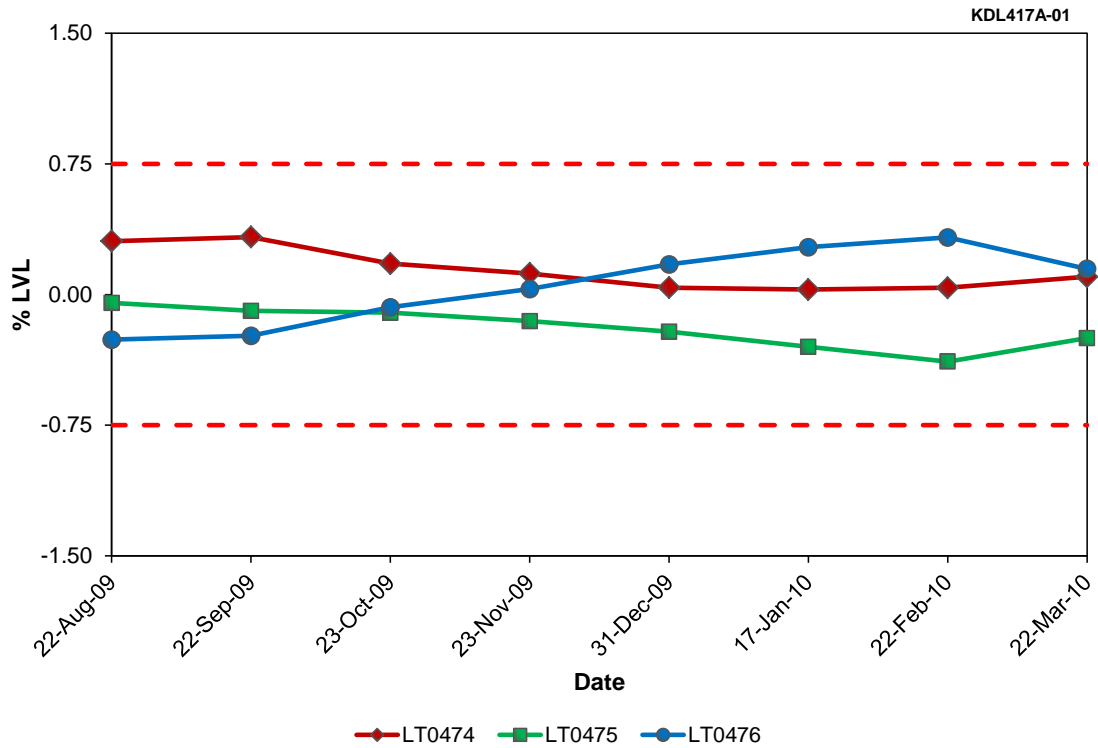


Figure D.10 SG A LEVEL Steady-State Deviation at Farley Unit 2 (Cycle 20)

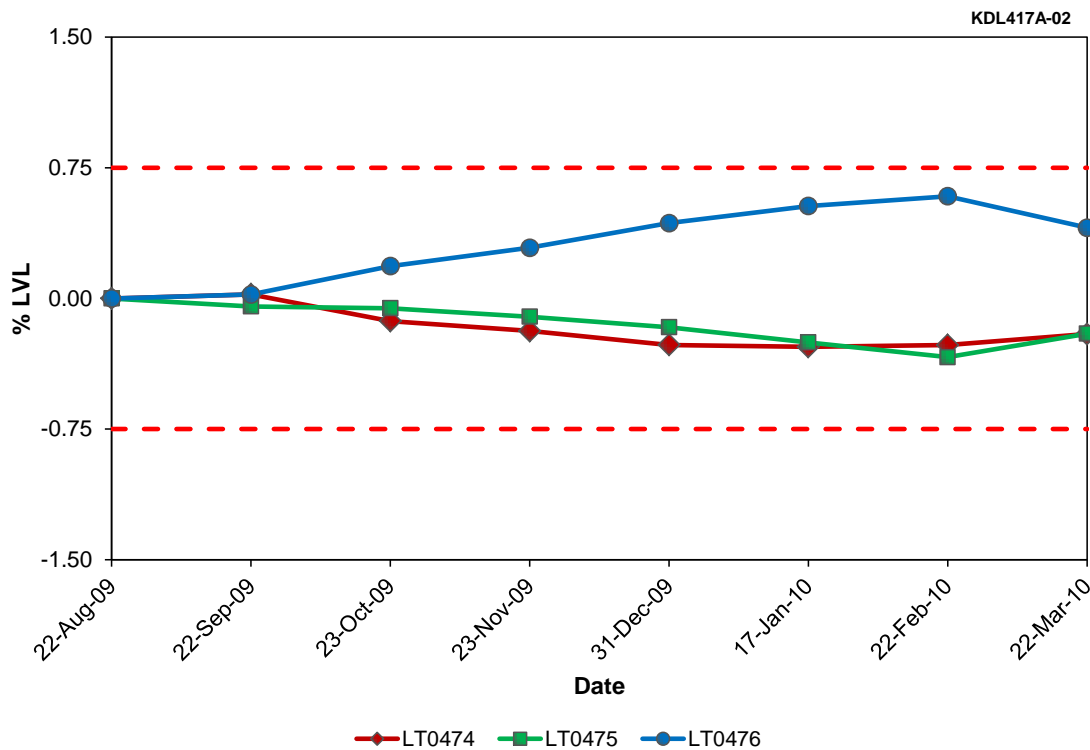


Figure D.11 SG A LEVEL Steady-State Drift at Farley Unit 2 (Cycle 20)

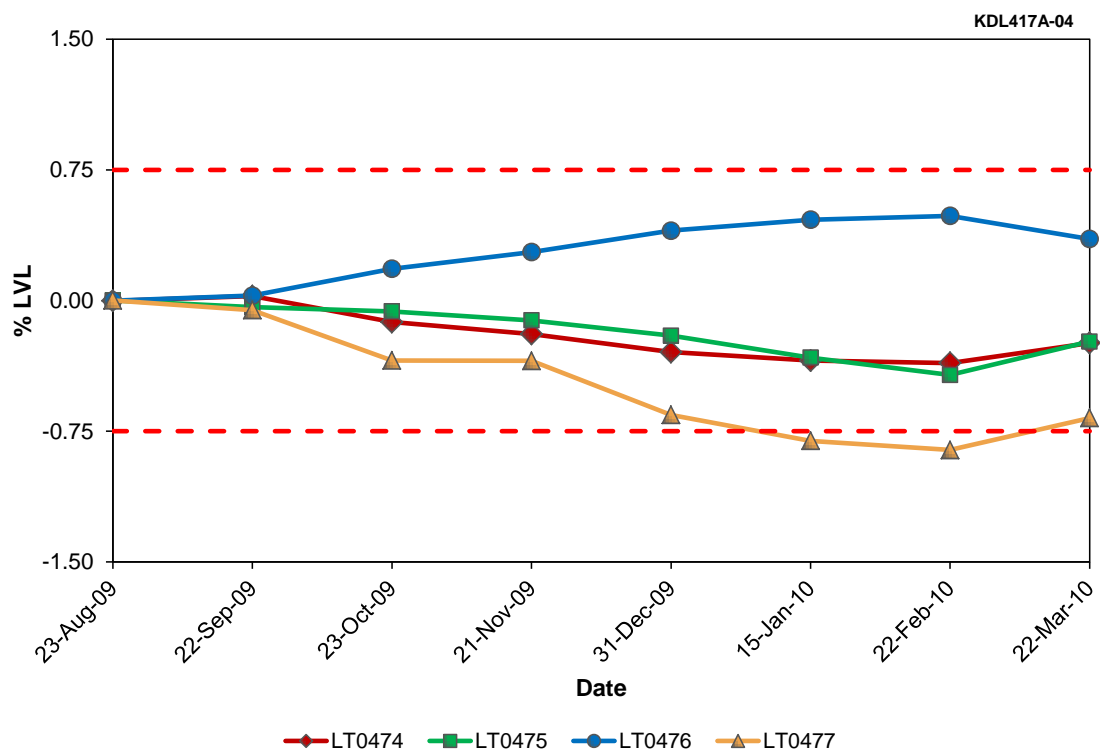


Figure D.12 SG A LEVEL Steady-State Residual AAKR at Farley Unit 2 (Cycle 20)

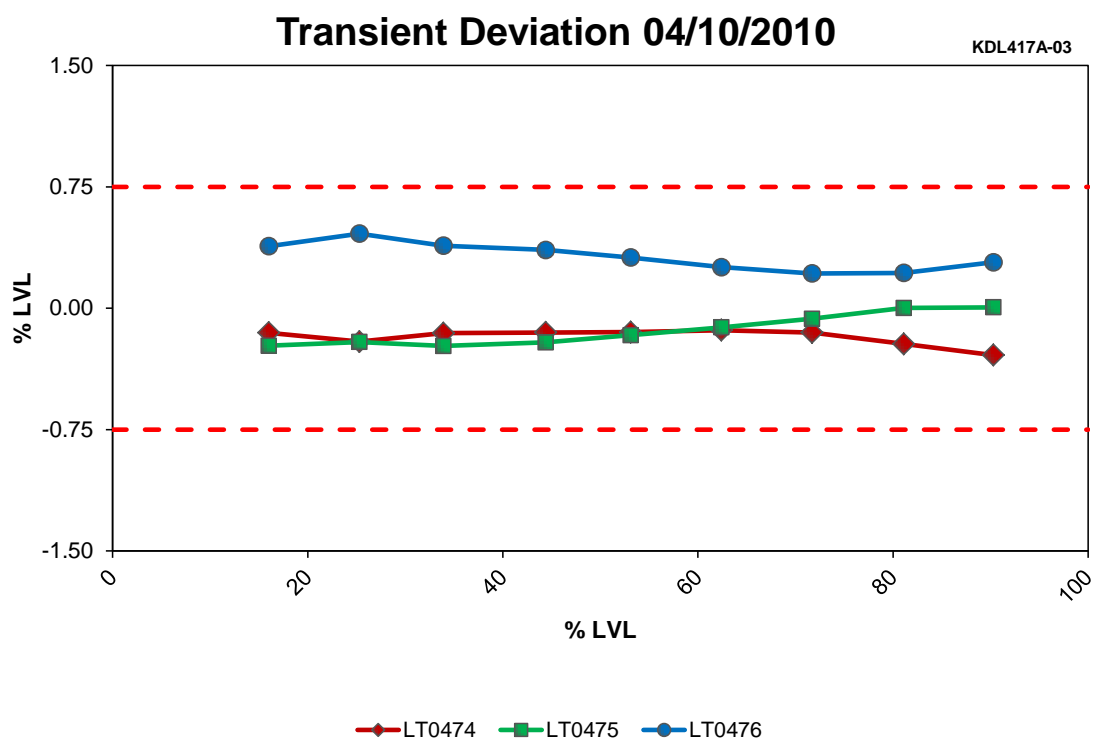


Figure D.13 SG A LEVEL Transient Deviation at Farley Unit 2 (Cycle 20)



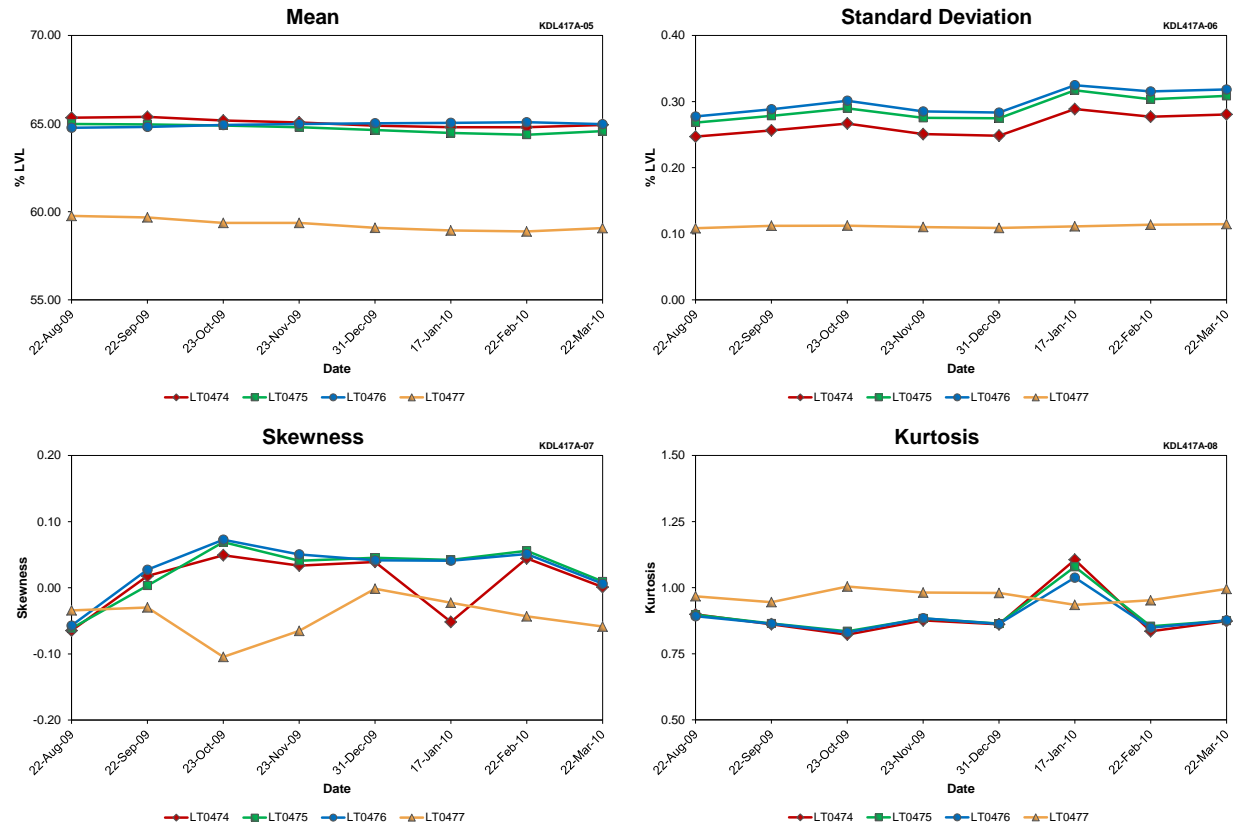


Figure D.14 SG A LEVEL Data Quality Statistics at Farley Unit 2 (Cycle 20)

Table D.3 SG A LEVEL Data Quality for Farley Unit 2 (Cycle 20)

Result Type	Tag Names			
	LT0474	LT0475	LT0476	LT0477
Mean	65.05	64.71	64.95	59.27
Std. Dev.	0.26	0.29	0.30	0.11
Skewness	0.01	0.03	0.03	-0.04
Kurtosis	0.89	0.89	0.89	0.97

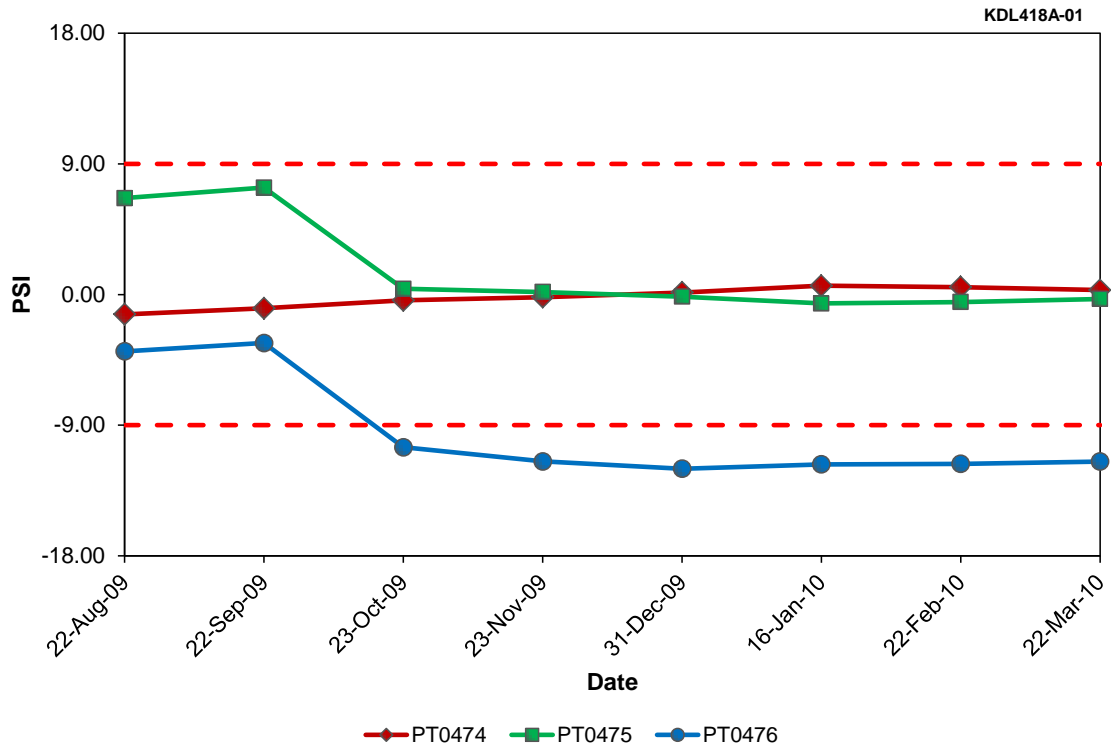


Figure D.15 SG A OUTLET PRESSURE Steady-State Deviation at Farley Unit 2 (Cycle 20)

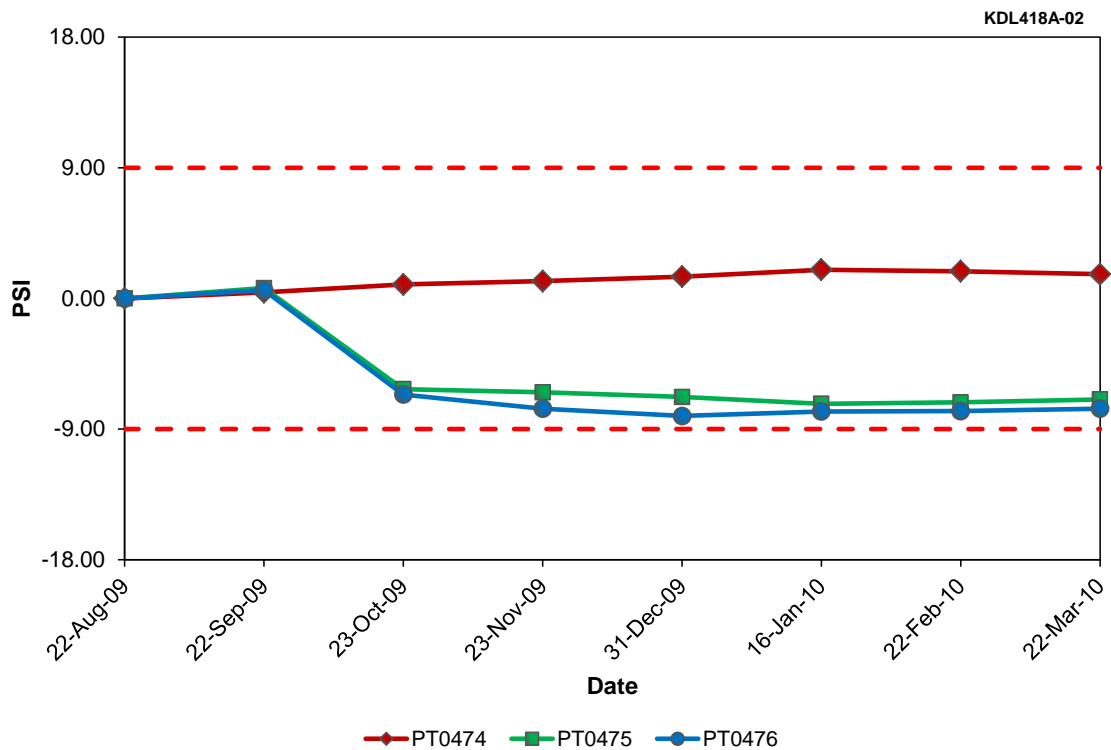


Figure D.16 SG A OUTLET PRESSURE Steady-State Drift at Farley Unit 2 (Cycle 20)

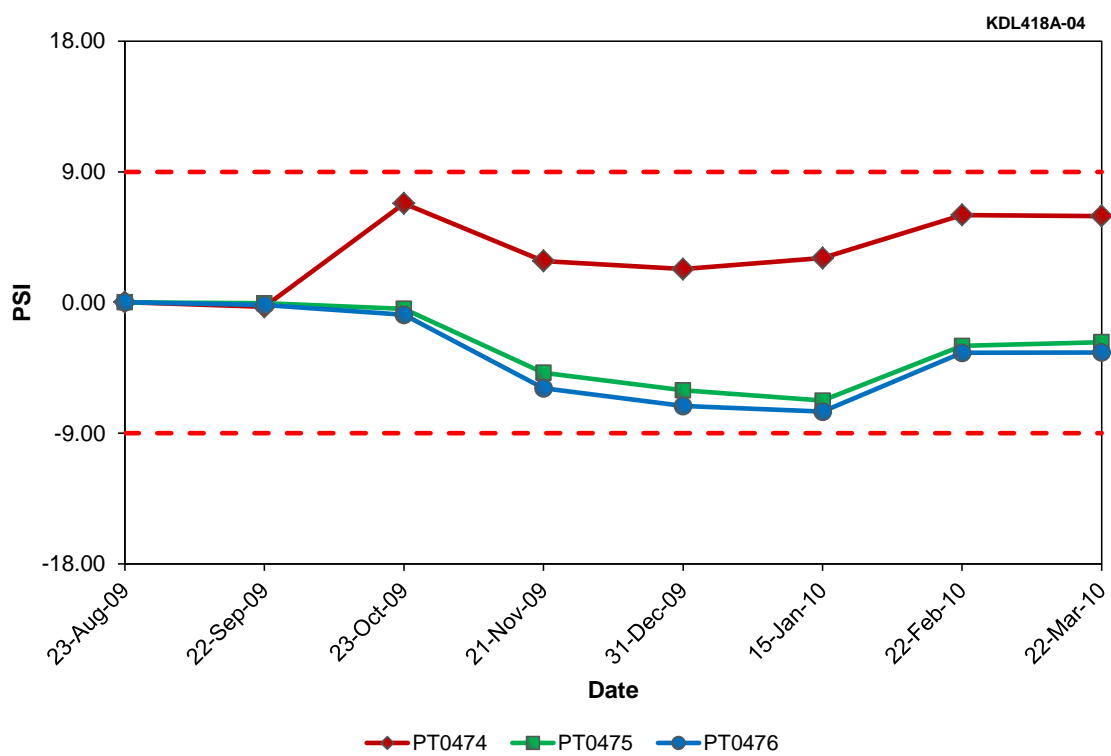
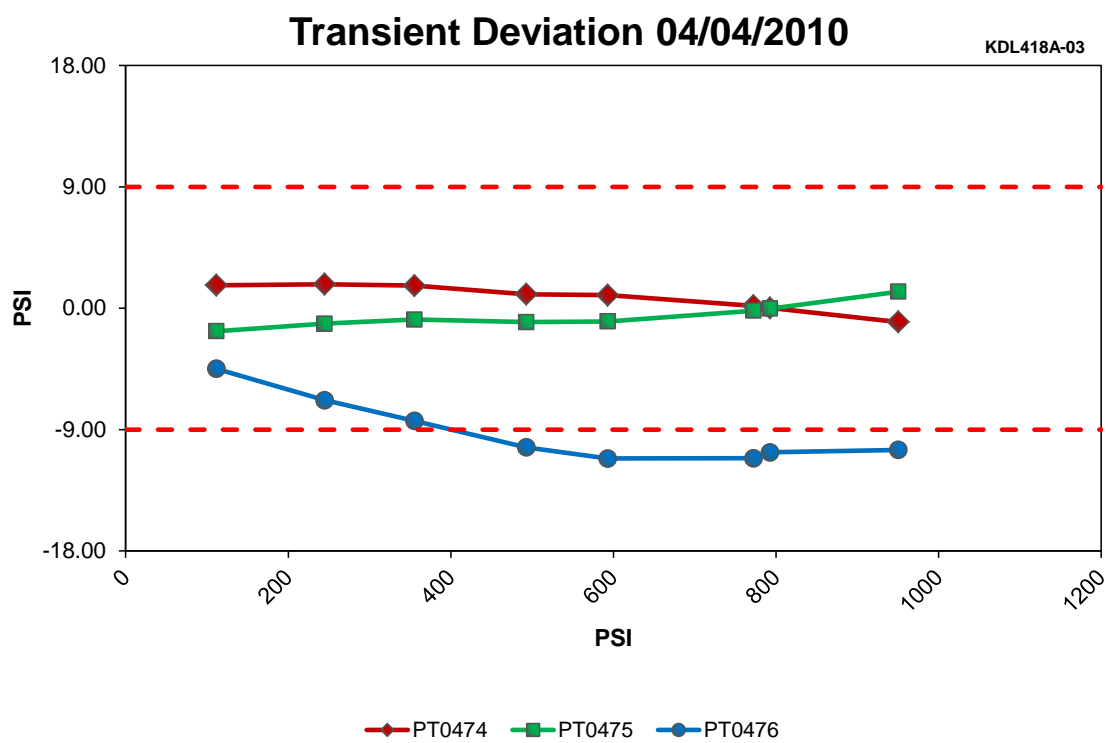
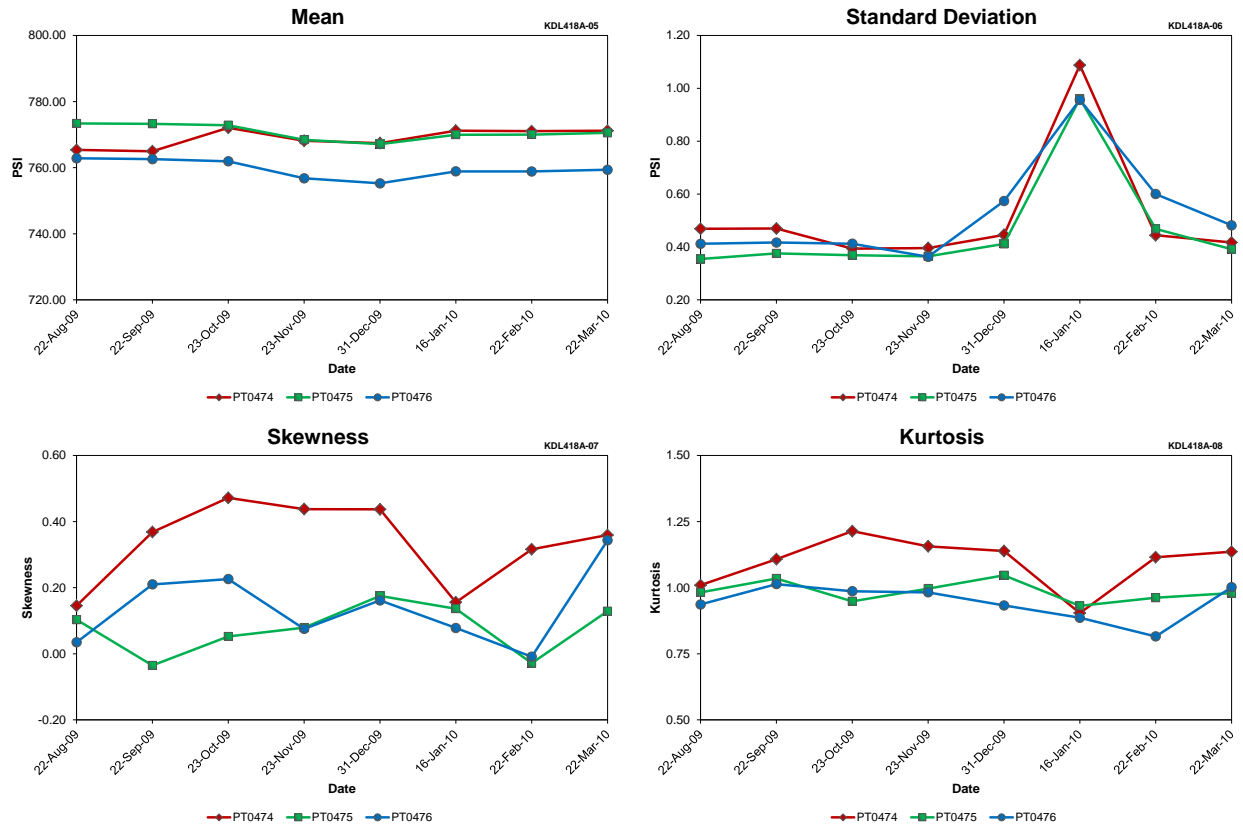


Figure D.17 SG A OUTLET PRESSURE Steady-State Residual AAKR at Farley Unit 2 (Cycle 20)



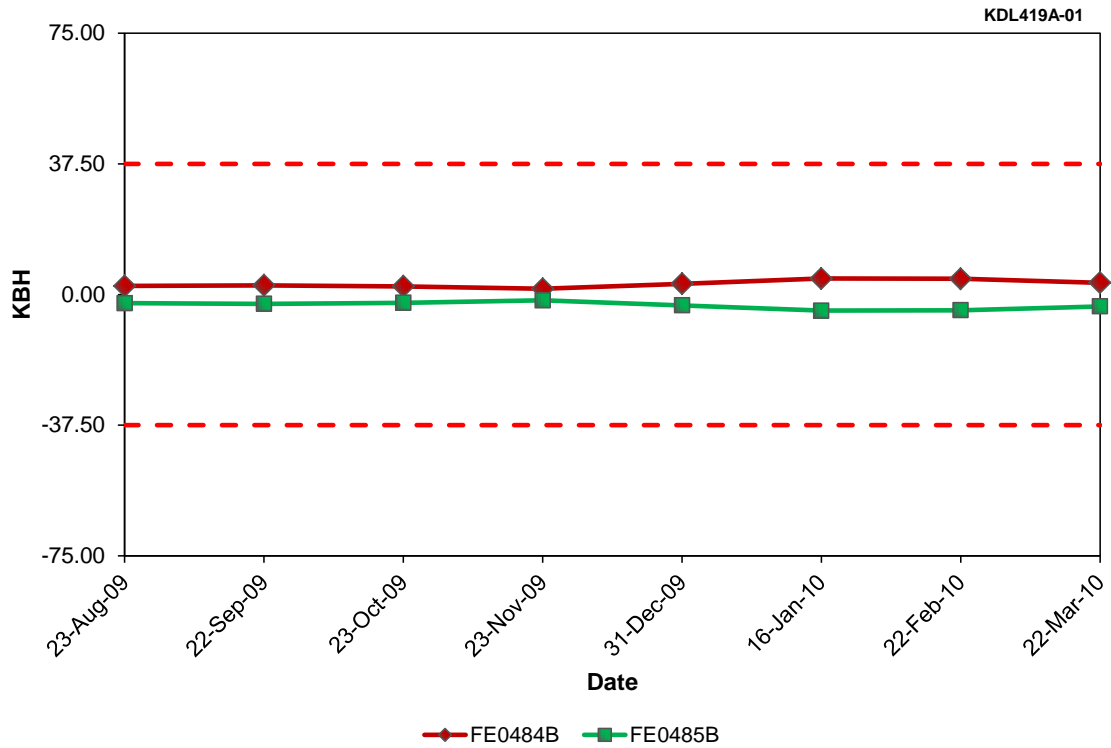
**Figure D.18 SG A OUTLET PRESSURE Transient Deviation at Farley Unit 2 (Cycle 20)**



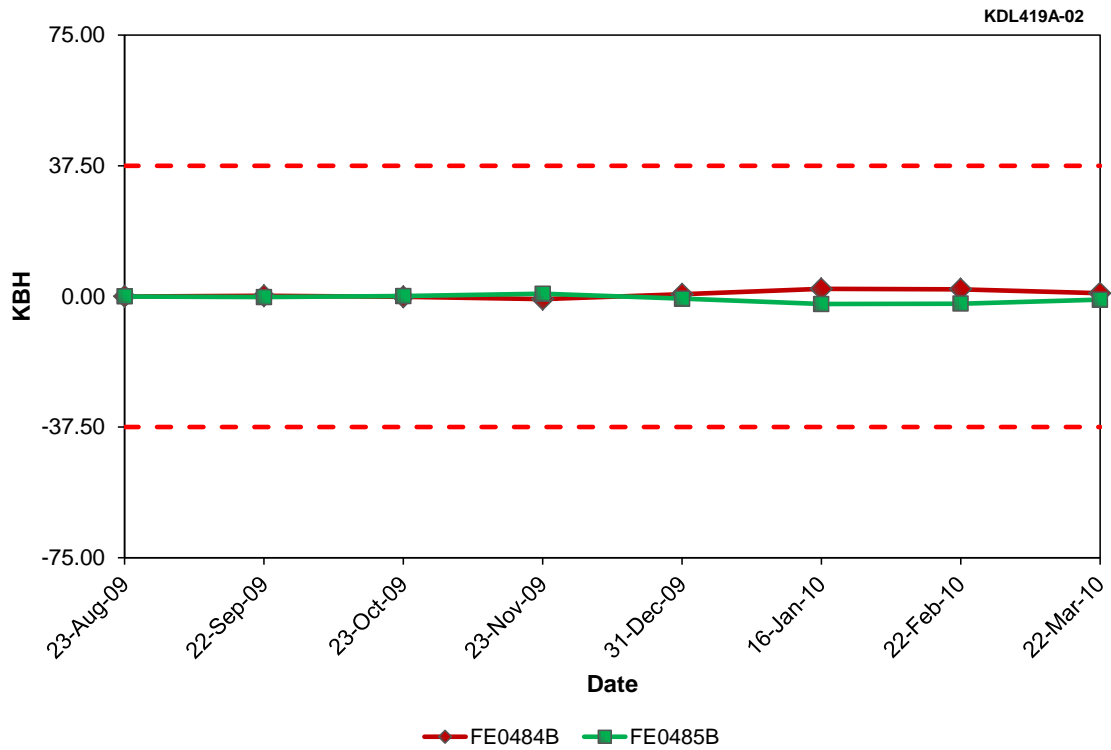
**Figure D.19 SG A OUTLET PRESSURE Data Quality Statistics at Farley Unit 2 (Cycle 20)**

**Table D.4 SG A OUTLET PRESSURE Data Quality for Farley Unit 2 (Cycle 20)**

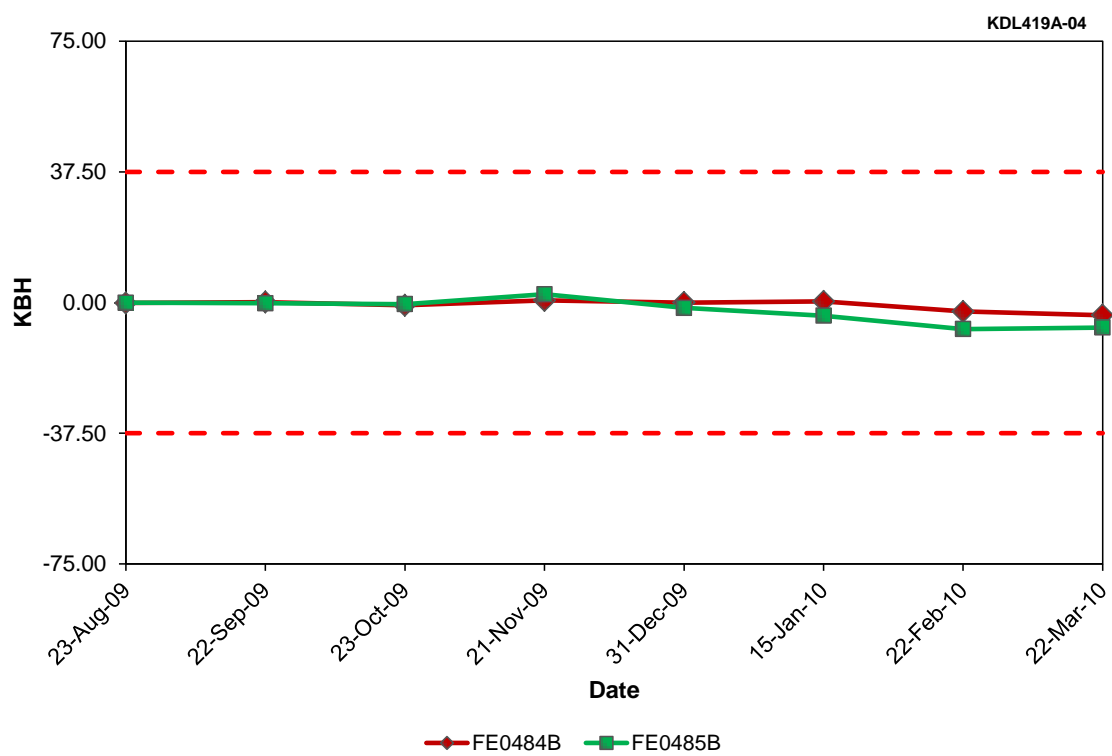
Result Type	Tag Names		
	PT0474	PT0475	PT0476
Mean	768.93	770.70	759.56
Std. Dev.	0.52	0.46	0.53
Skewness	0.34	0.08	0.14
Kurtosis	1.10	0.99	0.94



**Figure D.20 SG B STEAM FLOW Steady-State Deviation at Farley Unit 2 (Cycle 20)**



**Figure D.21 SG B STEAM FLOW Steady-State Drift at Farley Unit 2 (Cycle 20)**



**Figure D.22 SG B STEAM FLOW Steady-State Residual AAKR at Farley Unit 2 (Cycle 20)**

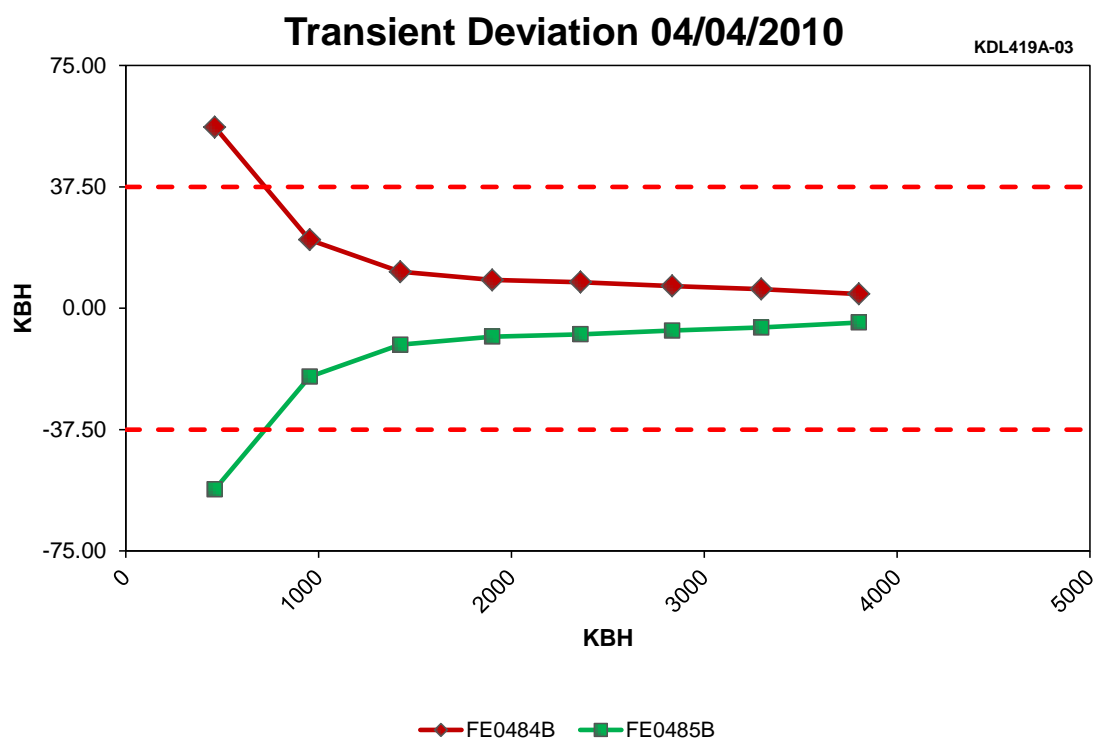
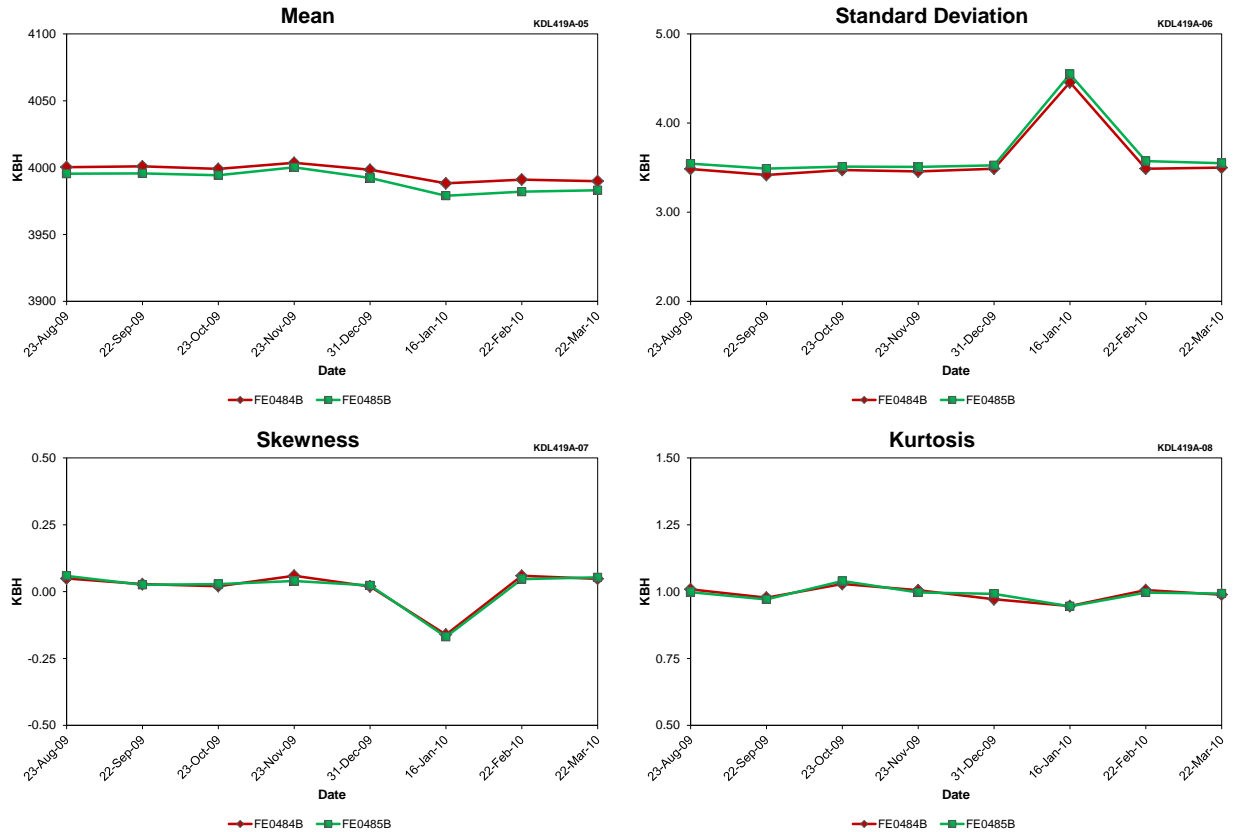


Figure D.23 SG B STEAM FLOW Transient Deviation at Farley Unit 2 (Cycle 20)





**Figure D.24 SG B STEAM FLOW Data Quality Statistics at Farley Unit 2 (Cycle 20)**

**Table D.5 SG B STEAM FLOW Data Quality for Farley Unit 2 (Cycle 20)**

Result Type	Tag Names	
	FE0484B	FE0485B
Mean	3996.46	3990.28
Std. Dev.	3.60	3.66
Skewness	0.02	0.01
Kurtosis	0.99	0.99

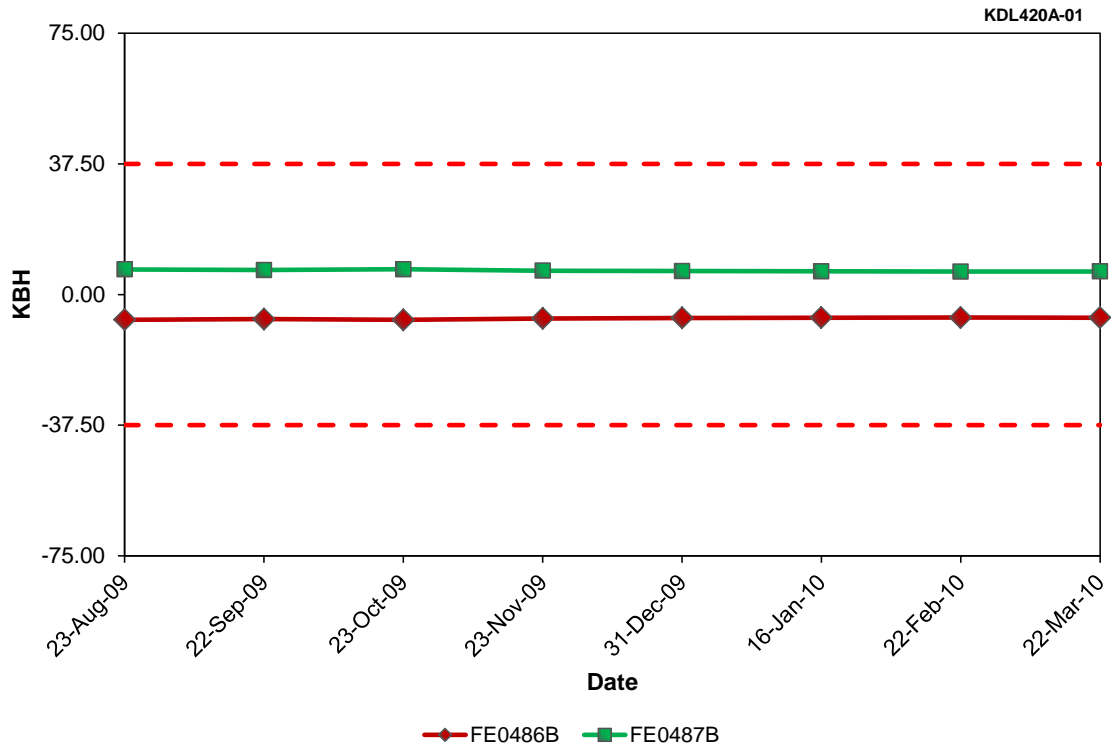


Figure D.25 FW FLOW TO SG B Steady-State Deviation at Farley Unit 2 (Cycle 20)

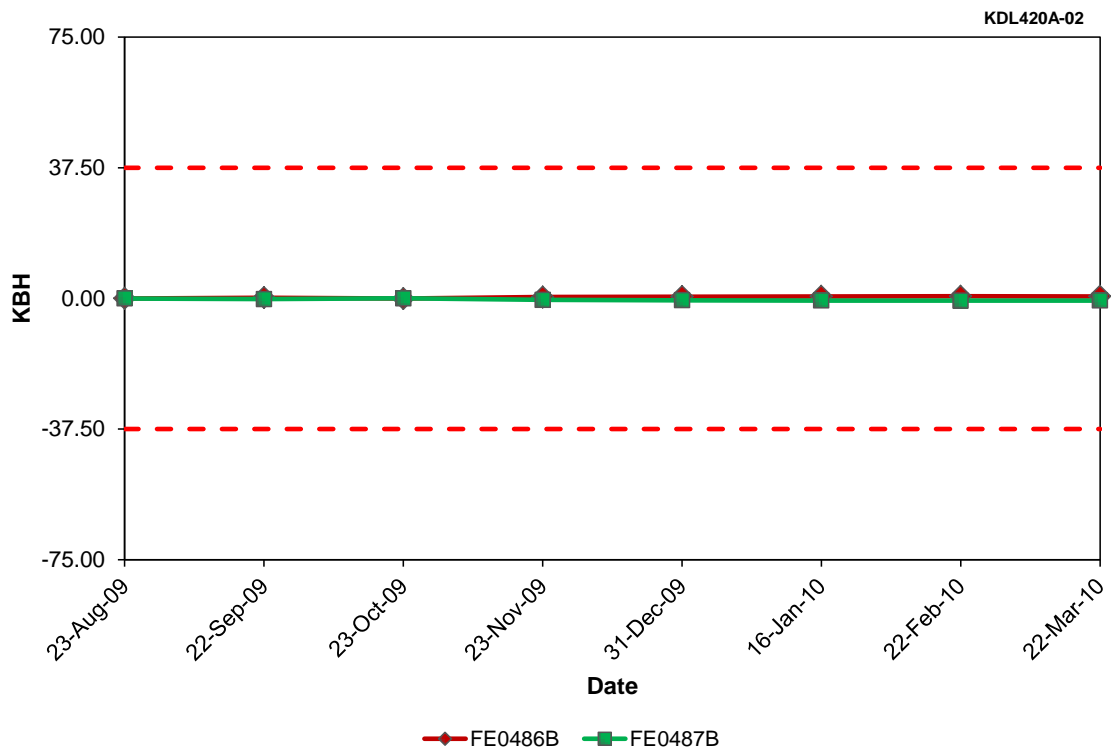
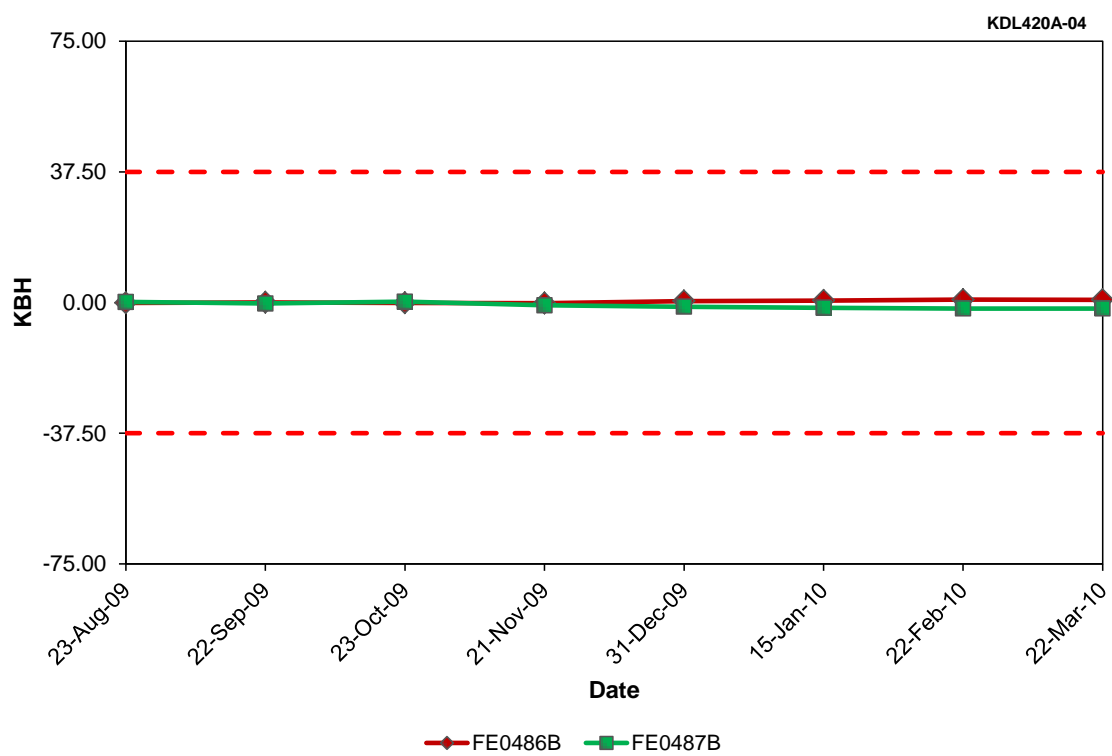
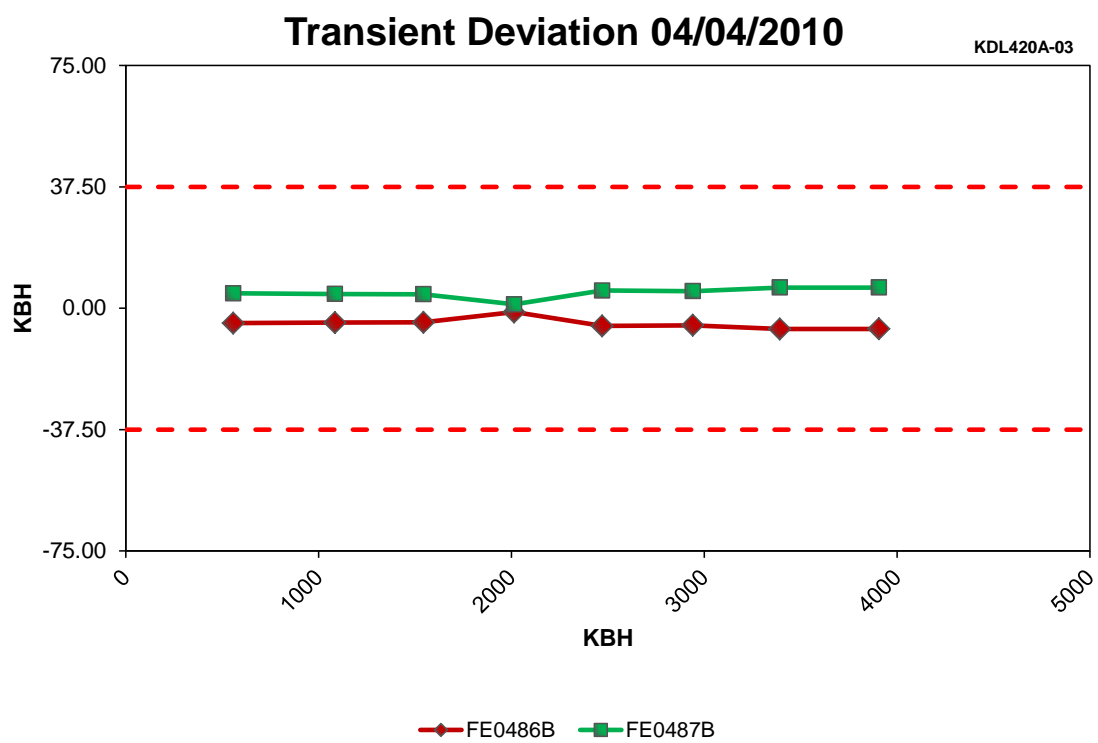


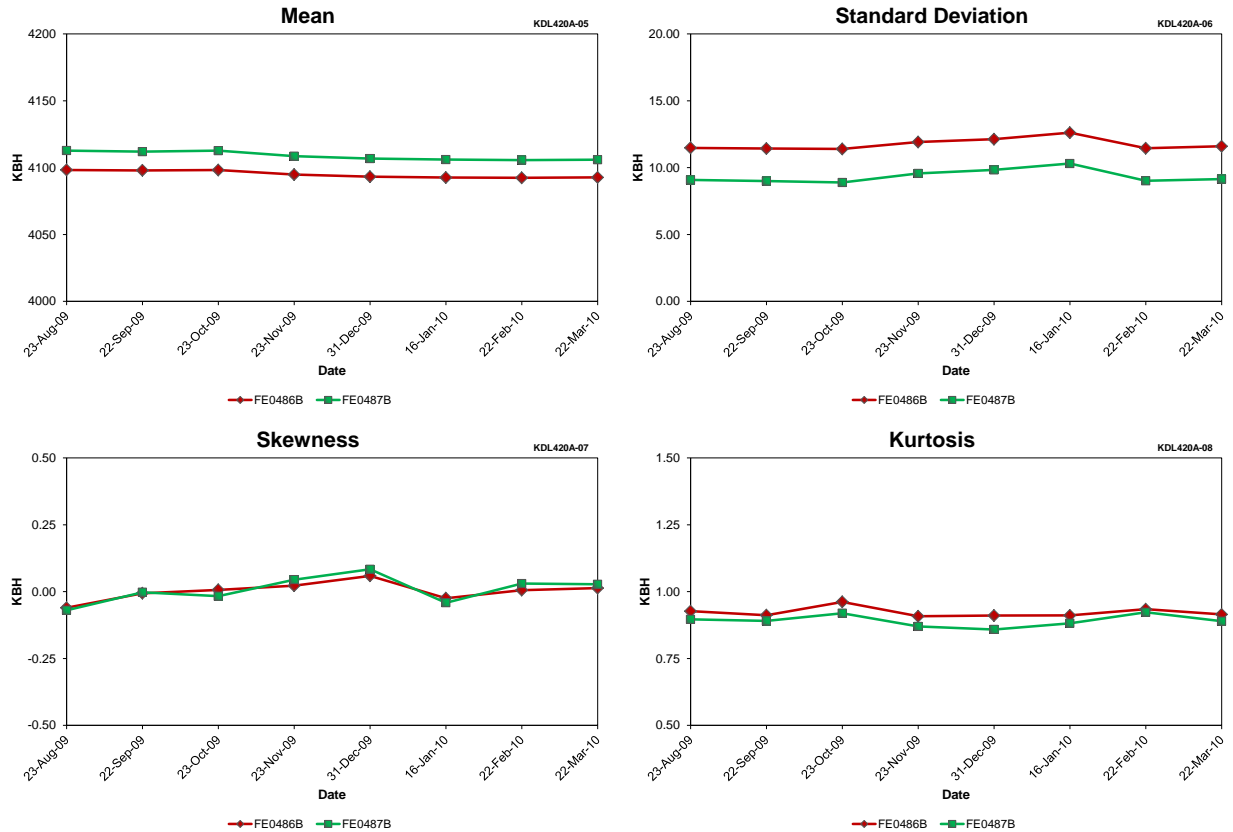
Figure D.26 FW FLOW TO SG B Steady-State Drift at Farley Unit 2 (Cycle 20)



**Figure D.27 FW FLOW TO SG B Steady-State Residual AAKR at Farley Unit 2 (Cycle 20)**



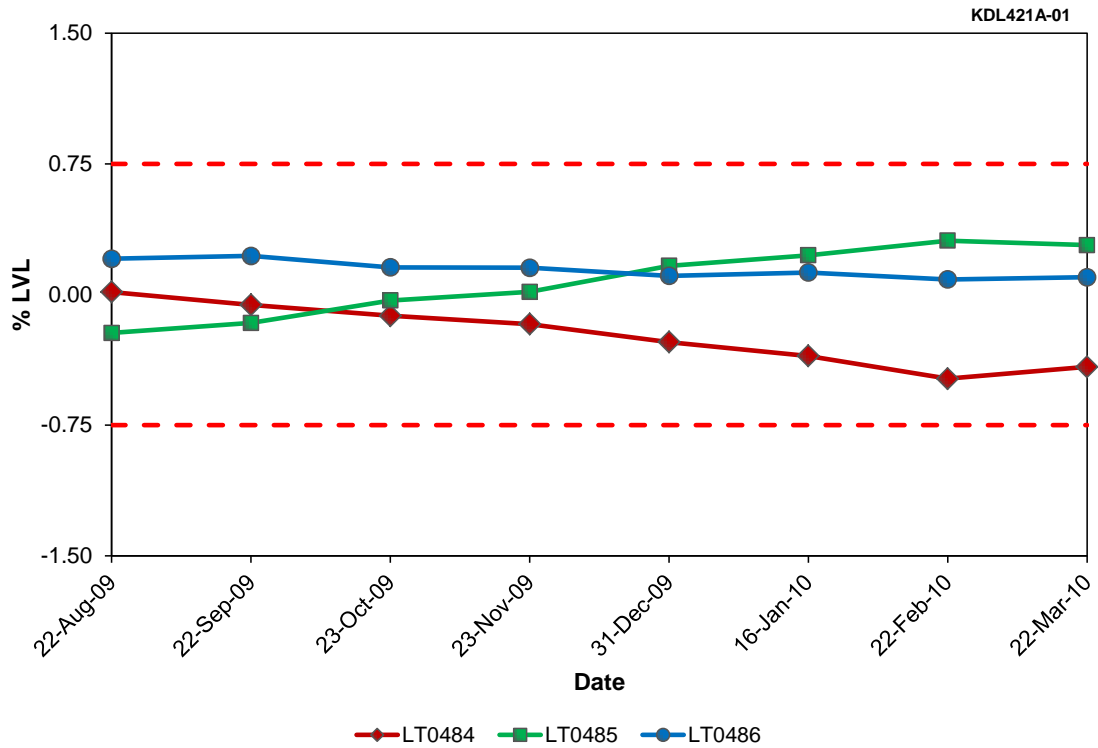
**Figure D.28 FW FLOW TO SG B Transient Deviation at Farley Unit 2 (Cycle 20)**



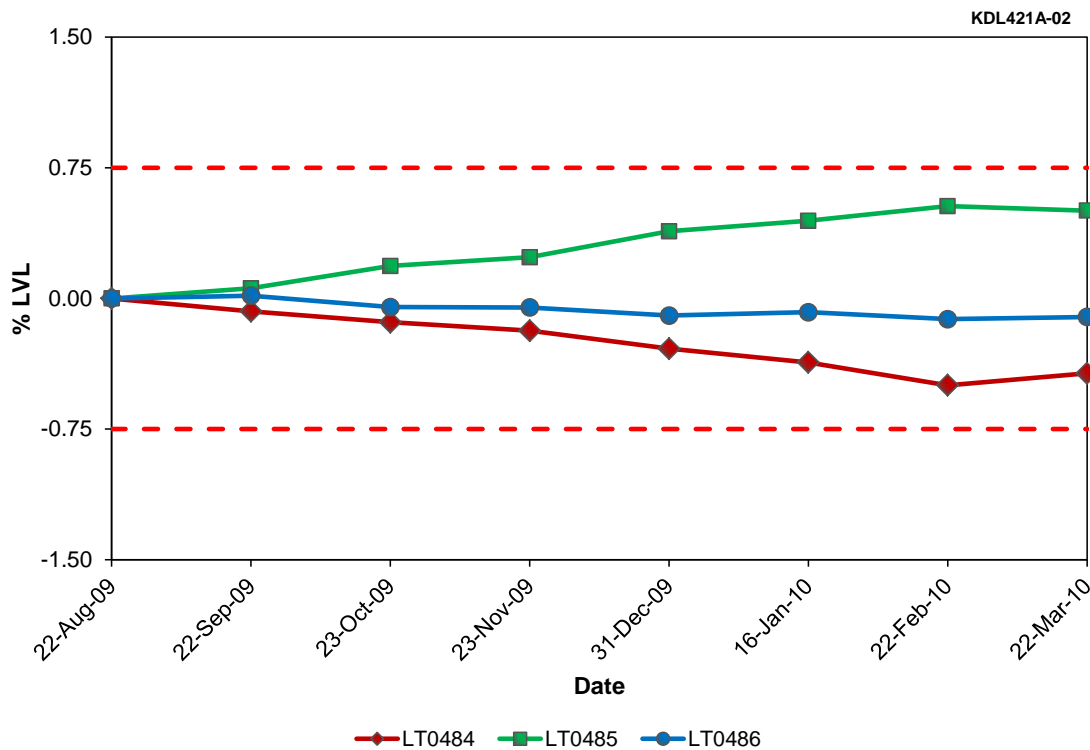
**Figure D.29 FW FLOW TO SG B Data Quality Statistics at Farley Unit 2 (Cycle 20)**

**Table D.6 FW FLOW TO SG B Data Quality for Farley Unit 2 (Cycle 20)**

Result Type	Tag Names	
	FE0486B	FE0487B
Mean	4095.02	4108.81
Std. Dev.	11.75	9.35
Skewness	0.00	0.01
Kurtosis	0.92	0.89



**Figure D.30 SG B LEVEL Steady-State Deviation at Farley Unit 2 (Cycle 20)**



**Figure D.31 SG B LEVEL Steady-State Drift at Farley Unit 2 (Cycle 20)**

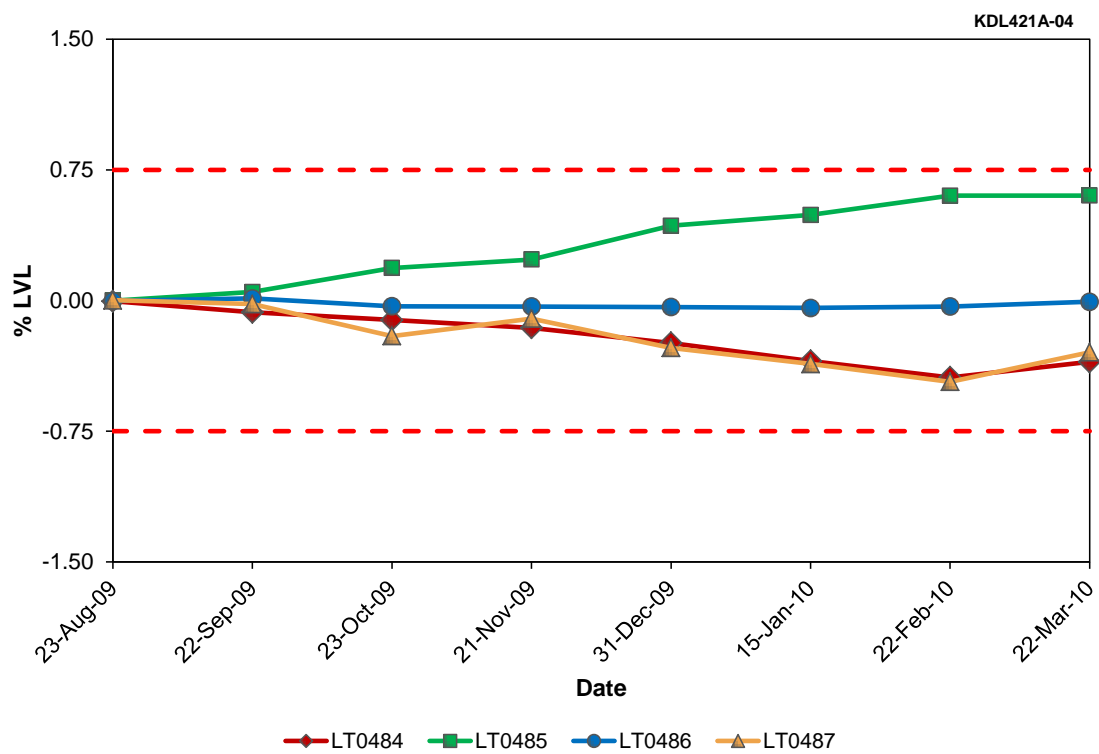
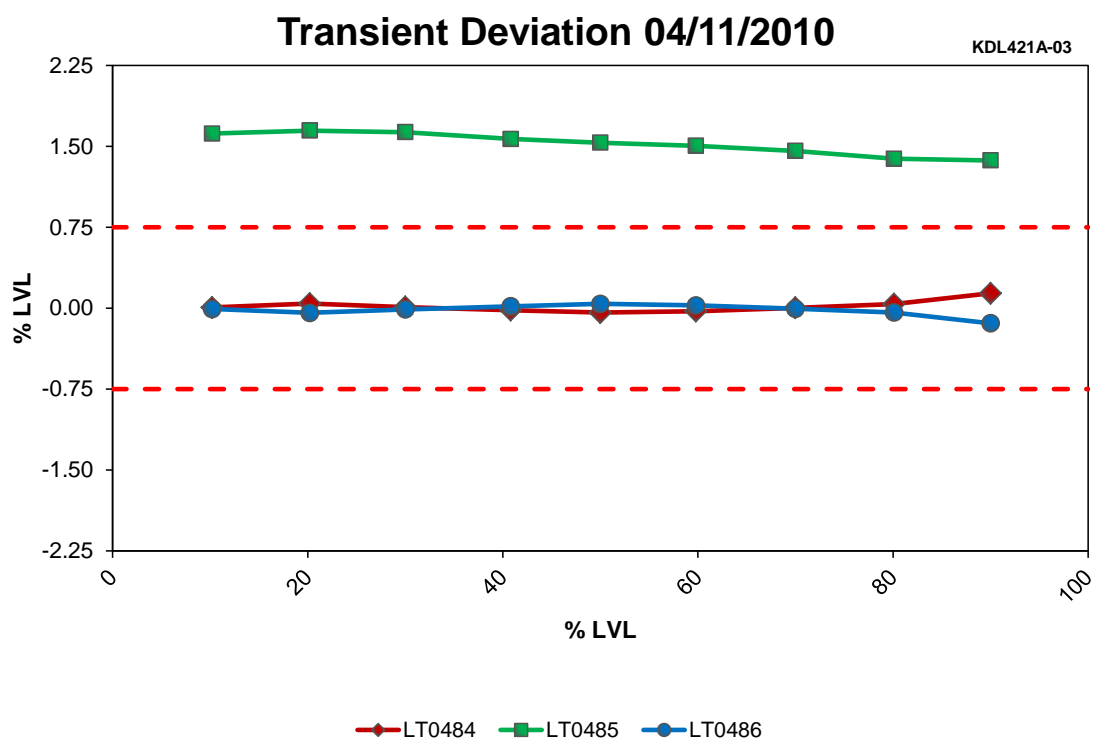
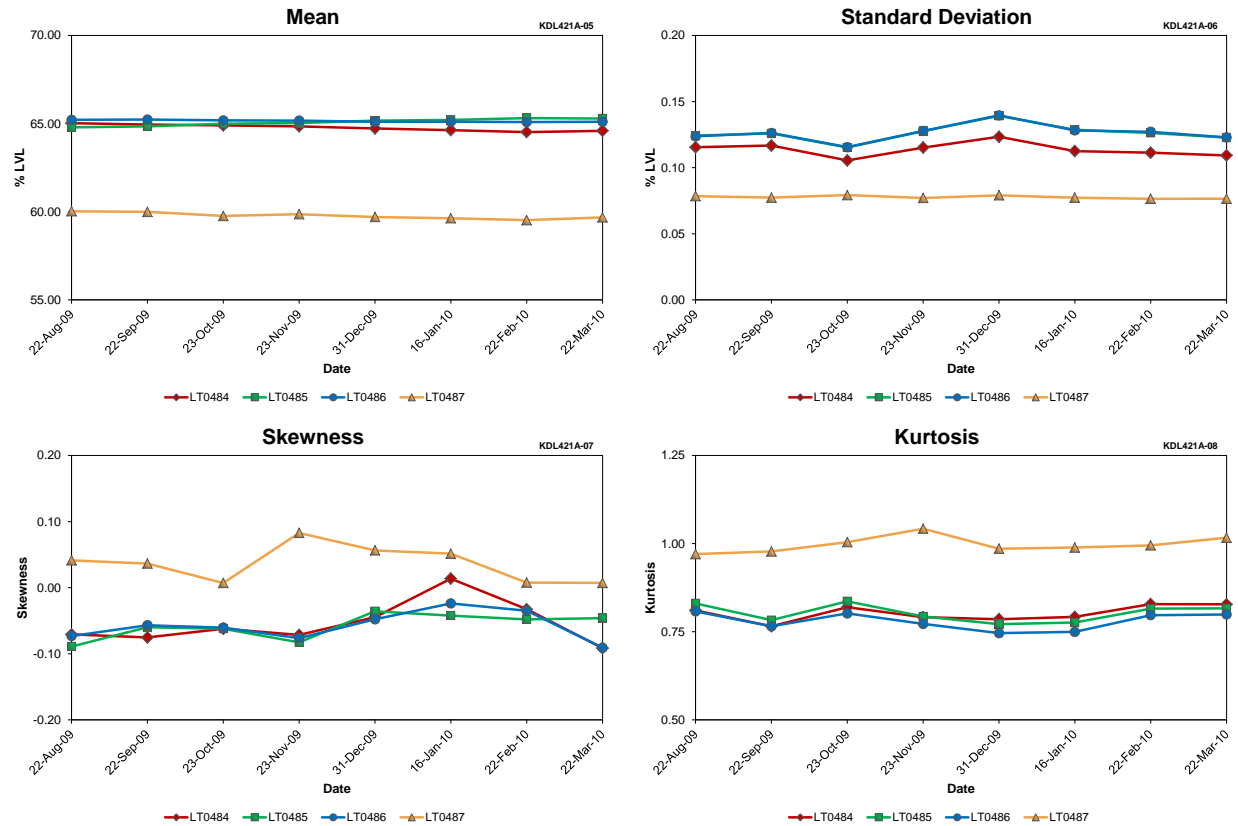


Figure D.32 SG B LEVEL Steady-State Residual AAKR at Farley Unit 2 (Cycle 20)



**Figure D.33 SG B LEVEL Transient Deviation at Farley Unit 2 (Cycle 20)**

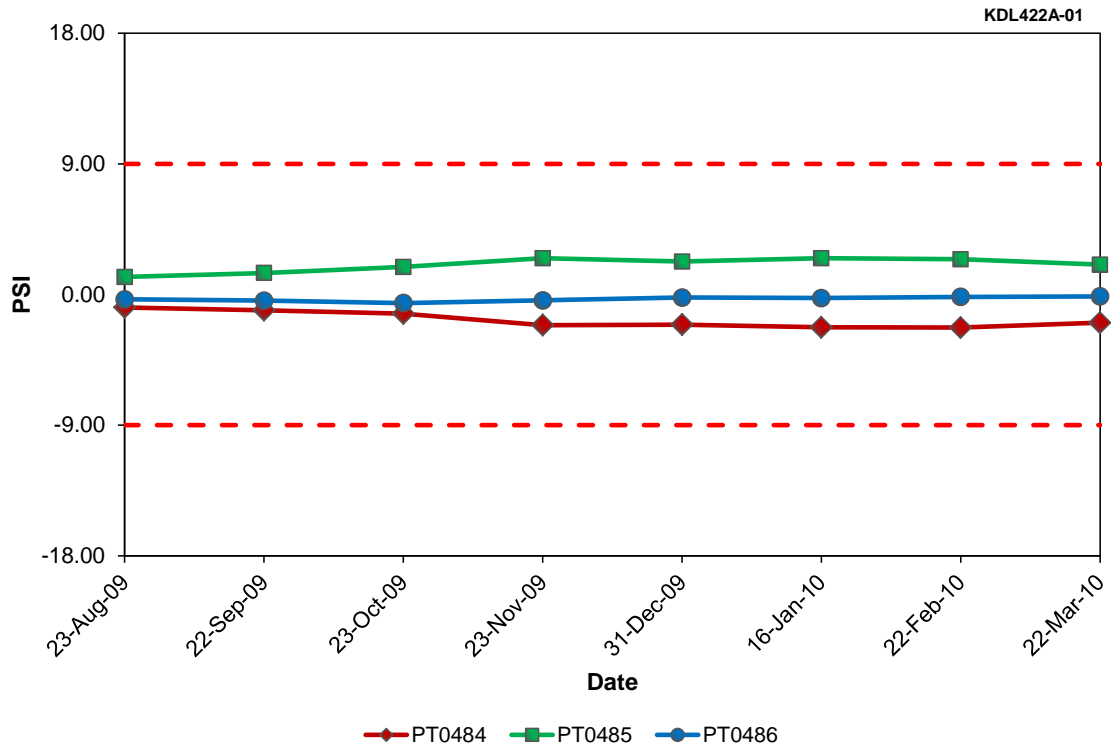




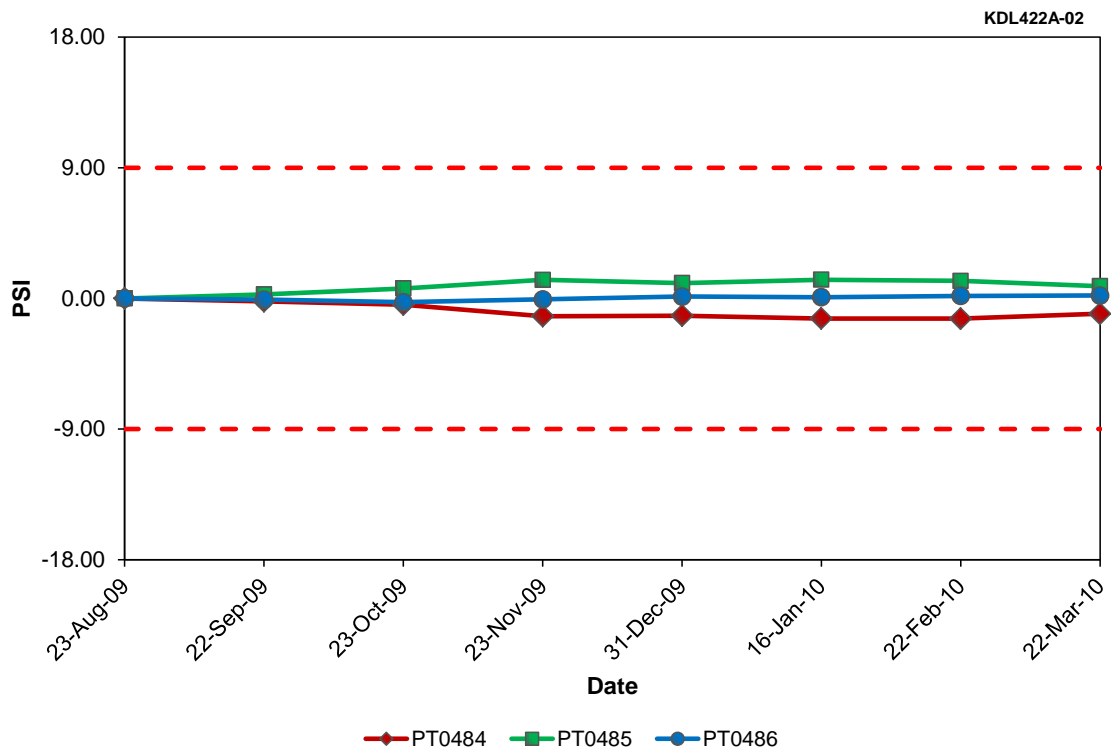
**Figure D.34 SG B LEVEL Data Quality Statistics at Farley Unit 2 (Cycle 20)**

**Table D.7 SG B LEVEL Data Quality for Farley Unit 2 (Cycle 20)**

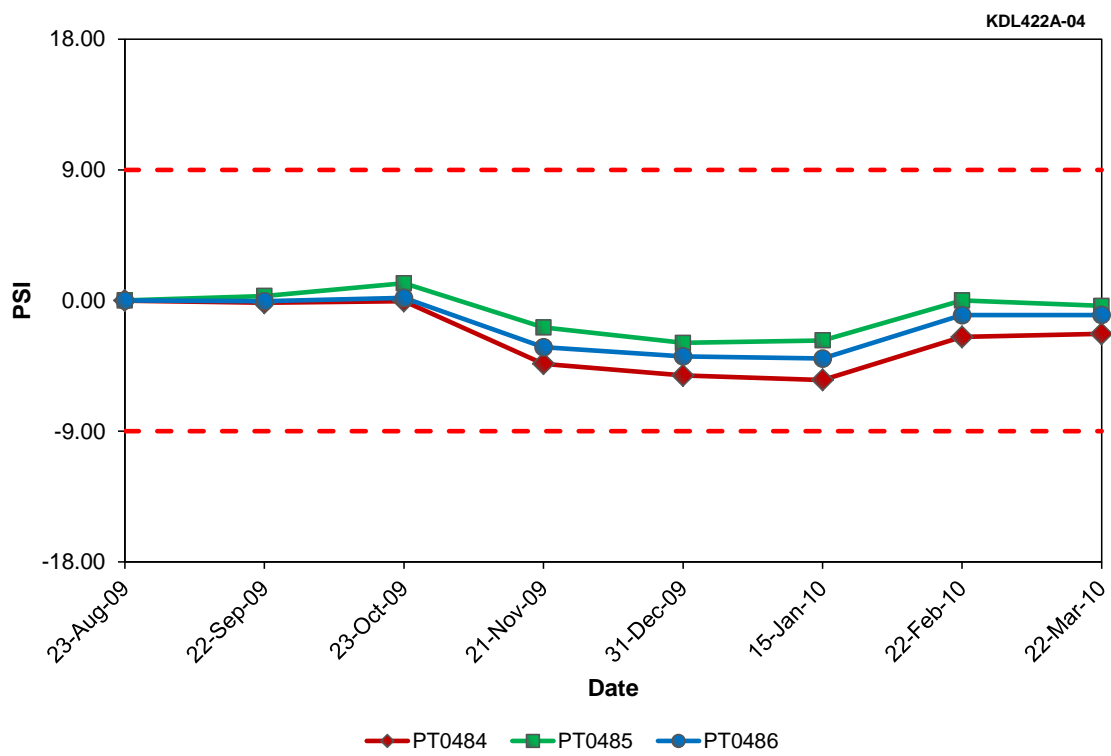
Result Type	Tag Names			
	LT0484	LT0485	LT0486	LT0487
Mean	64.77	65.08	65.15	59.77
Std. Dev.	0.11	0.13	0.13	0.08
Skewness	-0.05	-0.06	-0.06	0.04
Kurtosis	0.80	0.80	0.78	1.00



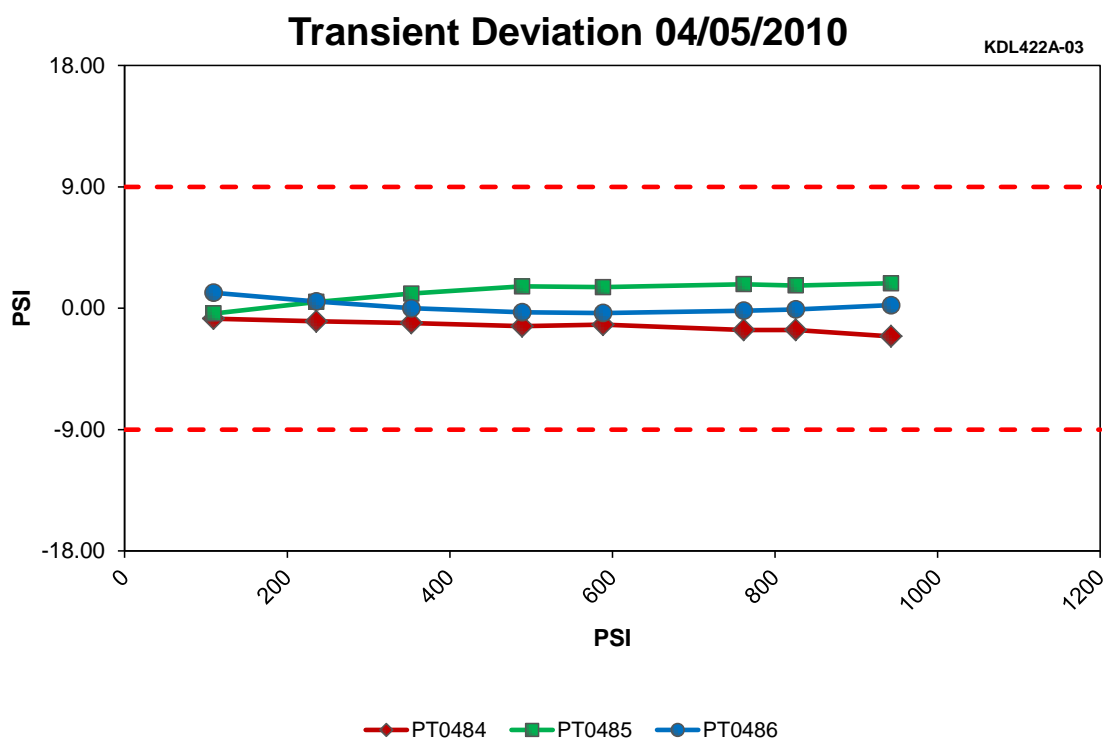
**Figure D.35 SG B OUTLET PRESSURE Steady-State Deviation at Farley Unit 2 (Cycle 20)**



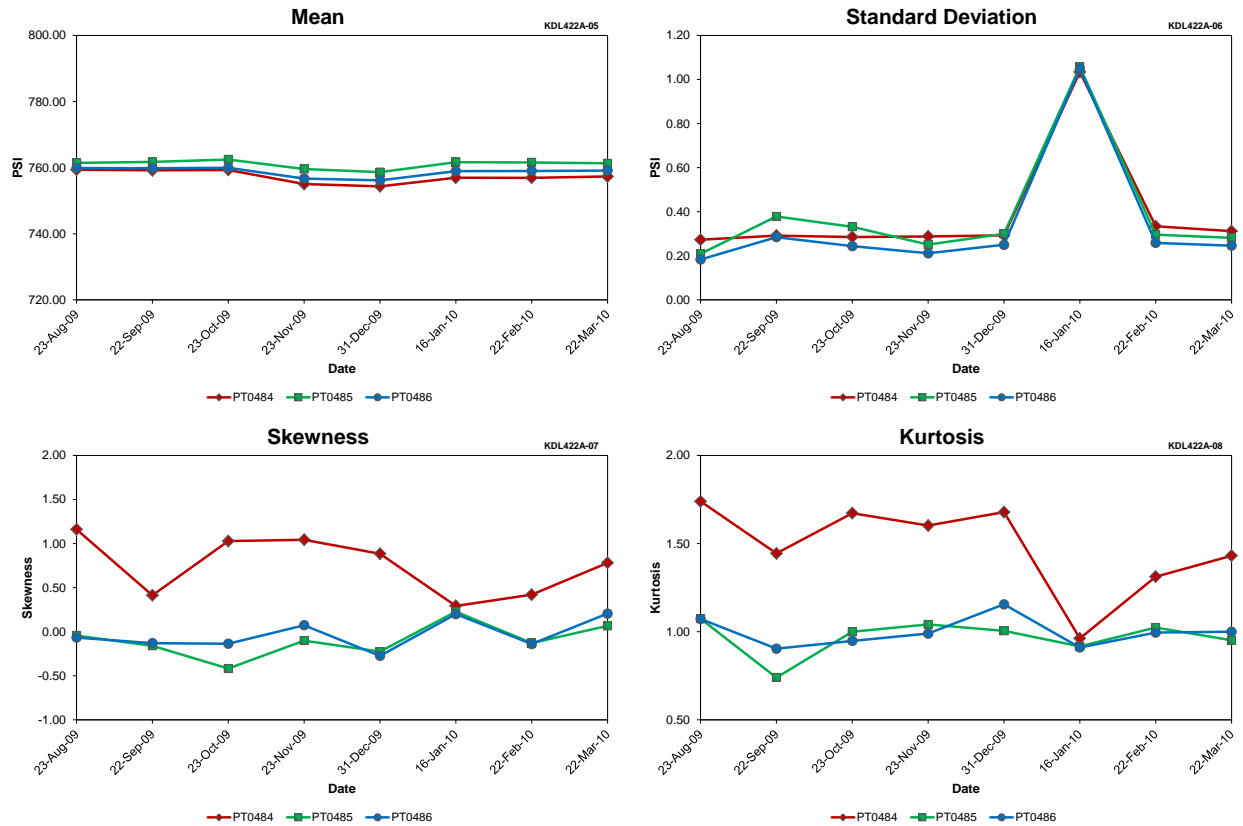
**Figure D.36 SG B OUTLET PRESSURE Steady-State Drift at Farley Unit 2 (Cycle 20)**



**Figure D.37 SG B OUTLET PRESSURE Steady-State Residual AAKR at Farley Unit 2 (Cycle 20)**



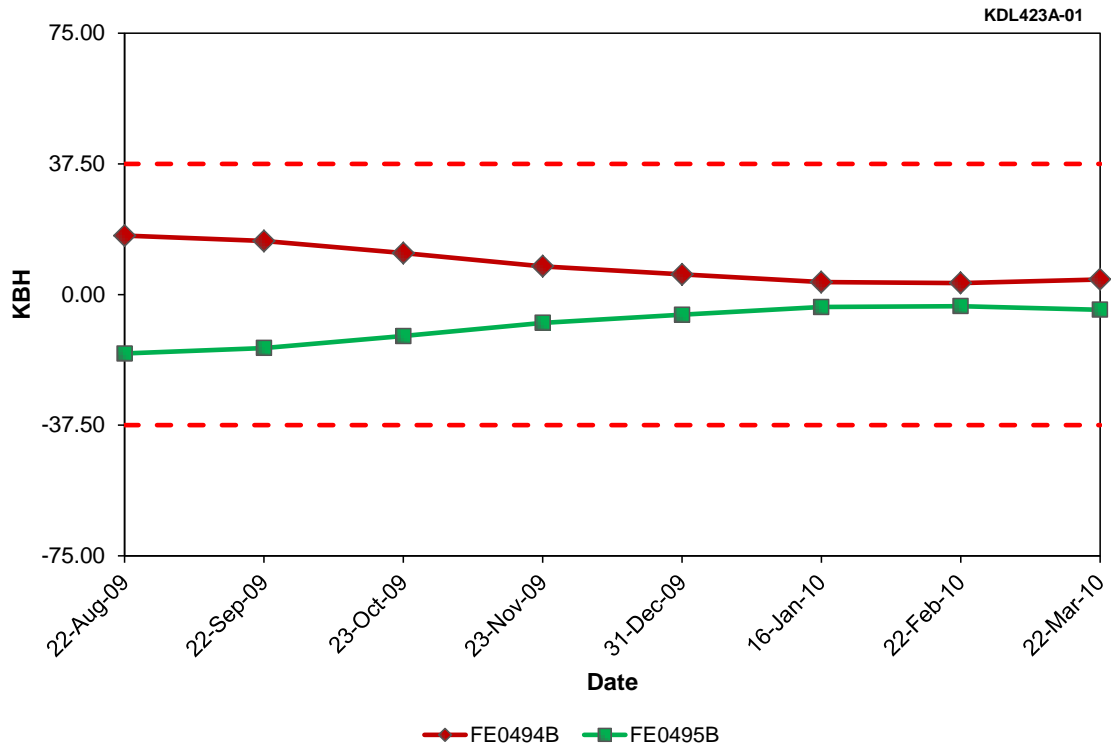
**Figure D.38 SG B OUTLET PRESSURE Transient Deviation at Farley Unit 2 (Cycle 20)**



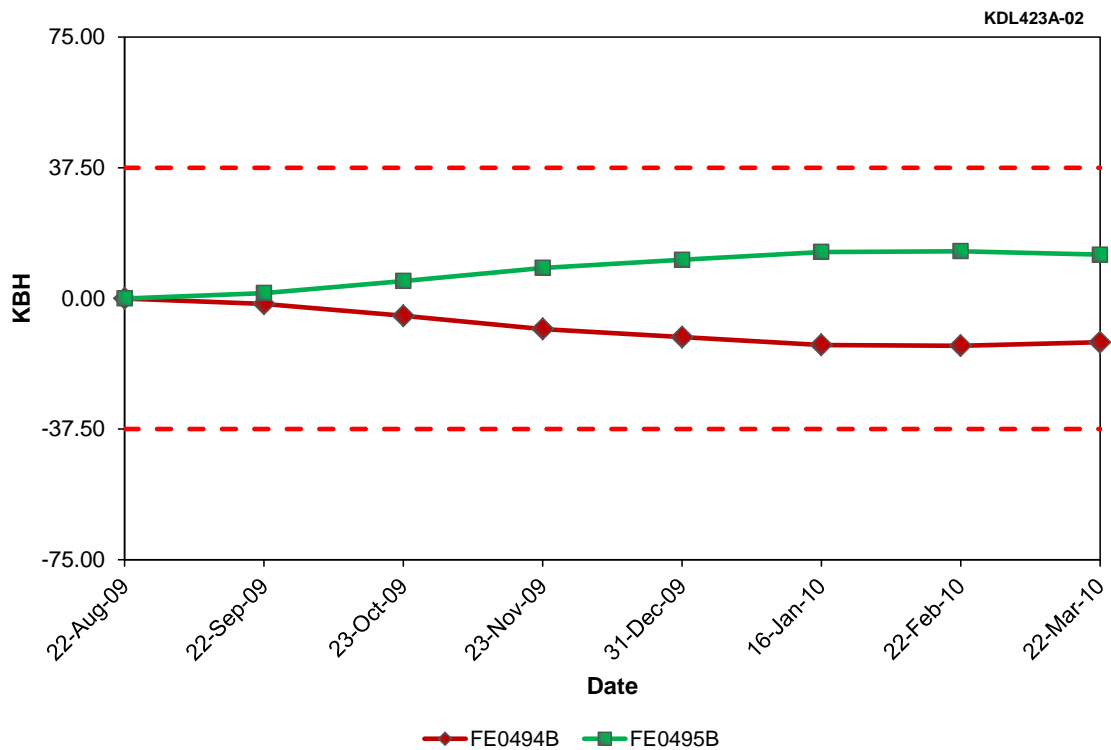
**Figure D.39 SG B OUTLET PRESSURE Data Quality Statistics at Farley Unit 2 (Cycle 20)**

**Table D.8 SG B OUTLET PRESSURE Data Quality for Farley Unit 2 (Cycle 20)**

Result Type	Tag Names		
	PT0484	PT0485	PT0486
Mean	757.32	761.06	758.71
Std. Dev.	0.39	0.39	0.34
Skewness	0.75	-0.10	-0.03
Kurtosis	1.48	0.97	1.00



**Figure D.40 SG C STEAM FLOW Steady-State Deviation at Farley Unit 2 (Cycle 20)**



**Figure D.41 SG C STEAM FLOW Steady-State Drift at Farley Unit 2 (Cycle 20)**

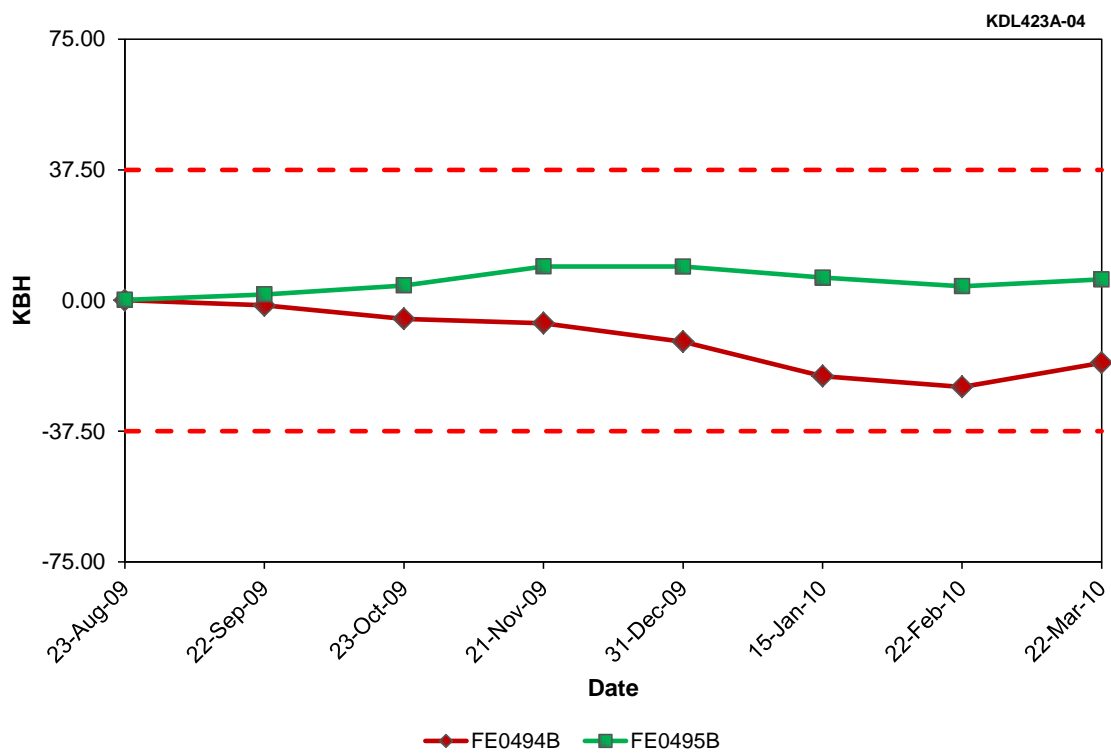
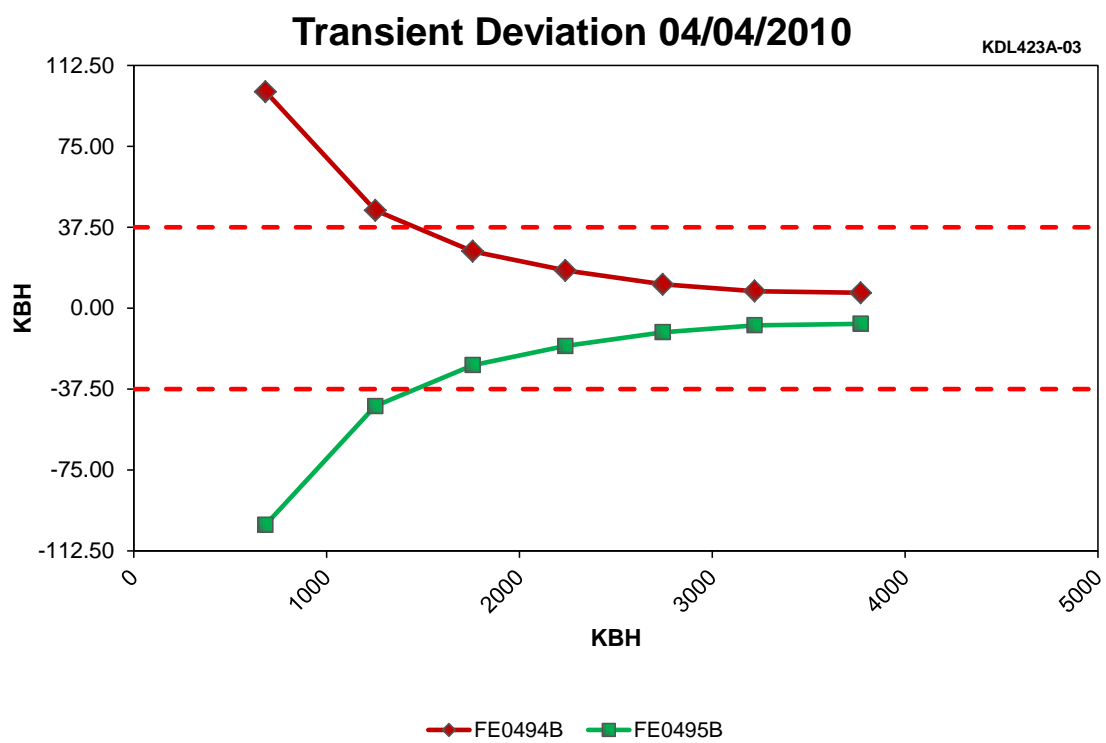
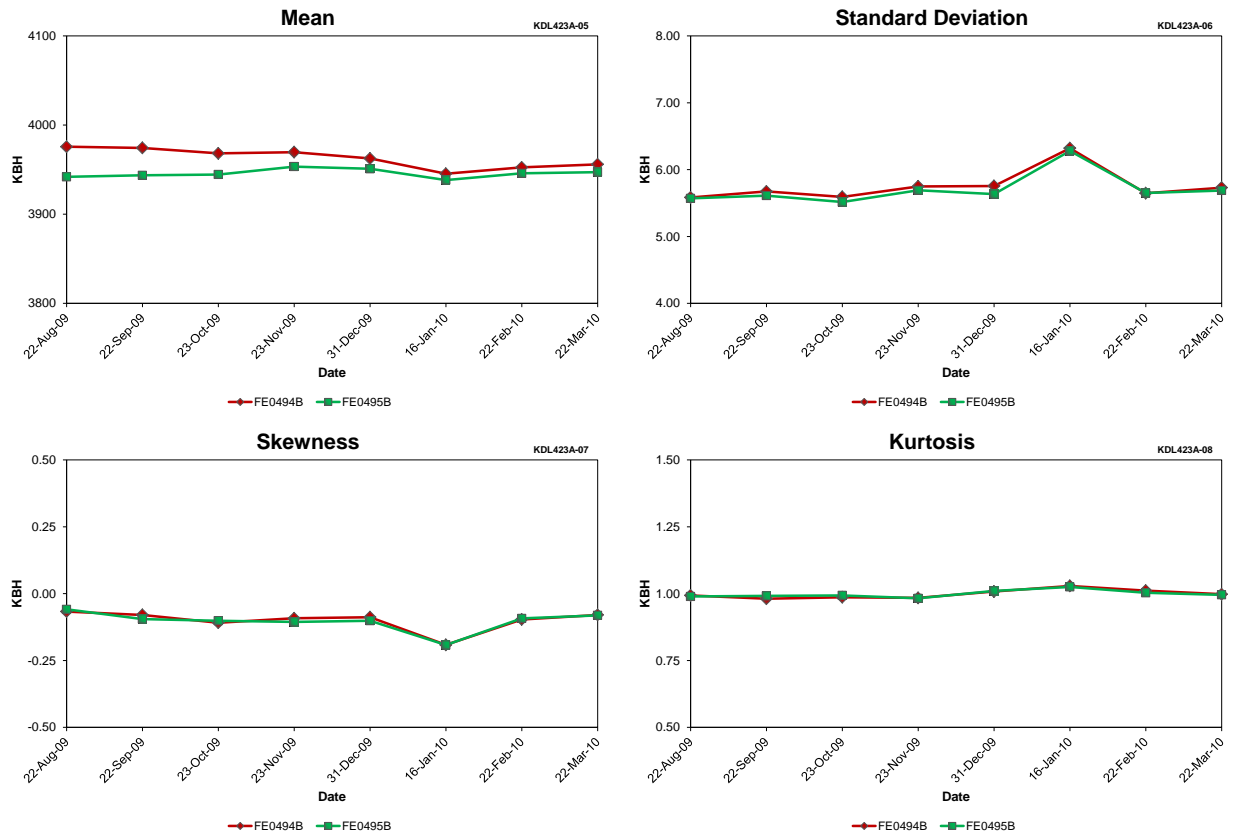


Figure D.42 SG C STEAM FLOW Steady-State Residual AAKR at Farley Unit 2 (Cycle 20)



**Figure D.43 SG C STEAM FLOW Transient Deviation at Farley Unit 2 (Cycle 20)**





**Figure D.44 SG C STEAM FLOW Data Quality Statistics at Farley Unit 2 (Cycle 20)**

**Table D.9 SG C STEAM FLOW Data Quality for Farley Unit 2 (Cycle 20)**

Result Type	Tag Names	
	FE0494B	FE0495B
Mean	3963.07	3945.74
Std. Dev.	5.76	5.71
Skewness	-0.10	-0.10
Kurtosis	1.00	1.00

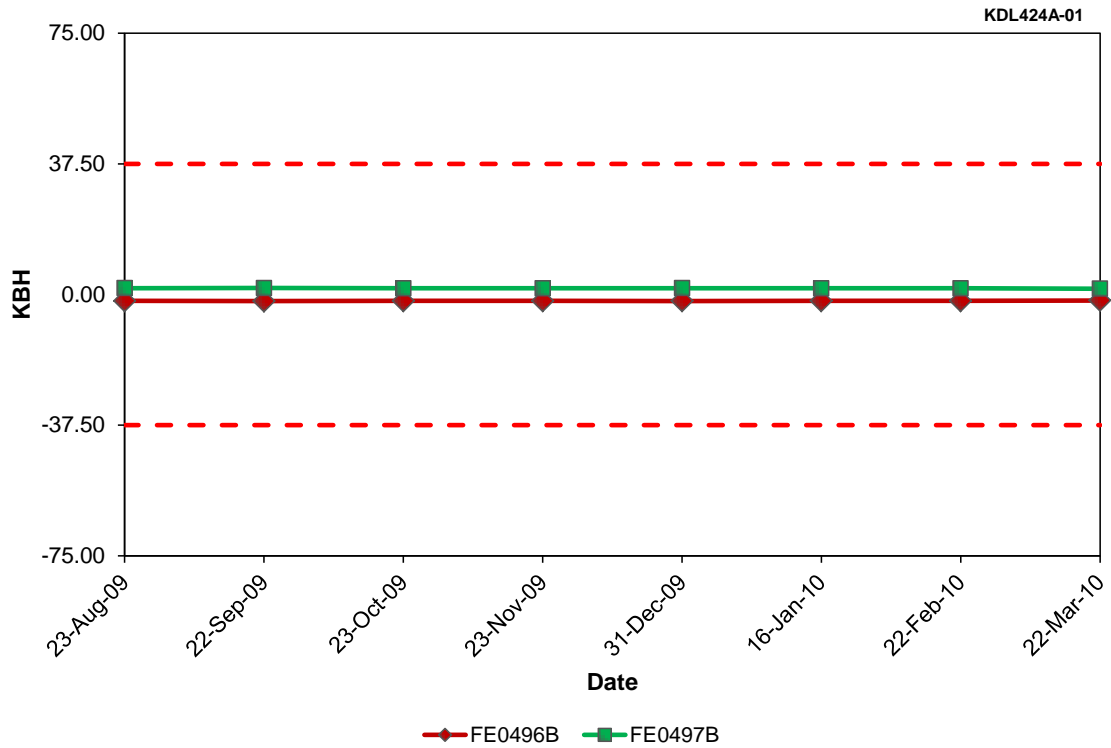


Figure D.45 FW FLOW TO SG C Steady-State Deviation at Farley Unit 2 (Cycle 20)

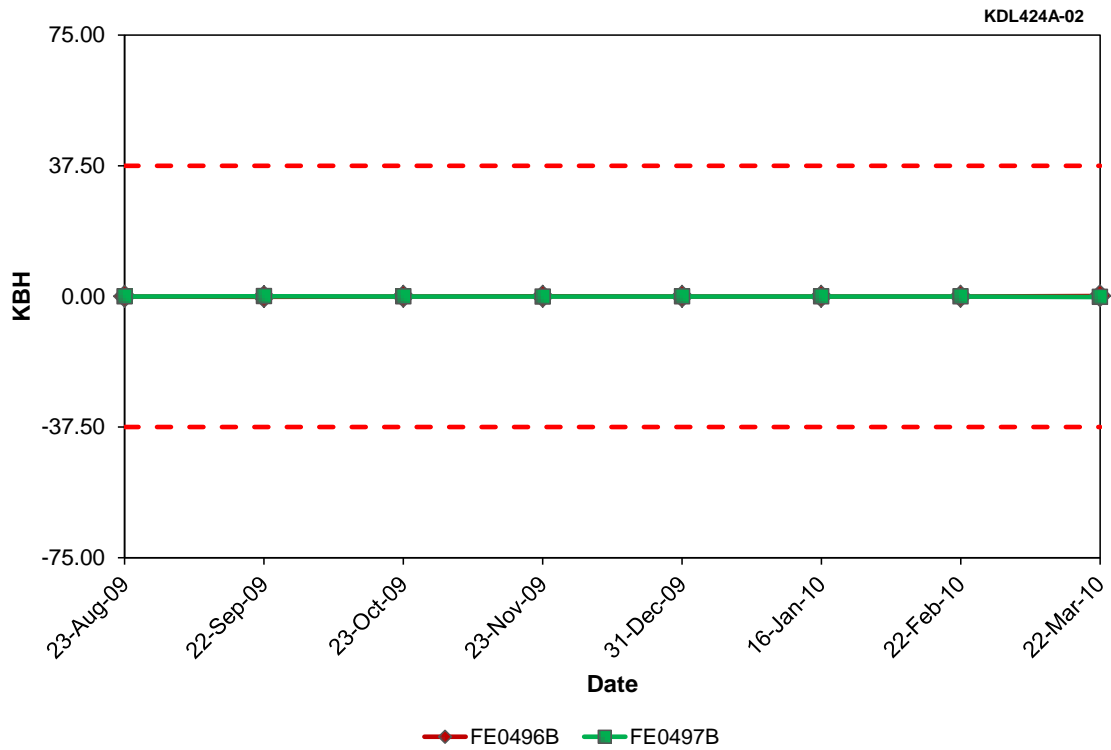
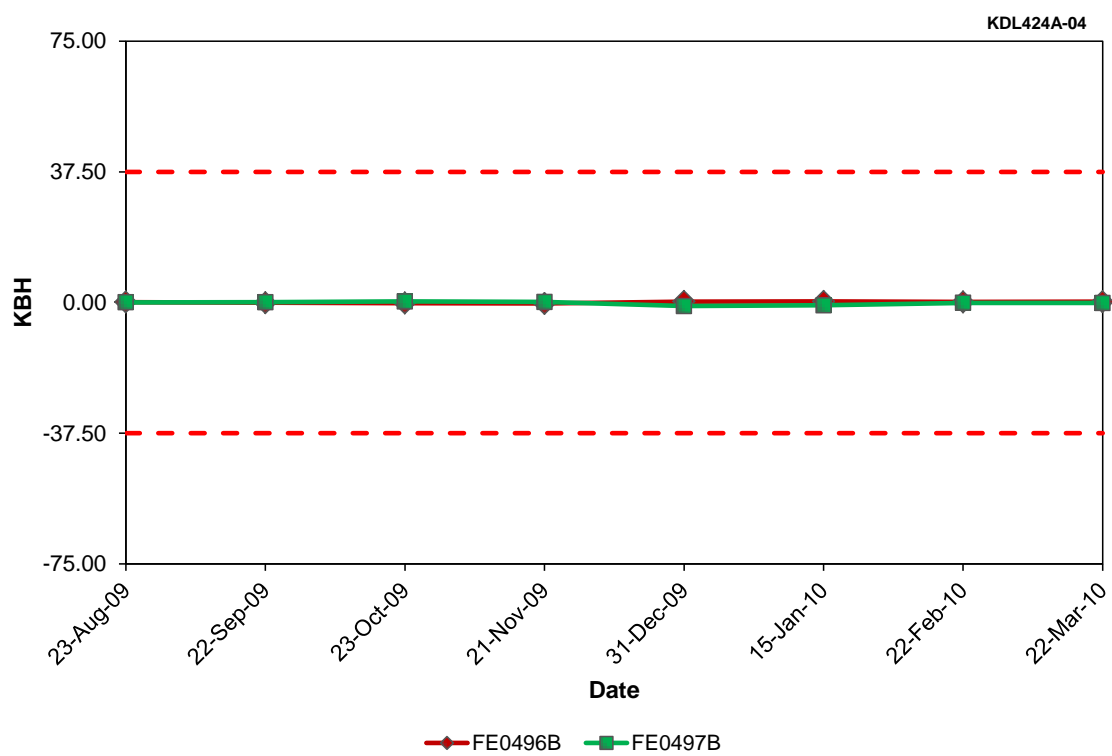


Figure D.46 FW FLOW TO SG C Steady-State Drift at Farley Unit 2 (Cycle 20)



**Figure D.47 FW FLOW TO SG C Steady-State Residual AAKR at Farley Unit 2 (Cycle 20)**

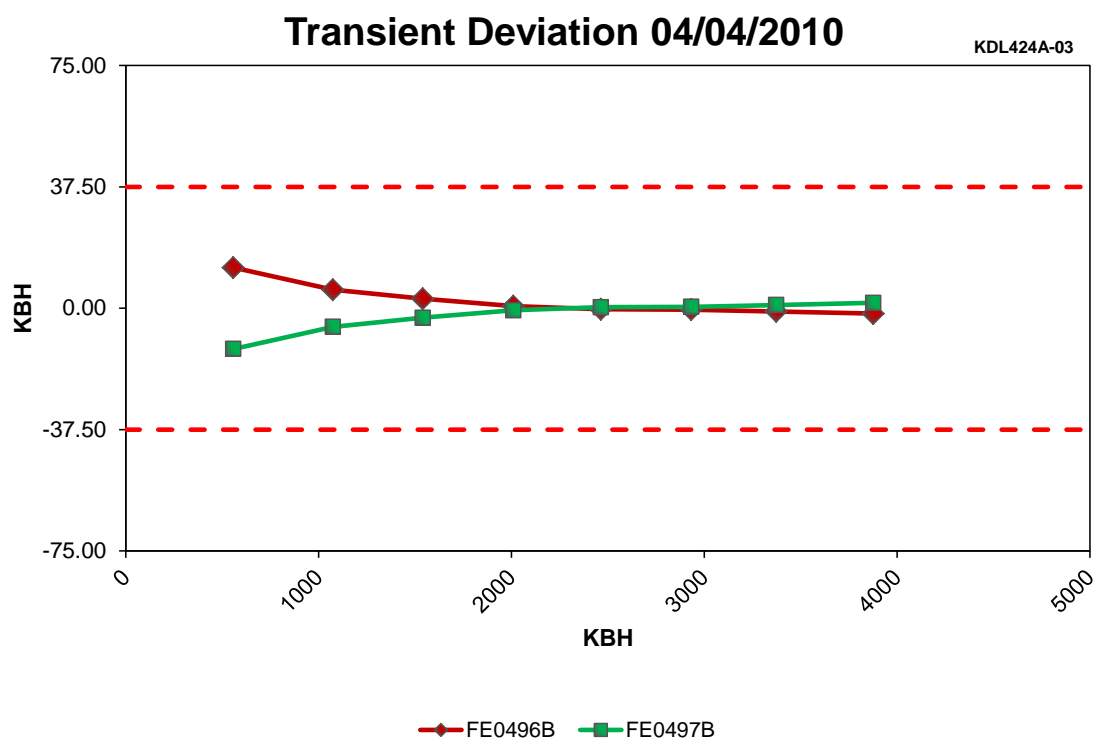


Figure D.48 FW FLOW TO SG C Transient Deviation at Farley Unit 2 (Cycle 20)

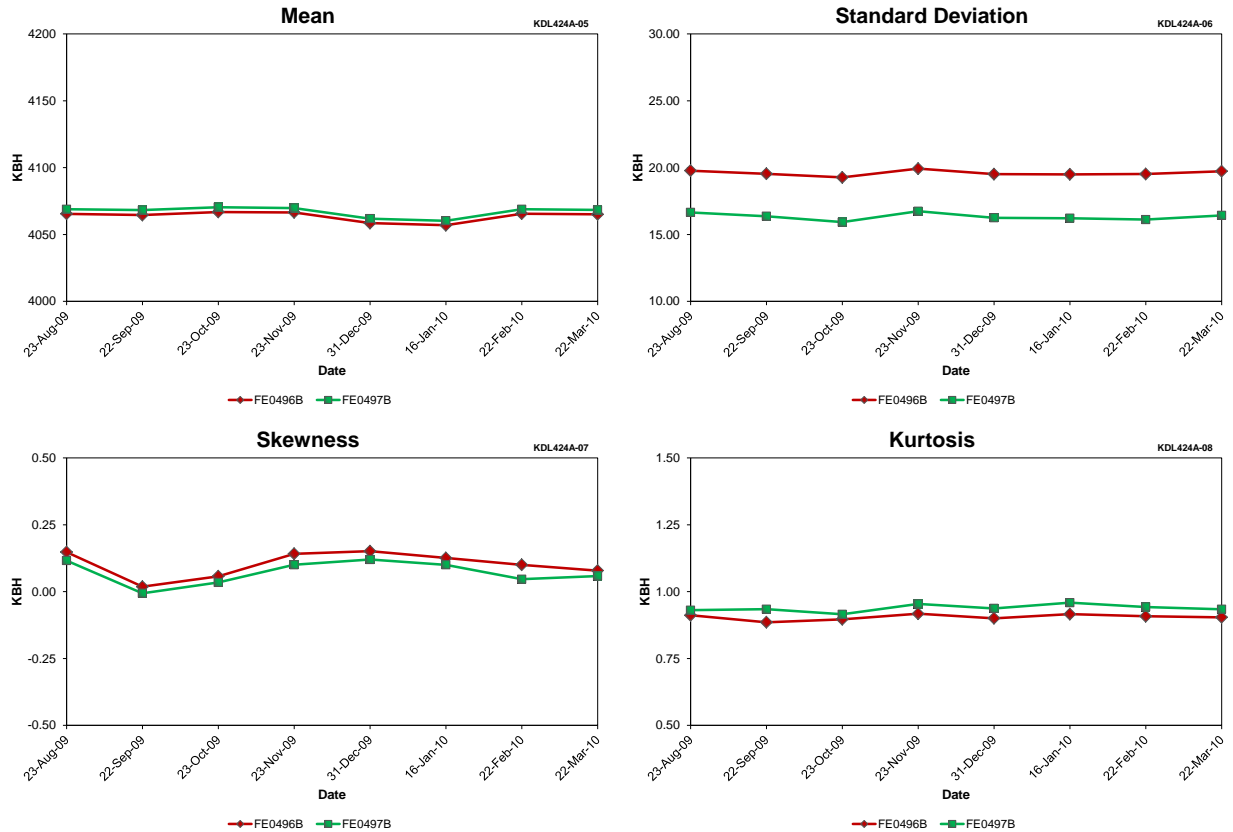


Figure D.49 FW FLOW TO SG C Data Quality Statistics at Farley Unit 2 (Cycle 20)

Table D.10 FW FLOW TO SG C Data Quality for Farley Unit 2 (Cycle 20)

Result Type	Tag Names	
	FE0496B	FE0497B
Mean	4063.68	4067.10
Std. Dev.	19.60	16.34
Skewness	0.10	0.07
Kurtosis	0.90	0.94

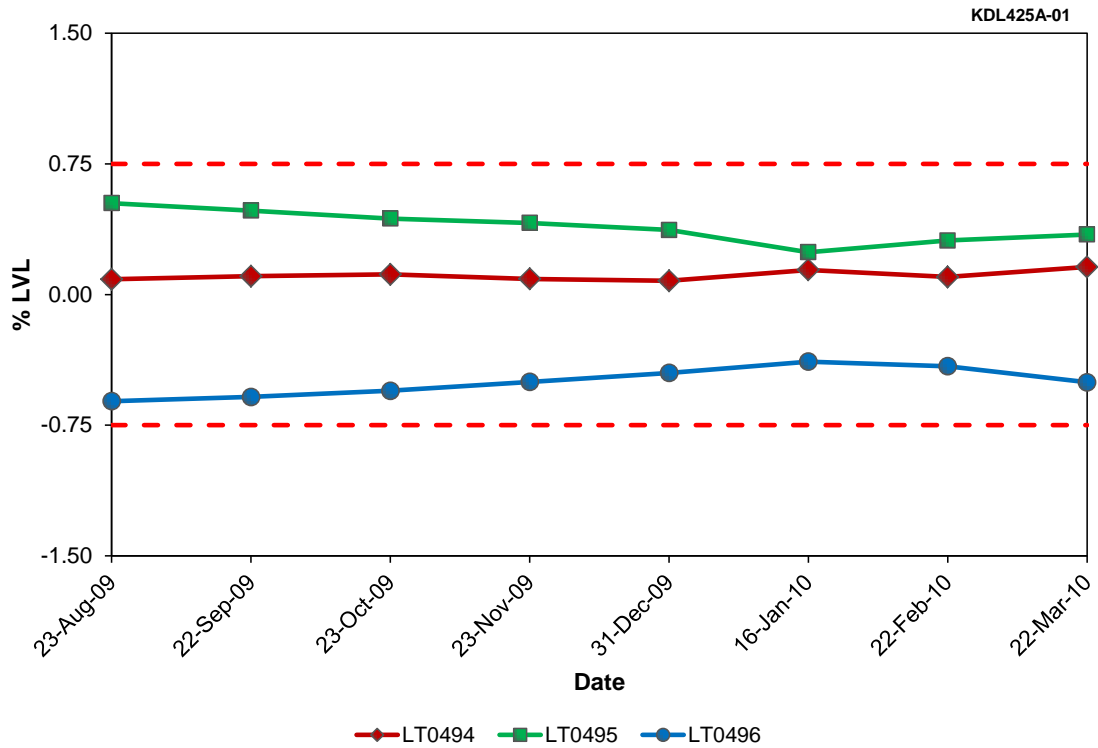


Figure D.50 SG C LEVEL Steady-State Deviation at Farley Unit 2 (Cycle 20)

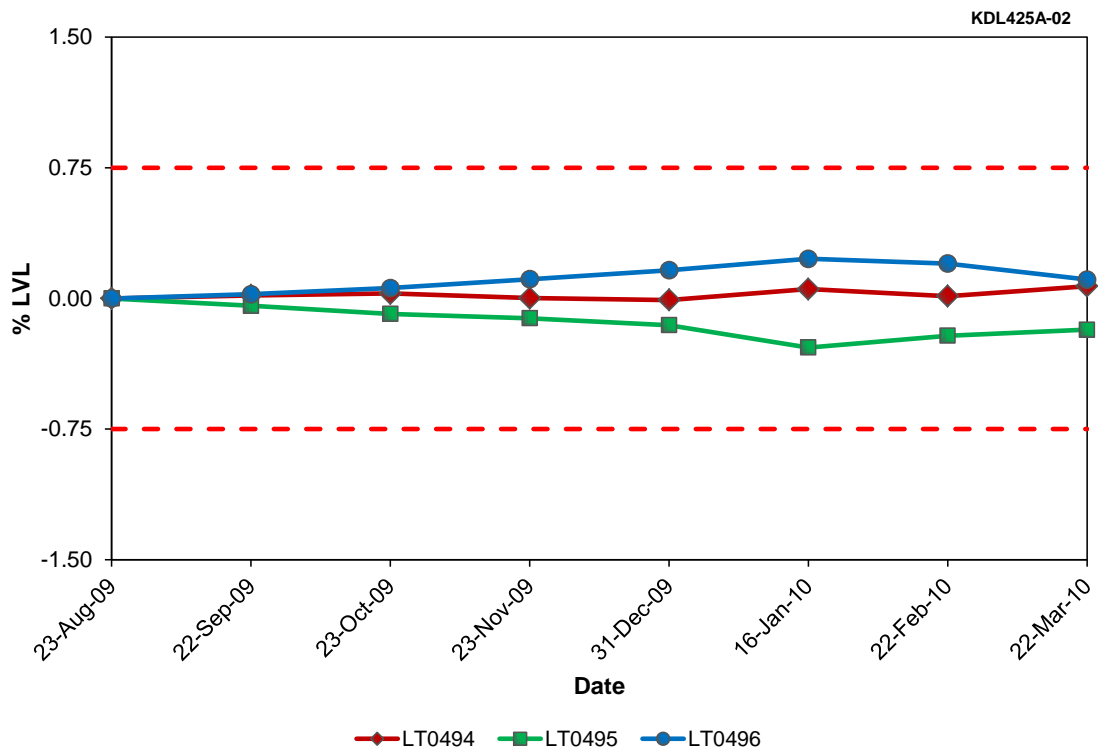


Figure D.51 SG C LEVEL Steady-State Drift at Farley Unit 2 (Cycle 20)

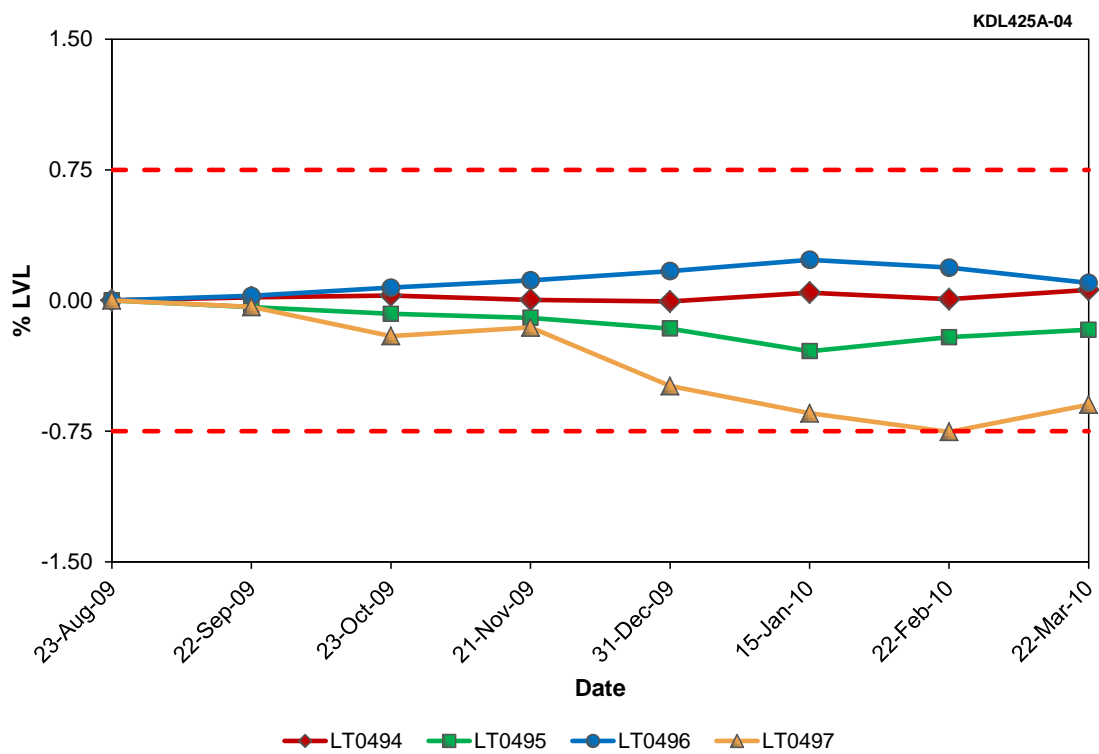


Figure D.52 SG C LEVEL Steady-State Residual AAKR at Farley Unit 2 (Cycle 20)

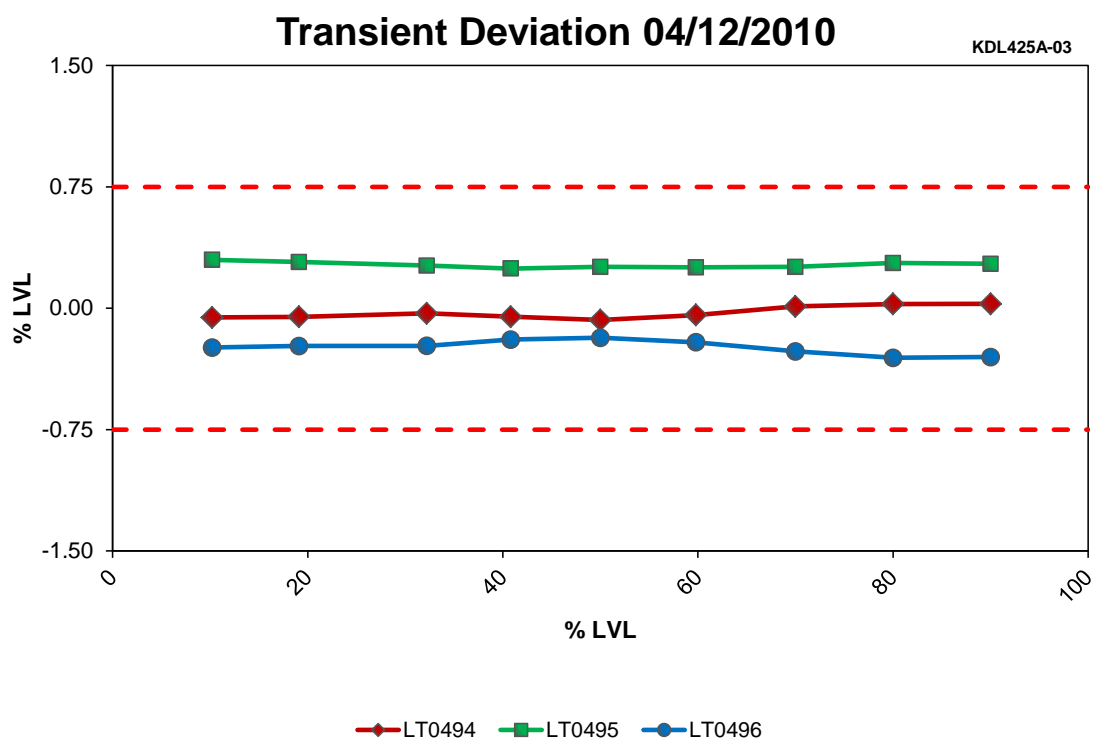
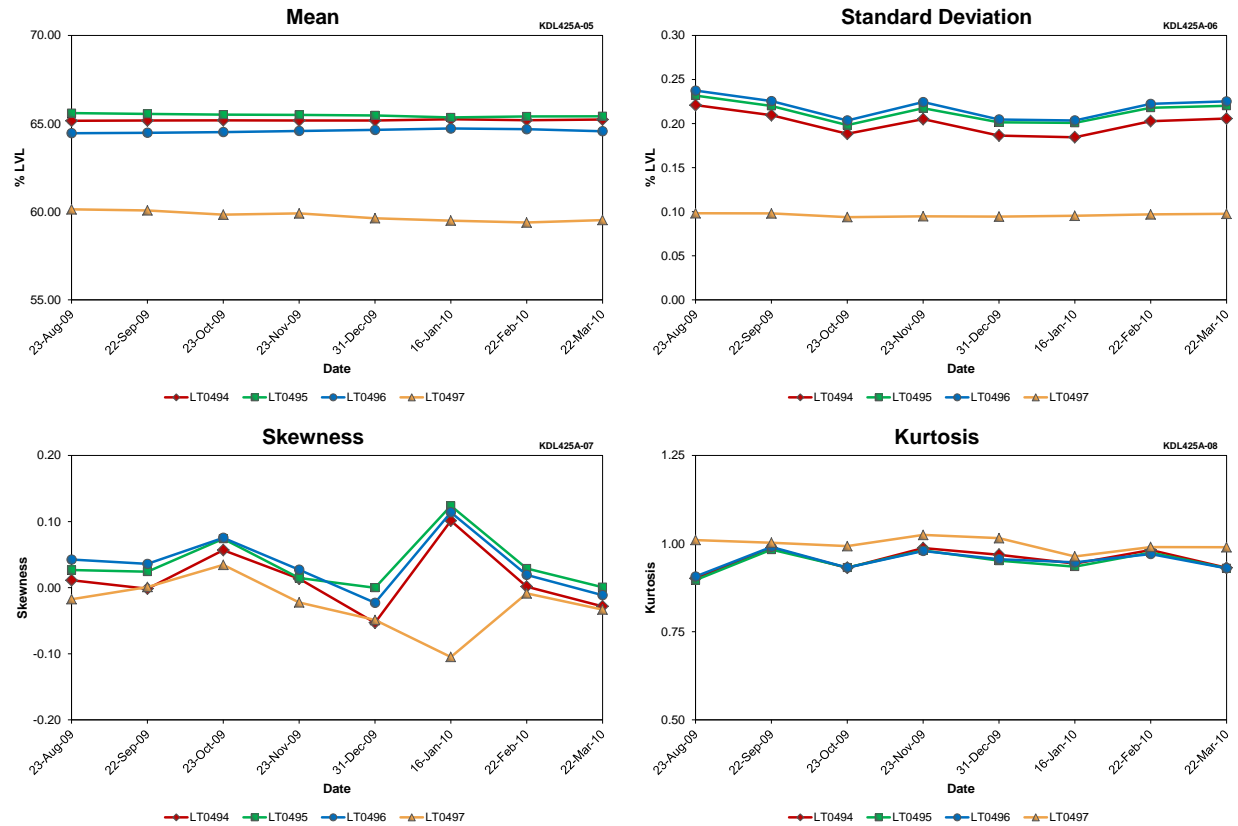


Figure D.53 SG C LEVEL Transient Deviation at Farley Unit 2 (Cycle 20)

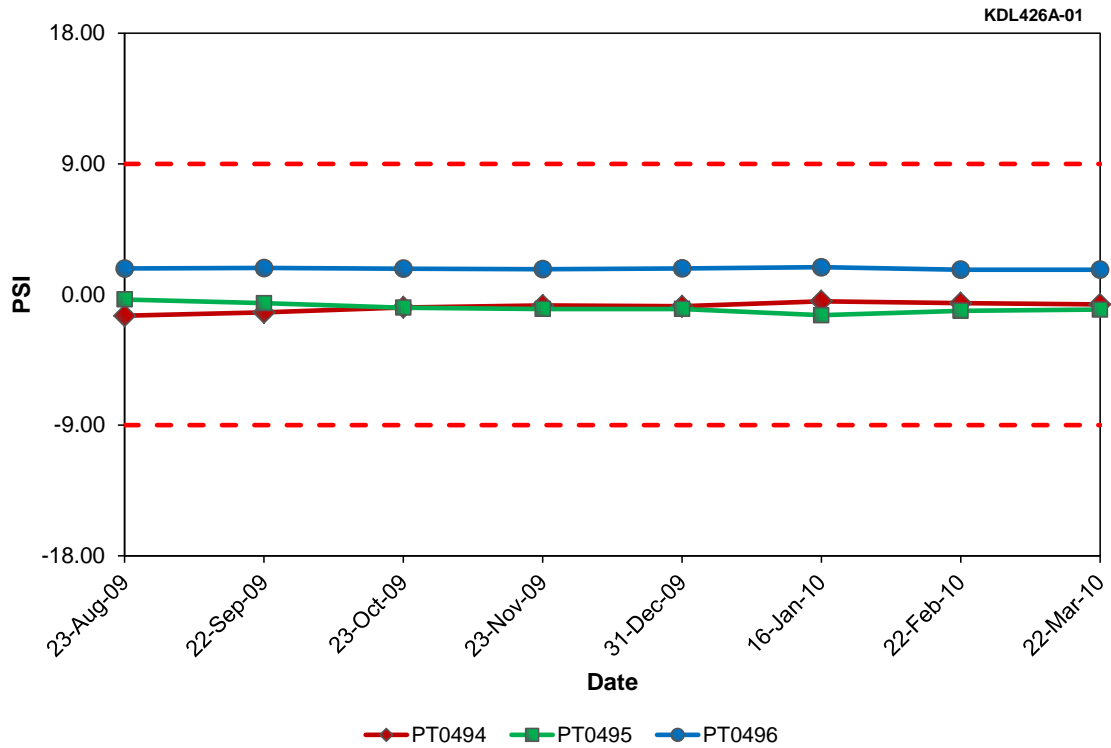




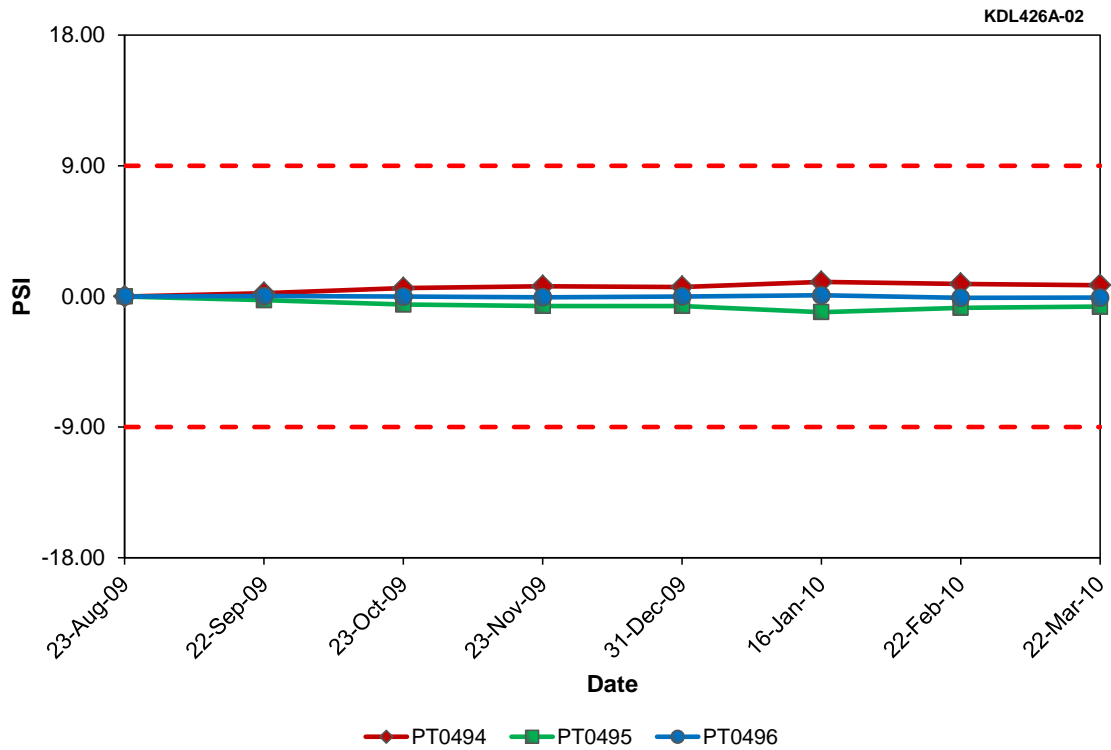
**Figure D.54 SG C LEVEL Data Quality Statistics at Farley Unit 2 (Cycle 20)**

**Table D.11 SG C LEVEL Data Quality for Farley Unit 2 (Cycle 20)**

Result Type	Tag Names			
	LT0494	LT0495	LT0496	LT0497
Mean	65.19	65.47	64.58	59.75
Std. Dev.	0.20	0.21	0.22	0.10
Skewness	0.01	0.04	0.04	-0.02
Kurtosis	0.95	0.95	0.95	1.00



**Figure D.55 SG C OUTLET PRESSURE Steady-State Deviation at Farley Unit 2 (Cycle 20)**



**Figure D.56 SG C OUTLET PRESSURE Steady-State Drift at Farley Unit 2 (Cycle 20)**

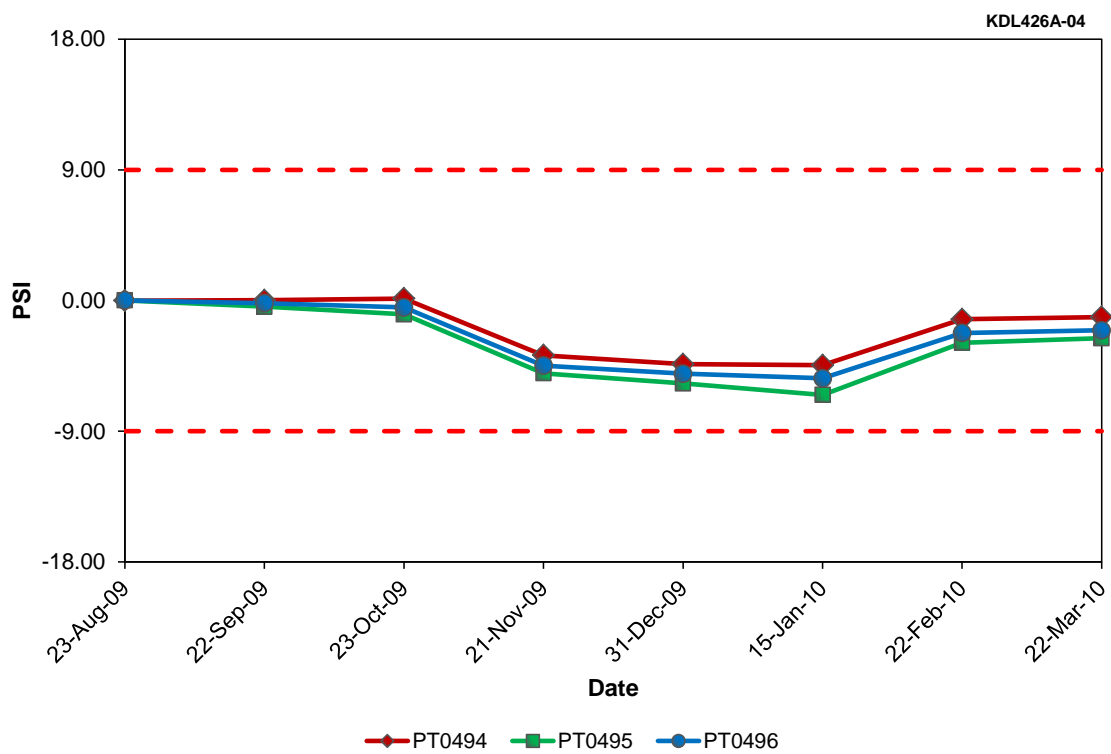


Figure D.57 SG C OUTLET PRESSURE Steady-State Residual AAKR at Farley Unit 2 (Cycle 20)

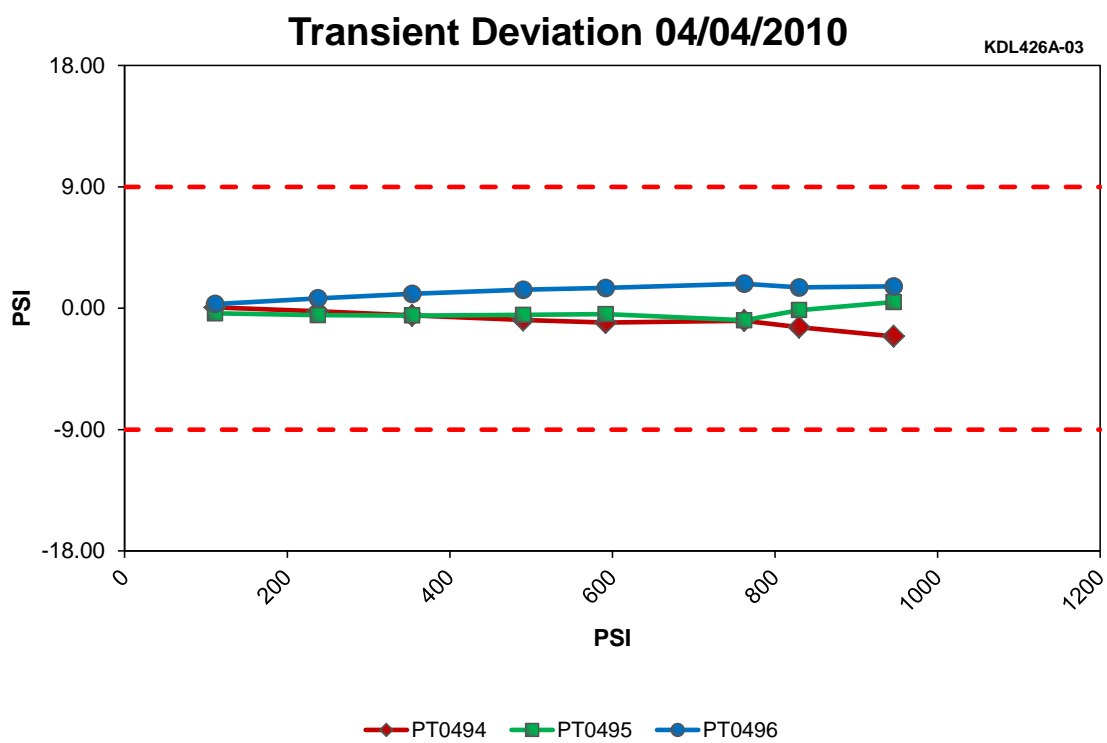


Figure D.58 SG C OUTLET PRESSURE Transient Deviation at Farley Unit 2 (Cycle 20)

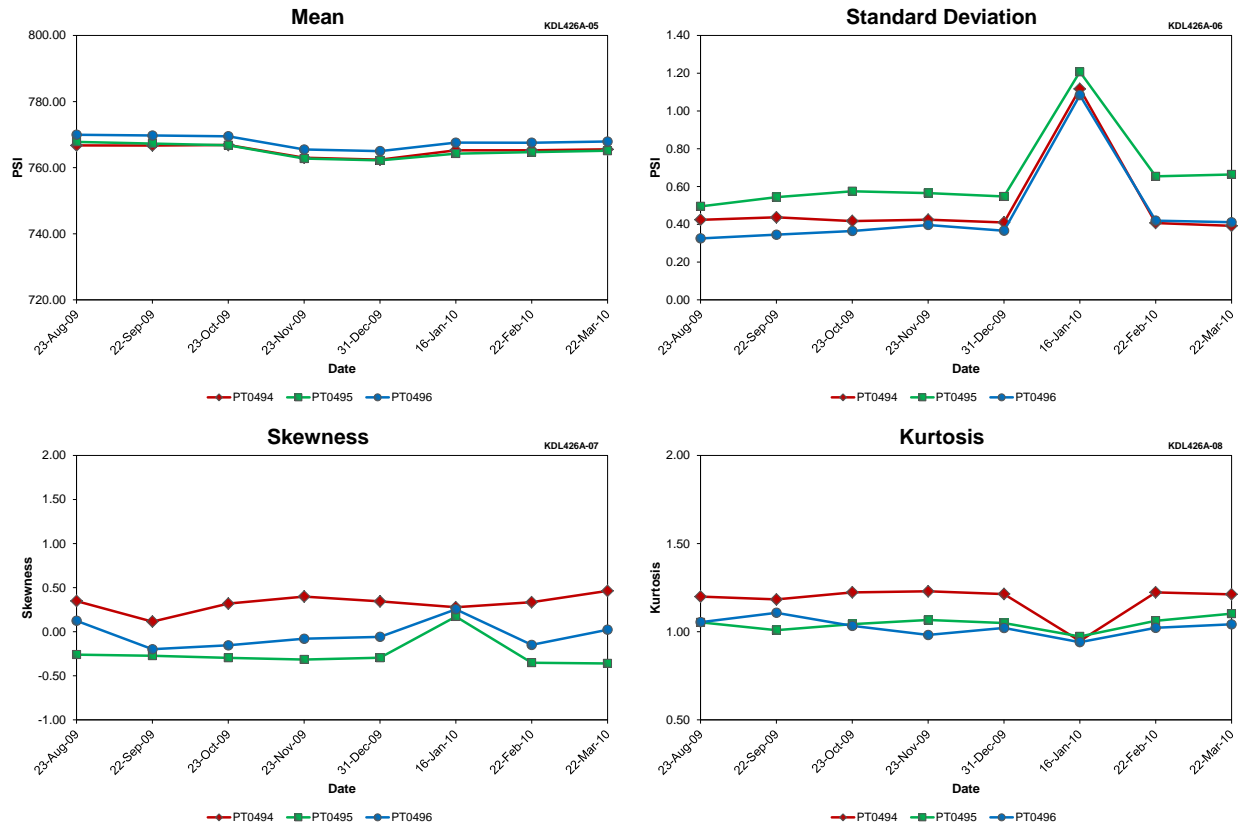
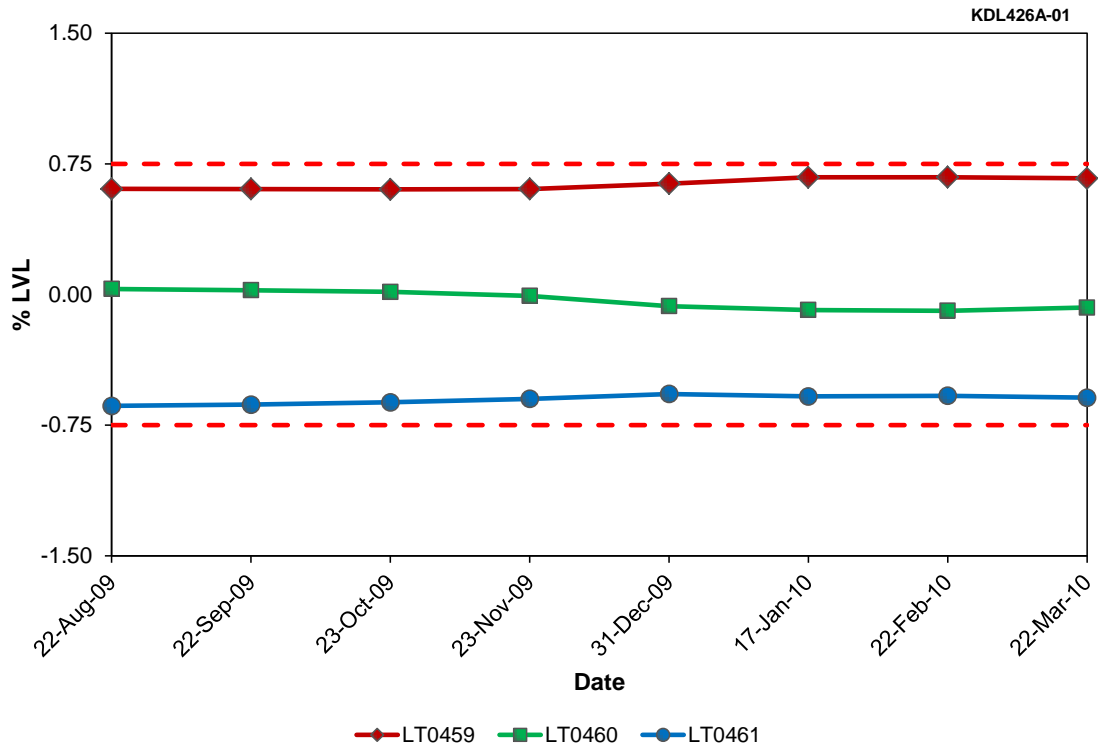


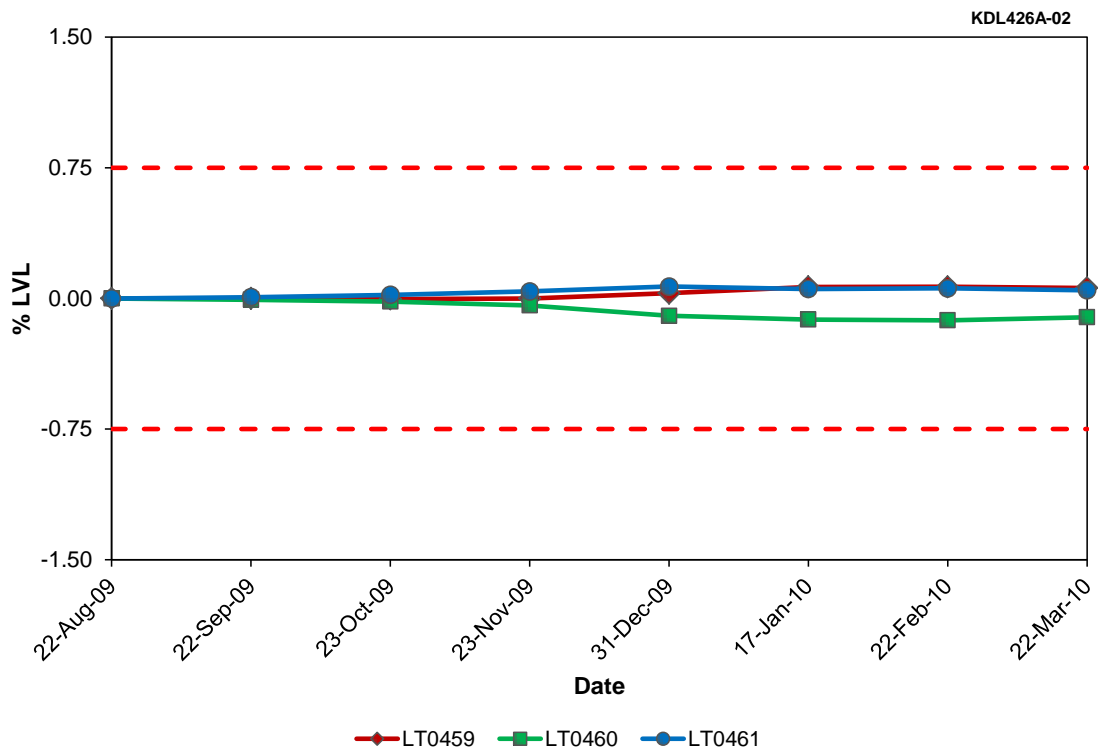
Figure D.59 SG C OUTLET PRESSURE Data Quality Statistics at Farley Unit 2 (Cycle 20)

Table D.12 SG C OUTLET PRESSURE Data Quality for Farley Unit 2 (Cycle 20)

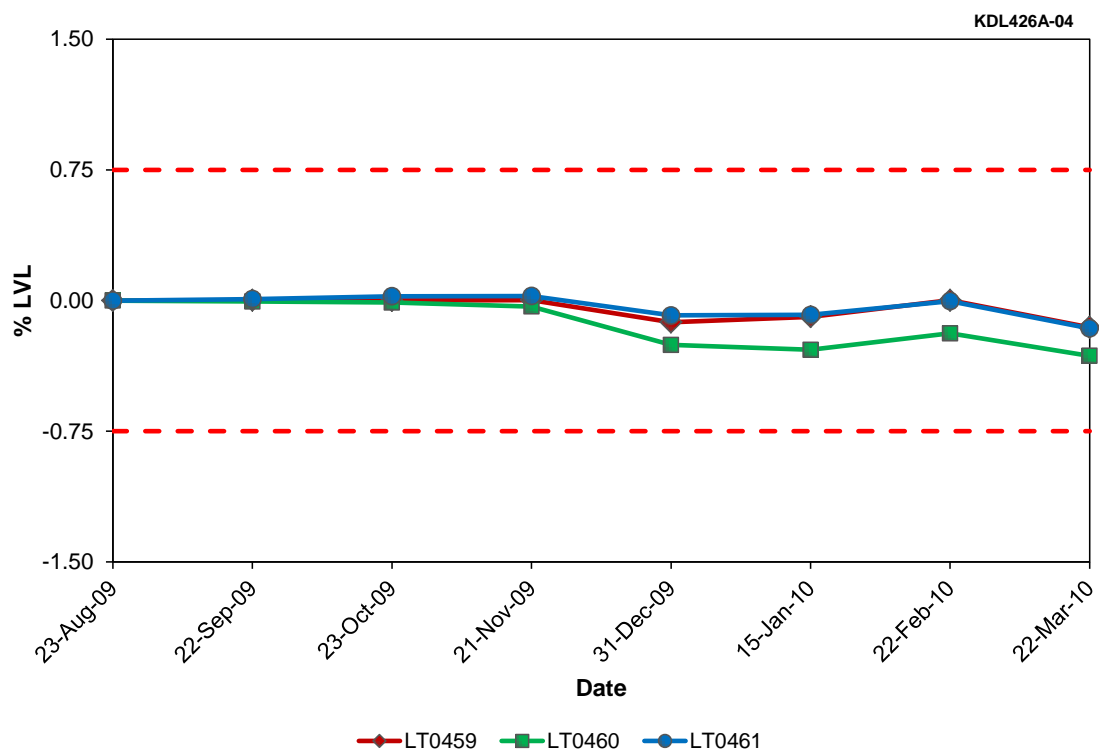
Result Type	Tag Names		
	PT0494	PT0495	PT0496
Mean	765.23	765.12	767.85
Std. Dev.	0.50	0.66	0.46
Skewness	0.33	-0.25	-0.03
Kurtosis	1.18	1.05	1.03



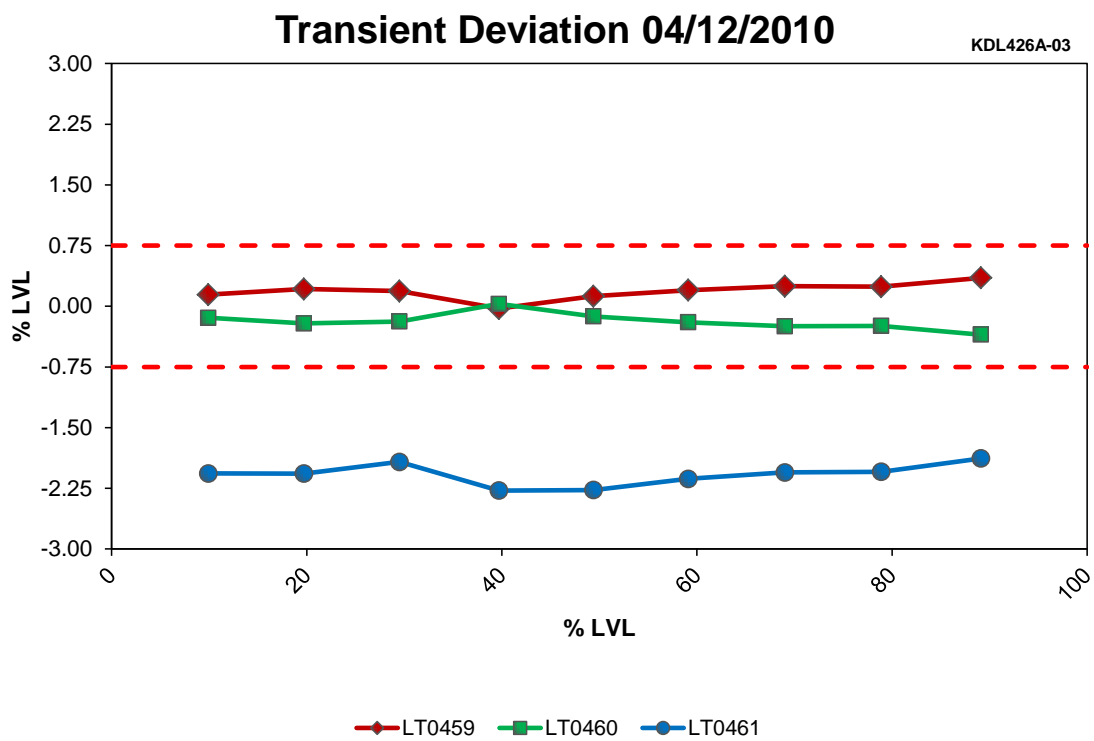
**Figure D.60 PRESSURIZER LEVEL Steady-State Deviation at Farley Unit 2 (Cycle 20)**



**Figure D.61 PRESSURIZER LEVEL Steady-State Drift at Farley Unit 2 (Cycle 20)**

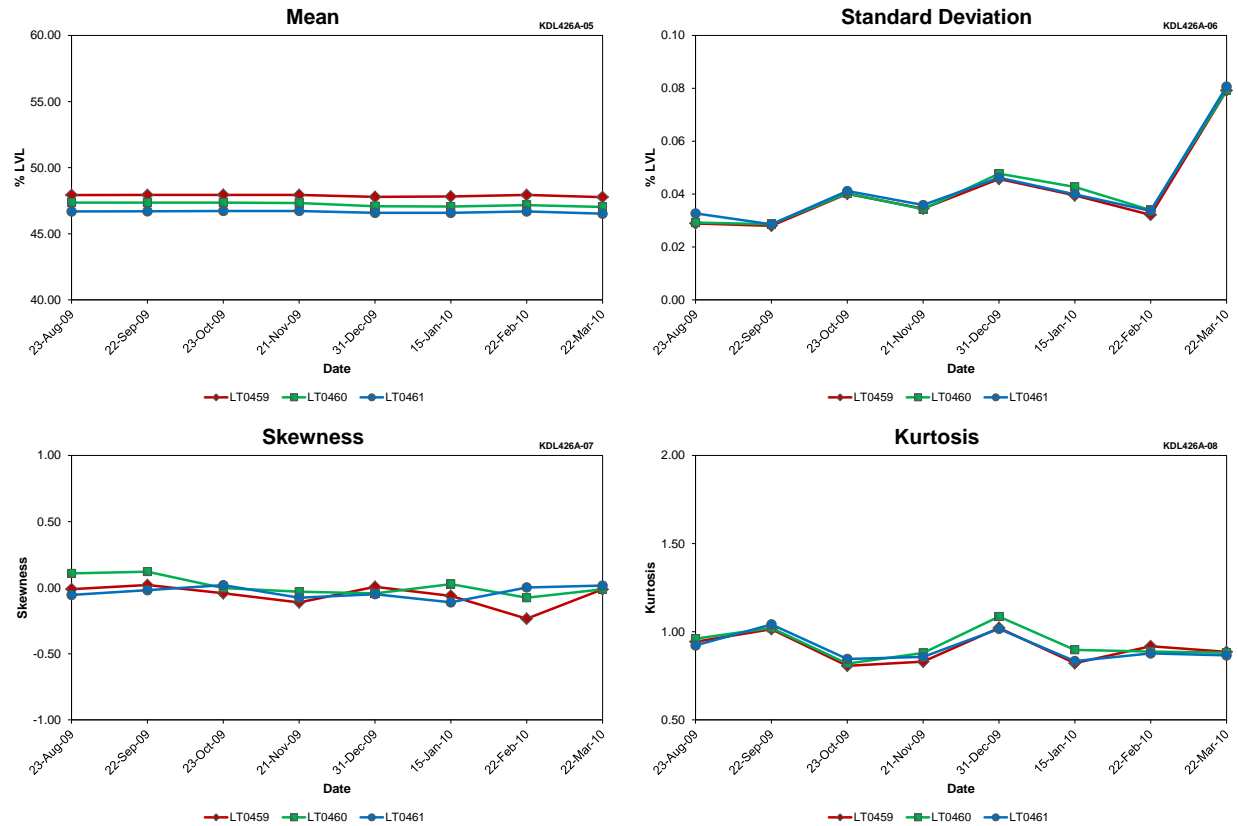


**Figure D.62 PRESSURIZER LEVEL Steady-State Residual AAKR at Farley Unit 2 (Cycle 20)**



**Figure D.63 PRESSURIZER LEVEL Transient Deviation at Farley Unit 2 (Cycle 20)**

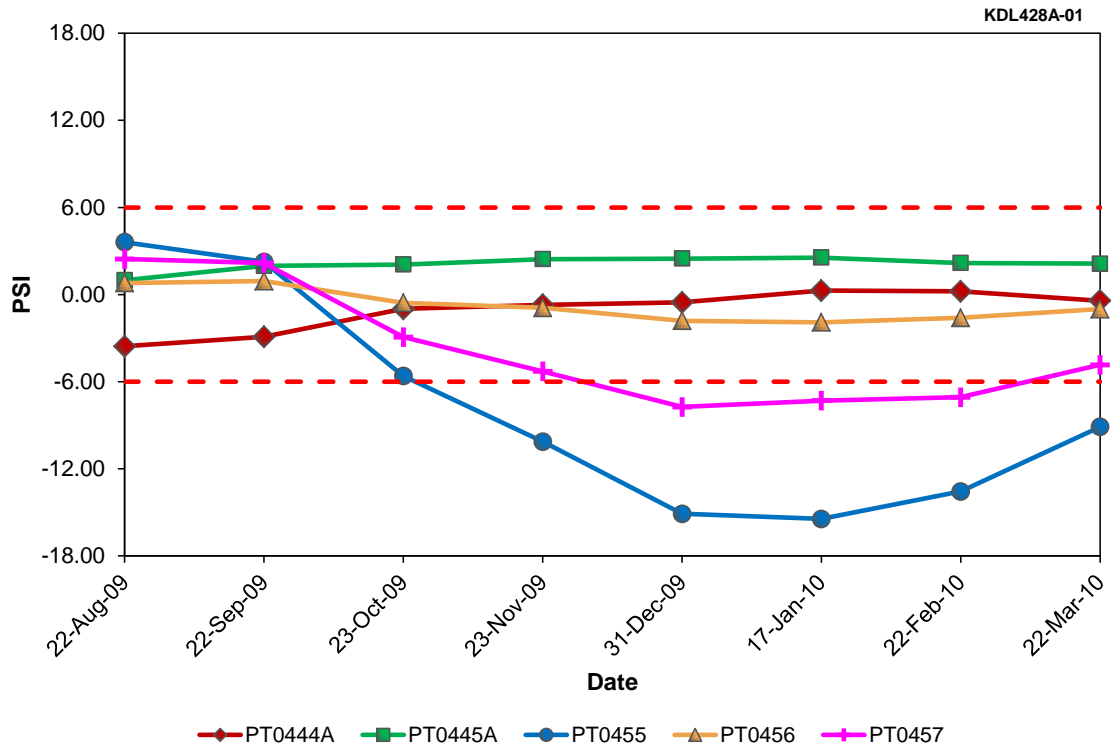




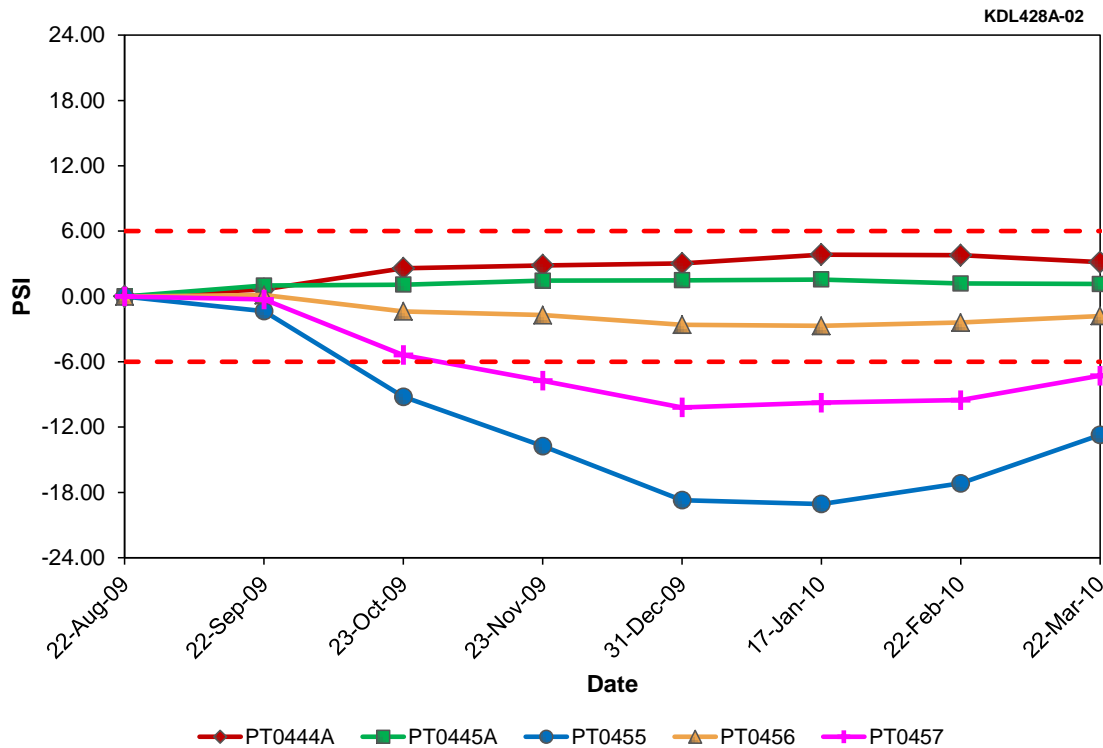
**Figure D.64 PRESSURIZER LEVEL Data Quality Statistics at Farley Unit 2 (Cycle 20)**

**Table D.13 PRESSURIZER LEVEL Data Quality for Farley Unit 2 (Cycle 20)**

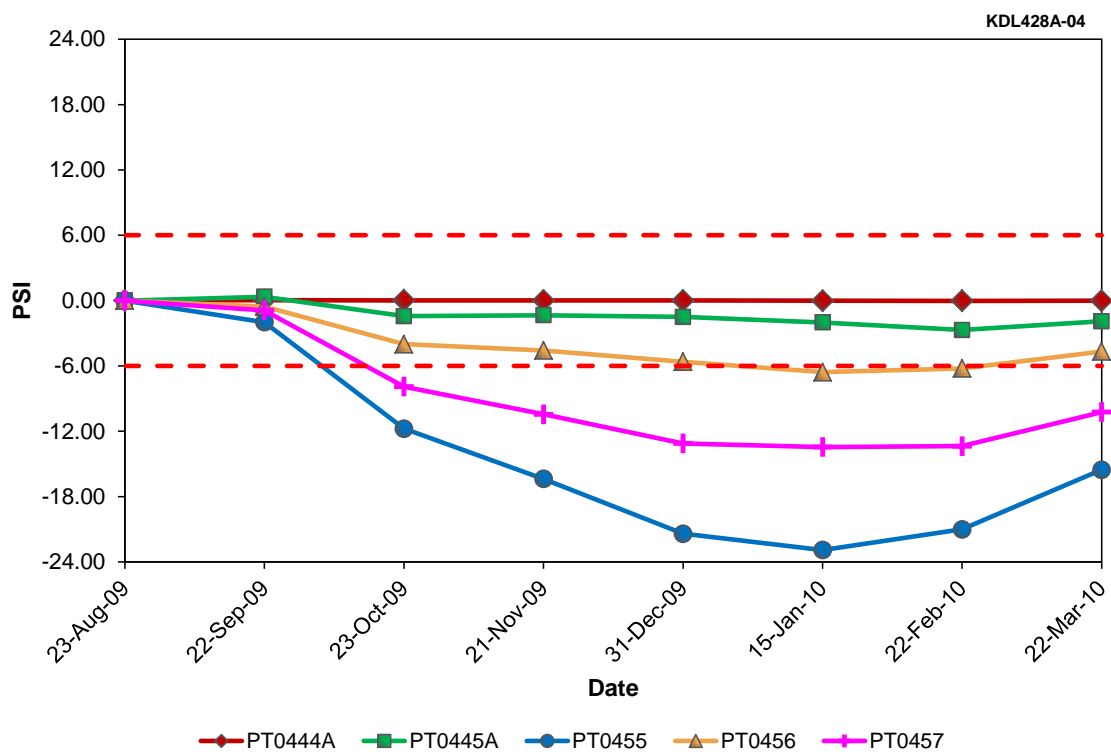
Result Type	Tag Names		
	LT0459	LT0460	LT0461
Mean	47.88	47.22	46.65
Std. Dev.	0.04	0.04	0.04
Skewness	-0.06	0.01	-0.03
Kurtosis	0.91	0.93	0.91



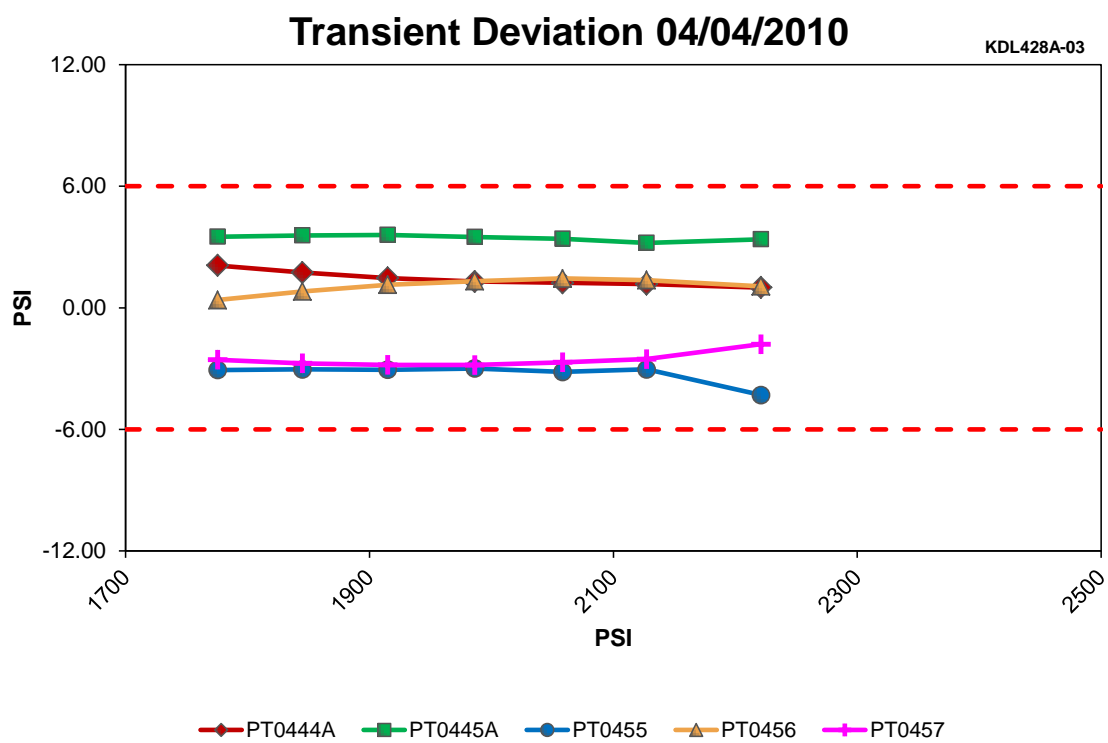
**Figure D.65 PRESSURIZER PRESSURE Steady-State Deviation at Farley Unit 2 (Cycle 20)**



**Figure D.66 PRESSURIZER PRESSURE Steady-State Drift at Farley Unit 2 (Cycle 20)**



**Figure D.67 PRESSURIZER PRESSURE Steady-State Residual AAKR at Farley Unit 2 (Cycle 20)**



**Figure D.68 PRESSURIZER PRESSURE Transient Deviation at Farley Unit 2 (Cycle 20)**

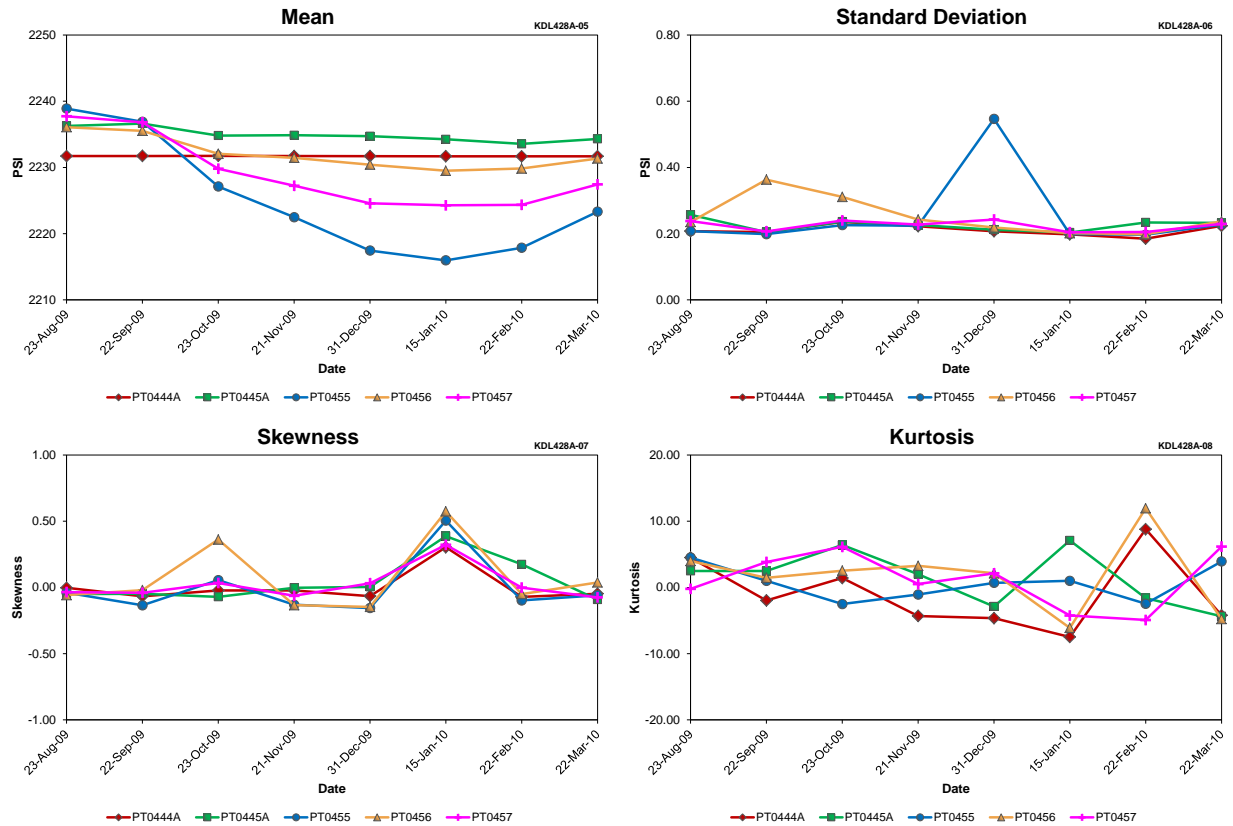
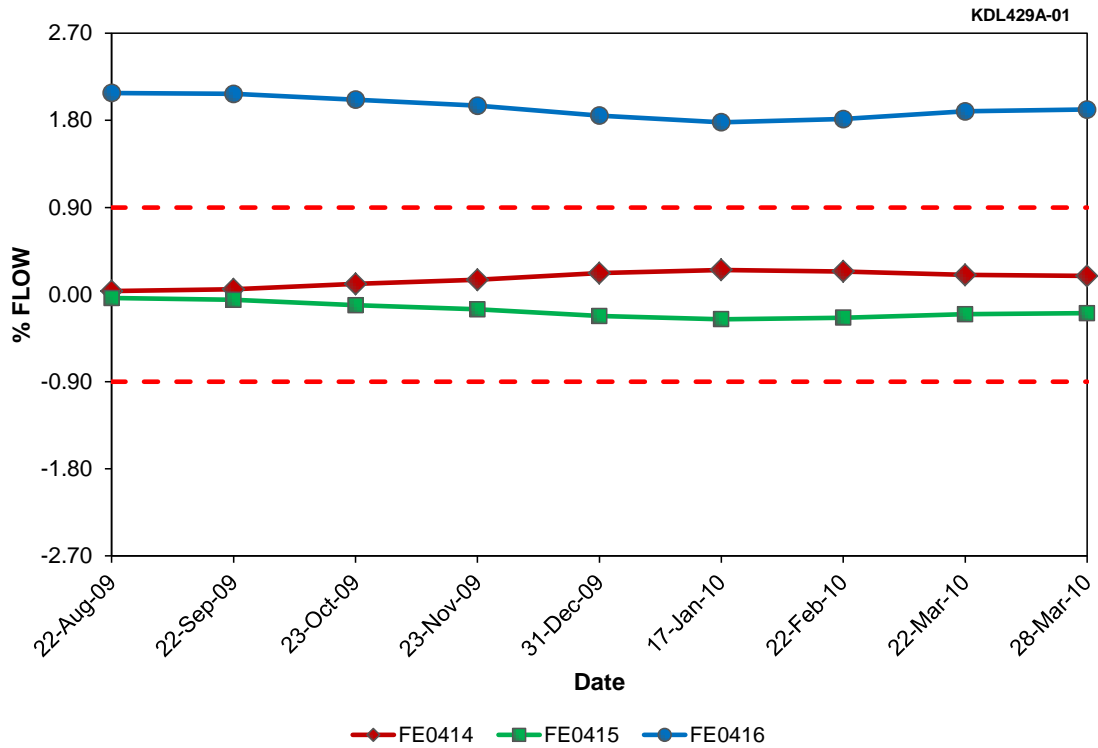


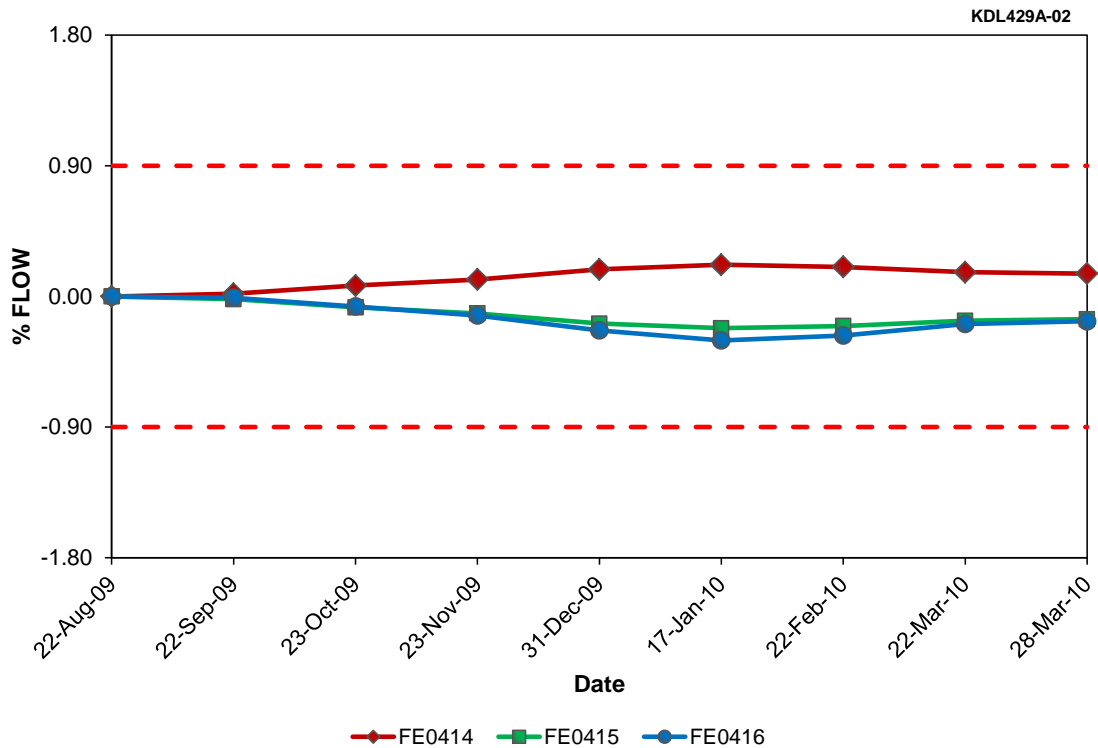
Figure D.69 PRESSURIZER PRESSURE Data Quality Statistics at Farley Unit 2 (Cycle 20)

Table D.14 PRESSURIZER PRESSURE Data Quality for Farley Unit 2 (Cycle 20)

Result Type	Tag Names				
	PT0444A	PT0445A	PT0455	PT0456	PT0457
Mean	2231.71	2234.93	2225.00	2232.03	2229.03
Std. Dev.	0.21	0.23	0.25	0.25	0.22
Skewness	0.00	0.04	-0.01	0.07	0.02
Kurtosis	-0.99	1.45	0.64	1.80	1.18



**Figure D.70 RCS LOOP A FLOW Steady-State Deviation at Farley Unit 2 (Cycle 20)**



**Figure D.71 RCS LOOP A FLOW Steady-State Drift at Farley Unit 2 (Cycle 20)**

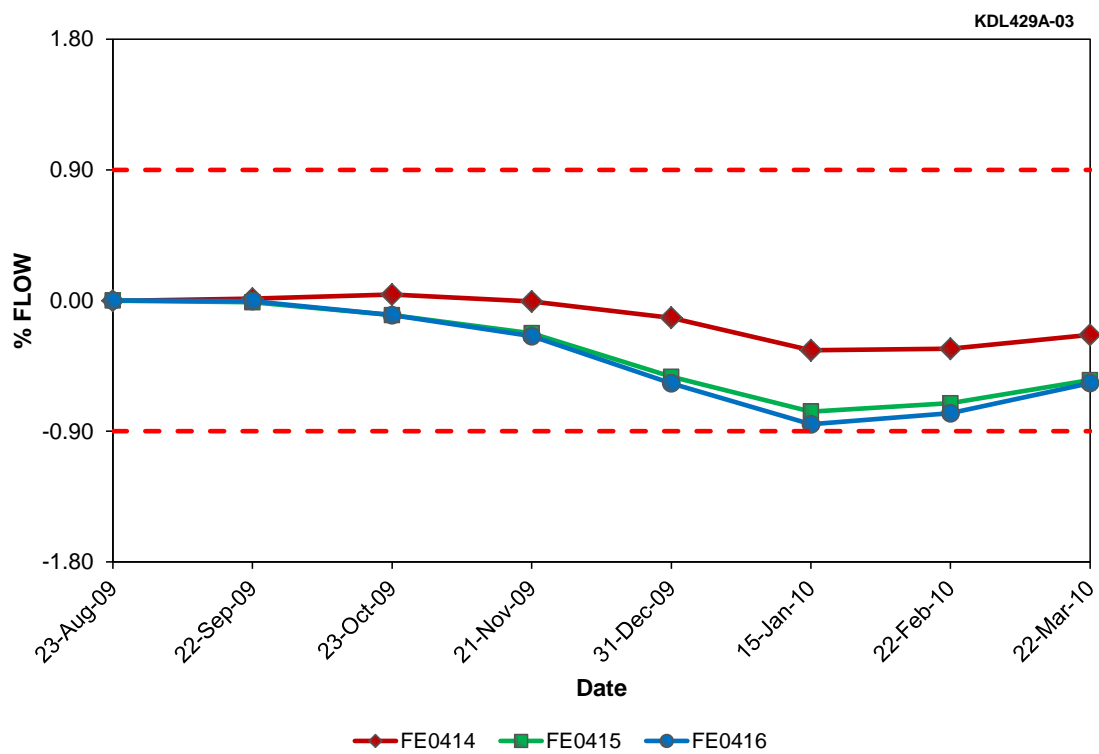


Figure D.72 RCS LOOP A FLOW Steady-State Residual AAKR at Farley Unit 2 (Cycle 20)

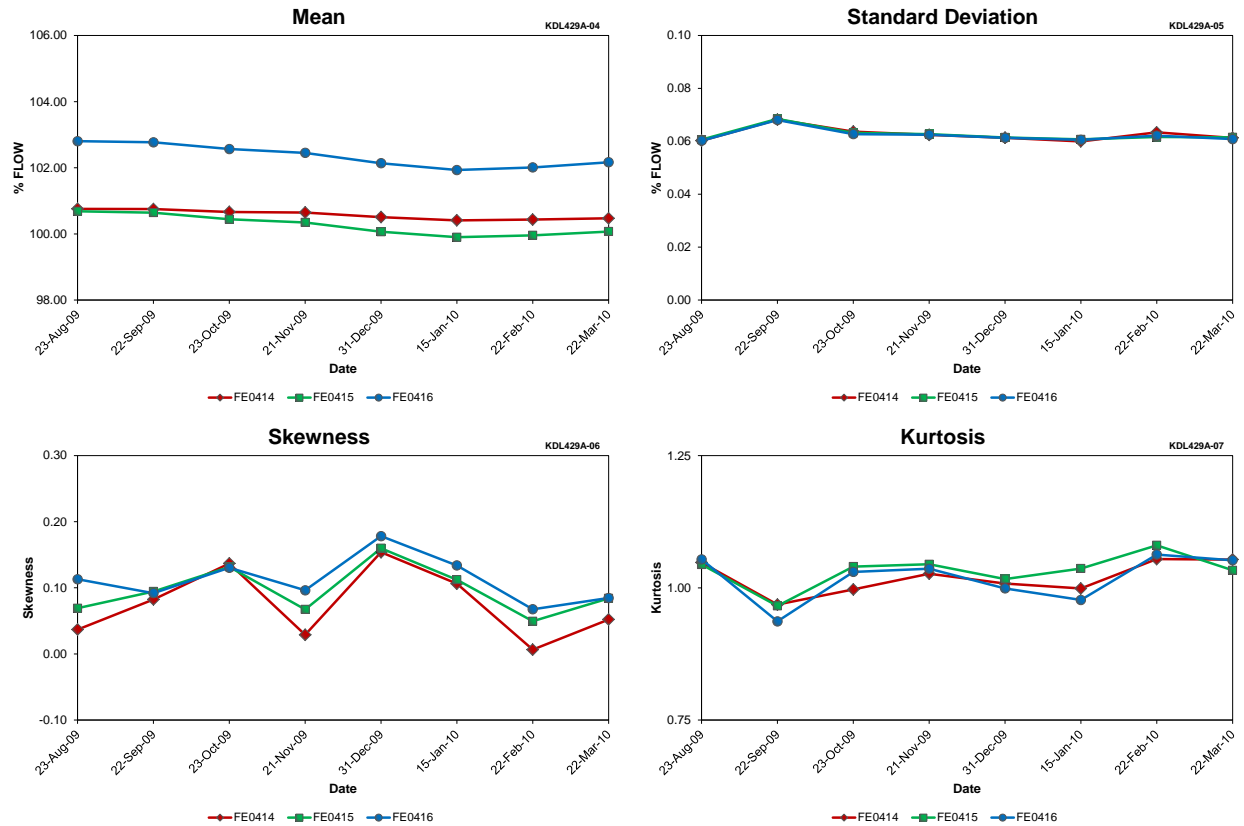


Figure D.73 RCS LOOP A FLOW Data Quality Statistics at Farley Unit 2 (Cycle 20)

Table D.15 RCS LOOP A FLOW Data Quality for Farley Unit 2 (Cycle 20)

Result Type	Tag Names		
	FE0414	FE0415	FE0416
Mean	100.58	100.26	102.36
Std. Dev.	0.06	0.06	0.06
Skewness	0.08	0.10	0.11
Kurtosis	1.02	1.03	1.02





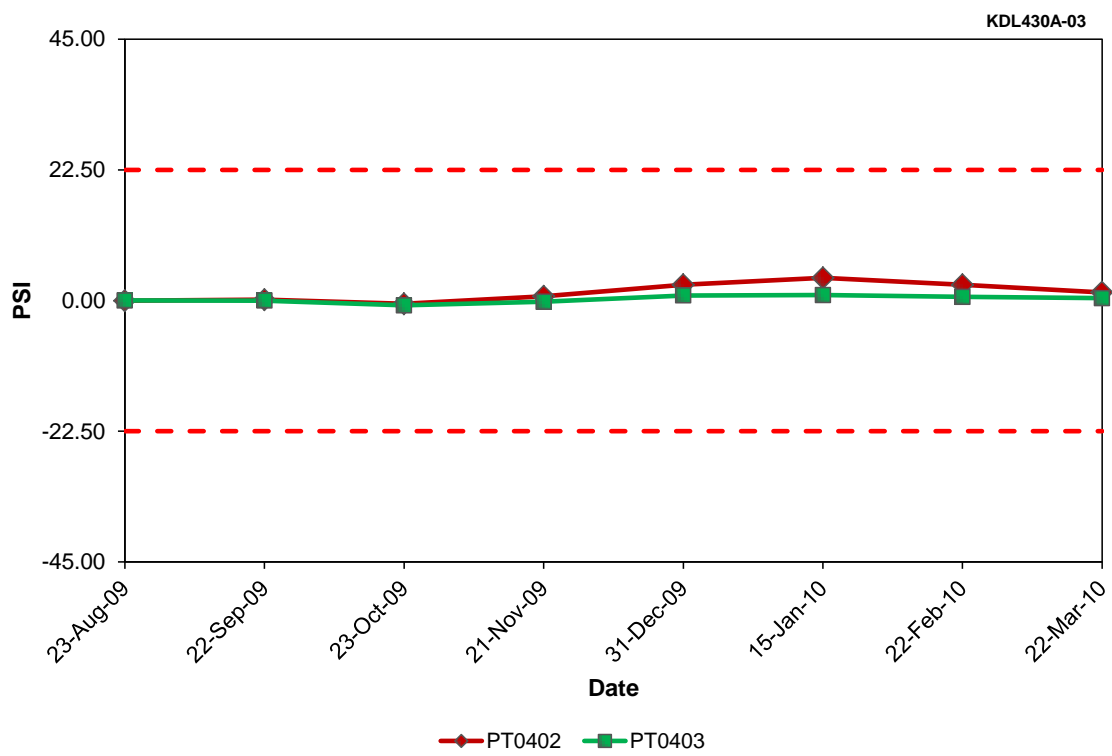


Figure D.74 RCS WIDE RANGE PRESSURE Steady-State Residual AAKR at Farley Unit 2 (Cycle 20)

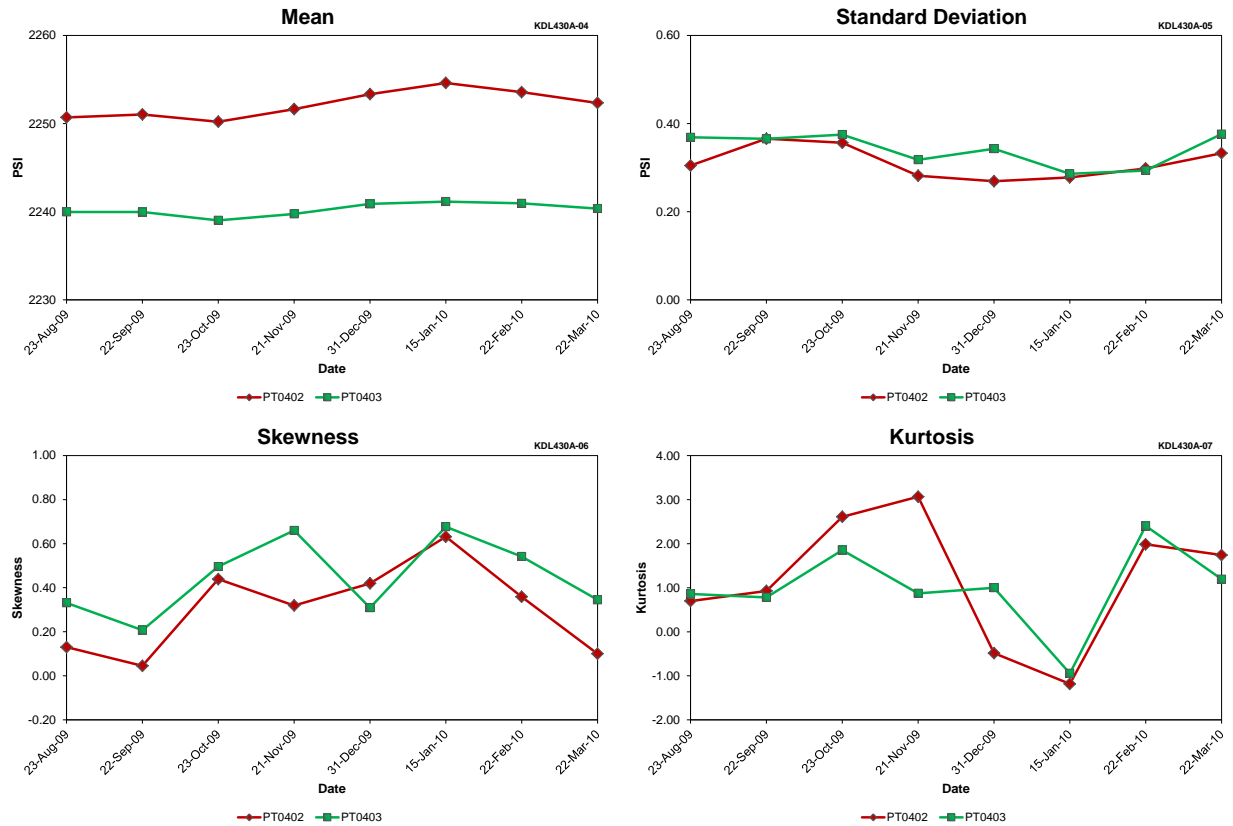


Figure D.75 RCS WIDE RANGE PRESSURE Data Quality Statistics at Farley Unit 2 (Cycle 20)

Table D.16 RCS WIDE RANGE PRESSURE Data Quality for Farley Unit 2 (Cycle 20)

Result Type	Tag Names	
	PT0402	PT0403
Mean	2252.19	2240.26
Std. Dev.	0.31	0.34
Skewness	0.31	0.45
Kurtosis	1.17	1.00

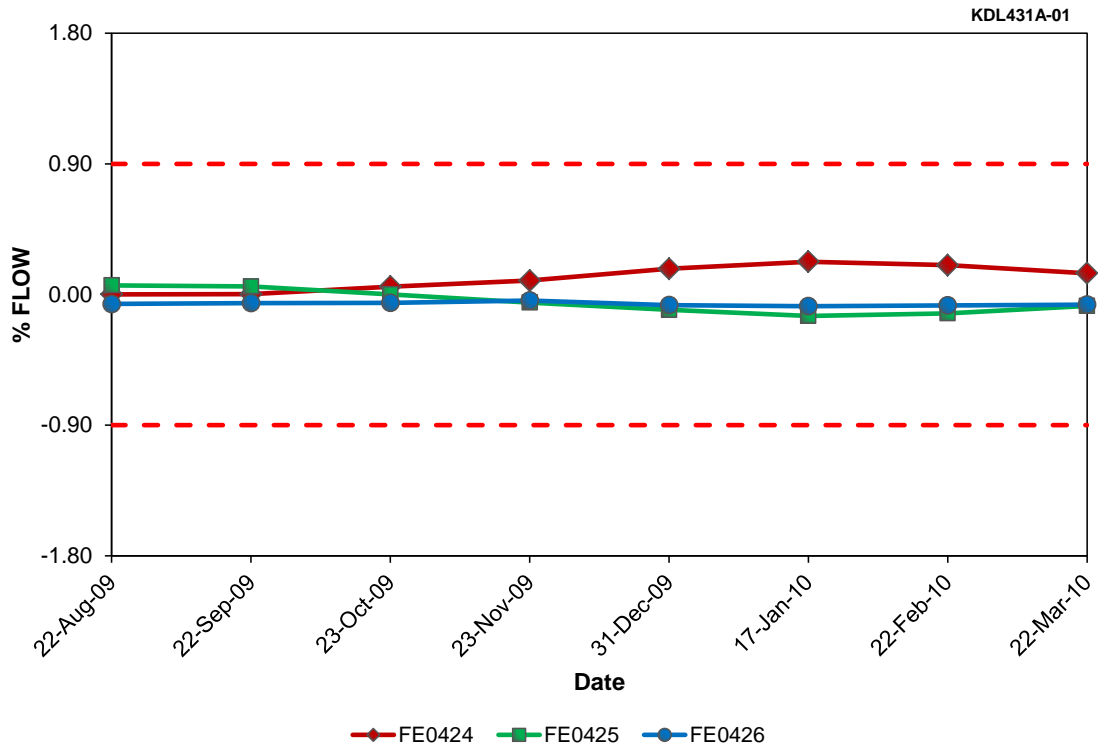


Figure D.76 RCS LOOP B FLOW Steady-State Deviation at Farley Unit 2 (Cycle 20)

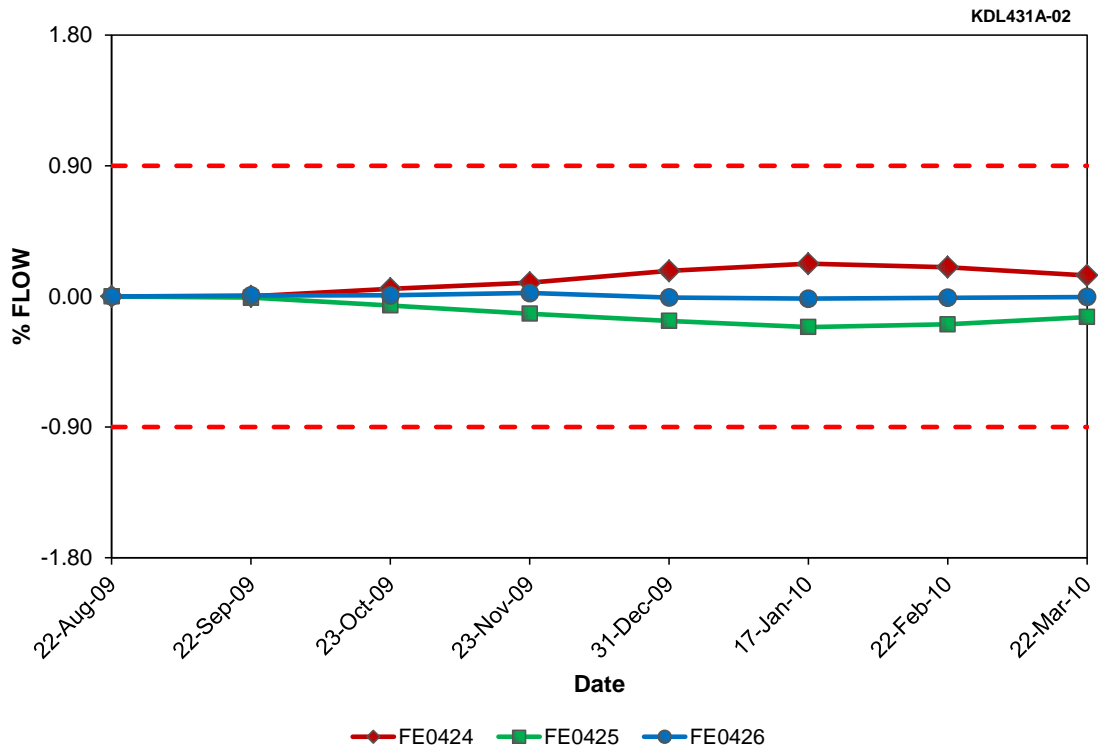
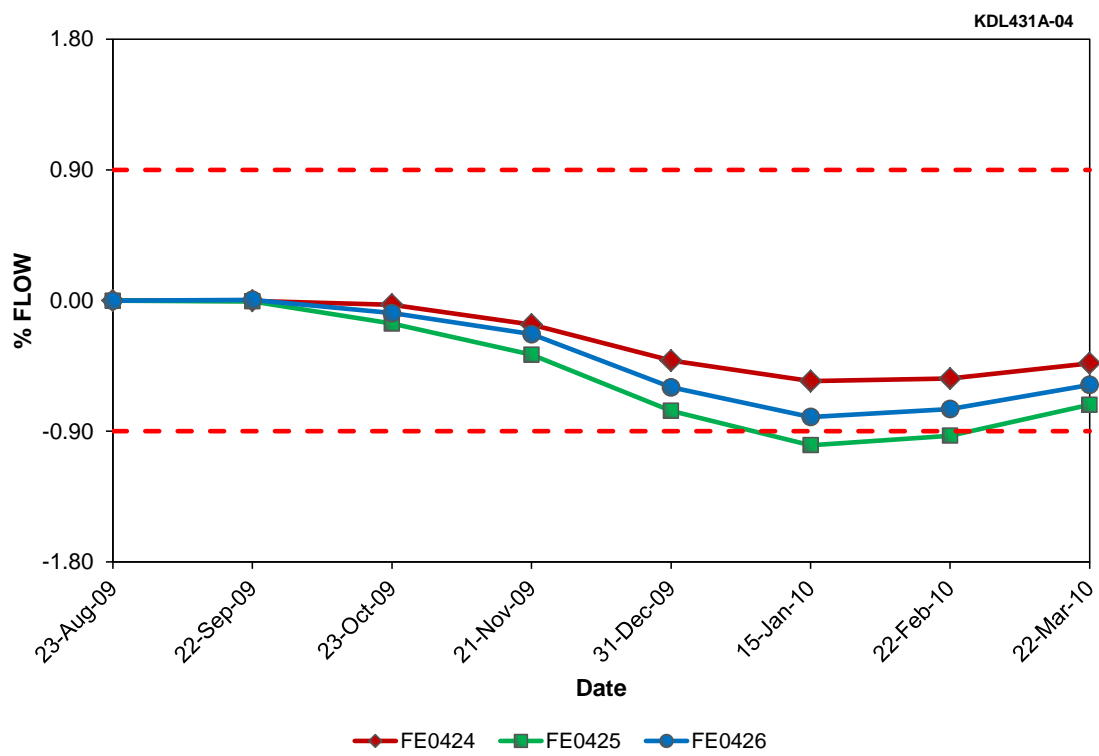
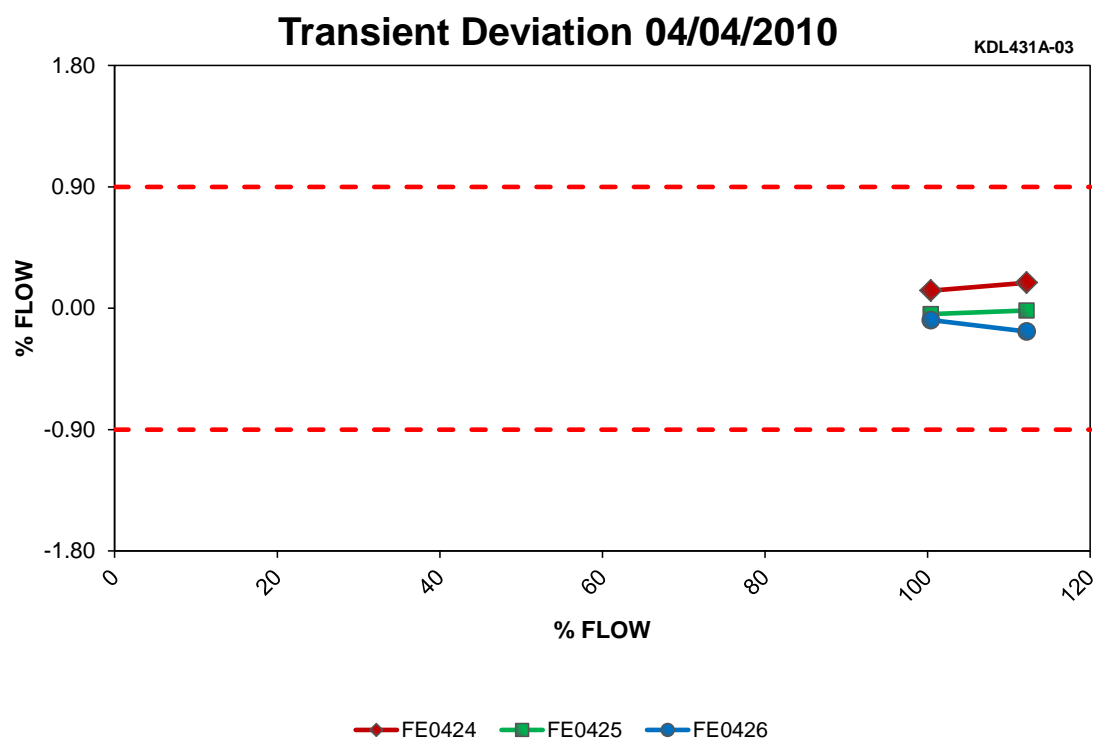


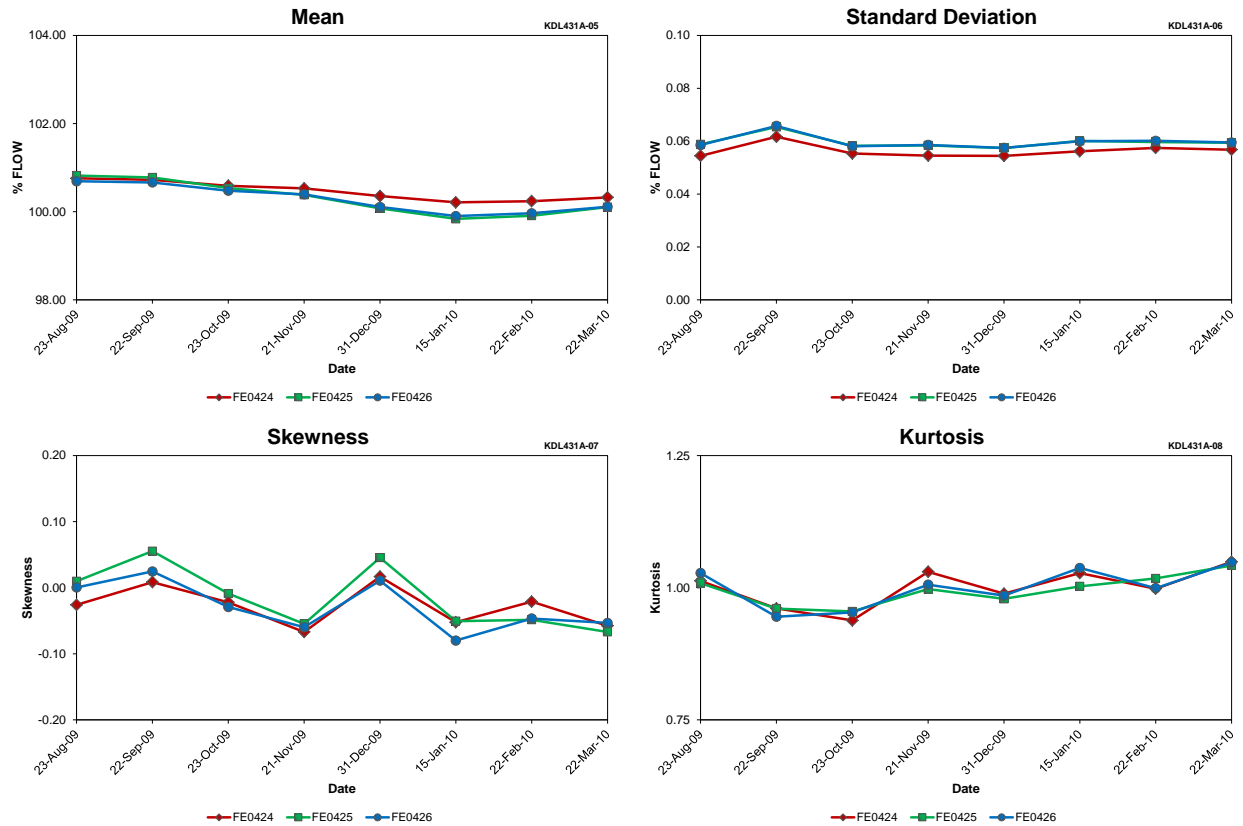
Figure D.77 RCS LOOP B FLOW Steady-State Drift at Farley Unit 2 (Cycle 20)



**Figure D.78 RCS LOOP B FLOW Steady-State Residual AAKR at Farley Unit 2 (Cycle 20)**



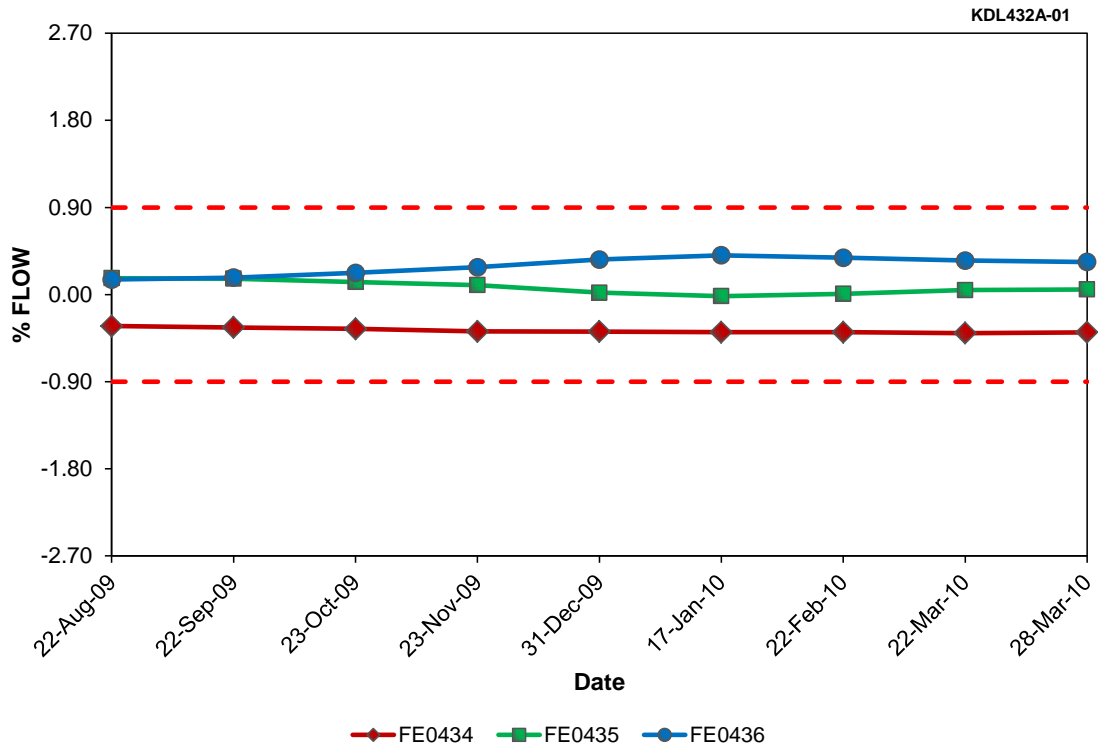
**Figure D.79 RCS LOOP B FLOW Transient Deviation at Farley Unit 2 (Cycle 20)**



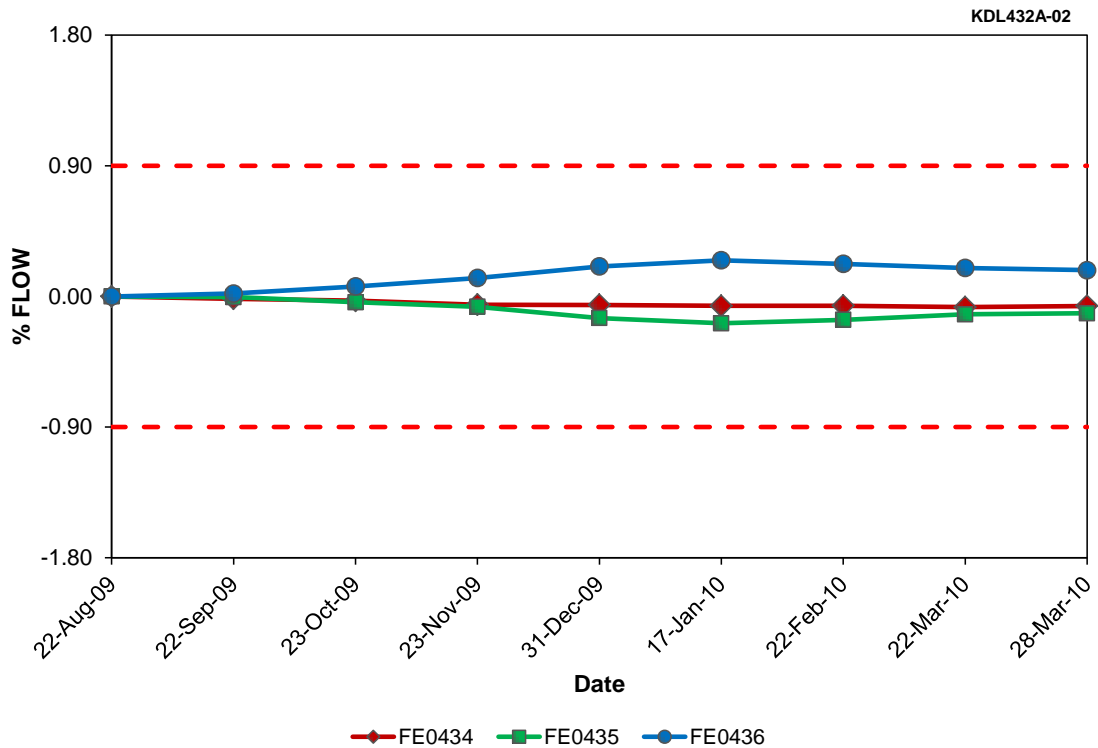
**Figure D.80 RCS LOOP B FLOW Data Quality Statistics at Farley Unit 2 (Cycle 20)**

**Table D.17 RCS LOOP B FLOW Data Quality for Farley Unit 2 (Cycle 20)**

Result Type	Tag Names		
	FE0424	FE0425	FE0426
Mean	100.47	100.31	100.29
Std. Dev.	0.06	0.06	0.06
Skewness	-0.03	-0.01	-0.03
Kurtosis	1.00	1.00	1.00



**Figure D.81 RCS LOOP C FLOW Steady-State Deviation at Farley Unit 2 (Cycle 20)**



**Figure D.82 RCS LOOP C FLOW Steady-State Drift at Farley Unit 2 (Cycle 20)**



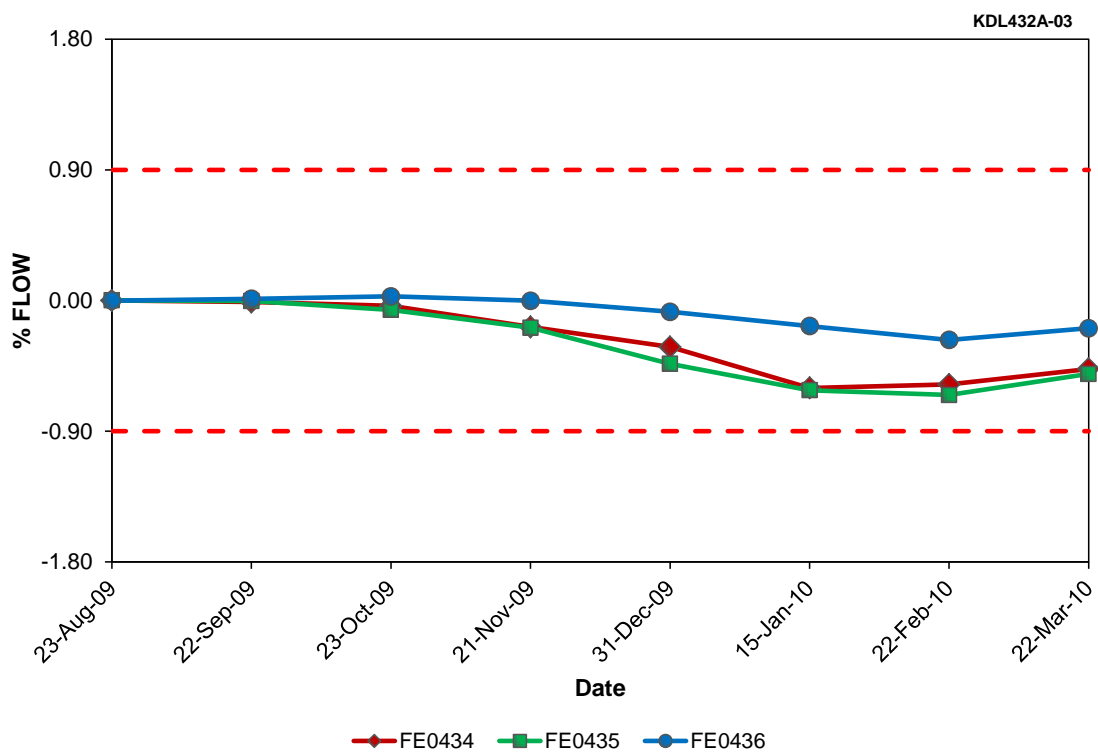
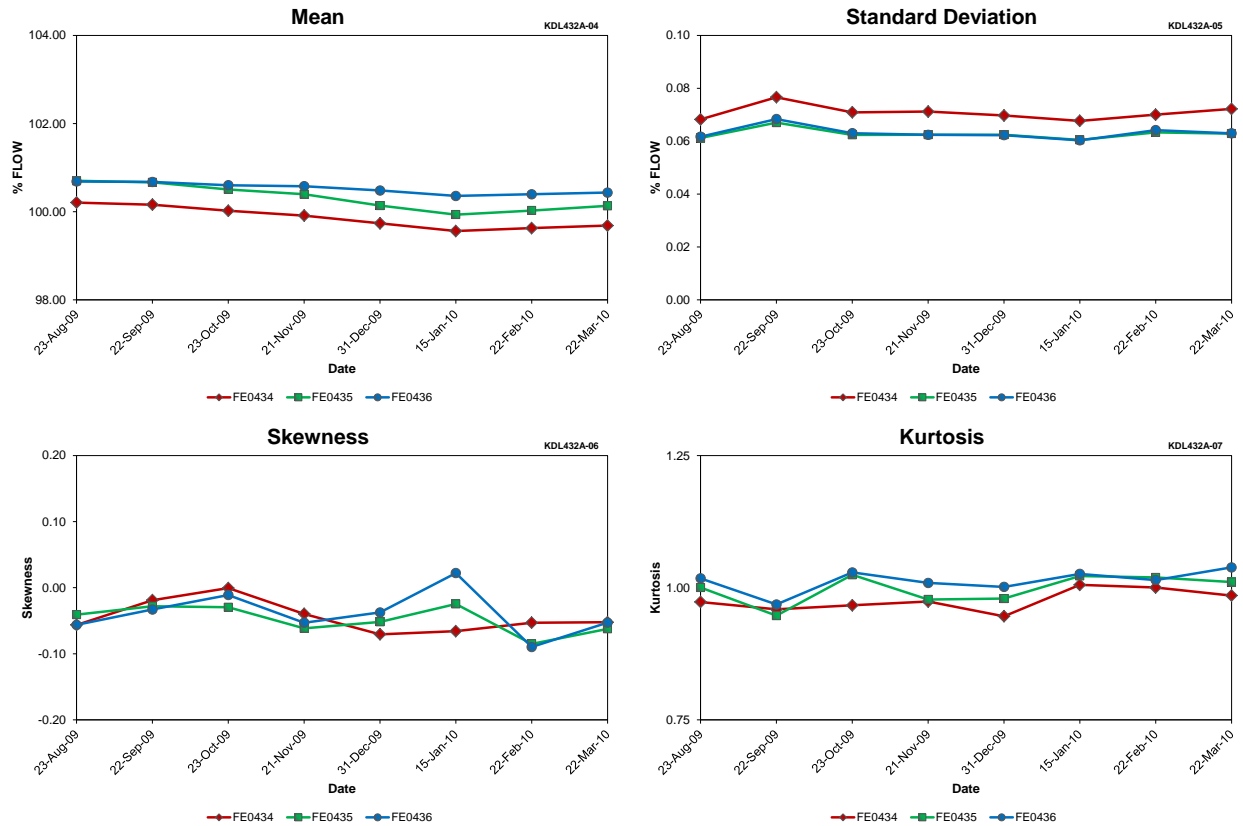


Figure D.83 RCS LOOP C FLOW Steady-State Residual AAKR at Farley Unit 2 (Cycle 20)

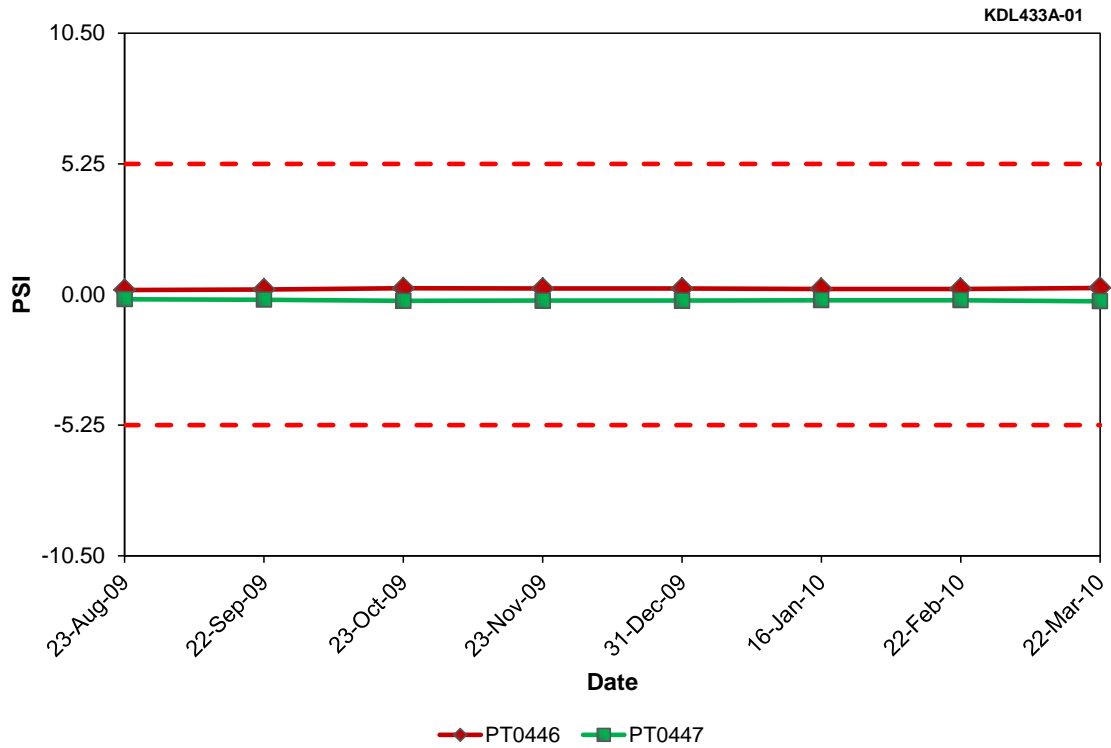


**Figure D.84 RCS LOOP C FLOW Data Quality Statistics at Farley Unit 2 (Cycle 20)**

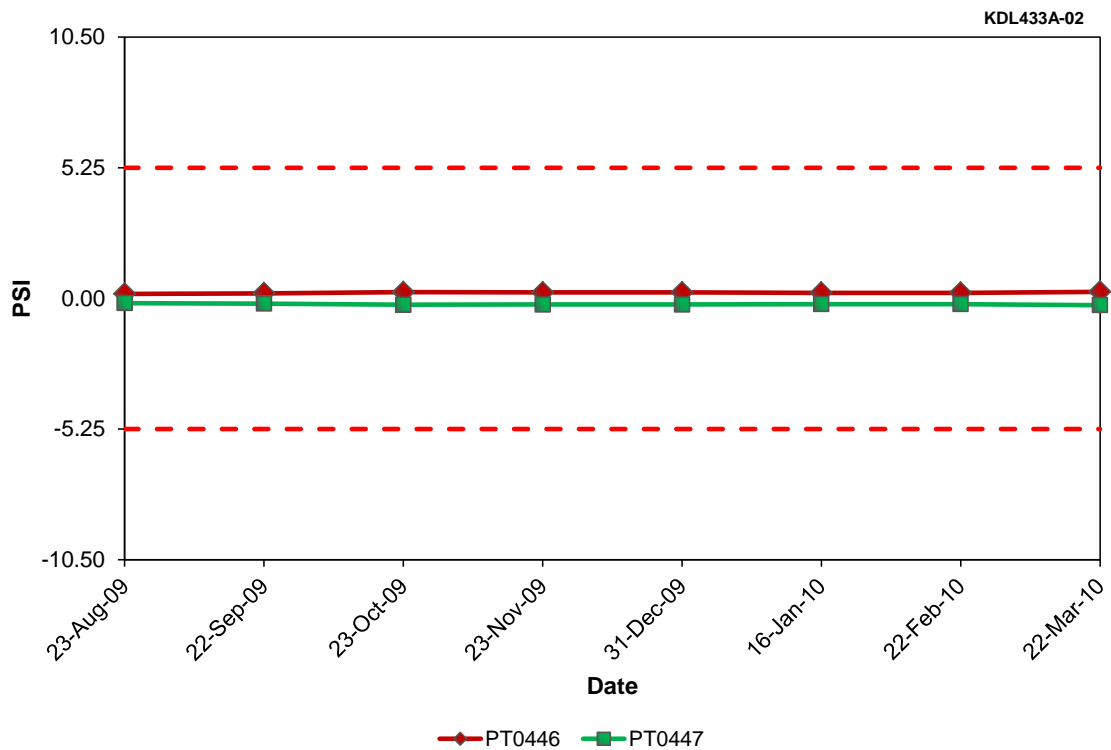
**Table D.18 RCS LOOP C FLOW Data Quality for Farley Unit 2 (Cycle 20)**

Result Type	Tag Names		
	FE0434	FE0435	FE0436
Mean	99.86	100.31	100.53
Std. Dev.	0.07	0.06	0.06
Skewness	-0.04	-0.05	-0.04
Kurtosis	0.98	1.00	1.01





**Figure D.85 TBIN FIRST STAGE PRESSURE Steady-State Deviation at Farley Unit 2 (Cycle 20)**



**Figure D.86 TBIN FIRST STAGE PRESSURE Steady-State Drift at Farley Unit 2 (Cycle 20)**

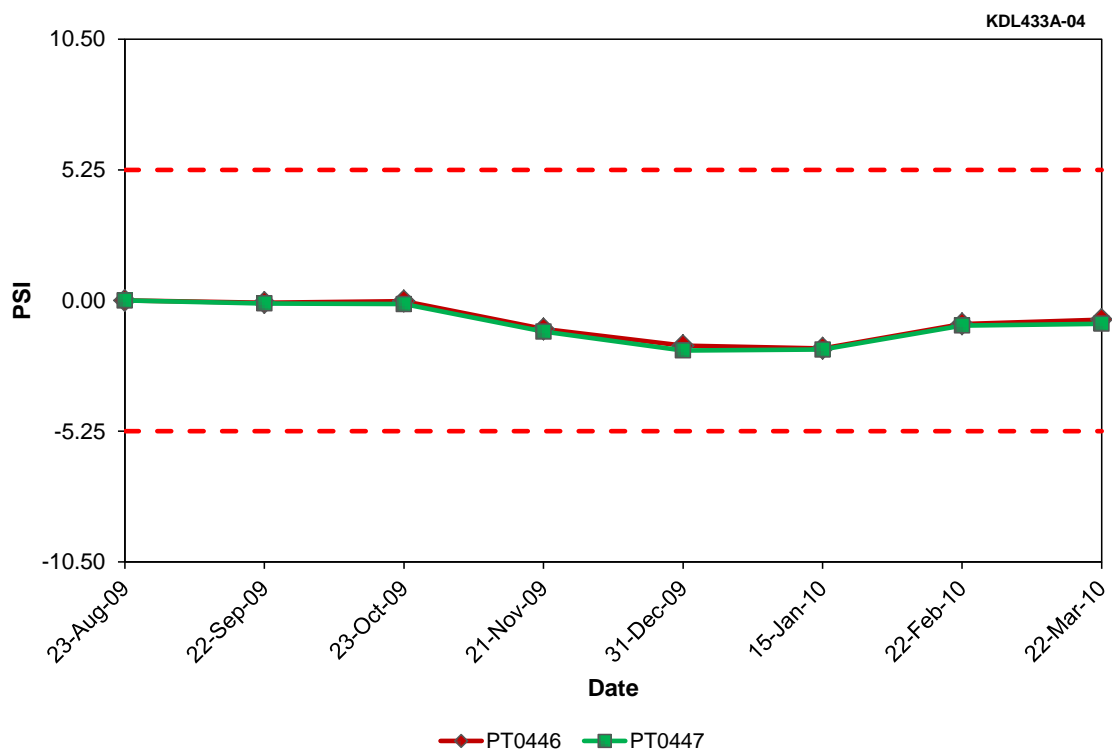
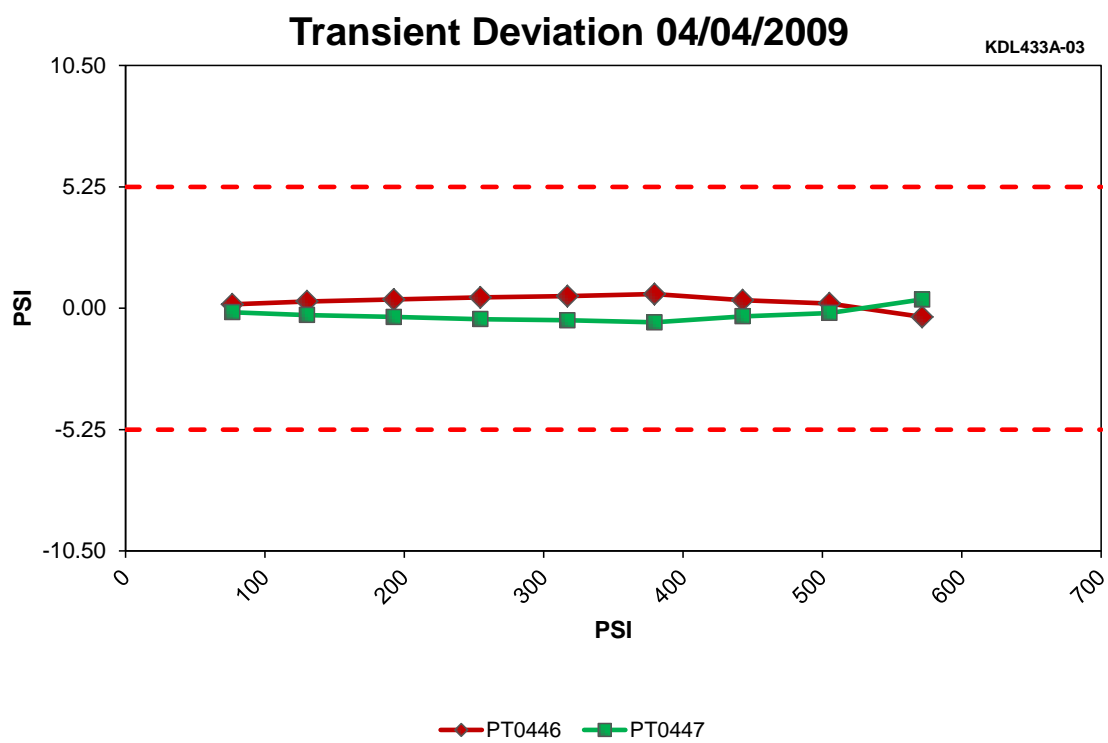
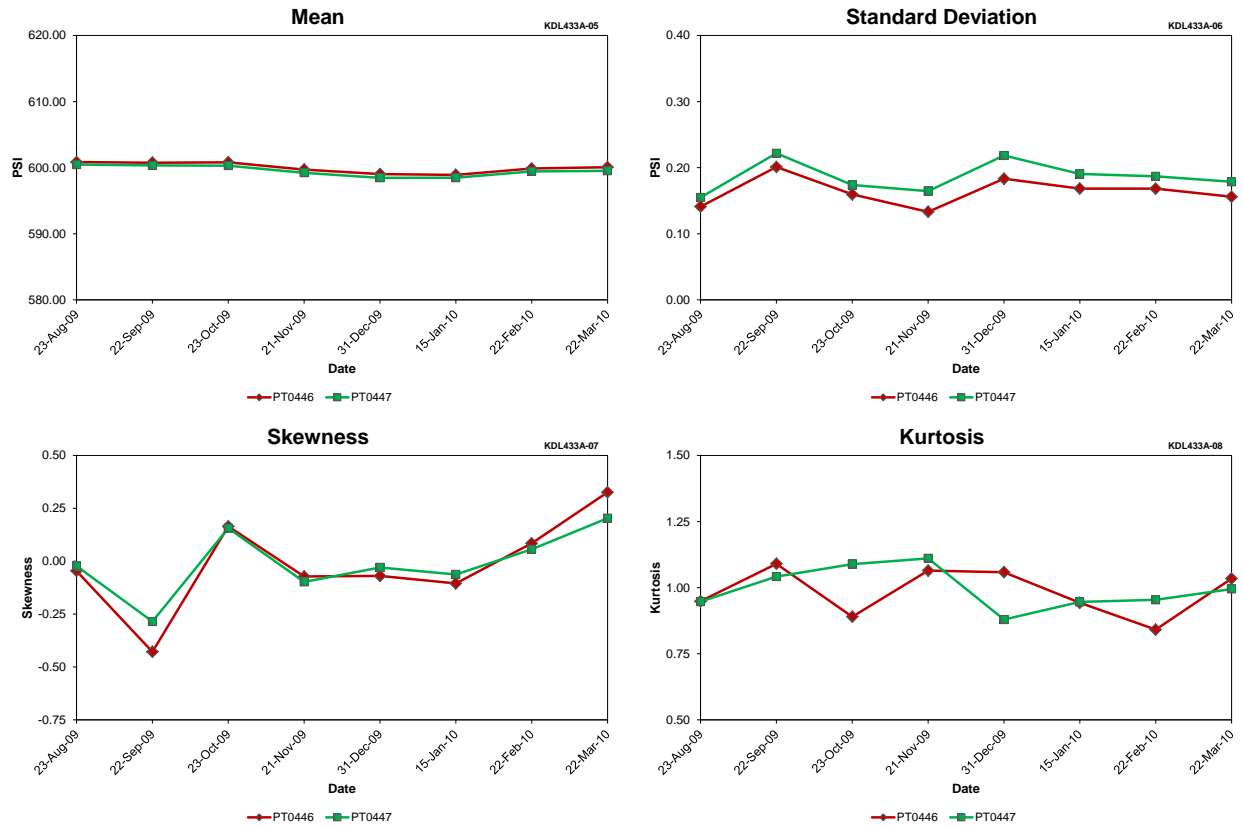


Figure D.87 TBIN FIRST STAGE PRESSURE Steady-State Residual AAKR at Farley Unit 2 (Cycle 20)



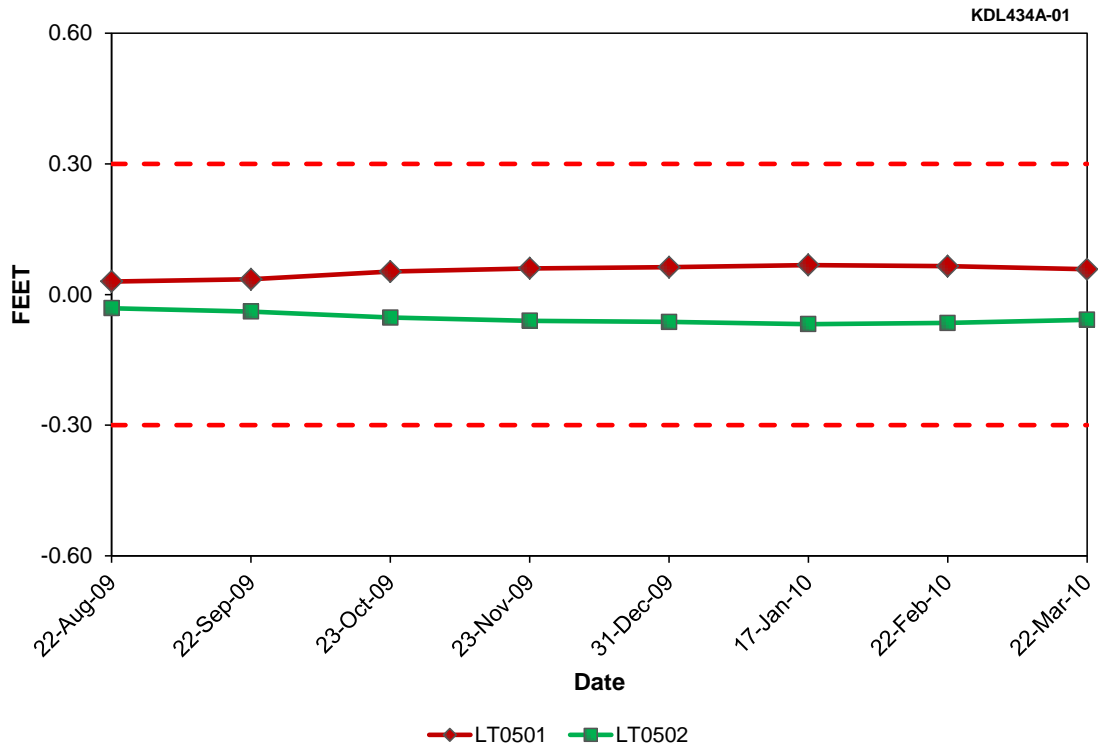
**Figure D.88 TBIN FIRST STAGE PRESSURE Transient Deviation at Farley Unit 2 (Cycle 20)**



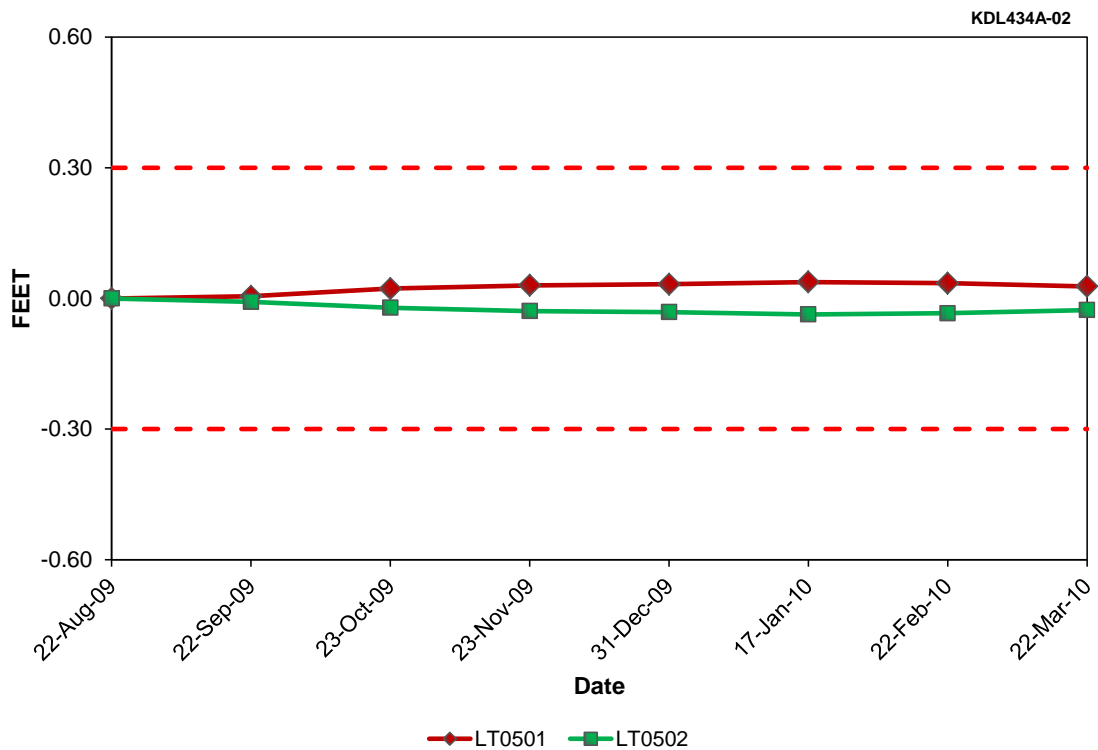
**Figure D.89 TBIN FIRST STAGE PRESSURE Data Quality Statistics at Farley Unit 2 (Cycle 20)**

**Table D.19 TBIN FIRST STAGE PRESSURE Data Quality for Farley Unit 2 (Cycle 20)**

Result Type	Tag Names	
	PT0446	PT0447
Mean	600.00	599.53
Std. Dev.	0.16	0.19
Skewness	-0.02	-0.01
Kurtosis	0.98	1.00

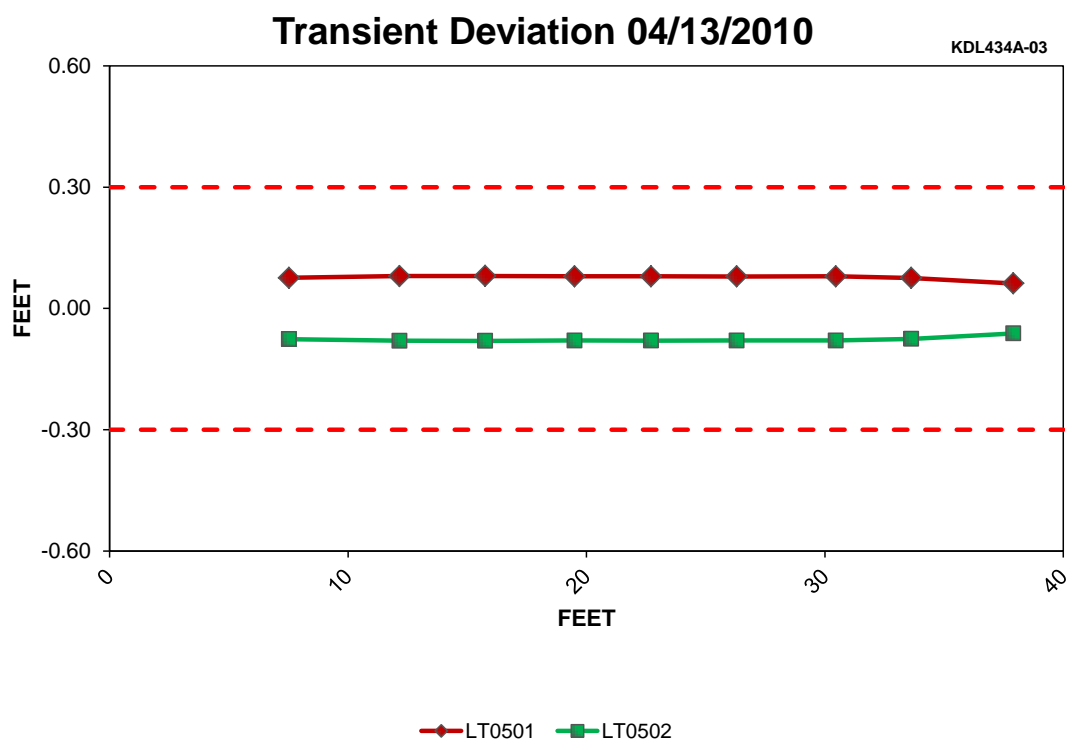


**Figure D.90 RWST LVL Steady-State Deviation at Farley Unit 2 (Cycle 20)**

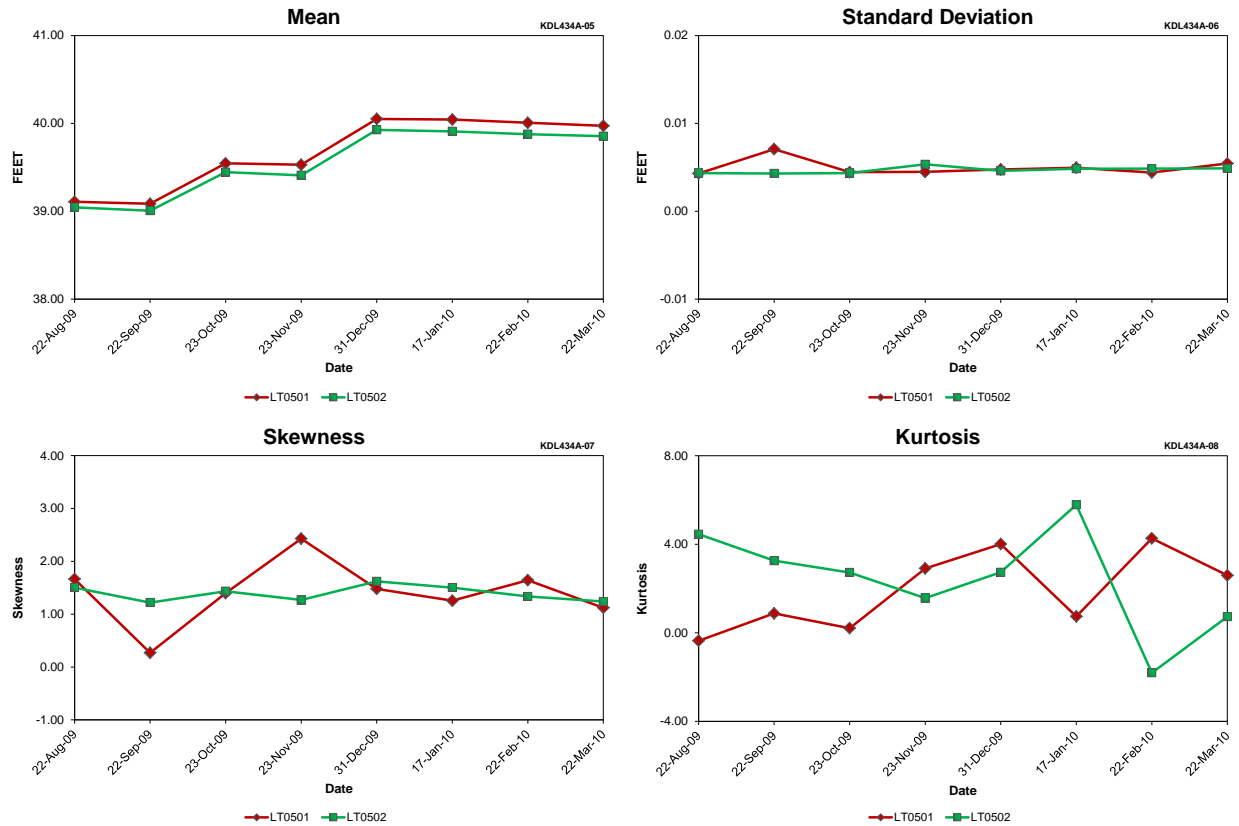


**Figure D.91 RWST LVL Steady-State Drift at Farley Unit 2 (Cycle 20)**





**Figure D.92 RWST LVL Transient Deviation at Farley Unit 2 (Cycle 20)**

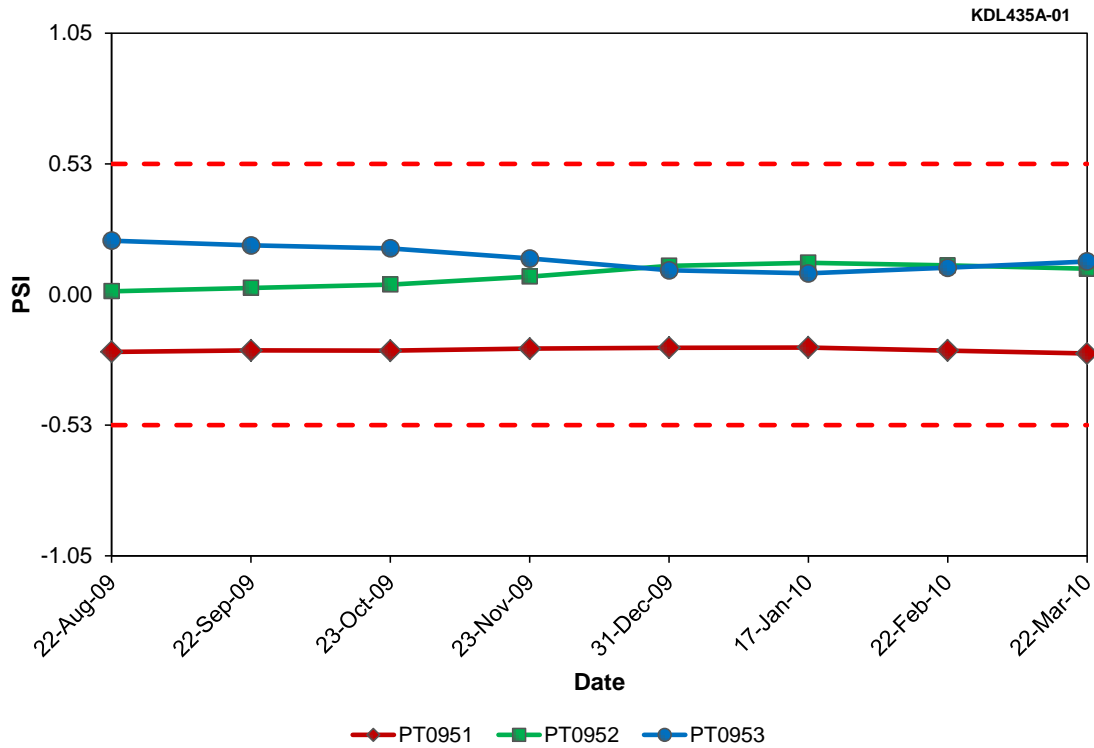


**Figure D.93 RWST LVL Data Quality Statistics at Farley Unit 2 (Cycle 20)**

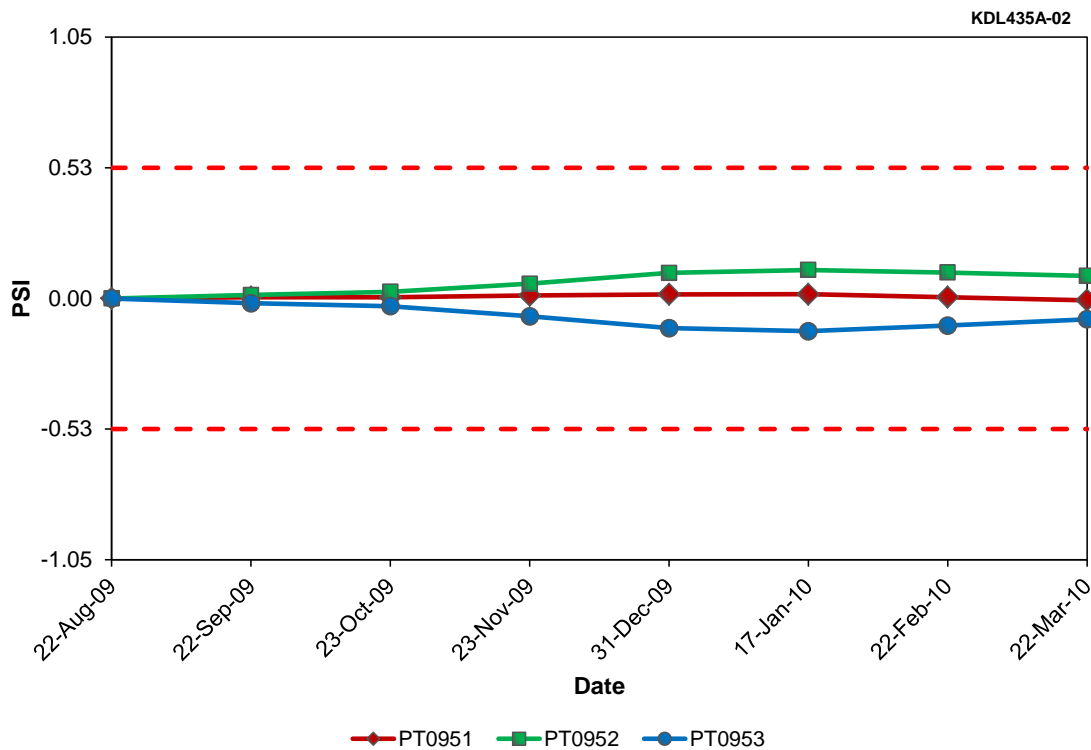
**Table D.20 RWST LVL Data Quality for Farley Unit 2 (Cycle 20)**

Result Type	Tag Names	
	LT0501	LT0502
Mean	39.67	39.56
Std. Dev.	0.00	0.00
Skewness	1.41	1.39
Kurtosis	1.91	2.43





**Figure D.94 CTMT PSR Steady-State Deviation at Farley Unit 2 (Cycle 20)**



**Figure D.95 CTMT PSR Steady-State Drift at Farley Unit 2 (Cycle 20)**

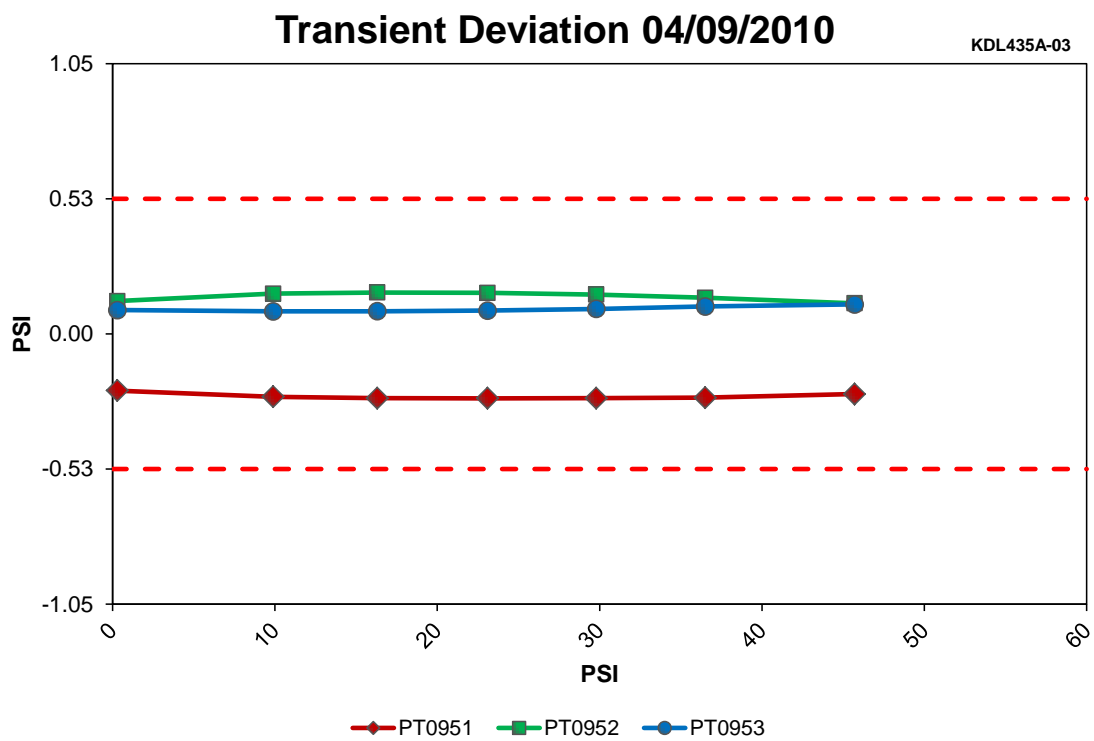


Figure D.96 CTMT PSR Transient Deviation at Farley Unit 2 (Cycle 20)

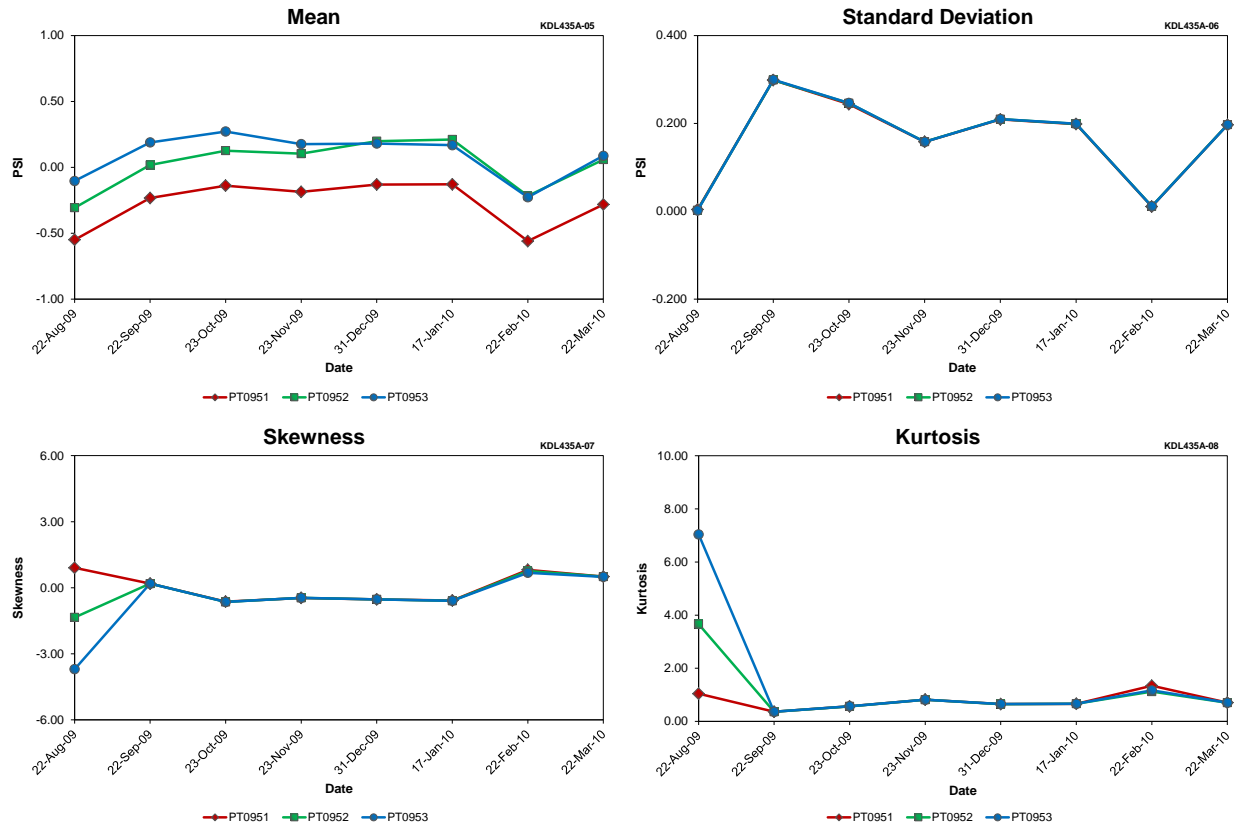


Figure D.97 CTMT PSR Data Quality Statistics at Farley Unit 2 (Cycle 20)

Table D.21 CTMT PSR Data Quality for Farley Unit 2 (Cycle 20)

Result Type	Tag Names		
	PT0951	PT0952	PT0953
Mean	-0.28	0.02	0.09
Std. Dev.	0.16	0.17	0.17
Skewness	0.03	-0.26	-0.57
Kurtosis	0.77	1.07	1.50



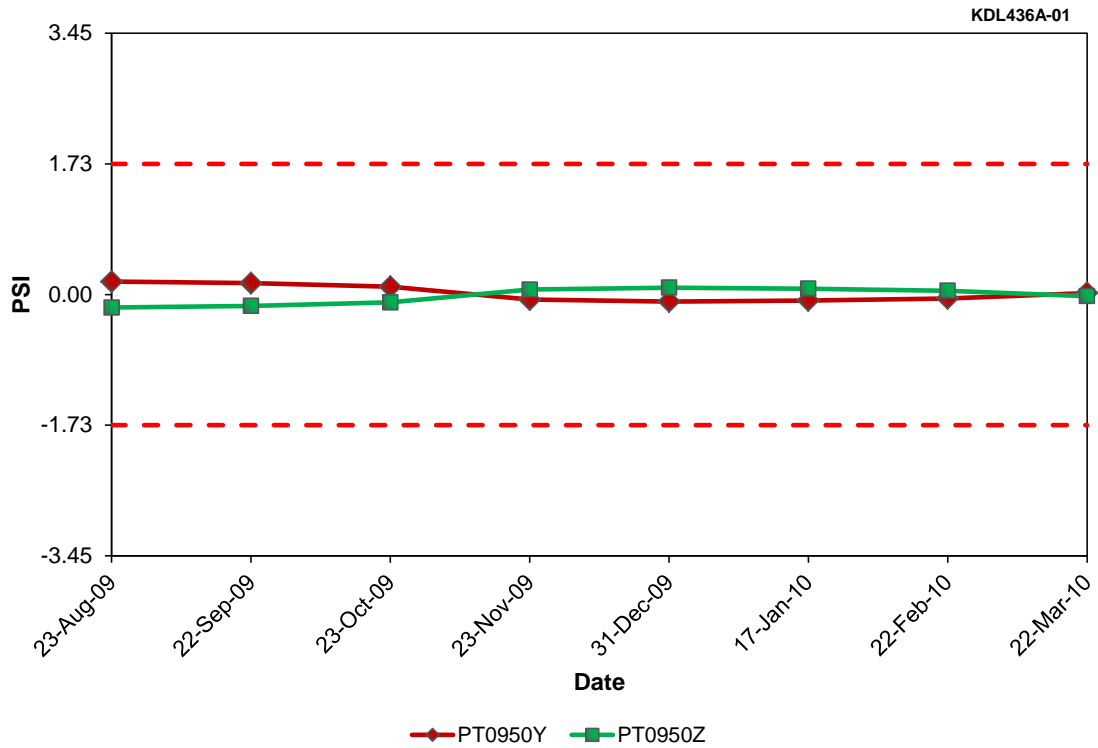


Figure D.98 CTMT PSR EXT RANGE Steady-State Deviation at Farley Unit 2 (Cycle 20)

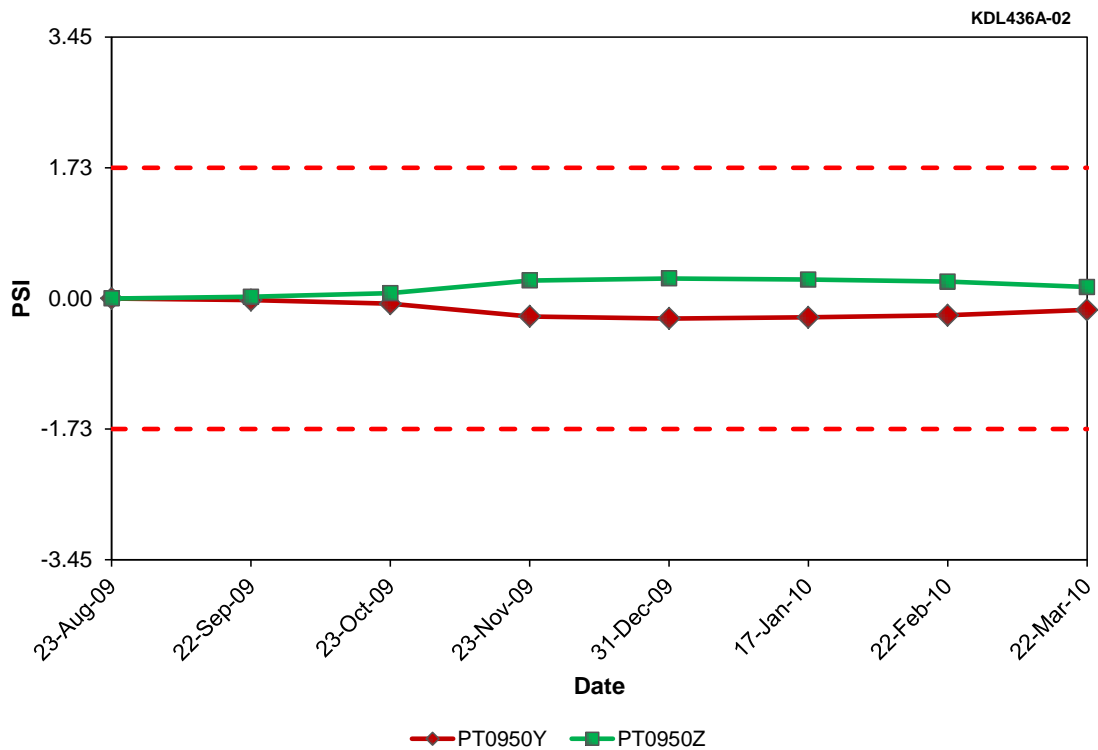
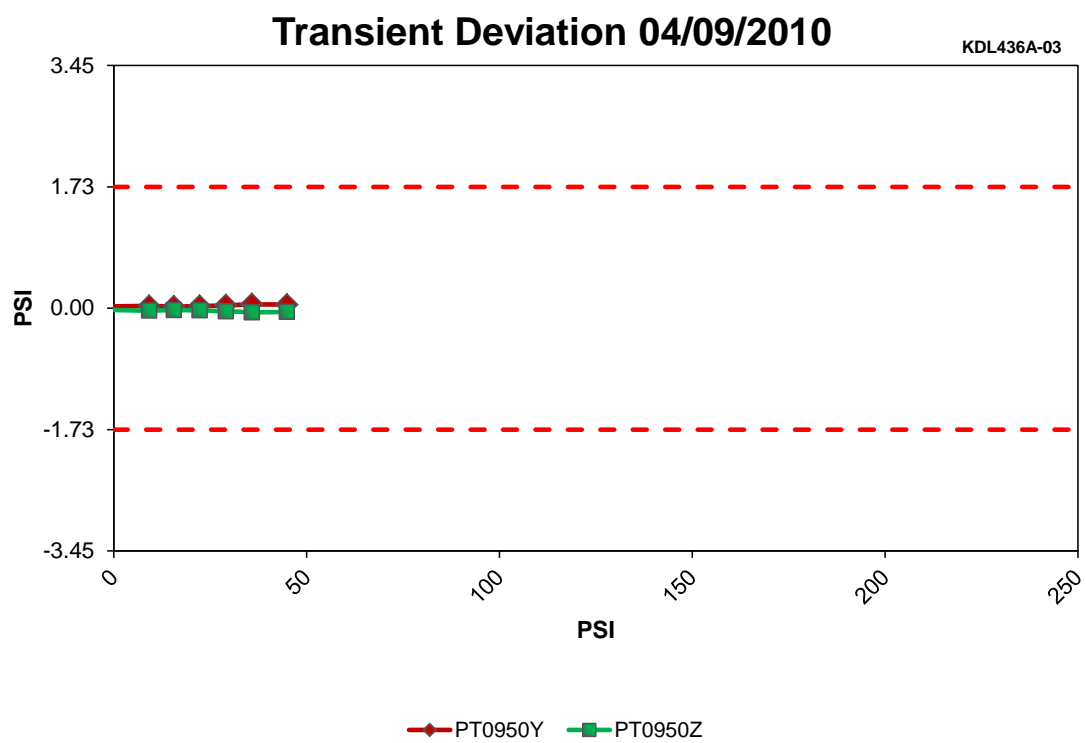


Figure D.99 CTMT PSR EXT RANGE Steady-State Drift at Farley Unit 2 (Cycle 20)





**Figure D.100 CTMT PSR EXT RANGE Transient Deviation at Farley Unit 2 (Cycle 20)**

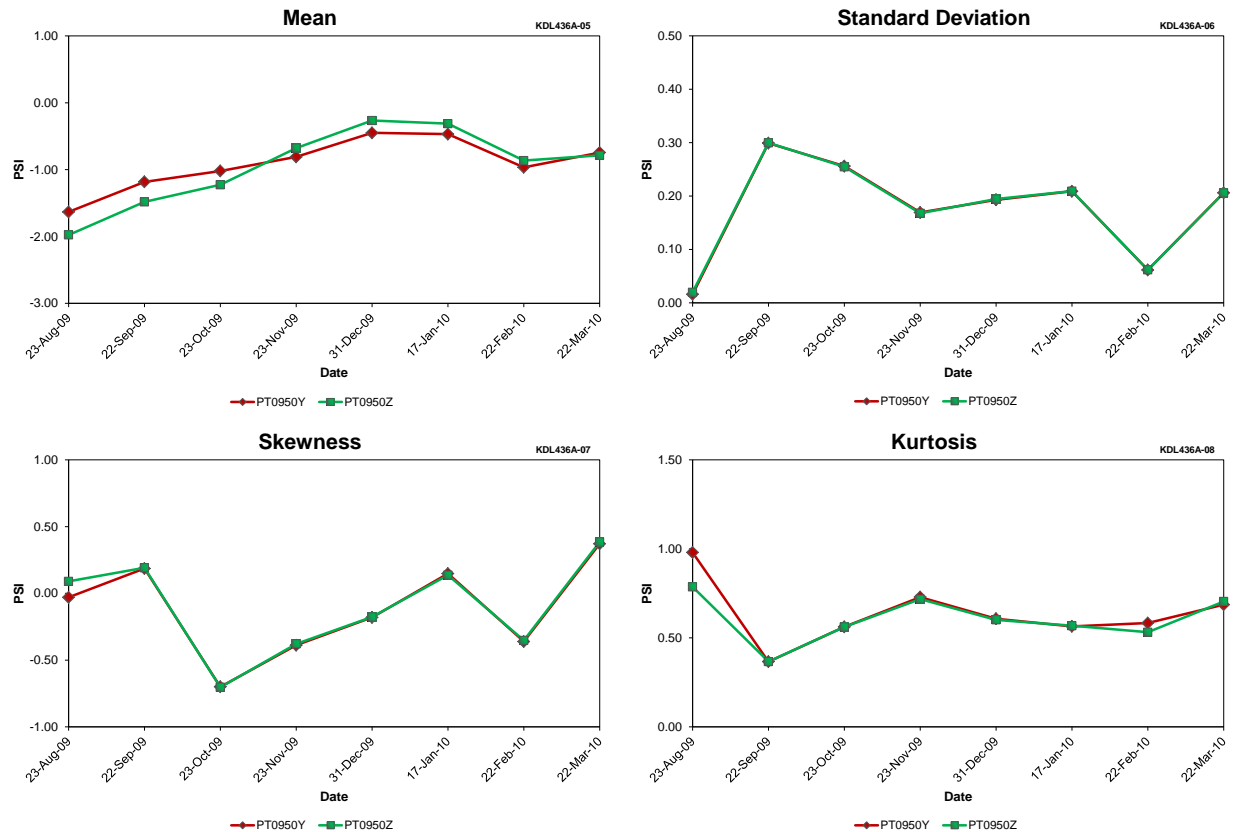


Figure D.101 CTMT PSR EXT RANGE Data Quality Statistics at Farley Unit 2 (Cycle 20)

Table D.22 CTMT PSR EXT RANGE Data Quality for Farley Unit 2 (Cycle 20)

Result Type	Tag Names	
	PT0950Y	PT0950Z
Mean	-0.91	-0.95
Std. Dev.	0.18	0.18
Skewness	-0.12	-0.10
Kurtosis	0.63	0.60



Table D.23 OLM-NA Results

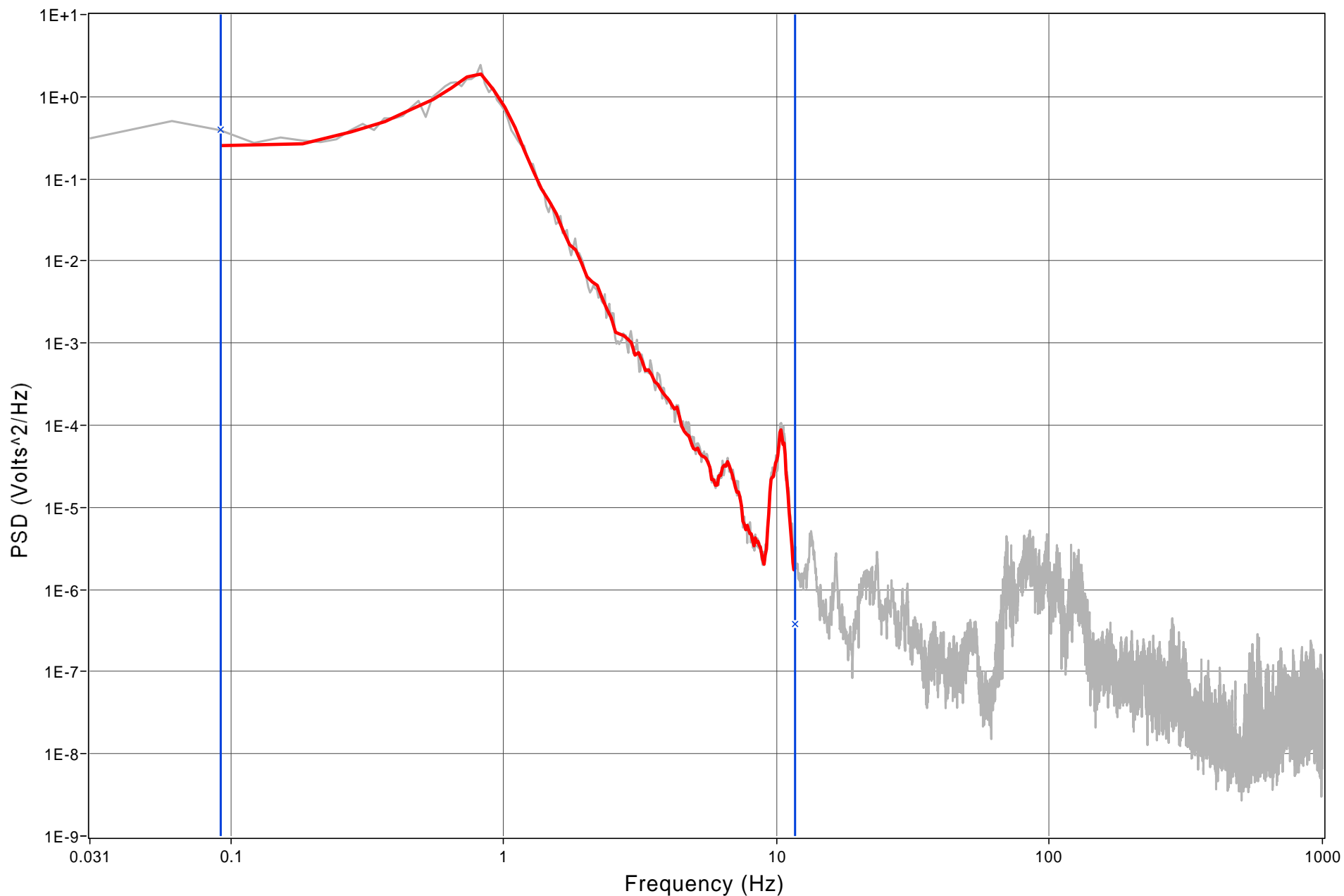
Item	Tag Name	Service	Filename	WB PSD Range (Hz)	Decimator	Trim Block Size	Trim Low Freq.	Trim High Freq.	AR Method	AR Order
1	FT0476	FW FLOW	FU2_2010-03_0007	0.0305 : 1000	364	512	0.0107	2.7472	Least-Squares	11
2	FT0477	FW FLOW	FU2_2010-03_0008	0.0305 : 1000	364	512	0.0107	2.7472	Least-Squares	17
3	FT0486	FW FLOW	FU2_2010-03_0007	0.0305 : 1000	364	512	0.0107	2.7472	Least-Squares	20
4	FT0487	FW FLOW	FU2_2010-03_0008	0.0305 : 1000	364	512	0.0107	2.7472	Least-Squares	21
5	FT0496	FW FLOW	FU2_2010-03_0007	0.0305 : 1000	364	512	0.0107	2.7474	Least-Squares	20
6	FT0497	FW FLOW	FU2_2010-03_0008	0.0305 : 1000	364	512	0.0107	2.7472	Least-Squares	20
7	LT0474	SG LEVEL	FU2_2010-03_0005	0.0305 : 1000	85	256	0.0919	11.7643	Forward-Backward	11
8	LT0475	SG LEVEL	FU2_2010-03_0006	0.0305 : 1000	81	256	0.0964	12.3453	Forward-Backward	11
9	LT0476	SG LEVEL	FU2_2010-03_0008	0.0305 : 1000	81	256	0.0964	12.3453	Forward-Backward	11
10	LT0484	SG LEVEL	FU2_2010-03_0005	0.0305 : 1000	80	128	0.1953	12.4996	Forward-Backward	11
11	LT0485	SG LEVEL	FU2_2010-03_0006	0.0305 : 1000	80	256	0.0977	12.4996	Forward-Backward	11
12	LT0486	SG LEVEL	FU2_2010-03_0008	0.0305 : 1000	85	128	0.1838	11.7643	Forward-Backward	11
13	LT0494	SG LEVEL	FU2_2010-03_0005	0.0305 : 1000	83	256	0.0941	12.0478	Forward-Backward	11
14	LT0495	SG LEVEL	FU2_2010-03_0006	0.0305 : 1000	78	256	0.1002	12.8201	Forward-Backward	11
15	LT0496	SG LEVEL	FU2_2010-03_0008	0.0305 : 1000	83	256	0.0941	12.0478	Forward-Backward	11
16	FT0474	STM FLOW	FU2_2010-03_0008	0.0305 : 1000	29	128	0.5388	34.4817	Least-Squares	20
17	FT0475	STM FLOW	FU2_2010-03_0007	0.0305 : 1000	29	128	0.5388	34.4817	Least-Squares	18
18	FT0484	STM FLOW	FU2_2010-03_0008	0.0305 : 1000	29	128	0.5388	34.4817	Least-Squares	18
19	FT0485	STM FLOW	FU2_2010-03_0007	0.0305 : 1000	29	128	0.5388	34.4817	Least-Squares	18
20	FT0494	STM FLOW	FU2_2010-03_0008	0.0305 : 1000	29	128	0.5388	34.4817	Least-Squares	19
21	FT0495	STM FLOW	FU2_2010-03_0007	0.0305 : 1000	29	128	0.5388	34.4817	Least-Squares	18



# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	LT0474	SG LVL	FU2_2010-03_0005.psd	0 : 256	0.091909	11.764348	Baseline	04-Mar-2010 14:24:12

**PSD Window**

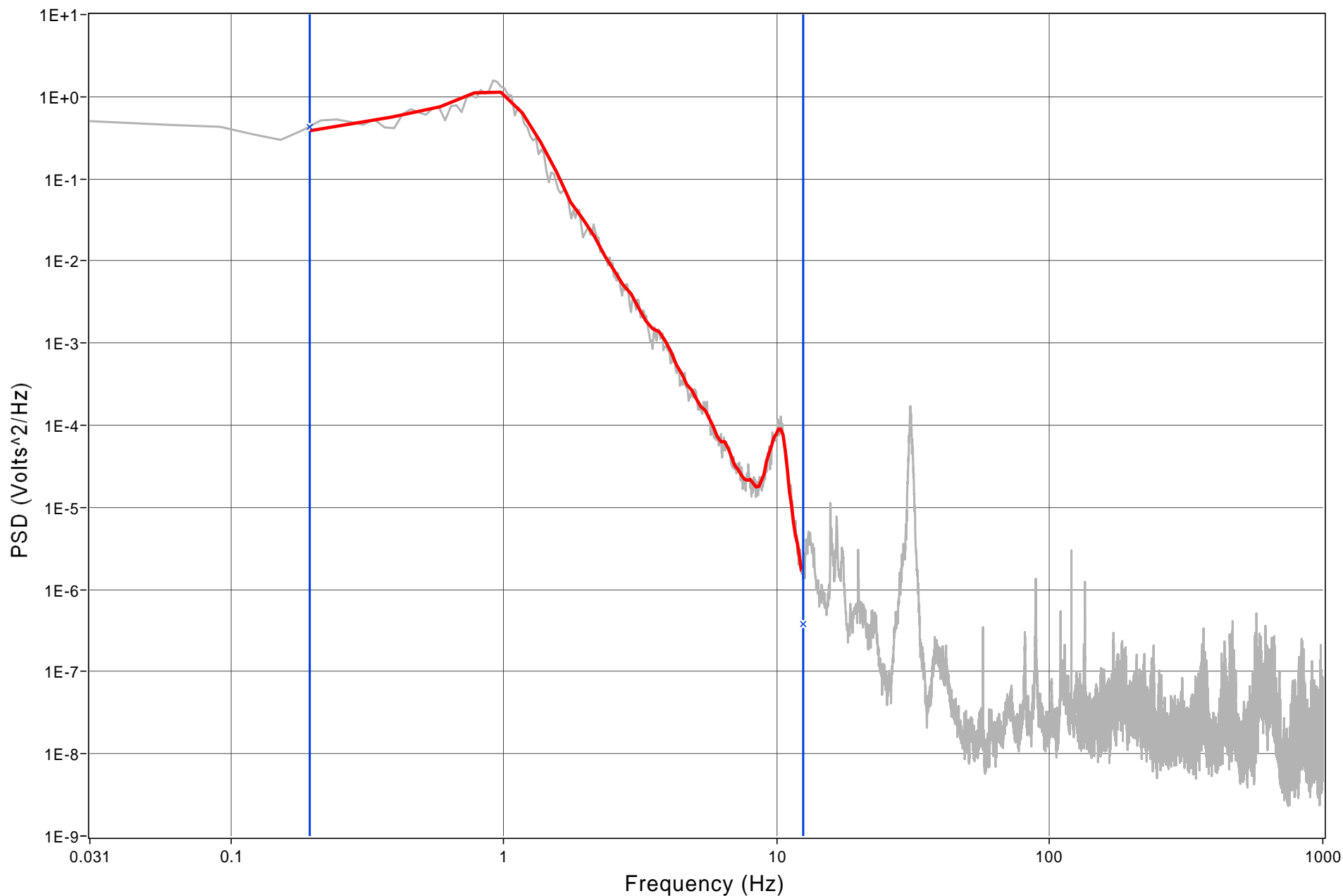




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	LT0484	SG LVL	FU2_2010-03_0005.psd	0 : 128	0.195307	12.499619	Baseline	04-Mar-2010 14:24:12

**PSD Window**

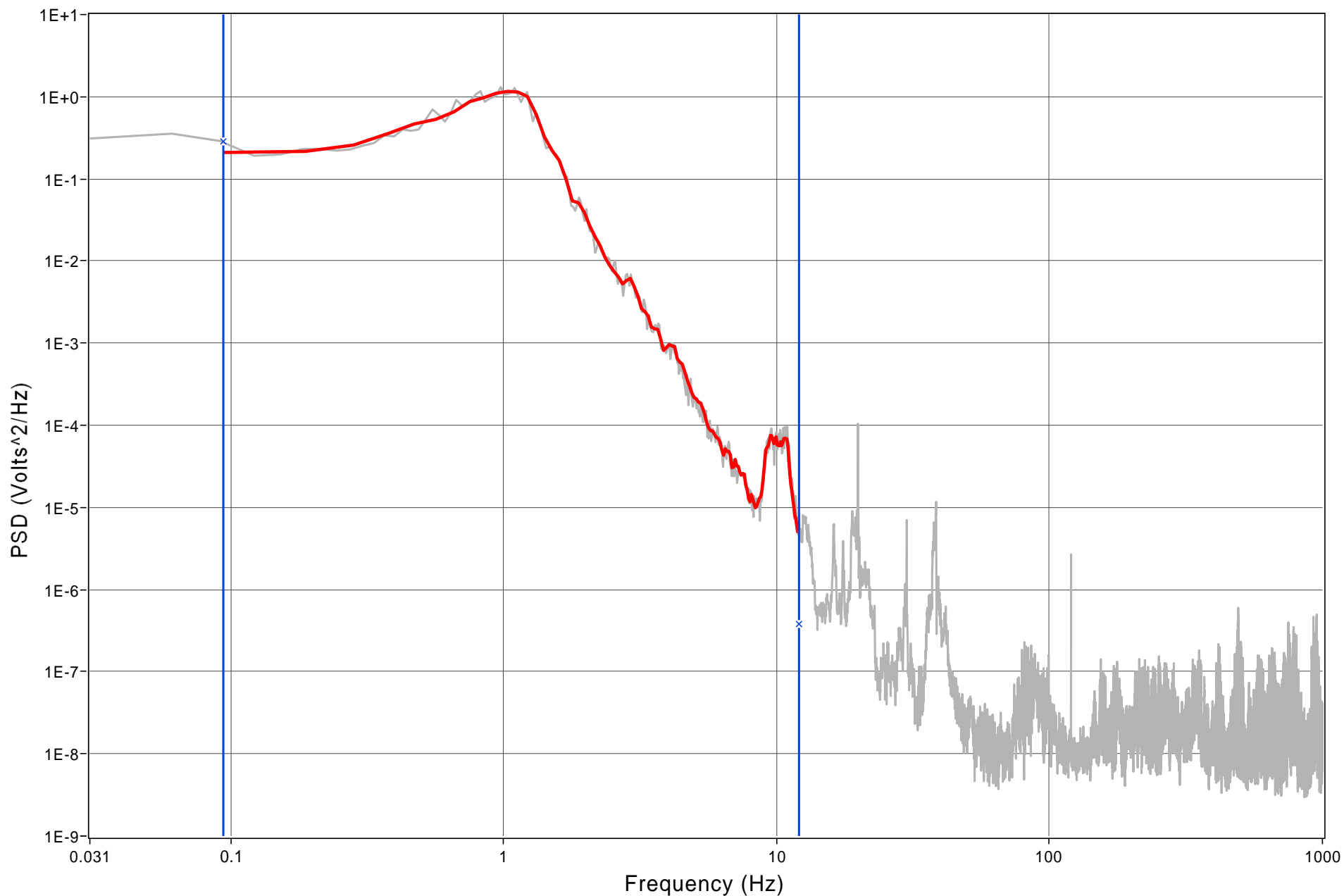




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	LT0494	SG LVL	FU2_2010-03_0005.psd	0 : 256	0.094124	12.047826	Baseline	04-Mar-2010 14:24:12

## PSD Window

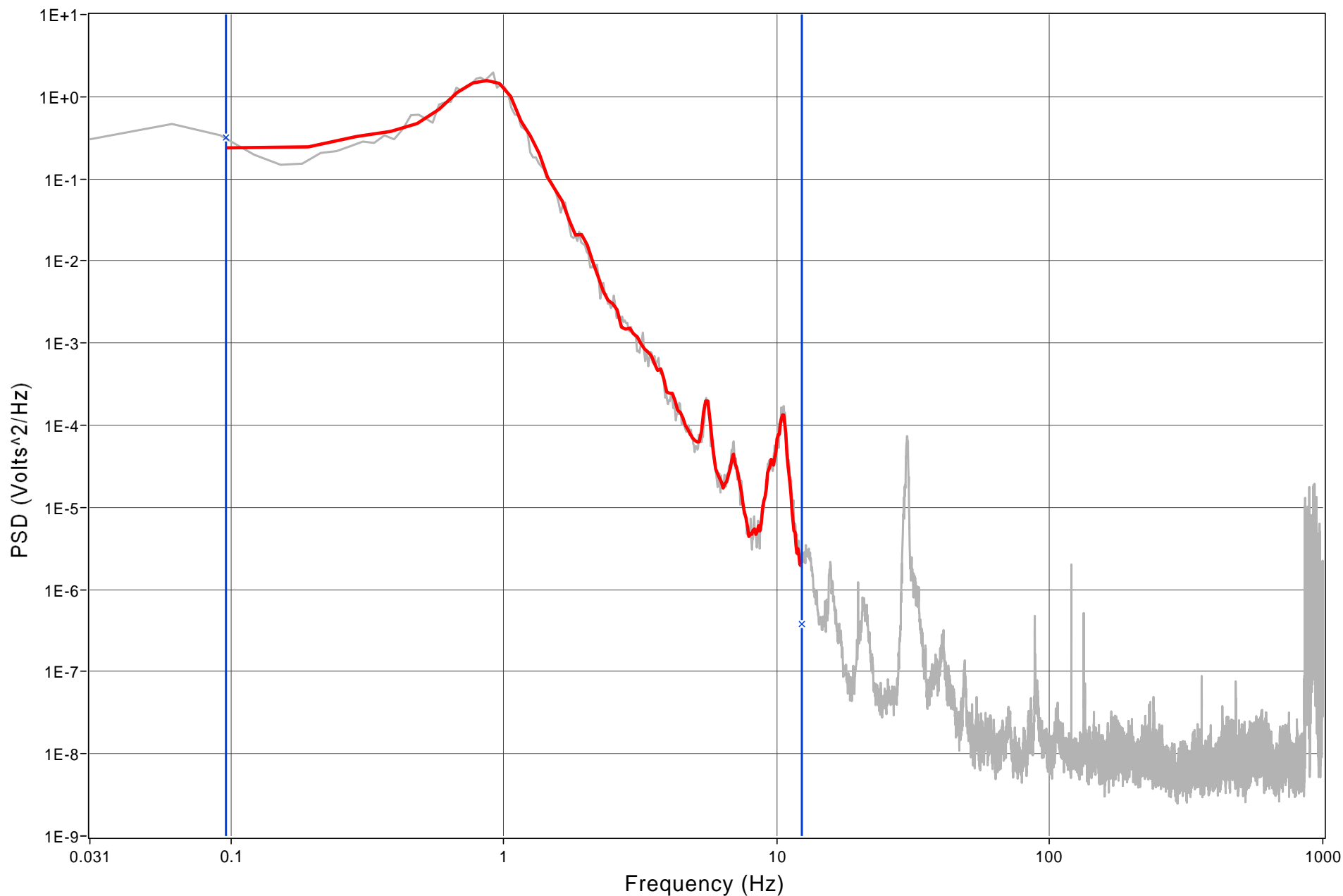




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	LT0475	SG LVL	FU2_2010-03_0006.psd	0 : 256	0.096448	12.345303	Baseline	04-Mar-2010 14:24:12

## PSD Window



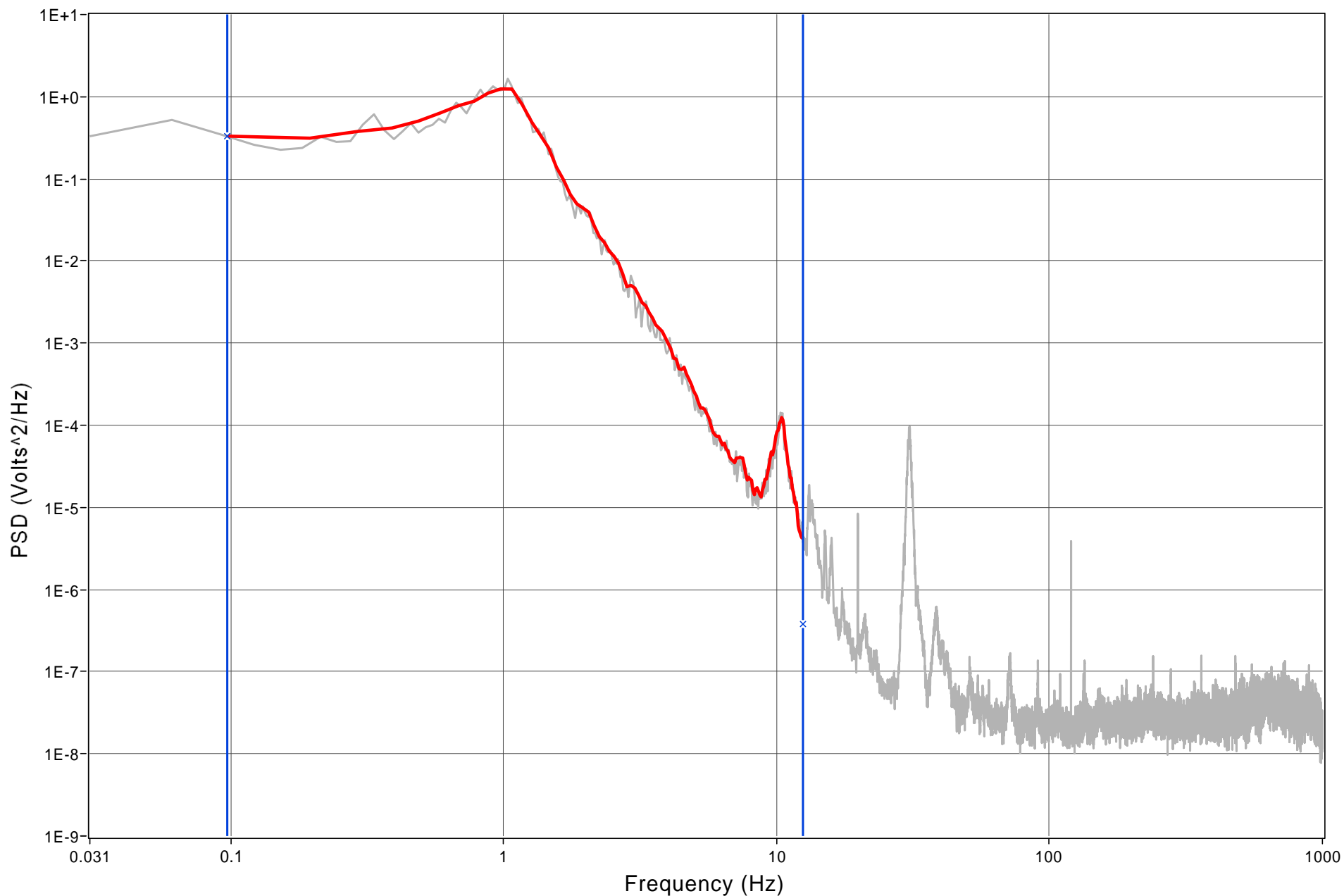




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	LT0485	SG LVL	FU2_2010-03_0006.psd	0 : 256	0.097653	12.499619	Baseline	04-Mar-2010 14:24:12

**PSD Window**

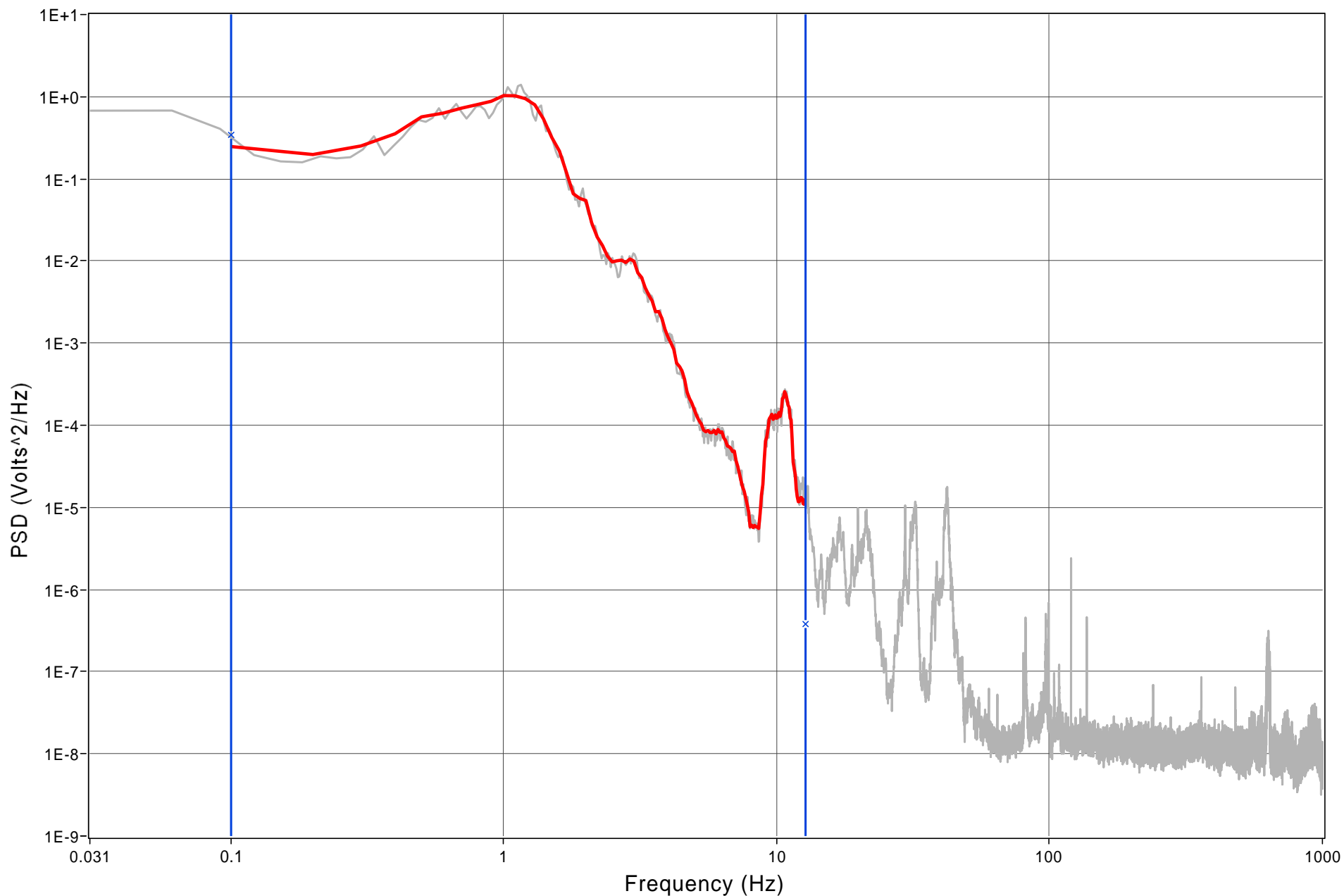




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	LT0495	SG LVL	FU2_2010-03_0006.psd	0 : 256	0.100157	12.820122	Baseline	04-Mar-2010 14:24:12

**PSD Window**

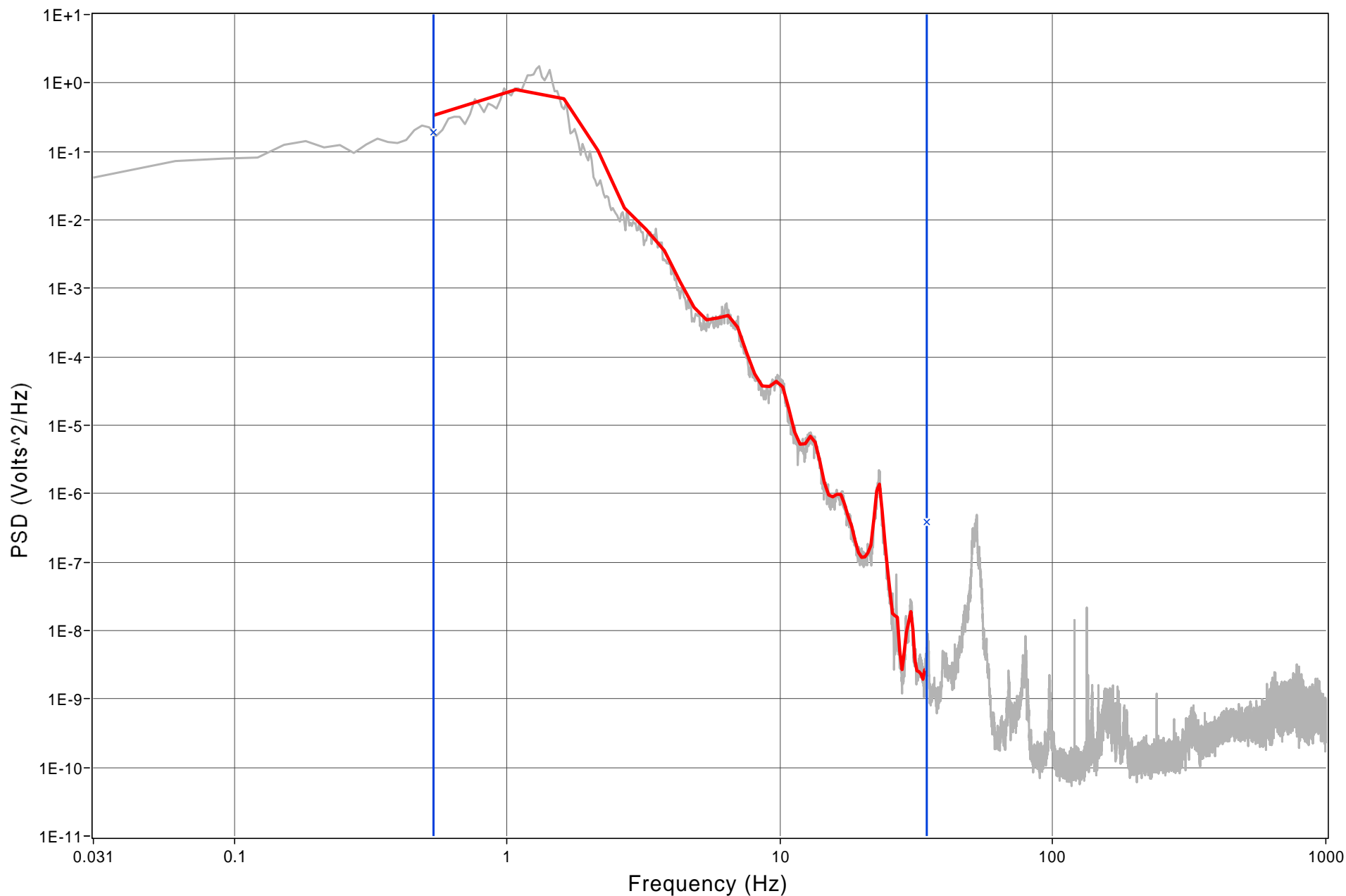




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	FT0475	STM FLOW	FU2_2010-03_0007.psd	0 : 128	0.538777	34.481708	Baseline	04-Mar-2010 14:24:12

## PSD Window

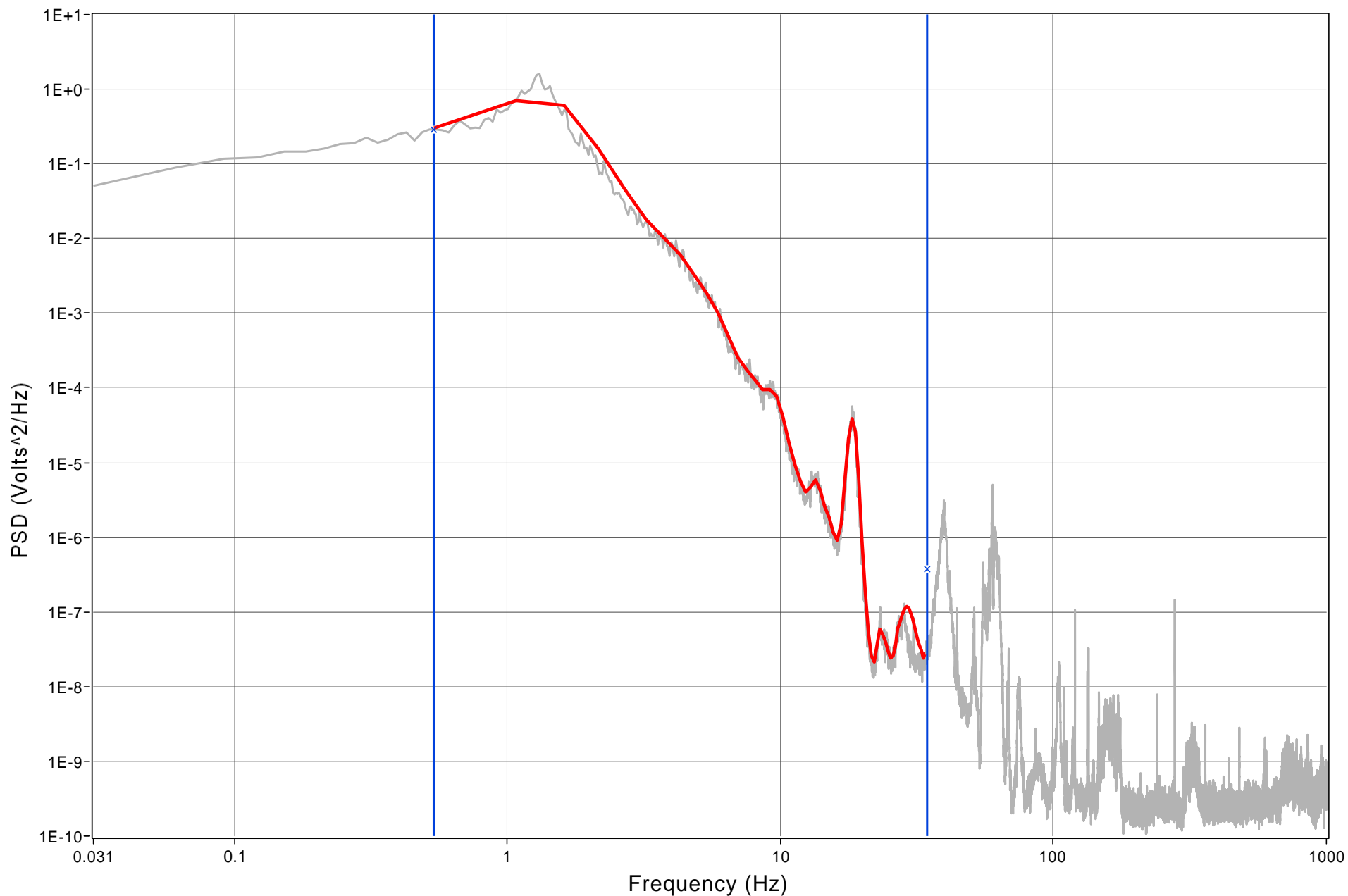




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	FT0485	STM FLOW	FU2_2010-03_0007.psd	0 : 128	0.538777	34.481708	Baseline	04-Mar-2010 14:24:12

**PSD Window**

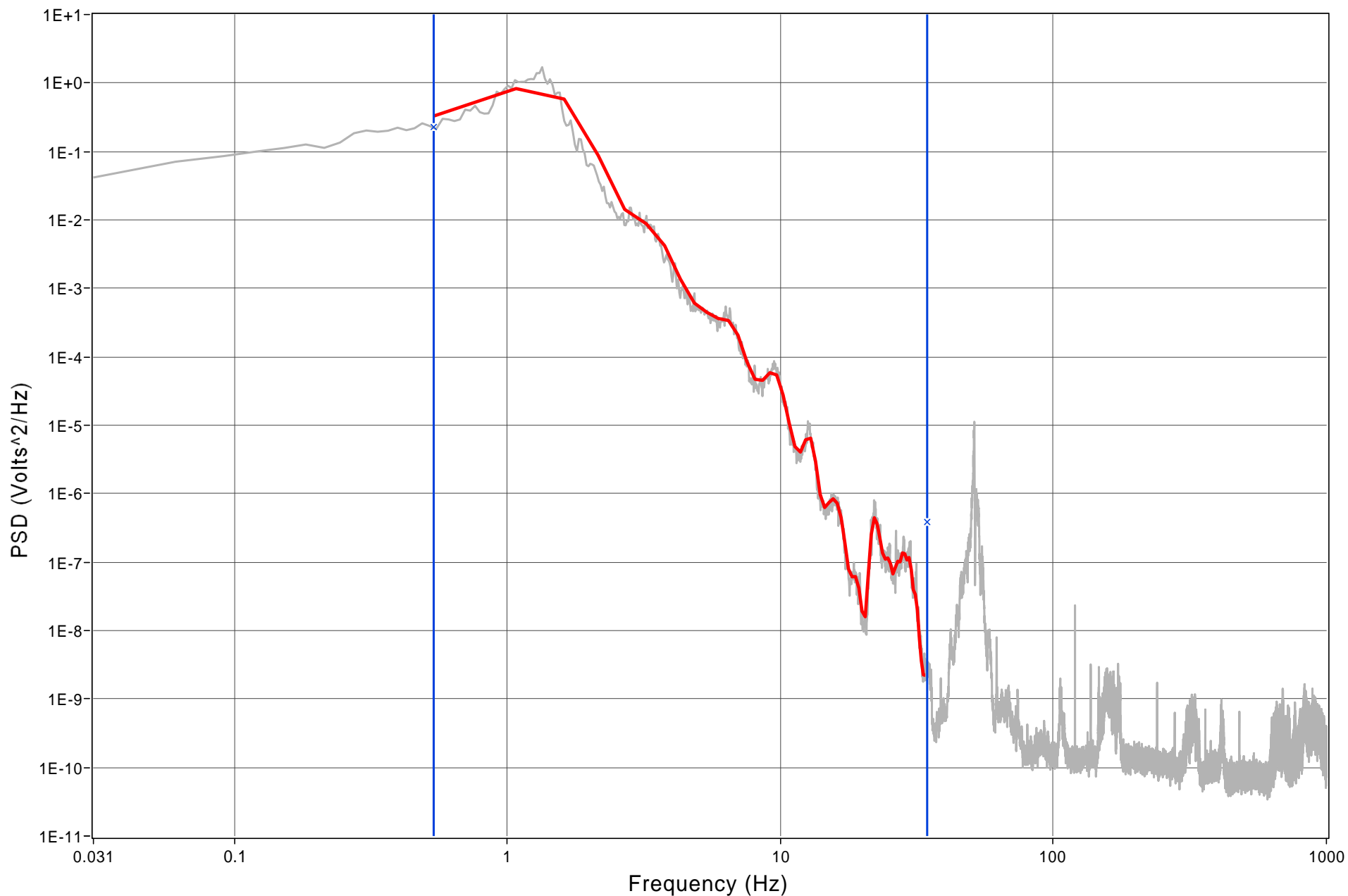




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	FT0495	STM FLOW	FU2_2010-03_0007.psd	0 : 128	0.538777	34.481708	Baseline	04-Mar-2010 14:24:12

PSD Window

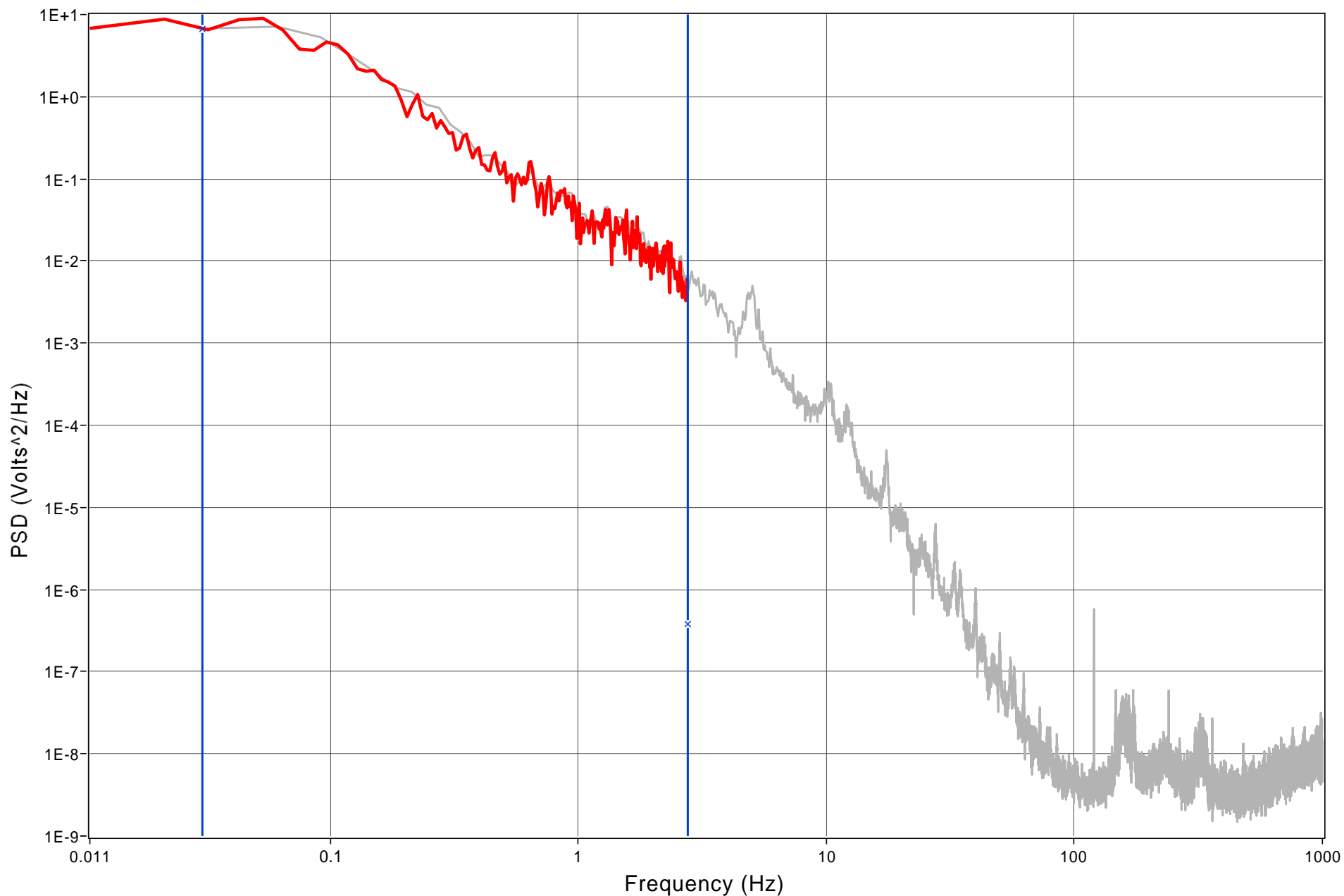




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	FT0476	FW FLOW	FU2_2010-03_0007.psd	0 : 512	0.010731	2.747169	Baseline	04-Mar-2010 14:24:12

PSD Window

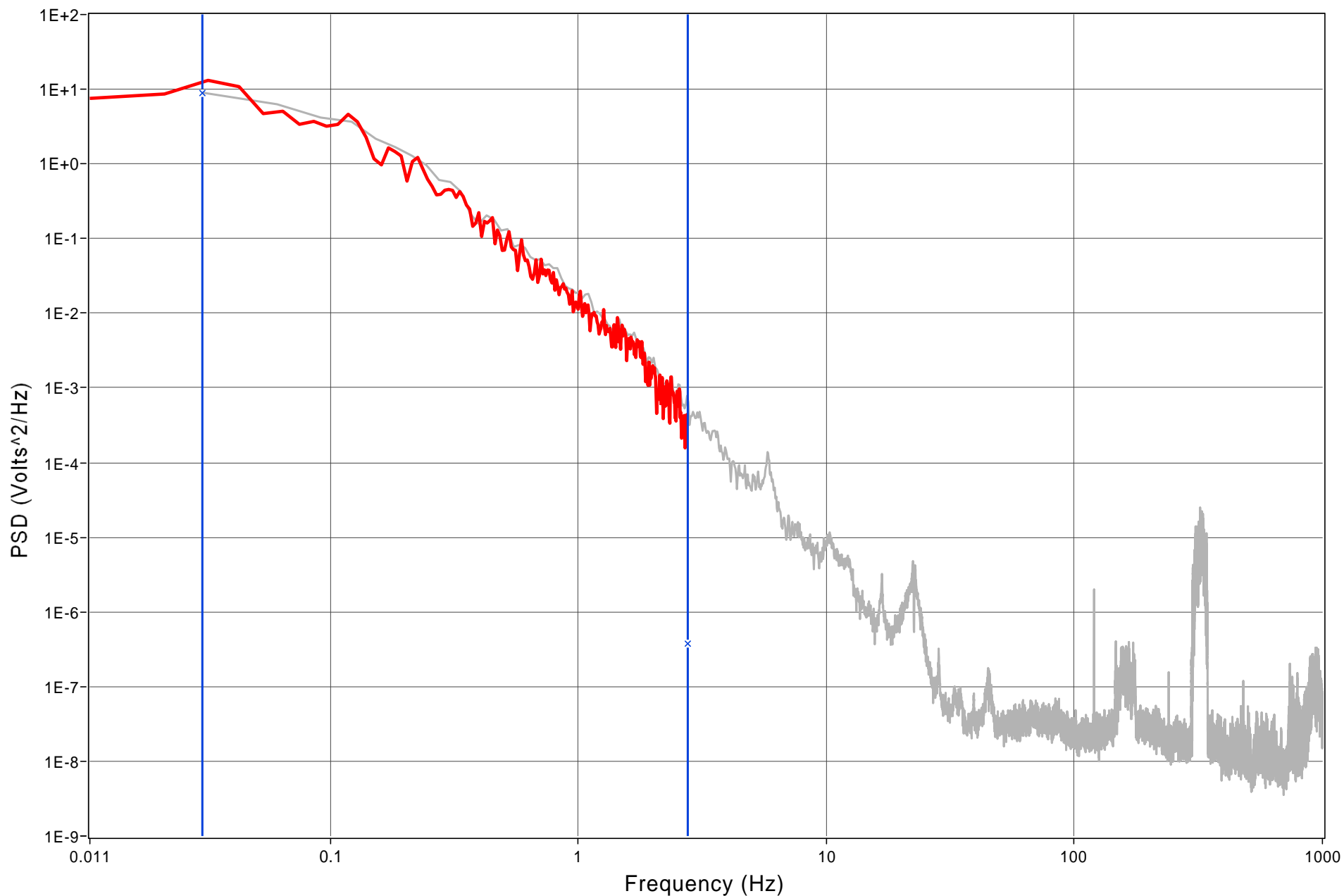




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	FT0486	FW FLOW	FU2_2010-03_0007.psd	0 : 512	0.010731	2.747169	Baseline	04-Mar-2010 14:24:12

## PSD Window

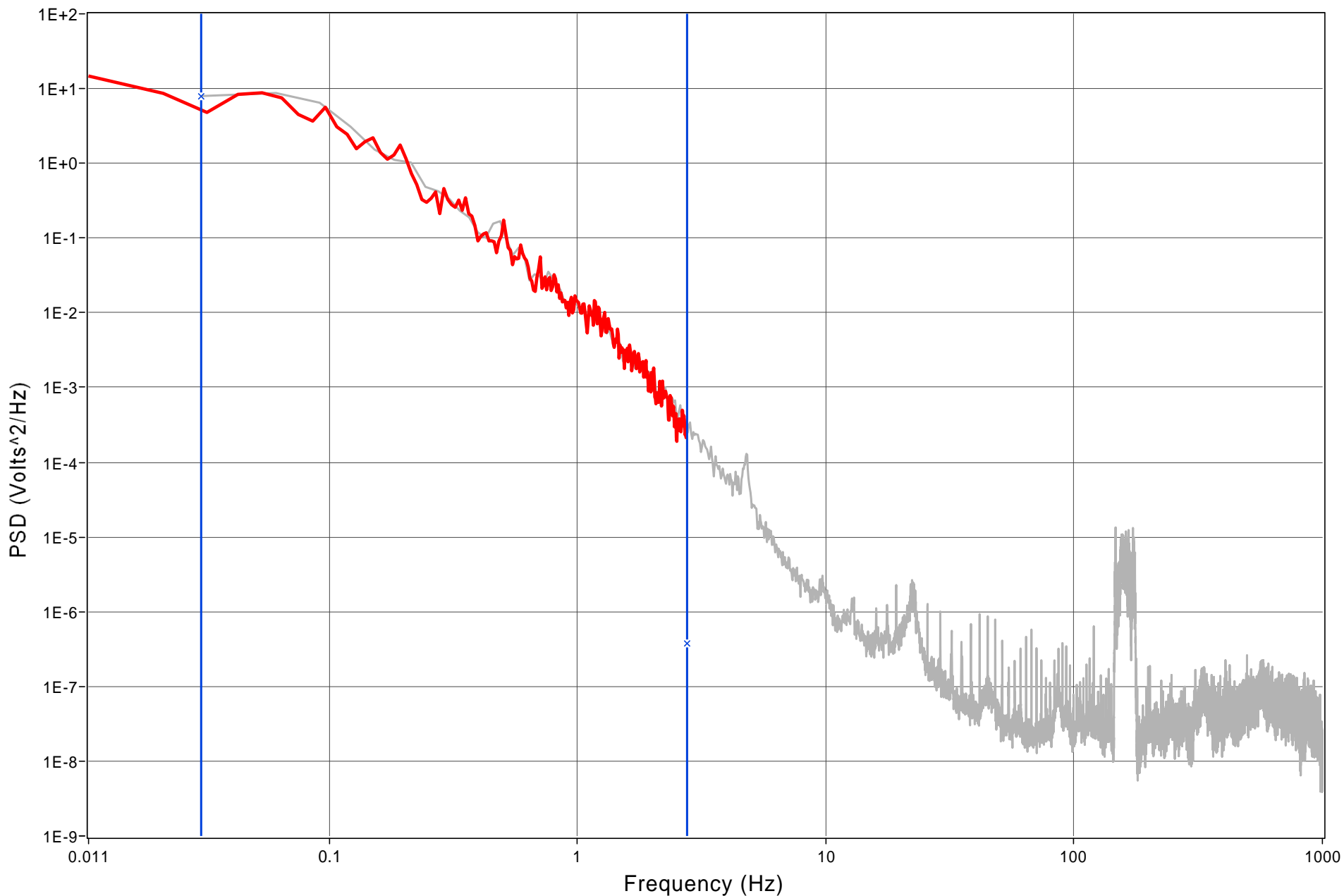




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	FT0496	FW FLOW	FU2_2010-03_0007.psd	0 : 512	0.010731	2.747169	Baseline	04-Mar-2010 14:24:12

PSD Window



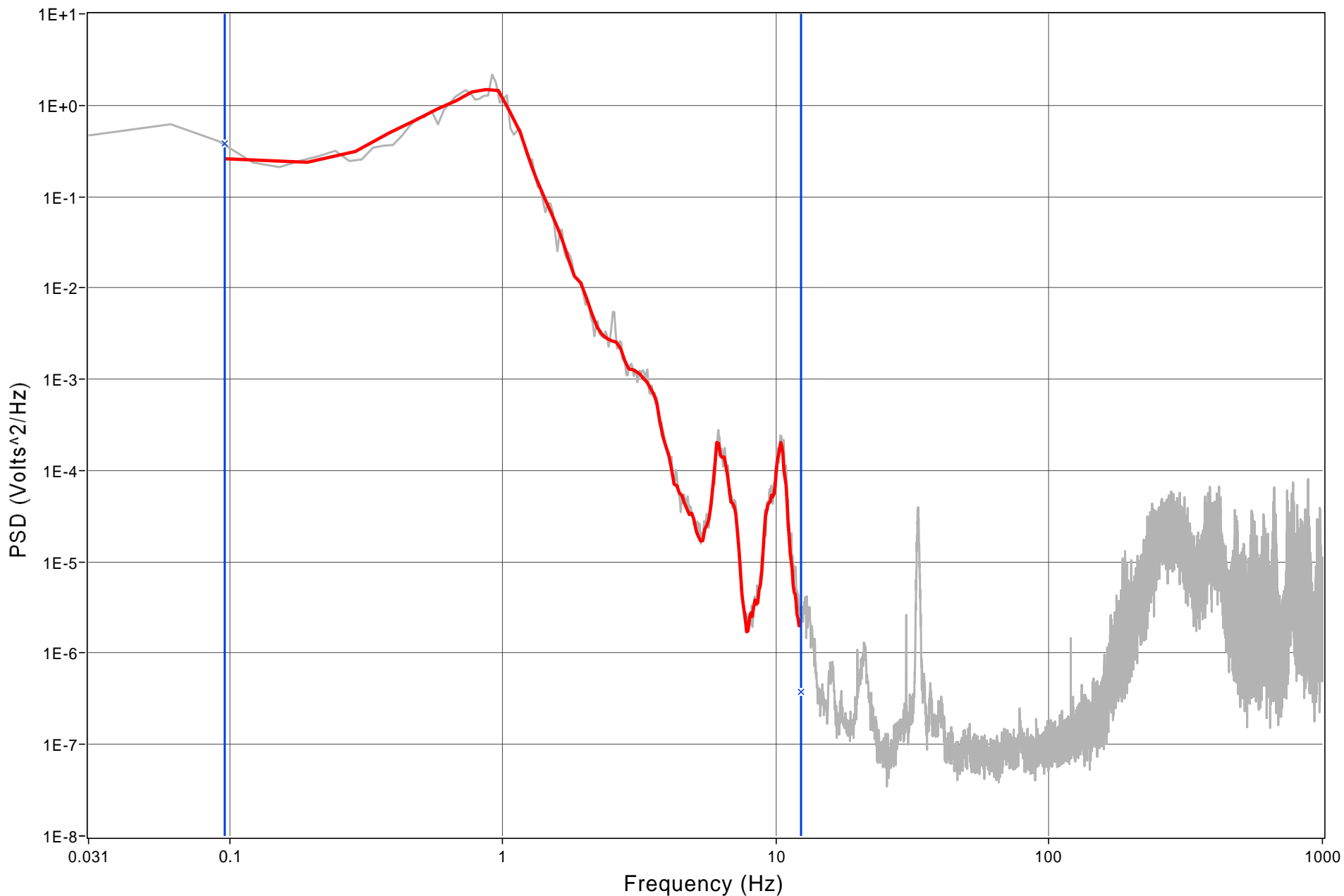




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	LT0476	SG LVL	FU2_2010-03_0008.psd	0 : 256	0.096448	12.345303	Baseline	04-Mar-2010 14:24:12

PSD Window

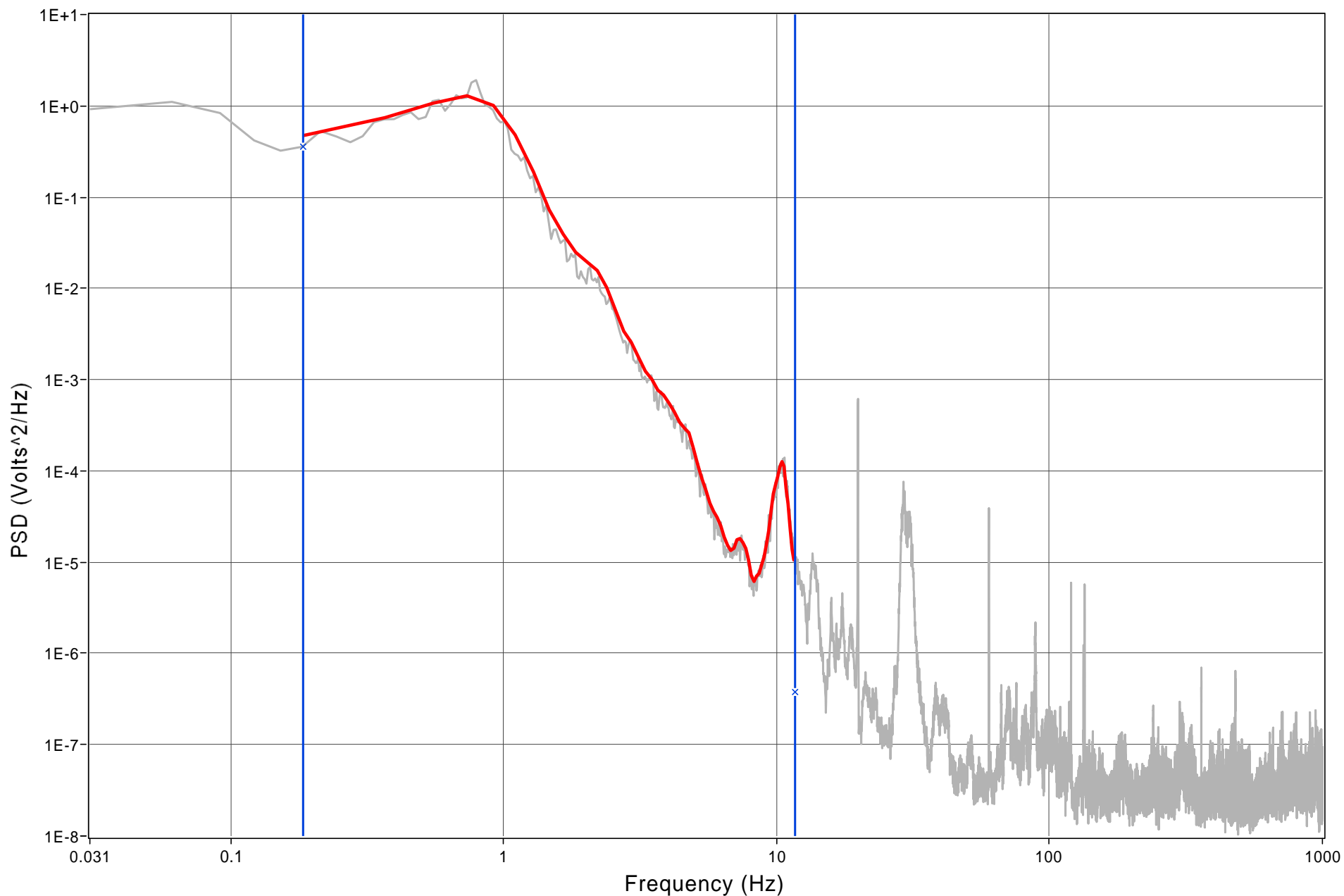




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	LT0486	SG LVL	FU2_2010-03_0008.psd	0 : 128	0.183818	11.764348	Baseline	04-Mar-2010 14:24:12

**PSD Window**

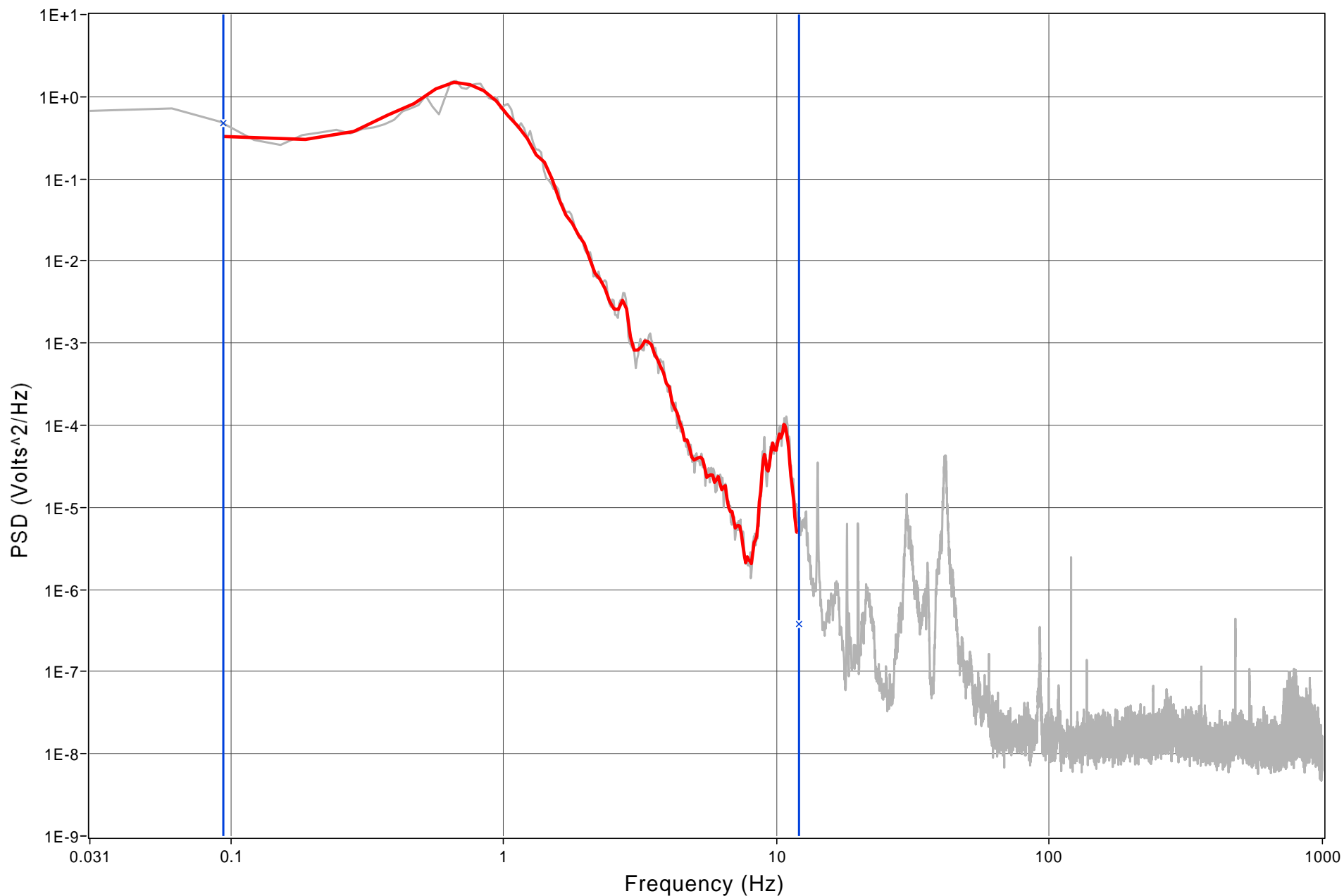




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	LT0496	SG LVL	FU2_2010-03_0008.psd	0 : 256	0.094124	12.047826	Baseline	04-Mar-2010 14:24:12

## PSD Window

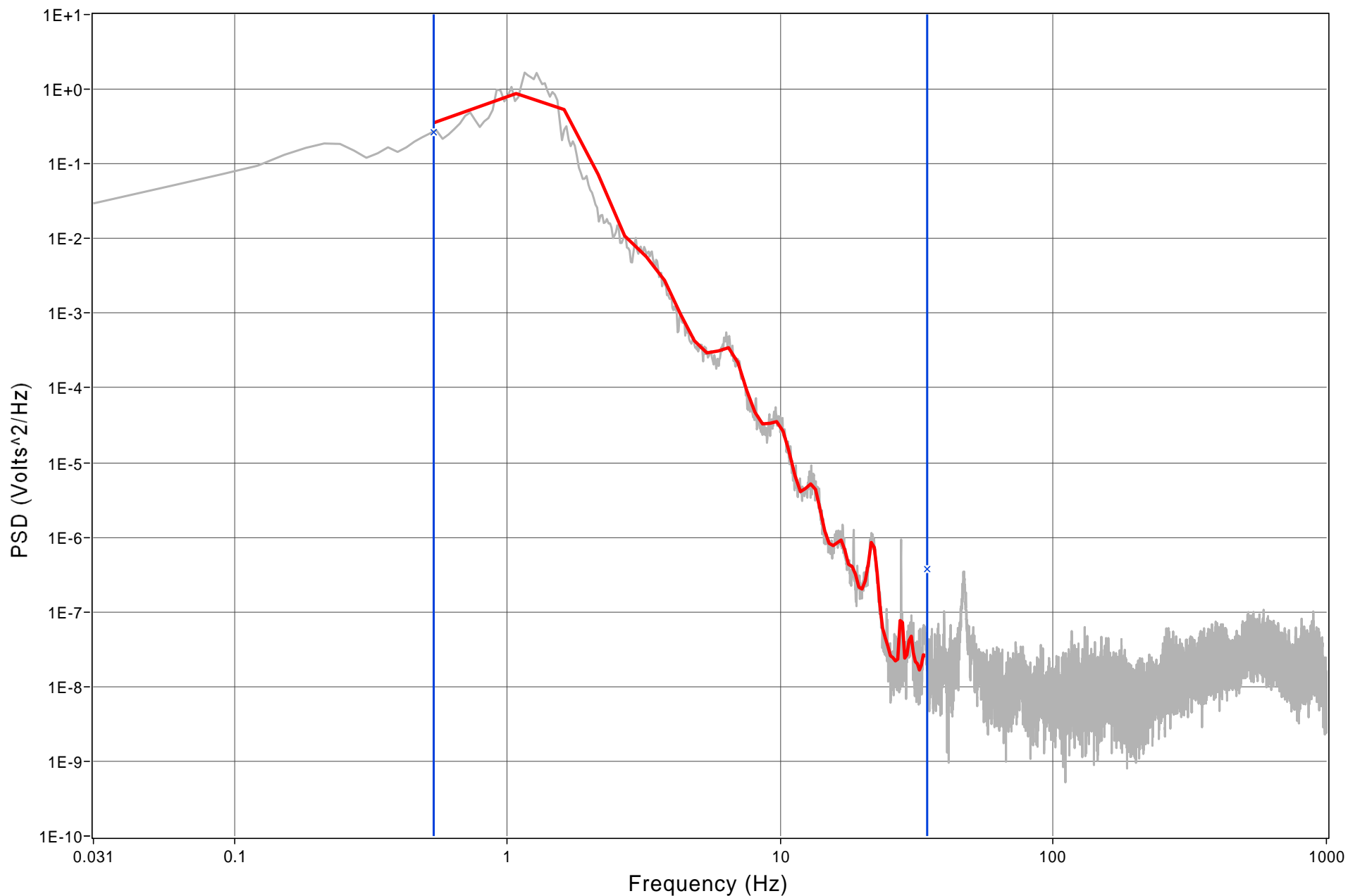




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	FT0474	STM FLOW	FU2_2010-03_0008.psd	0 : 128	0.538777	34.481708	Baseline	04-Mar-2010 14:24:12

**PSD Window**

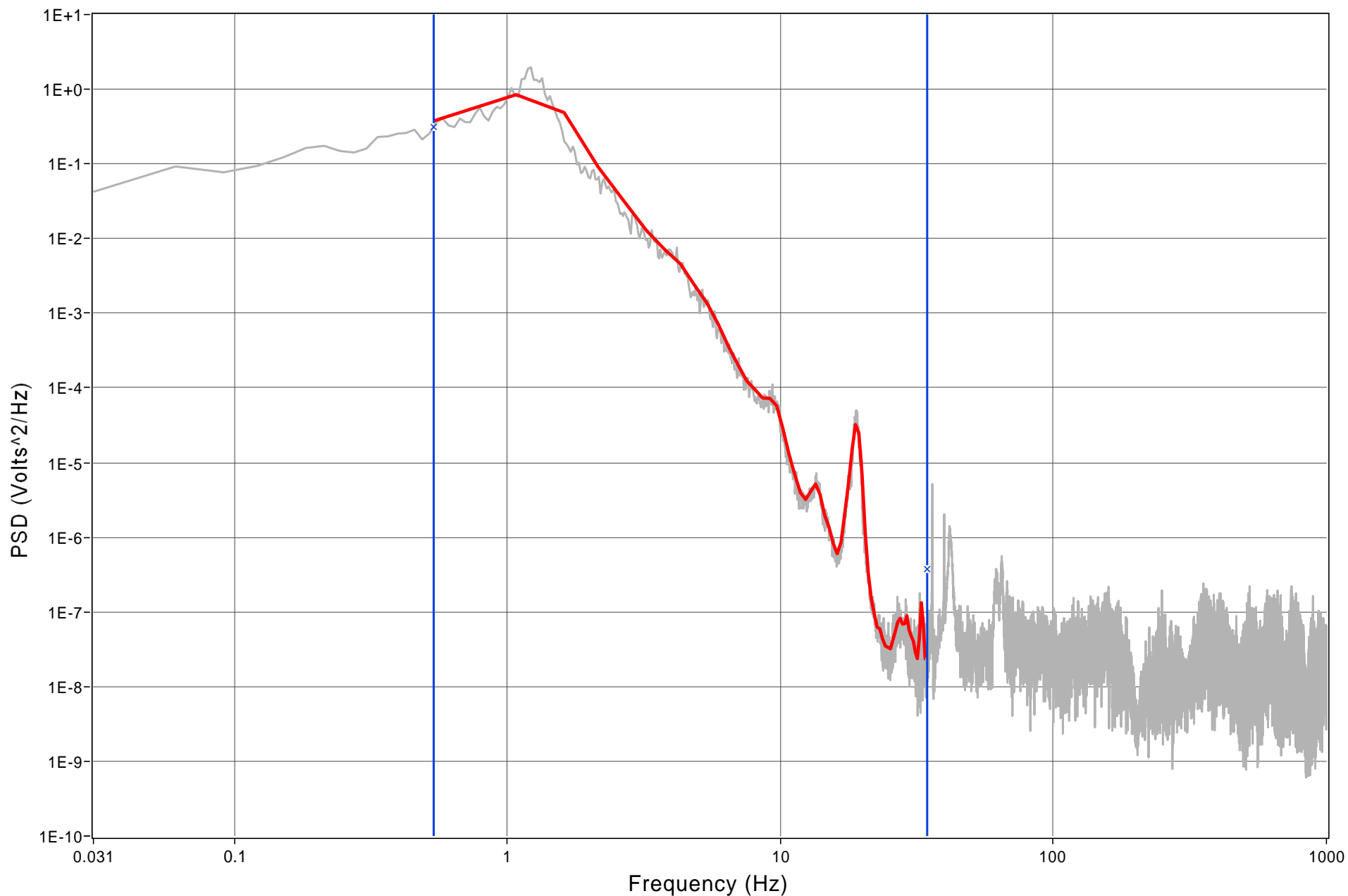




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	FT0484	STM FLOW	FU2_2010-03_0008.psd	0 : 128	0.538777	34.481708	Baseline	04-Mar-2010 14:24:12

**PSD Window**

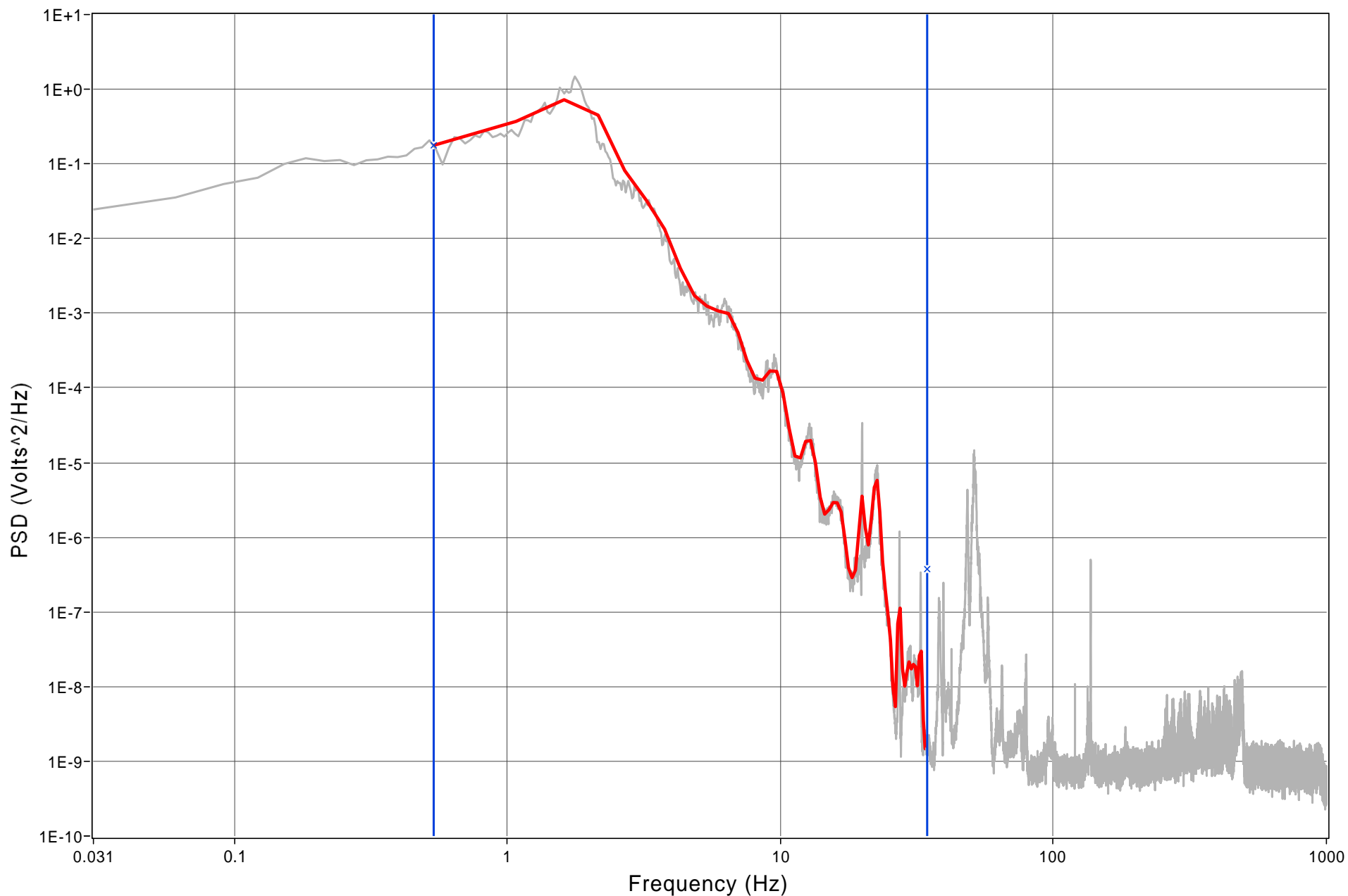




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	FT0494	STM FLOW	FU2_2010-03_0008.psd	0 : 128	0.538777	34.481708	Baseline	04-Mar-2010 14:24:12

PSD Window

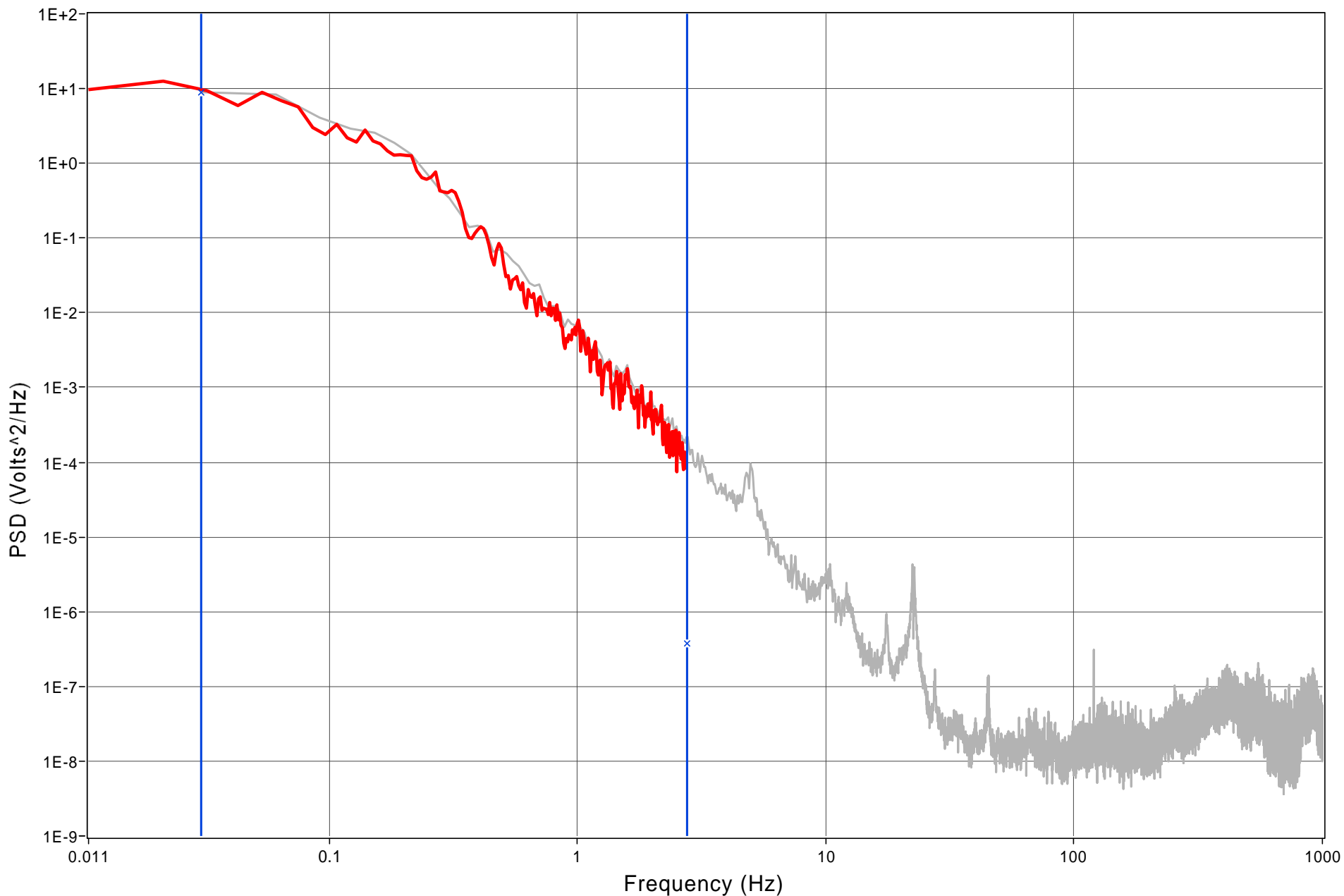




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	FT0477	FW FLOW	FU2_2010-03_0008.psd	0 : 512	0.010731	2.747169	Baseline	04-Mar-2010 14:24:12

PSD Window

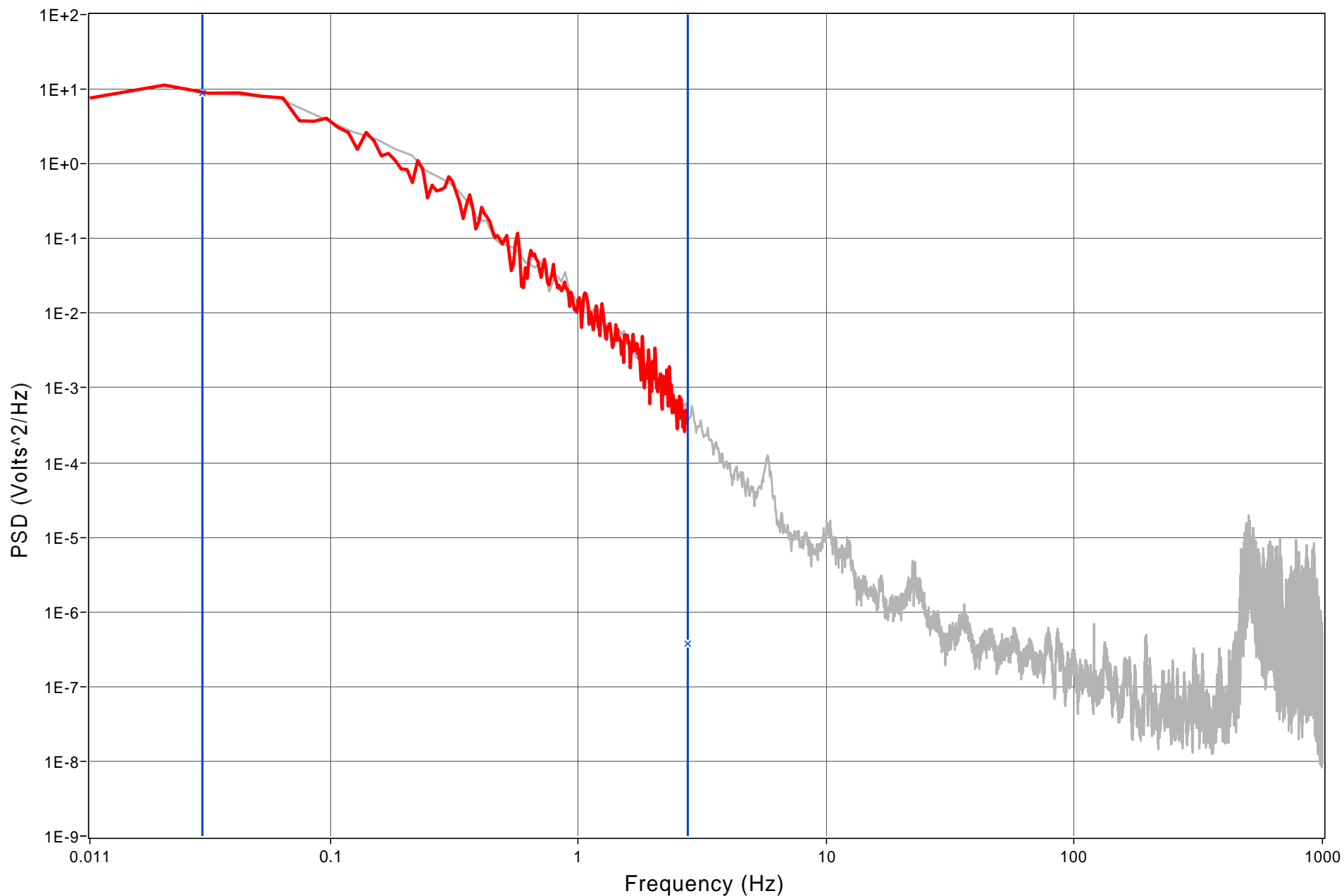




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	FT0487	FW FLOW	FU2_2010-03_0008.psd	0 : 512	0.010731	2.747169	Baseline	04-Mar-2010 14:24:12

PSD Window



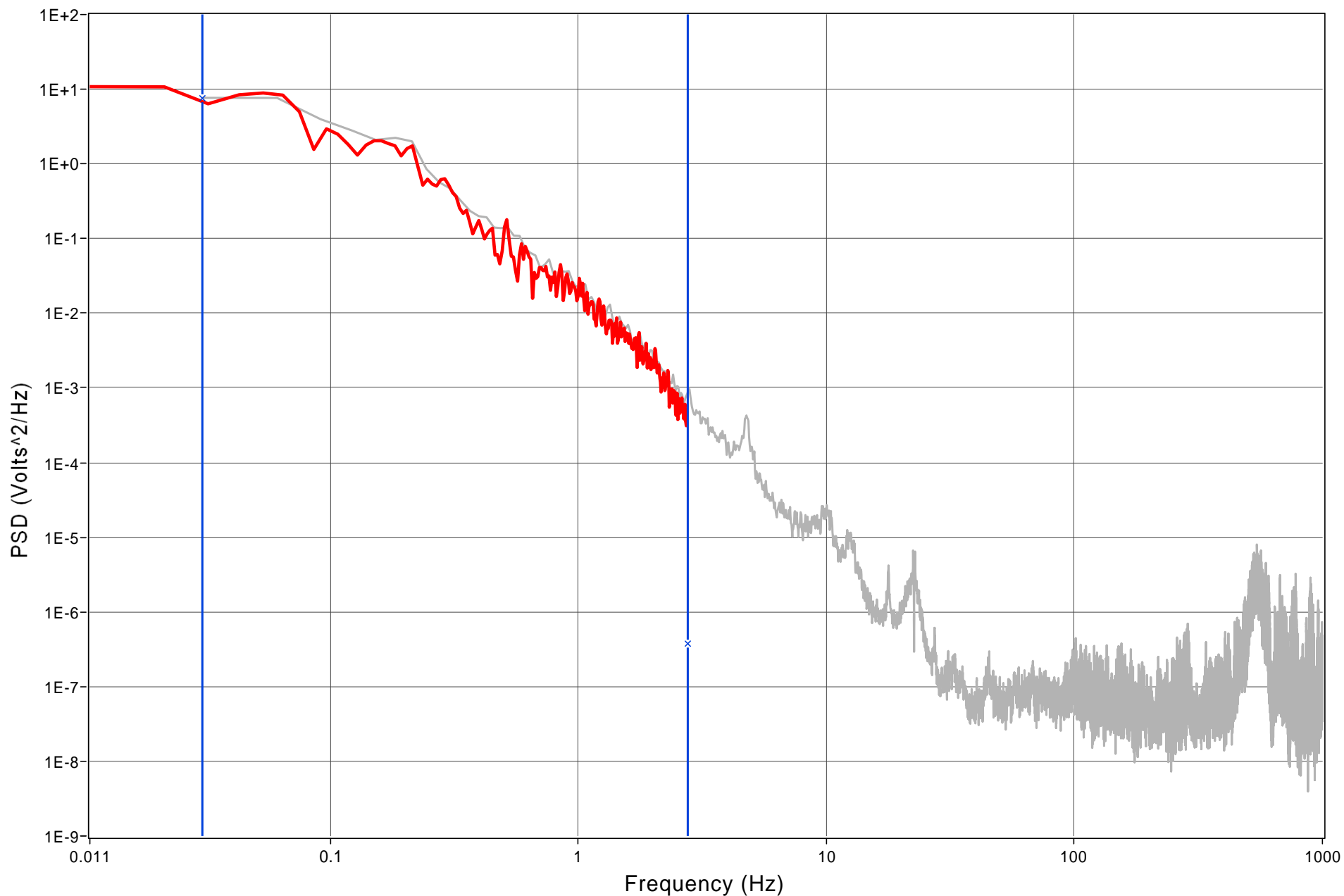




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	FT0497	FW FLOW	FU2_2010-03_0008.psd	0 : 512	0.010731	2.747169	Baseline	04-Mar-2010 14:24:12

PSD Window

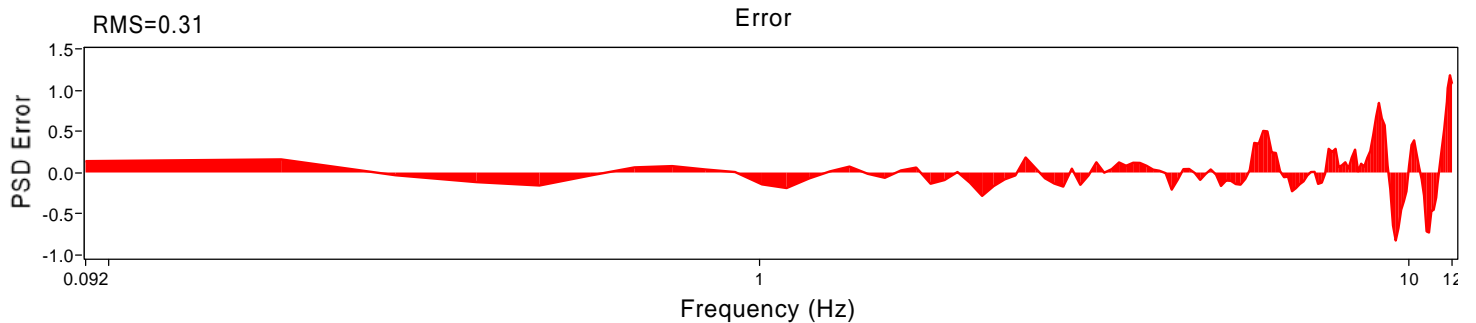
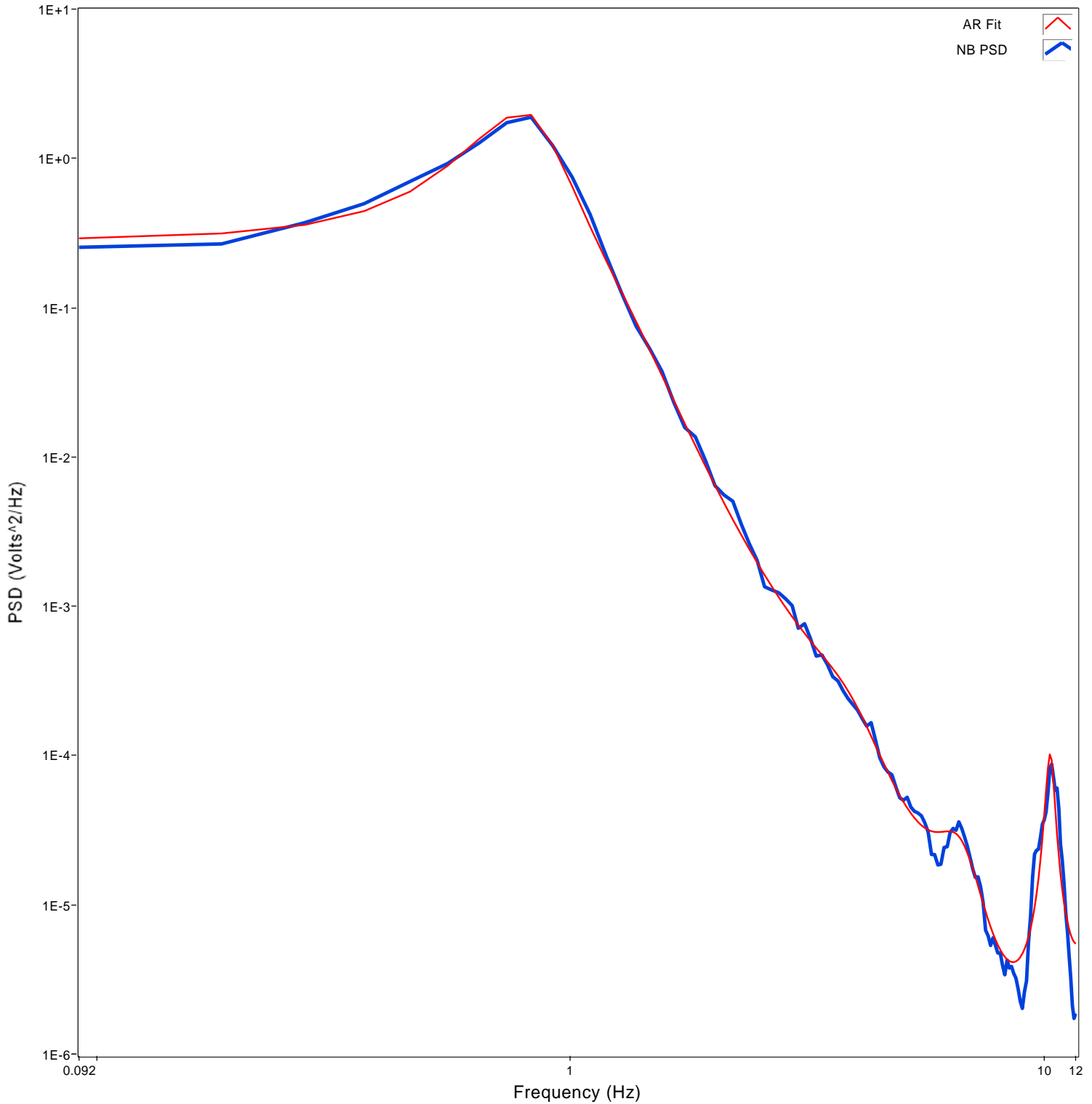




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	LT0474	SG LVL	FU2_2010-03_0005.psd	96 : 512	0.091909	11.764348	11	Forward-Backward	04-Mar-2010 14:24:12

NB PSD and AR PSD

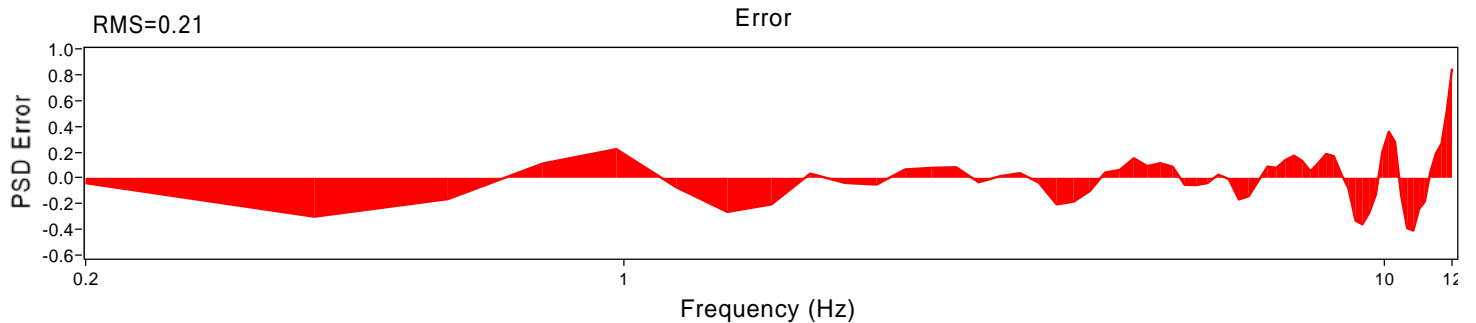
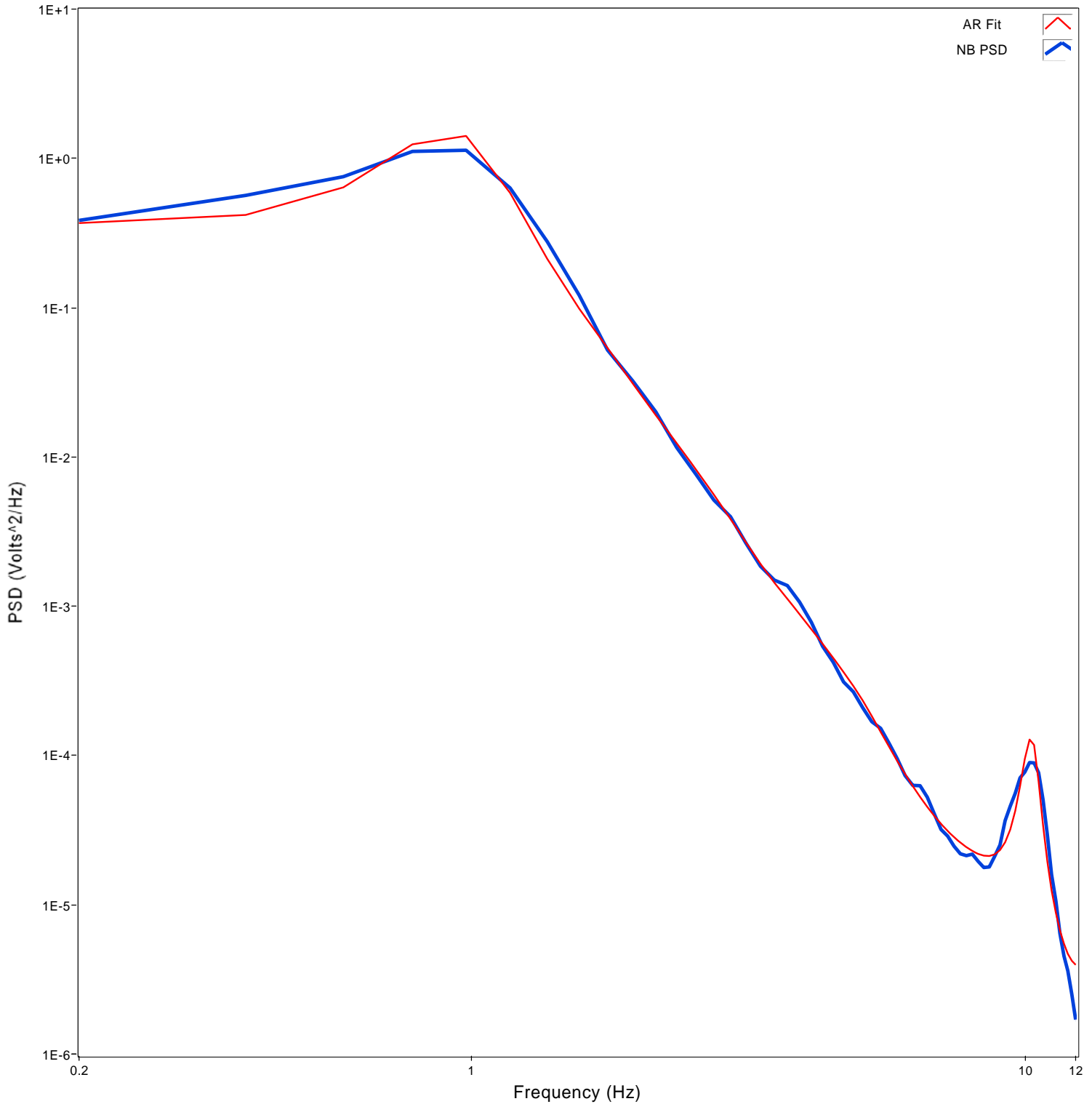




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	LT0484	SG LVL	FU2_2010-03_0005.psd	204 : 512	0.195307	12.499619	11	Forward-Backward	04-Mar-2010 14:24:12

NB PSD and AR PSD

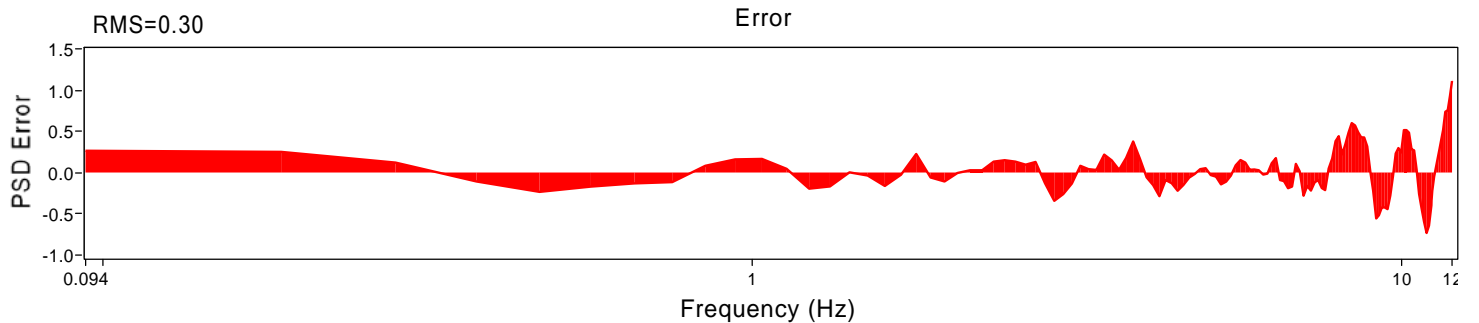
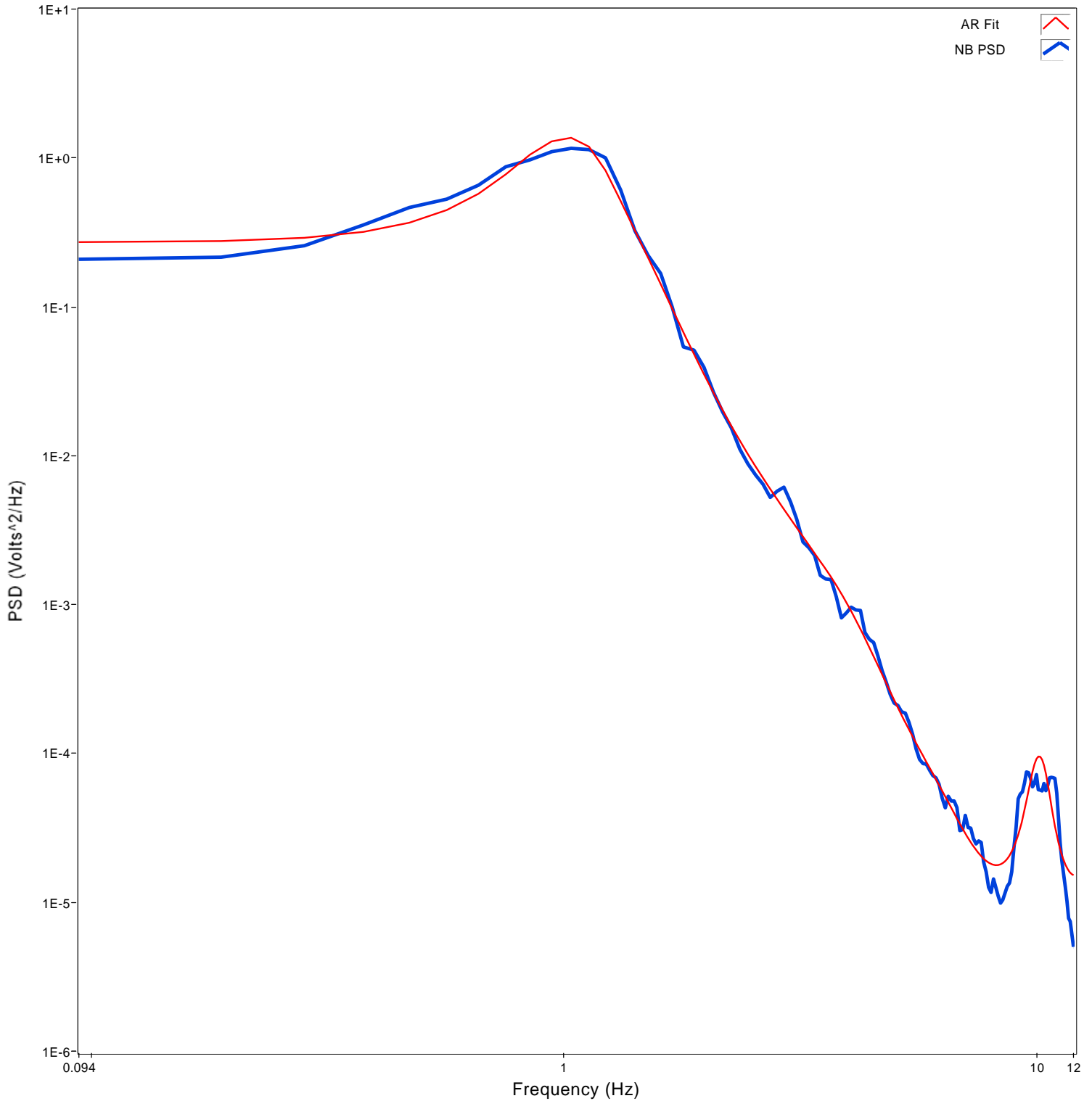




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	LT0494	SG LVL	FU2_2010-03_0005.psd	98 : 512	0.094124	12.047826	11	Forward-Backward	04-Mar-2010 14:24:12

NB PSD and AR PSD

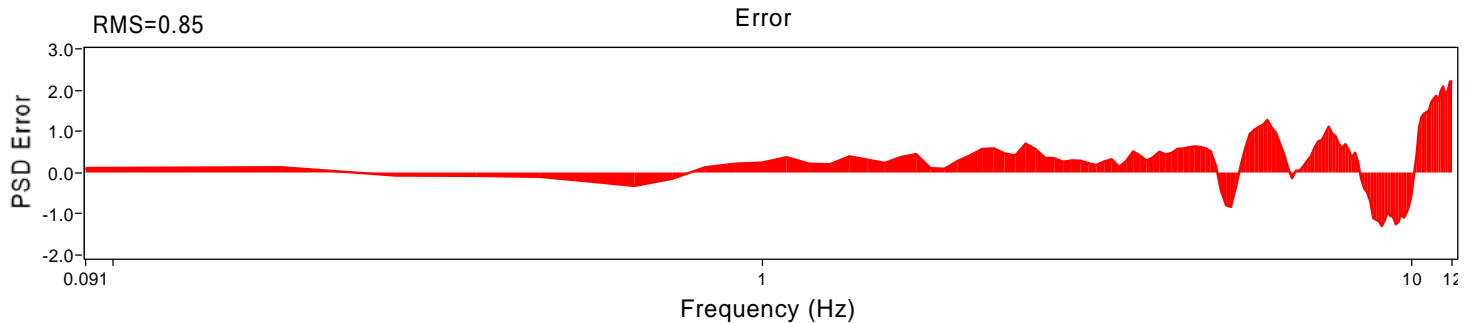
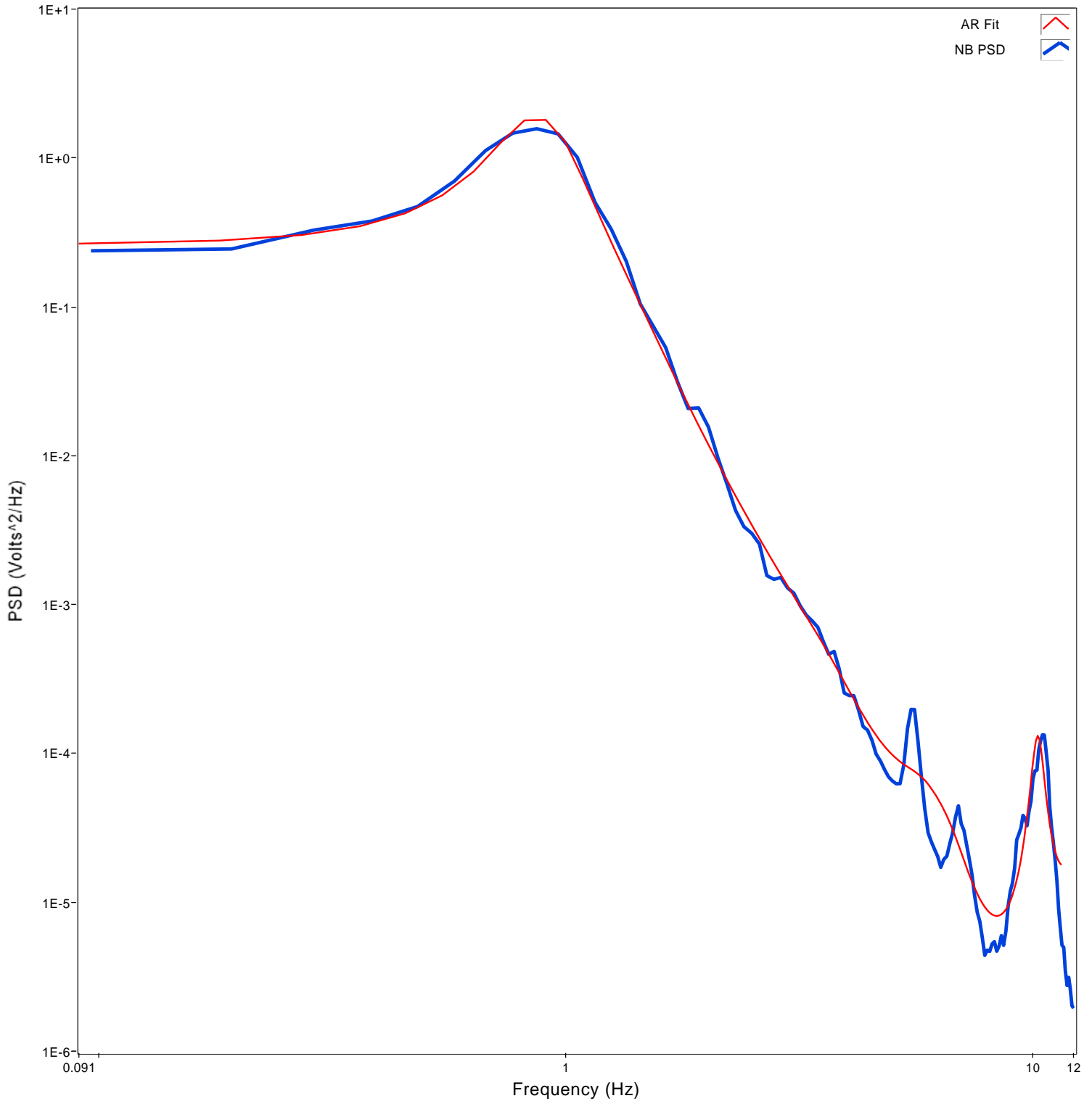




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	LT0475	SG LVL	FU2_2010-03_0006.psd	95 : 512	0.096448	12.345303	11	Forward-Backward	04-Mar-2010 14:24:12

NB PSD and AR PSD

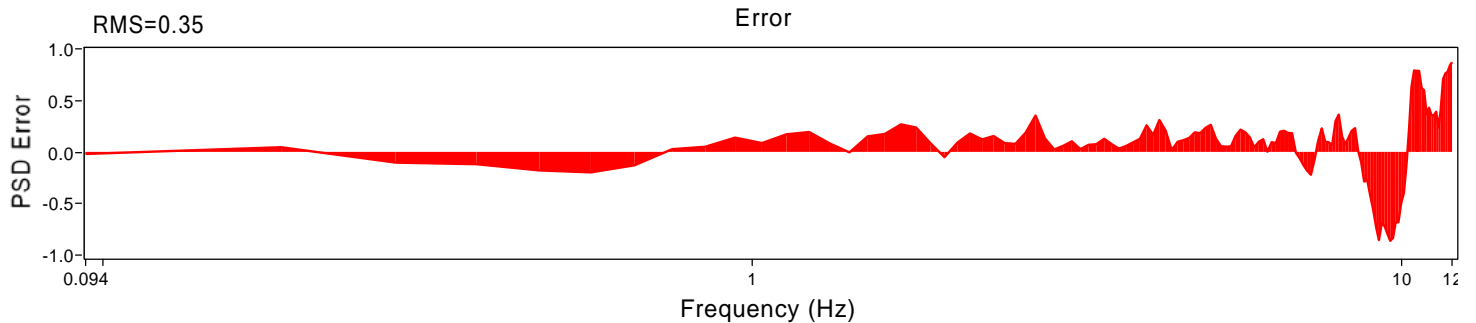
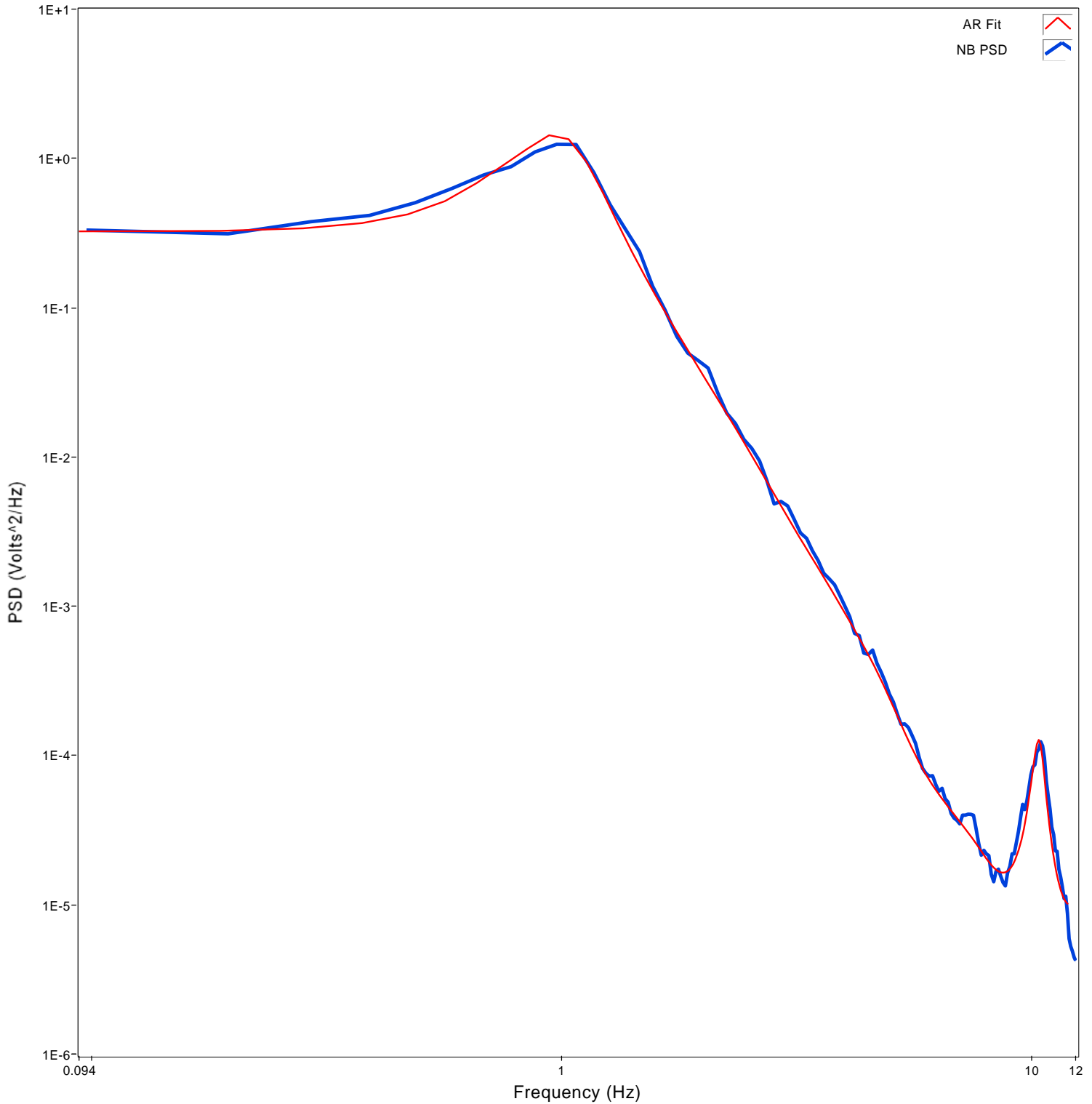




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	LT0485	SG LVL	FU2_2010-03_0006.psd	98 : 512	0.097653	12.499619	11	Forward-Backward	04-Mar-2010 14:24:12

NB PSD and AR PSD

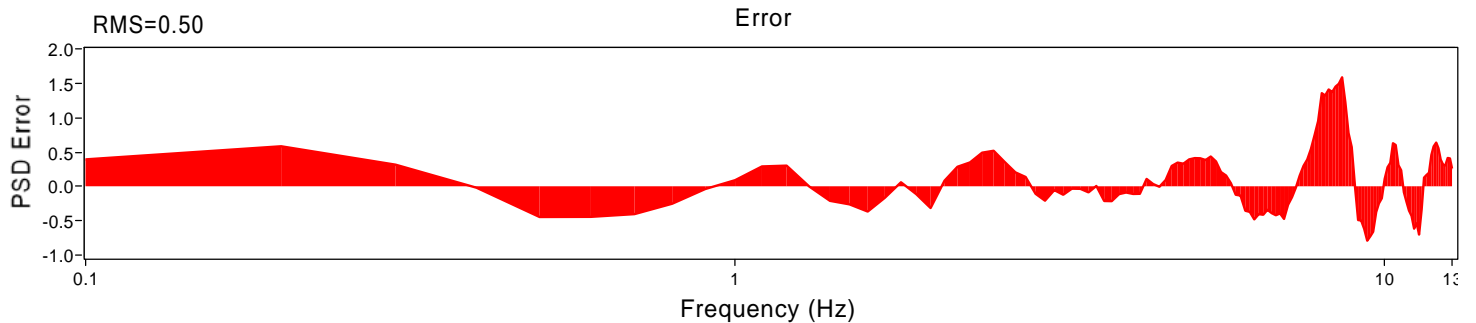
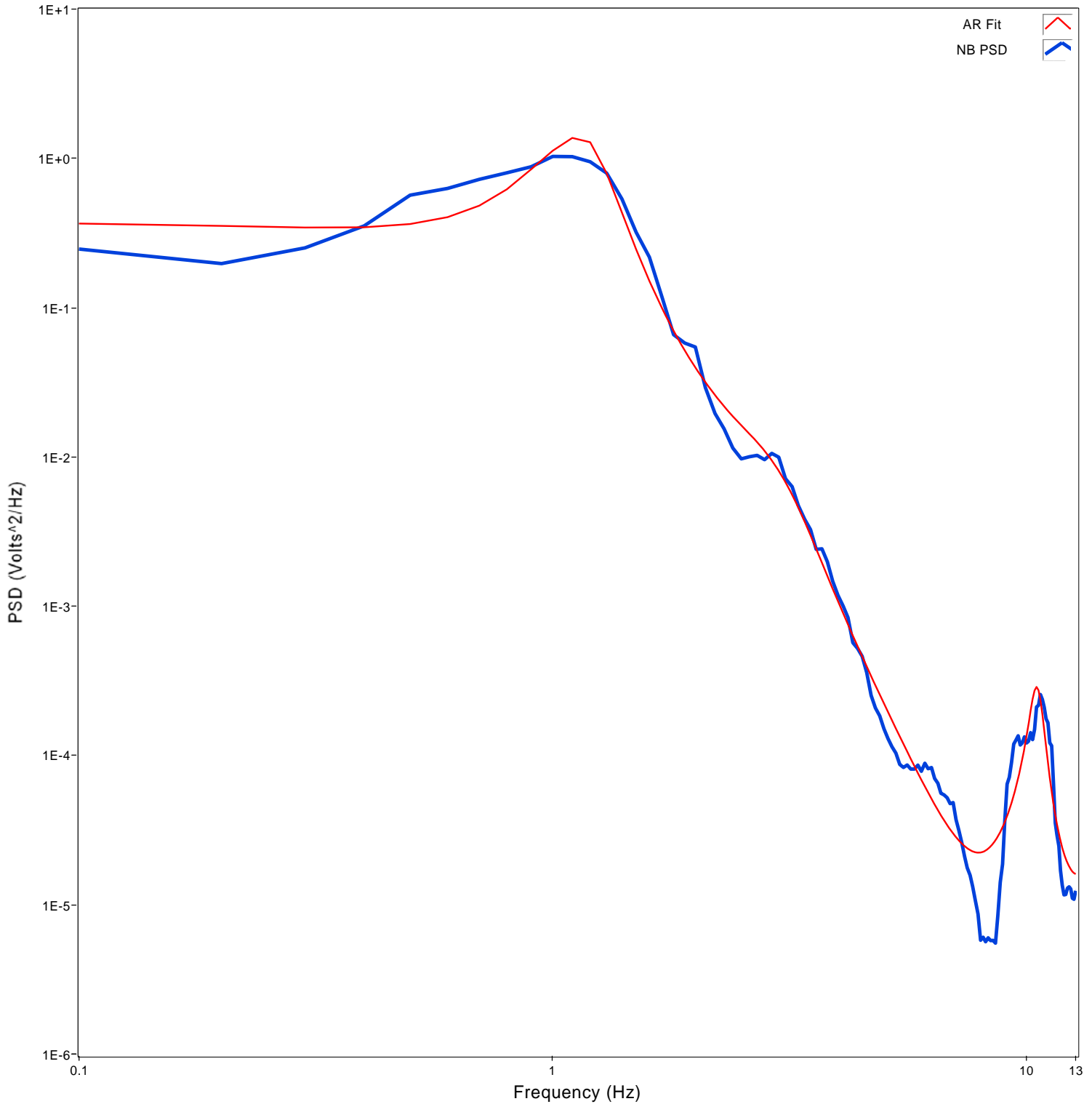




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	LT0495	SG LVL	FU2_2010-03_0006.psd	104 : 512	0.100157	12.820122	11	Forward-Backward	04-Mar-2010 14:24:12

NB PSD and AR PSD

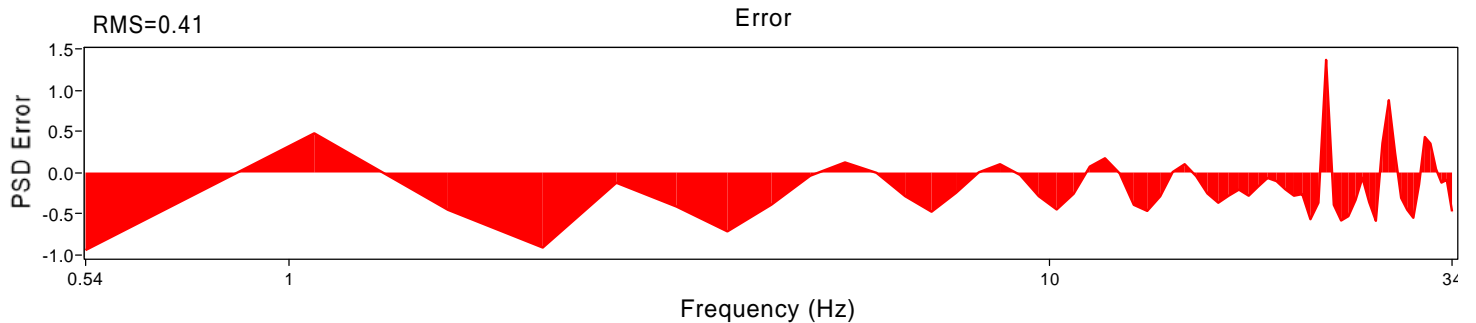
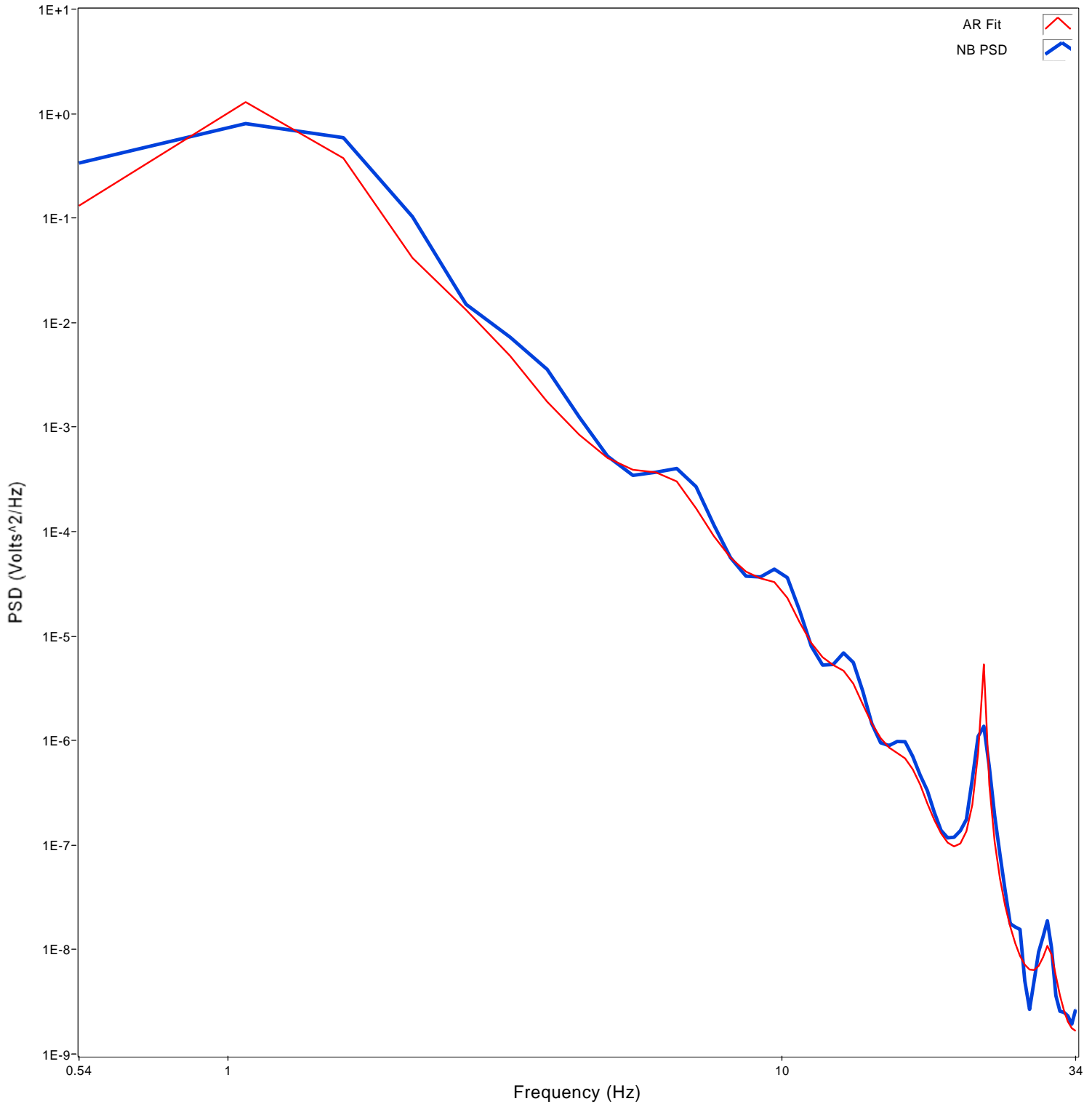




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0475	STM FLOW	FU2_2010-03_0007.psd	564 : 512	0.538777	34.481708	18	Least-Squares	04-Mar-2010 14:24:12

NB PSD and AR PSD



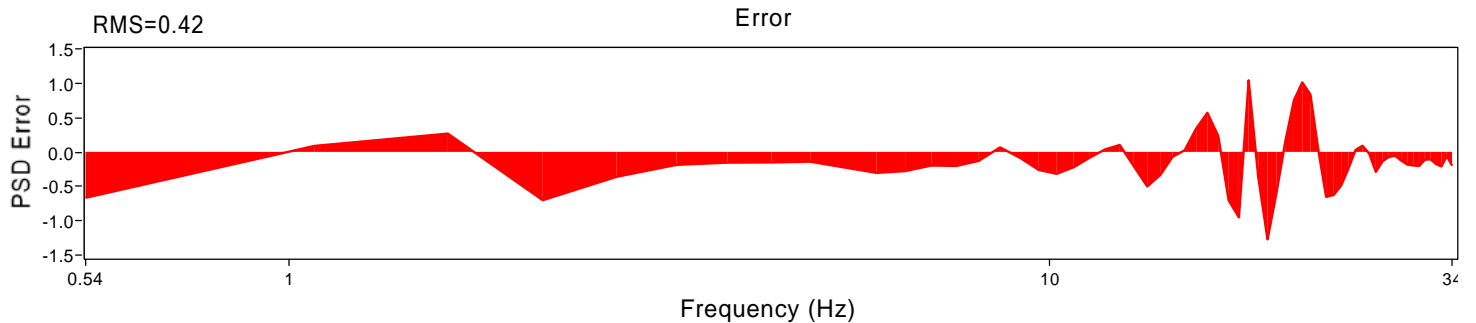
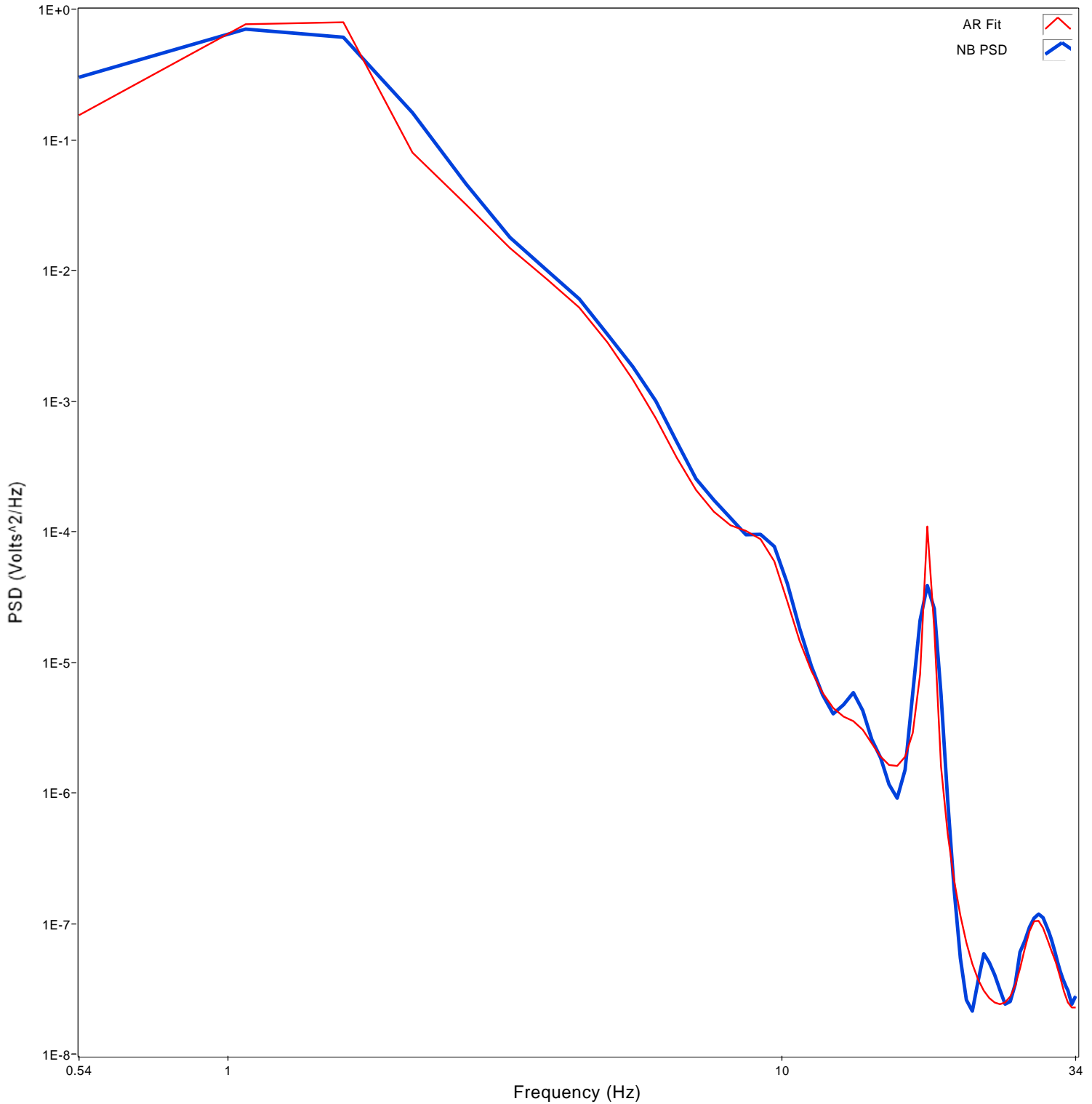




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0485	STM FLOW	FU2_2010-03_0007.psd	564 : 512	0.538777	34.481708	18	Least-Squares	04-Mar-2010 14:24:12

NB PSD and AR PSD

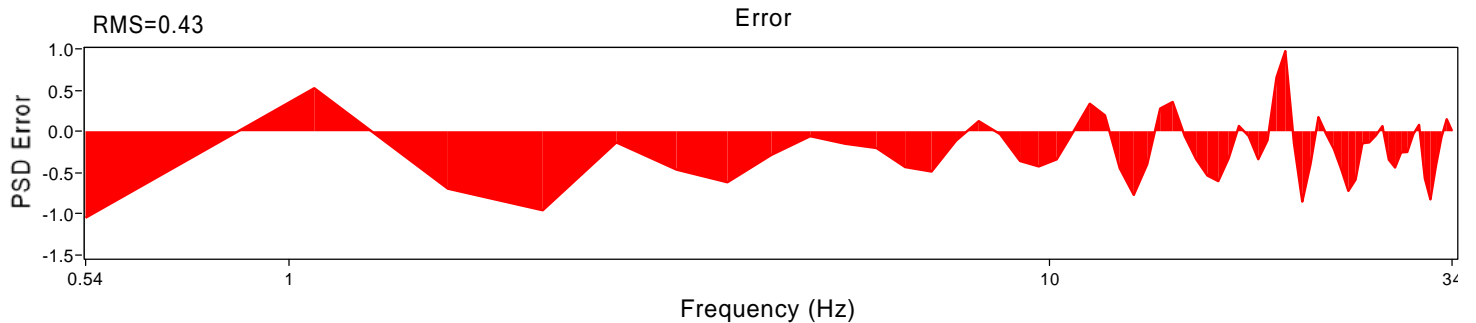
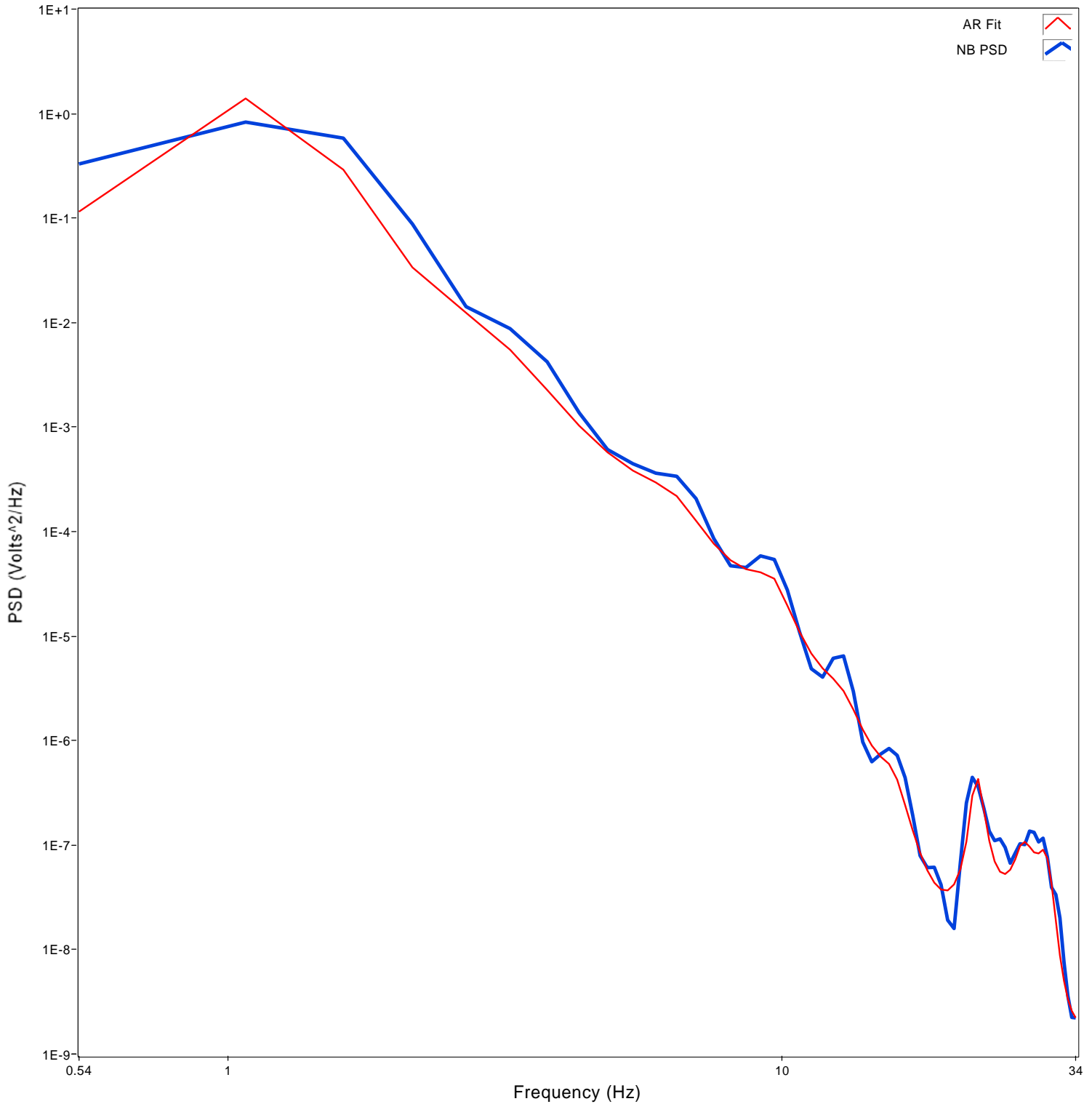




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0495	STM FLOW	FU2_2010-03_0007.psd	564 : 512	0.538777	34.481708	18	Least-Squares	04-Mar-2010 14:24:12

NB PSD and AR PSD

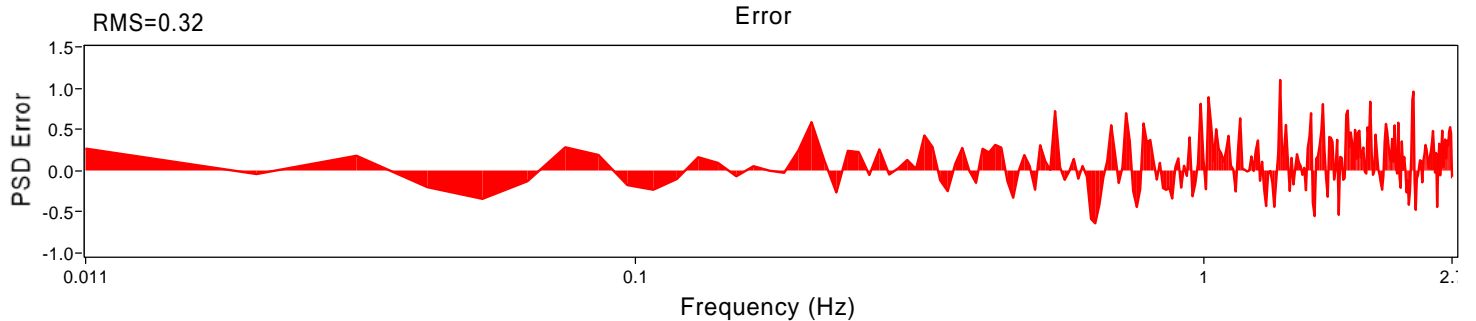
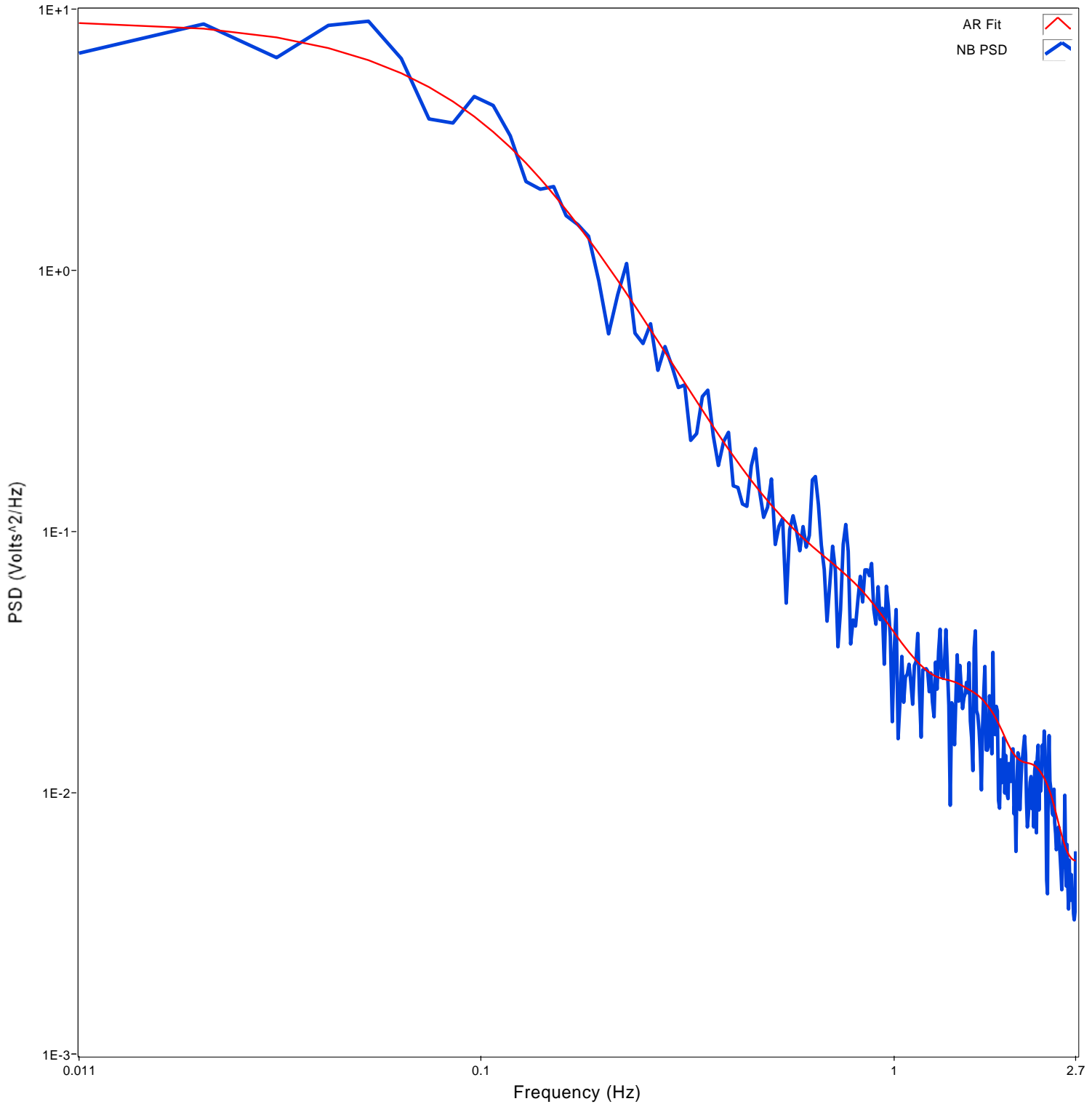




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0476	FW FLOW	FU2_2010-03_0007.psd	11 : 512	0.010731	2.747169	11	Least-Squares	04-Mar-2010 14:24:12

NB PSD and AR PSD

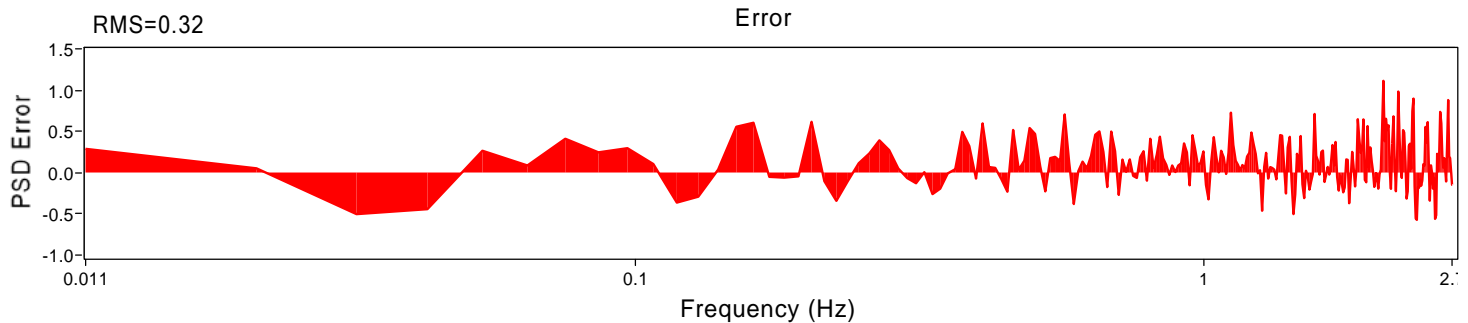
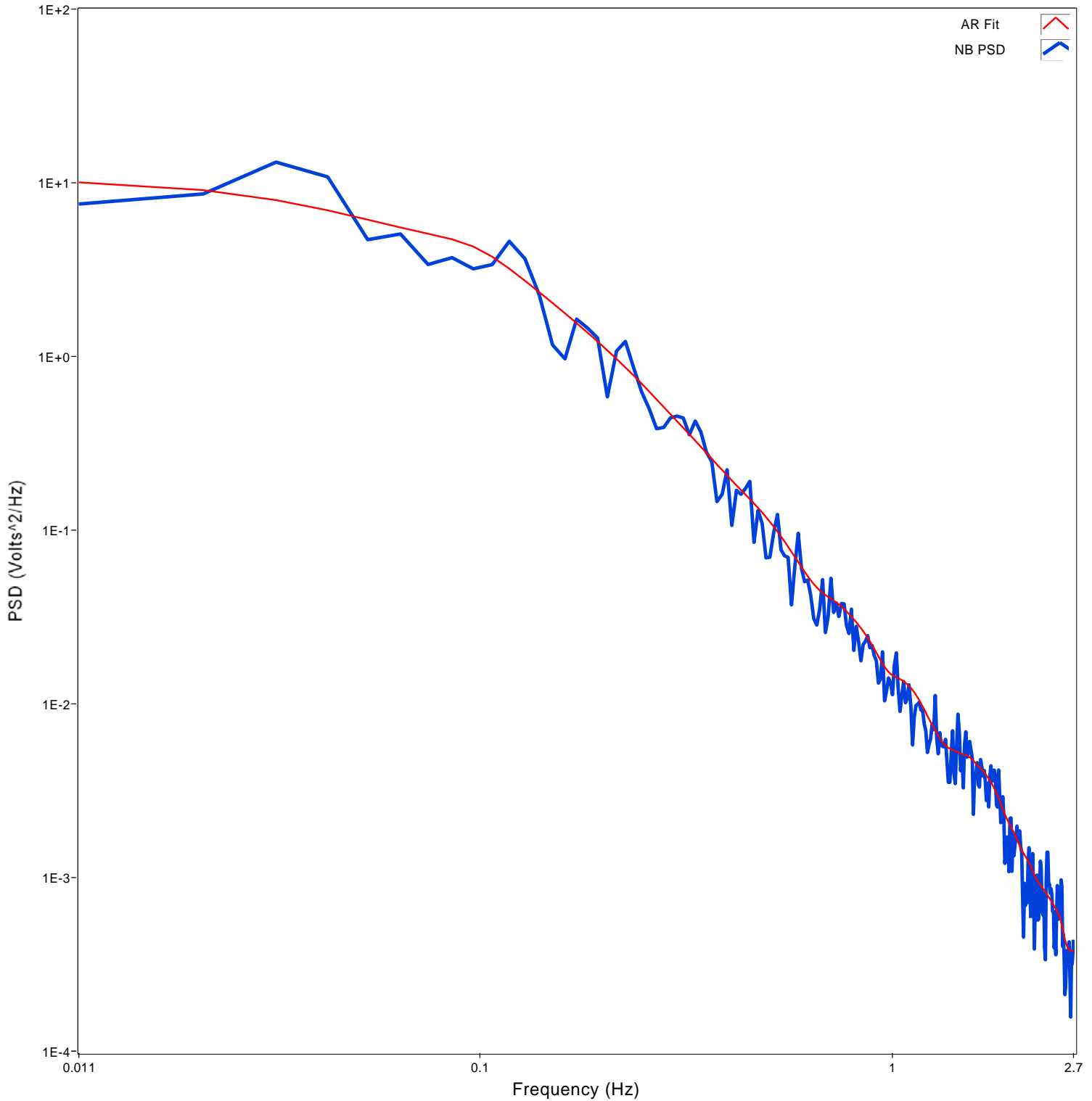




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0486	FW FLOW	FU2_2010-03_0007.psd	11 : 512	0.010731	2.747169	20	Least-Squares	04-Mar-2010 14:24:12

NB PSD and AR PSD

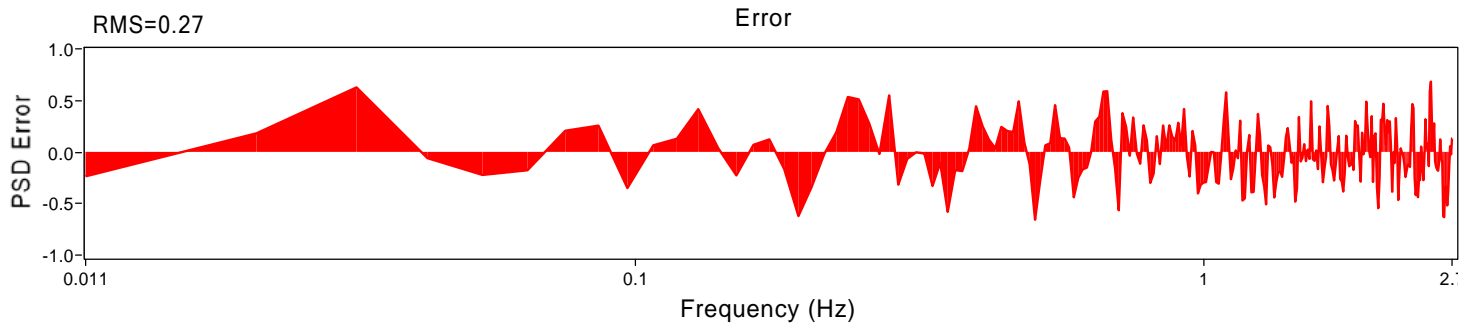
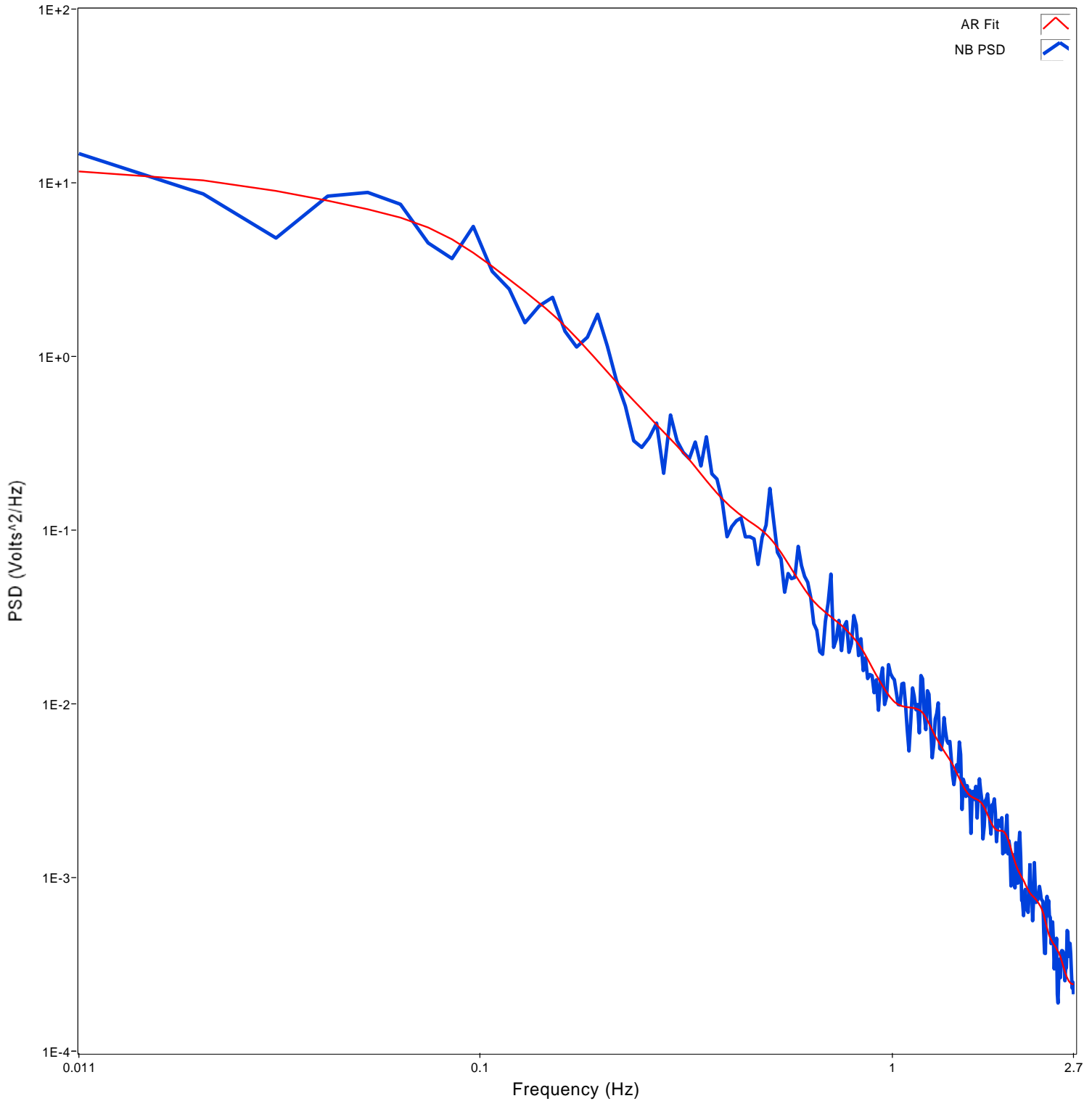




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0496	FW FLOW	FU2_2010-03_0007.psd	11 : 512	0.010731	2.747169	20	Least-Squares	04-Mar-2010 14:24:12

NB PSD and AR PSD

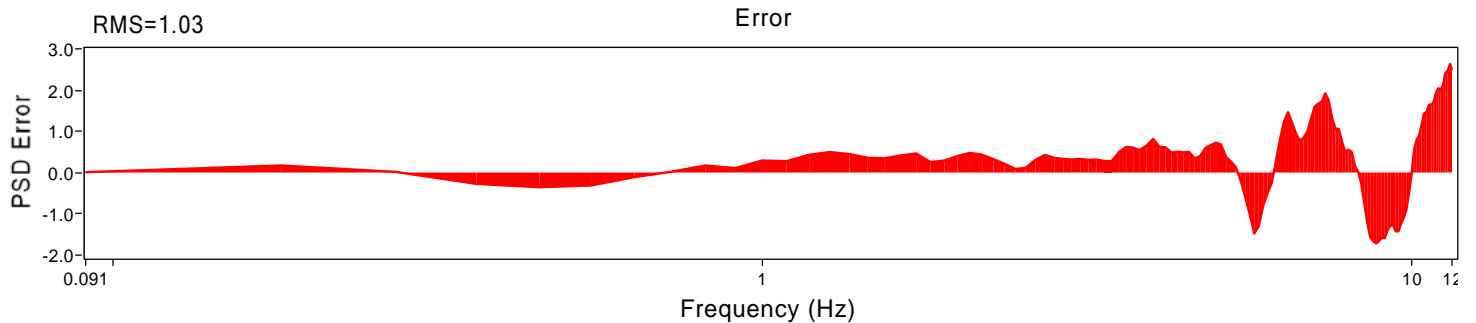
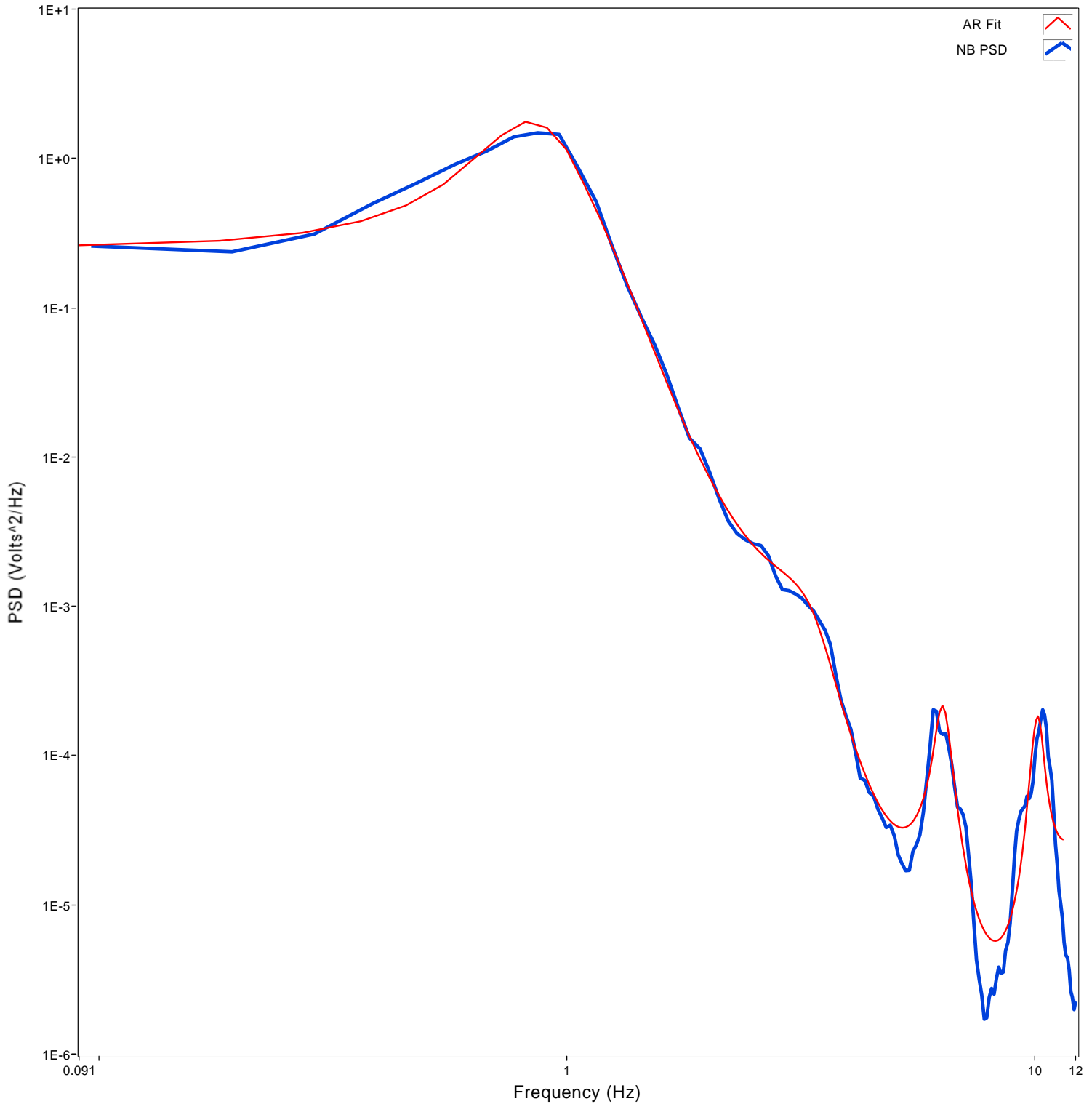




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	LT0476	SG LVL	FU2_2010-03_0008.psd	95 : 512	0.096448	12.345303	11	Forward-Backward	04-Mar-2010 14:24:12

NB PSD and AR PSD

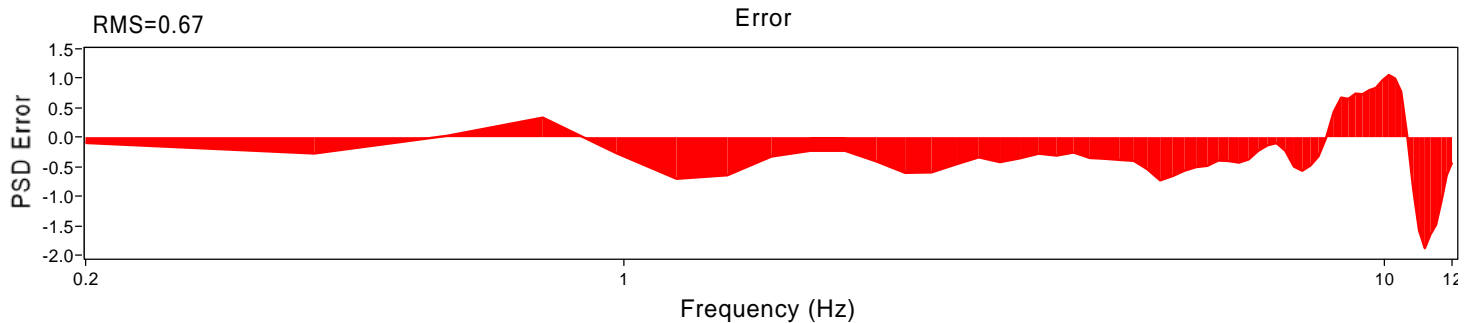
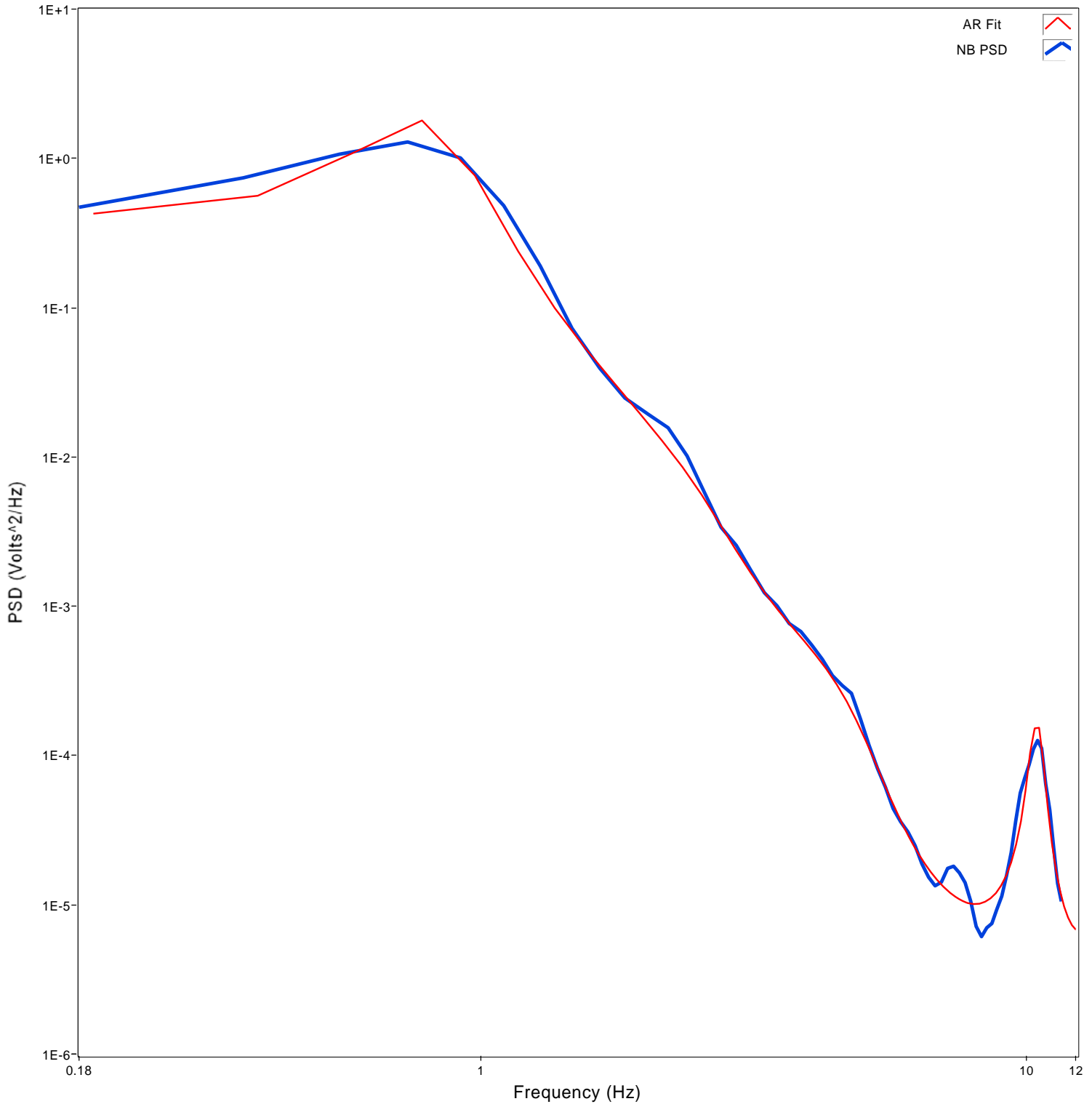




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	LT0486	SG LVL	FU2_2010-03_0008.psd	204 : 512	0.183818	11.764348	11	Forward-Backward	04-Mar-2010 14:24:12

NB PSD and AR PSD

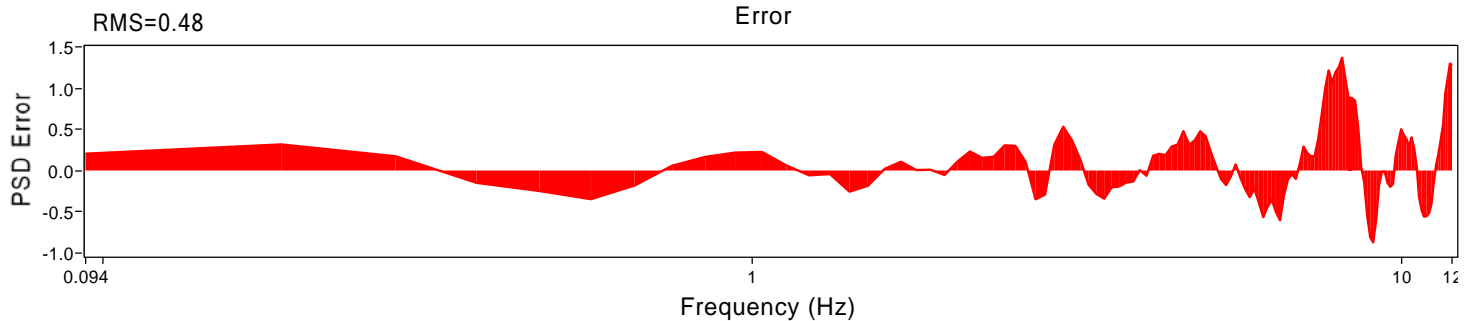
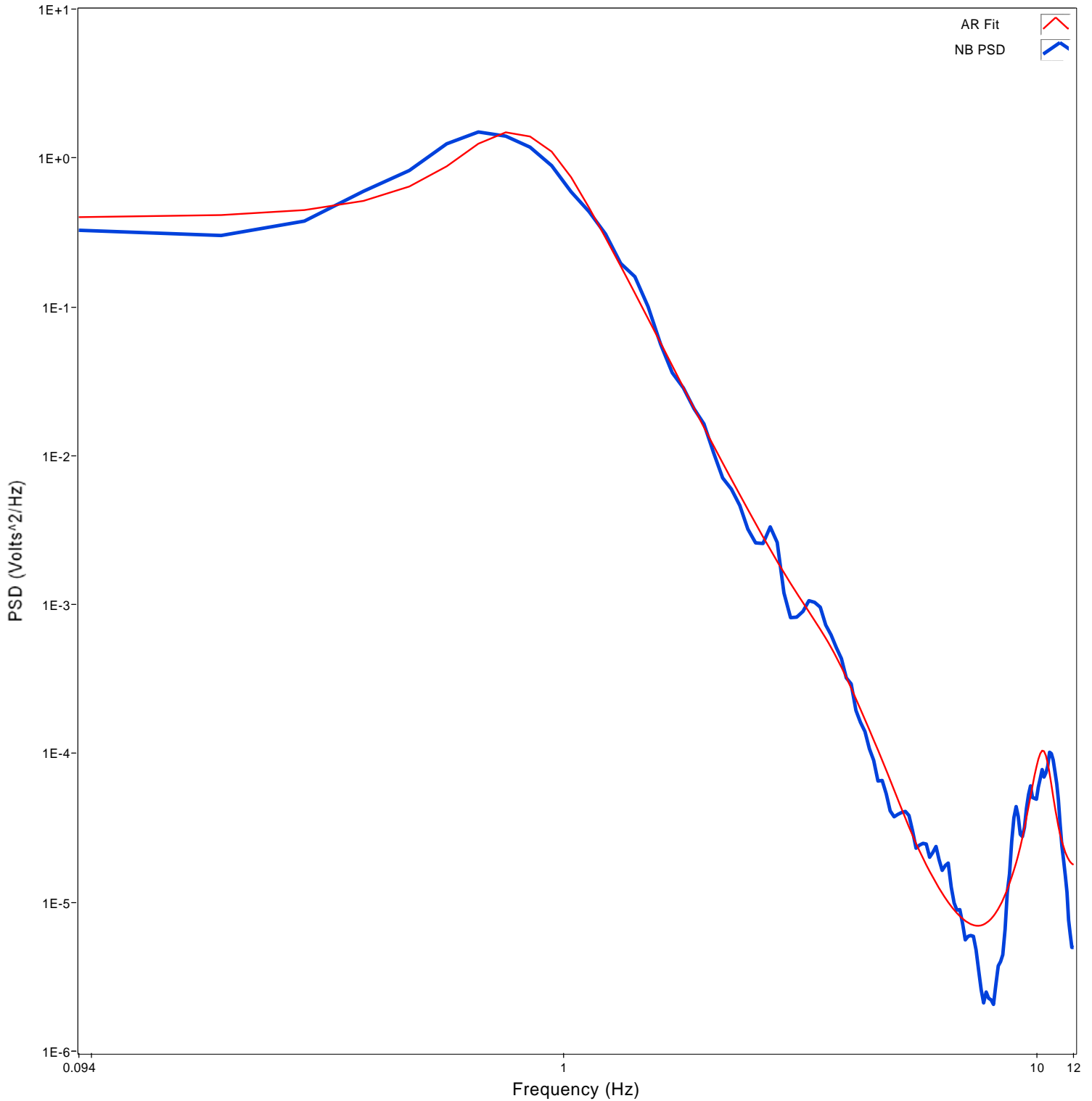




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	LT0496	SG LVL	FU2_2010-03_0008.psd	98 : 512	0.094124	12.047826	11	Forward-Backward	04-Mar-2010 14:24:12

NB PSD and AR PSD



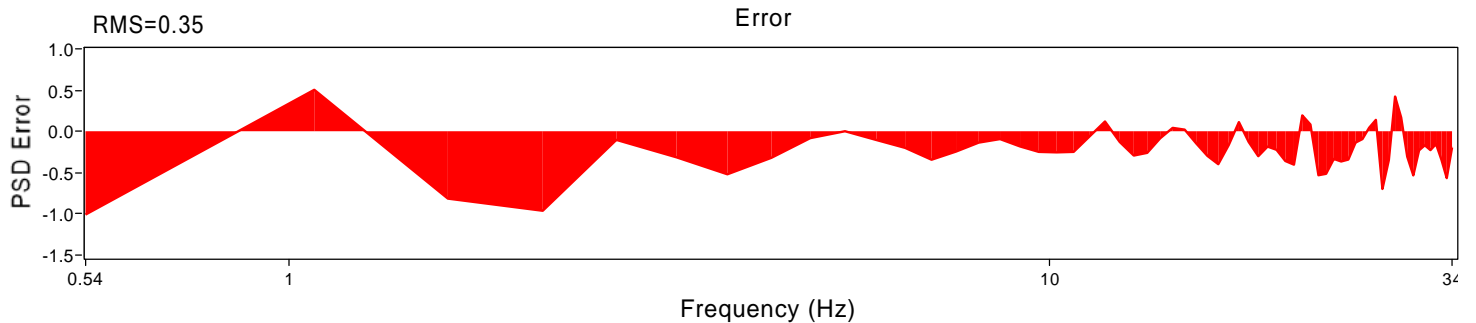
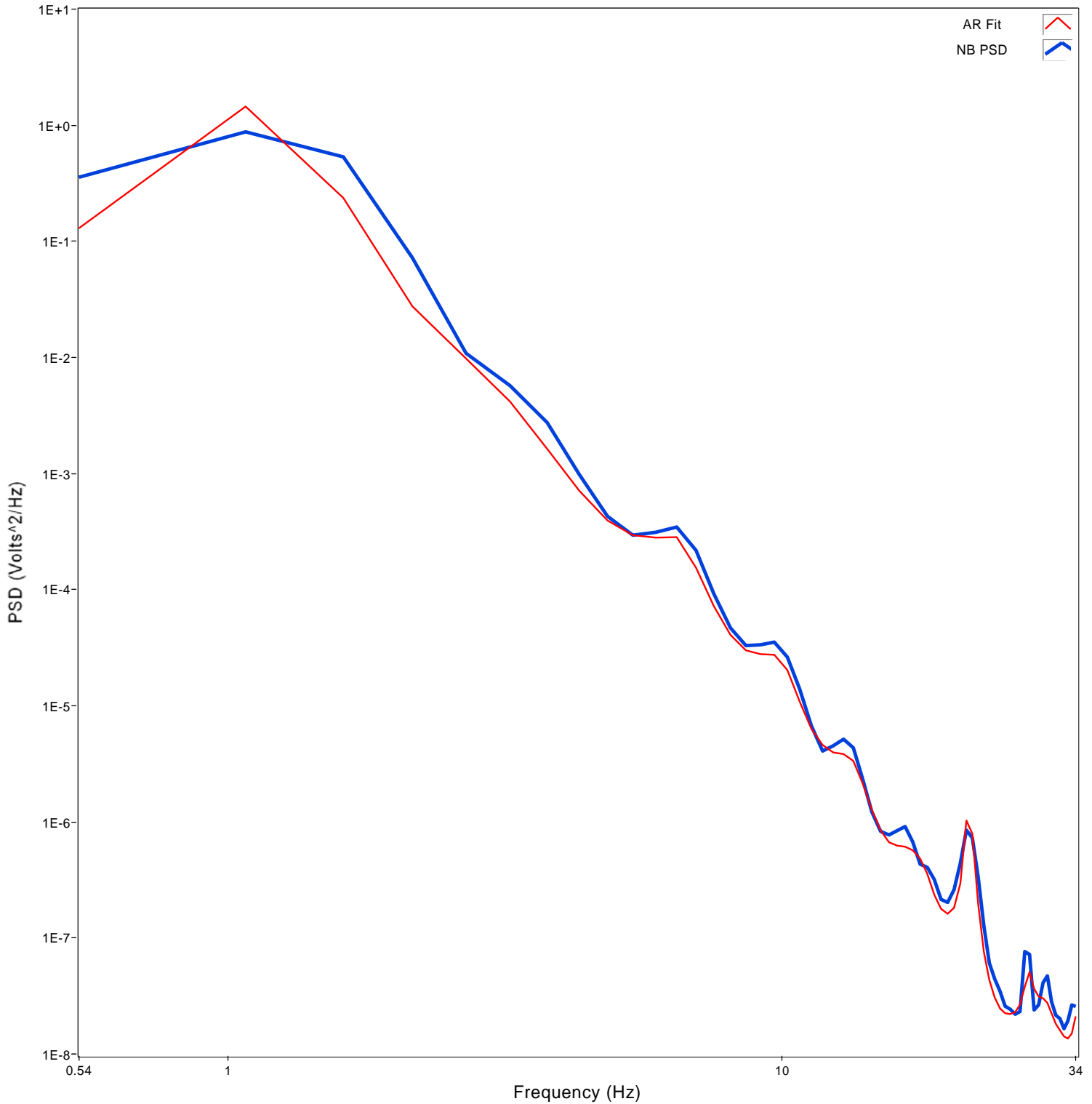




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0474	STM FLOW	FU2_2010-03_0008.psd	564 : 512	0.538777	34.481708	20	Least-Squares	04-Mar-2010 14:24:12

NB PSD and AR PSD

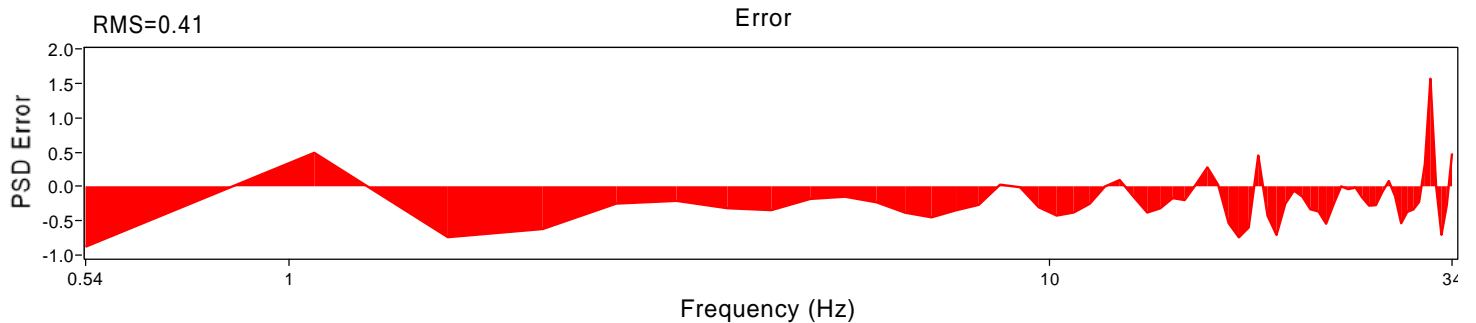
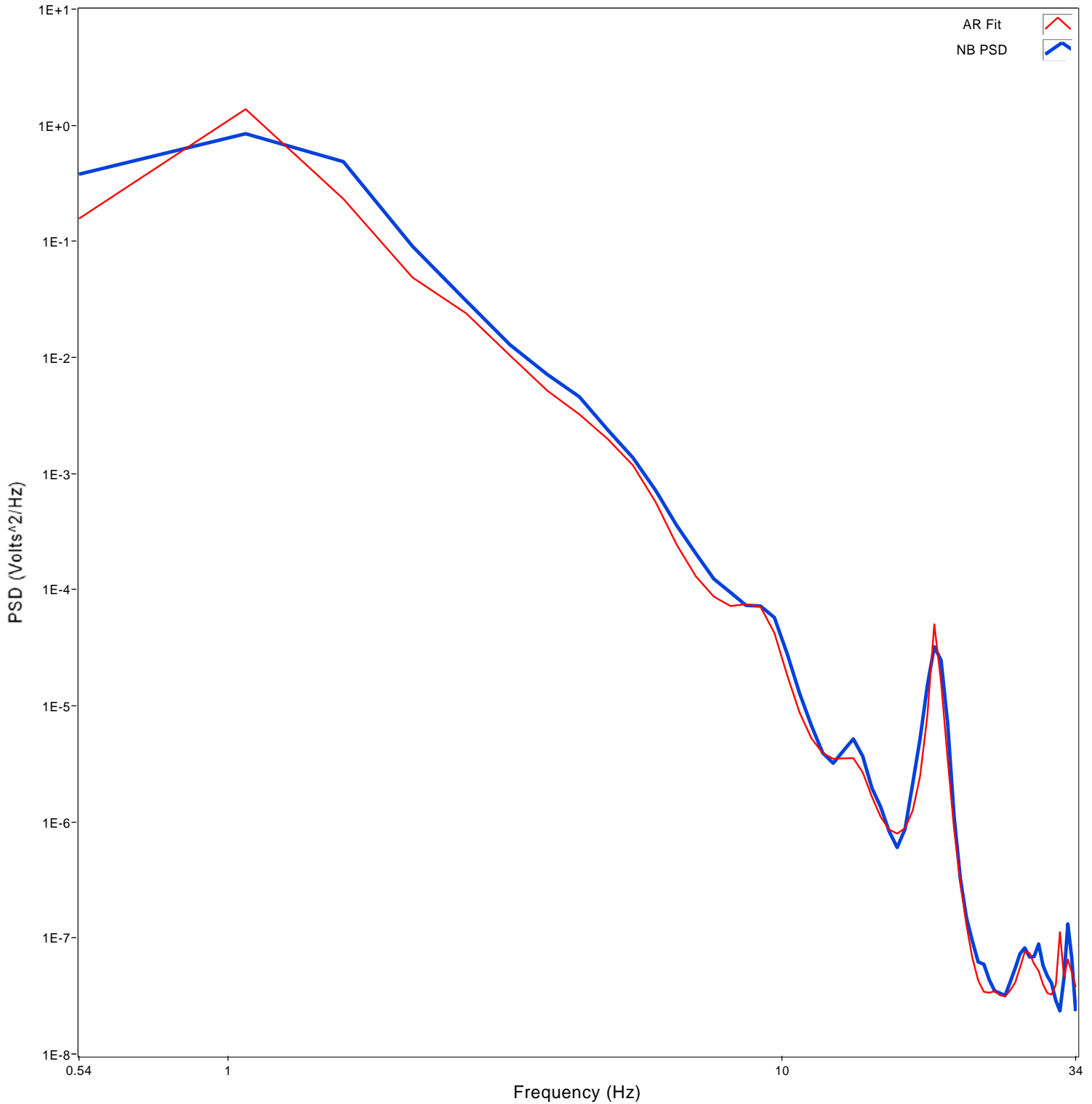




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0484	STM FLOW	FU2_2010-03_0008.psd	564 : 512	0.538777	34.481708	18	Least-Squares	04-Mar-2010 14:24:12

NB PSD and AR PSD

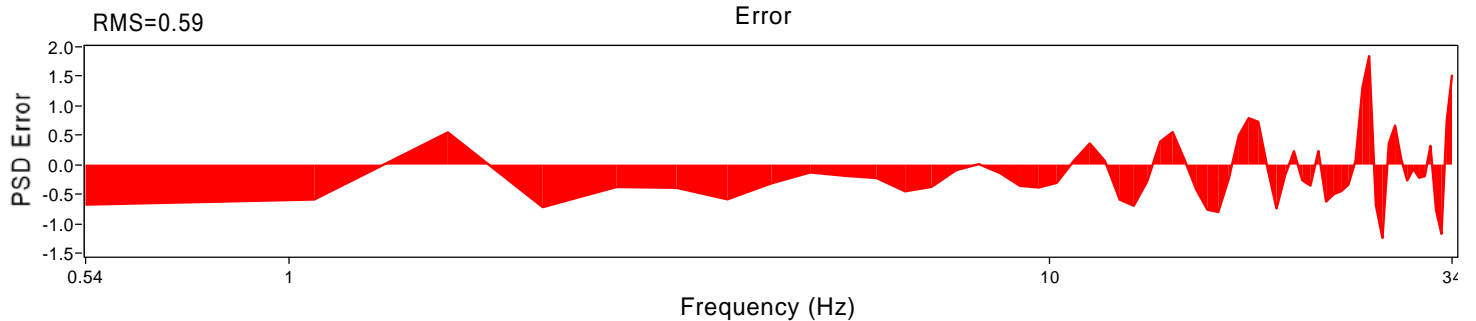
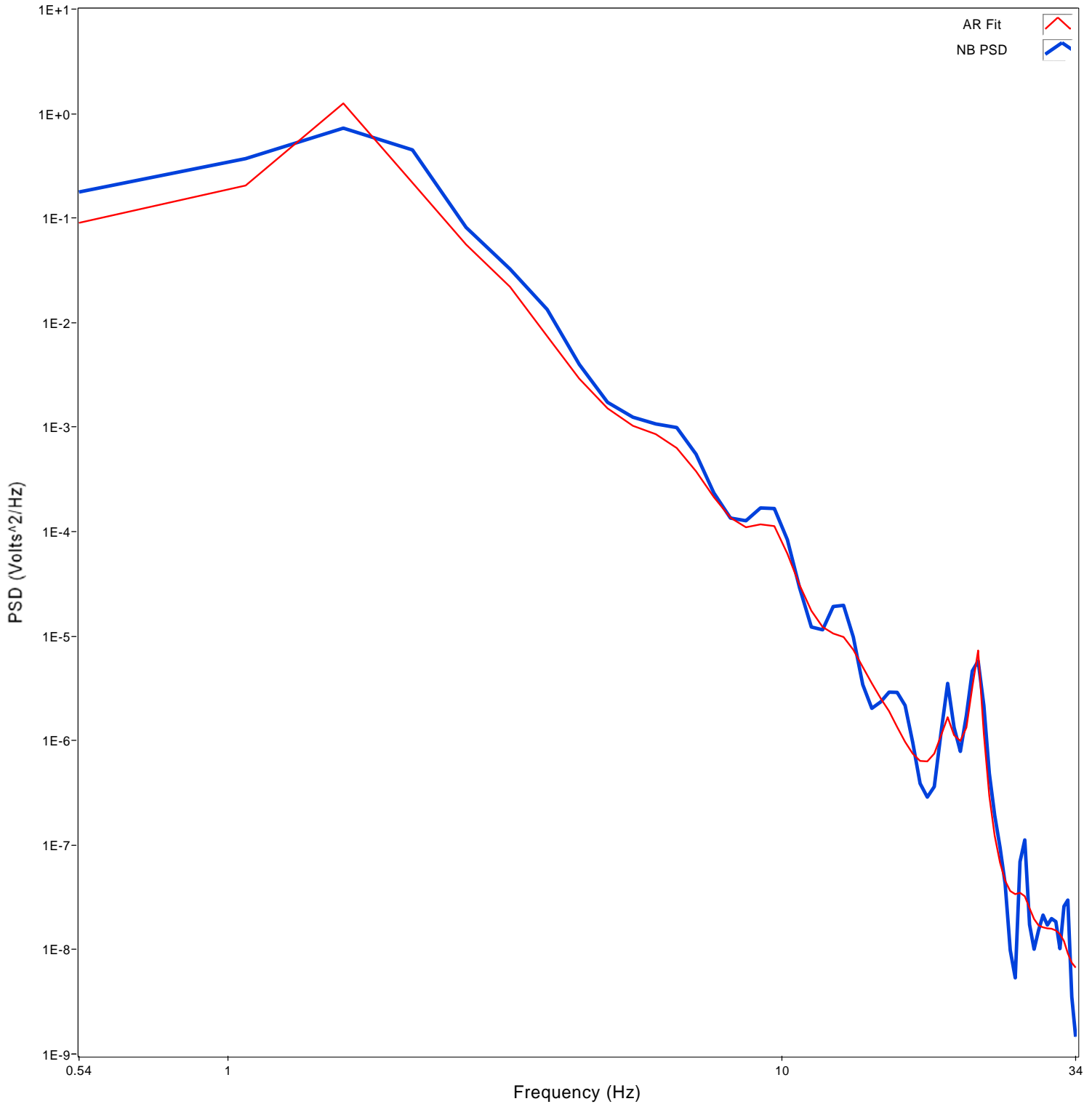




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0494	STM FLOW	FU2_2010-03_0008.psd	564 : 512	0.538777	34.481708	19	Least-Squares	04-Mar-2010 14:24:12

NB PSD and AR PSD

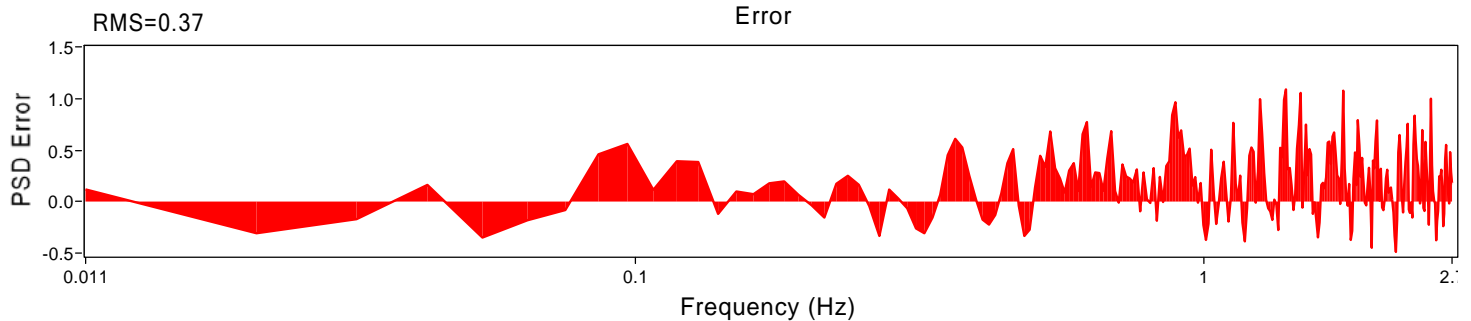
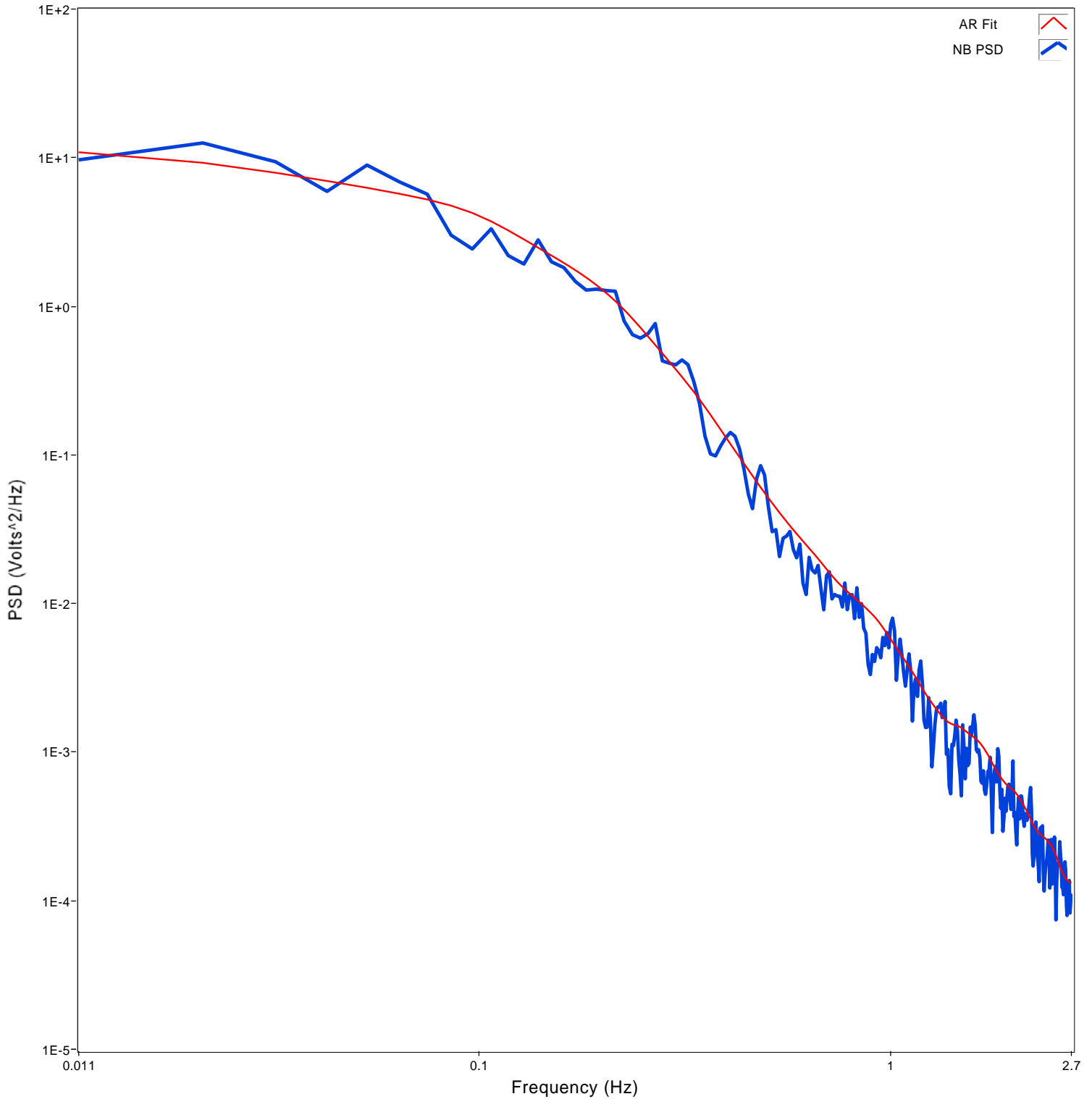




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0477	FW FLOW	FU2_2010-03_0008.psd	11 : 512	0.010731	2.747169	17	Least-Squares	04-Mar-2010 14:24:12

NB PSD and AR PSD

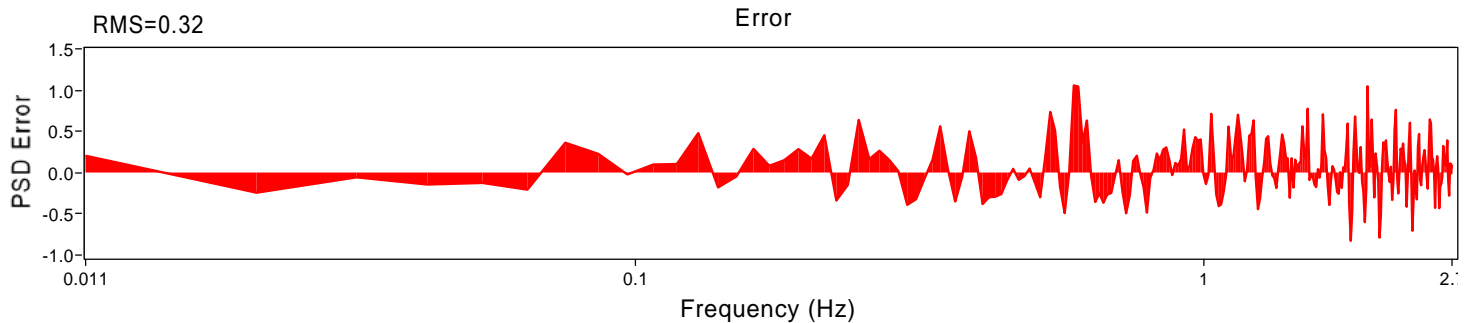
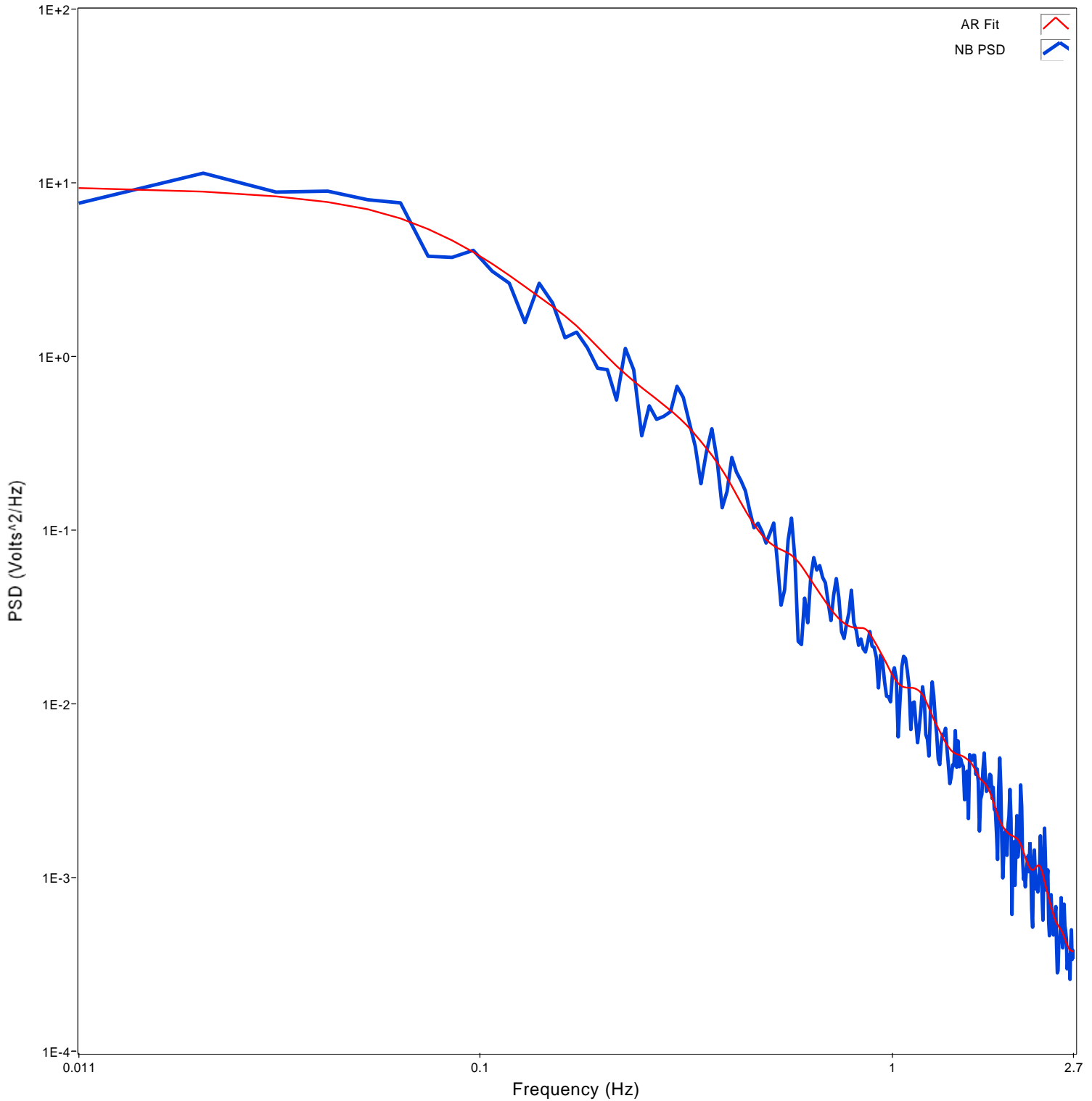




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0487	FW FLOW	FU2_2010-03_0008.psd	11 : 512	0.010731	2.747169	21	Least-Squares	04-Mar-2010 14:24:12

NB PSD and AR PSD

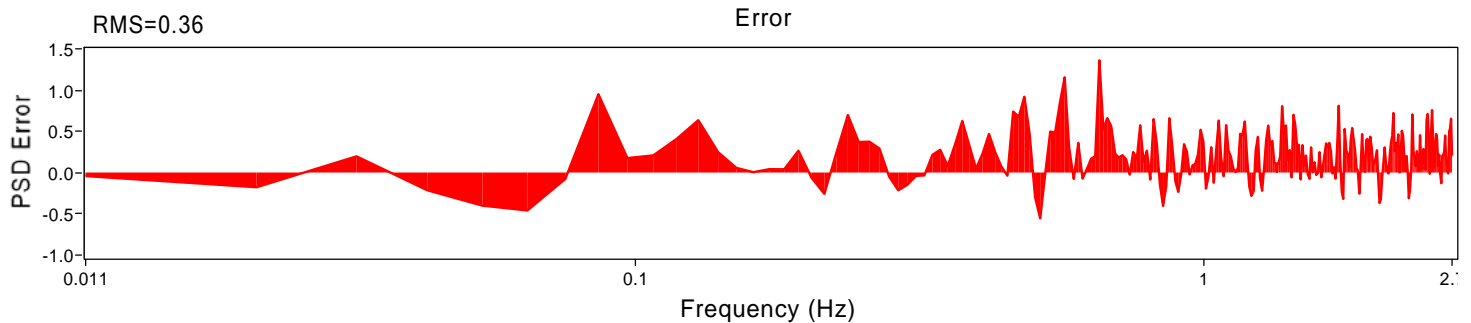
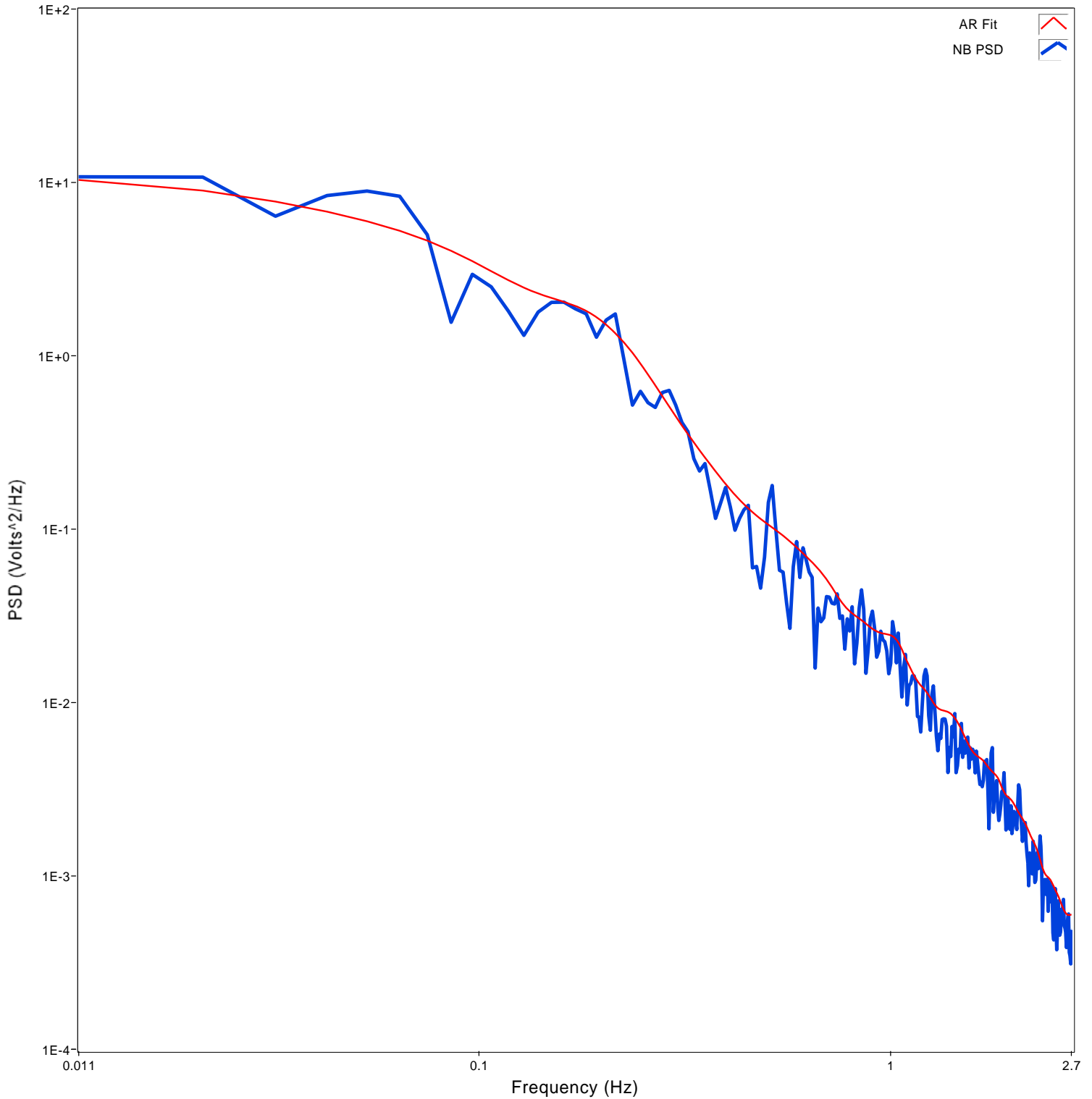




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0497	FW FLOW	FU2_2010-03_0008.psd	11 : 512	0.010731	2.747169	20	Least-Squares	04-Mar-2010 14:24:12

NB PSD and AR PSD





## **APPENDIX E**

### **Farley Unit 2 OLM Results (Cycle 21)**





Item	Tagname	Service	14 May 2010	21 Jun 2010	18 Jul 2010	17 Aug 2010	15 Sep 2010	1 Nov 2010	9 Nov 2010	28 Nov 2010	22 Dec 2010	1 Jan 2011	24 Jan 2011	17 Feb 2011	8 Mar 2011	10 Mar 2011	24 Apr 2011	30 May 2011	11 Jun 2011	19 Jul 2011	25 Jul 2011	Drift	Final	Comment		
1	FE0474B	SG A STEAM FLOW	R																				PASS	Only out in low range transient		
2	FE0475B	SG A STEAM FLOW	R																				PASS	Only out in low range transient		
3	FE0476B	FW FLOW TO SG A																					PASS			
4	FE0477B	FW FLOW TO SG A																					PASS			
5	LT0474	SG A NARROW RANGE LEVEL																					PASS			
6	LT0475	SG A NARROW RANGE LEVEL																					PASS			
7	LT0476	SG A NARROW RANGE LEVEL									R	R	R,M									D	FAIL	Drift high over cycle		
8	LT0477	SG A WIDE RANGE LEVEL																					PASS			
9	PT0474	SG A OUTLET PRESSURE																					PASS			
10	PT0475	SG A OUTLET PRESSURE																					PASS			
11	PT0476	SG A OUTLET PRESSURE																					PASS			
12	FE0484B	SG B STEAM FLOW	R																				PASS	Only out in low range transient		
13	FE0485B	SG B STEAM FLOW	R																				PASS	Only out in low range transient		
14	FE0486B	FW FLOW TO SG B																					PASS			
15	FE0487B	FW FLOW TO SG B																					PASS			
16	LT0484	SG B NARROW RANGE LEVEL																					PASS			
17	LT0485	SG B NARROW RANGE LEVEL	R																				PASS	High bias in startup transient.		
18	LT0486	SG B NARROW RANGE LEVEL																					PASS			
19	LT0487	SG B WIDE RANGE LEVEL																					PASS			
20	PT0484	SG B OUTLET PRESSURE																					PASS			
21	PT0485	SG B OUTLET PRESSURE																					PASS			
22	PT0486	SG B OUTLET PRESSURE																					PASS			
23	FE0494B	SG C STEAM FLOW	R									M	M	R									PASS	Out in low range transient.		
24	FE0495B	SG C STEAM FLOW	R							M	M	M	M	R	M	M	M	M	M	M	M		FAIL	Out in low range transient. Low drift during cycle.		
25	FE0496B	FW FLOW TO SG C																					PASS			
26	FE0497B	FW FLOW TO SG C																					PASS			
27	LT0494	SG C NARROW RANGE LEVEL																					PASS			
28	LT0495	SG C NARROW RANGE LEVEL												R,M	R,M	R,M		R	R	R	R	D	PASS	Low drift between Feb 2011 and Mar 2011.		
29	LT0496	SG C NARROW RANGE LEVEL	R																				FAIL	Low bias in startup transient.		
30	LT0497	SG C WIDE RANGE LEVEL																					PASS			

*R = Exceeded Redundant Sensor Analysis Limits    M = Exceeded Model Analysis Limits    D = Exceeded Drift Limits*

**Table E.1 Farley Unit 2 OLM Results Summary (Cycle 21)**

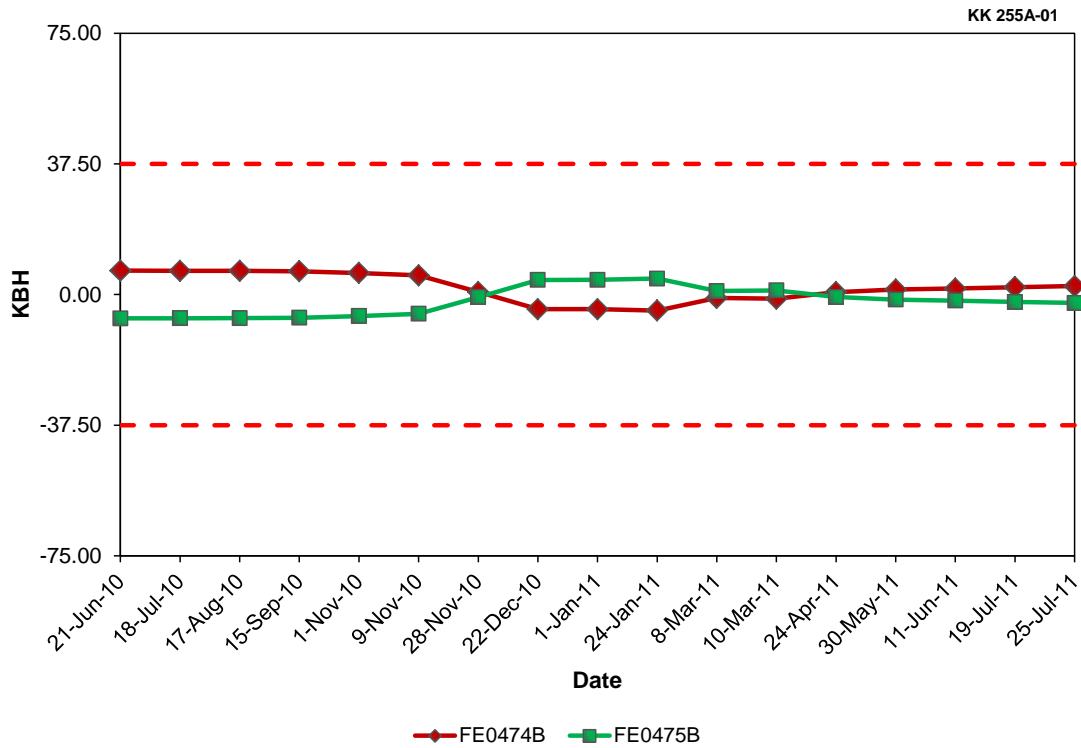


Item	Tagname	Service	14 May 2010	21 Jun 2010	18 Jul 2010	17 Aug 2010	15 Sep 2010	1 Nov 2010	9 Nov 2010	28 Nov 2010	22 Dec 2010	1 Jan 2011	24 Jan 2011	17 Feb 2011	8 Mar 2011	10 Mar 2011	24 Apr 2011	30 May 2011	11 Jun 2011	19 Jul 2011	25 Jul 2011	Drift	Final	Comment
31	PT0494	SG C OUTLET PRESSURE																					PASS	
32	PT0495	SG C OUTLET PRESSURE																					PASS	
33	PT0496	SG C OUTLET PRESSURE																					PASS	
34	LT0459	PRESSURIZER LEVEL	R								R	R	R	R	R	R	R	R	R	R	R	R	FAIL	High bias.
35	LT0460	PRESSURIZER LEVEL																					PASS	
36	LT0461	PRESSURIZER LEVEL																					PASS	
37	PT0455	PRESSURIZER PRESSURE	R	R	R	R	R	M	M	M	R,M	R,M	R,M	R				R	R	R	R	D	FAIL	High bias in transient. Drift during cycle possibly environmental effect.
38	PT0456	PRESSURIZER PRESSURE		R	R	R	R	R	R	R	R,M	R	R,M	M	M	M	M	M	M	M	M	D	PASS	Drifts high at start of cycle, but adjusted mid-cycle.
39	PT0457	PRESSURIZER PRESSURE						M	M	M	R,M	R,M	R,M									D	PASS	Drift during cycle possibly environmental effect.
40	PT0444A	PRESSURIZER PRESSURE																					PASS	
41	PT0445A	PRESSURIZER PRESSURE																					PASS	
42	FE0414	RCS LOOP A FLOW																					PASS	
43	FE0415	RCS LOOP A FLOW																					PASS	
44	FE0416	RCS LOOP A FLOW																					PASS	
45	FE0424	RCS LOOP B FLOW																					PASS	
46	FE0425	RCS LOOP B FLOW																					PASS	
47	FE0426	RCS LOOP B FLOW																					PASS	
48	FE0434	RCS LOOP C FLOW	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	PASS	Low bias.
49	FE0435	RCS LOOP C FLOW																					PASS	
50	FE0436	RCS LOOP C FLOW																					PASS	
51	PT0402	RCS WIDE RANGE PRESSURE LOOP C																					PASS	
52	PT0403	RCS WIDE RANGE PRESSURE LOOP A																					PASS	
53	PT0446	TURBINE FIRST STAGE PRESSURE																					PASS	
54	PT0447	TURBINE FIRST STAGE PRESSURE																					PASS	
55	LT0501	RWST LEVEL																					PASS	
56	LT0502	RWST LEVEL																					PASS	
57	PT0951	CTMT PRESSURE																					PASS	
58	PT0952	CTMT PRESSURE																					PASS	
59	PT0953	CTMT PRESSURE																					PASS	
60	PT0950Y	CTMT PRESSURE EXTENDED RANGE																					PASS	
61	PT0950Z	CTMT PRESSURE EXTENDED RANGE																					PASS	

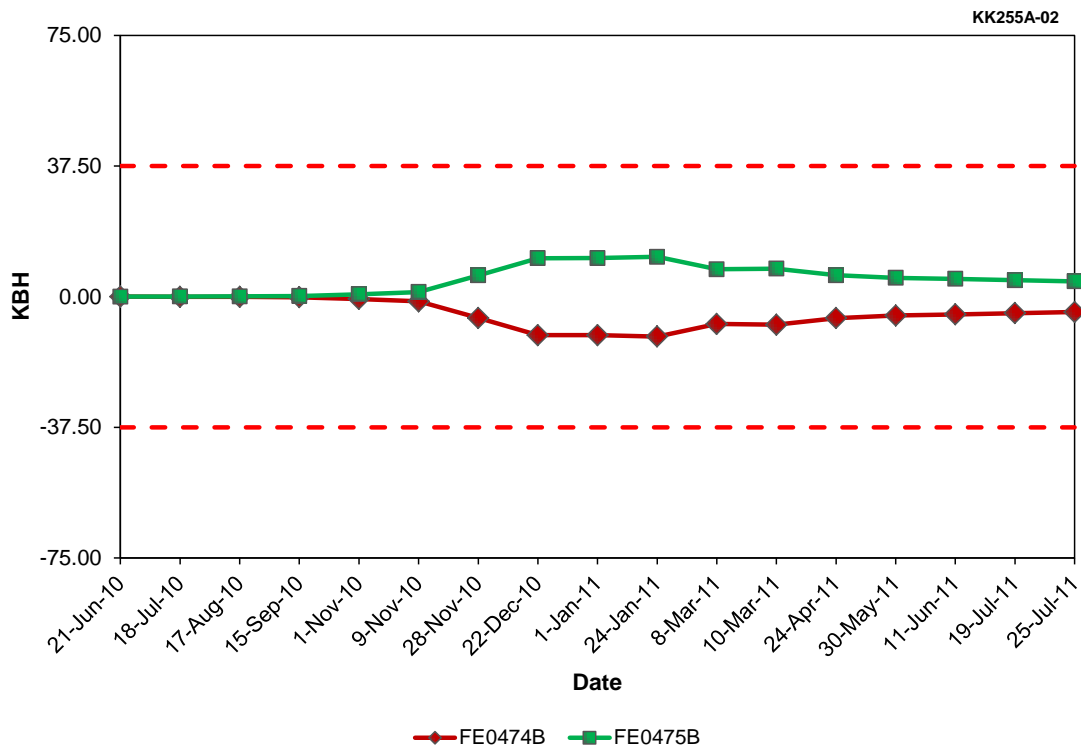
*R = Exceeded Redundant Sensor Analysis Limits    M = Exceeded Model Analysis Limits    D = Exceeded Drift Limits*

**Table E.1 (continued) Farley Unit 2 OLM Results Summary (Cycle 21)**

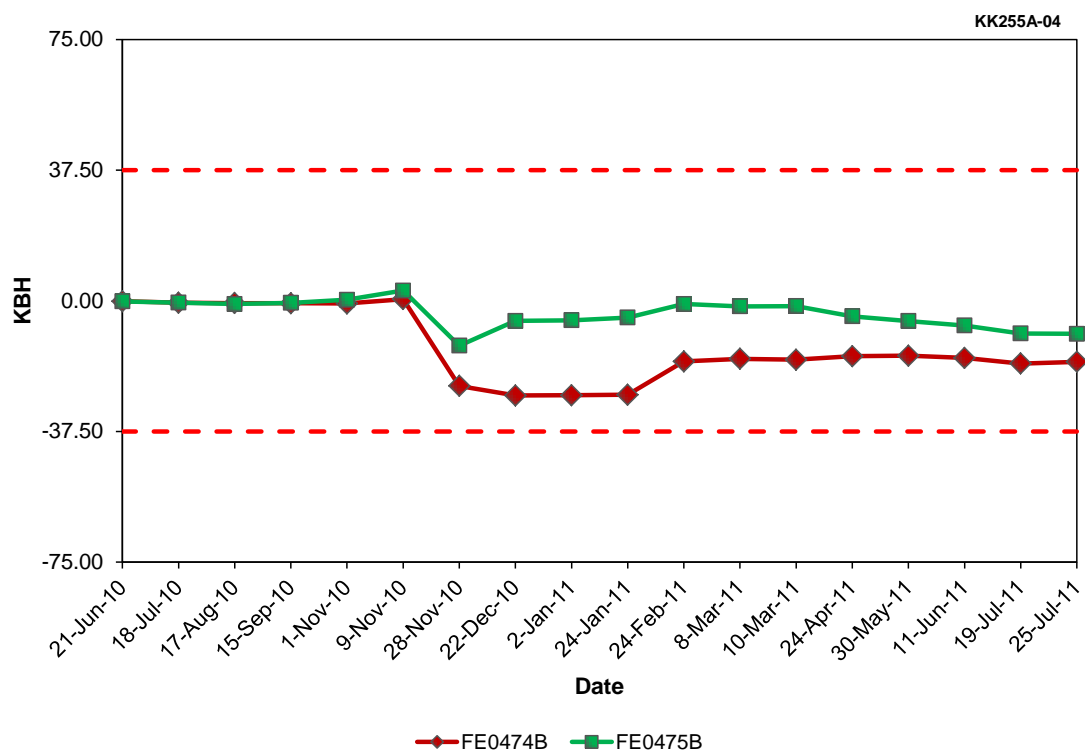




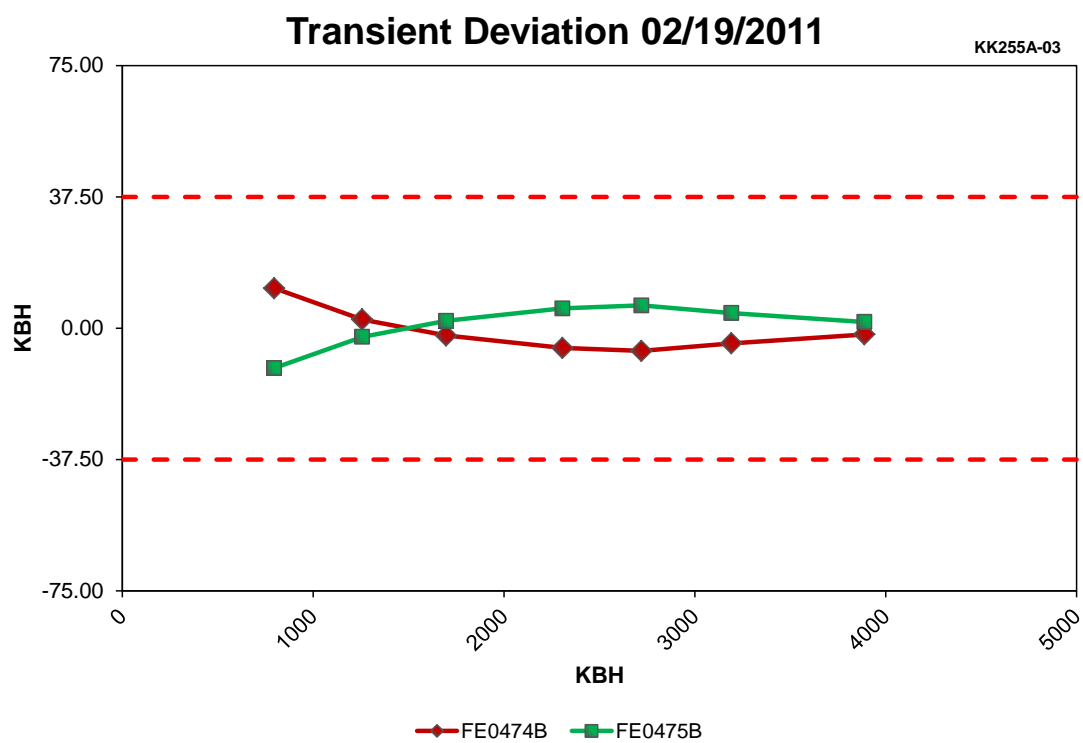
**Figure E.1 SG A STEAM FLOW Steady-State Deviation at Farley Unit 2 (Cycle 21)**



**Figure E.2 SG A STEAM FLOW Steady-State Drift at Farley Unit 2 (Cycle 21)**



**Figure E.3 SG A STEAM FLOW Steady-State Residual AAKR at Farley Unit 2 (Cycle 21)**



**Figure E.4 SG A STEAM FLOW Transient Deviation at Farley Unit 2 (Cycle 21)**

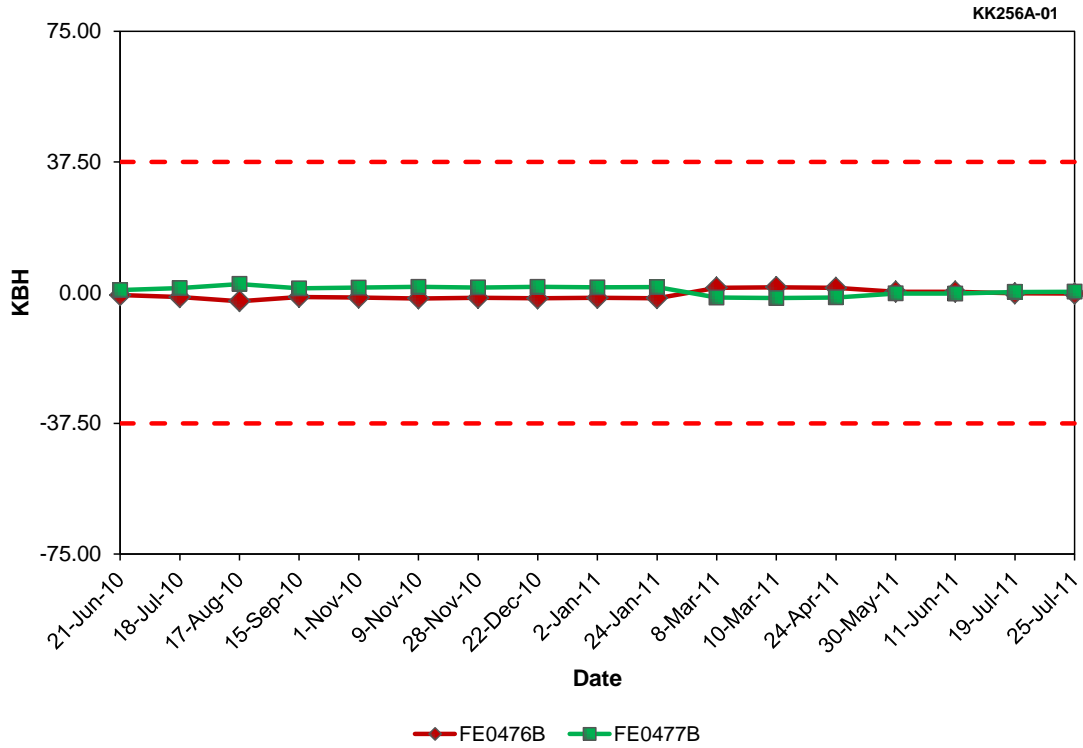




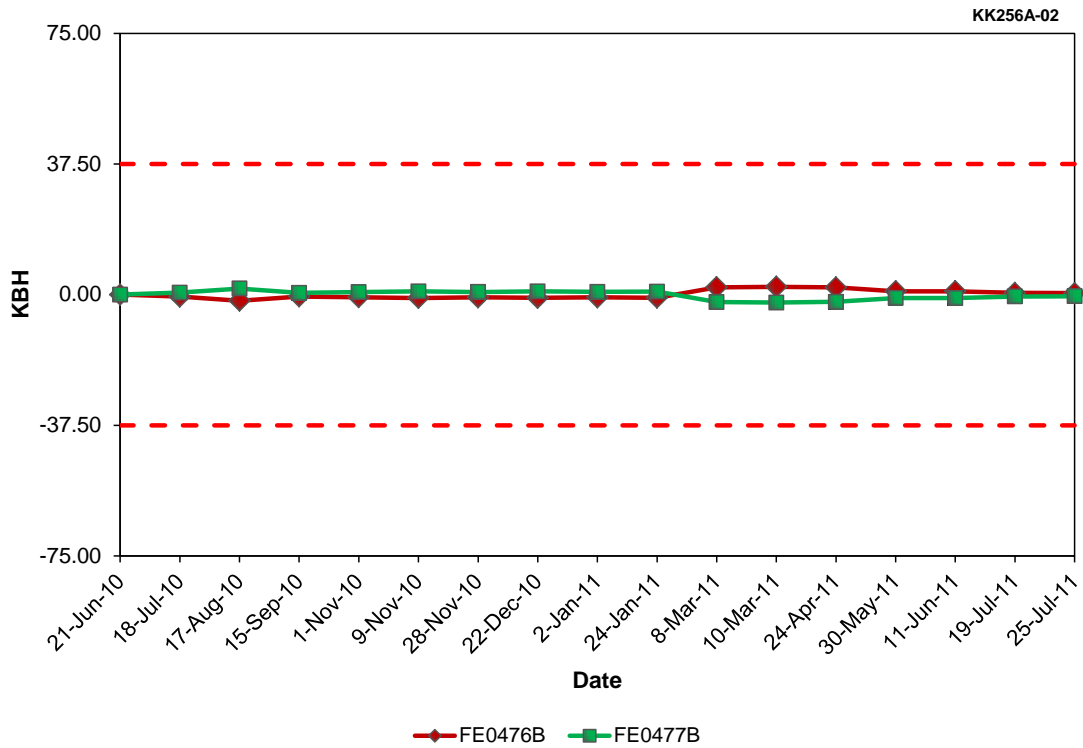
**Figure E.5 SG A STEAM FLOW Data Quality Statistics at Farley Unit 2 (Cycle 21)**

**Table E.1 SG A STEAM FLOW Data Quality for Farley Unit 2 (Cycle 21)**

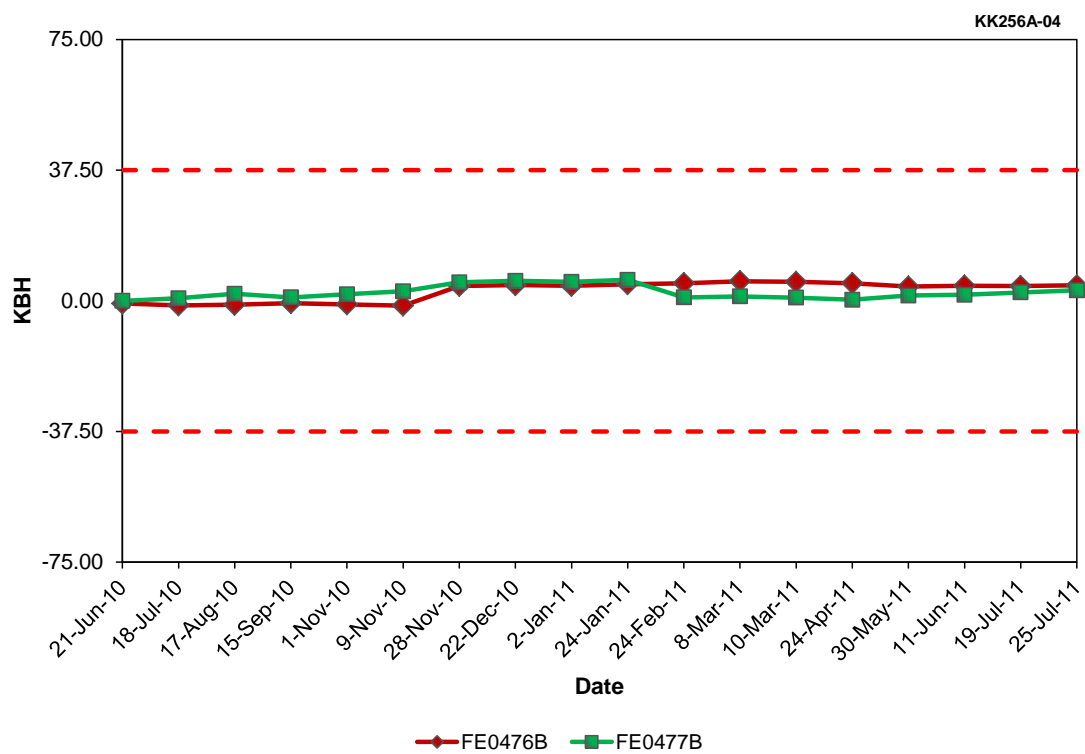
Result Type	Tag Names	
	FE0474B	FE0475B
Mean	3995.91	3992.07
Std. Dev.	6.78	6.59
Skewness	-0.09	-0.08
Kurtosis	0.99	1.00



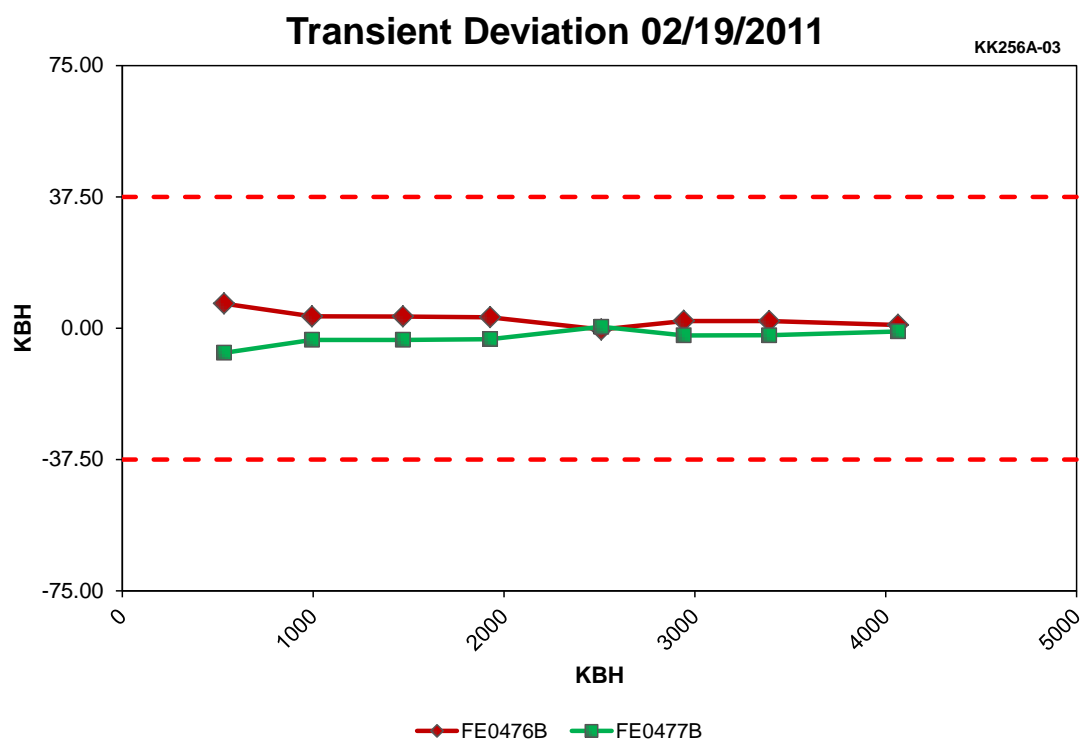
**Figure E.6 FW FLOW TO SG A Steady-State Deviation at Farley Unit 2 (Cycle 21)**



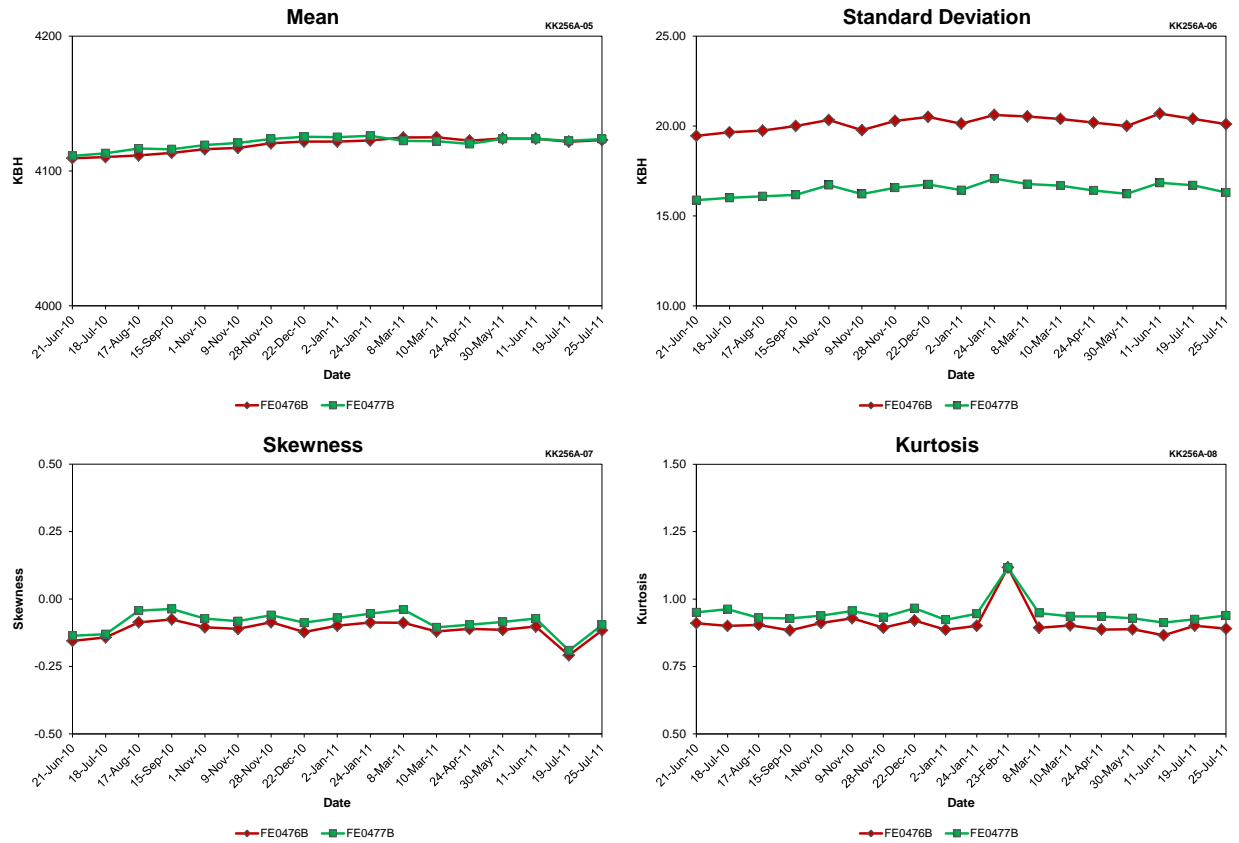
**Figure E.7 FW FLOW TO SG A Steady-State Drift at Farley Unit 2 (Cycle 21)**



**Figure E.8 FW FLOW TO SG A Steady-State Residual AAKR at Farley Unit 2 (Cycle 21)**



**Figure E.9 FW FLOW TO SG A Transient Deviation at Farley Unit 2 (Cycle 21)**



**Figure E.10 FW FLOW TO SG A Data Quality Statistics at Farley Unit 2 (Cycle 21)**

**Table E.2 FW FLOW TO SG A Data Quality for Farley Unit 2 (Cycle 21)**

Result Type	Tag Names	
	FE0476B	FE0477B
Mean	4119.36	4120.87
Std. Dev.	20.17	16.46
Skewness	-0.11	-0.09
Kurtosis	0.91	0.95

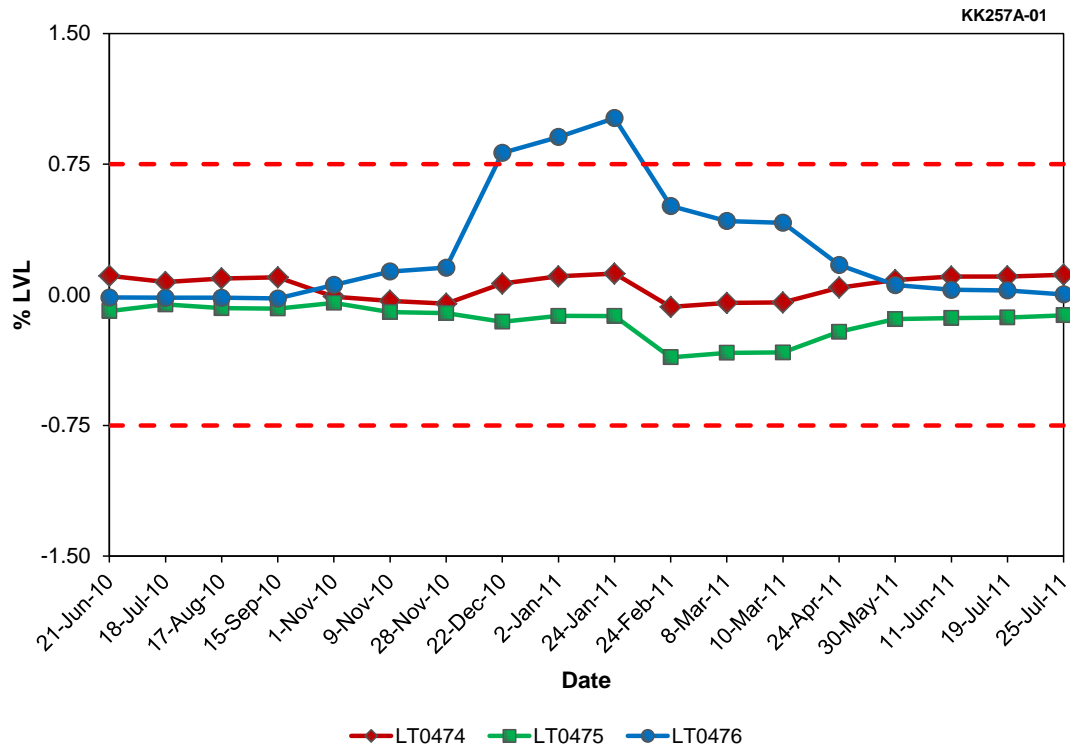


Figure E.11 SG A LEVEL Steady-State Deviation at Farley Unit 2 (Cycle 21)

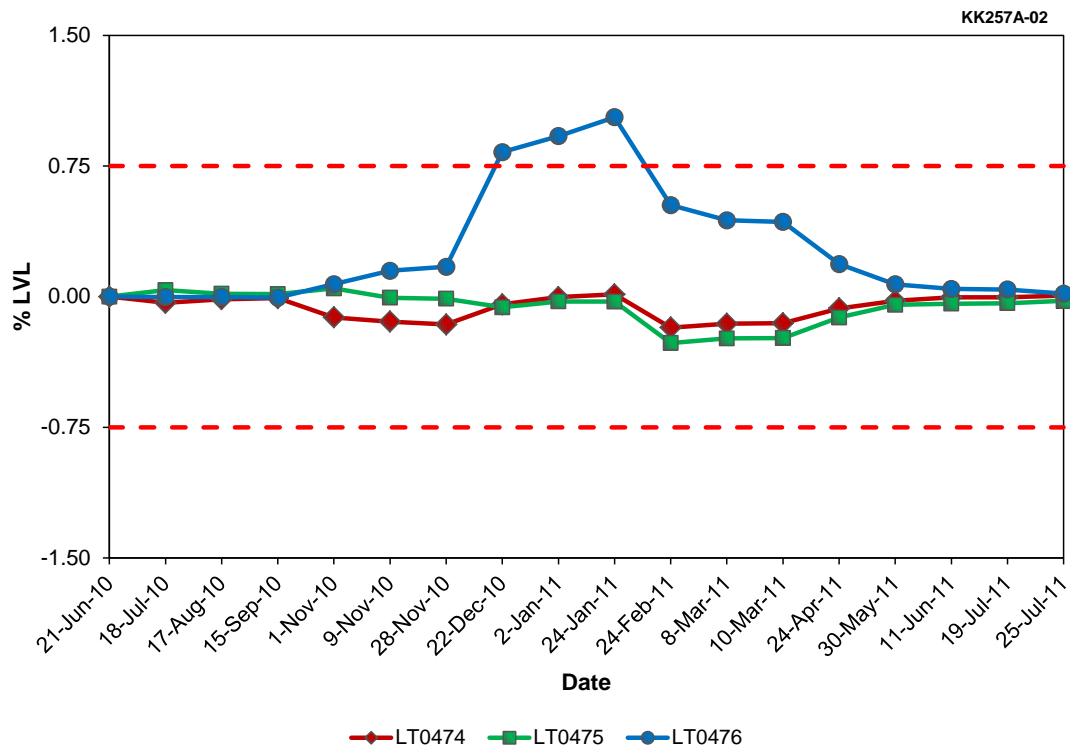
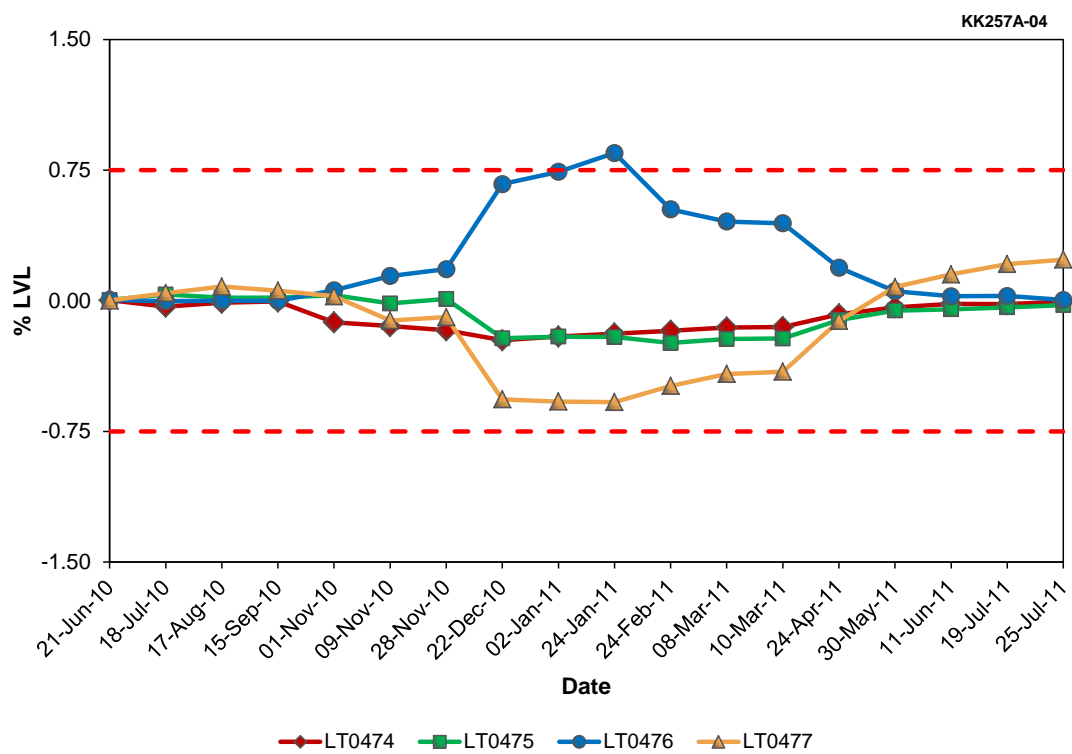
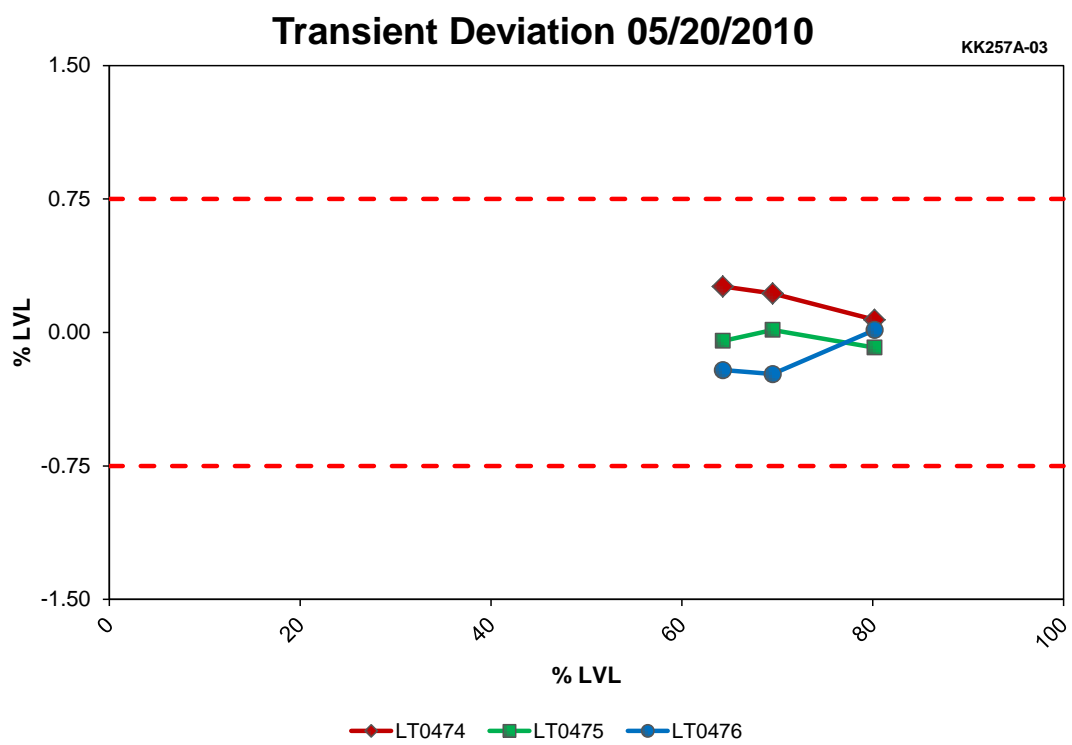


Figure E.12 SG A LEVEL Steady-State Drift at Farley Unit 2 (Cycle 21)

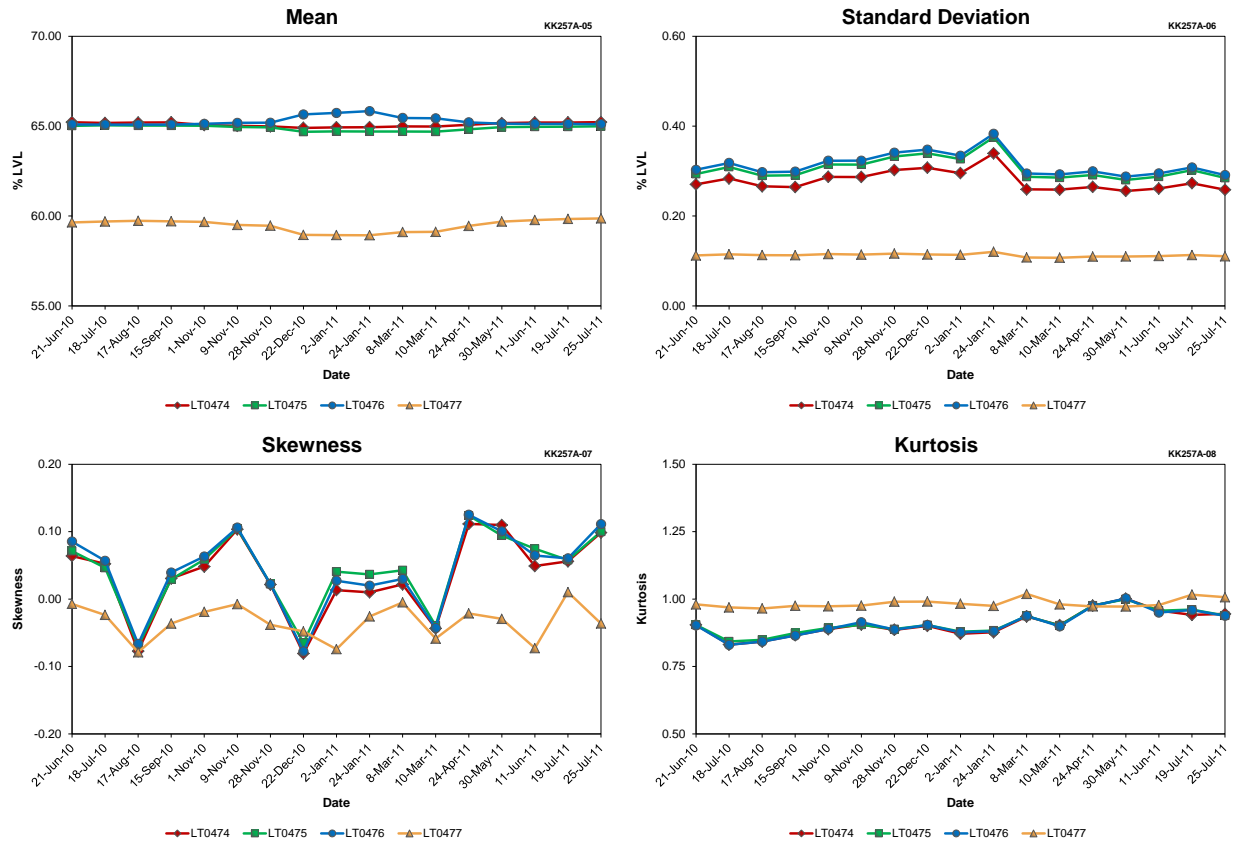


**Figure E.13 SG A LEVEL Steady-State Residual AAKR at Farley Unit 2 (Cycle 21)**



**Figure E.14 SG A LEVEL Transient Deviation at Farley Unit 2 (Cycle 21)**





**Figure E.15 SG A LEVEL Data Quality Statistics at Farley Unit 2 (Cycle 21)**

**Table E.3 SG A LEVEL Data Quality for Farley Unit 2 (Cycle 21)**

Result Type	Tag Names			
	LT0474	LT0475	LT0476	LT0477
Mean	65.09	64.89	65.27	59.47
Std. Dev.	0.28	0.31	0.31	0.11
Skewness	0.03	0.04	0.04	-0.03
Kurtosis	0.91	0.91	0.91	0.98

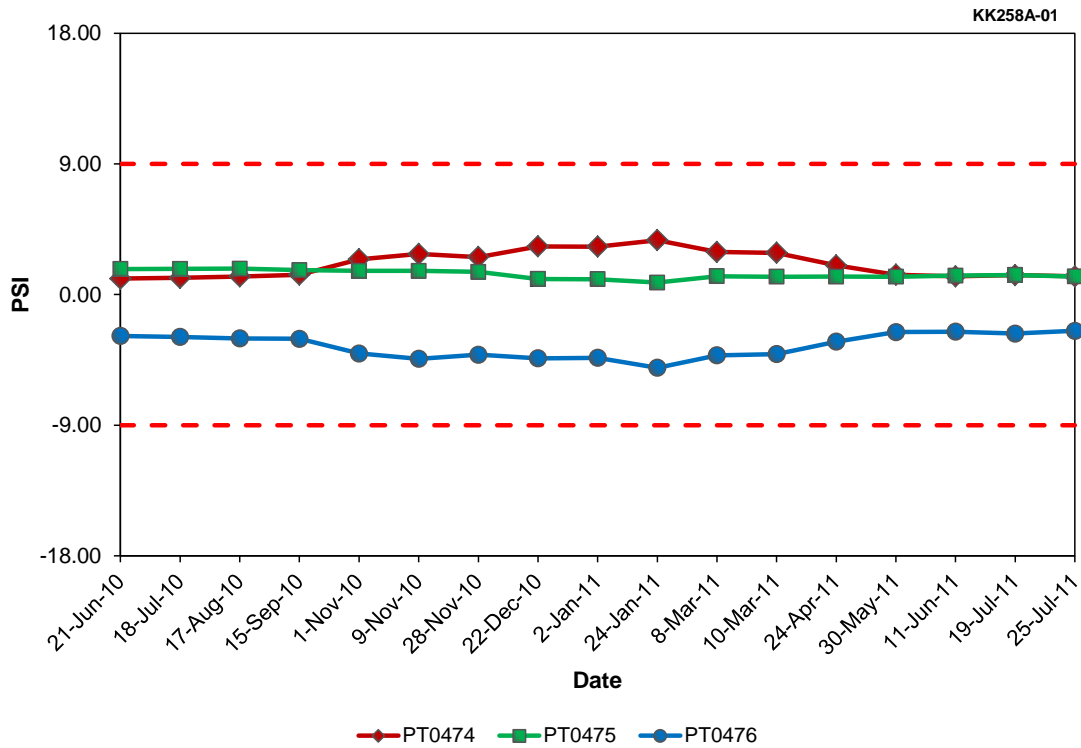


Figure E.16 SG A OUTLET PRESSURE Steady-State Deviation at Farley Unit 2 (Cycle 21)

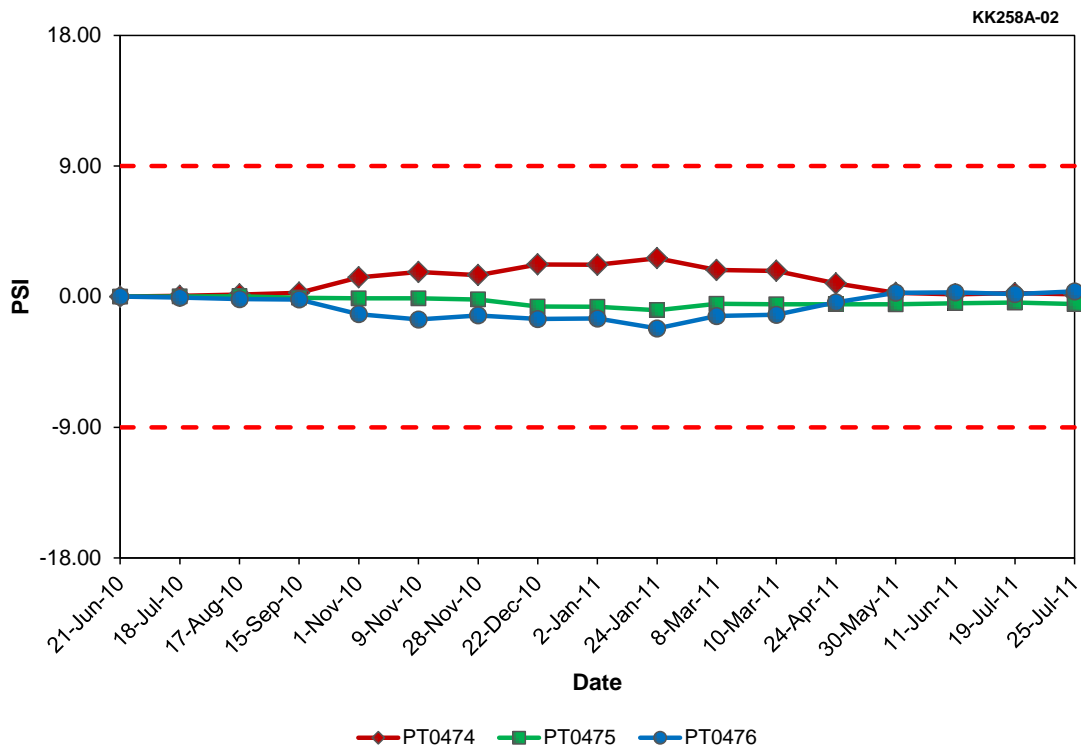
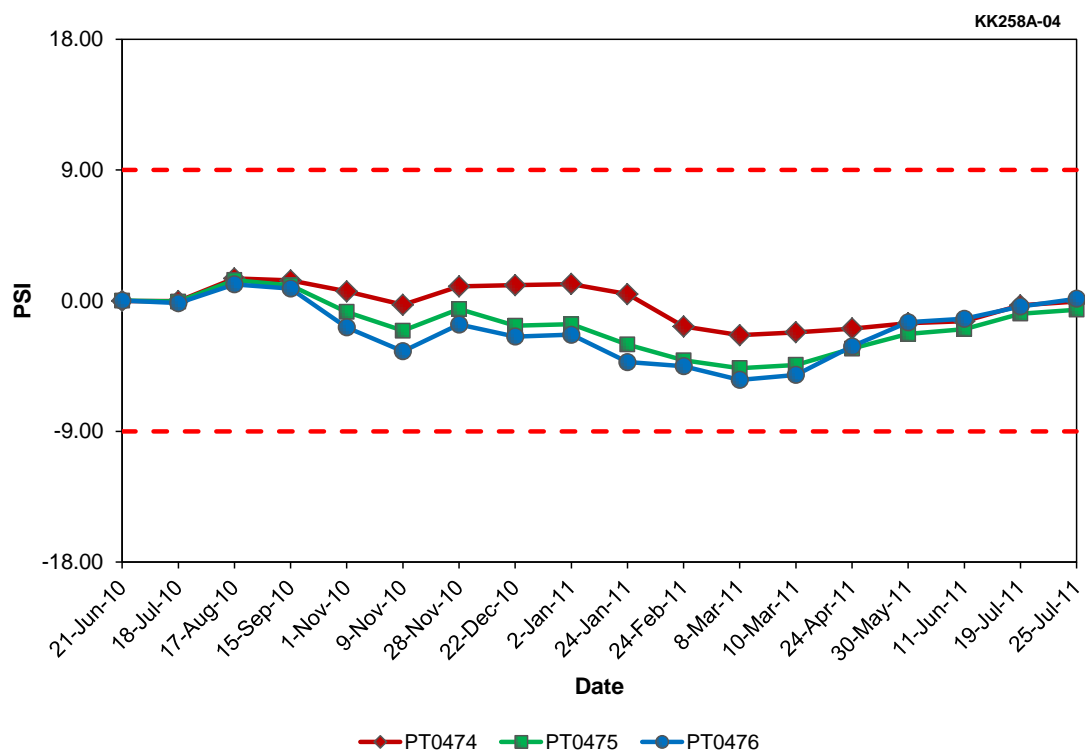
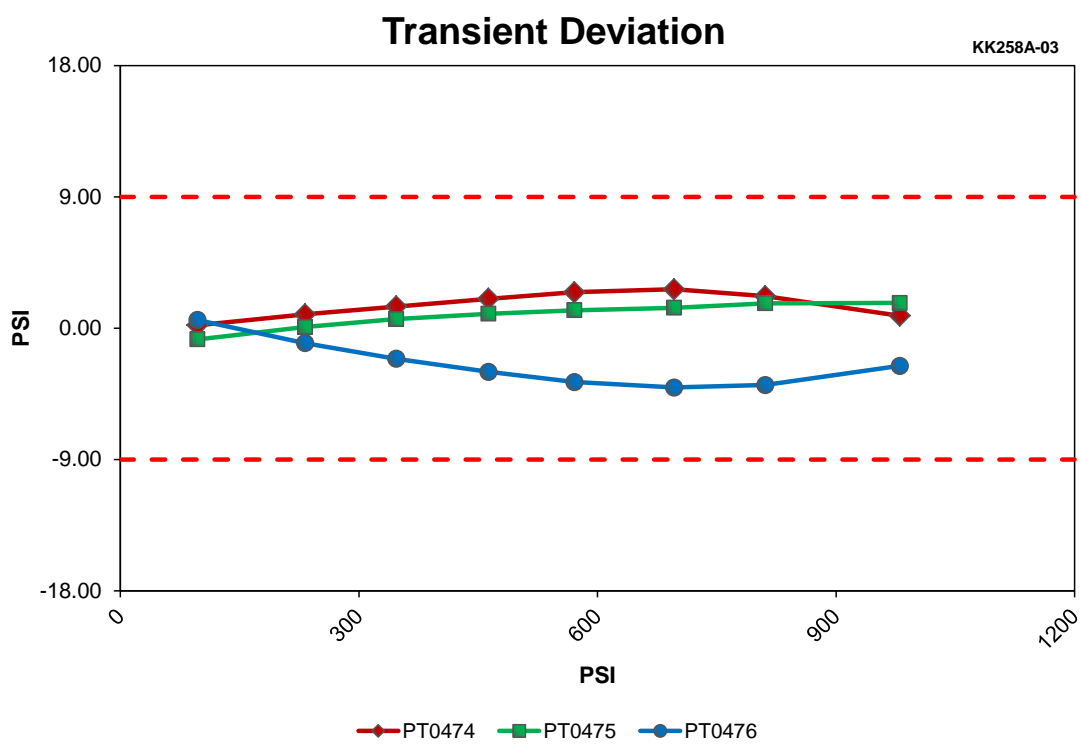


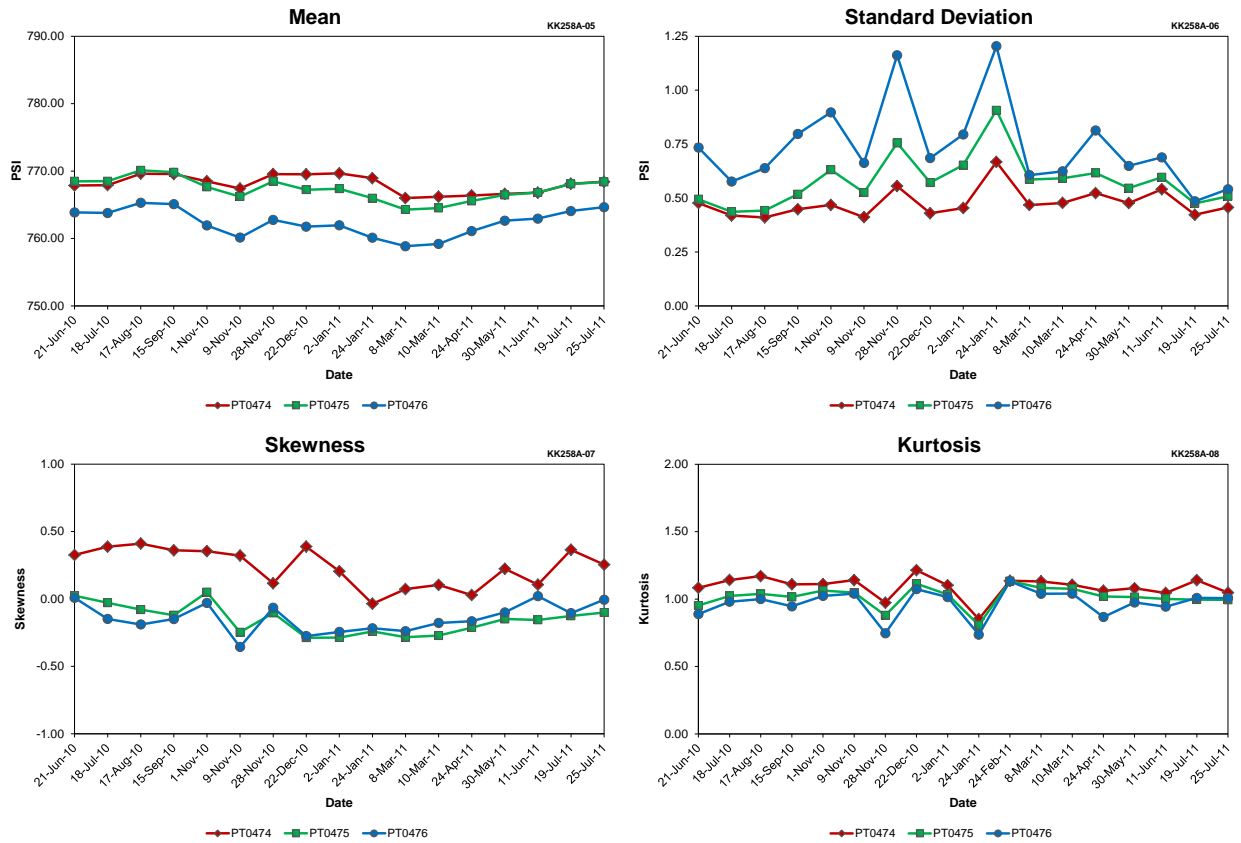
Figure E.17 SG A OUTLET PRESSURE Steady-State Drift at Farley Unit 2 (Cycle 21)



**Figure E.18 SG A OUTLET PRESSURE Steady-State Residual AAKR at Farley Unit 2 (Cycle 21)**



**Figure E.19 SG A OUTLET PRESSURE Transient Deviation at Farley Unit 2 (Cycle 21)**



**Figure E.20 SG A OUTLET PRESSURE Data Quality Statistics at Farley Unit 2 (Cycle 21)**

**Table E.4 SG A OUTLET PRESSURE Data Quality for Farley Unit 2 (Cycle 21)**

Result Type	Tag Names		
	PT0474	PT0475	PT0476
Mean	768.06	767.29	762.36
Std. Dev.	0.48	0.58	0.74
Skewness	0.23	-0.15	-0.14
Kurtosis	1.09	1.02	0.97

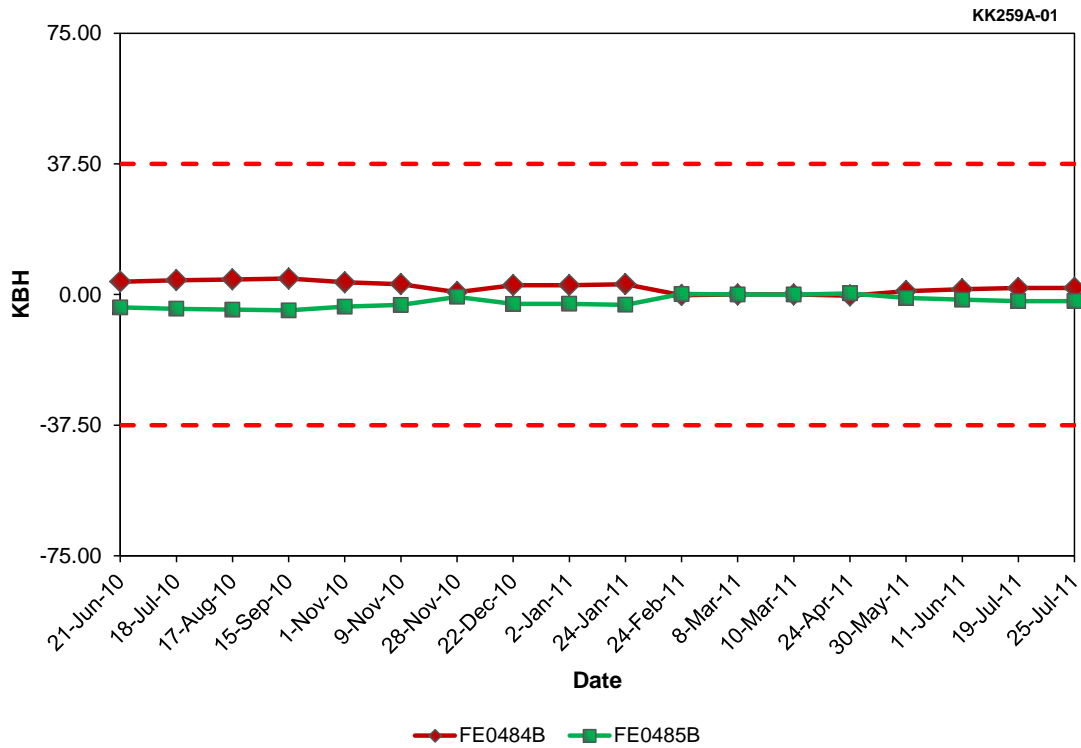


Figure E.21 SG B STEAM FLOW Steady-State Deviation at Farley Unit 2 (Cycle 21)

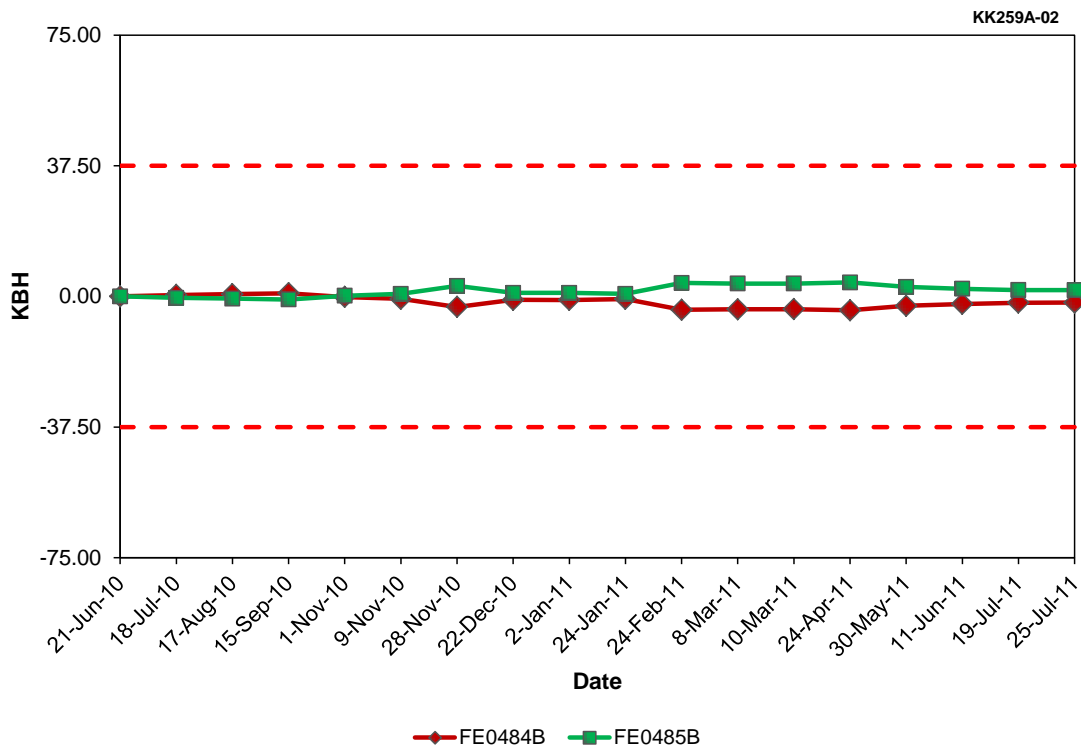
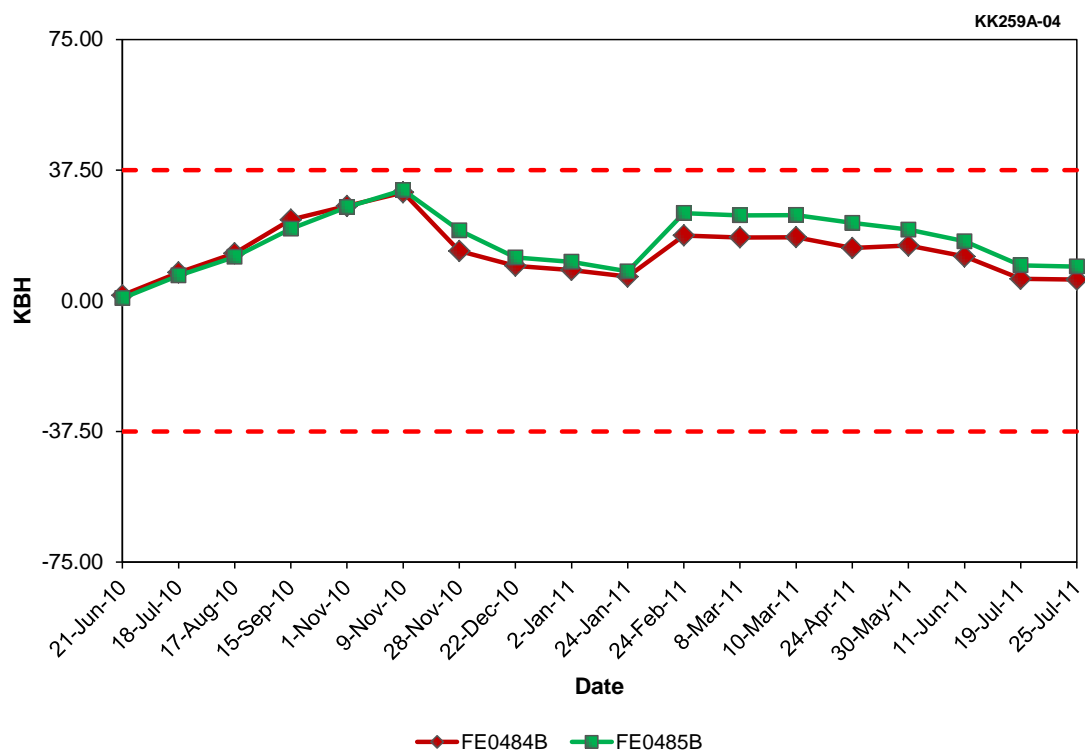
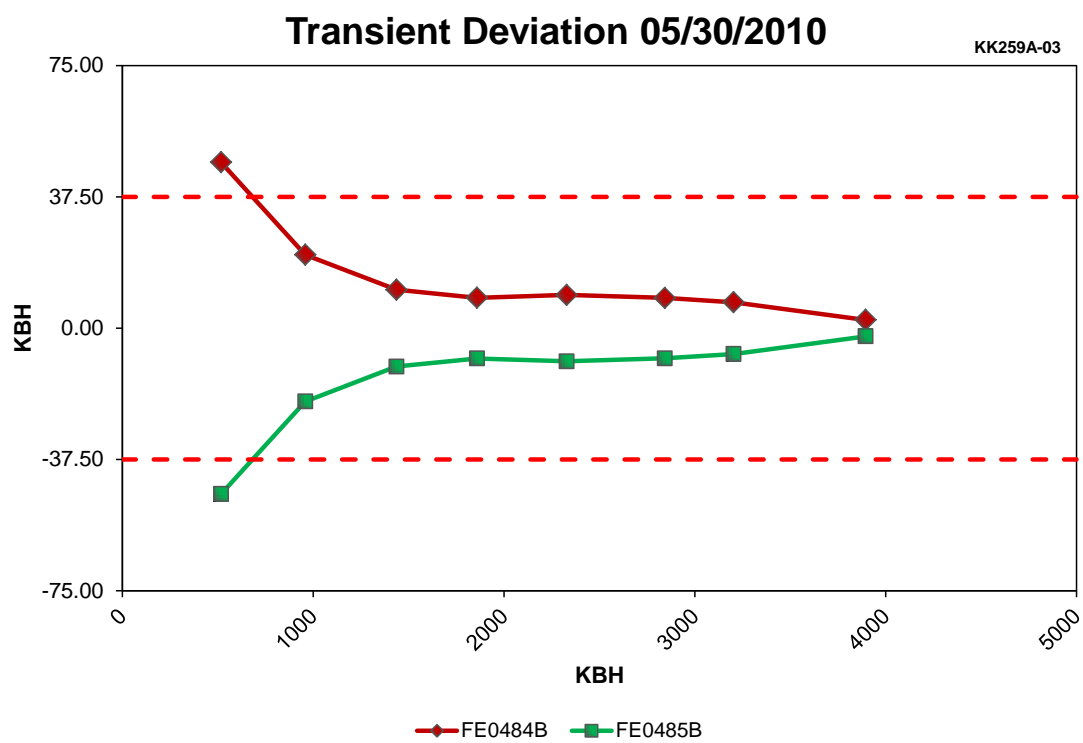


Figure E.22 SG B STEAM FLOW Steady-State Drift at Farley Unit 2 (Cycle 21)



**Figure E.23 SG B STEAM FLOW Steady-State Residual AAKR at Farley Unit 2 (Cycle 21)**



**Figure E.24 SG B STEAM FLOW Transient Deviation at Farley Unit 2 (Cycle 21)**



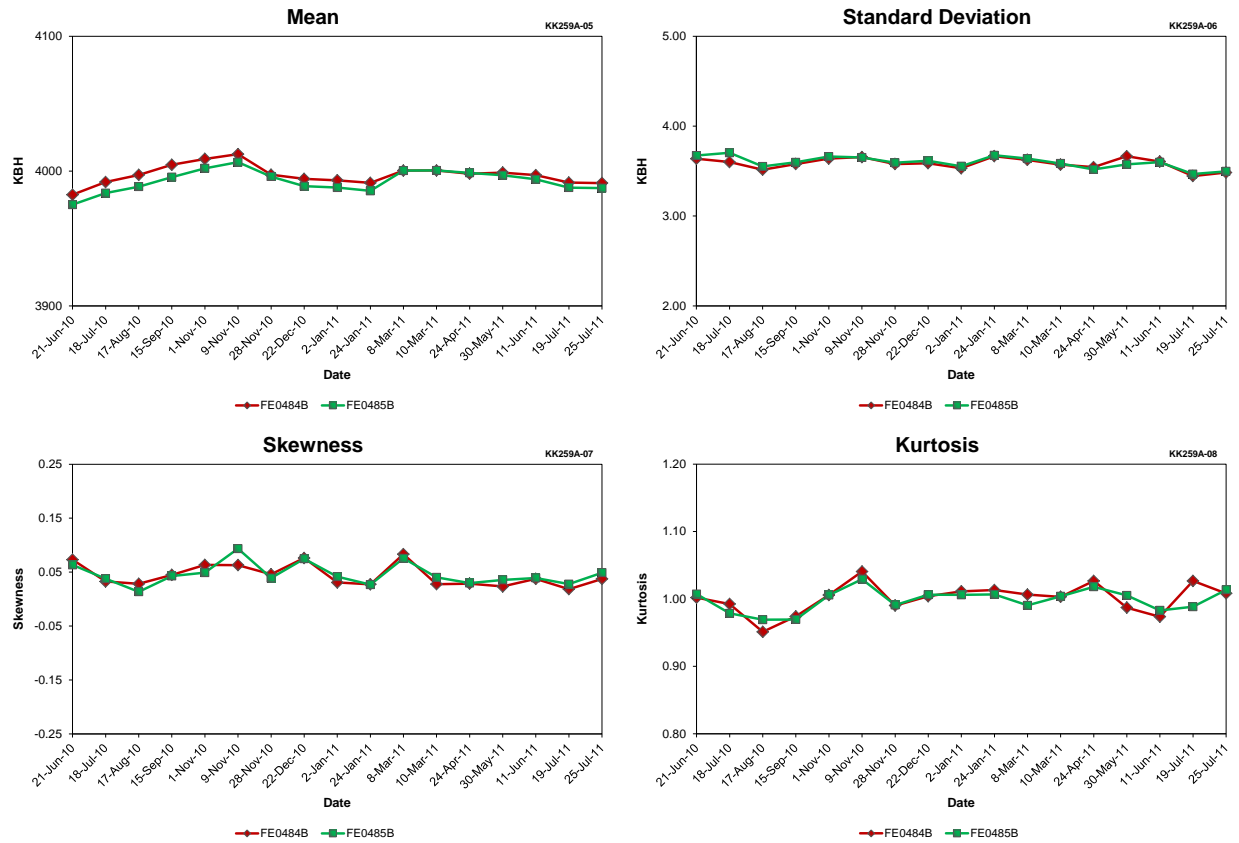


Figure E.25 SG B STEAM FLOW Data Quality Statistics at Farley Unit 2 (Cycle 21)

Table E.5 SG B STEAM FLOW Data Quality for Farley Unit 2 (Cycle 21)

Result Type	Tag Names	
	FE0484B	FE0485B
Mean	3997.10	3992.61
Std. Dev.	3.58	3.60
Skewness	0.04	0.05
Kurtosis	1.00	1.00

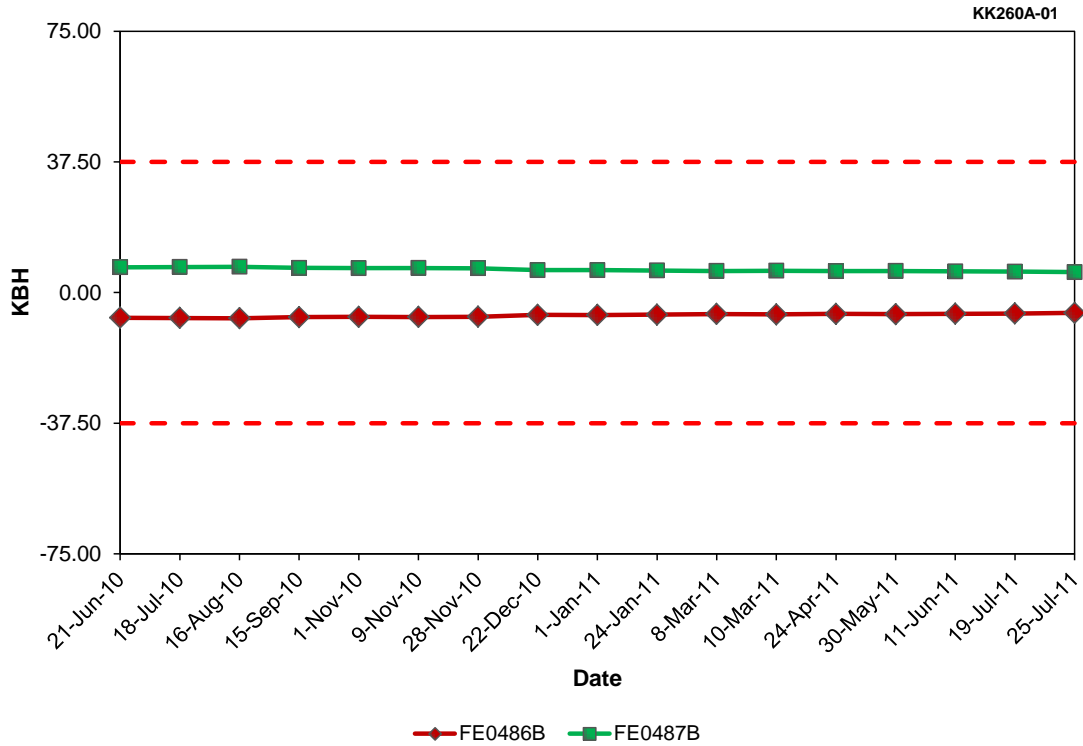


Figure E.26 FW FLOW TO SG B Steady-State Deviation at Farley Unit 2 (Cycle 21)

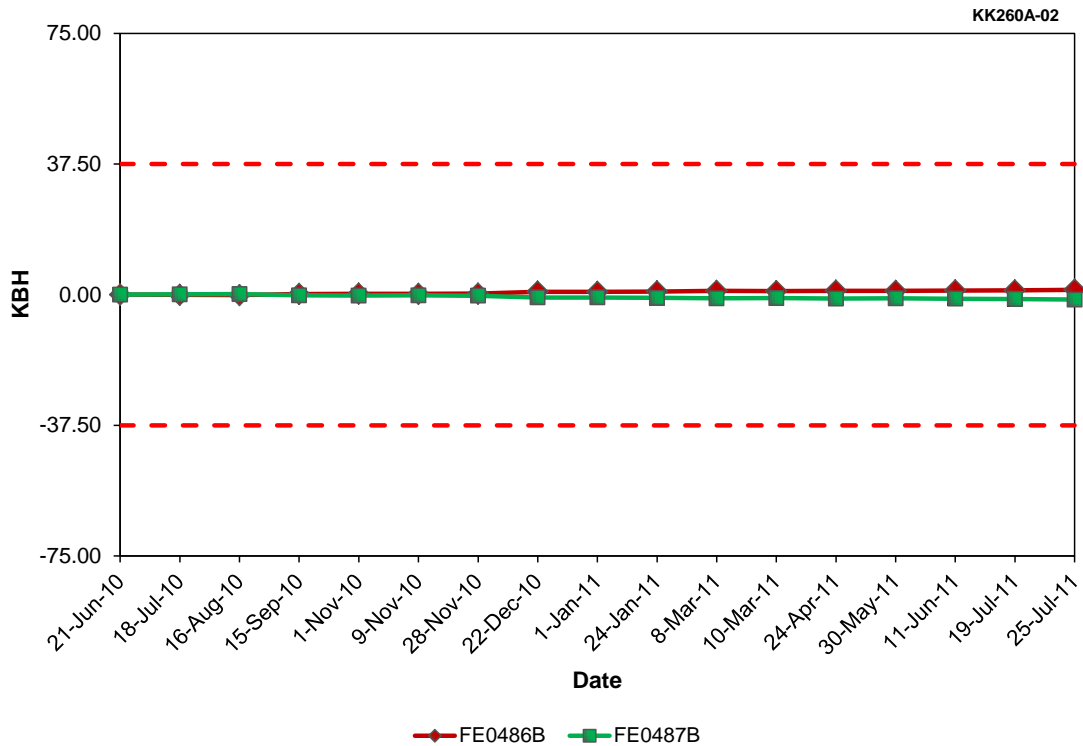
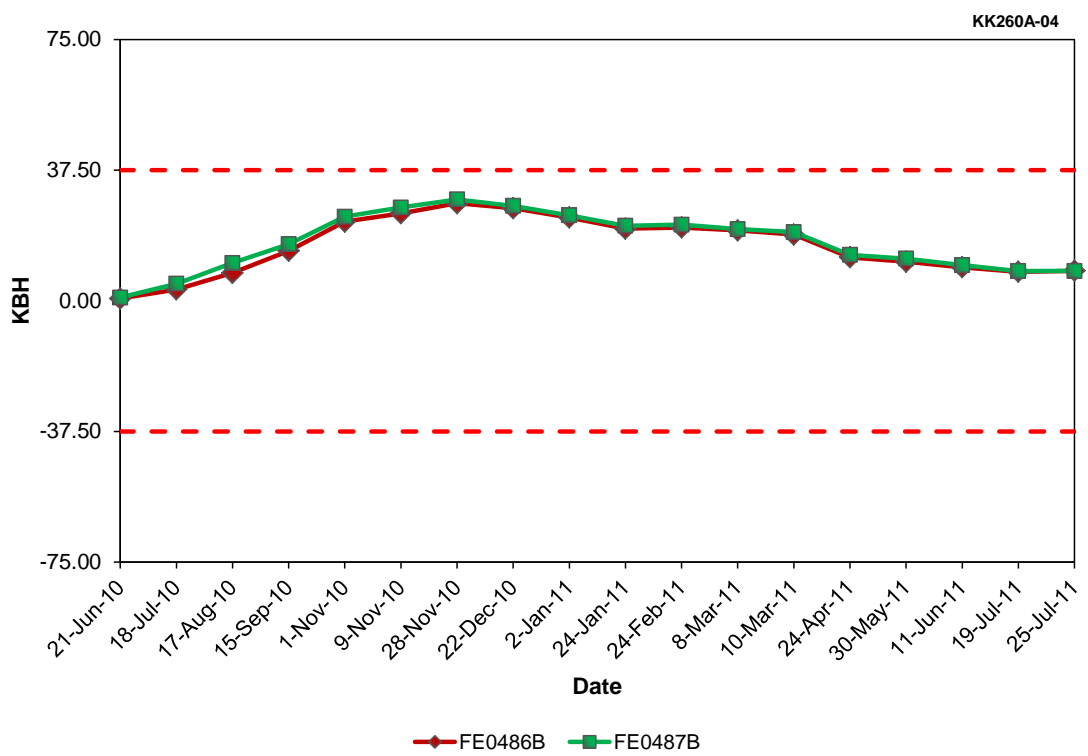
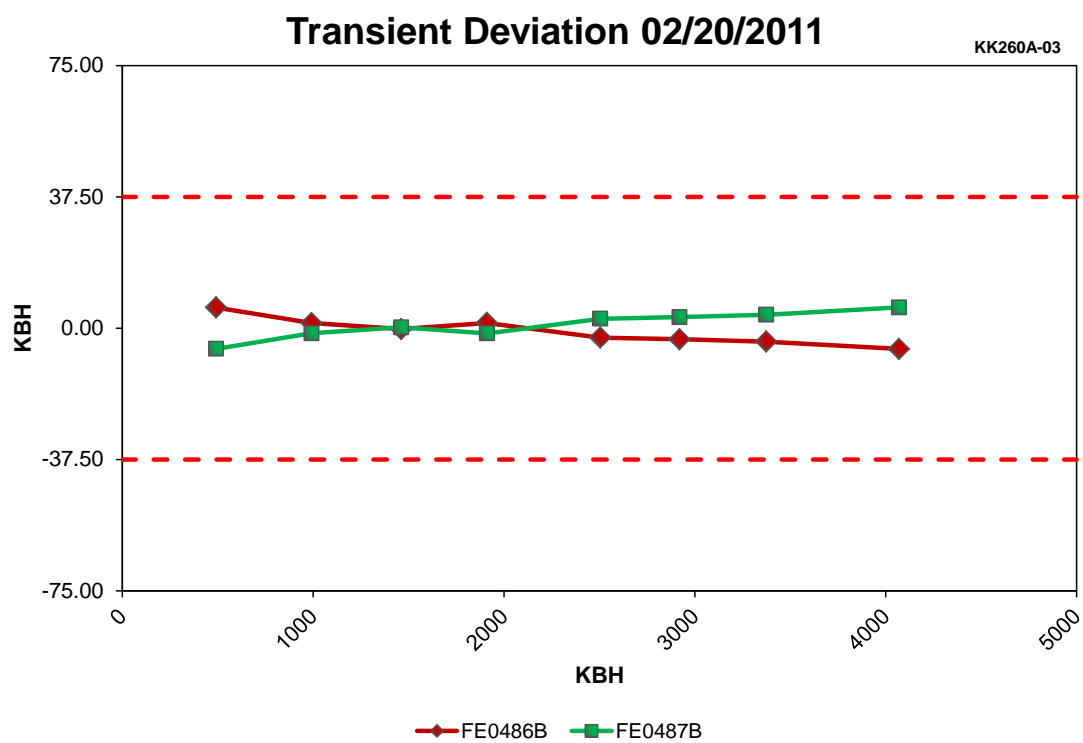


Figure E.27 FW FLOW TO SG B Steady-State Drift at Farley Unit 2 (Cycle 21)



**Figure E.28 FW FLOW TO SG B Steady-State Residual AAKR at Farley Unit 2 (Cycle 21)**



**Figure E.29 FW FLOW TO SG B Transient Deviation at Farley Unit 2 (Cycle 21)**

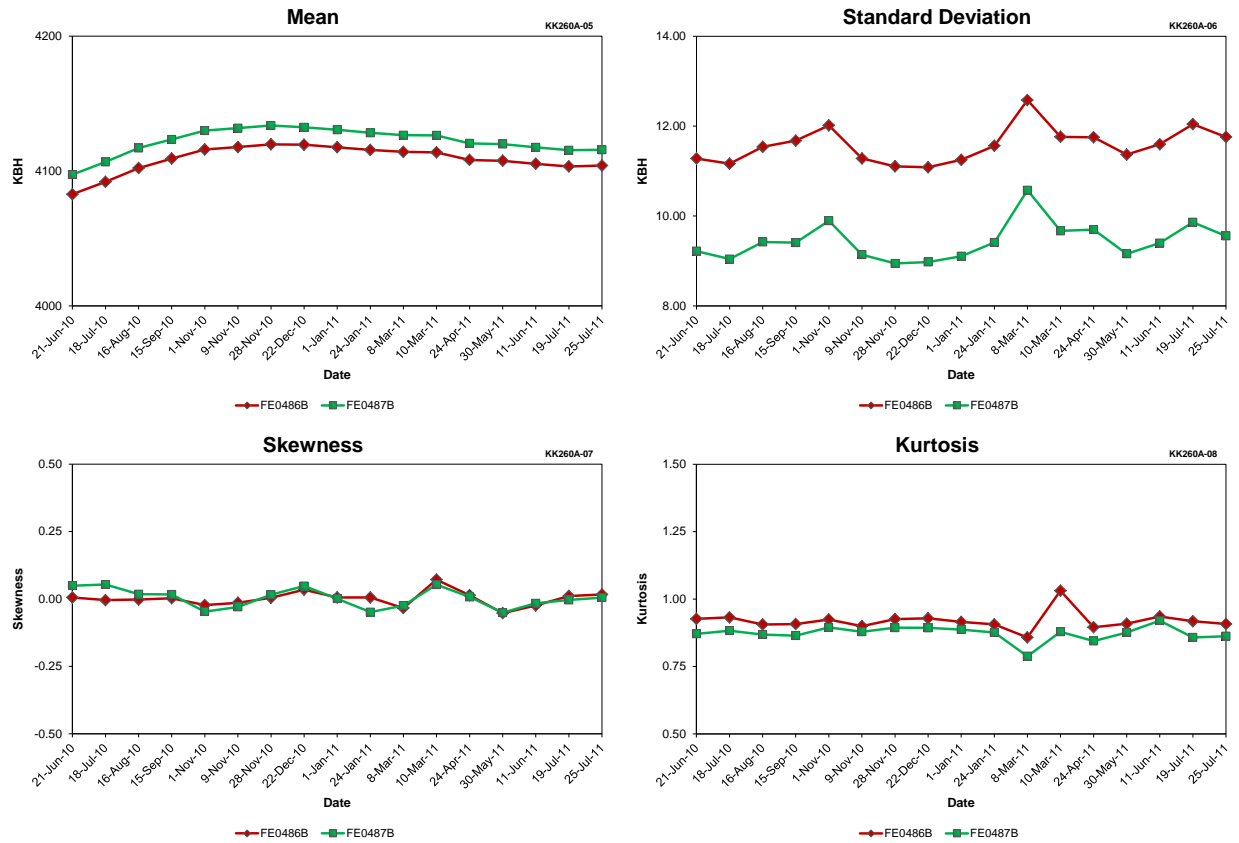


Figure E.30 FW FLOW TO SG B Data Quality Statistics at Farley Unit 2 (Cycle 21)

Table E.6 FW FLOW TO SG B Data Quality for Farley Unit 2 (Cycle 21)

Result Type	Tag Names	
	FE0486B	FE0487B
Mean	4108.75	4121.94
Std. Dev.	11.58	9.44
Skewness	0.00	0.00
Kurtosis	0.92	0.87

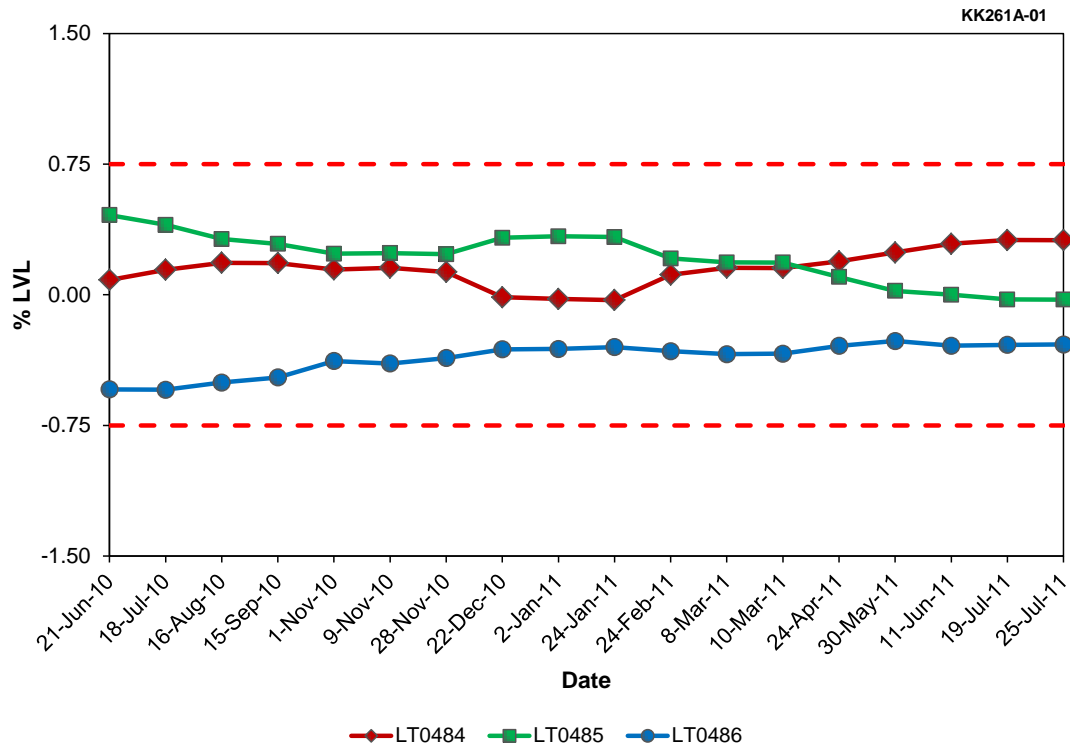


Figure E.31 SG B LEVEL Steady-State Deviation at Farley Unit 2 (Cycle 21)

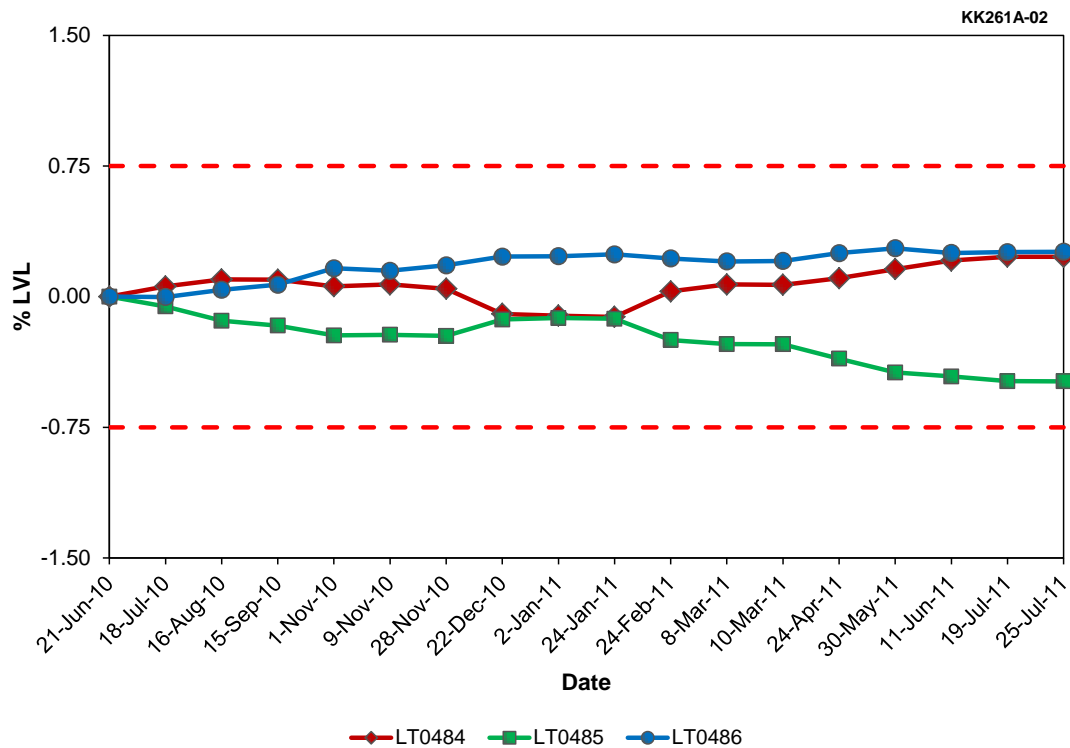
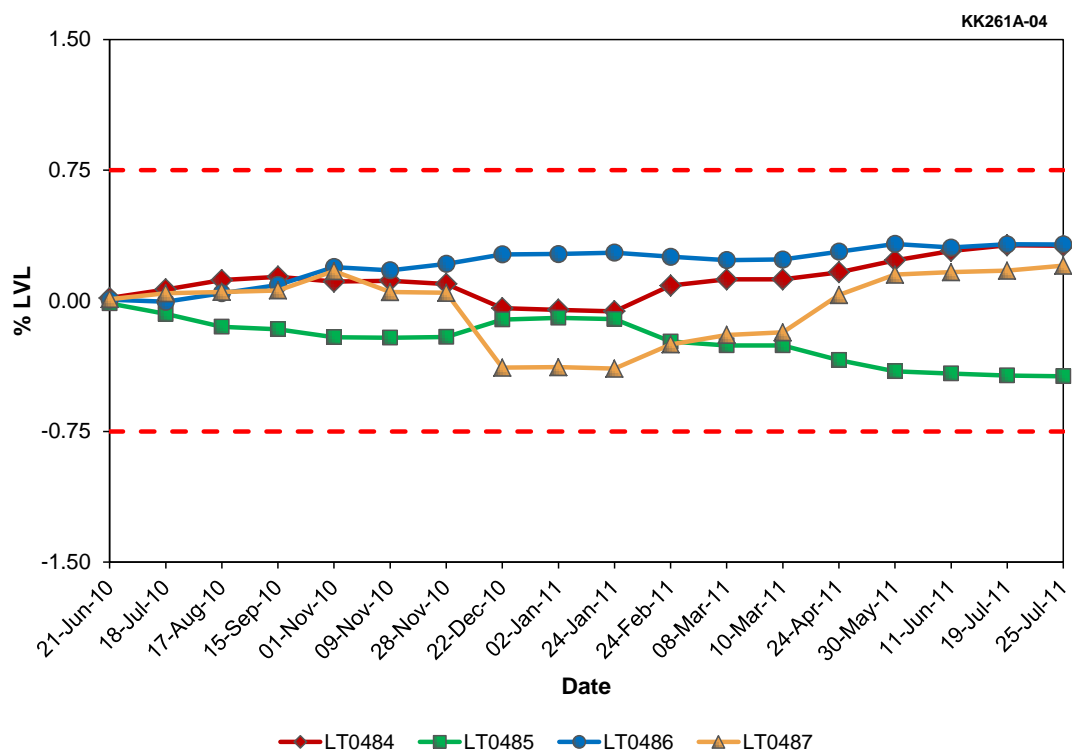
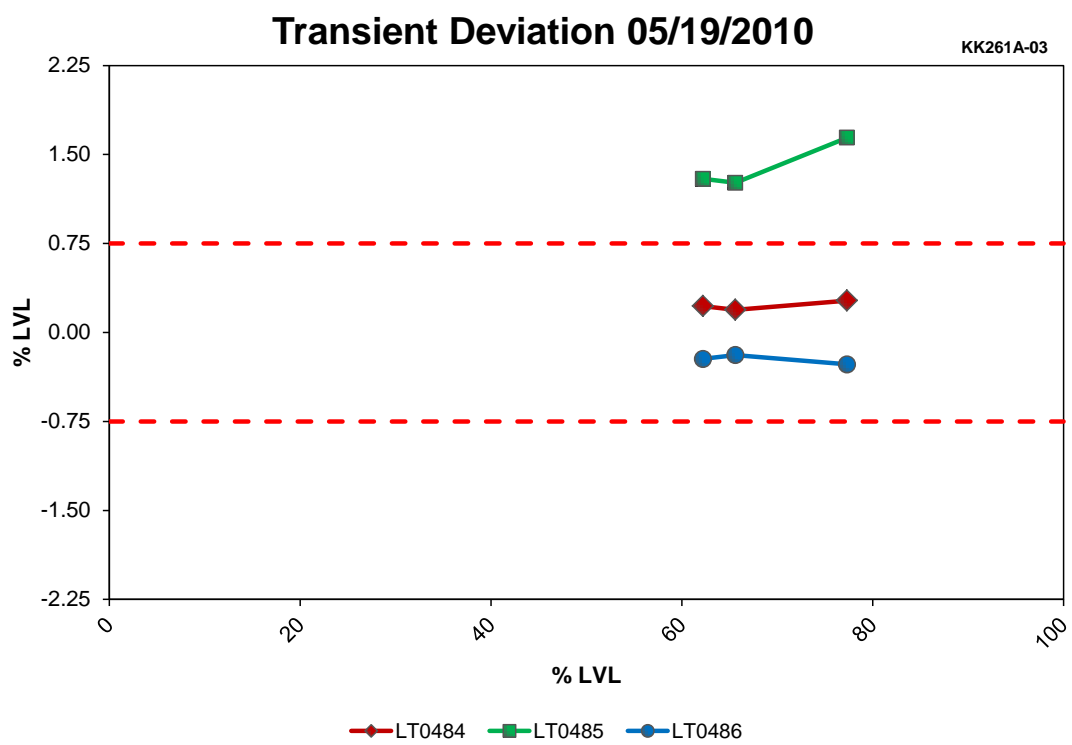


Figure E.32 SG B LEVEL Steady-State Drift at Farley Unit 2 (Cycle 21)

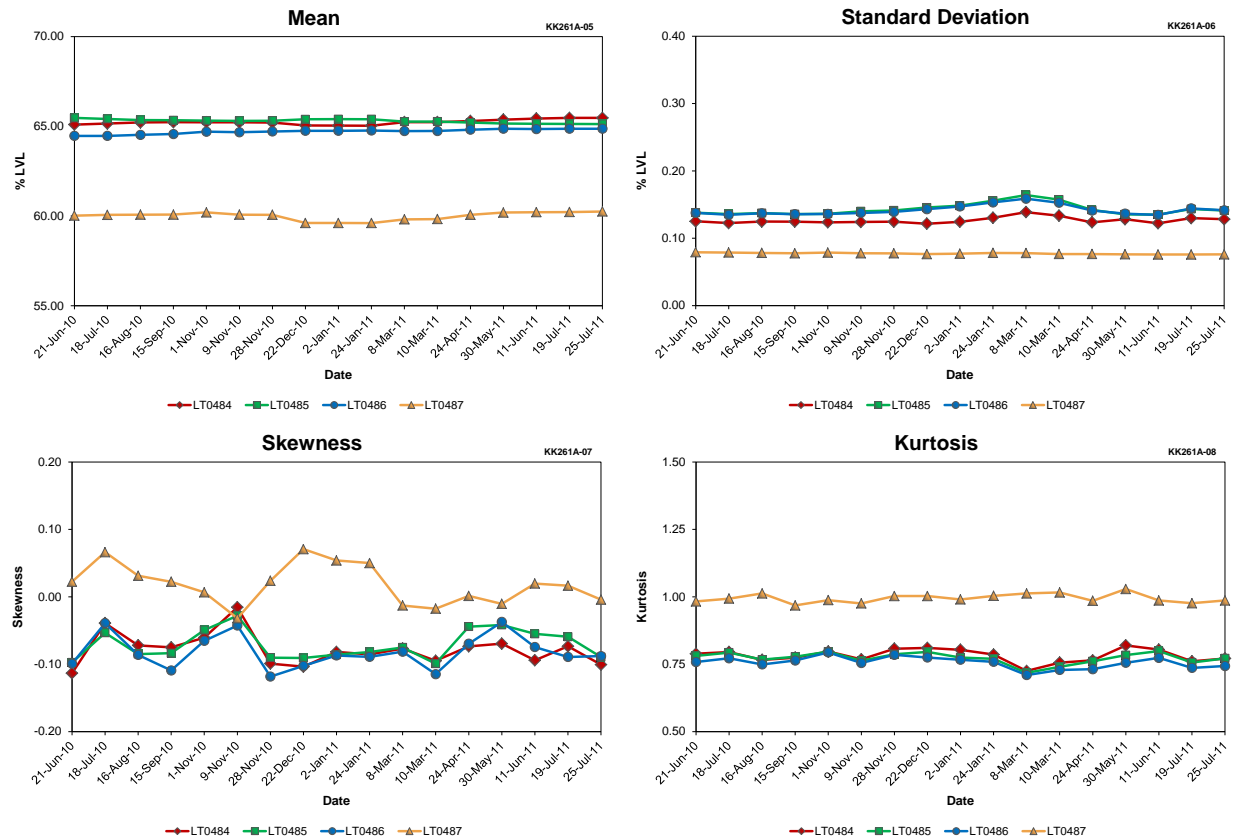


**Figure E.33 SG B LEVEL Steady-State Residual AAKR at Farley Unit 2 (Cycle 21)**



**Figure E.34 SG B LEVEL Transient Deviation at Farley Unit 2 (Cycle 21)**

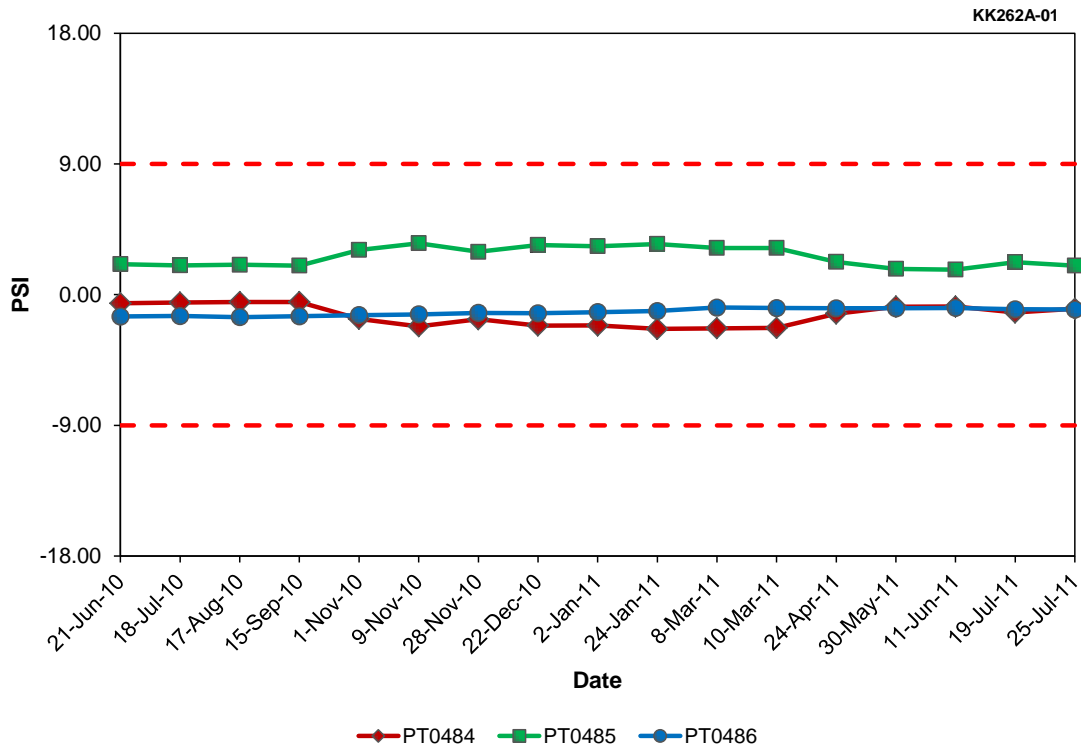




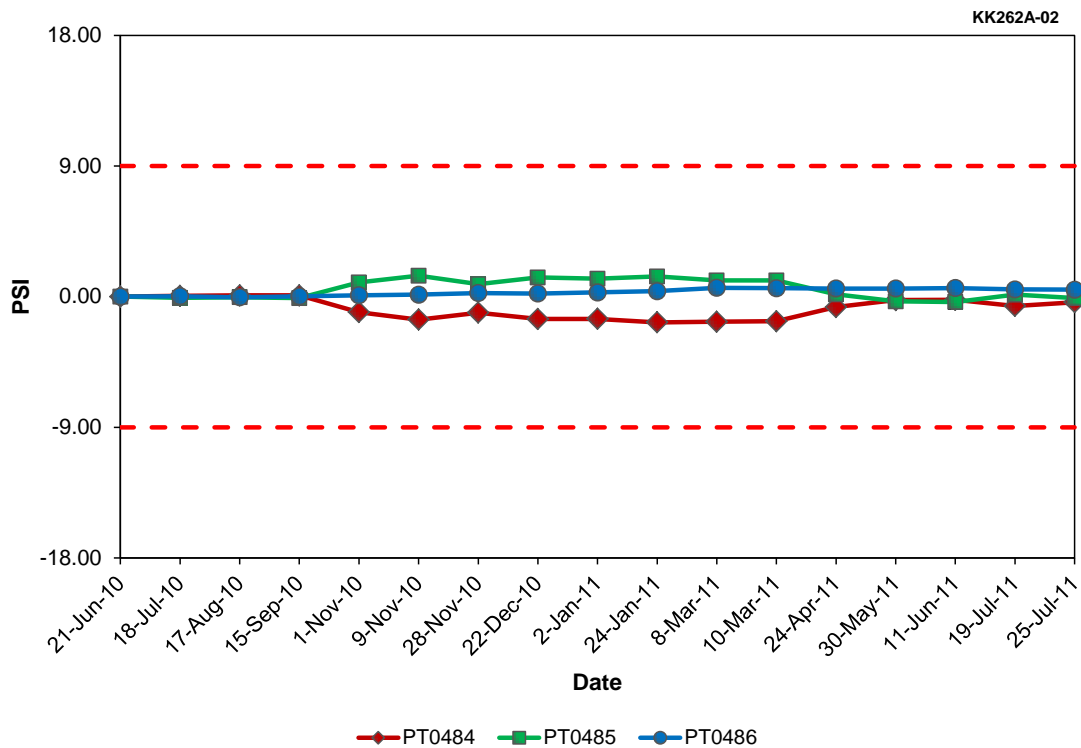
**Figure E.35 SG B LEVEL Data Quality Statistics at Farley Unit 2 (Cycle 21)**

**Table E.7 SG B LEVEL Data Quality for Farley Unit 2 (Cycle 21)**

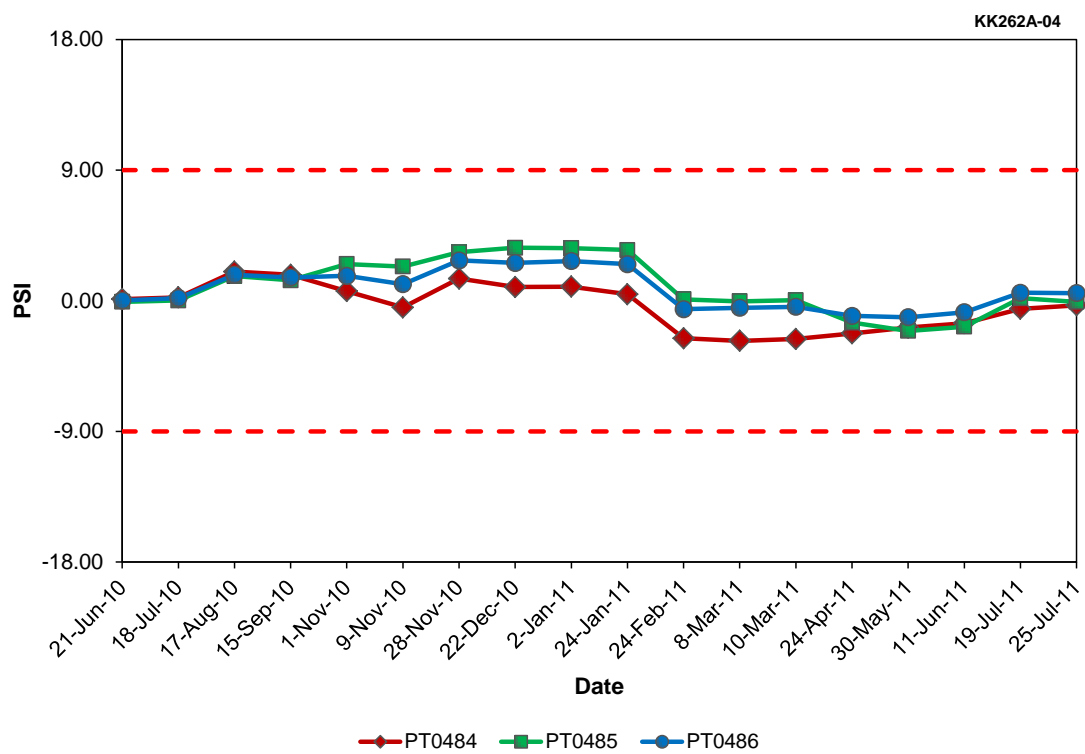
Result Type	Tag Names			
	LT0484	LT0485	LT0486	LT0487
Mean	65.23	65.29	64.71	60.00
Std. Dev.	0.13	0.14	0.14	0.08
Skewness	-0.08	-0.07	-0.08	0.02
Kurtosis	0.78	0.77	0.76	0.99



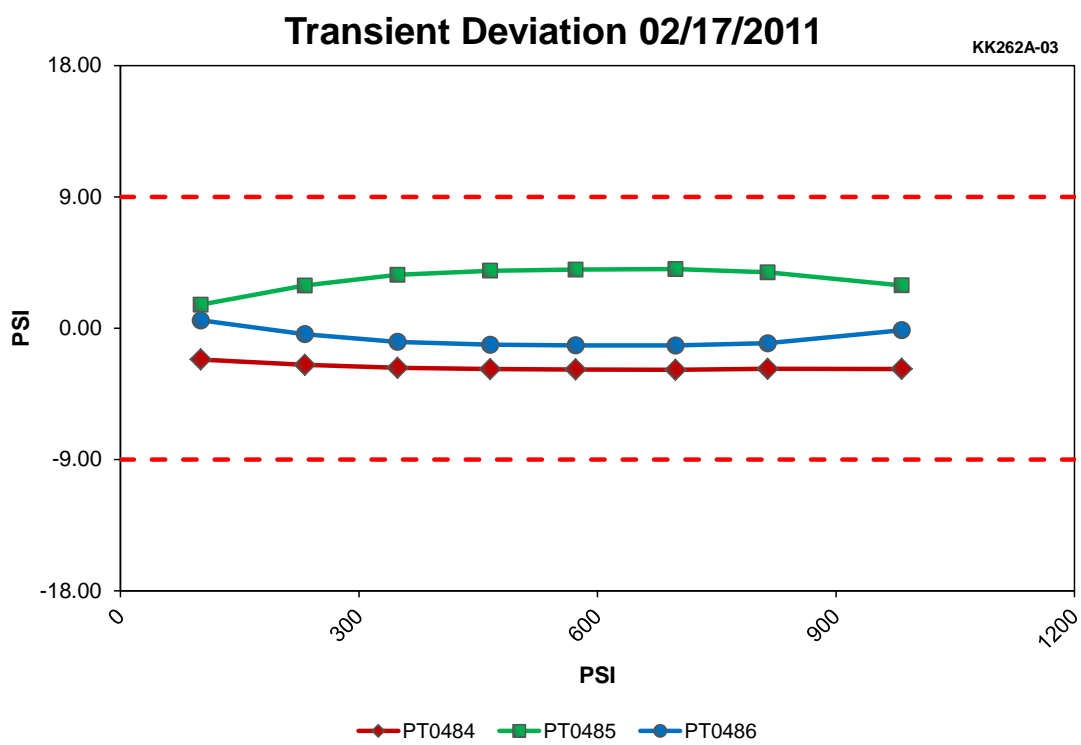
**Figure E.36 SG B OUTLET PRESSURE Steady-State Deviation at Farley Unit 2 (Cycle 21)**



**Figure E.37 SG B OUTLET PRESSURE Steady-State Drift at Farley Unit 2 (Cycle 21)**



**Figure E.38 SG B OUTLET PRESSURE Steady-State Residual AAKR at Farley Unit 2 (Cycle 21)**



**Figure E.39 SG B OUTLET PRESSURE Transient Deviation at Farley Unit 2 (Cycle 21)**

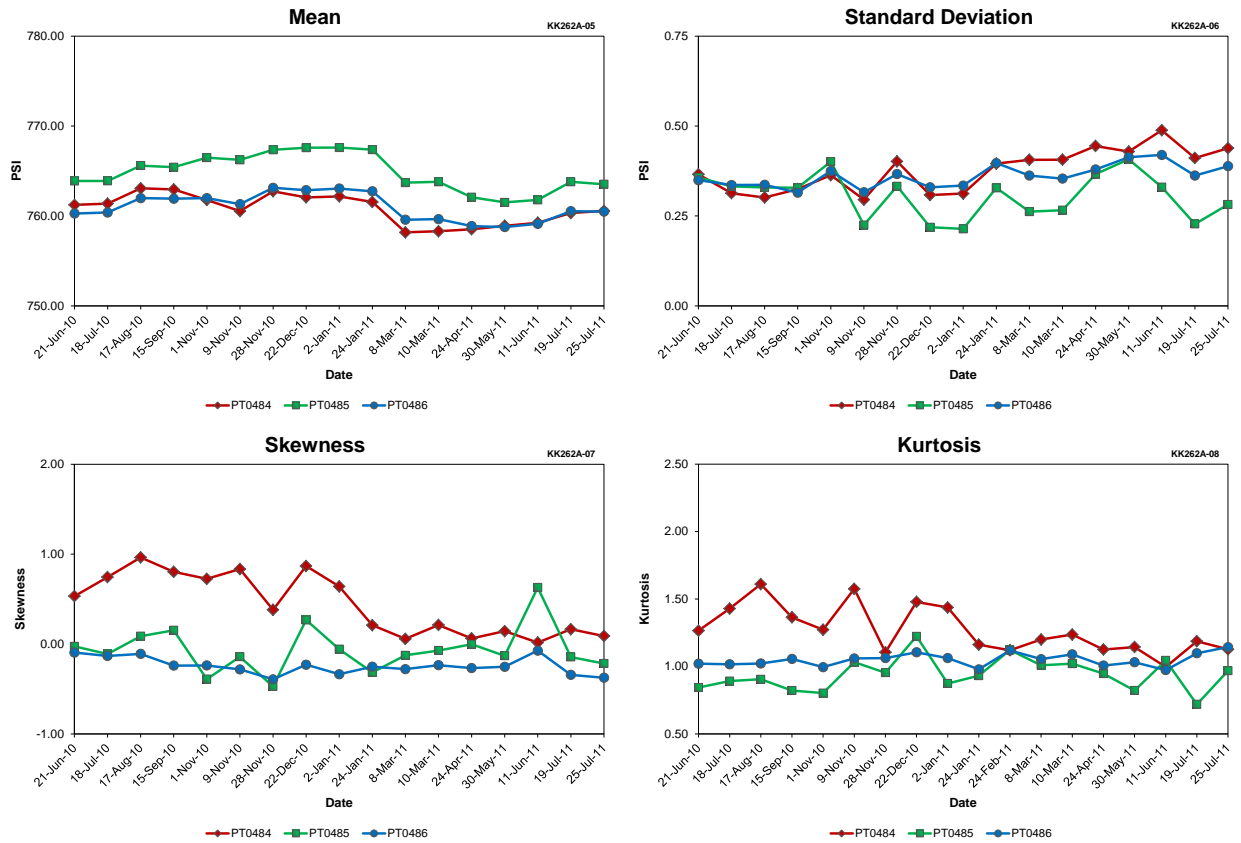


Figure E.40 SG B OUTLET PRESSURE Data Quality Statistics at Farley Unit 2 (Cycle 21)

Table E.8 SG B OUTLET PRESSURE Data Quality for Farley Unit 2 (Cycle 21)

Result Type	Tag Names		
	PT0484	PT0485	PT0486
Mean	760.79	764.80	760.98
Std. Dev.	0.38	0.31	0.36
Skewness	0.44	-0.06	-0.24
Kurtosis	1.27	0.94	1.05

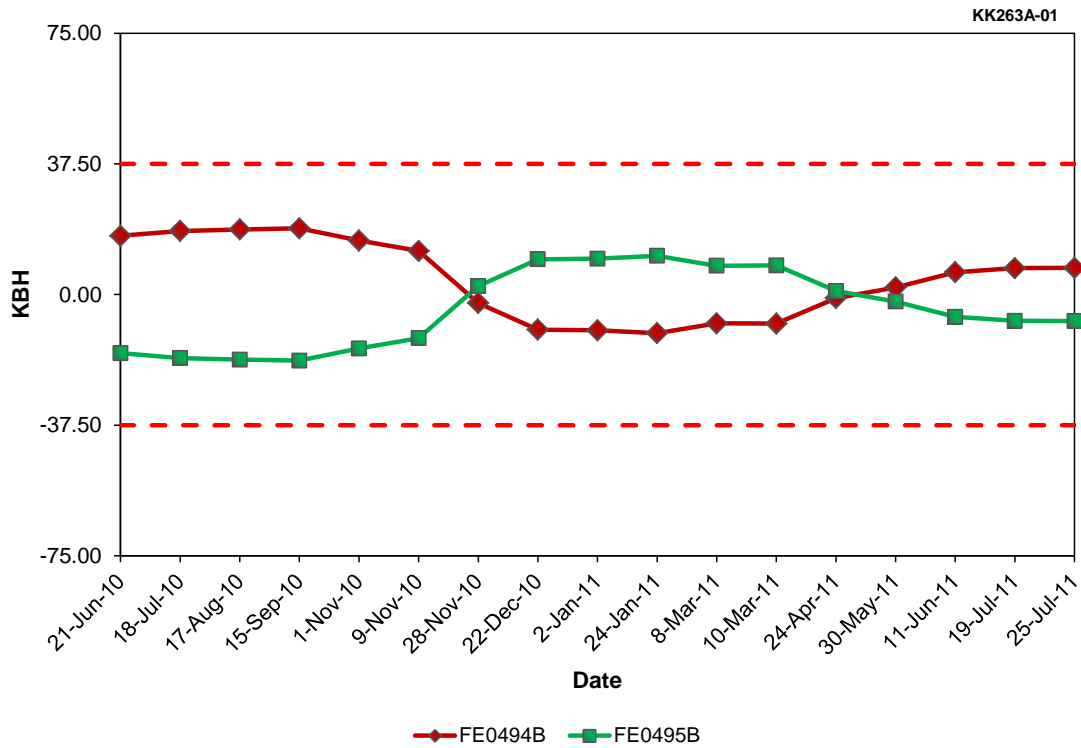


Figure E.41 SG C STEAM FLOW Steady-State Deviation at Farley Unit 2 (Cycle 21)

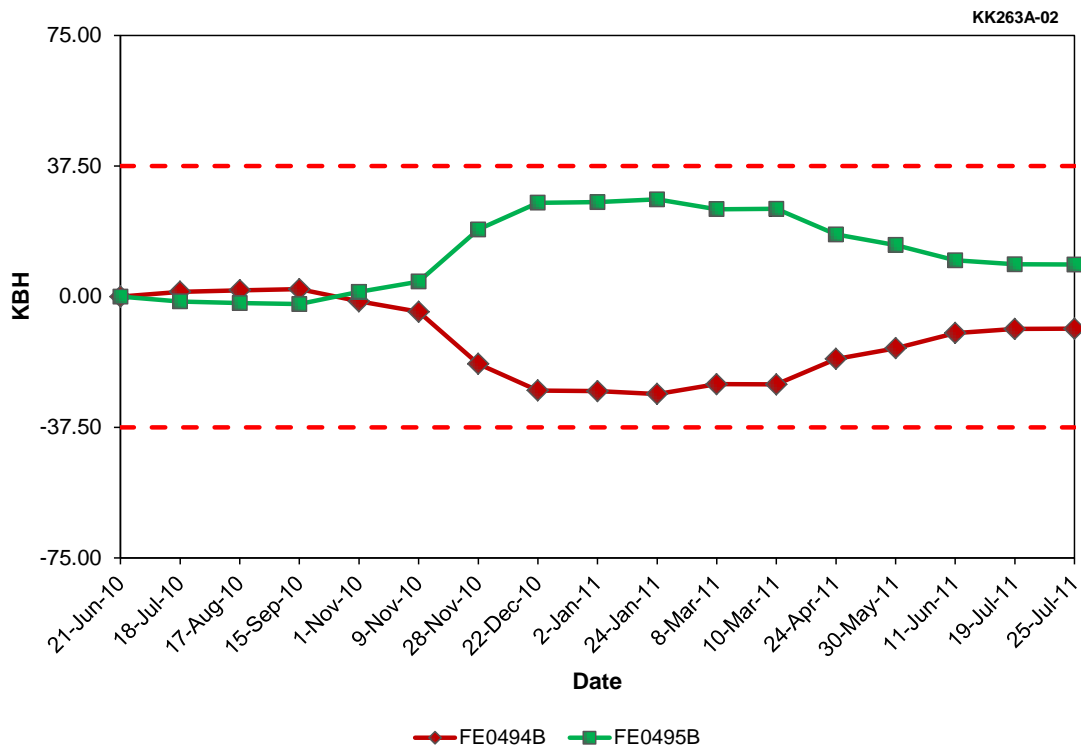
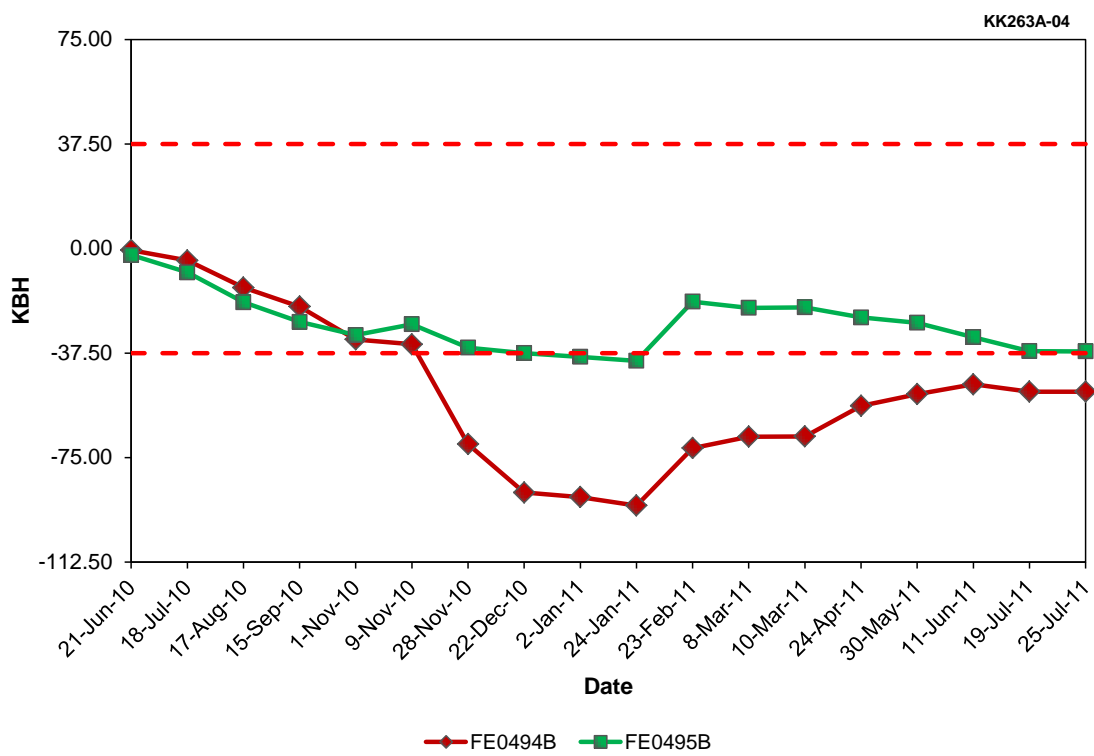
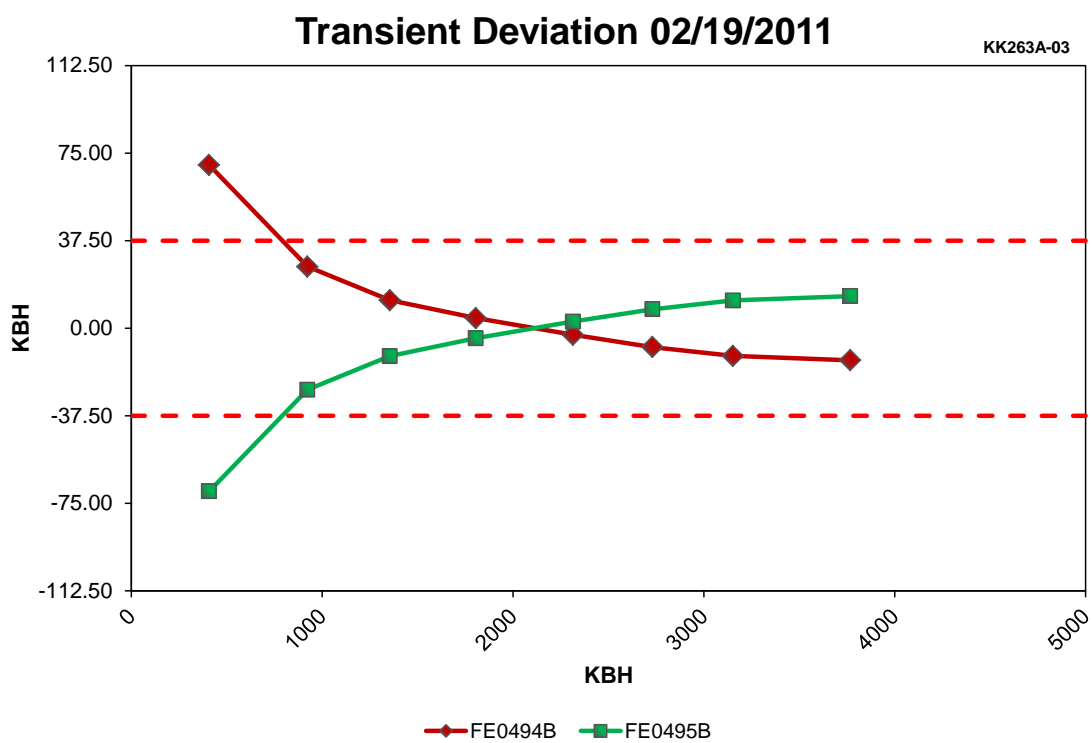


Figure E.42 SG C STEAM FLOW Steady-State Drift at Farley Unit 2 (Cycle 21)



**Figure E.43 SG C STEAM FLOW Steady-State Residual AAKR at Farley Unit 2 (Cycle 21)**



**Figure E.44 SG C STEAM FLOW Transient Deviation at Farley Unit 2 (Cycle 21)**





Figure E.45 SG C STEAM FLOW Data Quality Statistics at Farley Unit 2 (Cycle 21)

Result Type	Tag Names	
	FE0494B	FE0495B
Mean	3902.62	3894.05
Std. Dev.	5.55	5.57
Skewness	-0.09	-0.09
Kurtosis	1.00	1.00

Table E.9 SG C STEAM FLOW Data Quality for Farley Unit 2 (Cycle 21)

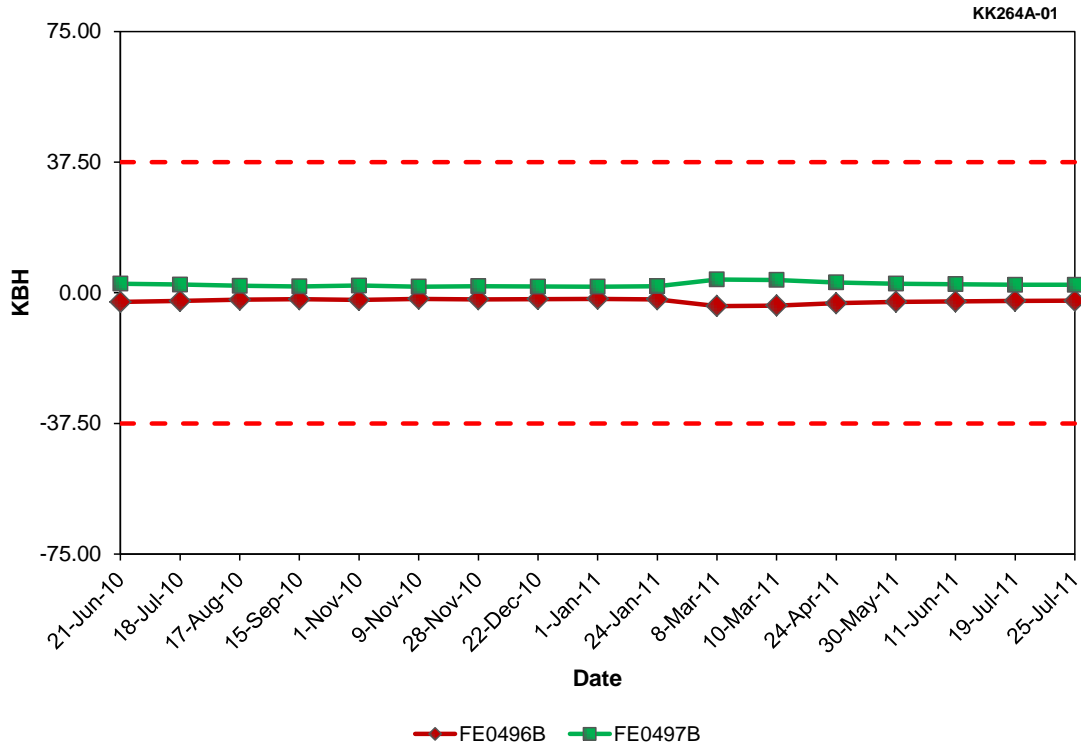


Figure E.46 FW FLOW TO SG C Steady-State Deviation at Farley Unit 2 (Cycle 21)

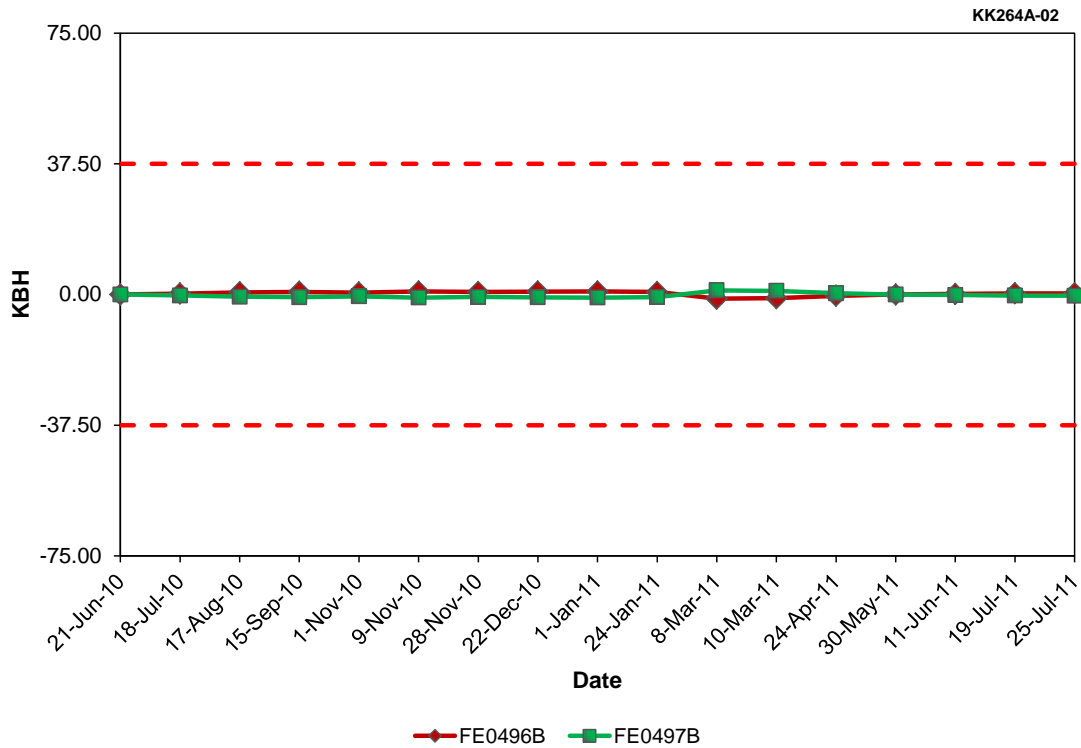
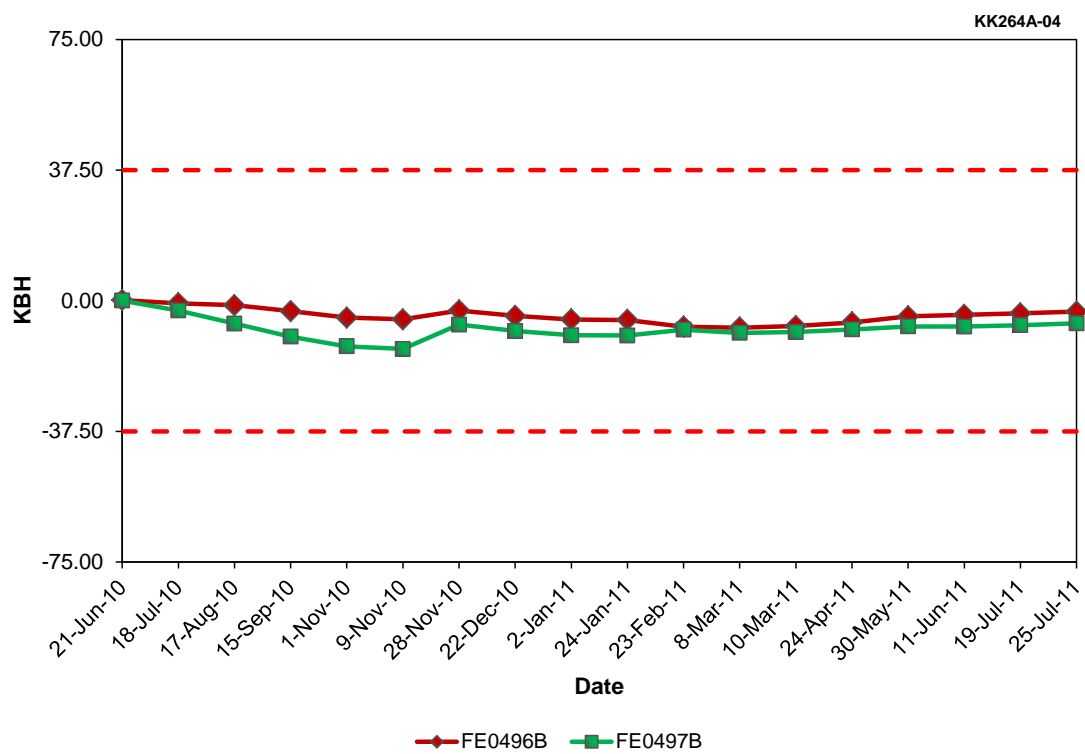


Figure E.47 FW FLOW TO SG C Steady-State Drift at Farley Unit 2 (Cycle 21)



**Figure E.48 FW FLOW TO SG C Steady-State Residual AAKR at Farley Unit 2 (Cycle 21)**

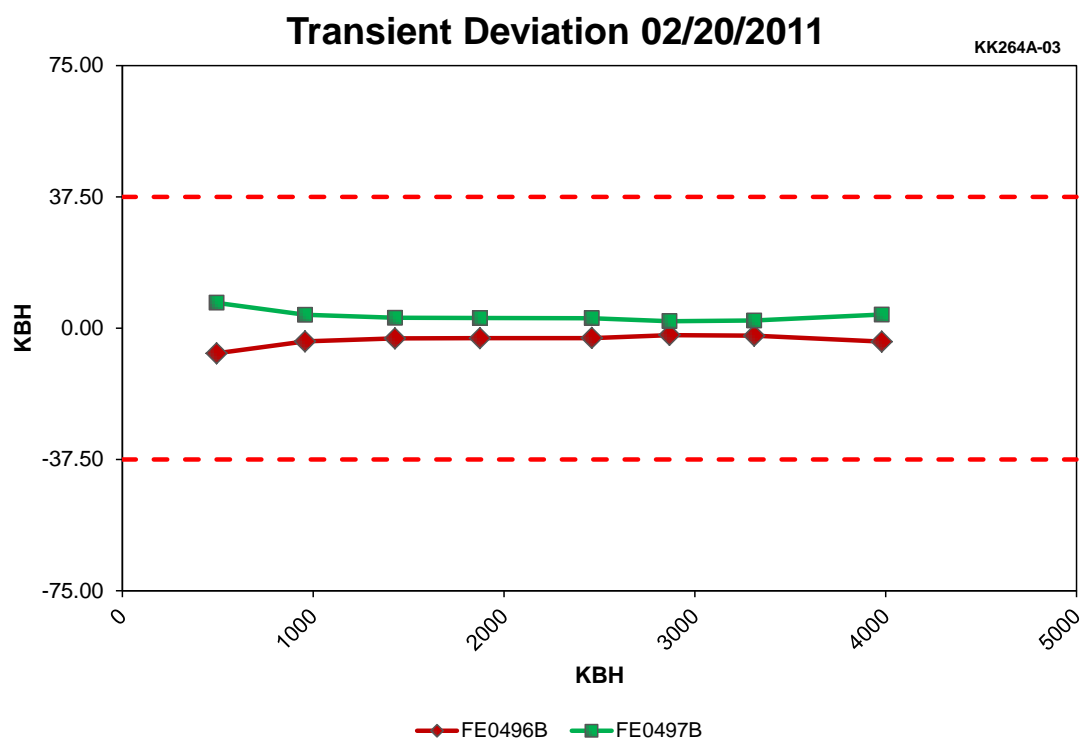


Figure E.49 FW FLOW TO SG C Transient Deviation at Farley Unit 2 (Cycle 21)

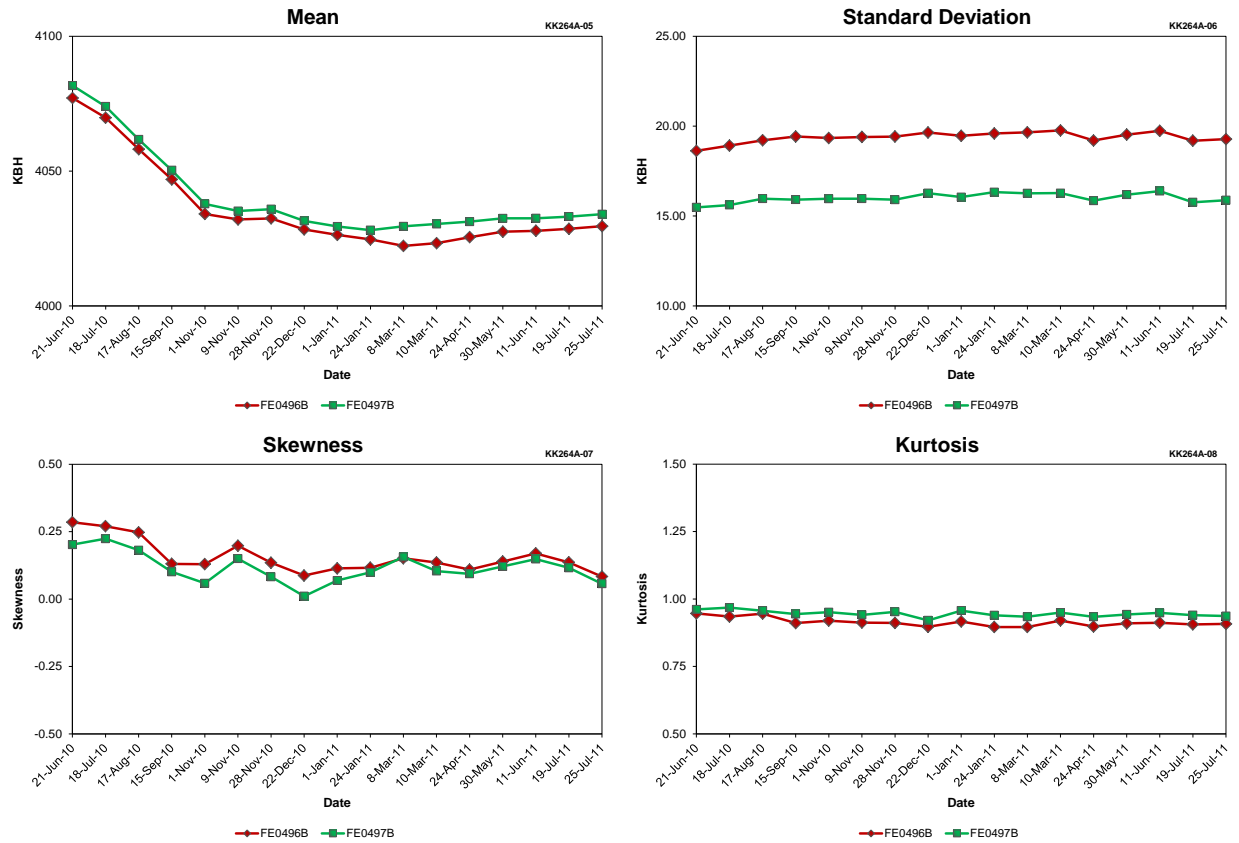


Figure E.50 FW FLOW TO SG C Data Quality Statistics at Farley Unit 2 (Cycle 21)

Table E.10 FW FLOW TO SG C Data Quality for Farley Unit 2 (Cycle 21)

Result Type	Tag Names	
	FE0496B	FE0497B
Mean	4036.13	4040.52
Std. Dev.	19.37	16.00
Skewness	0.16	0.12
Kurtosis	0.91	0.94

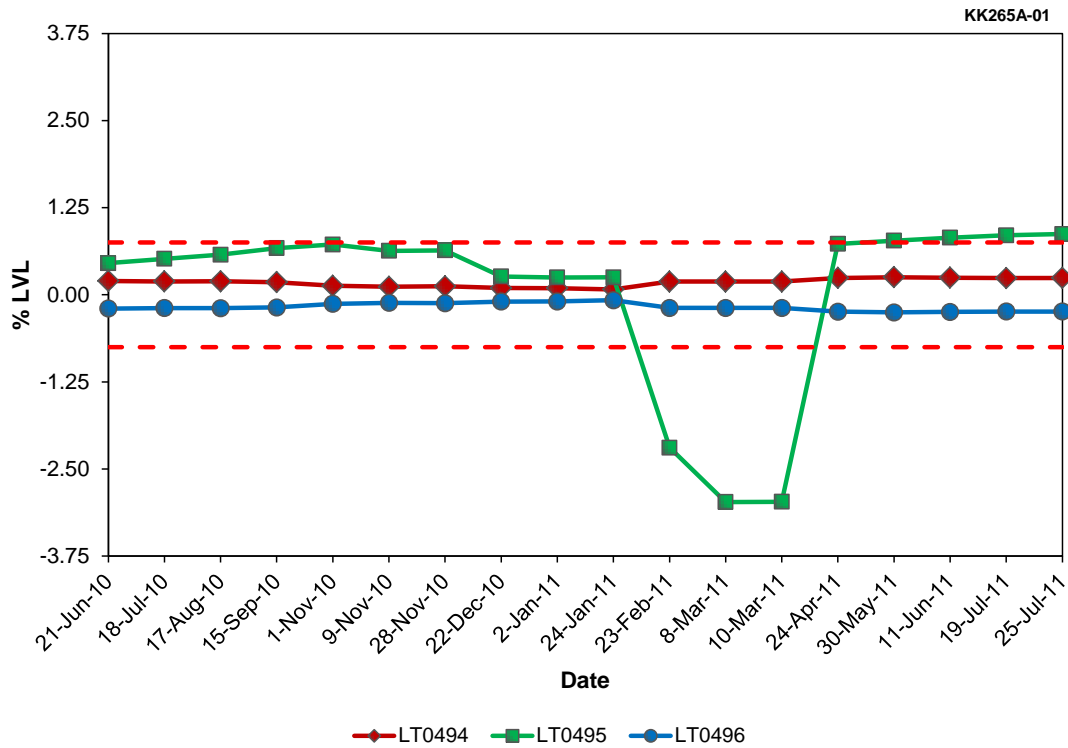


Figure E.51 SG C LEVEL Steady-State Deviation at Farley Unit 2 (Cycle 21)

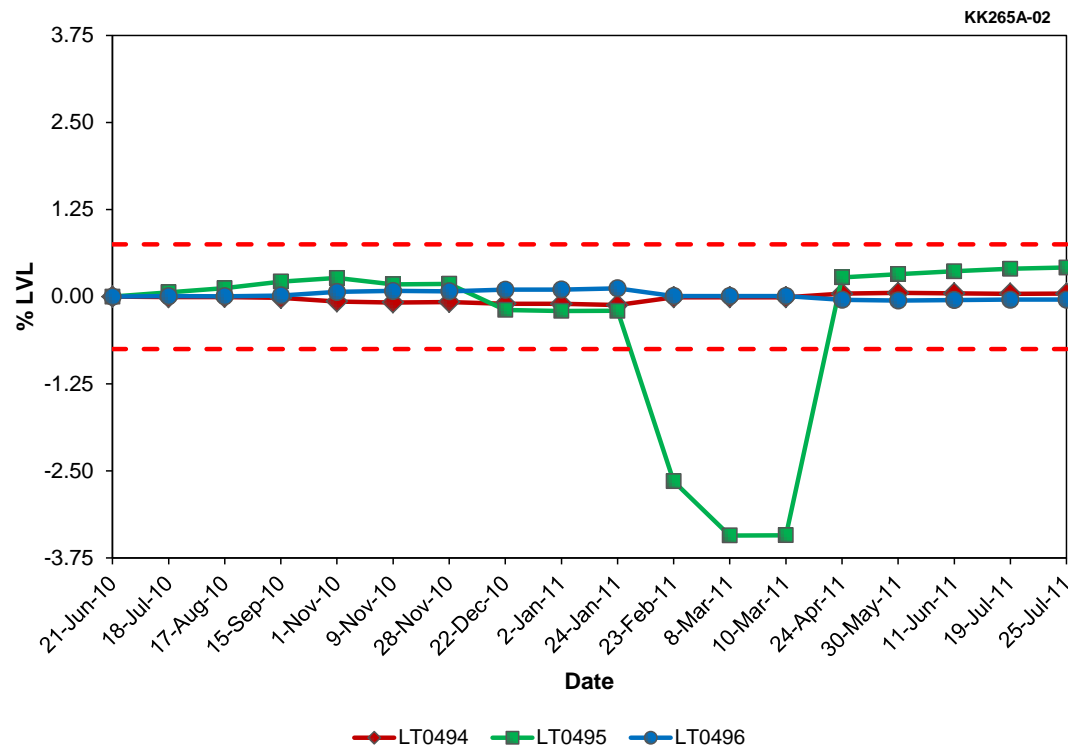
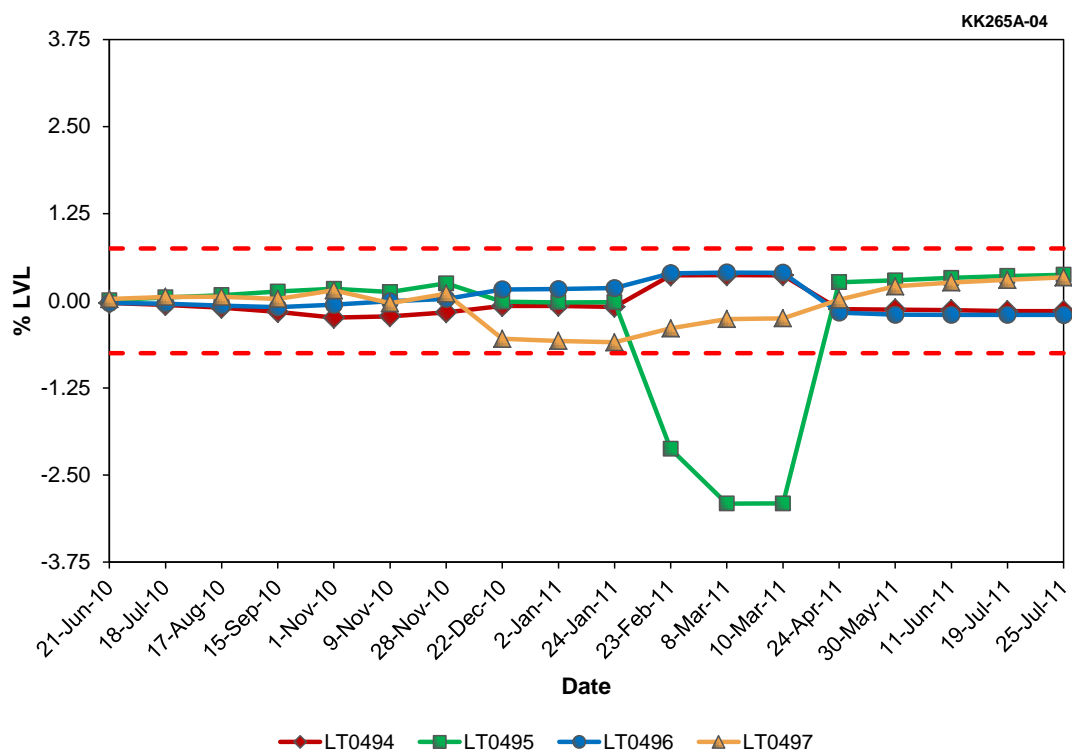
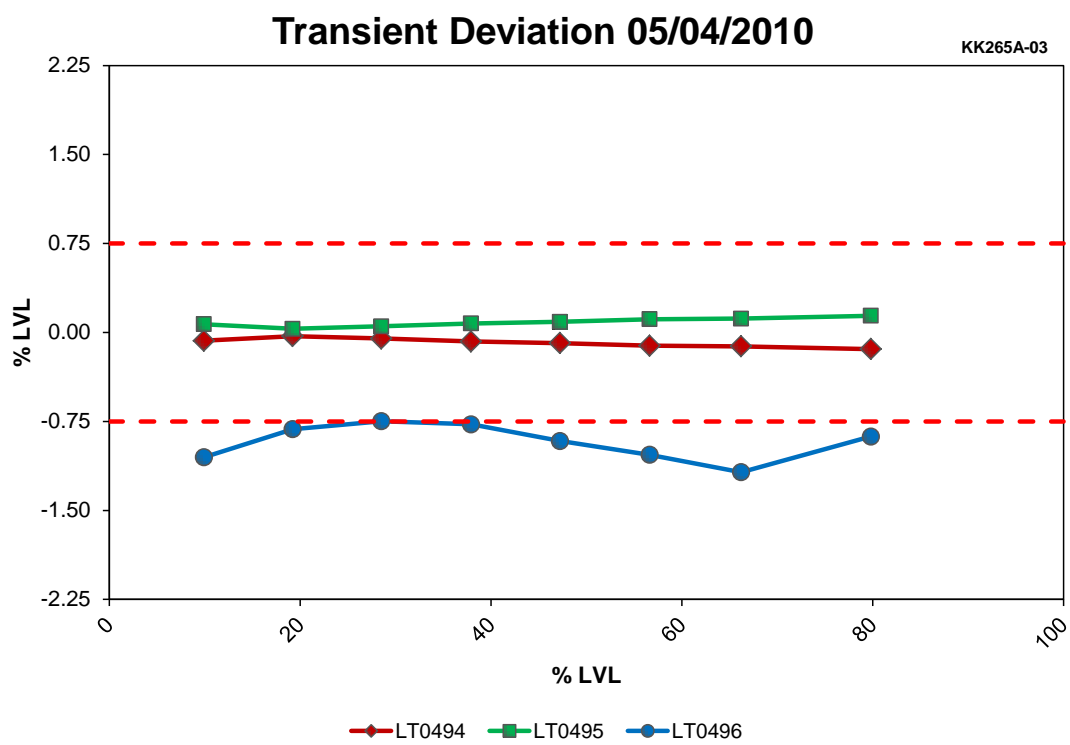


Figure E.52 SG C LEVEL Steady-State Drift at Farley Unit 2 (Cycle 21)



**Figure E.53 SG C LEVEL Steady-State Residual AAKR at Farley Unit 2 (Cycle 21)**



**Figure E.54 SG C LEVEL Transient Deviation at Farley Unit 2 (Cycle 21)**



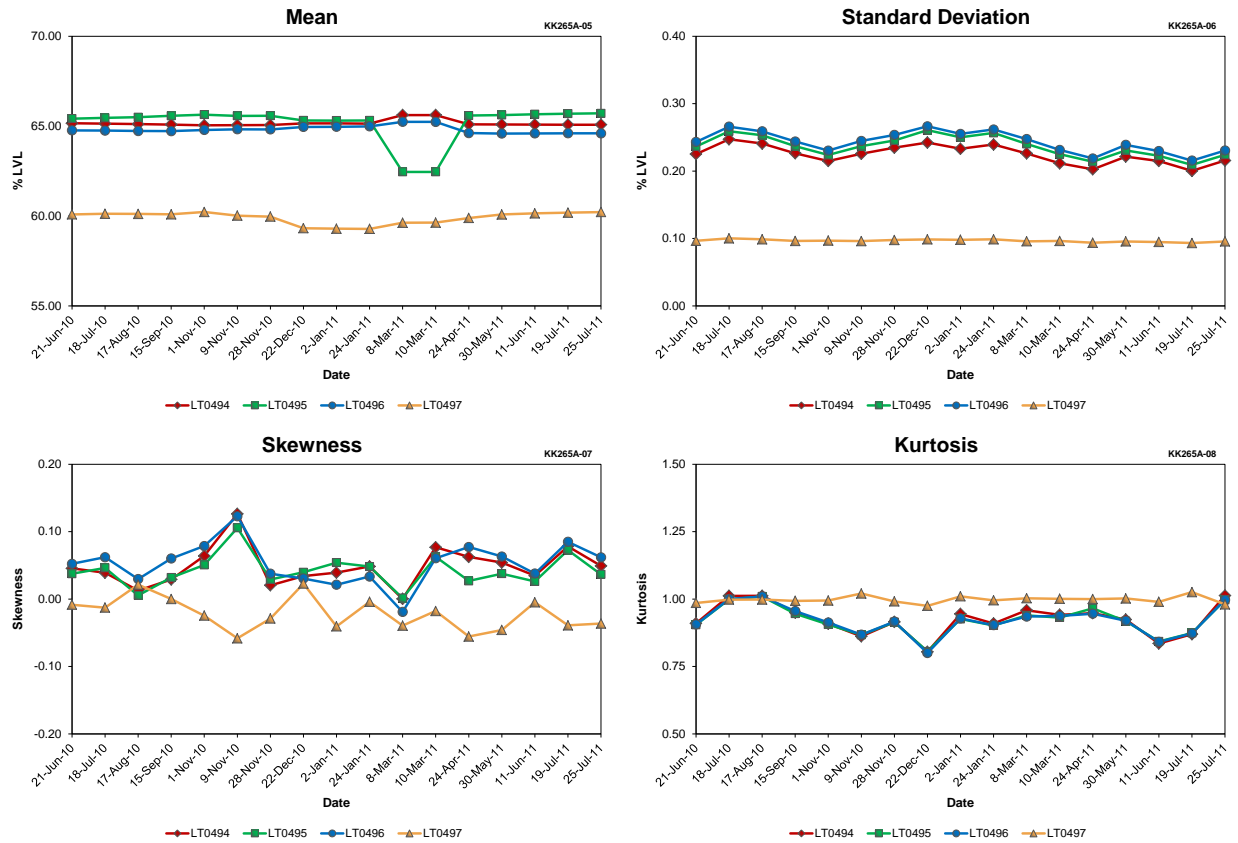
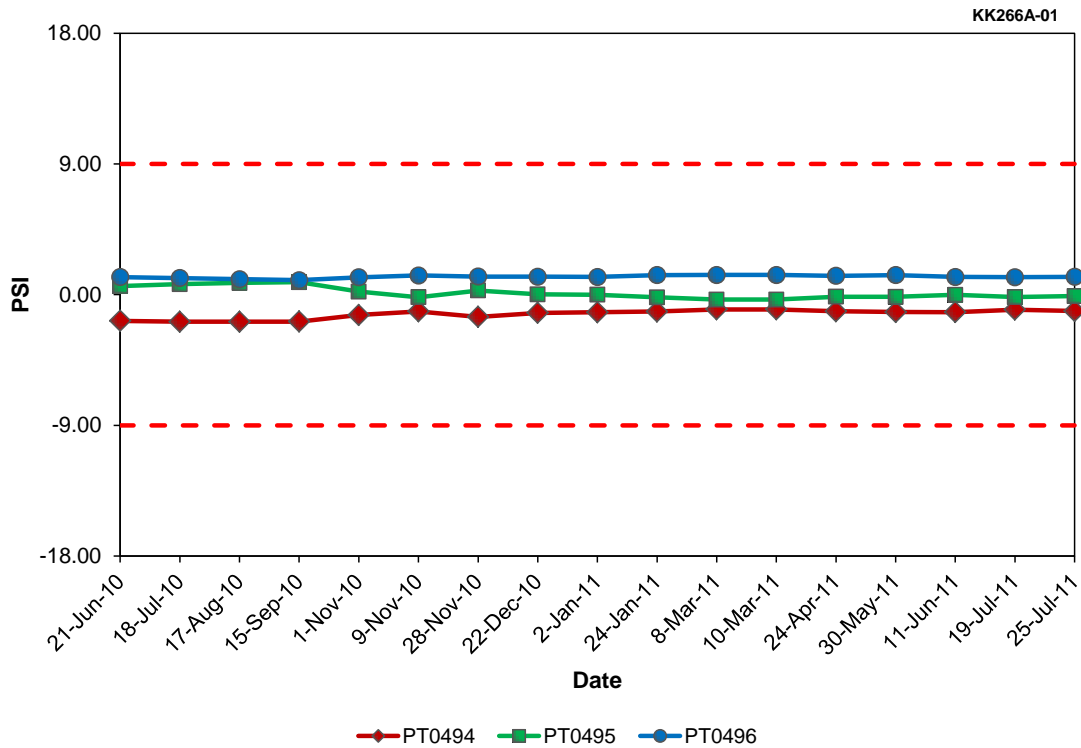


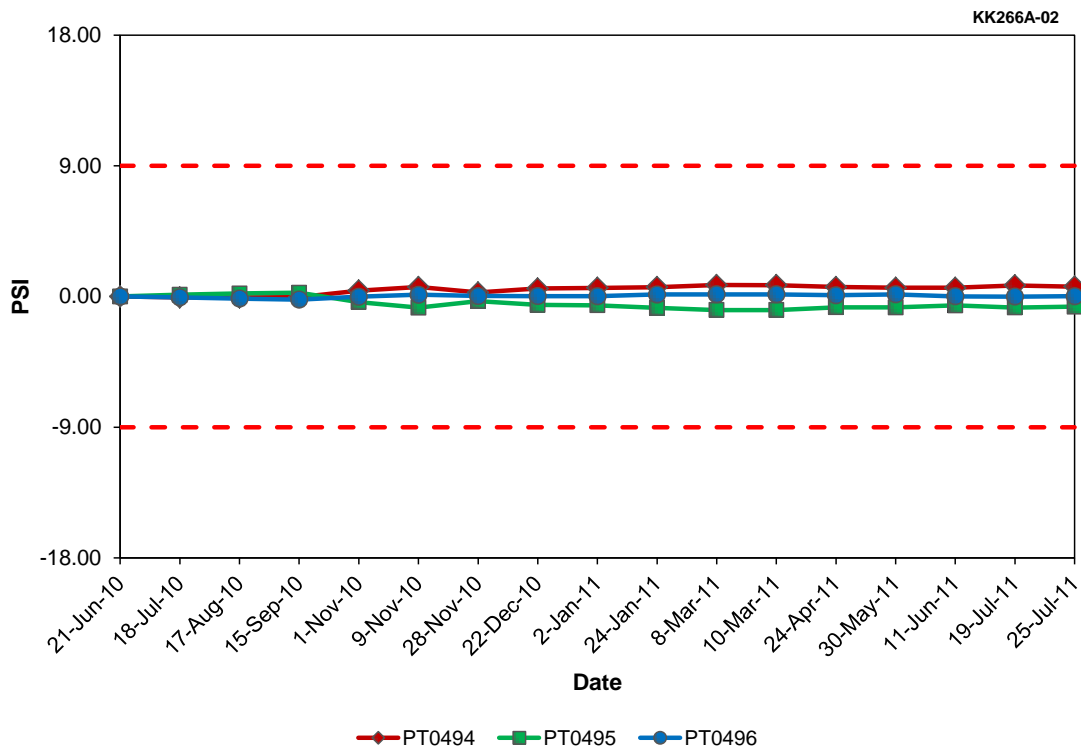
Figure E.55 SG C LEVEL Data Quality Statistics at Farley Unit 2 (Cycle 21)

Table E.11 SG B LEVEL Data Quality for Farley Unit 2 (Cycle 21)

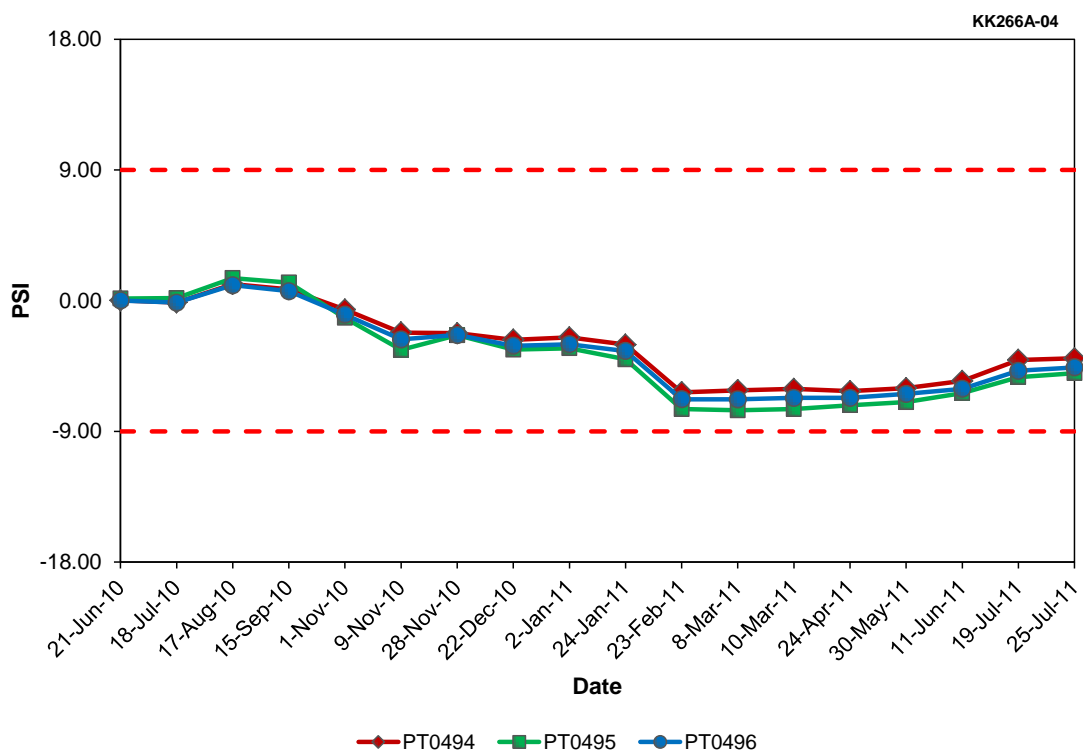
Result Type	Tag Names			
	LT0494	LT0495	LT0496	LT0497
Mean	65.16	65.17	64.81	59.90
Std. Dev.	0.22	0.24	0.24	0.10
Skewness	0.05	0.04	0.05	-0.02
Kurtosis	0.92	0.92	0.92	1.00



**Figure E.56 SG C OUTLET PRESSURE Steady-State Deviation at Farley Unit 2 (Cycle 21)**



**Figure E.57 SG C OUTLET PRESSURE Steady-State Drift at Farley Unit 2 (Cycle 21)**



**Figure E.58 SG C OUTLET PRESSURE Steady-State Residual AAKR at Farley Unit 2 (Cycle 21)**

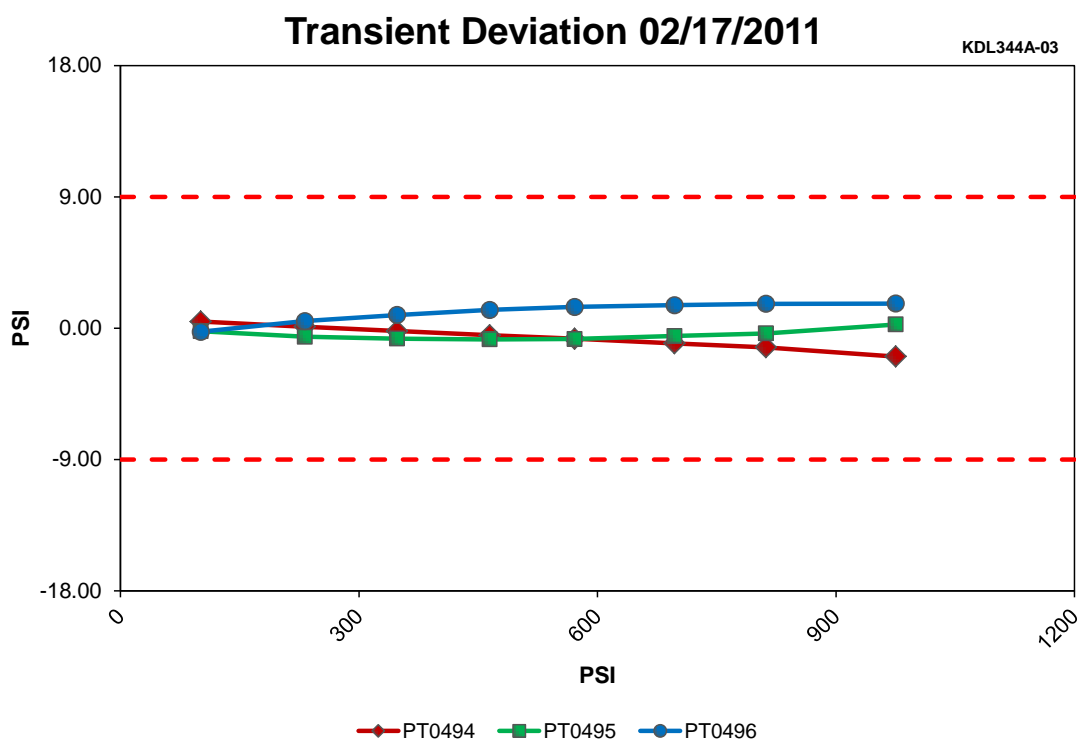


Figure E.59 SG C OUTLET PRESSURE Transient Deviation at Farley Unit 2 (Cycle 21)

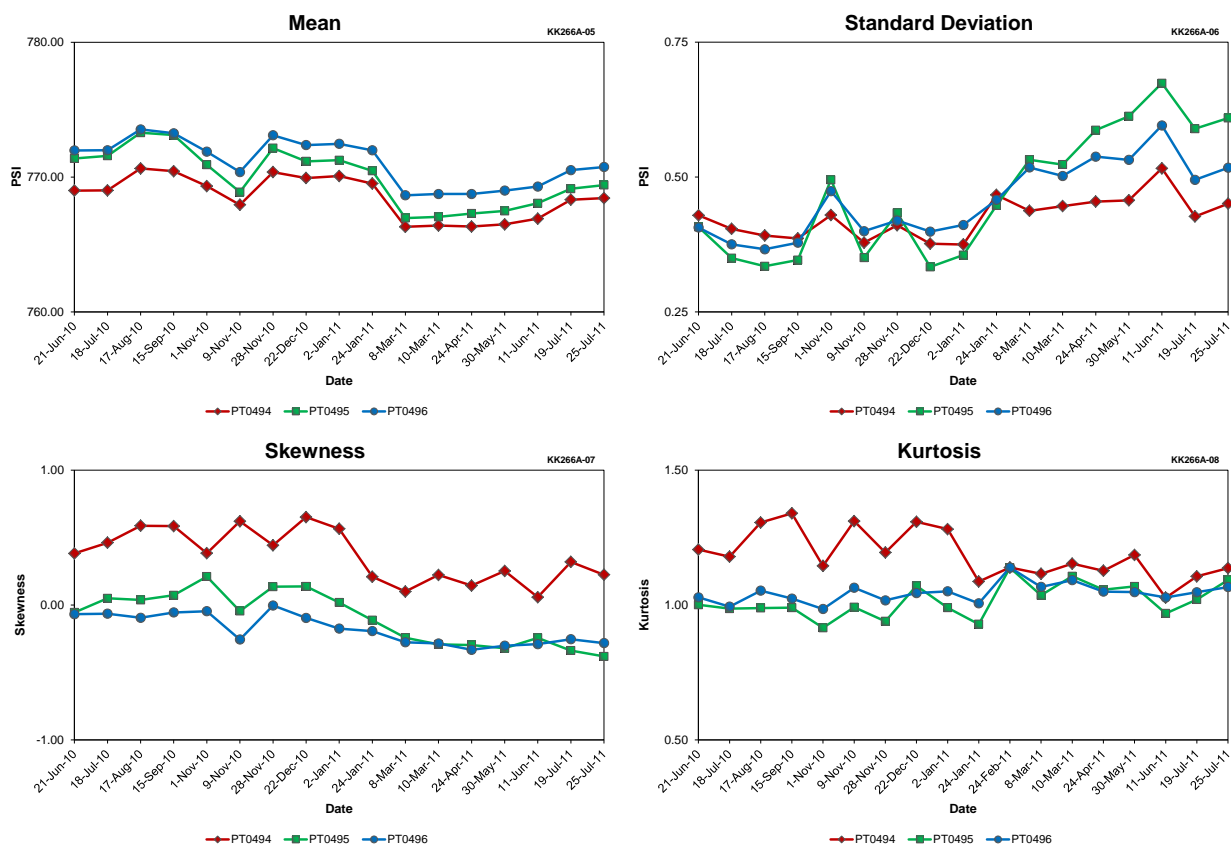


Figure E.60 SG C OUTLET PRESSURE Data Quality Statistics at Farley Unit 2 (Cycle 21)

Table E.12 SG C OUTLET PRESSURE Data Quality for Farley Unit 2 (Cycle 21)

Result Type	Tag Names		
	PT0494	PT0495	PT0496
Mean	768.56	769.98	771.10
Std. Dev.	0.43	0.47	0.46
Skewness	0.37	-0.10	-0.18
Kurtosis	1.19	1.02	1.04

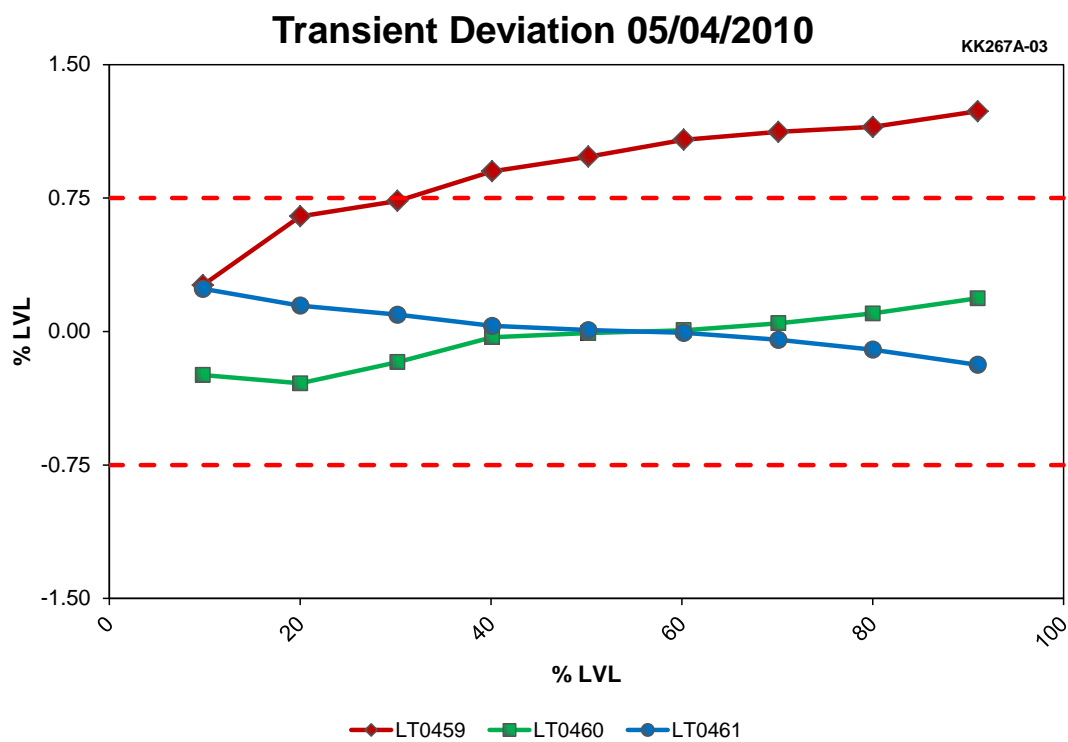


Figure E. 61 PRESSURIZER LEVEL Transient Deviation at Farley Unit 2 (Cycle 21)

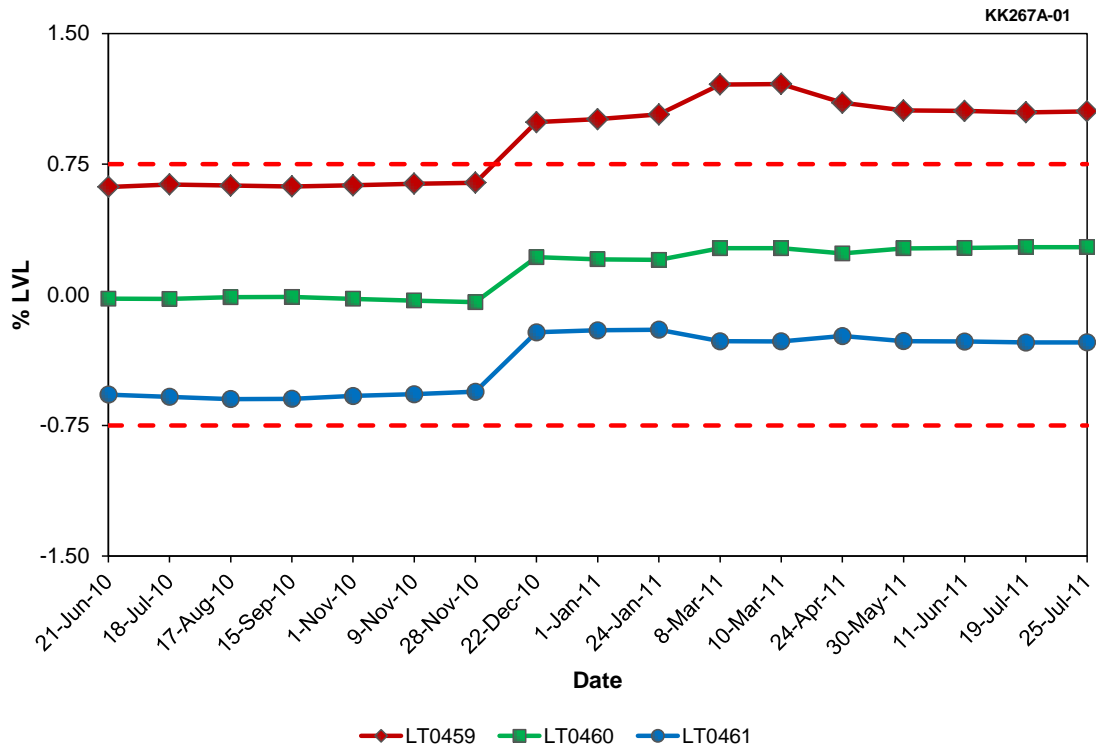


Figure E.62 PRESSURIZER LEVEL Steady-State Deviation at Farley Unit 2 (Cycle 21)

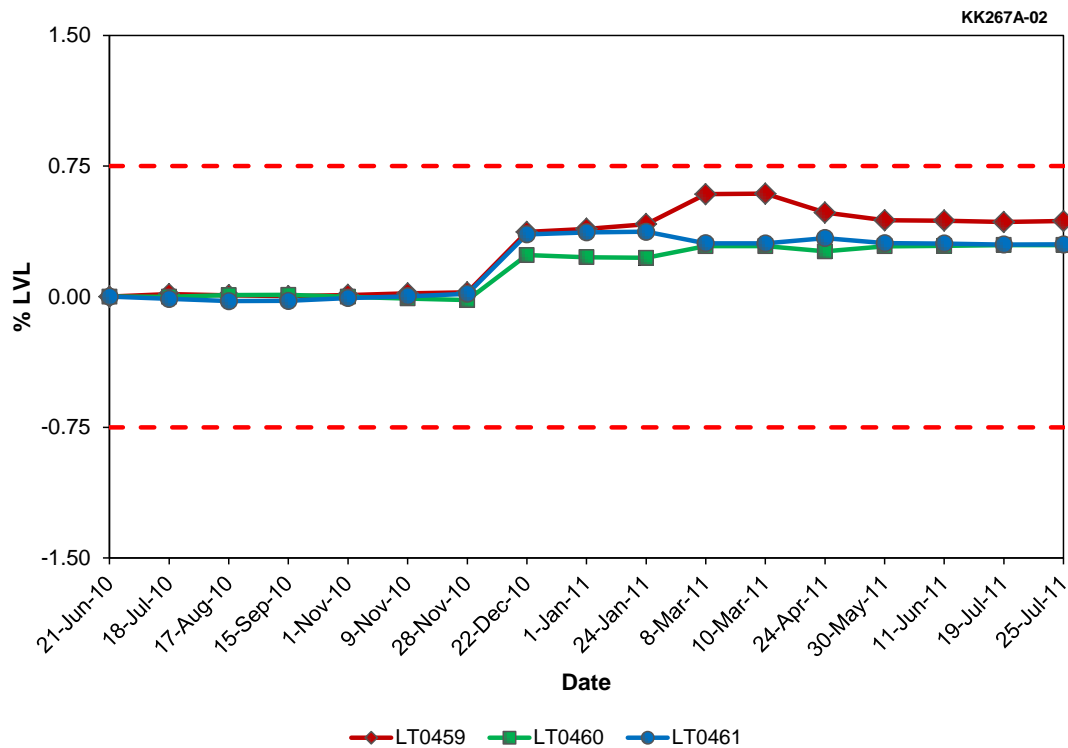


Figure E.63 PRESSURIZER LEVEL Steady-State Drift at Farley Unit 2 (Cycle 21)

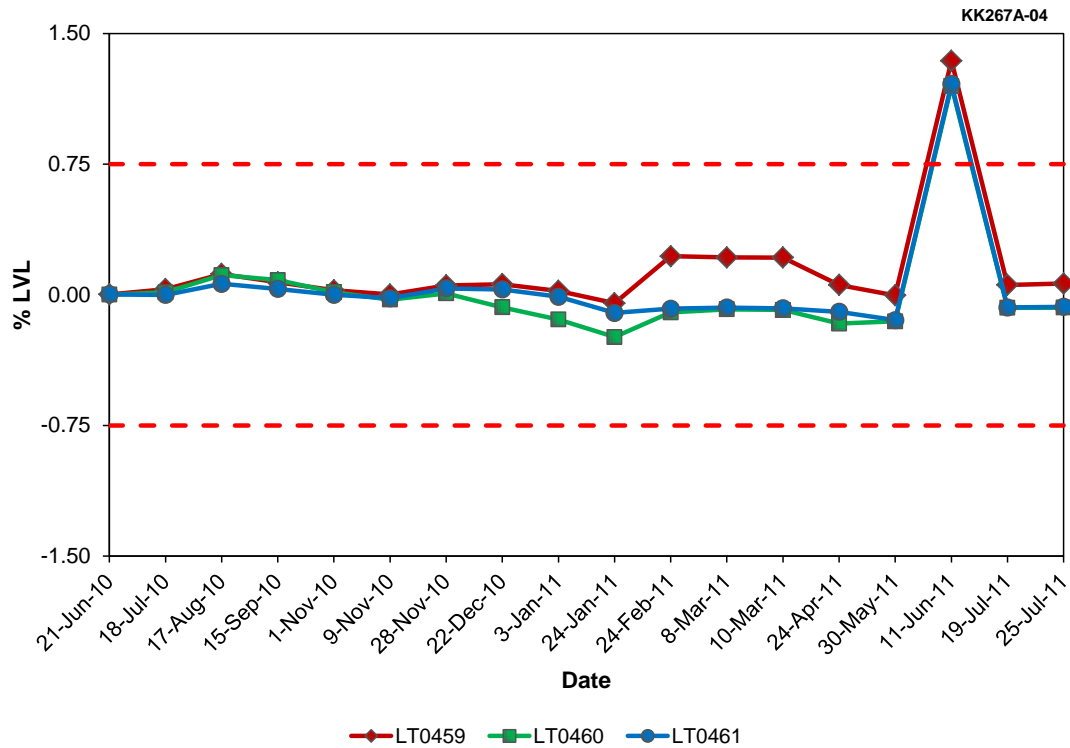


Figure E. 64 PRESSURIZER LEVEL Steady-State Residual AAKR at Farley Unit 2 (Cycle 21)

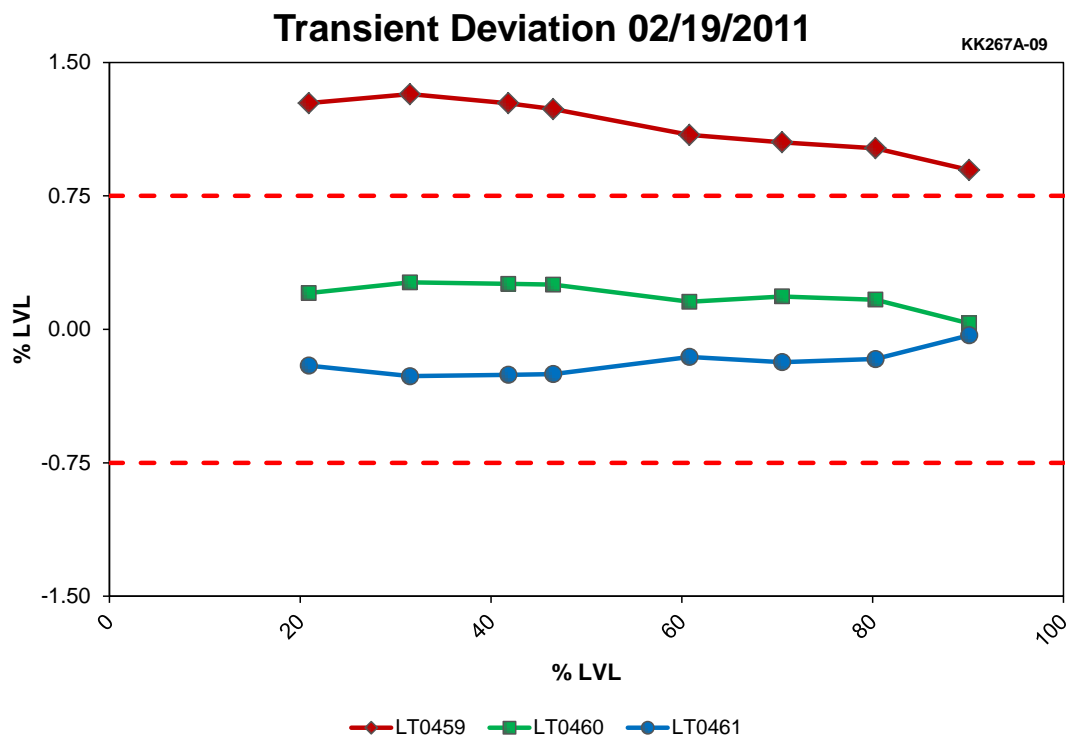
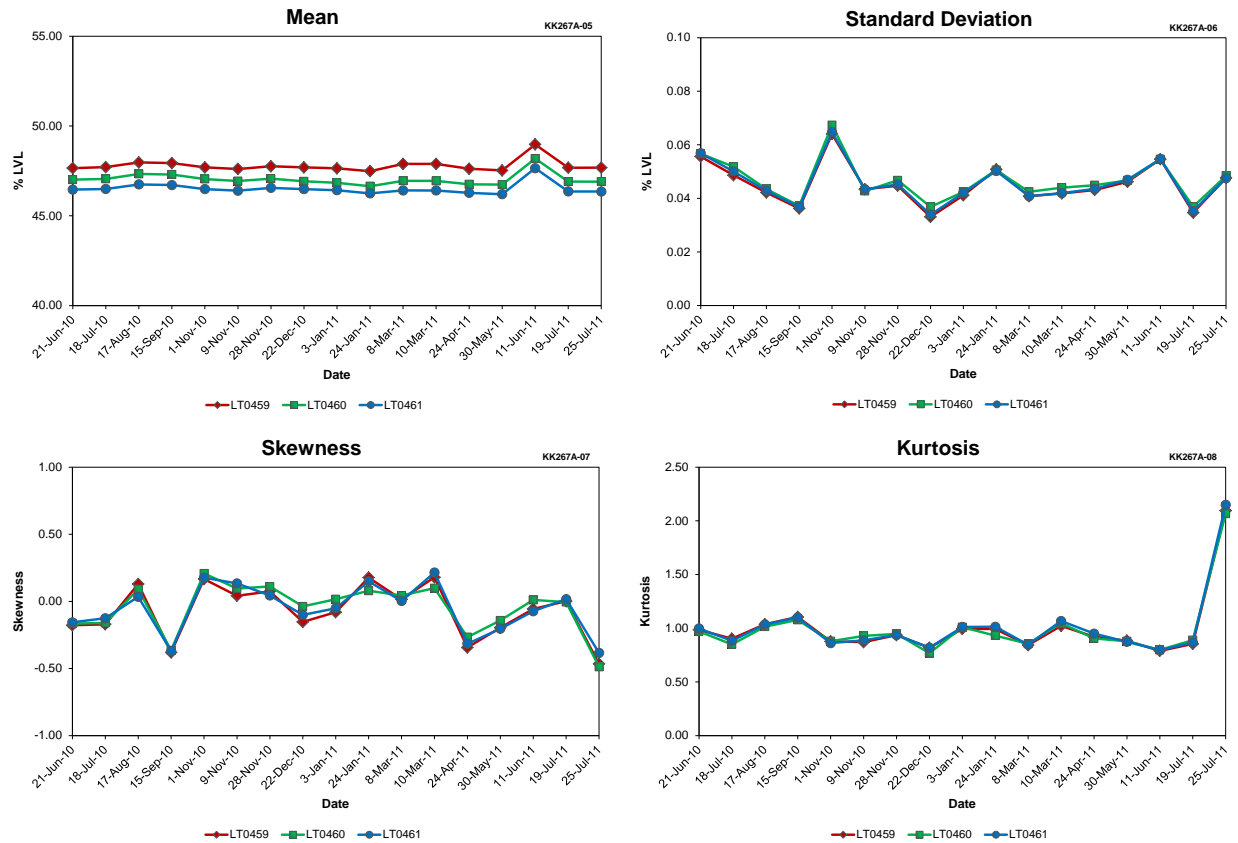


Figure E. 65 PRESSURIZER LEVEL Transient Deviation at Farley Unit 2 (Cycle 21)

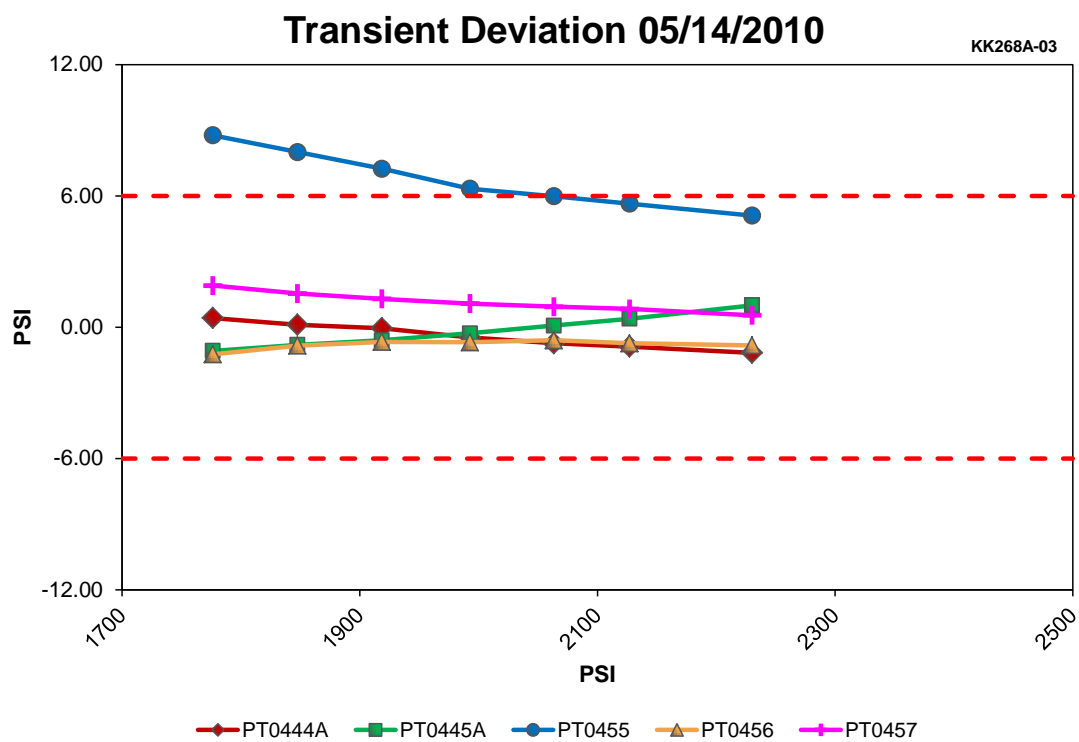




**Figure E. 66 PRESSURIZER LEVEL Data Quality Statistics at Farley Unit 2 (Cycle 21)**

**Table E.13 PRESSURIZER LEVEL Data Quality for Farley Unit 2 (Cycle 21)**

Result Type	Tag Names		
	LT0459	LT0460	LT0461
Mean	47.79	47.03	46.51
Std. Dev.	0.05	0.05	0.05
Skewness	-0.07	-0.05	-0.06
Kurtosis	1.00	0.99	1.01



**Figure E. 67 PRESSURIZER PRESSURE Transient Deviation at Farley Unit 2 (Cycle 21)**

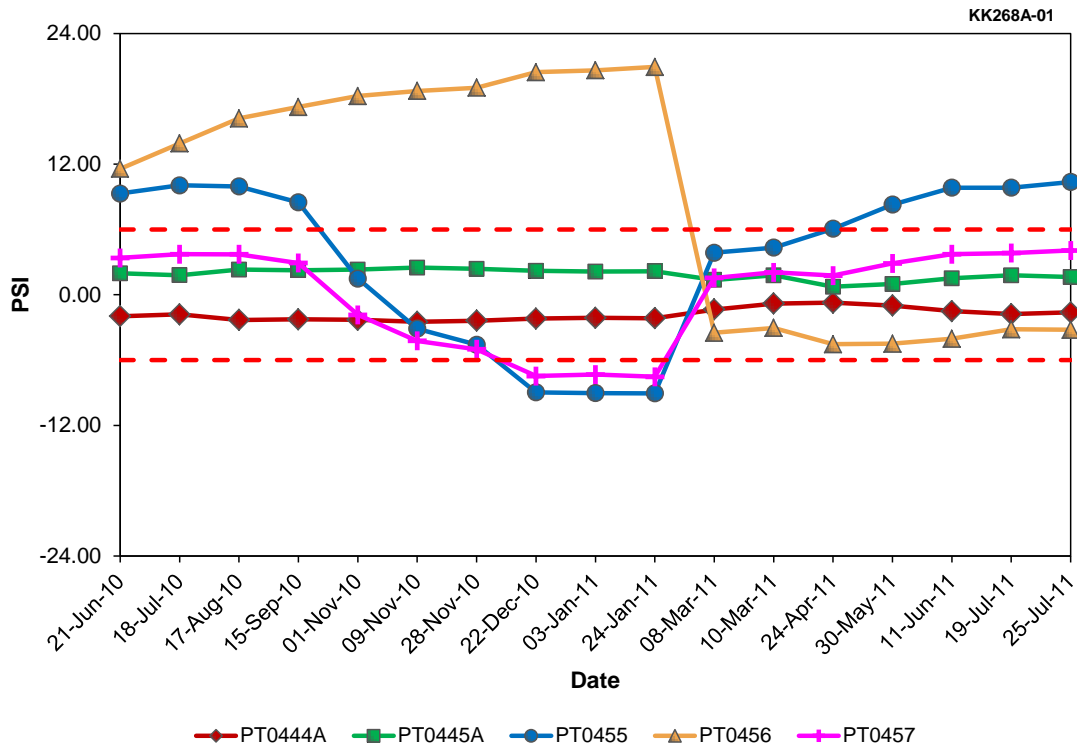


Figure E. 68 PRESSURIZER PRESSURE Steady-State Deviation at Farley Unit 2 (Cycle 21)

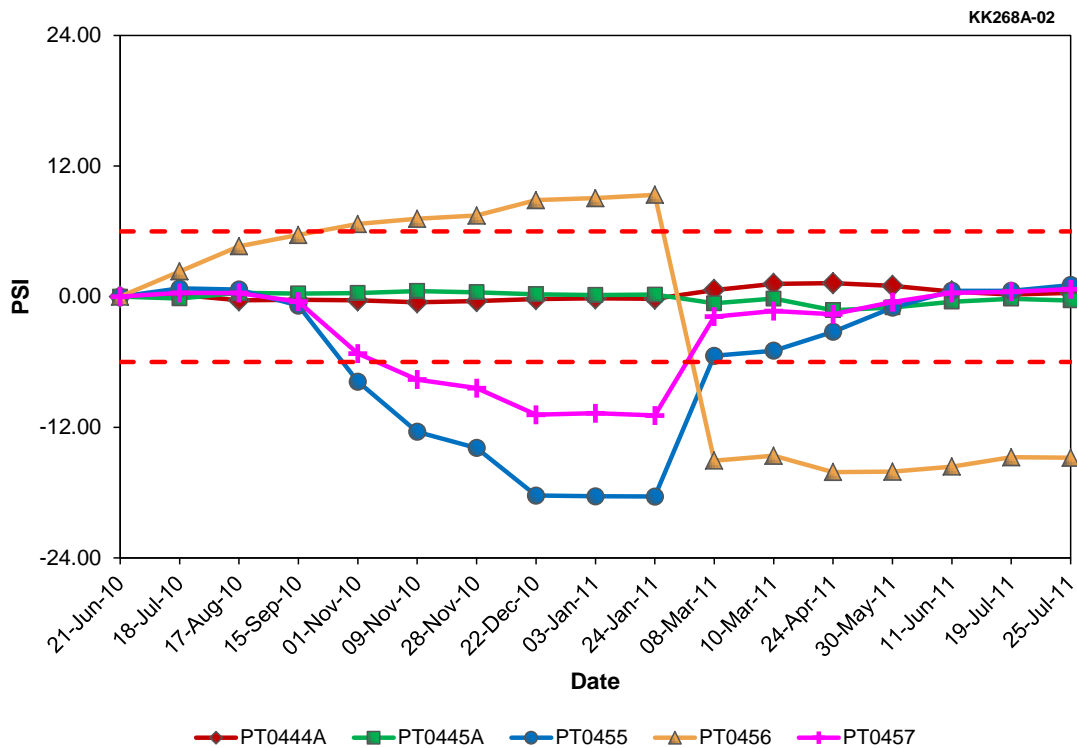


Figure E. 69 PRESSURIZER PRESSURE Steady-State Drift at Farley Unit 2 (Cycle 21)

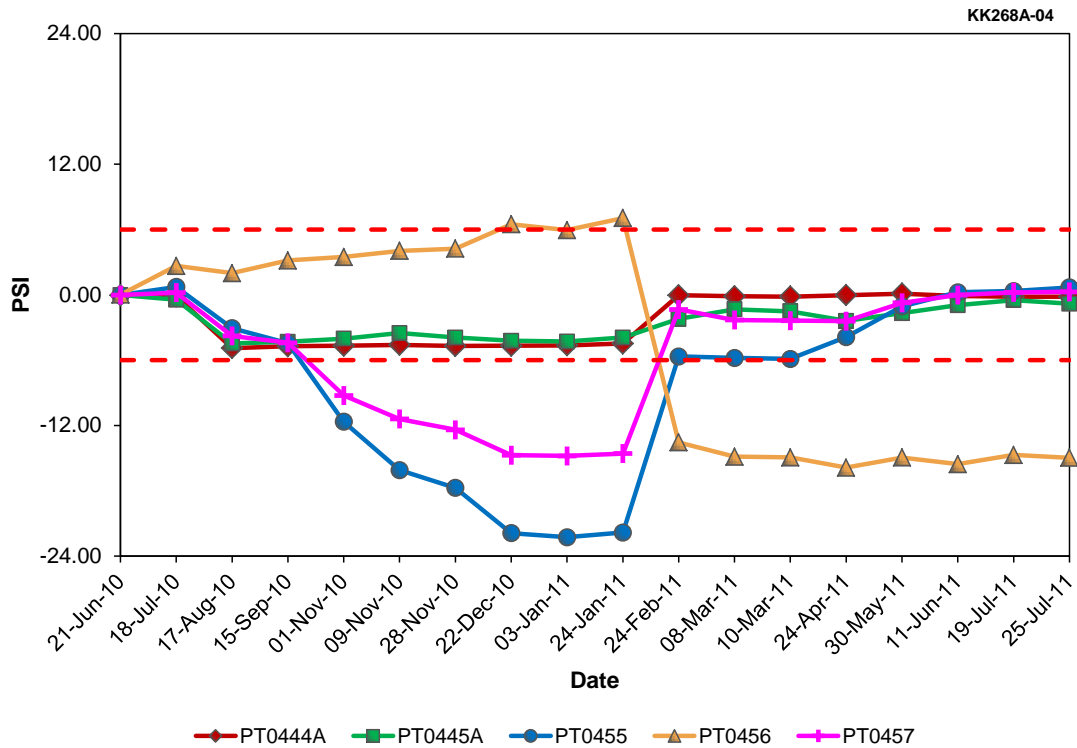


Figure E. 70 PRESSURIZER PRESSURE Steady-State Residual AAKR at Farley Unit 2 (Cycle 21)

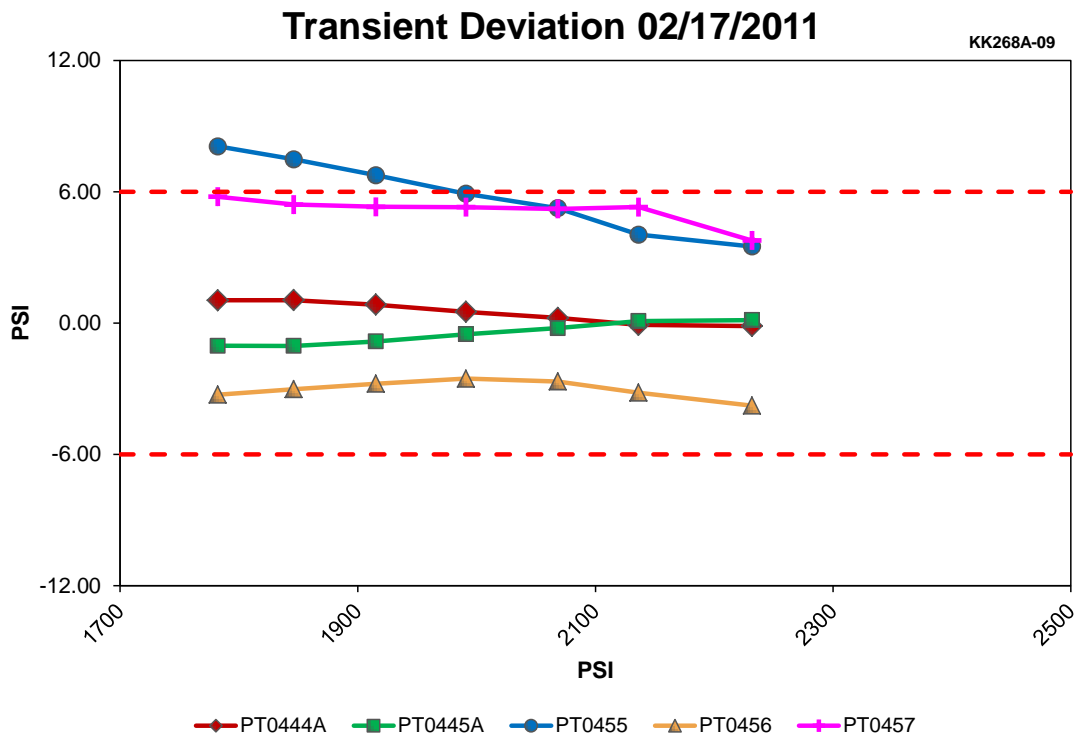
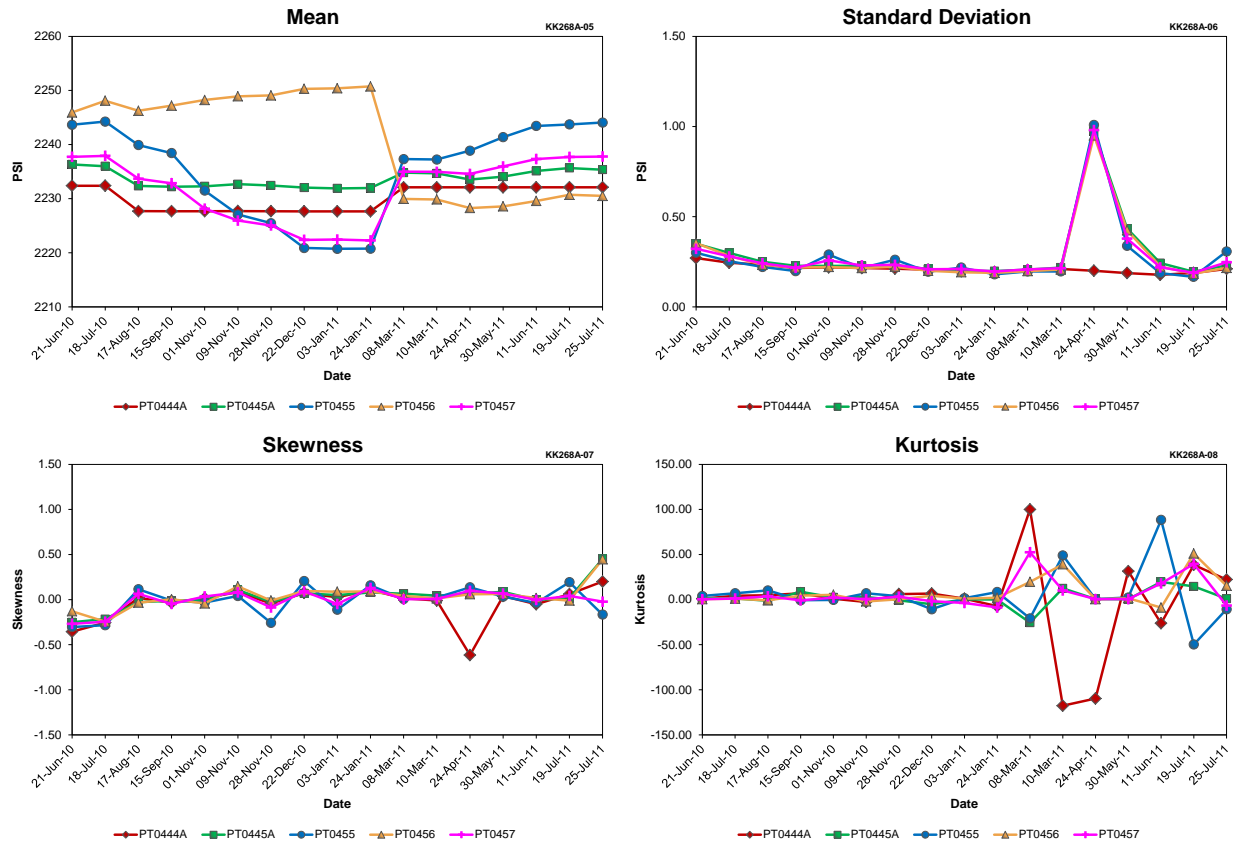


Figure E. 71 PRESSURIZER PRESSURE Transient Deviation at Farley Unit 2 (Cycle 21)



**Figure E. 72 PRESSURIZER PRESSURE Data Quality Statistics at Farley Unit 2 (Cycle 21)**

**Table E. 14 PRESSURIZER PRESSURE Data Quality for Farley Unit 2 (Cycle 21)**

Result Type	Tag Names				
	PT0444A	PT0445A	PT0455	PT0456	PT0457
Mean	2230.05	2233.73	2235.22	2240.74	2231.87
Std. Dev.	0.21	0.29	0.28	0.28	0.28
Skewness	-0.04	0.03	-0.02	0.04	-0.01
Kurtosis	-2.29	1.98	5.27	7.93	6.53

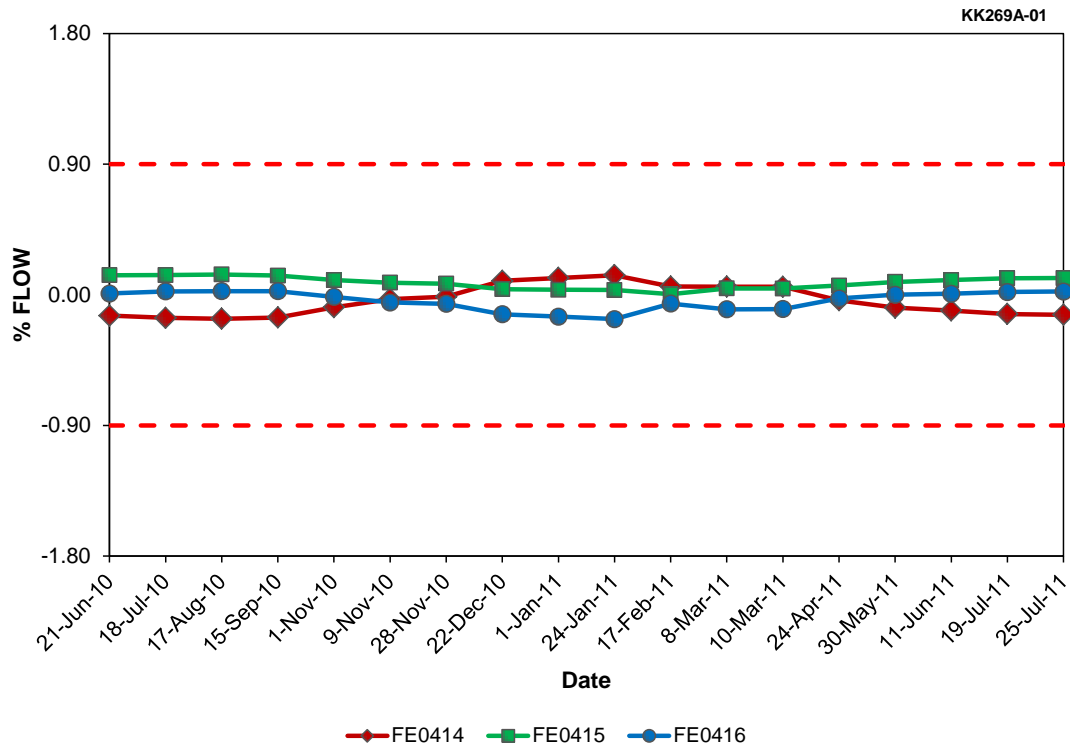


Figure E.73 RCS LOOP A FLOW Steady-State Deviation at Farley Unit 2 (Cycle 21)

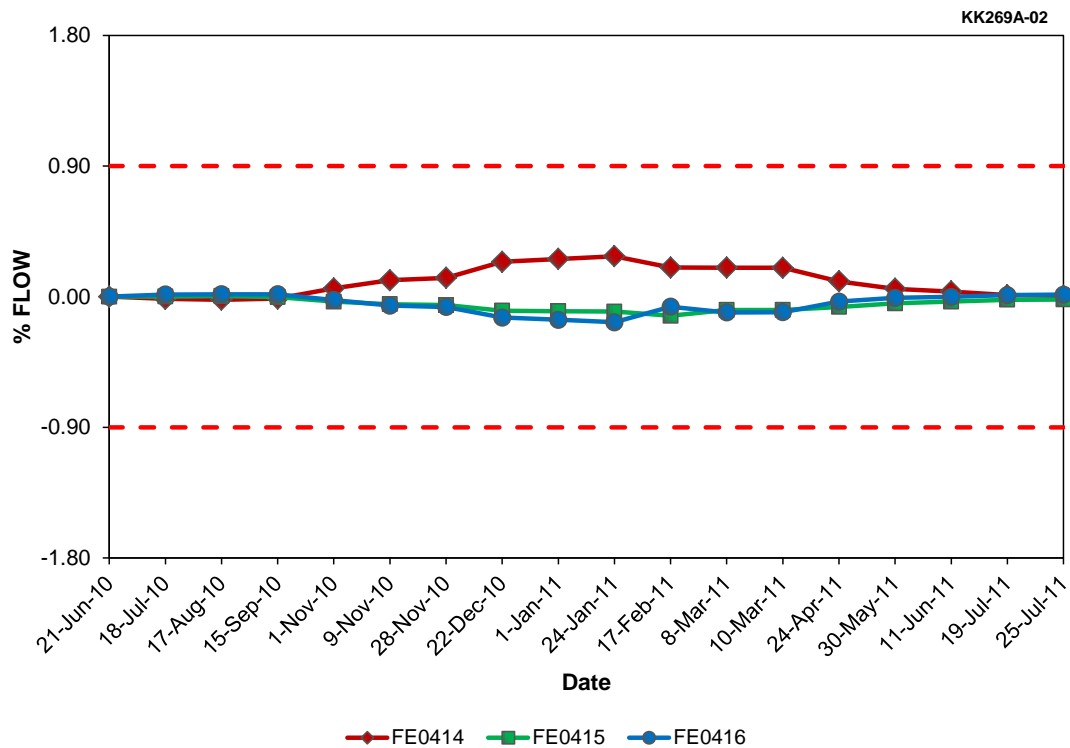
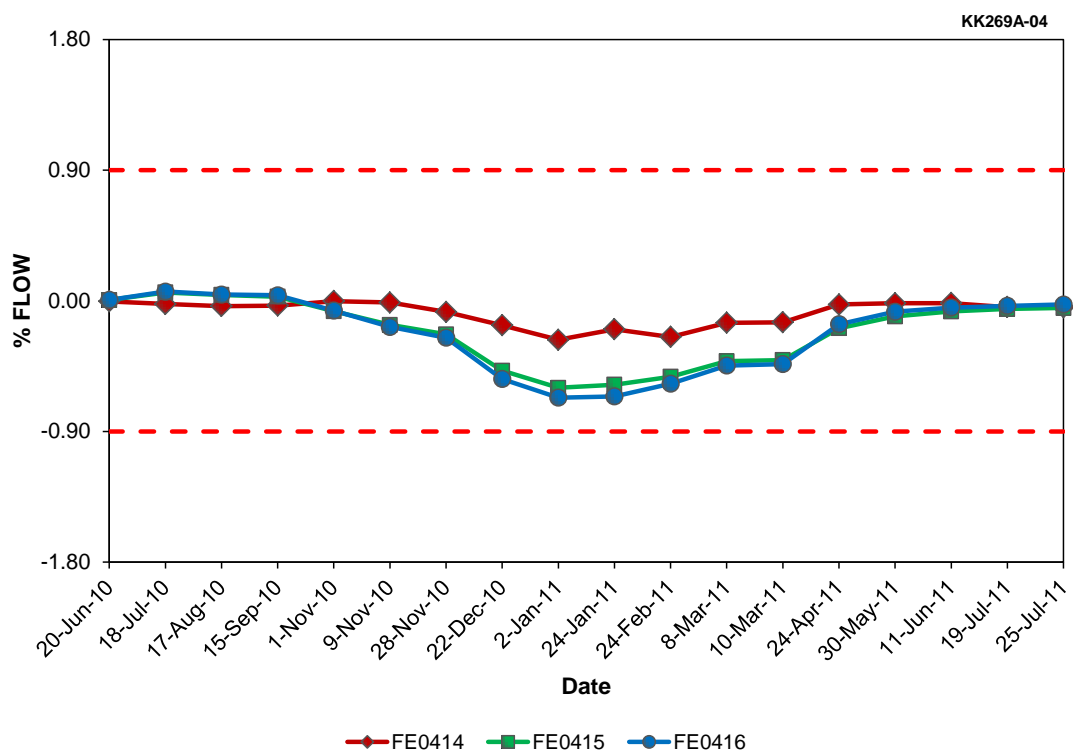
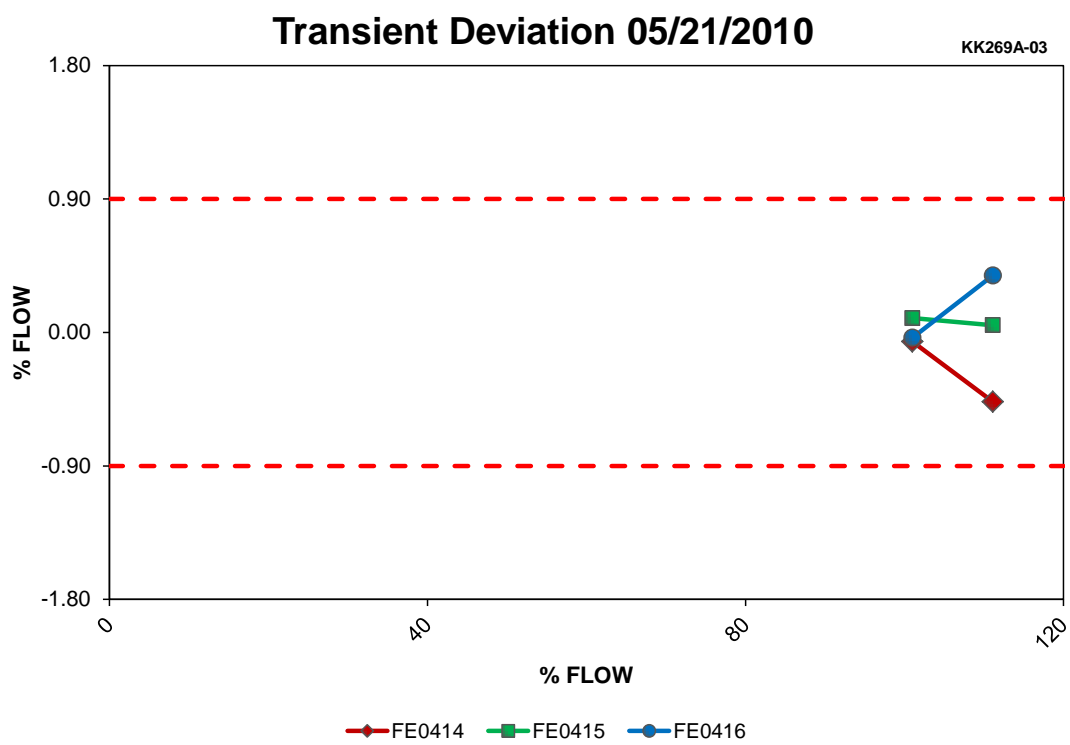


Figure E. 74 RCS LOOP A FLOW Steady-State Drift at Farley Unit 2 (Cycle 21)



**Figure E. 75 RCS LOOP A FLOW Steady-State Residual AAKR at Farley Unit 2 (Cycle 21)**



**Figure E. 76 RCS LOOP A FLOW Transient Deviation at Farley Unit 2 (Cycle 21)**



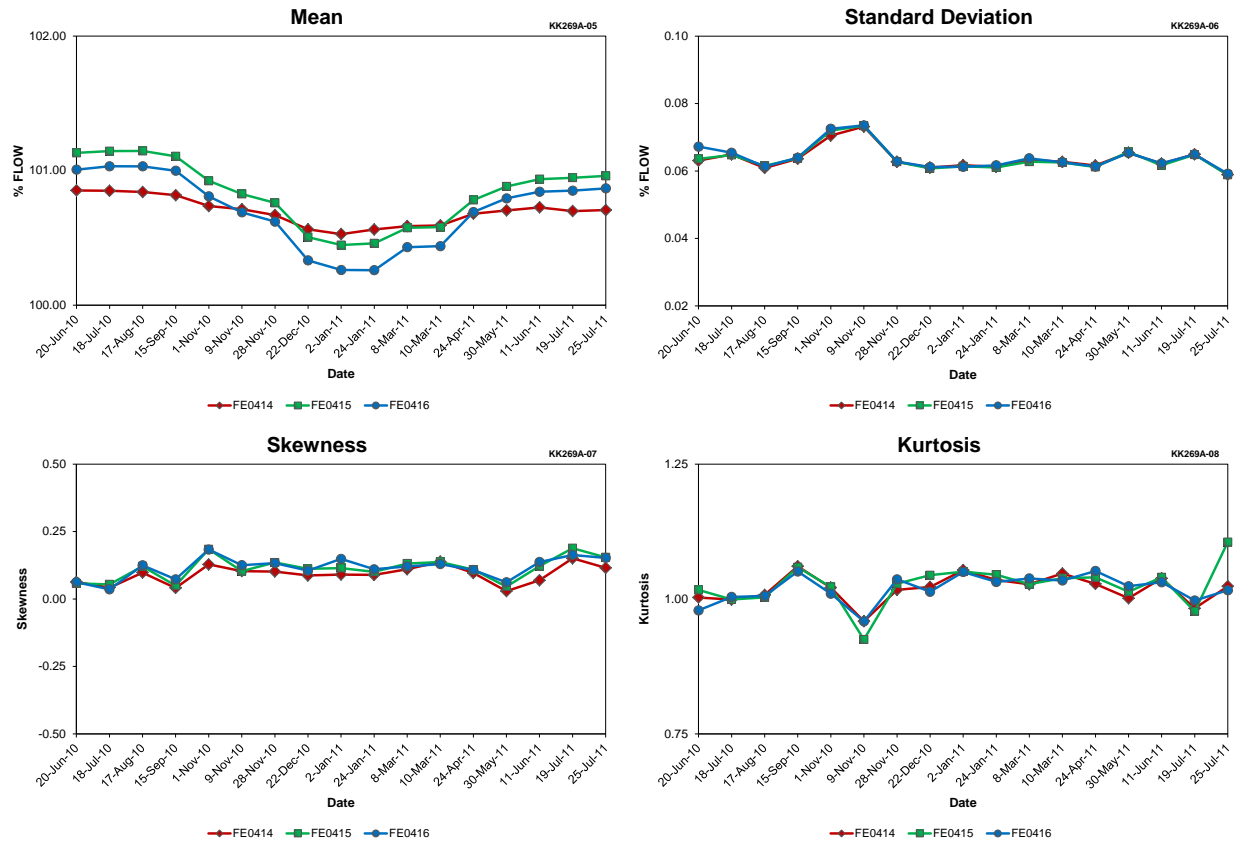
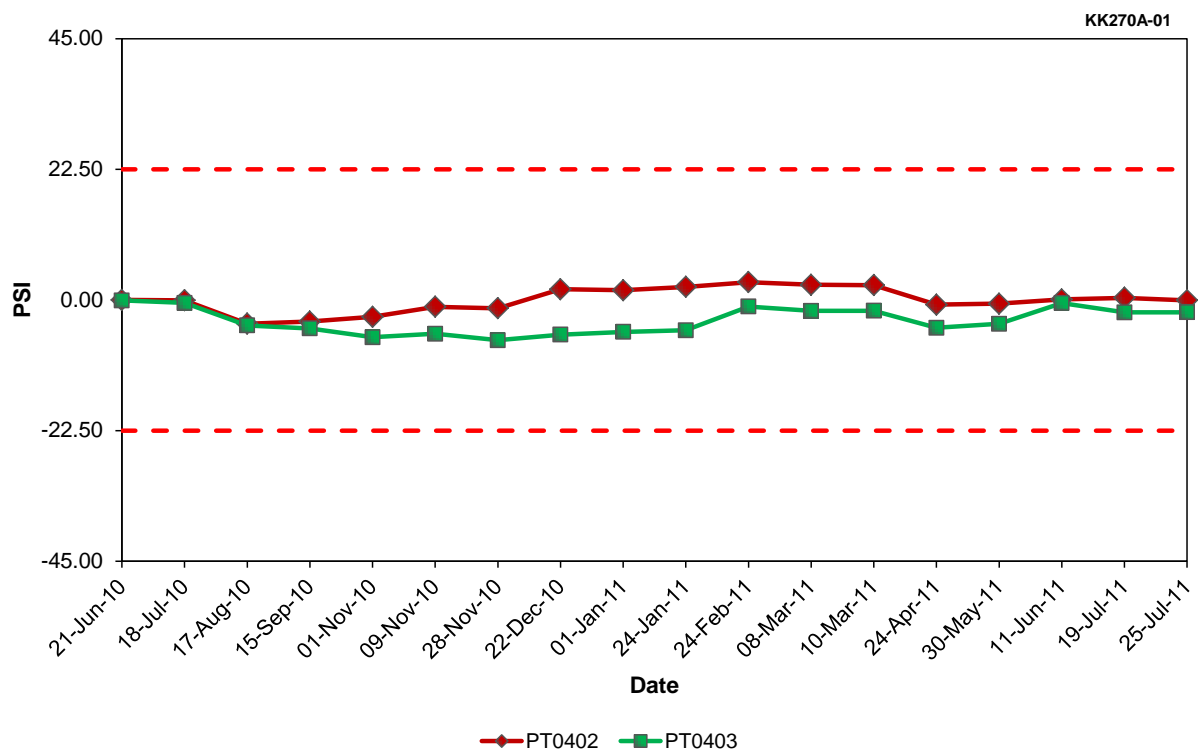


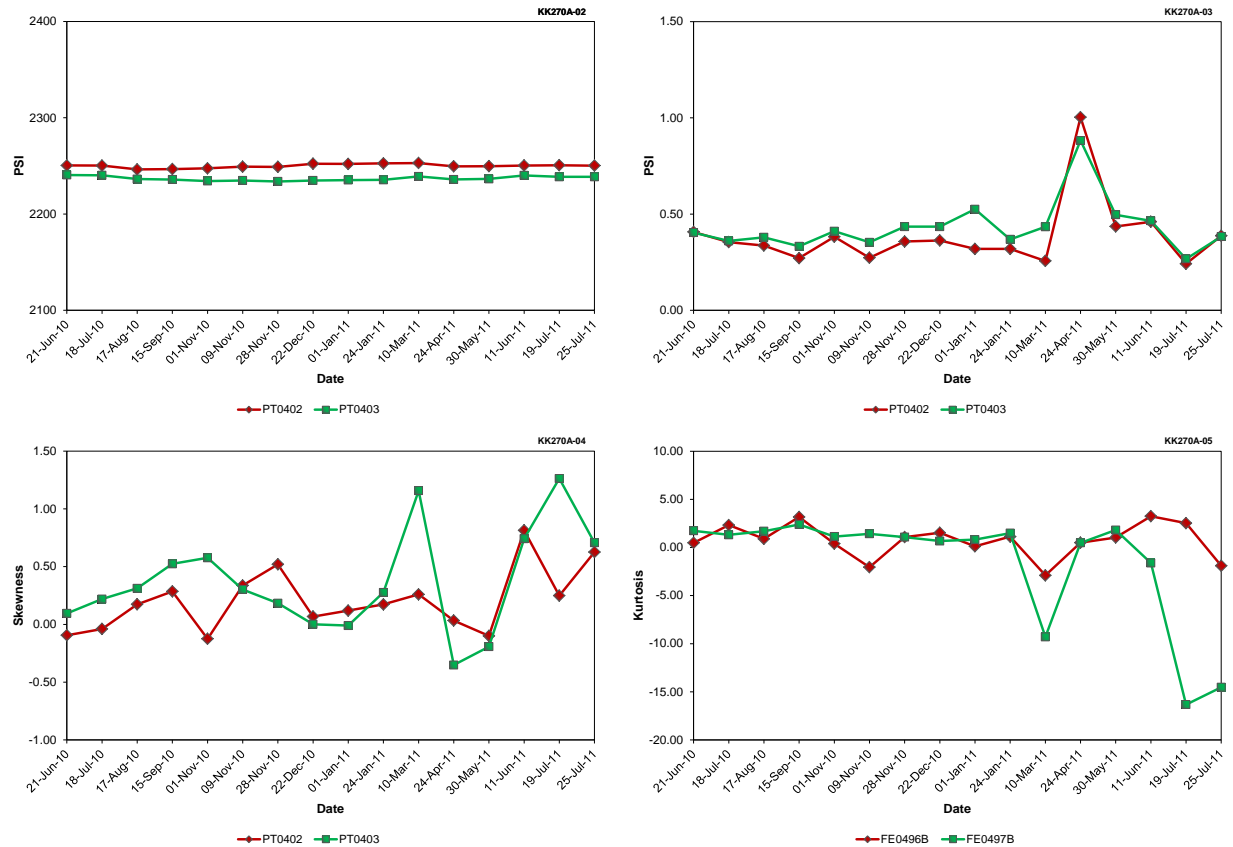
Figure E. 77 RCS LOOP A FLOW Data Quality Statistics at Farley Unit 2 (Cycle 21)

Table E.15 RCS LOOP A FLOW Data Quality for Farley Unit 2 (Cycle 21)

Result Type	Tag Names		
	FE0414	FE0415	FE0416
Mean	100.70	100.83	100.70
Std. Dev.	0.06	0.06	0.06
Skewness	0.09	0.11	0.12
Kurtosis	1.02	1.03	1.02



**Figure E.78 RCS WIDE RANGE PRESSURE Steady-State Residual AAKR at Farley Unit 2 (Cycle 21)**



**Figure E. 79 RCS WIDE RANGE PRESSURE Data Quality Statistics at Farley Unit 2 (Cycle 21)**

**Table E.16 RCS WIDE RANGE PRESSURE Data Quality for Farley Unit 2 (Cycle 21)**

Result Type	Tag Names	
	PT0402	PT0403
Mean	2249.96	2249.96
Std. Dev.	0.39	0.39
Skewness	0.21	0.21
Kurtosis	0.72	0.72

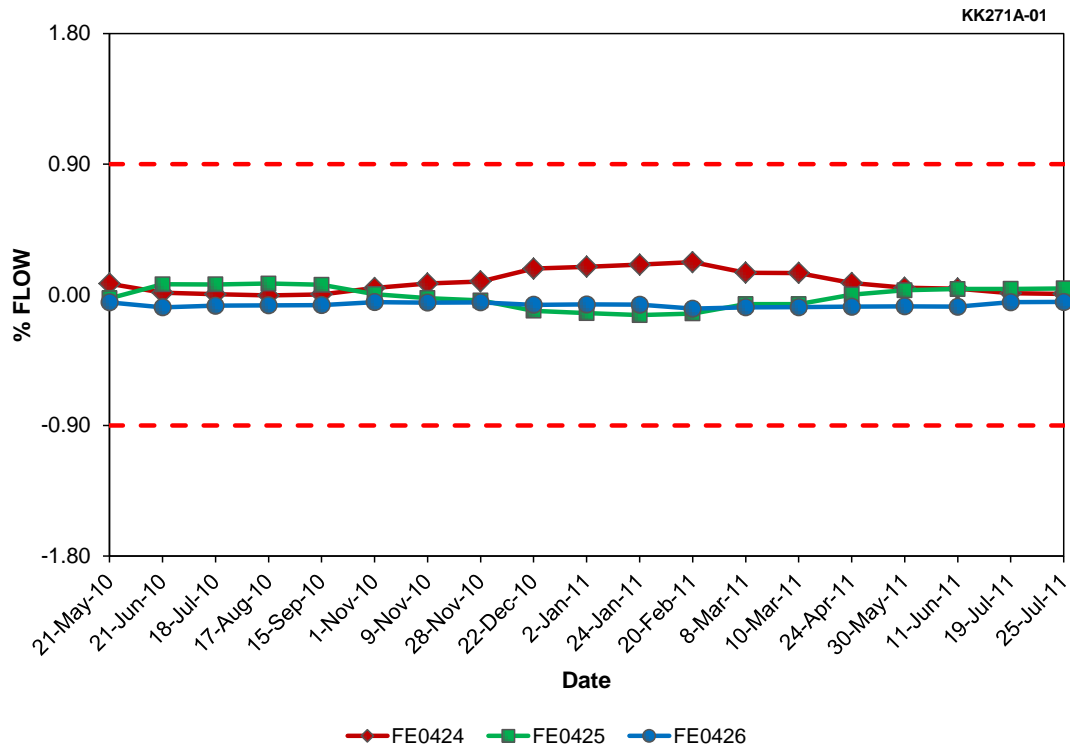


Figure E.80 RCS LOOP B FLOW Steady-State Deviation at Farley Unit 2 (Cycle 21)

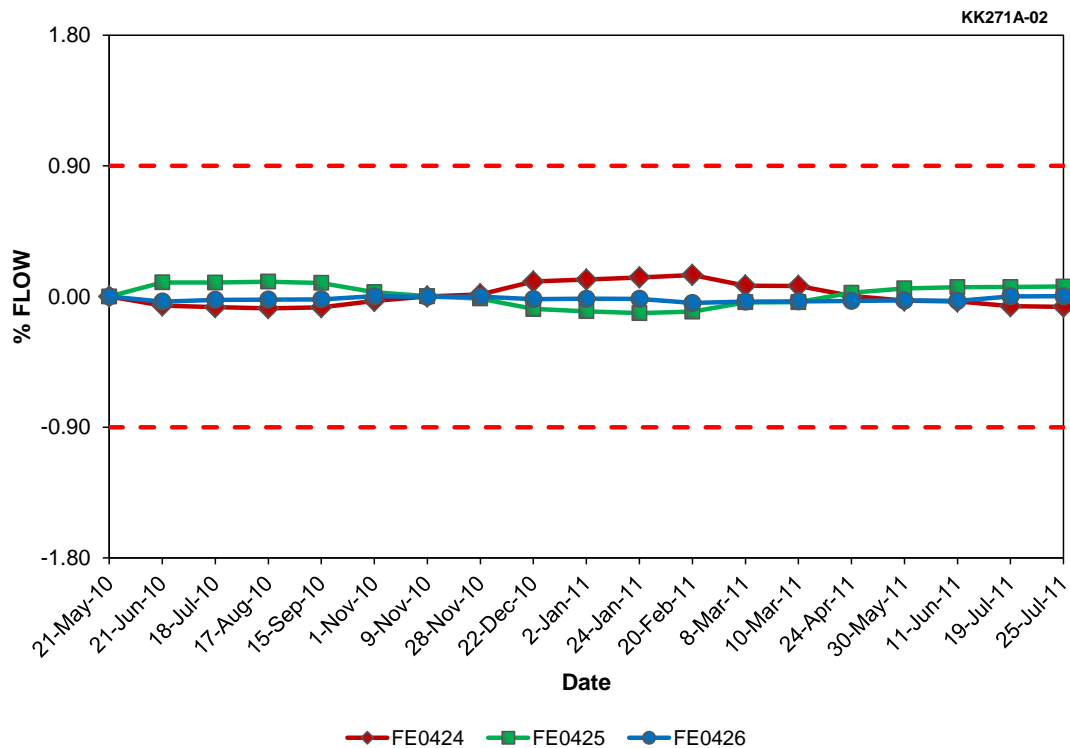
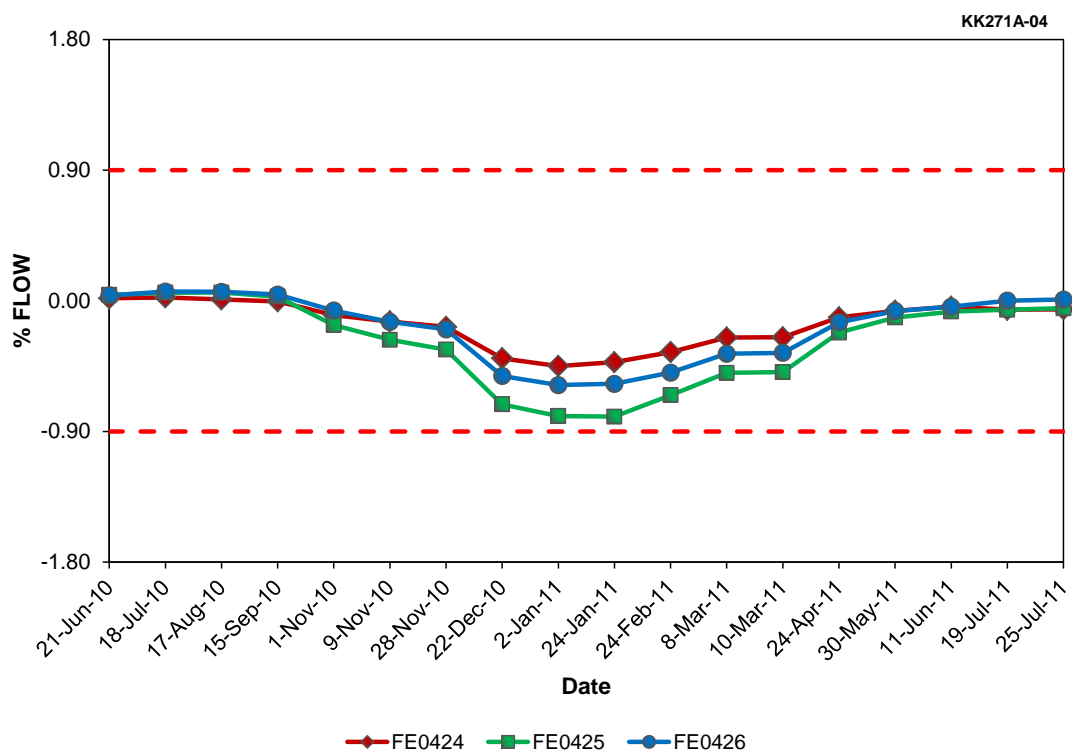
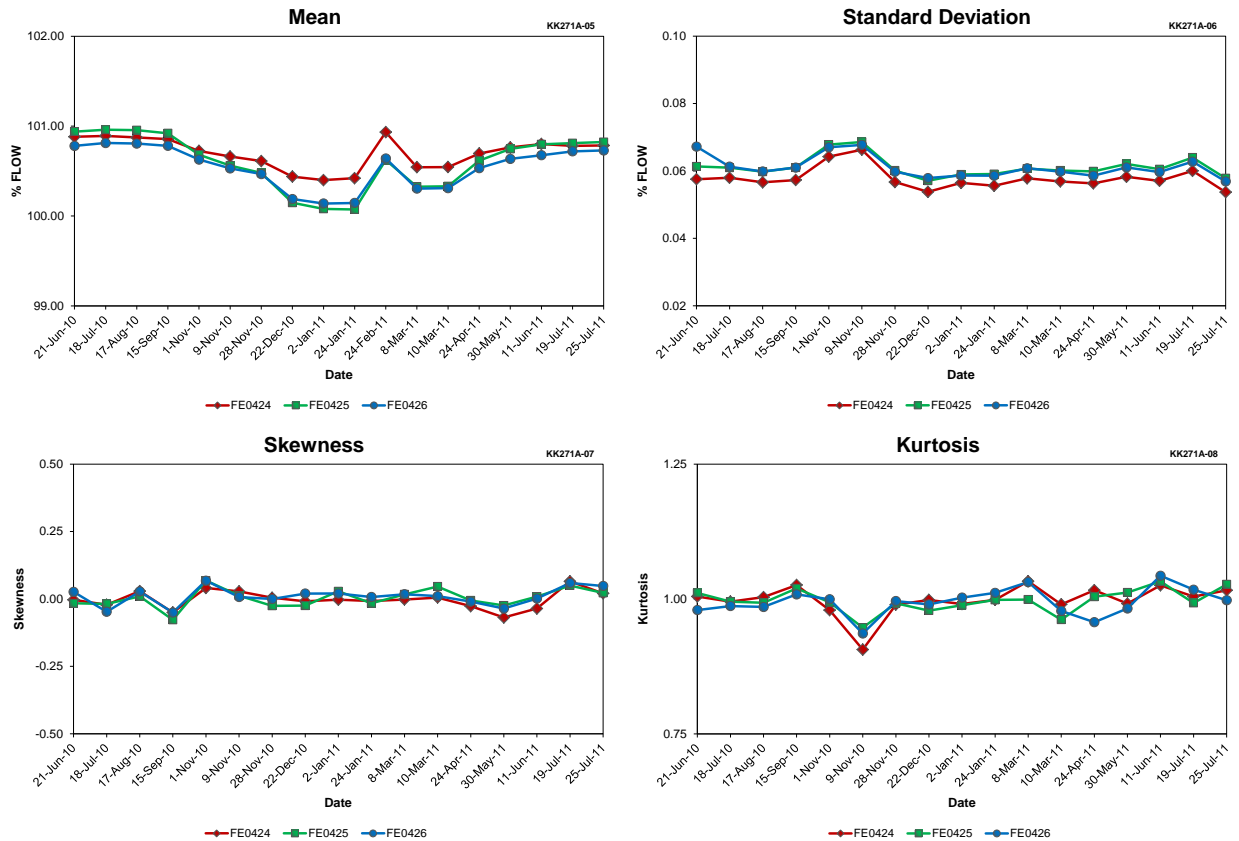


Figure E. 81 RCS LOOP B FLOW Steady-State Drift at Farley Unit 2 (Cycle 21)



**Figure E. 82 RCS LOOP B FLOW Steady-State Residual AAKR at Farley Unit 2 (Cycle 21)**



**Figure E. 83 RCS LOOP B FLOW Data Quality Statistics at Farley Unit 2 (Cycle 21)**

**Table E.17 RCS LOOP B FLOW Data Quality for Farley Unit 2 (Cycle 21)**

Result Type	Tag Names		
	FE0424	FE0425	FE0426
Mean	100.70	100.60	100.55
Std. Dev.	0.06	0.06	0.06
Skewness	0.00	0.00	0.01
Kurtosis	1.00	1.00	0.99



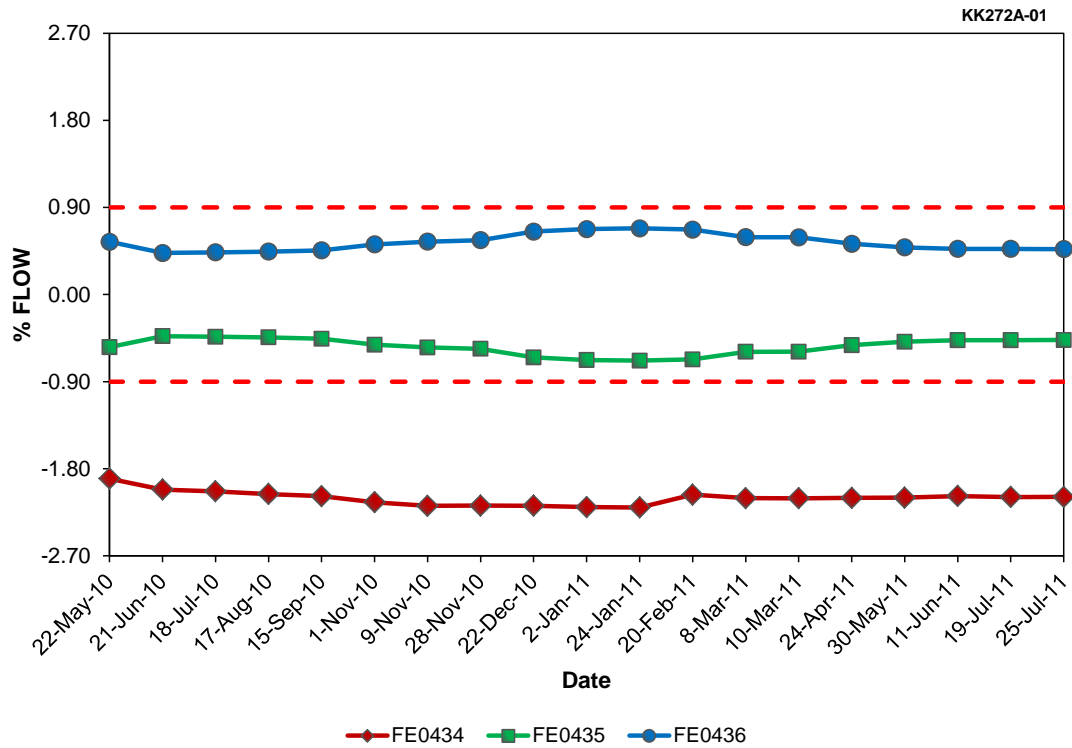


Figure E.84 RCS LOOP C FLOW Steady-State Deviation at Farley Unit 2 (Cycle 21)

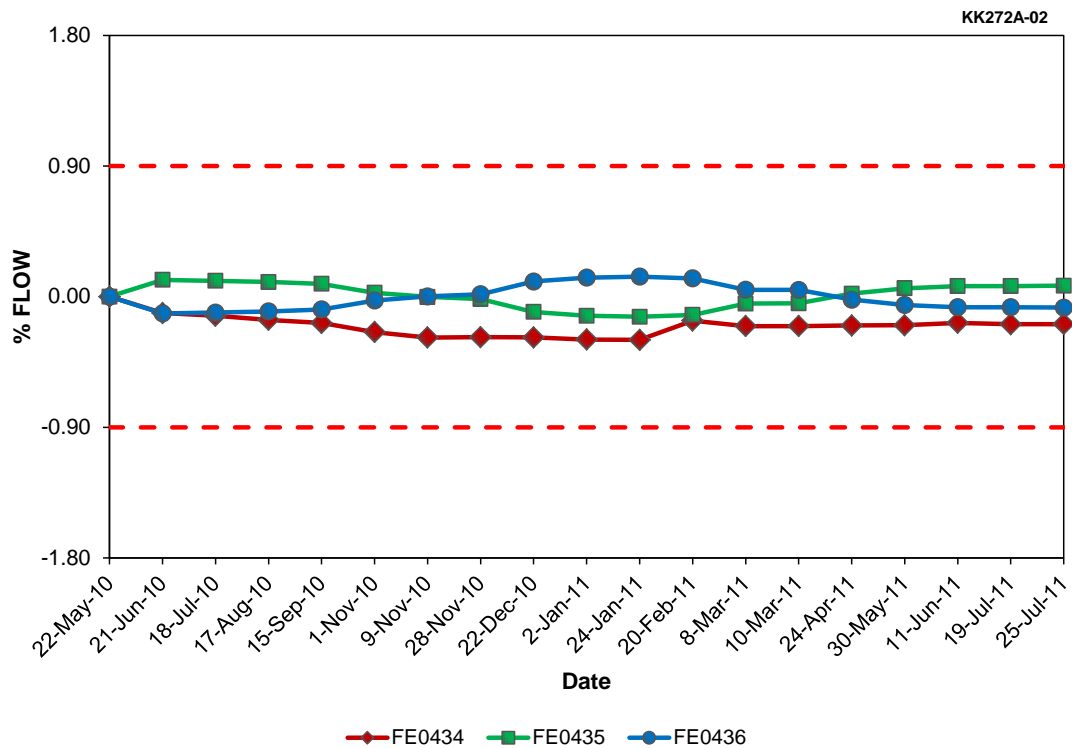
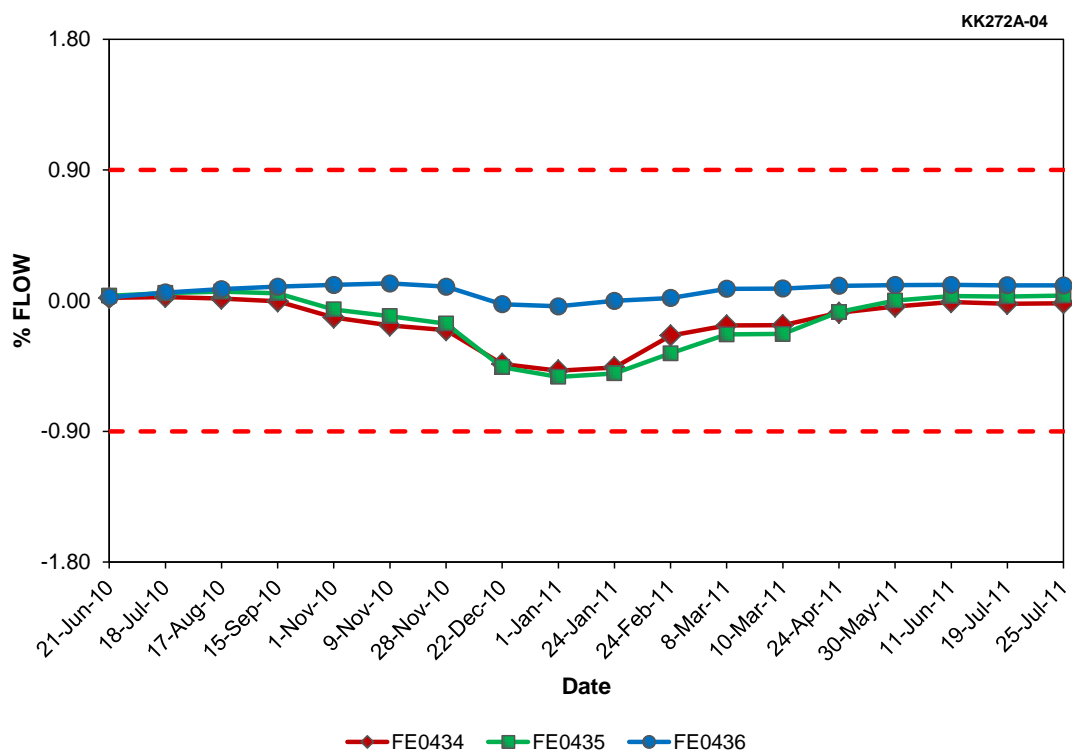


Figure E. 85 RCS LOOP C FLOW Steady-State Drift at Farley Unit 2 (Cycle 21)





**Figure E. 86 RCS LOOP C FLOW Steady-State Residual AAKR at Farley Unit 2 (Cycle 21)**

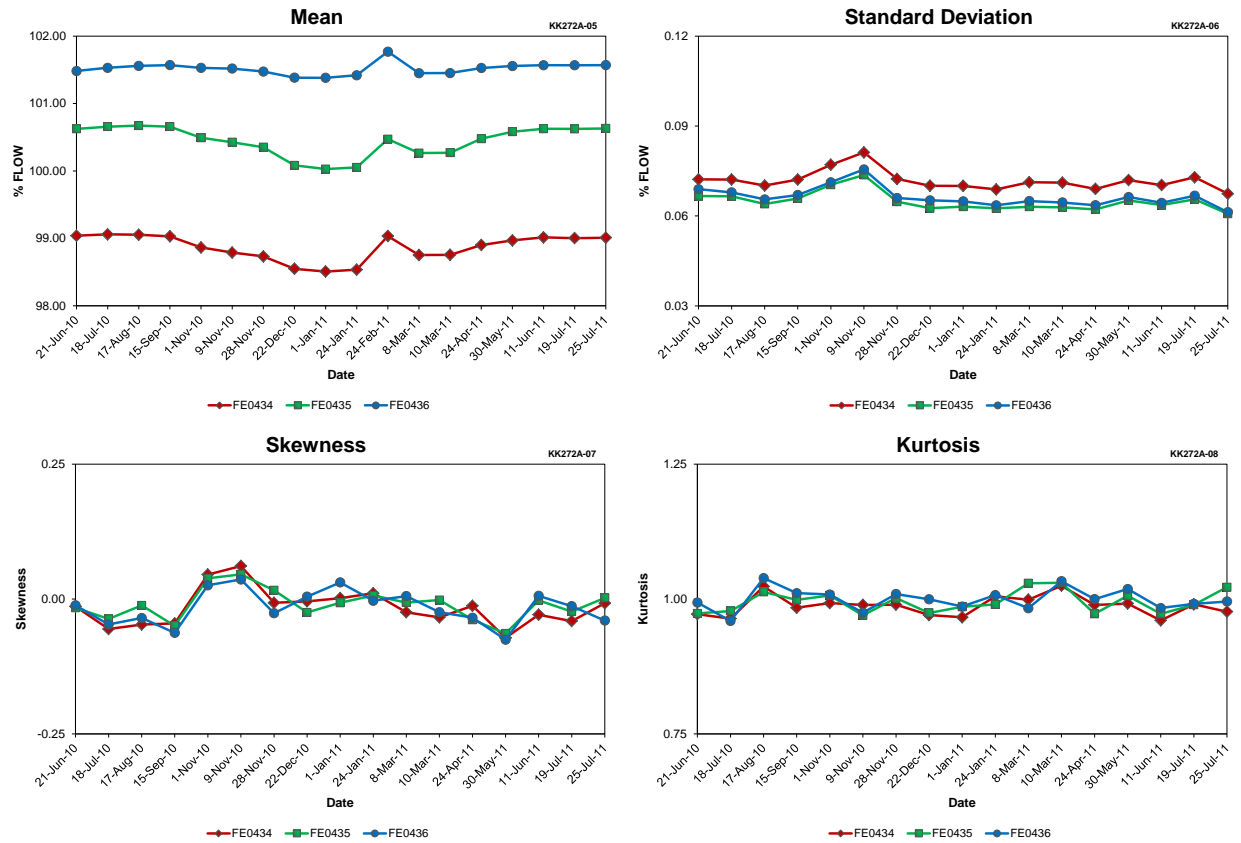
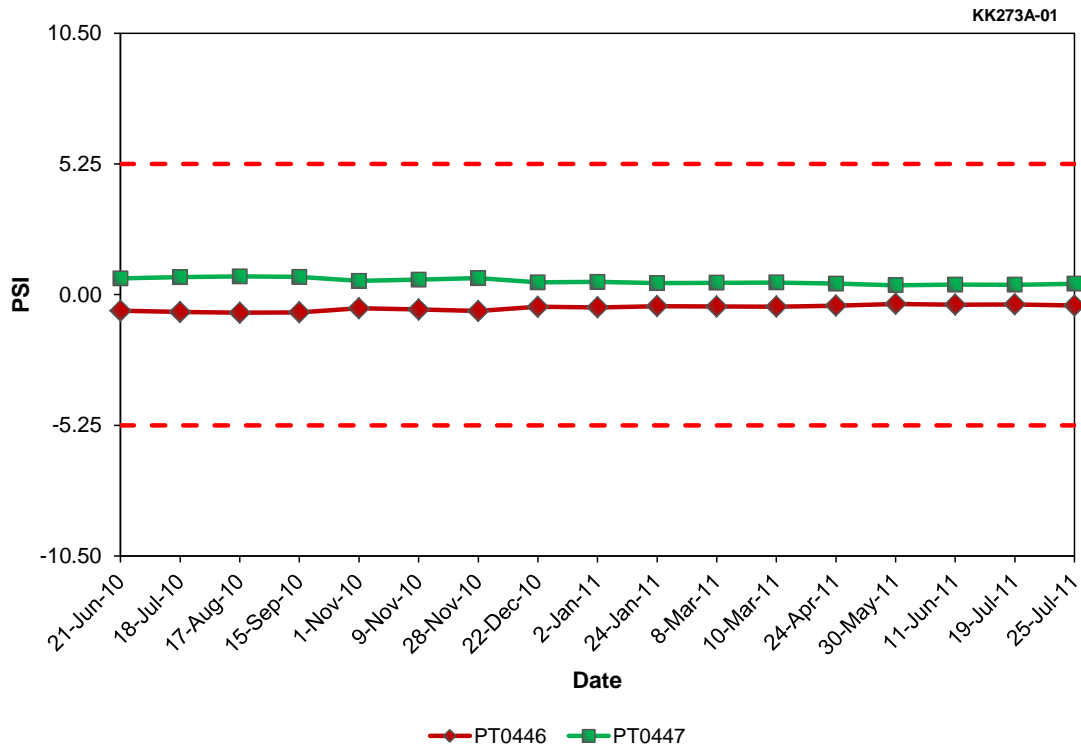


Figure E. 87 RCS LOOP C FLOW Data Quality Statistics at Farley Unit 2 (Cycle 21)

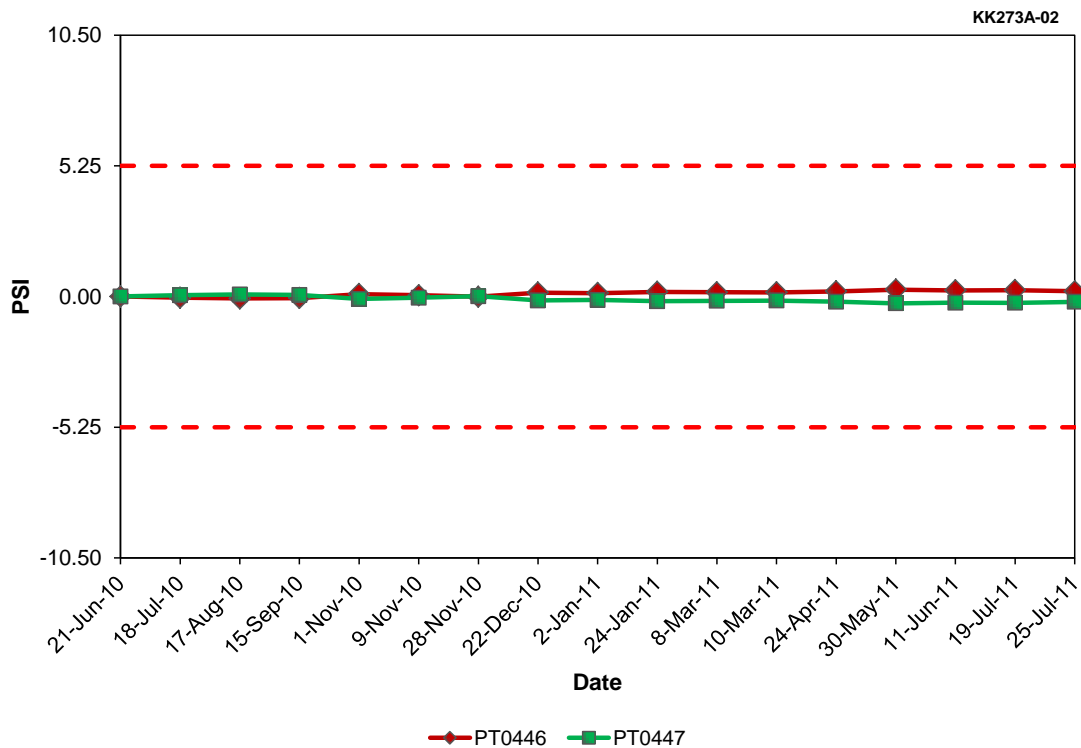
Table E.18 RCS LOOP C FLOW Data Quality for Farley Unit 2 (Cycle 21)

Result Type	Tag Names		
	FE0434	FE0435	FE0426
Mean	98.87	100.44	101.52
Std. Dev.	0.07	0.06	0.07
Skewness	-0.02	-0.01	-0.02
Kurtosis	0.99	0.99	1.00

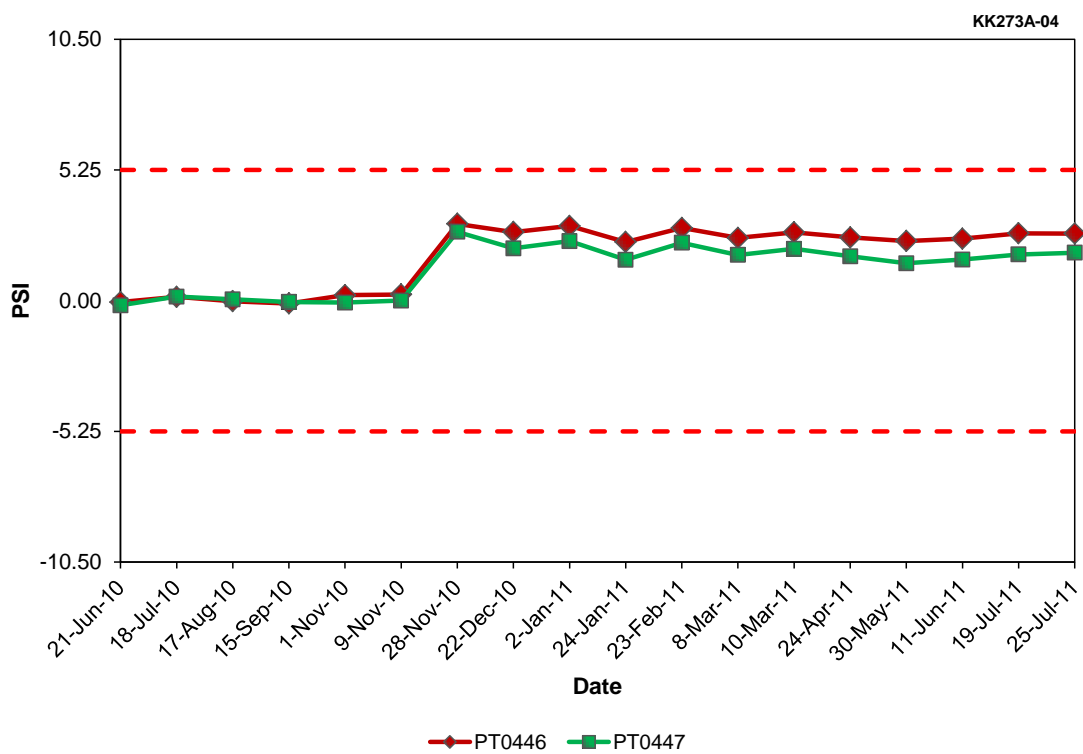




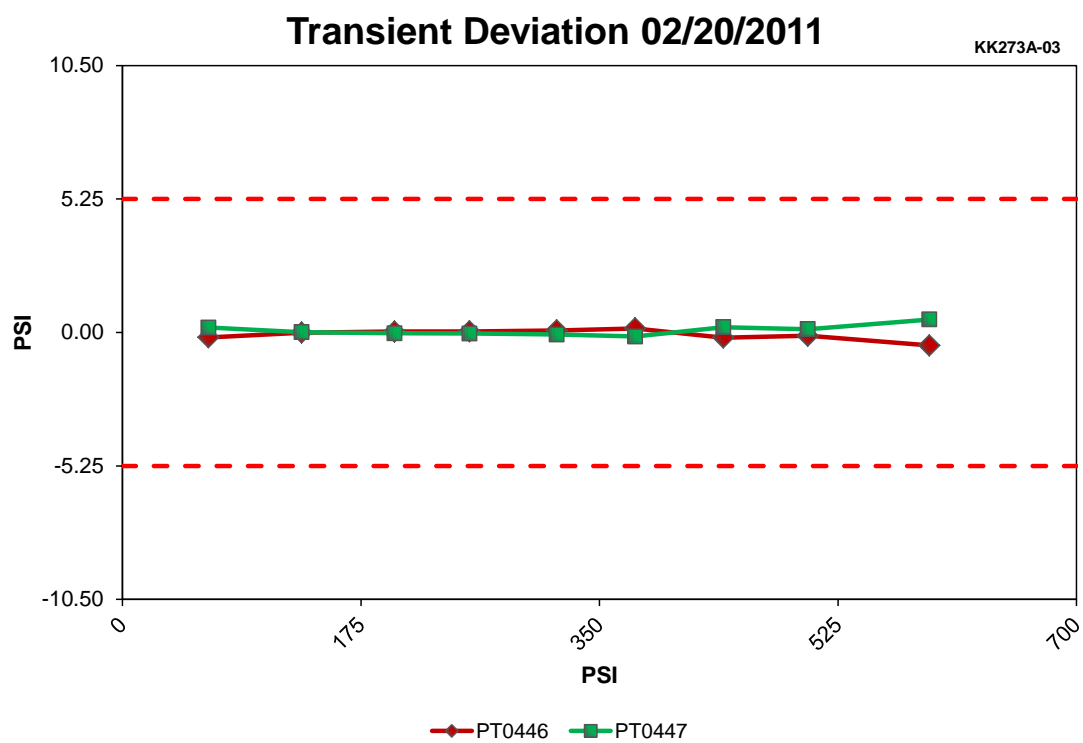
**Figure E. 88 TBIN FIRST STAGE PRESSURE Steady-State Deviation at Farley Unit 2 (Cycle 21)**



**Figure E. 89 TBIN FIRST STAGE PRESSURE Steady-State Drift at Farley Unit 2 (Cycle 21)**



**Figure E. 90 TBIN FIRST STAGE PRESSURE Steady-State Residual AAKR at Farley Unit 2 (Cycle 21)**



**Figure E. 91 TBIN FIRST STAGE PRESSURE Transient Deviation at Farley Unit 2 (Cycle 21)**

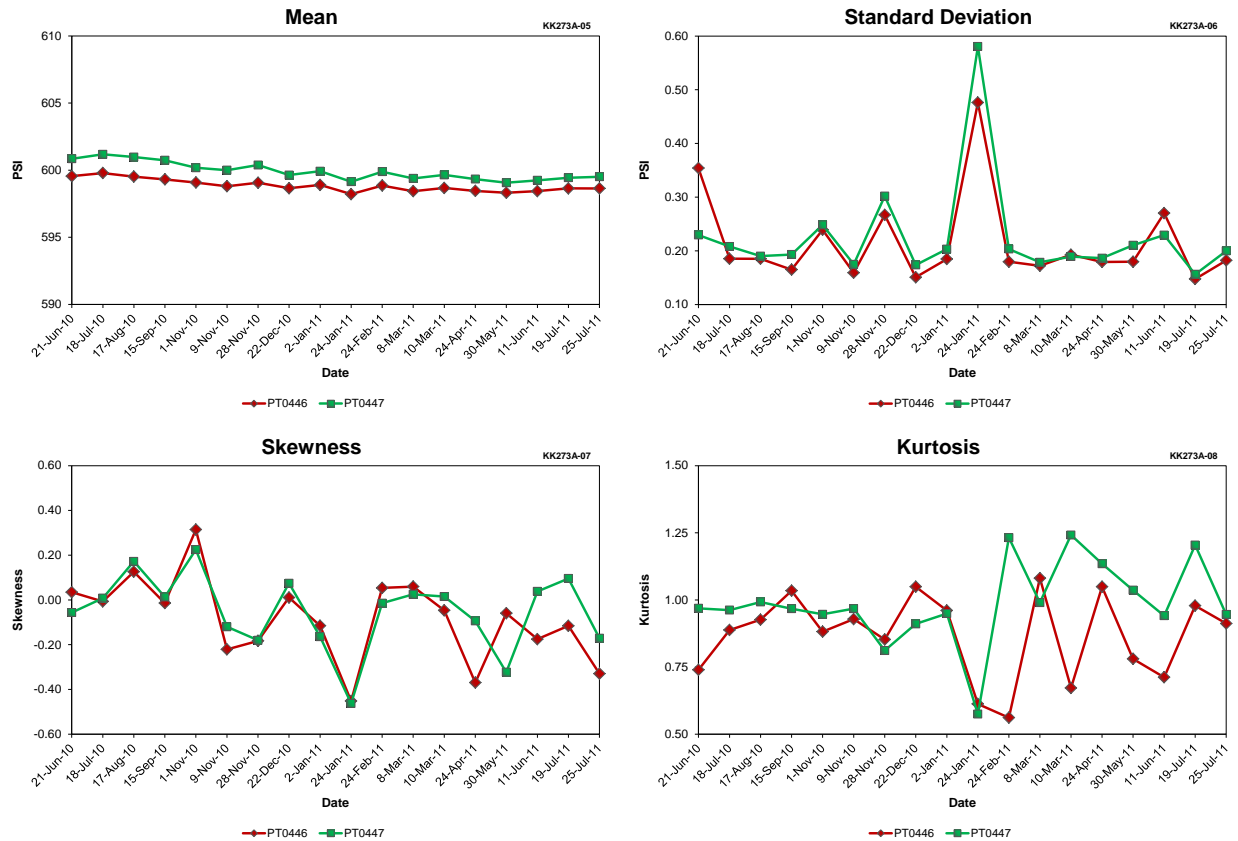


Figure E. 92 TBIN FIRST STAGE PRESSURE Data Quality Statistics at Farley Unit 2 (Cycle 21)

Table E. 19 TBIN FIRST STAGE PRESSURE Data Quality for Farley Unit 2 (Cycle 21)

Result Type	Tag Names	
	PT0446	PT0447
Mean	598.85	599.92
Std. Dev.	0.21	0.23
Skewness	-0.08	-0.05
Kurtosis	0.87	0.99

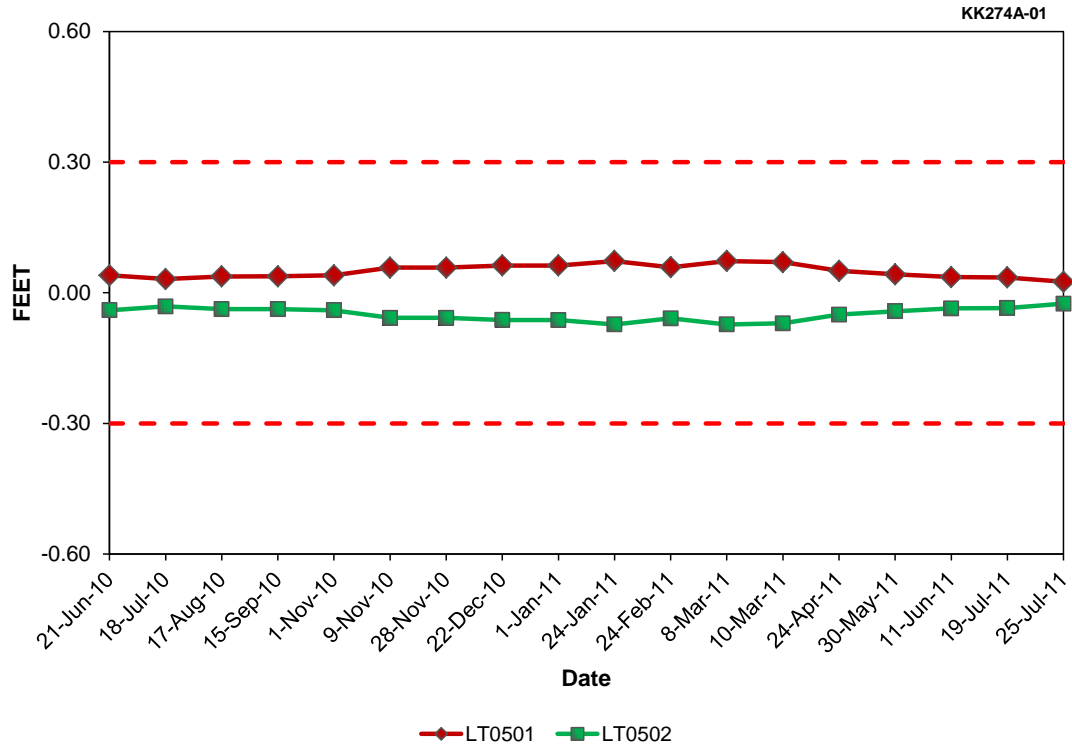


Figure E. 93 RWST LVL Steady-State Deviation at Farley Unit 2 (Cycle 21)

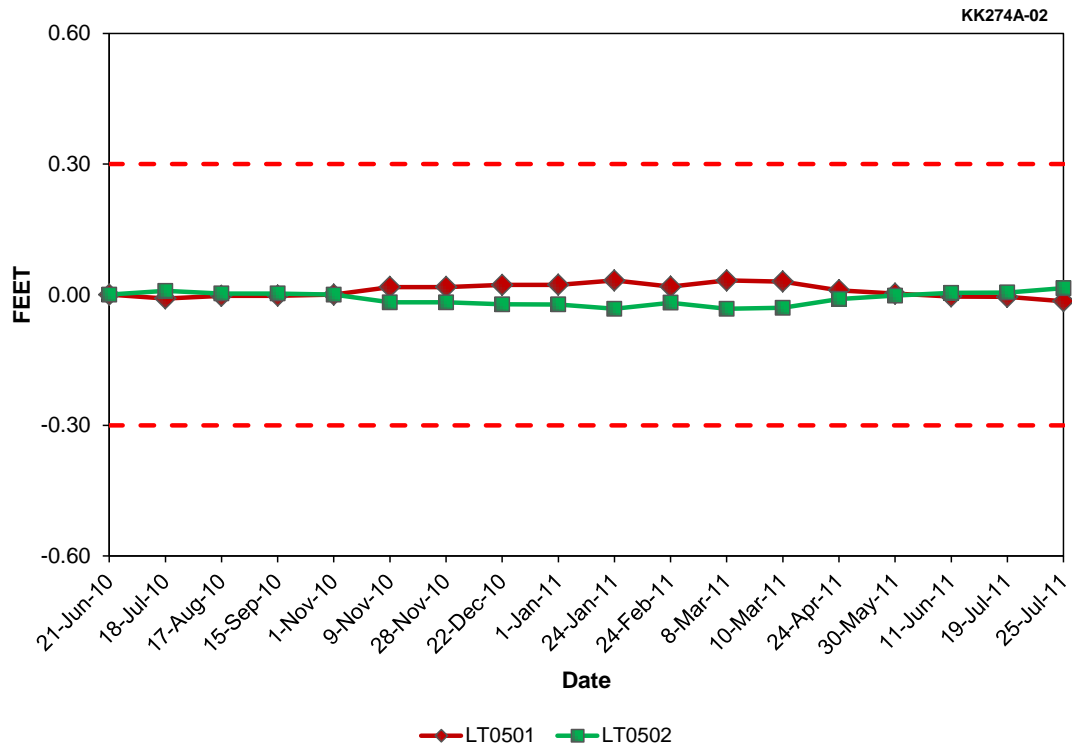


Figure E. 94 RWST LVL Steady-State Drift at Farley Unit 2 (Cycle 21)



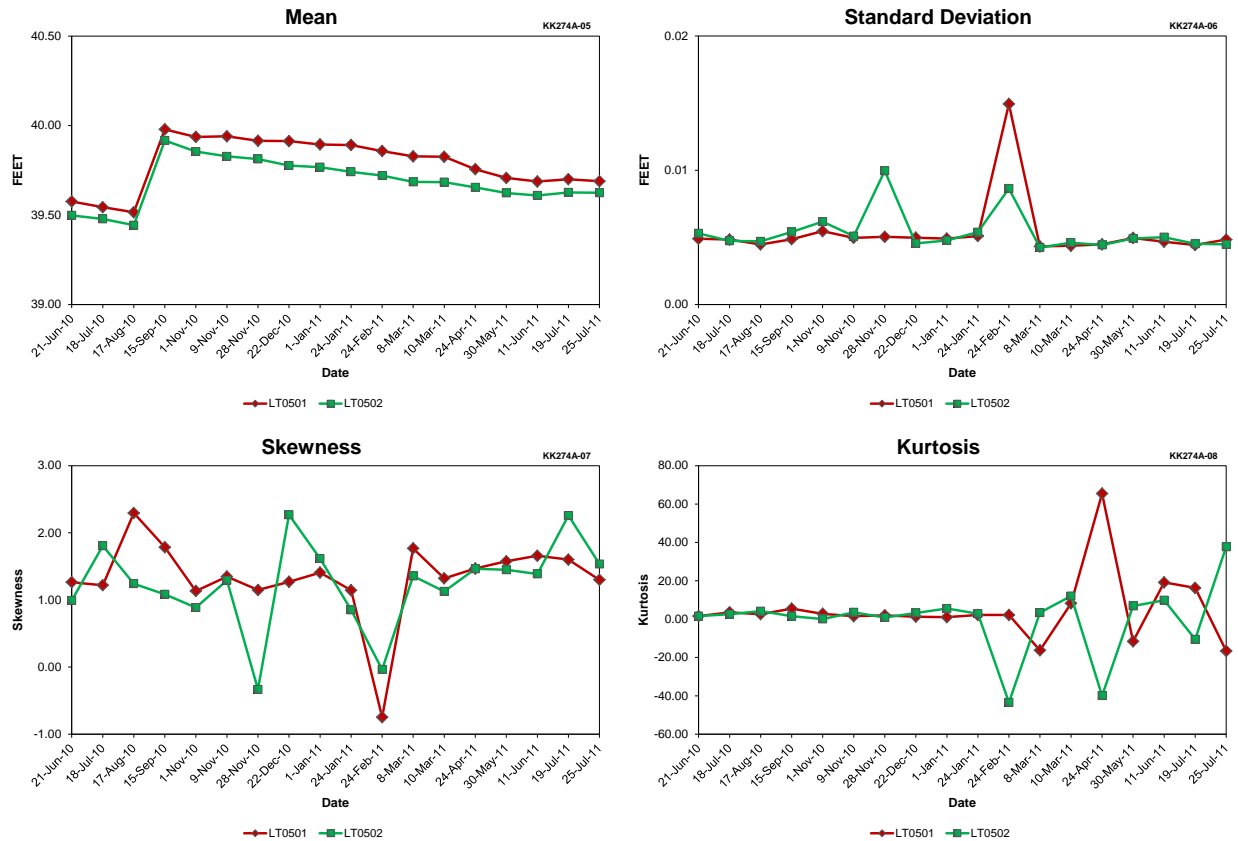


Figure E. 95 RWST LVL Data Quality Statistics at Farley Unit 2 (Cycle 21)

Table E. 20 RWST LVL Data Quality for Farley Unit 2 (Cycle 21)

Result Type	Tag Names	
	LT0501	LT0502
Mean	39.79	39.69
Std. Dev.	0.01	0.01
Skewness	1.33	1.24
Kurtosis	5.02	0.09

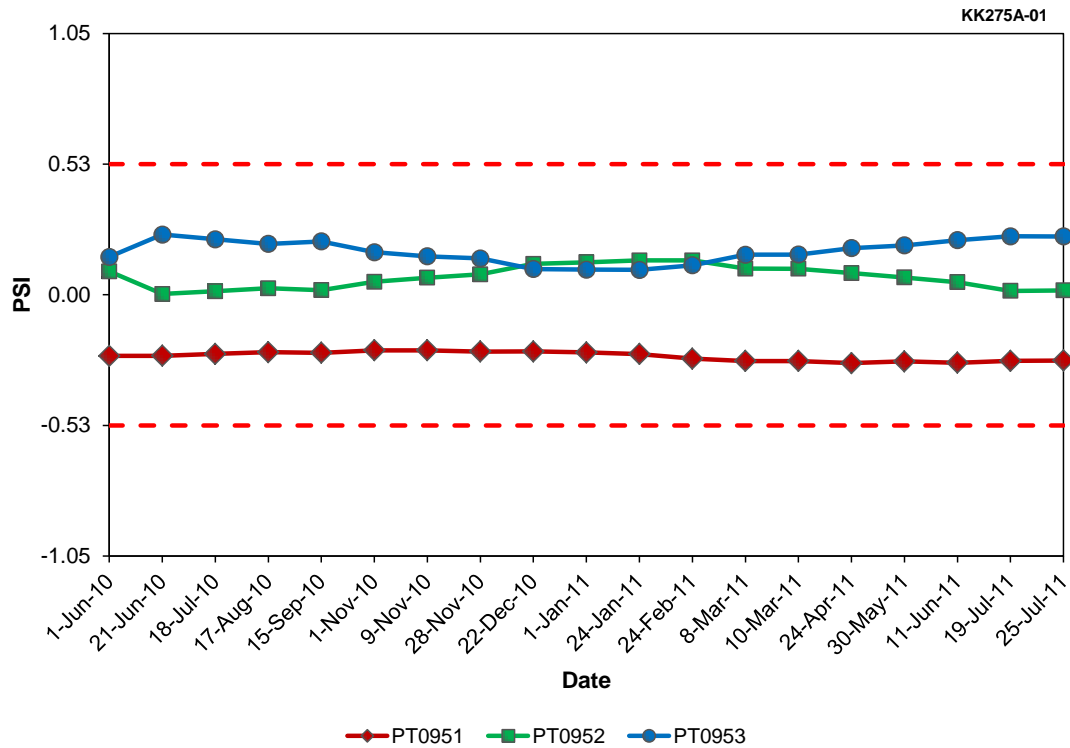


Figure E. 96 CTMT PSR Steady-State Deviation at Farley Unit 2 (Cycle 21)

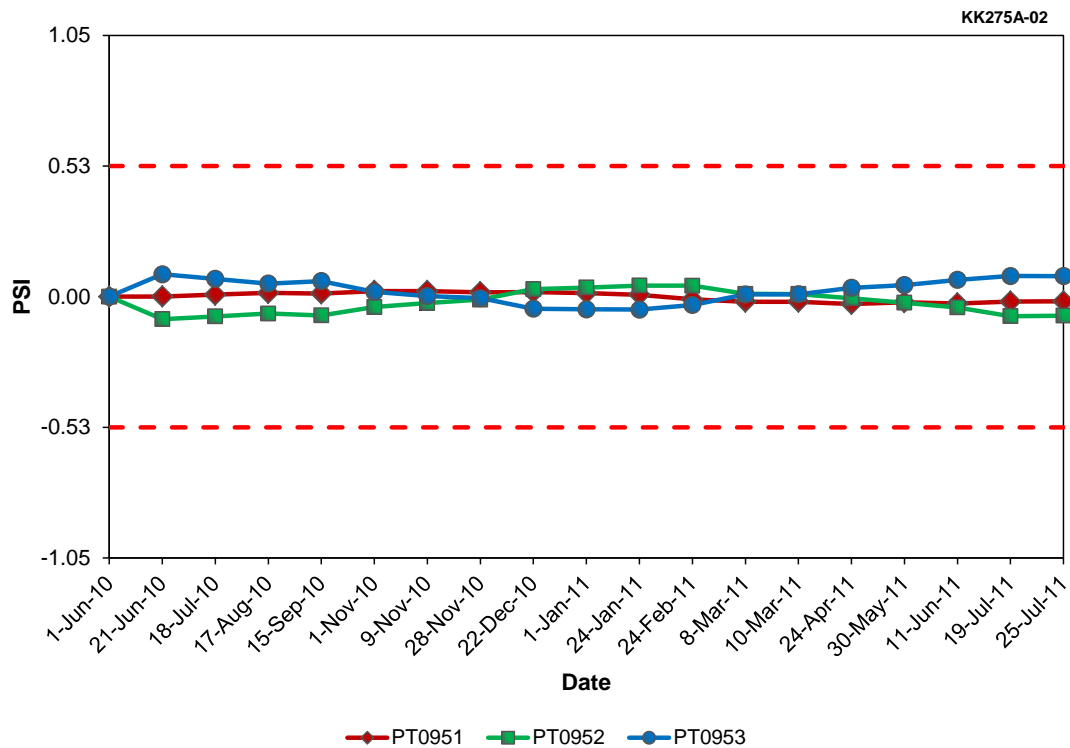


Figure E. 97 CTMT PSR Steady-State Drift at Farley Unit 2 (Cycle 21)

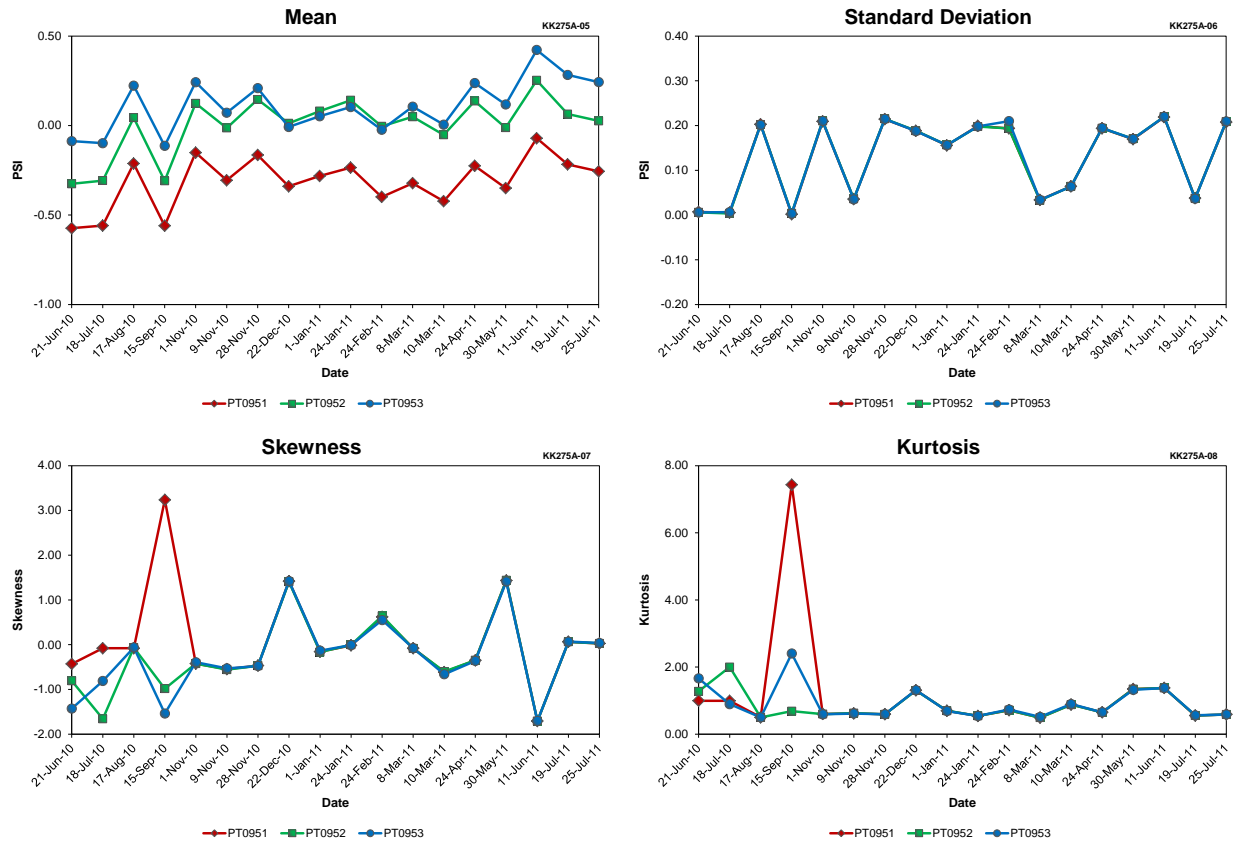


Figure E. 98 CTMT PSR Data Quality Statistics at Farley Unit 2 (Cycle 21)

Table E. 21 CTMT PSR Data Quality for Farley Unit 2 (Cycle 21)

Result Type	Tag Names		
	PT0951	PT0952	PT0953
Mean	-0.31	0.00	0.11
Std. Dev.	0.13	0.13	0.13
Skewness	0.10	-0.24	-0.26
Kurtosis	1.16	0.86	0.91

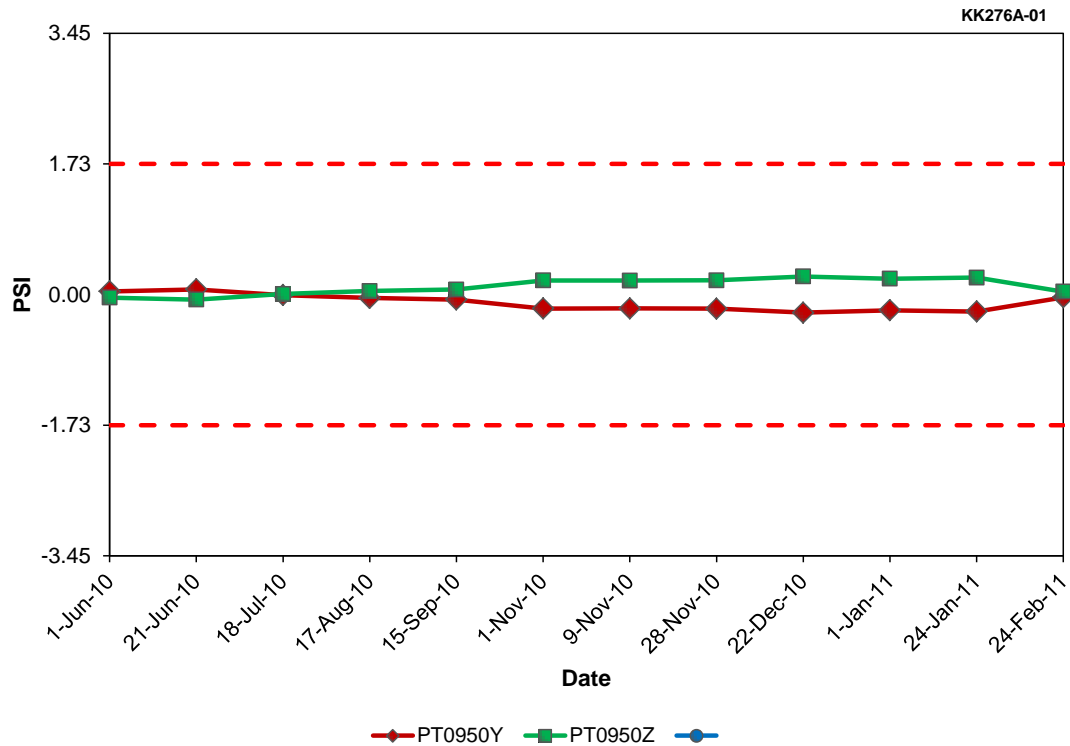


Figure E. 99 CTMT PSR EXT RANGE Steady-State Deviation at Farley Unit 2 (Cycle 21)

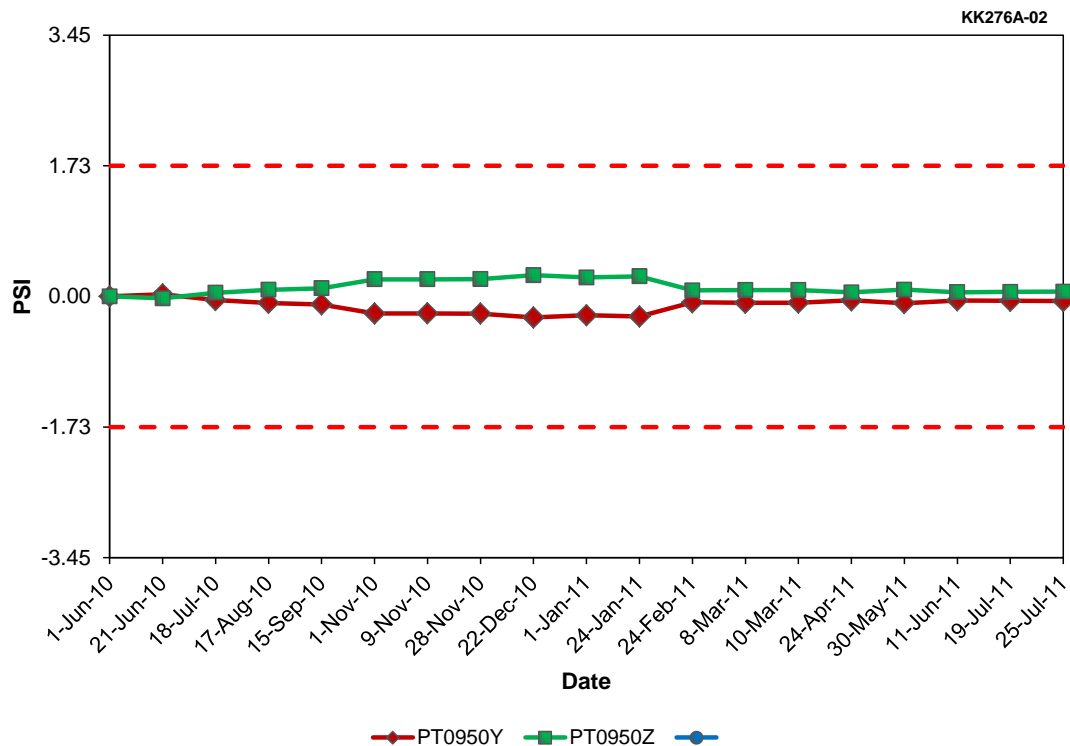


Figure E. 100 CTMT PSR EXT RANGE Steady-State Drift at Farley Unit 2 (Cycle 21)

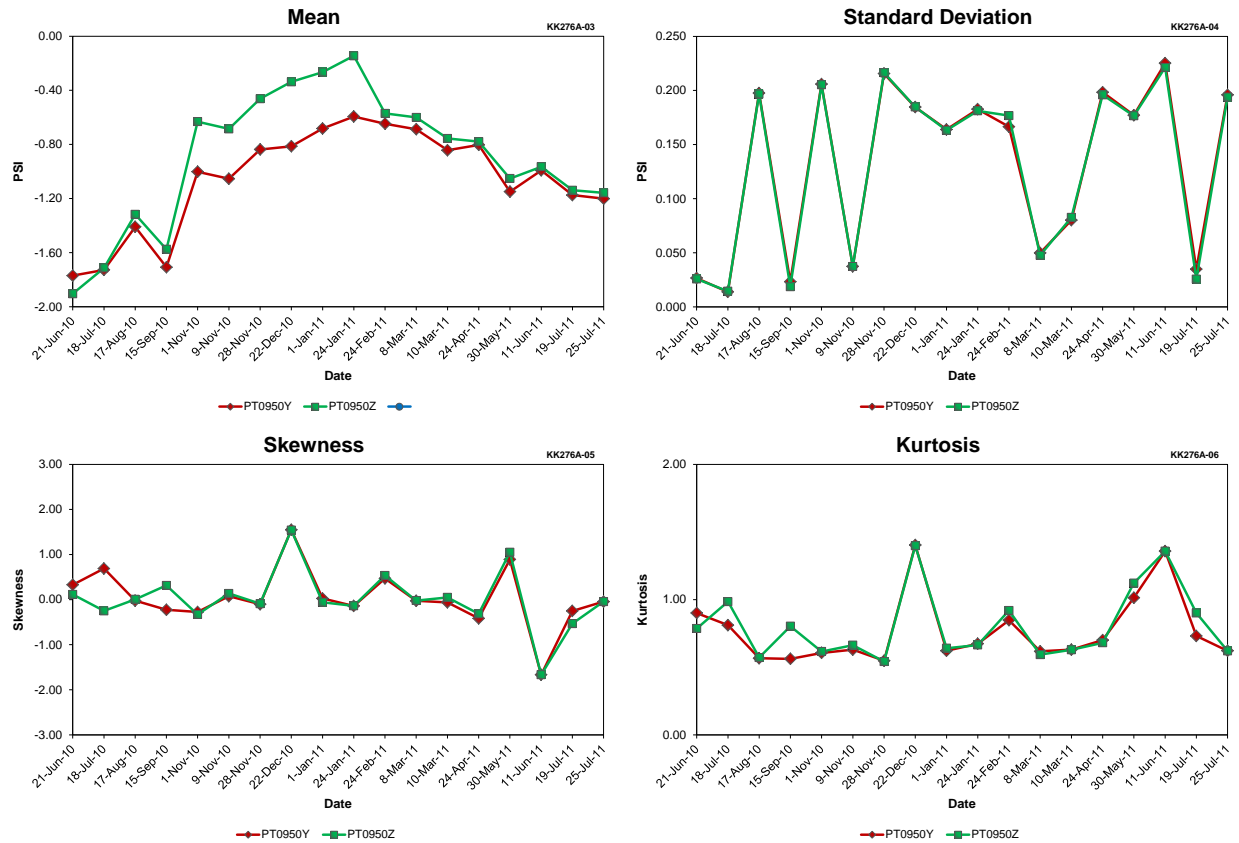


Figure E. 101 CTMT PSR EXT RANGE Data Quality Statistics at Farley Unit 2 (Cycle 21)

Table E. 22 CTMT PSR EXT RANGE Data Quality for Farley Unit 2 (Cycle 21)

Result Type	Tag Names	
	PT0950Y	PT0950Z
Mean	-1.06	-0.89
Std. Dev.	0.13	0.13
Skewness	0.04	0.02
Kurtosis	0.77	0.81



Figure E. 101 CTMT PSR EXT RANGE Data Quality Statistics at Farley Unit 2 (Cycle 21)

Result Type	Tag Names	
	PT0950Y	PT0950Z
Mean	-1.06	-0.89
Std. Dev.	0.13	0.13
Skewness	0.04	0.02
Kurtosis	0.77	0.81

Table E. 22 CTMT PSR EXT RANGE Data Quality for Farley Unit 2 (Cycle 21)

Table E.23 OLM-NA Results

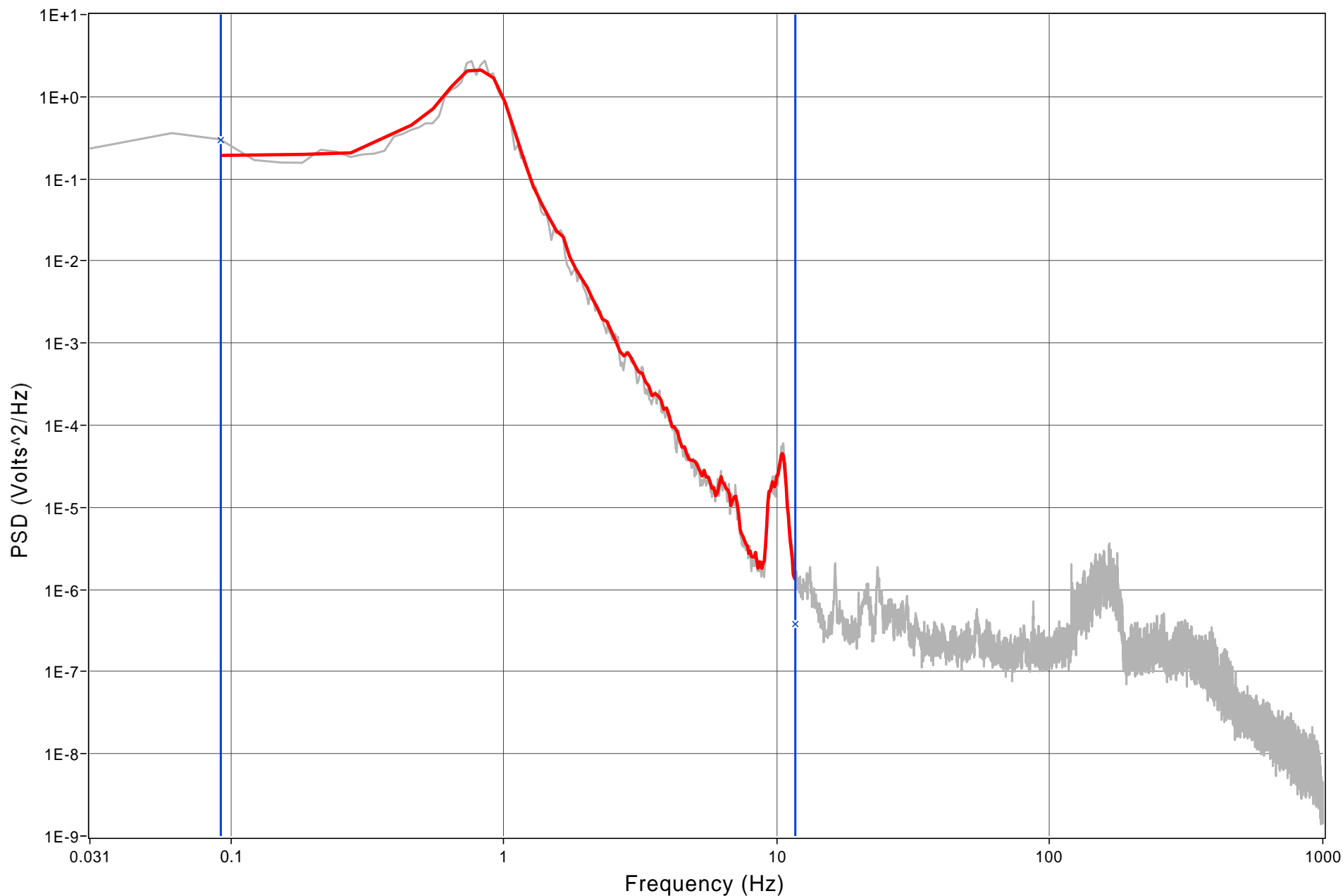
Item	Tag Name	Service	Filename	WB PSD Range (Hz)	Decimator	Trim Block Size	Trim Low Freq.	Trim High Freq.	AR Method	AR Order
1	FT0476	FW FLOW	FU2_2010-07_0004	0.0305 : 1000	364	512	0.0107	2.7472	Forward-Backward	11
2	FT0477	FW FLOW	FU2_2010-07_0003	0.0305 : 1000	364	512	0.0107	2.7472	Least-Squares	17
3	FT0486	FW FLOW	FU2_2010-07_0004	0.0305 : 1000	364	512	0.0107	2.7472	Forward-Backward	11
4	FT0487	FW FLOW	FU2_2010-07_0003	0.0305 : 1000	364	512	0.0107	2.7472	Least-Squares	21
5	FT0496	FW FLOW	FU2_2010-07_0004	0.0305 : 1000	364	512	0.0107	2.7474	Forward-Backward	11
6	FT0497	FW FLOW	FU2_2010-07_0003	0.0305 : 1000	364	512	0.0107	2.7472	Least-Squares	21
7	LT0474	SG LEVEL	FU2_2010-07_0001	0.0305 : 1000	85	256	0.0919	11.7643	Forward-Backward	11
8	LT0475	SG LEVEL	FU2_2010-07_0002	0.0305 : 1000	81	256	0.0964	12.3453	Least-Squares	18
9	LT0476	SG LEVEL	FU2_2010-07_0003	0.0305 : 1000	81	256	0.0964	12.3453	Least-Squares	11
10	LT0484	SG LEVEL	FU2_2010-07_0001	0.0305 : 1000	80	128	0.1953	12.4996	Forward-Backward	11
11	LT0485	SG LEVEL	FU2_2010-07_0002	0.0305 : 1000	80	256	0.0977	12.4996	Least-Squares	18
12	LT0486	SG LEVEL	FU2_2010-07_0003	0.0305 : 1000	85	128	0.1838	11.7643	Least-Squares	20
13	LT0494	SG LEVEL	FU2_2010-07_0001	0.0305 : 1000	83	256	0.0941	12.0478	Forward-Backward	11
14	LT0495	SG LEVEL	FU2_2010-07_0002	0.0305 : 1000	78	256	0.1002	12.8201	Least-Squares	18
15	LT0496	SG LEVEL	FU2_2010-07_0003	0.0305 : 1000	83	256	0.0941	12.0478	Least-Squares	20
16	FT0474	STM FLOW	FU2_2010-07_0003	0.0305 : 1000	29	128	0.5388	34.4817	Least-Squares	20
17	FT0475	STM FLOW	FU2_2010-07_0004	0.0305 : 1000	29	128	0.5388	34.4817	Forward-Backward	11
18	FT0484	STM FLOW	FU2_2010-07_0003	0.0305 : 1000	29	128	0.5388	34.4817	Least-Squares	18
19	FT0485	STM FLOW	FU2_2010-07_0004	0.0305 : 1000	29	128	0.5388	34.4817	Forward-Backward	11
20	FT0494	STM FLOW	FU2_2010-07_0003	0.0305 : 1000	29	128	0.5388	34.4817	Least-Squares	19
21	FT0495	STM FLOW	FU2_2010-07_0004	0.0305 : 1000	29	128	0.5388	34.4817	Forward-Backward	11



# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	LT0474	SG LVL	FU2_2010-07_0001.psd	11 : 256	0.091909	11.764348	Dynamic	15-Jul-2010 13:36:44

## PSD Window



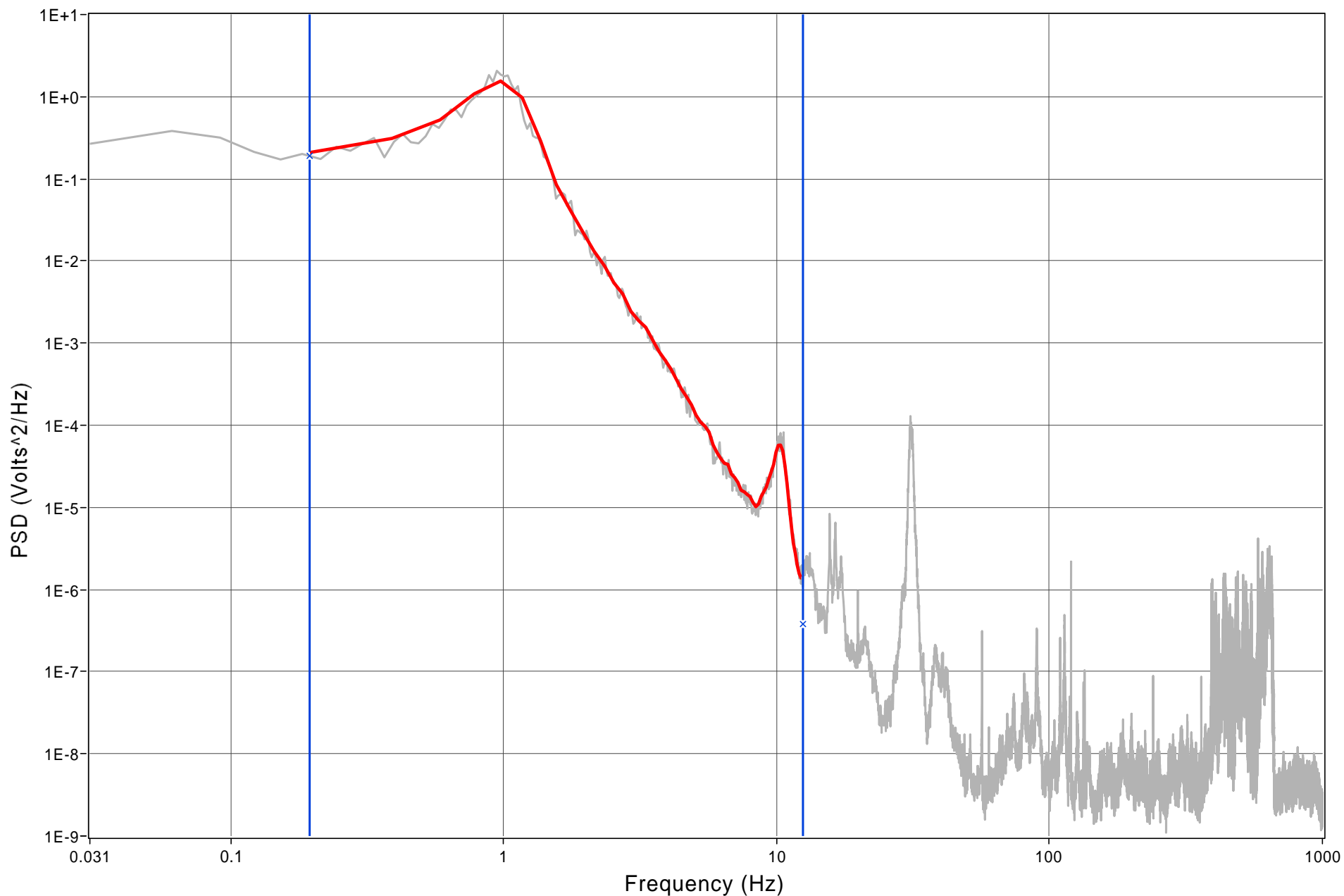




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	LT0484	SG LVL	FU2_2010-07_0001.psd	11 : 128	0.195307	12.499619	Dynamic	15-Jul-2010 13:36:44

**PSD Window**

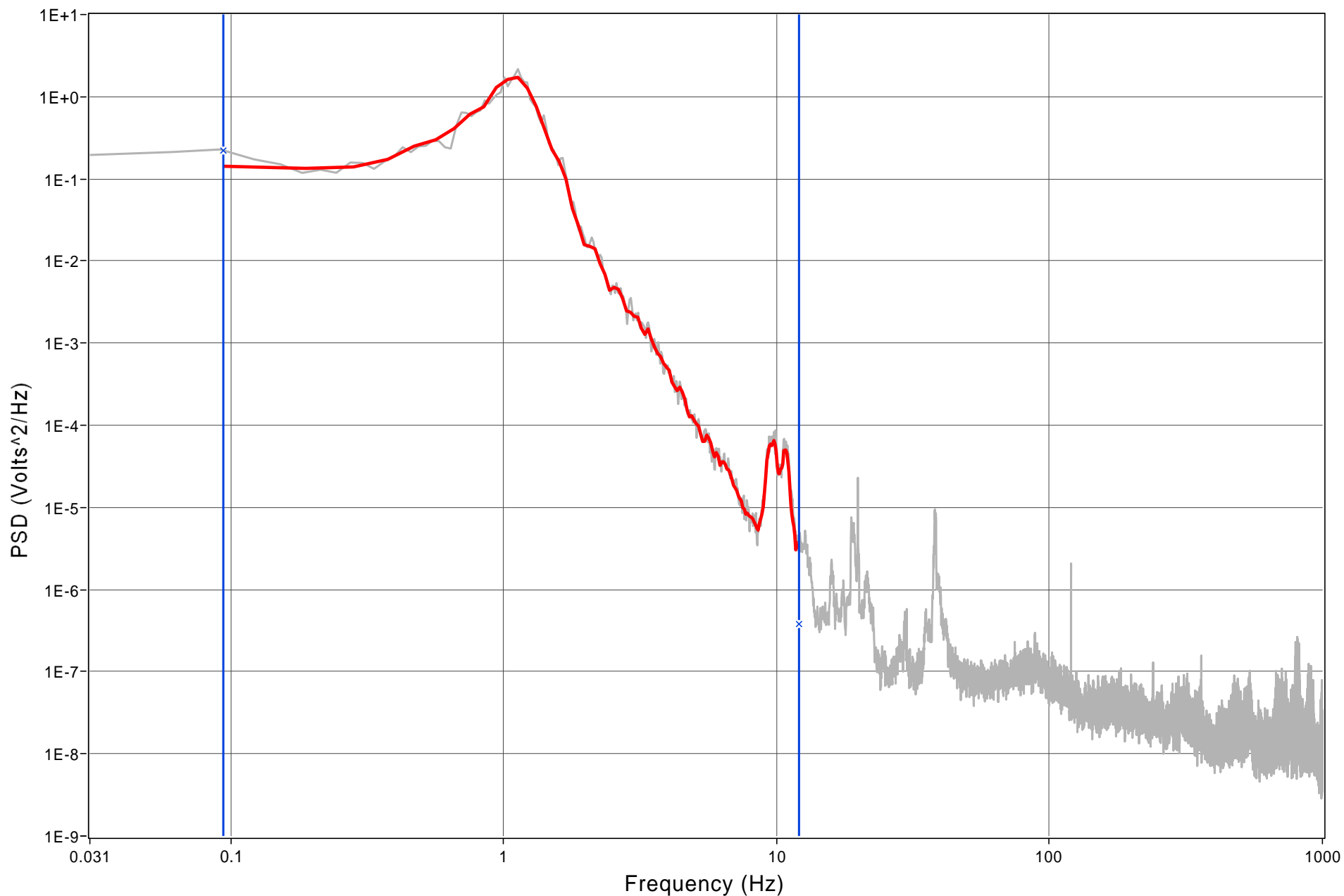




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	LT0494	SG LVL	FU2_2010-07_0001.psd	11 : 256	0.094124	12.047826	Dynamic	15-Jul-2010 13:36:44

## PSD Window

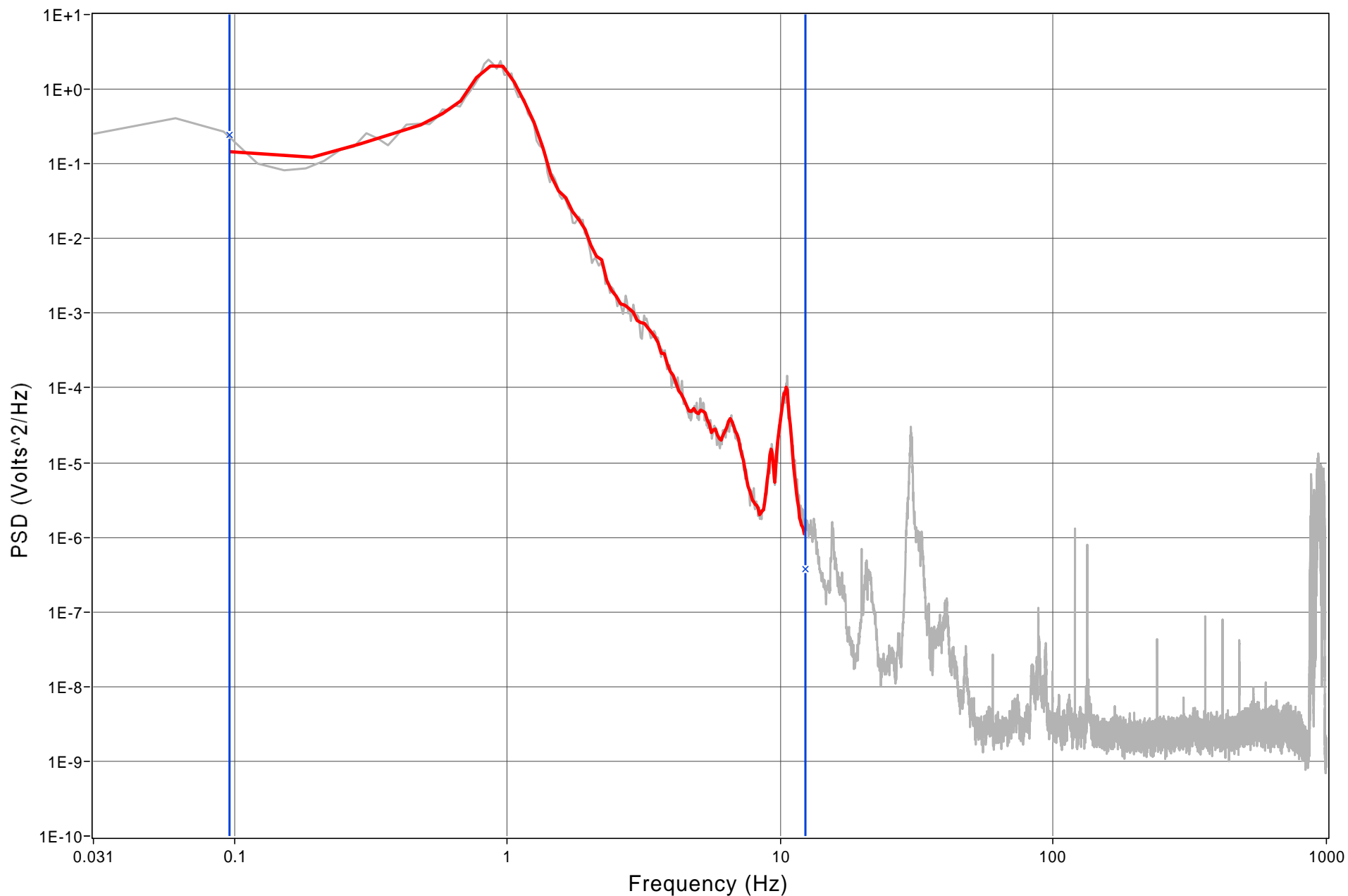




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	LT0475	SG LVL	FU2_2010-07_0002.psd	11 : 256	0.096448	12.345303	Dynamic	15-Jul-2010 13:36:44

## PSD Window

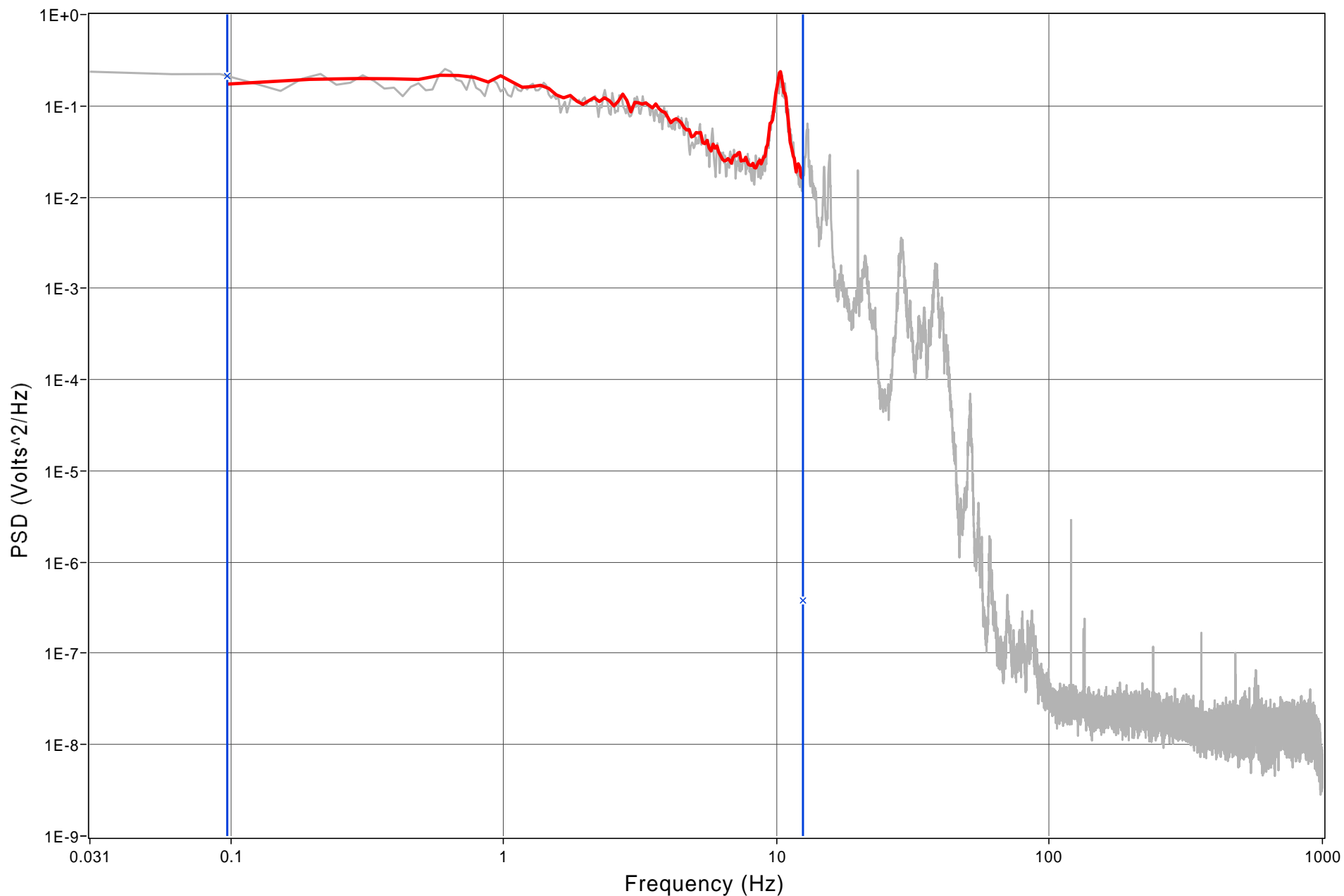




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	LT0485	SG LVL	FU2_2010-07_0002.psd	11 : 256	0.097653	12.499619	Dynamic	15-Jul-2010 13:36:44

## PSD Window

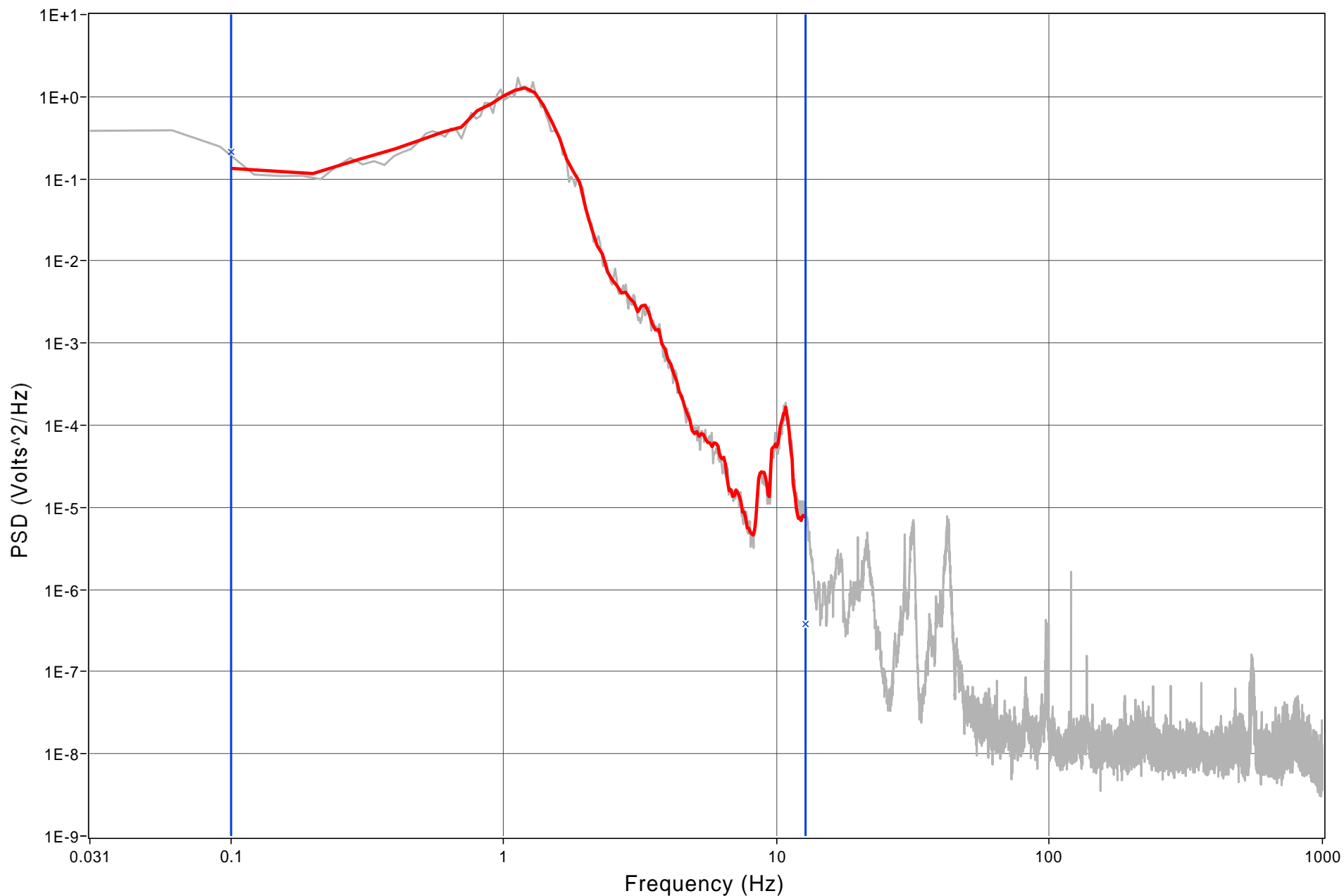




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	LT0495	SG LVL	FU2_2010-07_0002.psd	11 : 256	0.100157	12.820122	Dynamic	15-Jul-2010 13:36:44

**PSD Window**

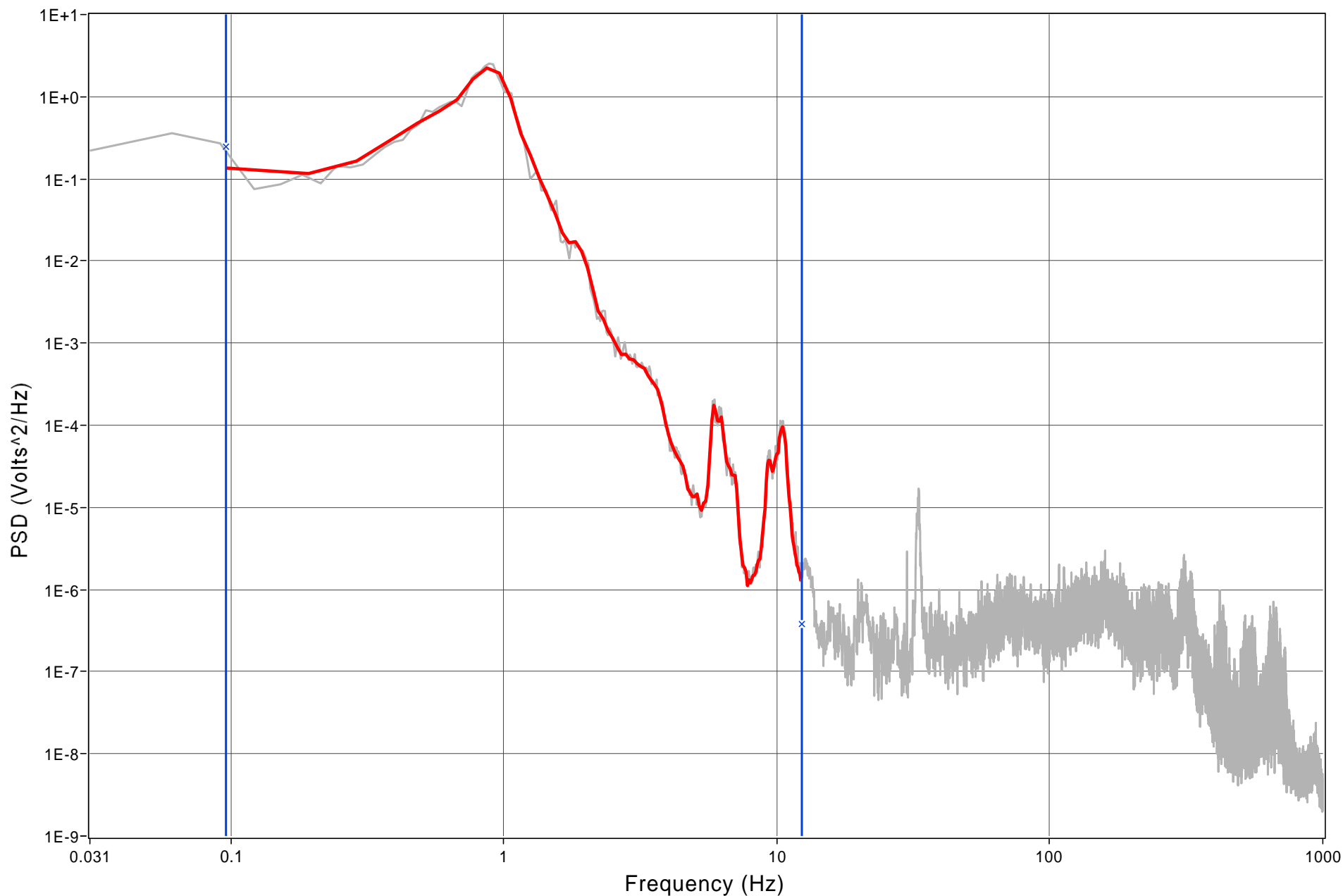




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	LT0476	SG LVL	FU2_2010-07_0003.psd	11 : 256	0.096448	12.345303	Dynamic	15-Jul-2010 13:36:44

## PSD Window

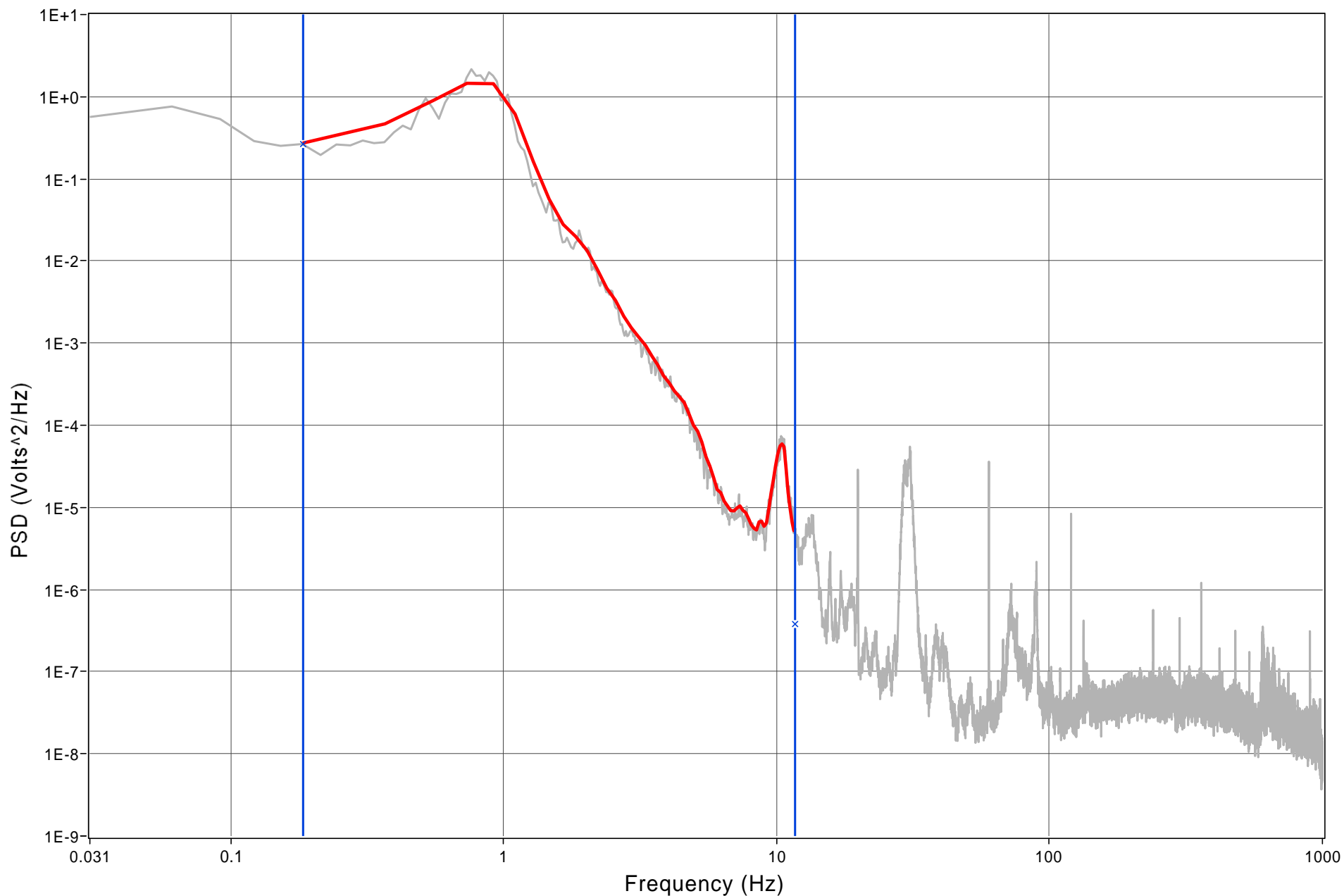




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	LT0486	SG LVL	FU2_2010-07_0003.psd	11 : 128	0.183818	11.764348	Dynamic	15-Jul-2010 13:36:44

## PSD Window

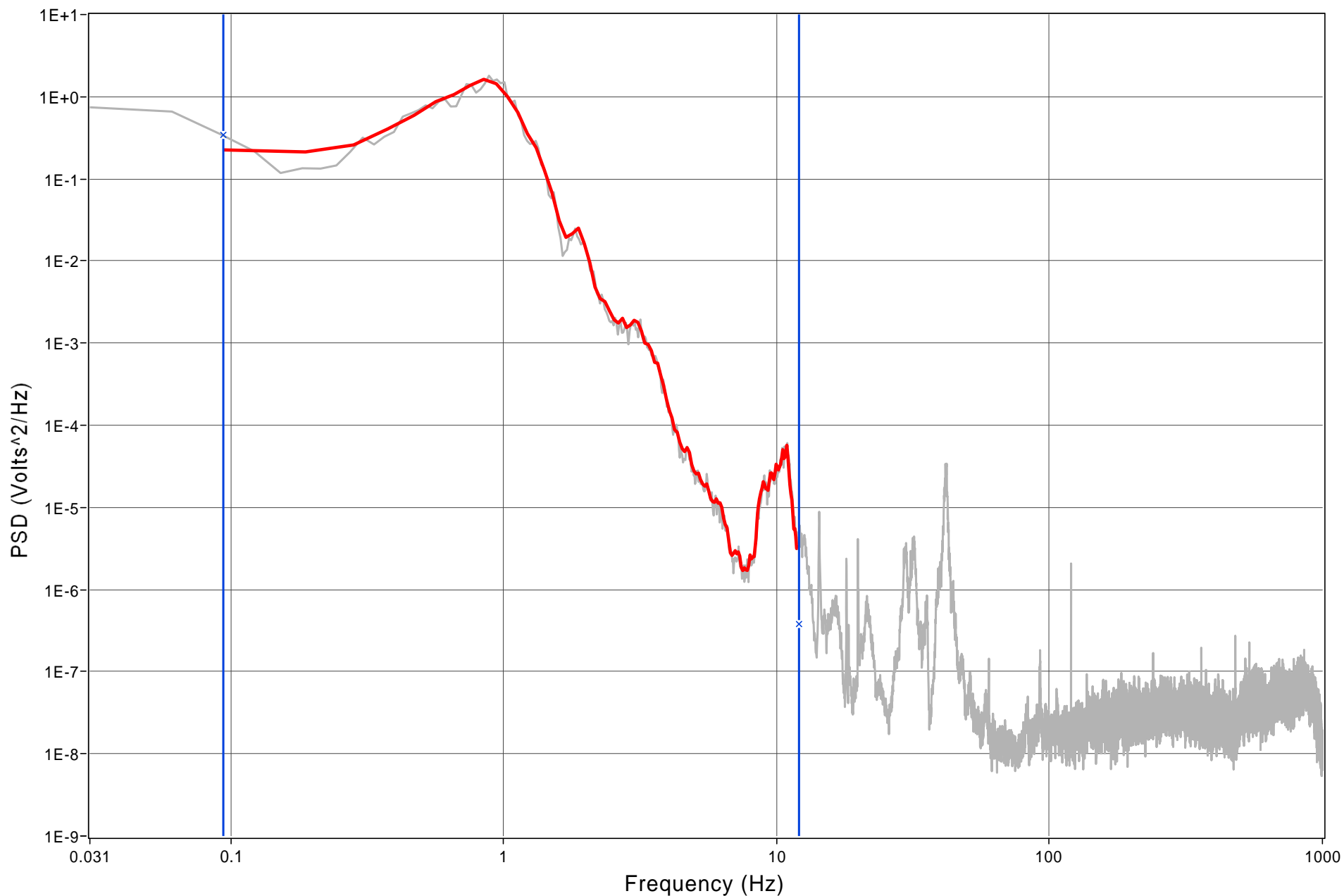




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	LT0496	SG LVL	FU2_2010-07_0003.psd	11 : 256	0.094124	12.047826	Dynamic	15-Jul-2010 13:36:44

## PSD Window



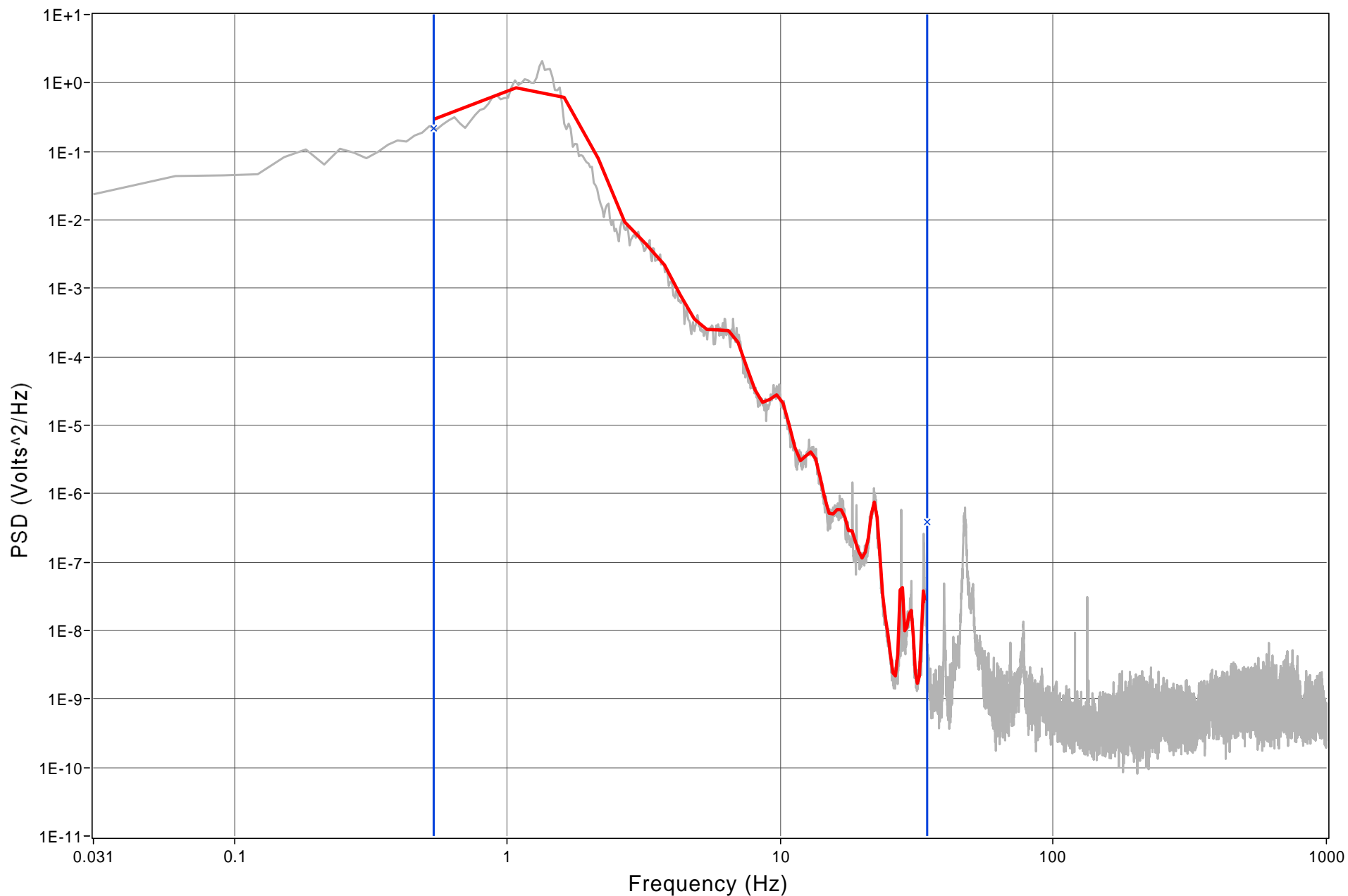




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	FT0474	STM FLOW	FU2_2010-07_0003.psd	11 : 128	0.538777	34.481708	Dynamic	15-Jul-2010 13:36:44

## PSD Window

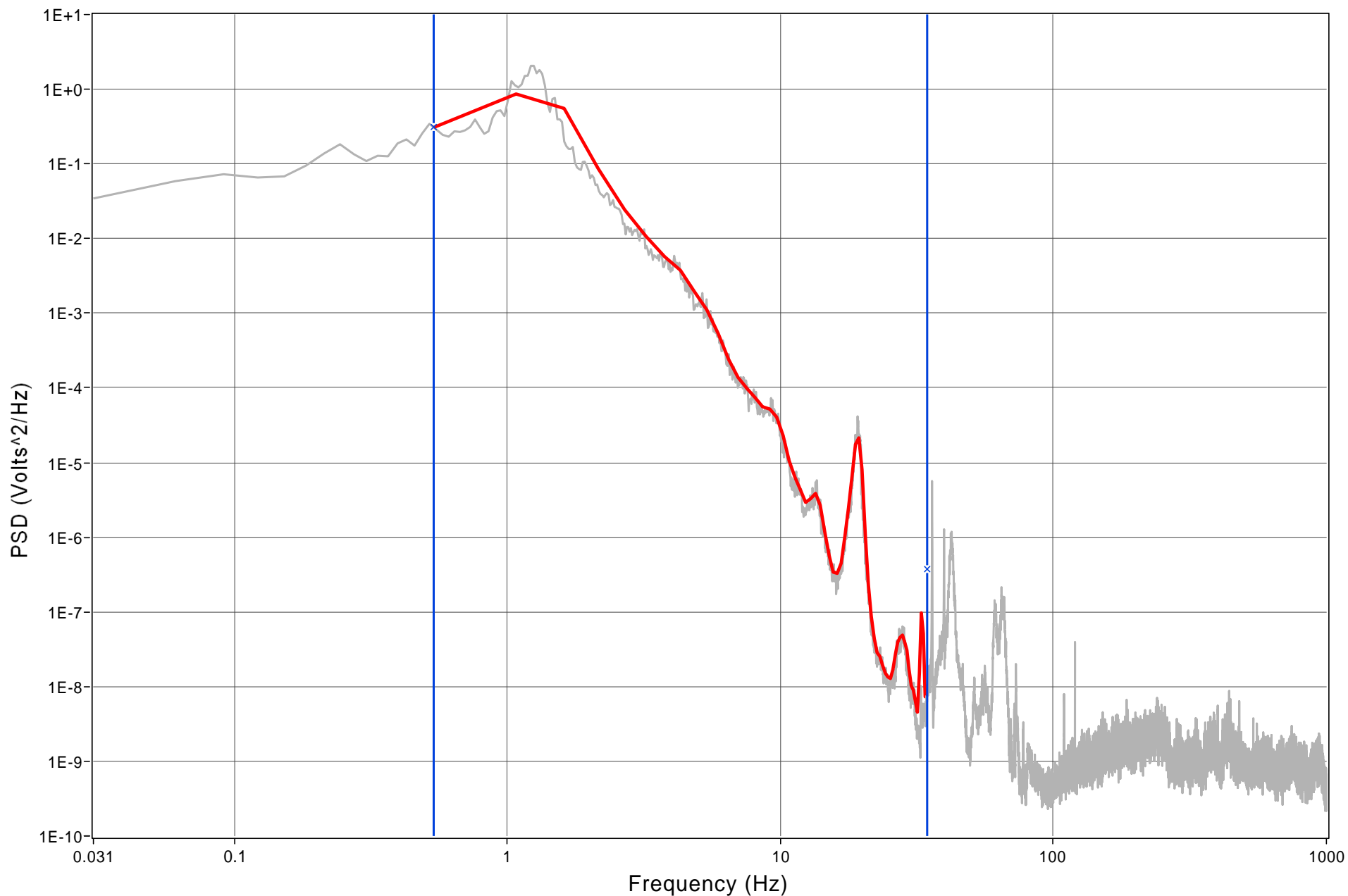




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	FT0484	STM FLOW	FU2_2010-07_0003.psd	11 : 128	0.538777	34.481708	Dynamic	15-Jul-2010 13:36:44

**PSD Window**

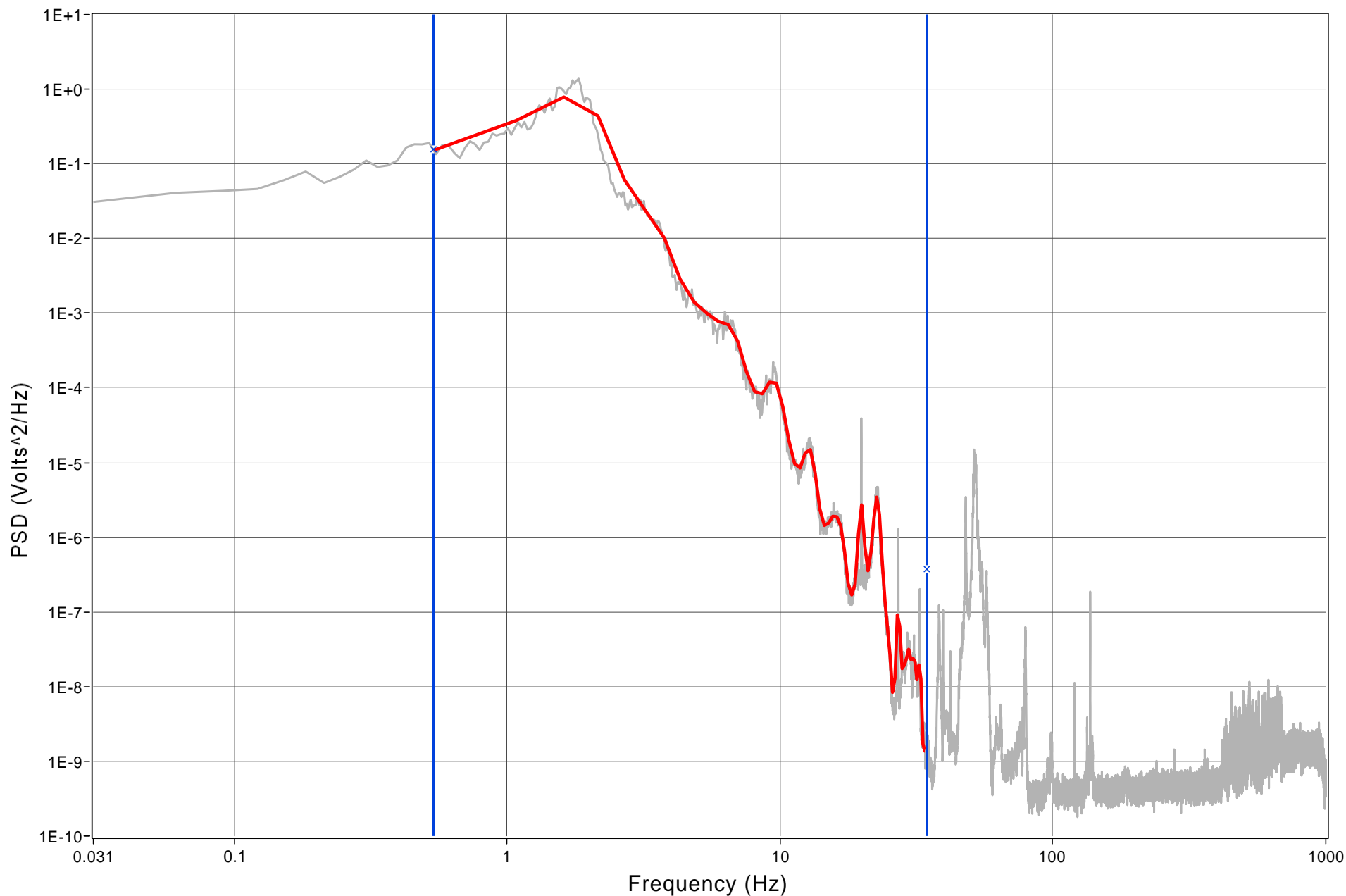




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	FT0494	STM FLOW	FU2_2010-07_0003.psd	11 : 128	0.538777	34.481708	Dynamic	15-Jul-2010 13:36:44

**PSD Window**

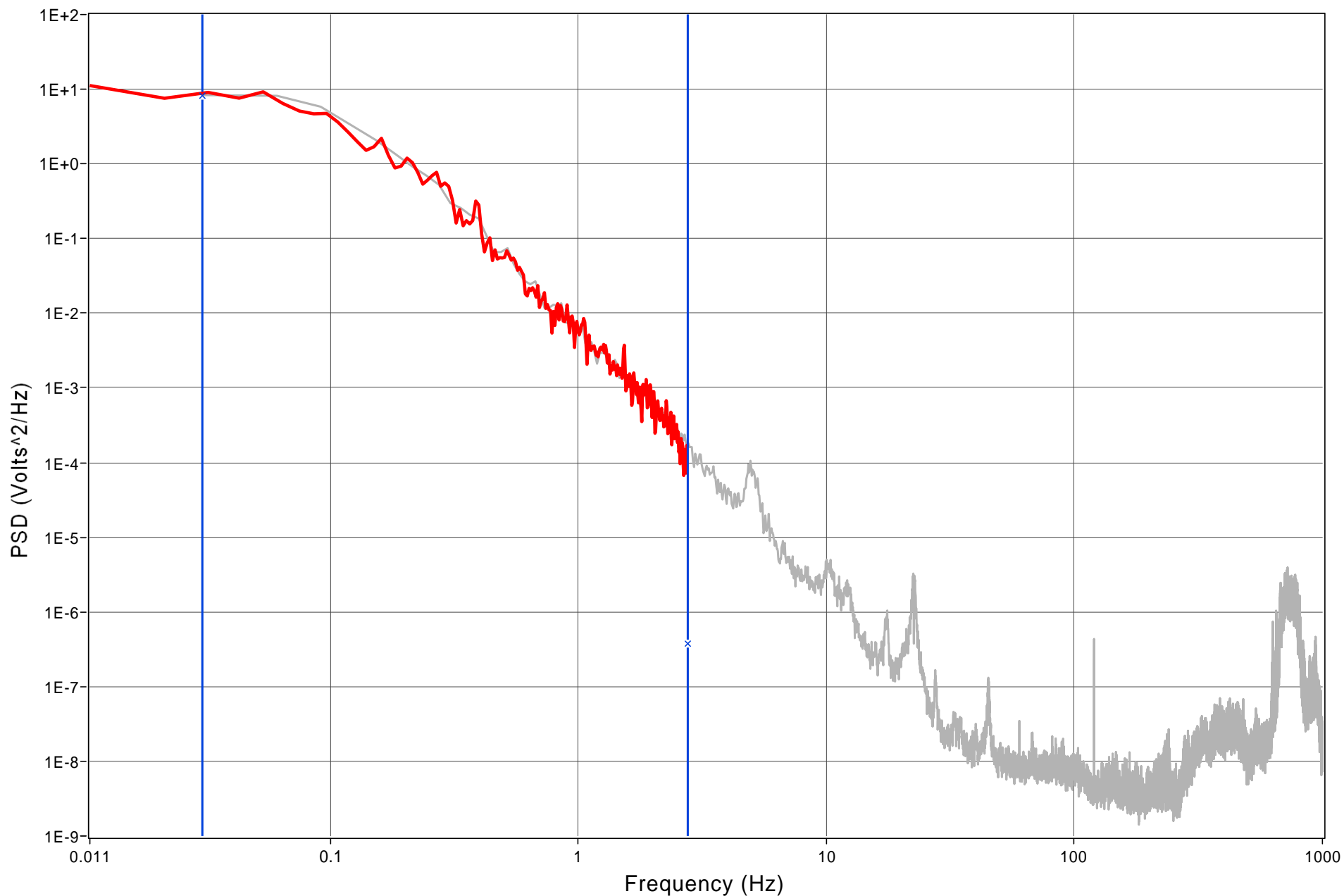




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	FT0477	FW FLOW	FU2_2010-07_0003.psd	11 : 512	0.010731	2.747169	Dynamic	15-Jul-2010 13:36:44

PSD Window

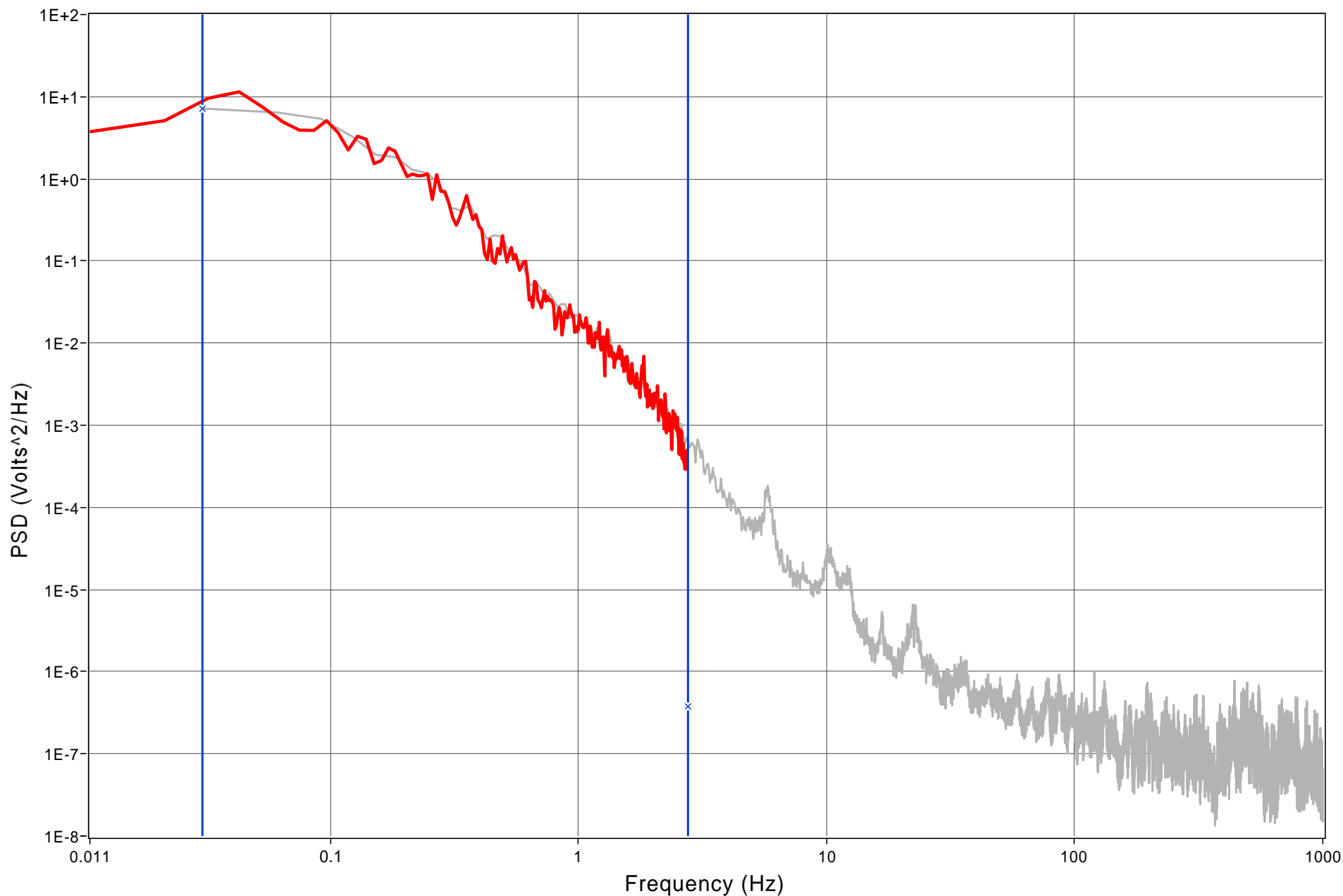




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	FT0487	FW FLOW	FU2_2010-07_0003.psd	11 : 512	0.010731	2.747169	Dynamic	15-Jul-2010 13:36:44

PSD Window

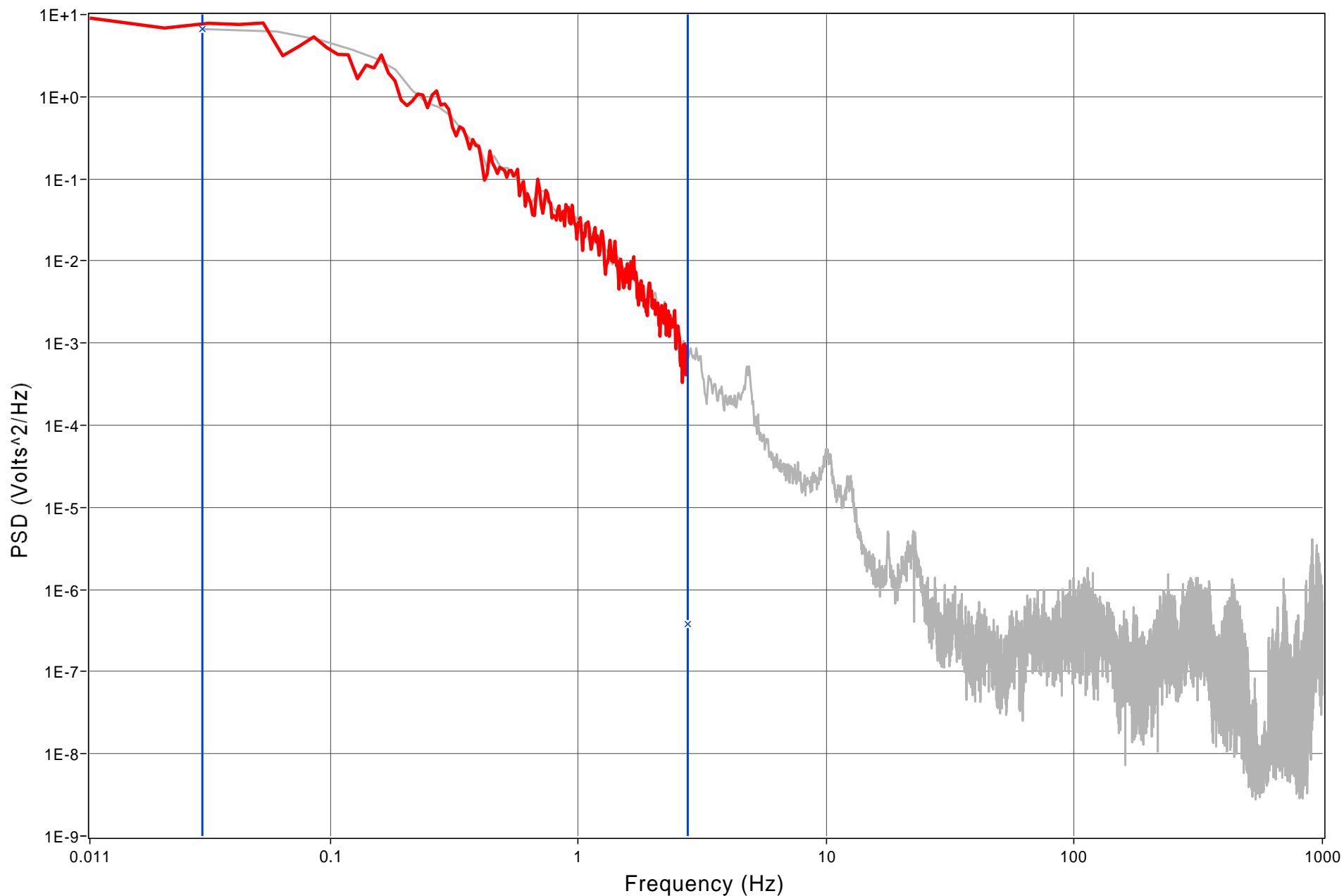




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	FT0497	FW FLOW	FU2_2010-07_0003.psd	11 : 512	0.010731	2.747169	Dynamic	15-Jul-2010 13:36:44

PSD Window

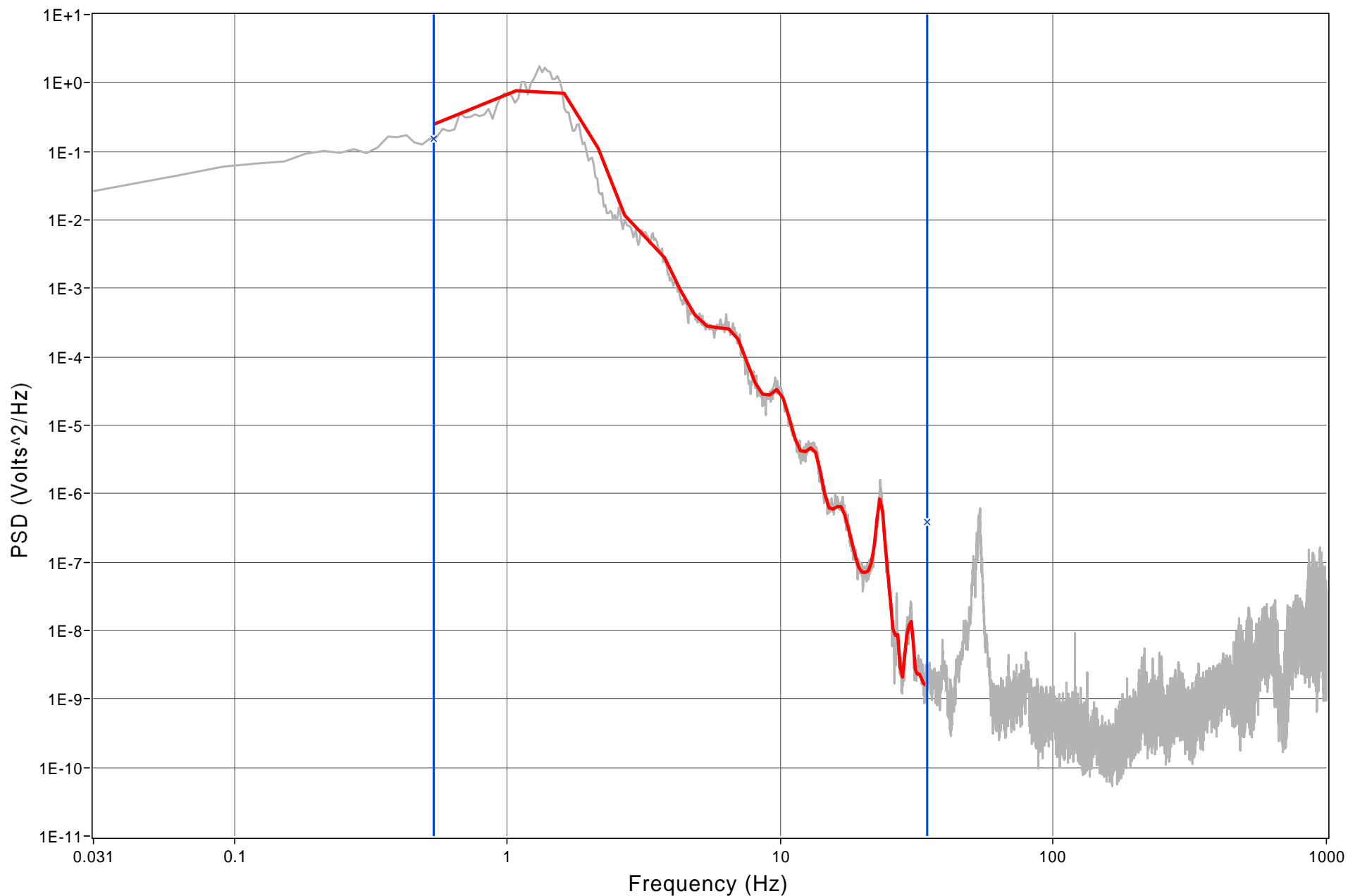




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	FT0475	STM FLOW	FU2_2010-07_0004.psd	11 : 128	0.538777	34.481708	Dynamic	15-Jul-2010 13:36:44

**PSD Window**

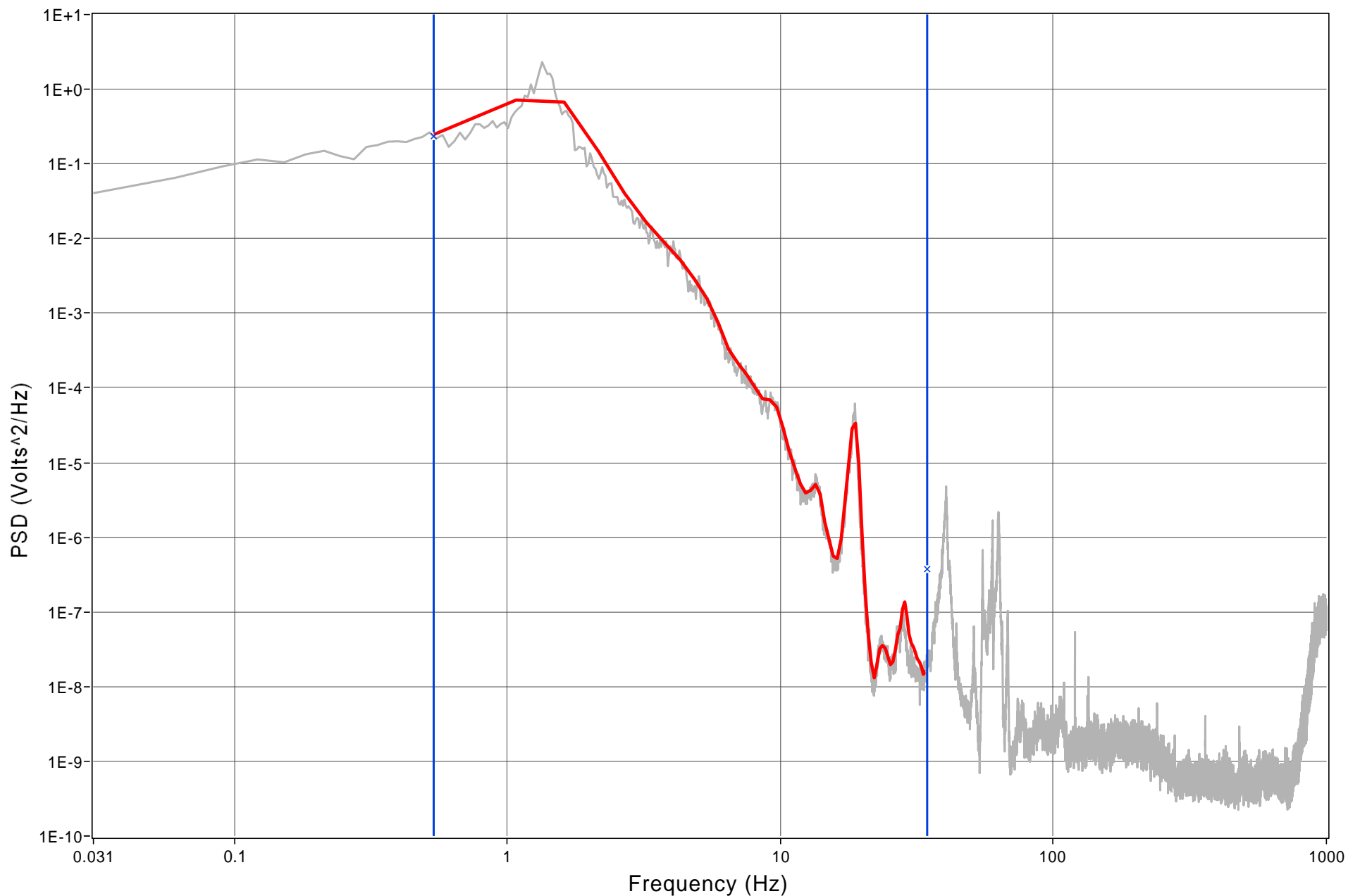




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	FT0485	STM FLOW	FU2_2010-07_0004.psd	11 : 128	0.538777	34.481708	Dynamic	15-Jul-2010 13:36:44

## PSD Window



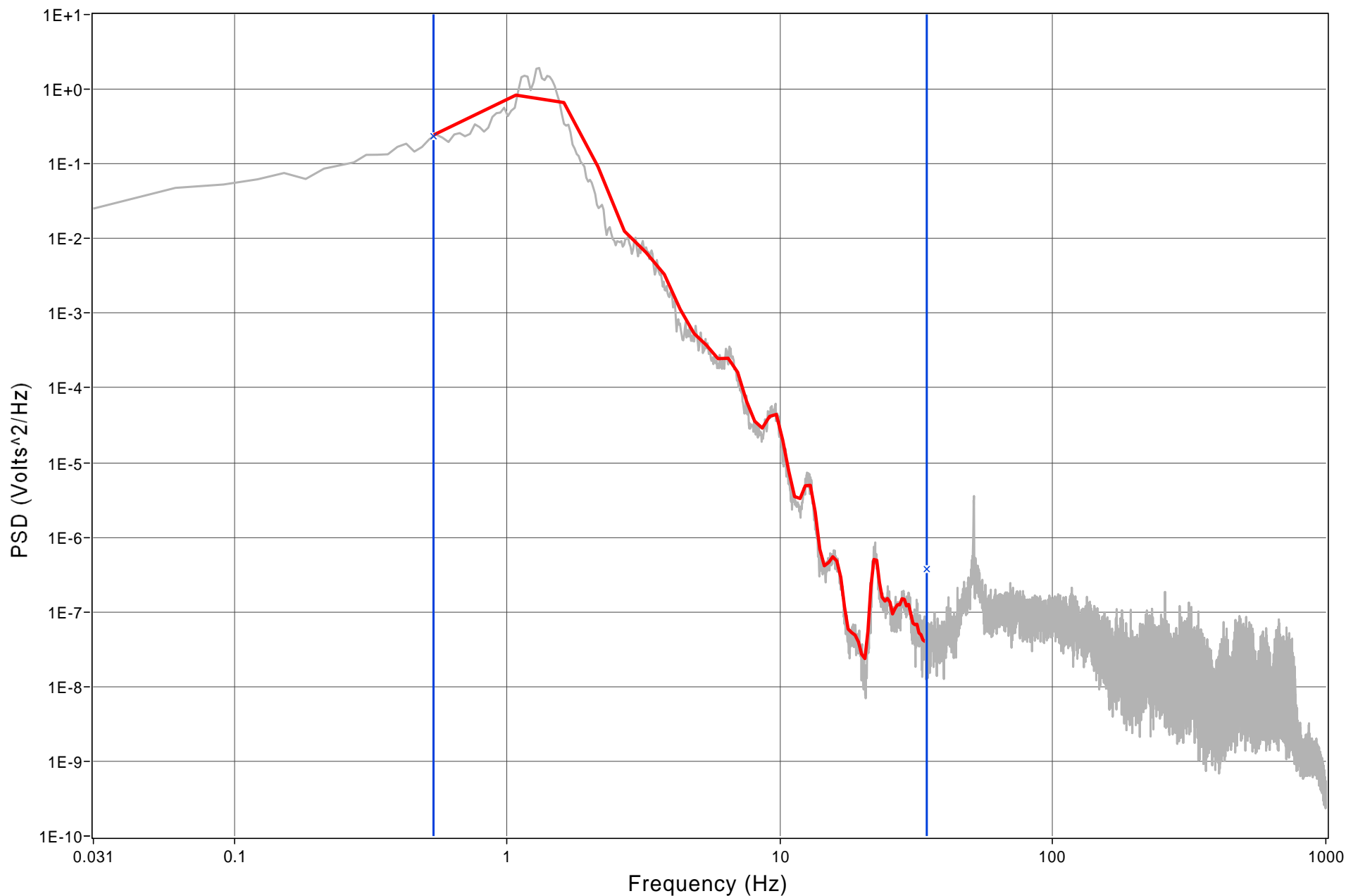




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	FT0495	STM FLOW	FU2_2010-07_0004.psd	11 : 128	0.538777	34.481708	Dynamic	15-Jul-2010 13:36:44

## PSD Window

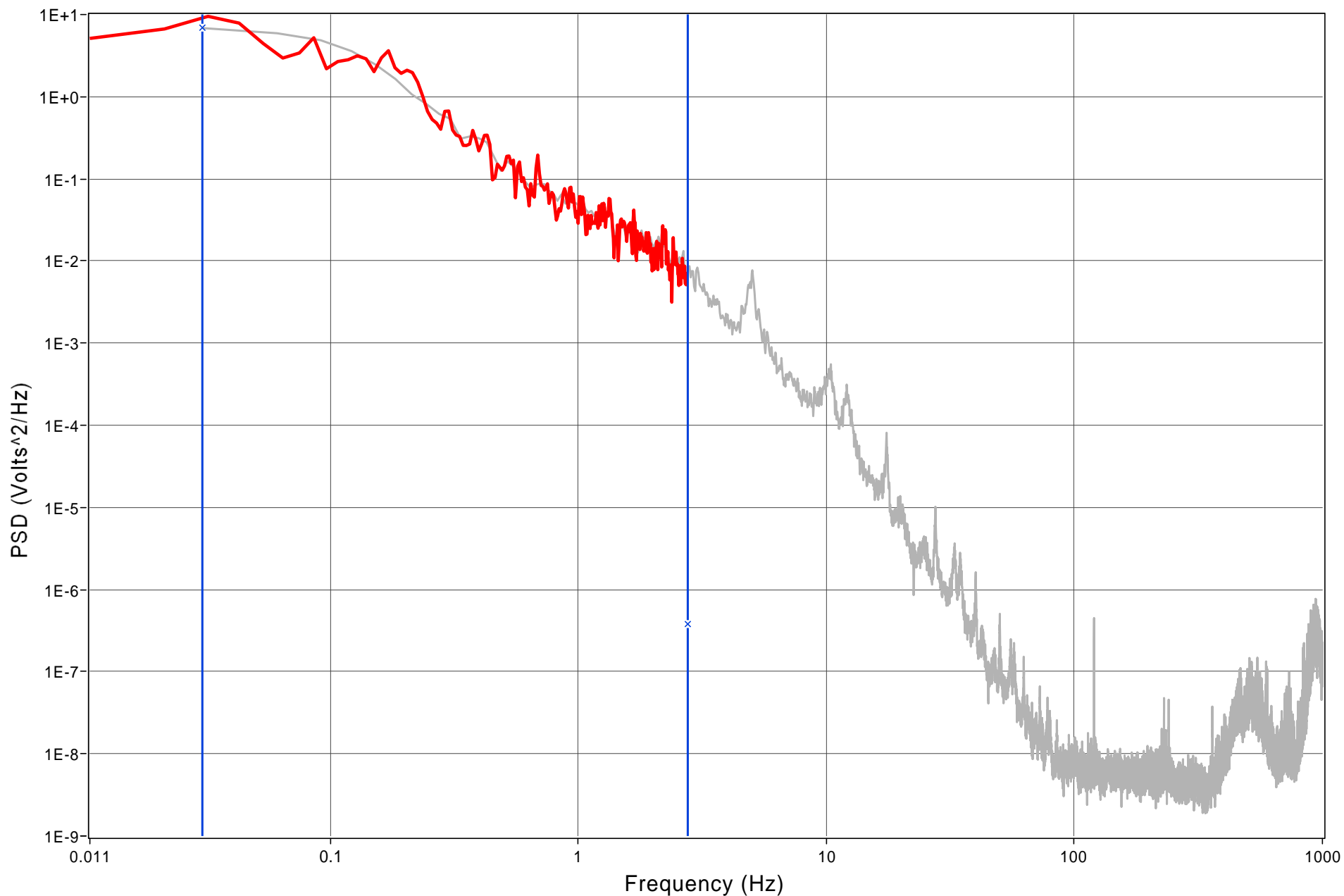




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	FT0476	FW FLOW	FU2_2010-07_0004.psd	11 : 512	0.010731	2.747169	Dynamic	15-Jul-2010 13:36:44

**PSD Window**

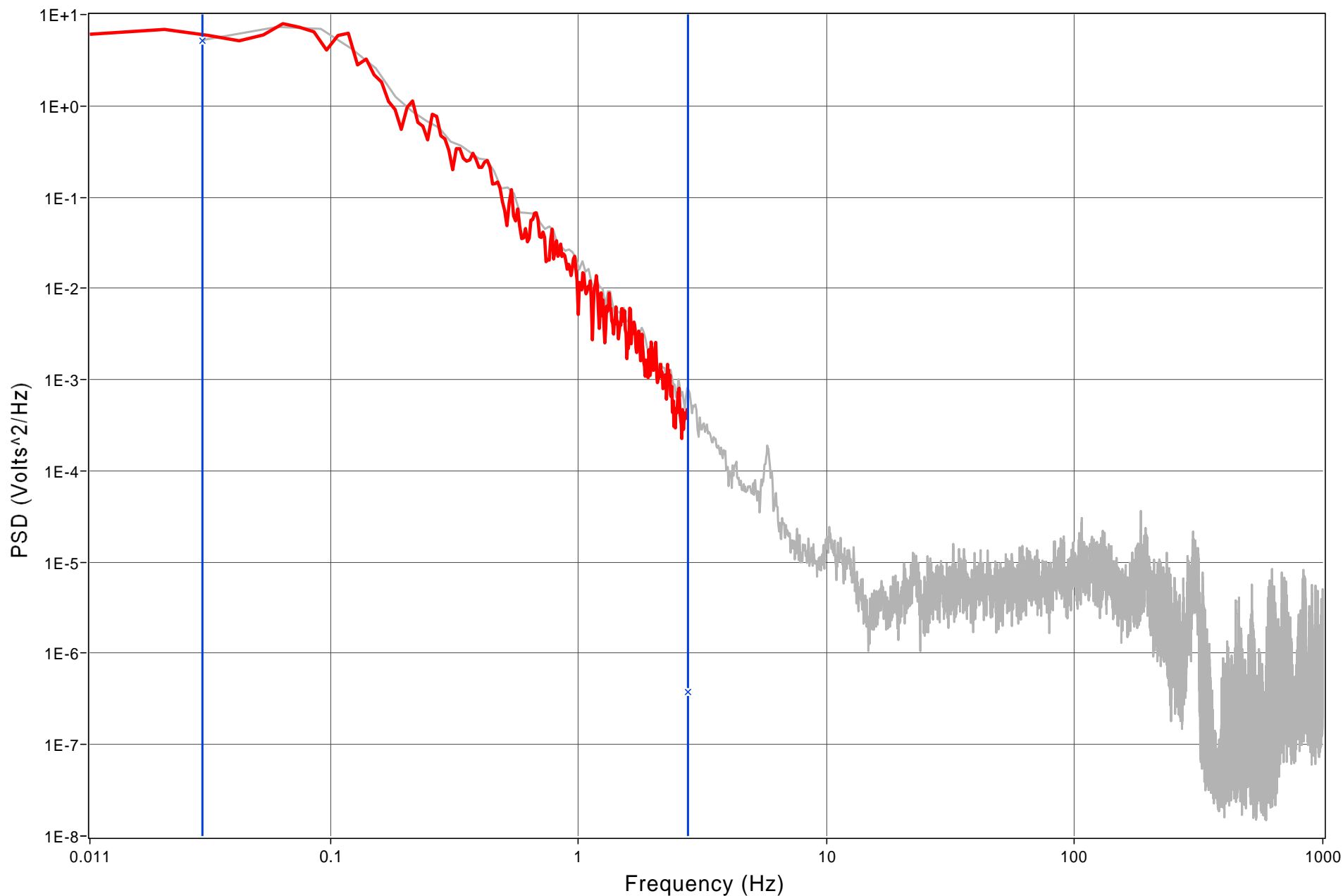




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	FT0486	FW FLOW	FU2_2010-07_0004.psd	11 : 512	0.010731	2.747169	Dynamic	15-Jul-2010 13:36:44

PSD Window

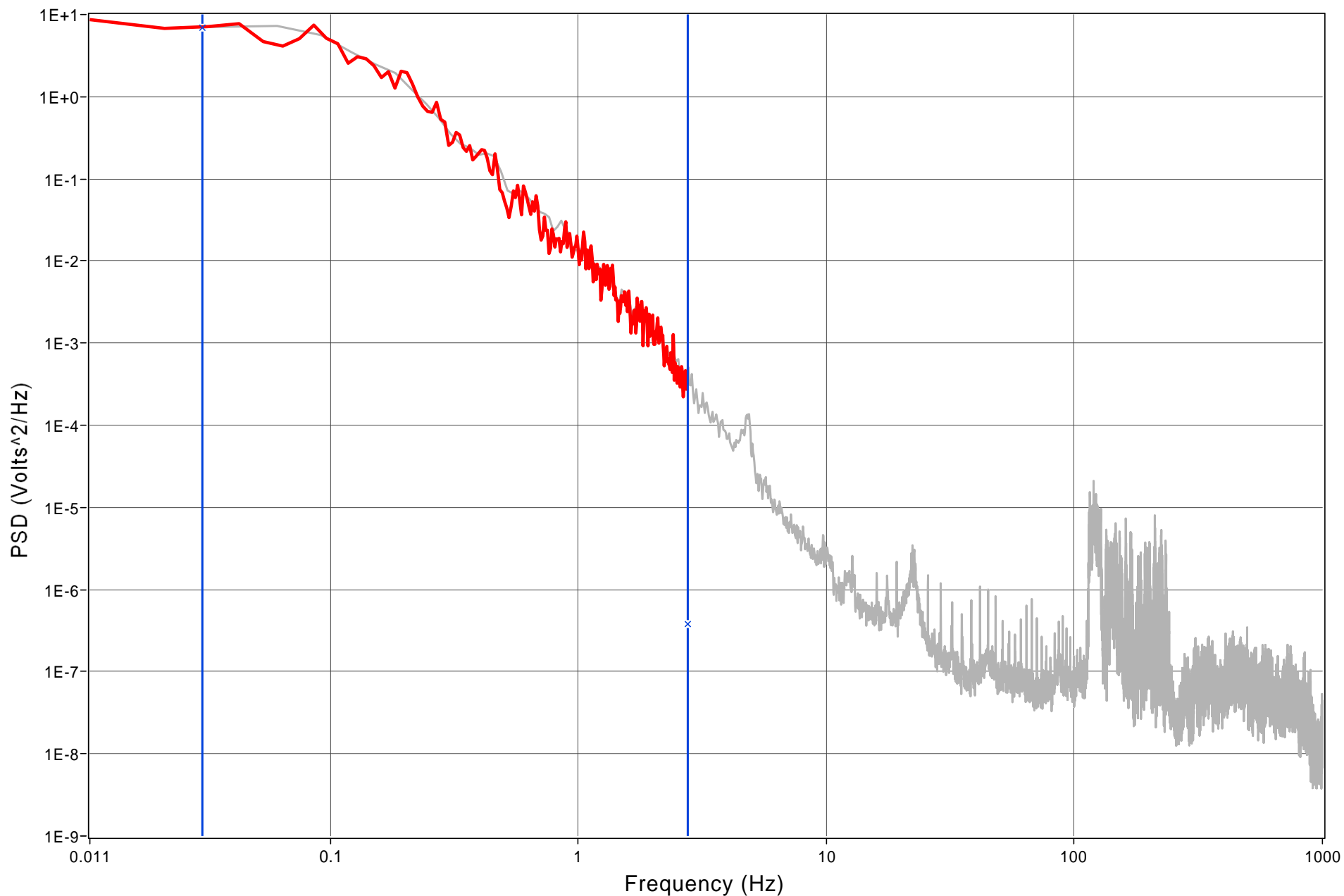




# OLM Narrow Band PSD Window Fitting

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	Fitting Type	Test Date
Farley Unit 2	FT0496	FW FLOW	FU2_2010-07_0004.psd	11 : 512	0.010731	2.747169	Dynamic	15-Jul-2010 13:36:44

PSD Window

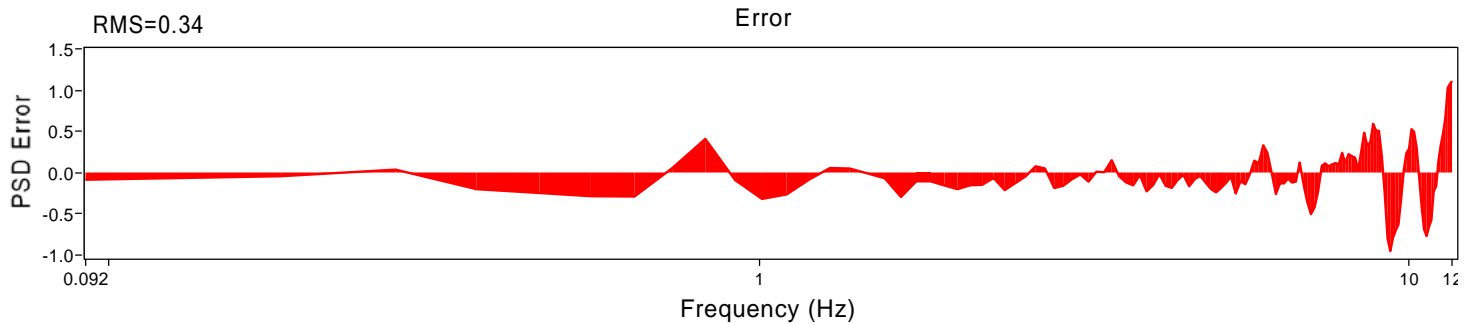
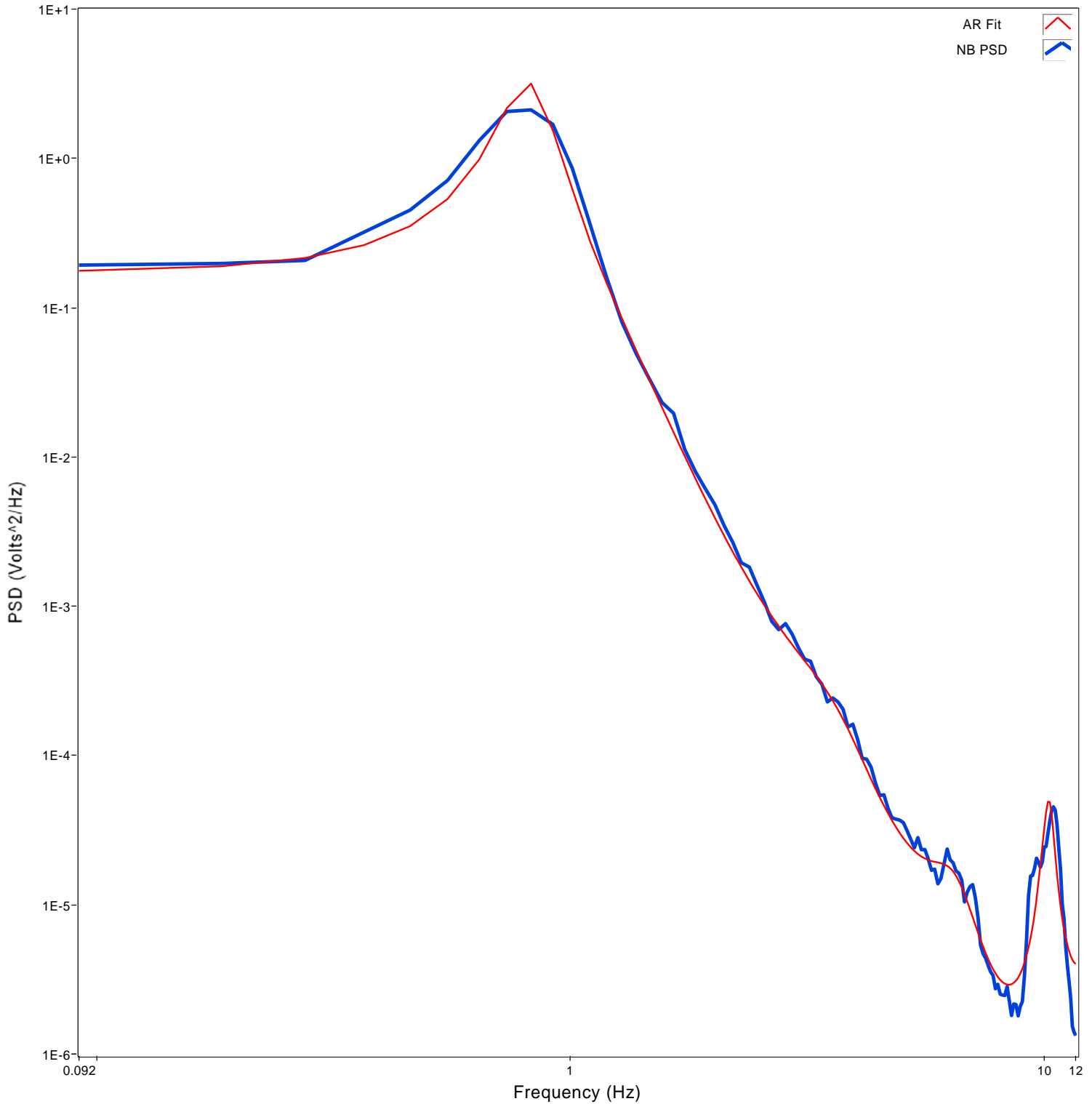




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	LT0474	SG LVL	FU2_2010-07_0001.psd	96 : 512	0.091909	11.764348	11	Forward-Backward	15-Jul-2010 13:36:44

NB PSD and AR PSD

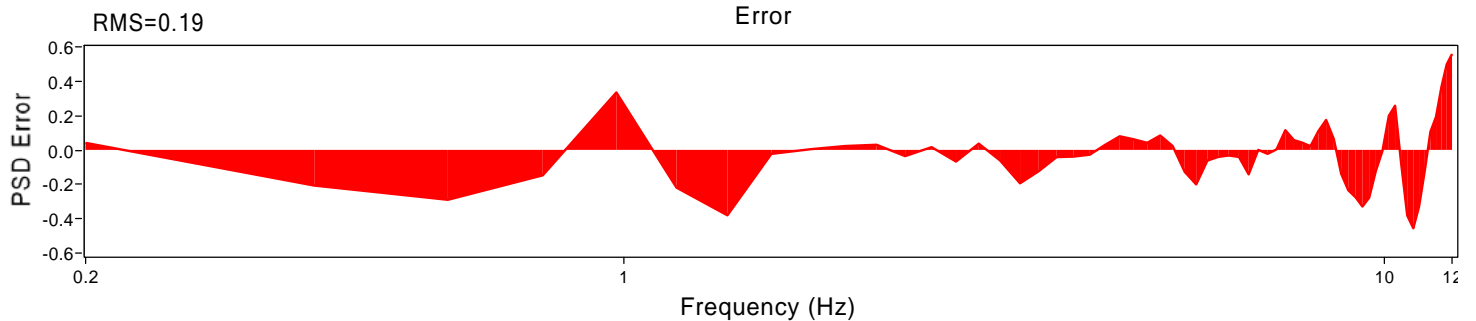
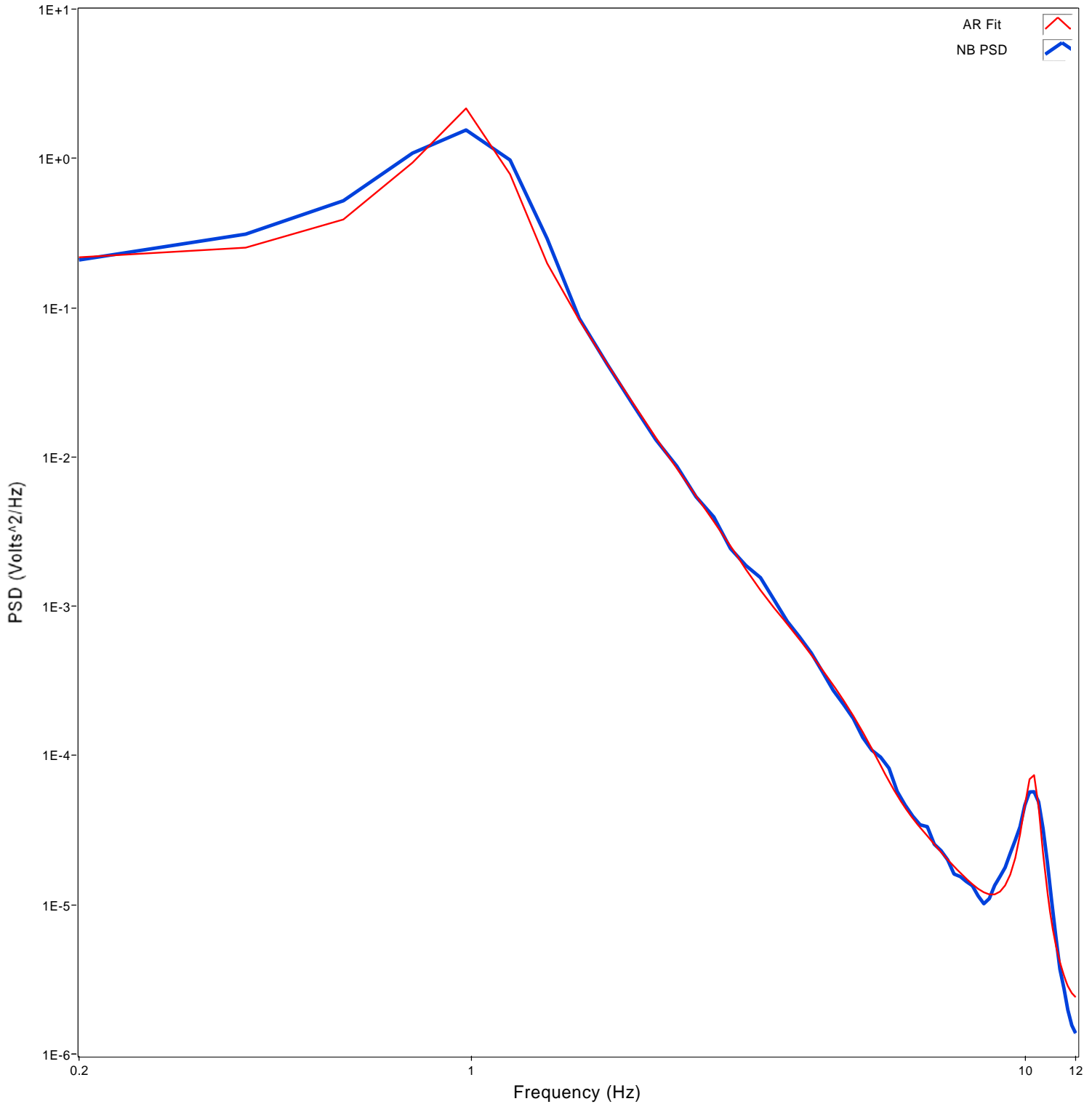




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	LT0484	SG LVL	FU2_2010-07_0001.psd	204 : 512	0.195307	12.499619	11	Forward-Backward	15-Jul-2010 13:36:44

NB PSD and AR PSD

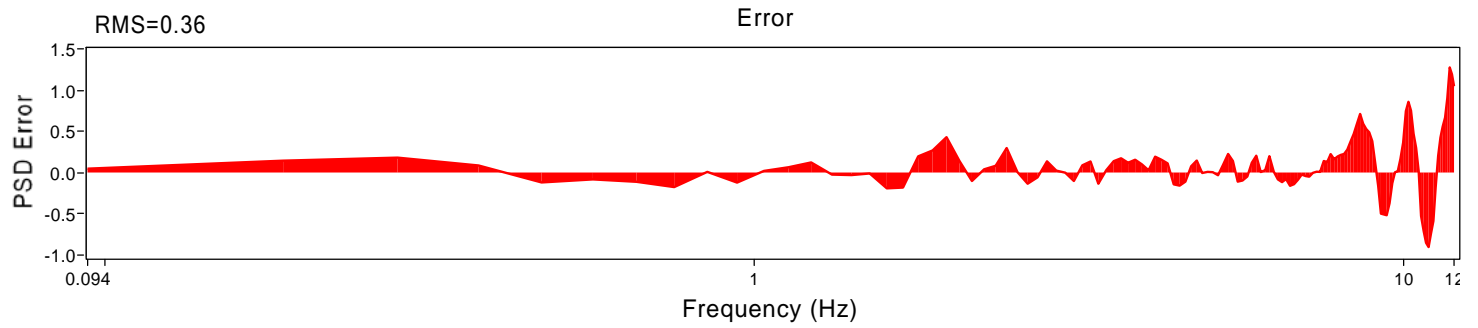
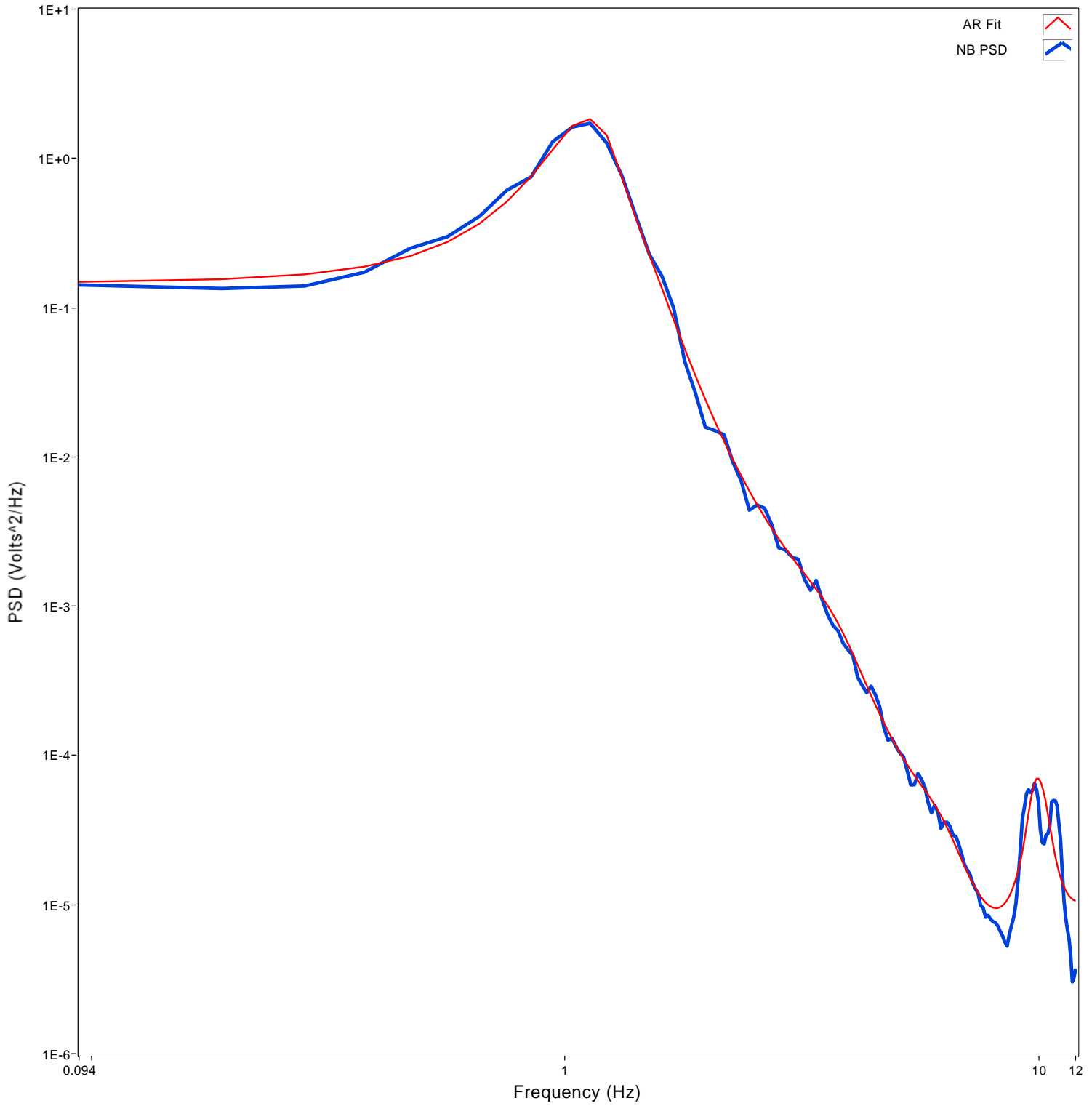




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	LT0494	SG LVL	FU2_2010-07_0001.psd	98 : 512	0.094124	12.047826	11	Forward-Backward	15-Jul-2010 13:36:44

NB PSD and AR PSD

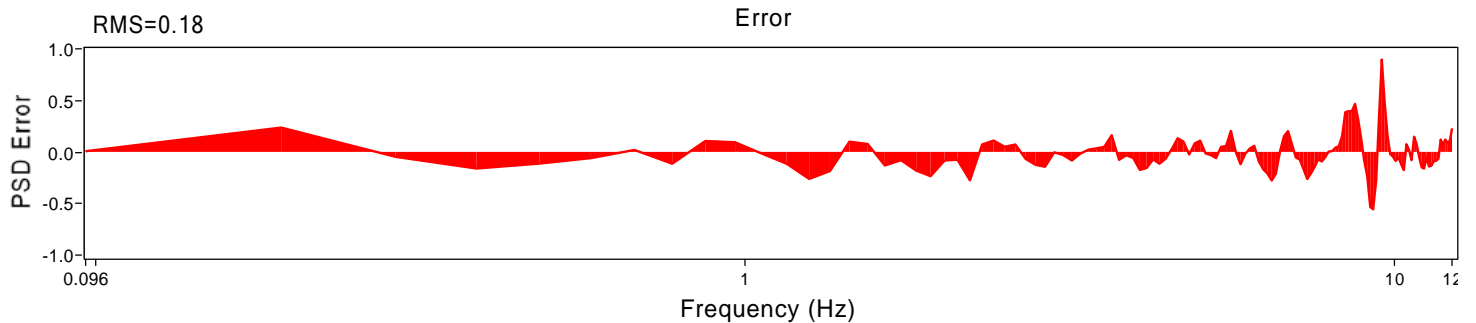
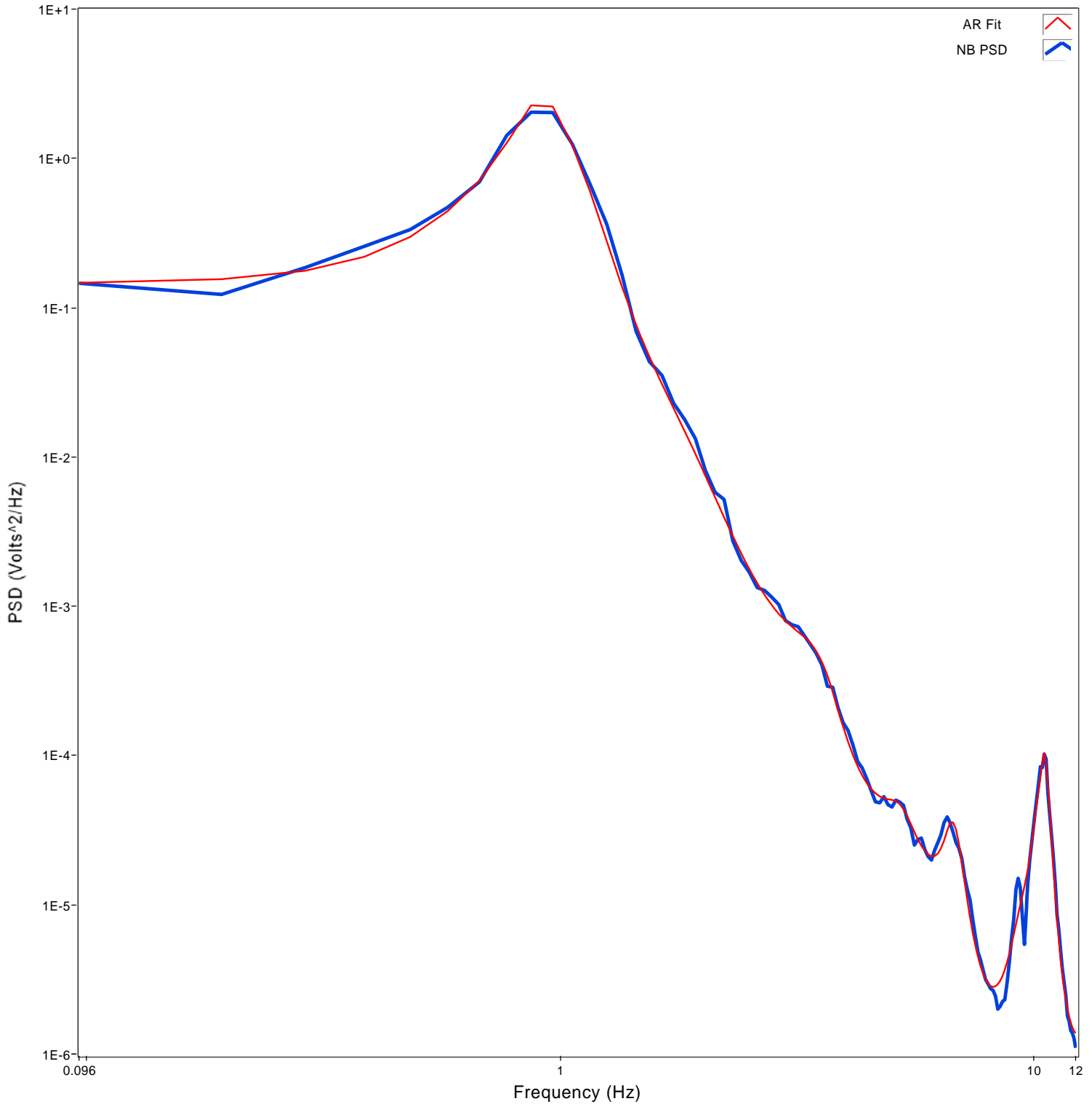




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	LT0475	SG LVL	FU2_2010-07_0002.psd	101 : 512	0.096448	12.345303	18	Least-Squares	15-Jul-2010 13:36:44

NB PSD and AR PSD



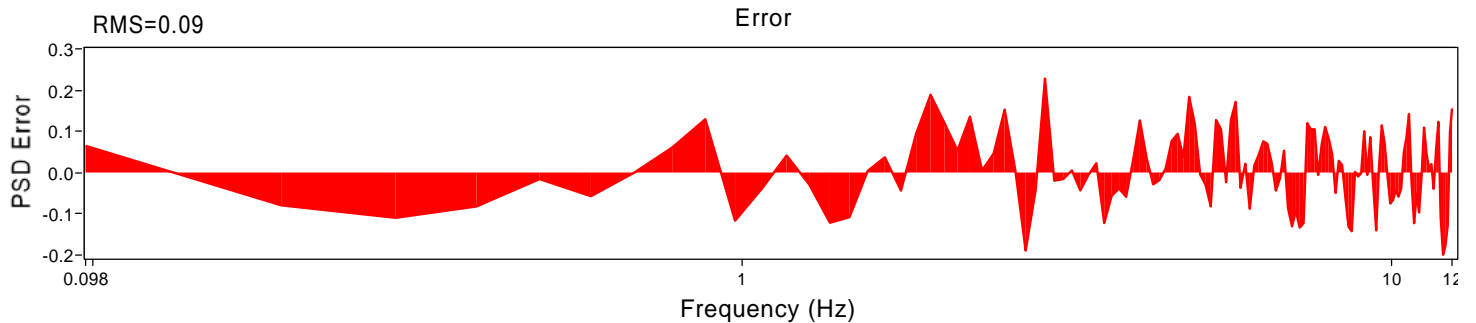
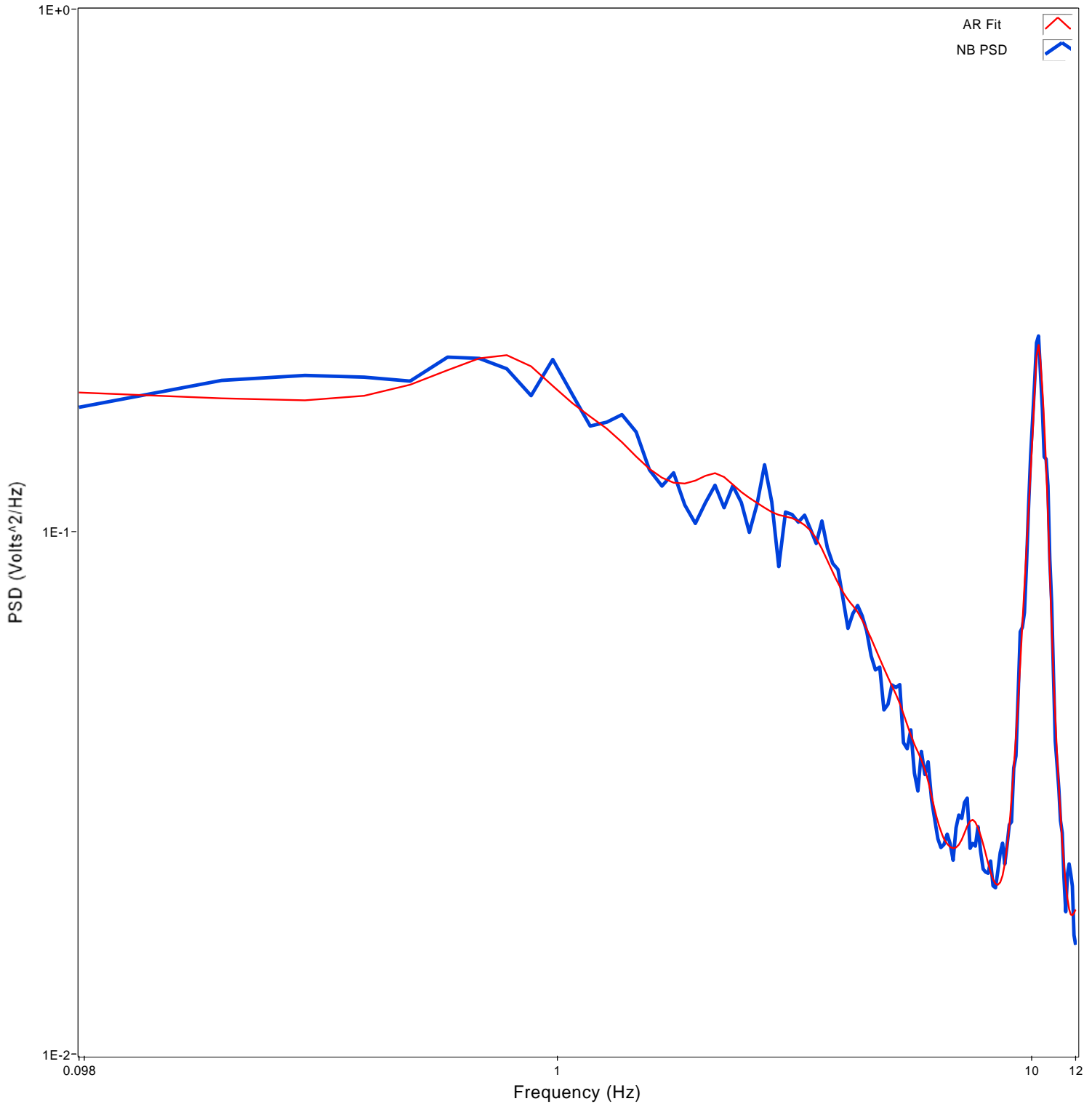




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	LT0485	SG LVL	FU2_2010-07_0002.psd	102 : 512	0.097653	12.499619	18	Least-Squares	15-Jul-2010 13:36:44

NB PSD and AR PSD

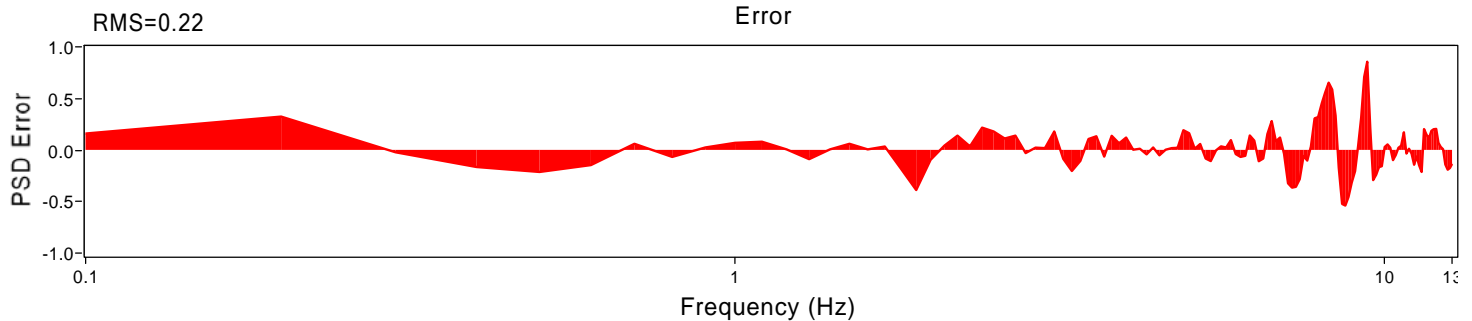
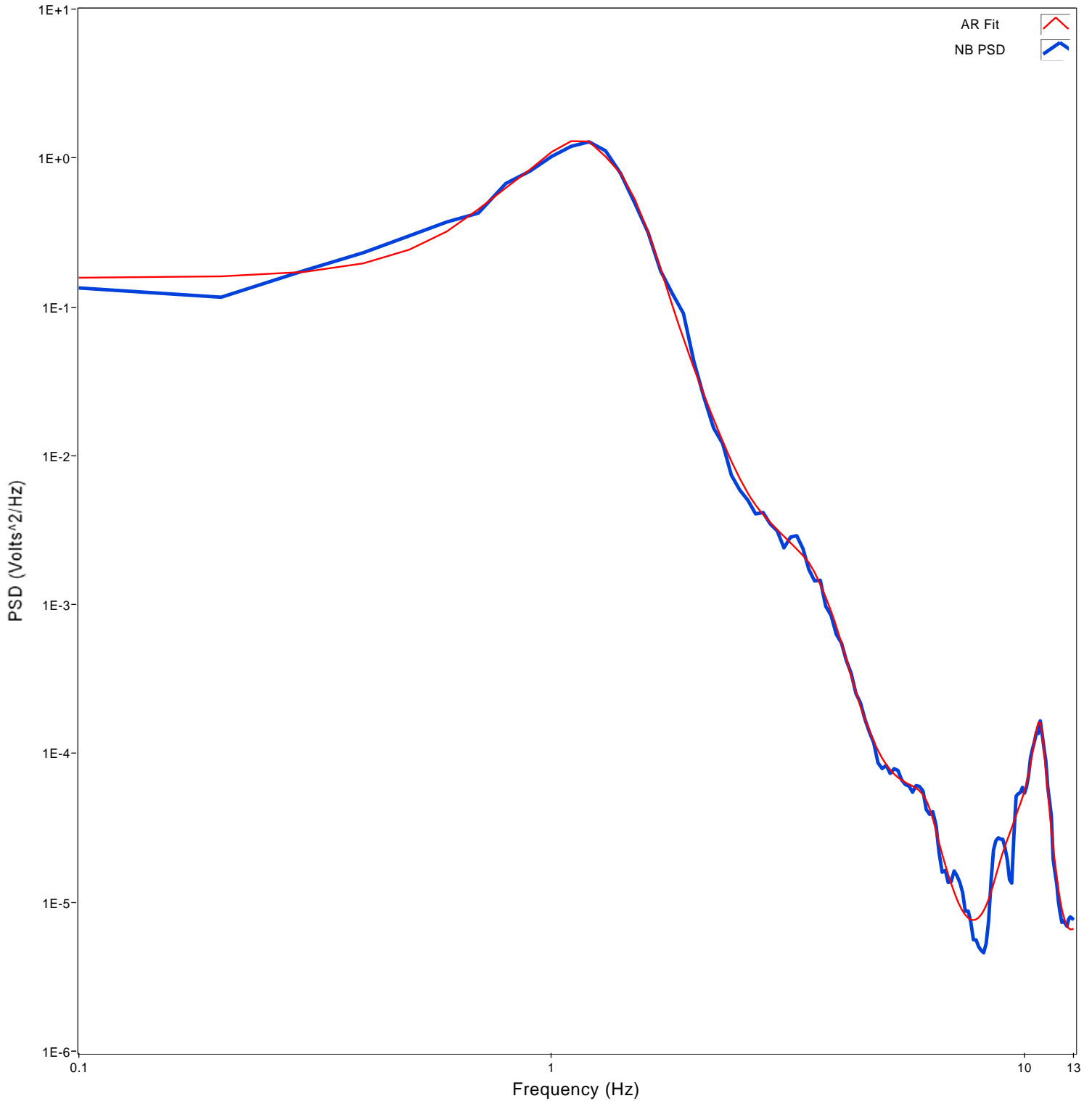




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	LT0495	SG LVL	FU2_2010-07_0002.psd	104 : 512	0.100157	12.820122	18	Least-Squares	15-Jul-2010 13:36:44

NB PSD and AR PSD

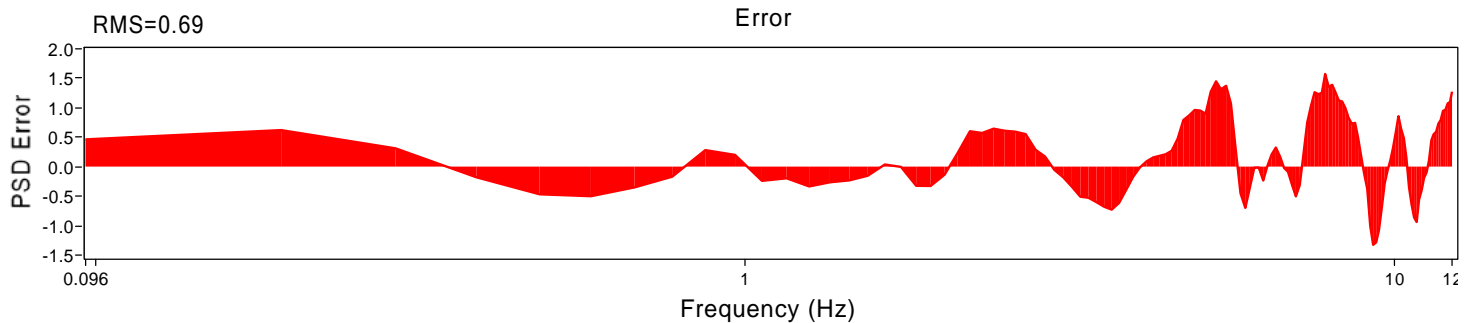
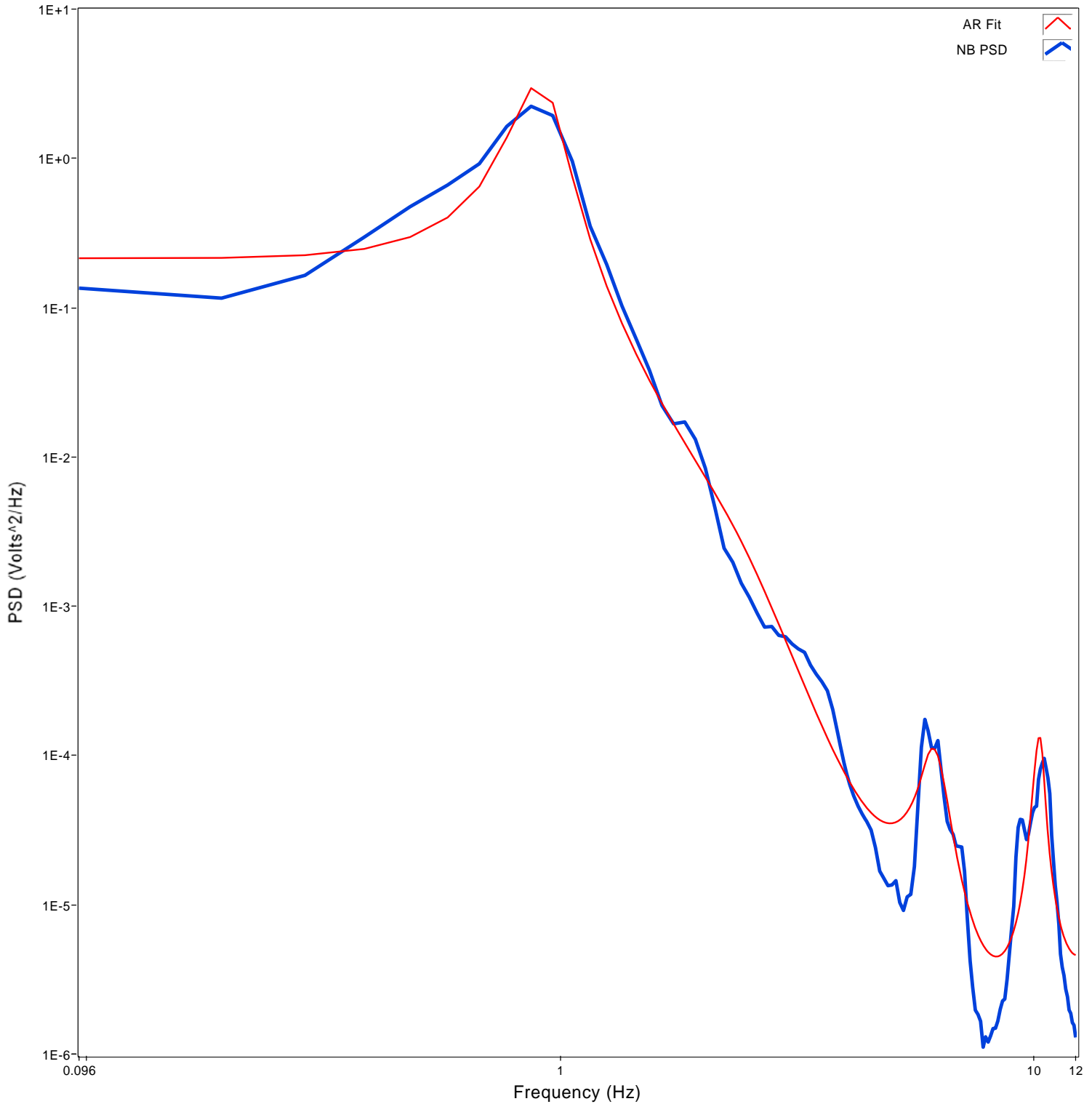




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	LT0476	SG LVL	FU2_2010-07_0003.psd	101 : 512	0.096448	12.345303	11	Least-Squares	15-Jul-2010 13:36:44

NB PSD and AR PSD

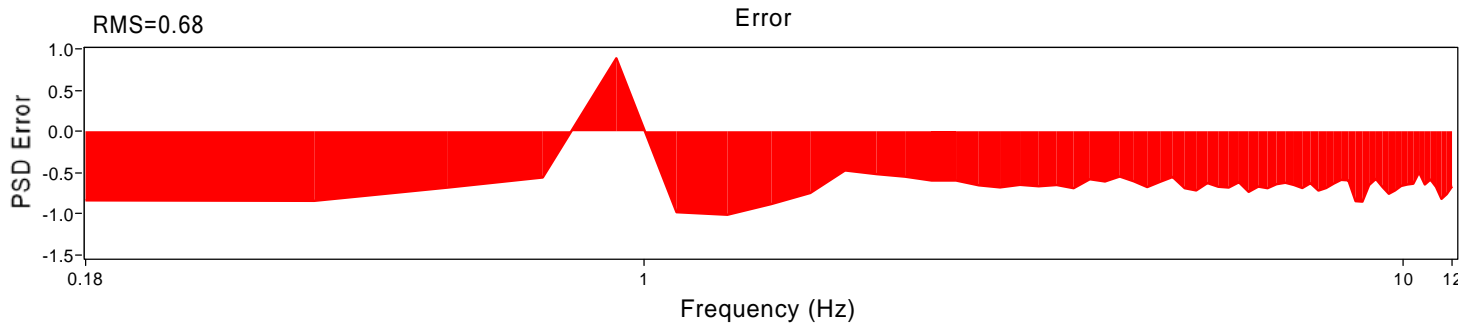
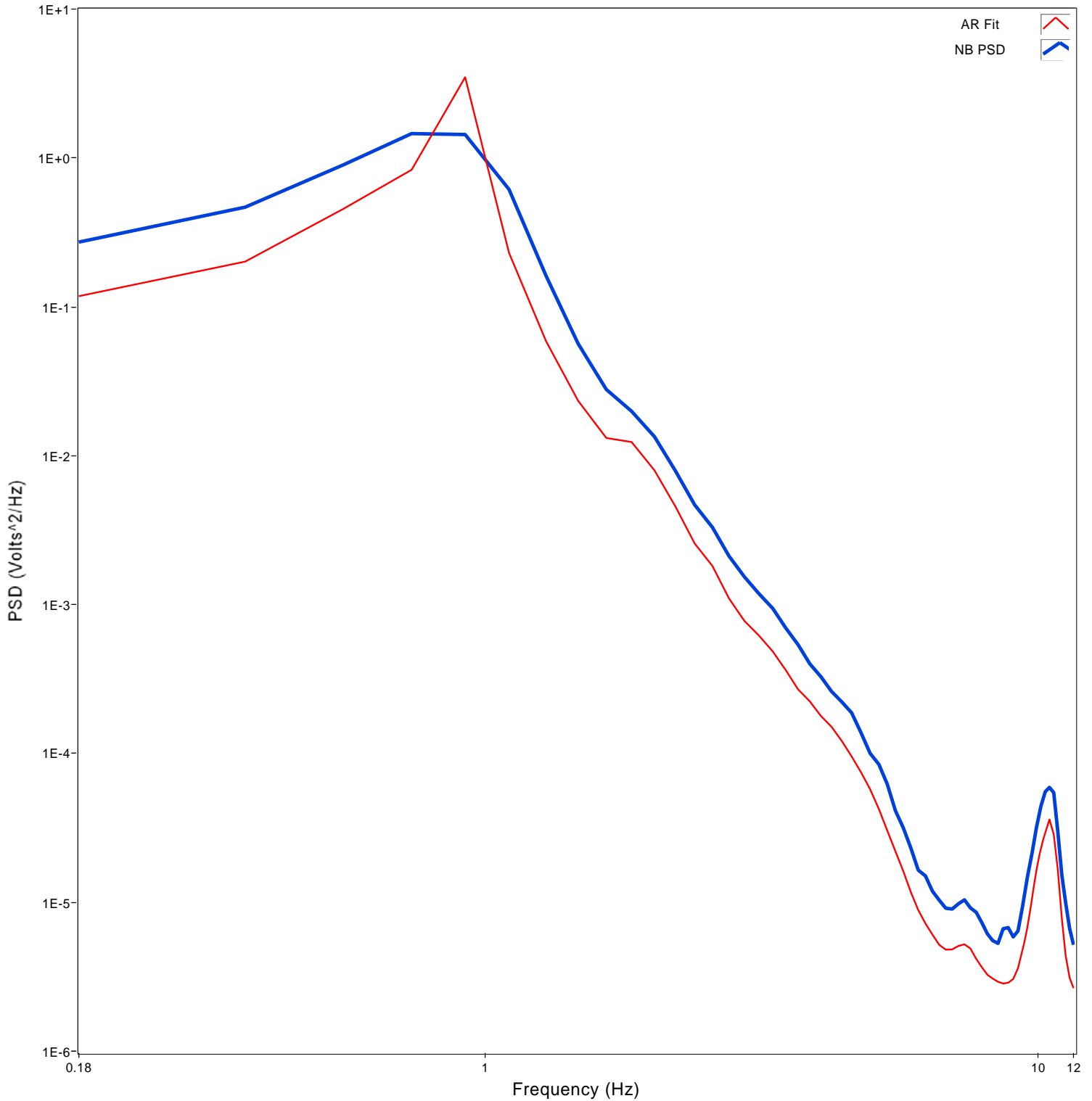




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	LT0486	SG LVL	FU2_2010-07_0003.psd	192 : 512	0.183818	11.764348	20	Least-Squares	15-Jul-2010 13:36:44

NB PSD and AR PSD

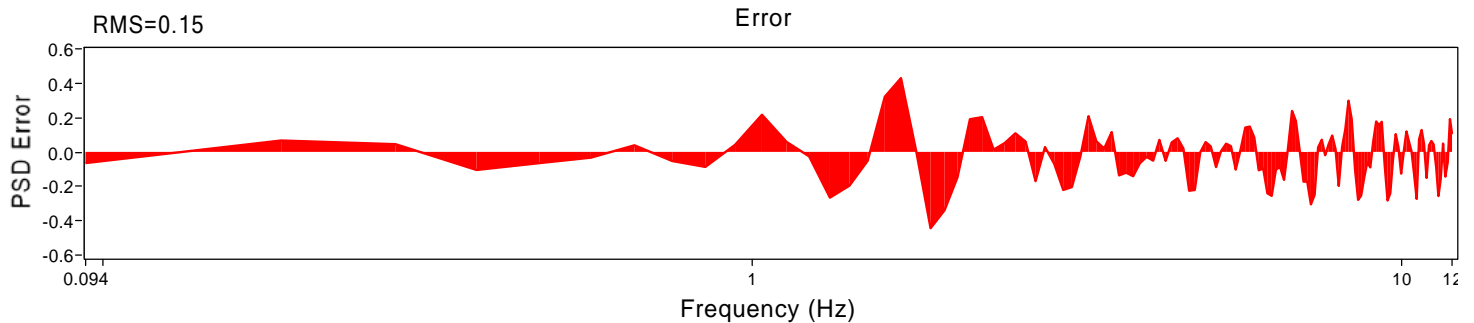
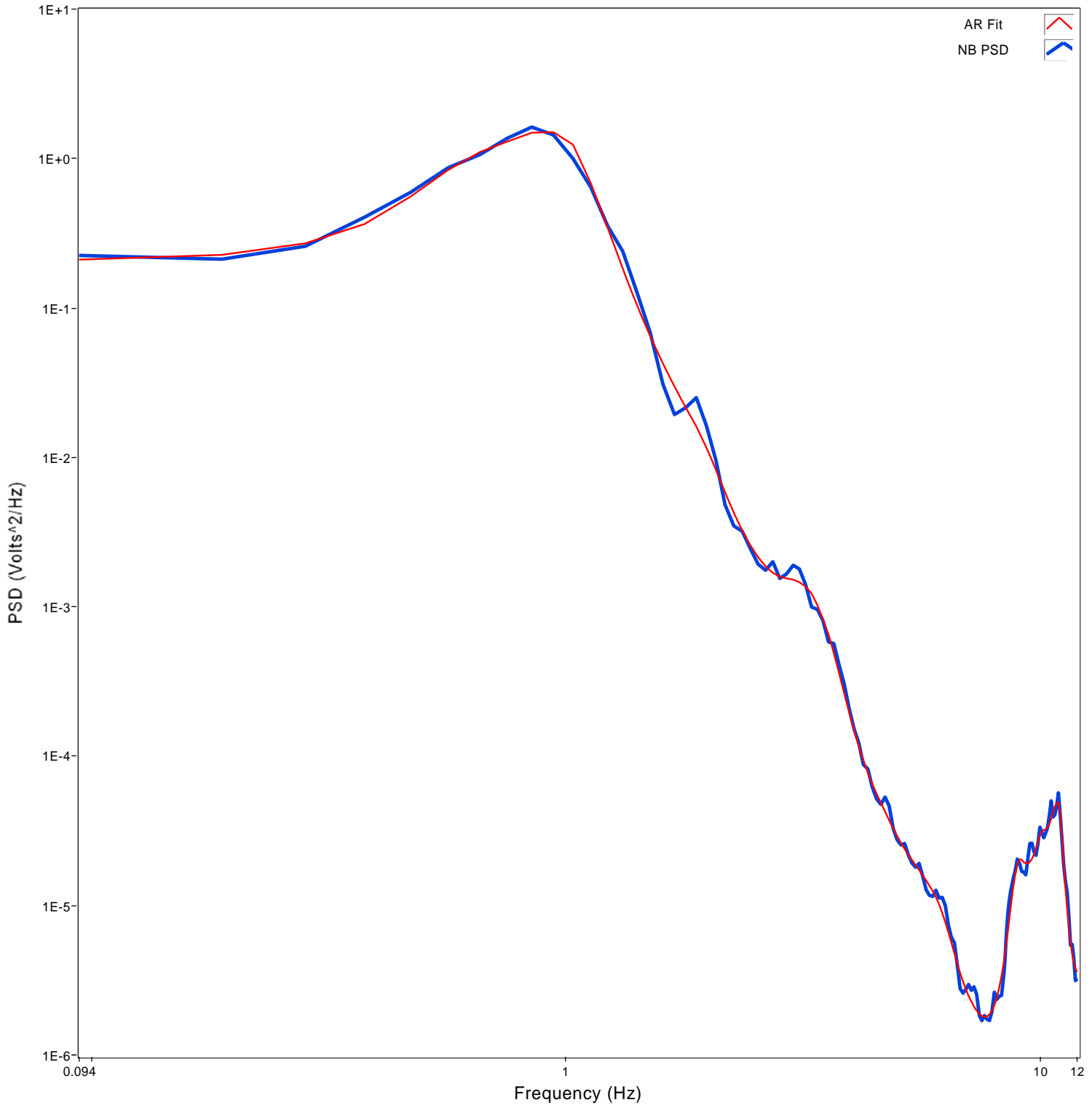




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	LT0496	SG LVL	FU2_2010-07_0003.psd	98 : 512	0.094124	12.047826	20	Least-Squares	15-Jul-2010 13:36:44

NB PSD and AR PSD

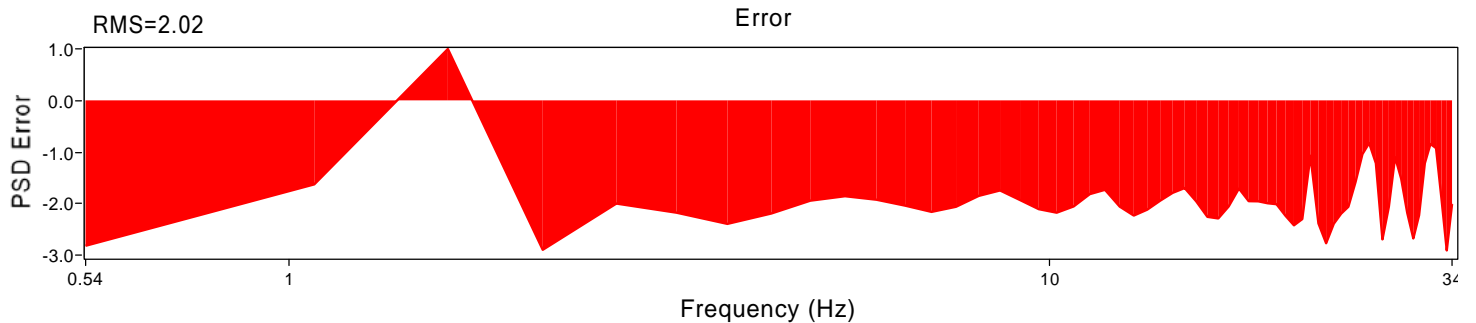
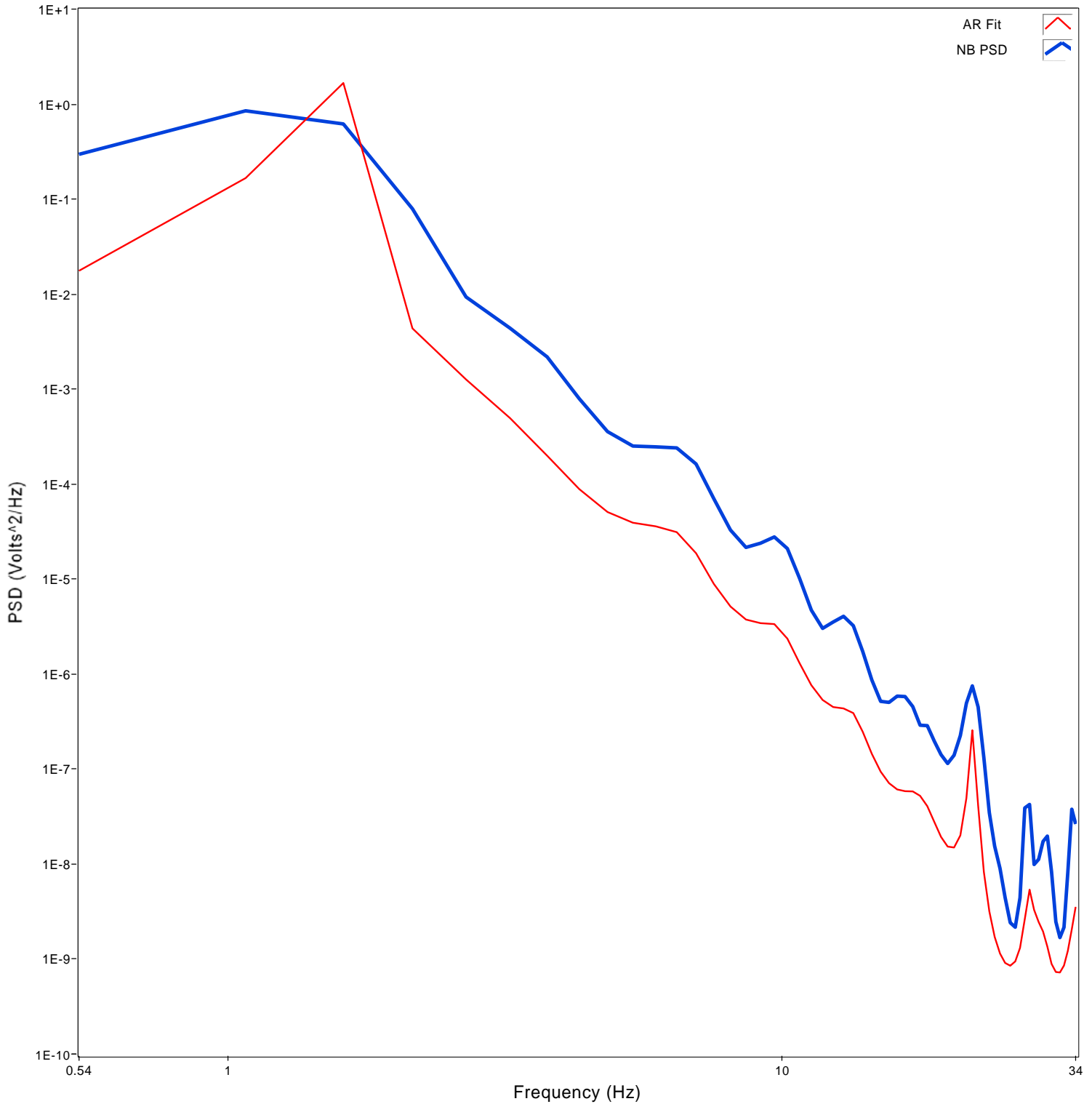




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0474	STM FLOW	FU2_2010-07_0003.psd	564 : 512	0.538777	34.481708	20	Least-Squares	15-Jul-2010 13:36:44

NB PSD and AR PSD

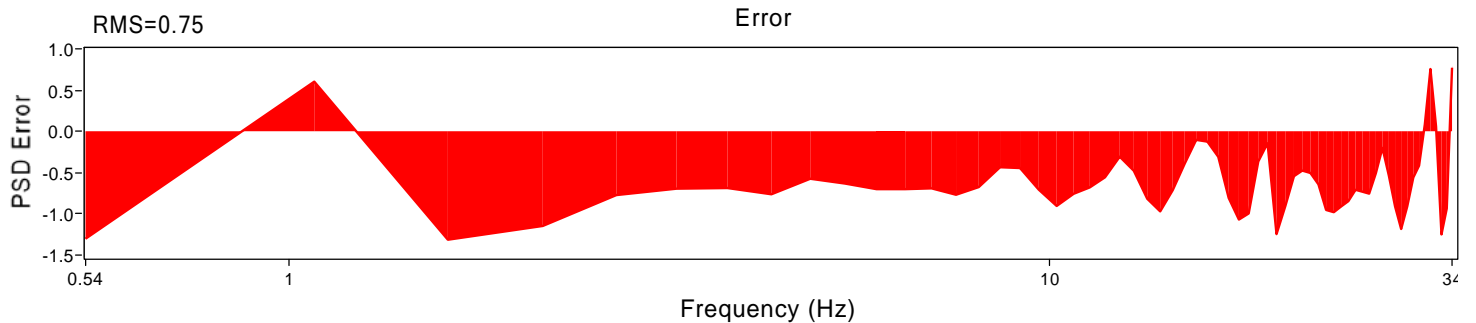
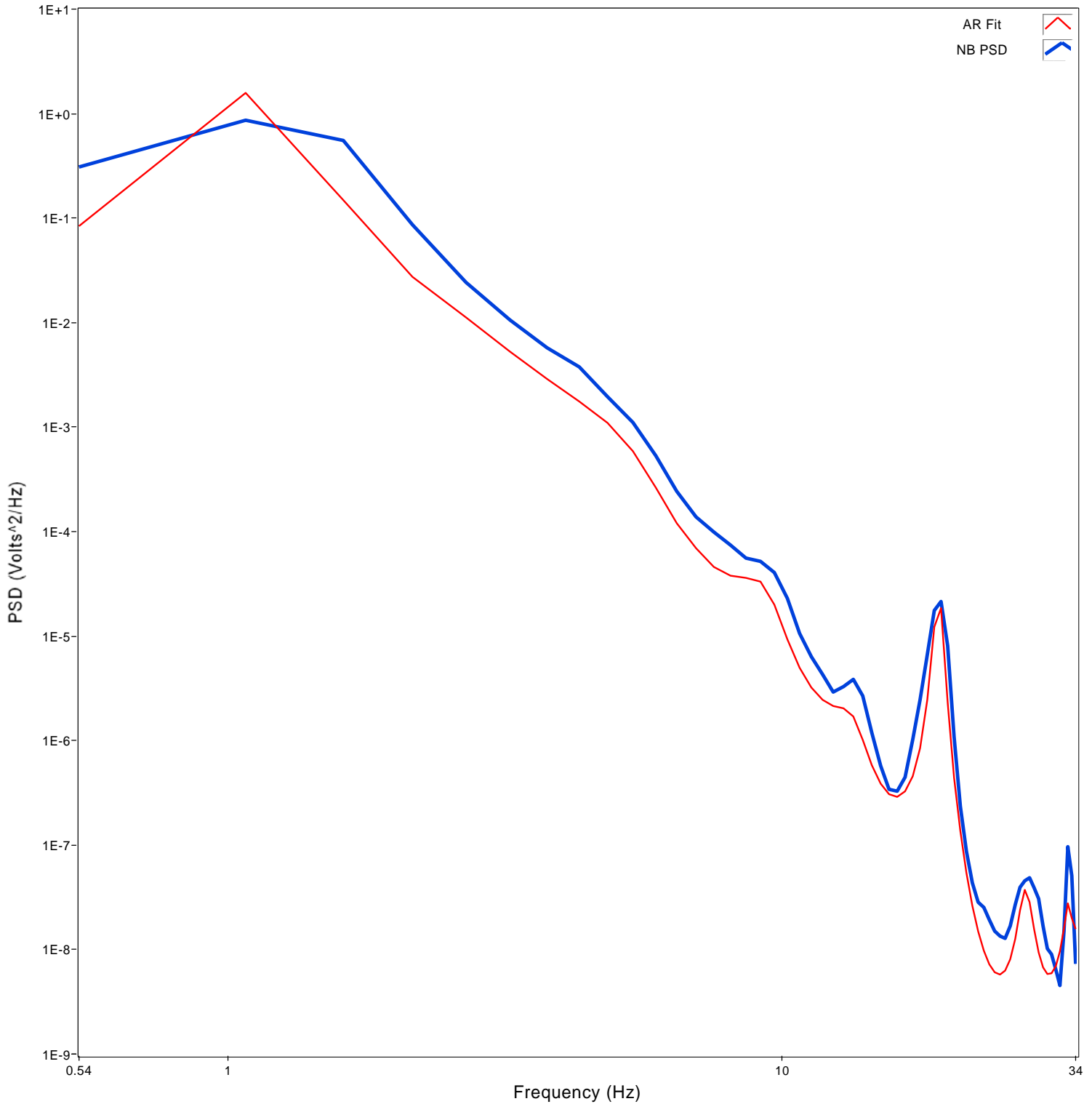




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0484	STM FLOW	FU2_2010-07_0003.psd	564 : 512	0.538777	34.481708	18	Least-Squares	15-Jul-2010 13:36:44

NB PSD and AR PSD

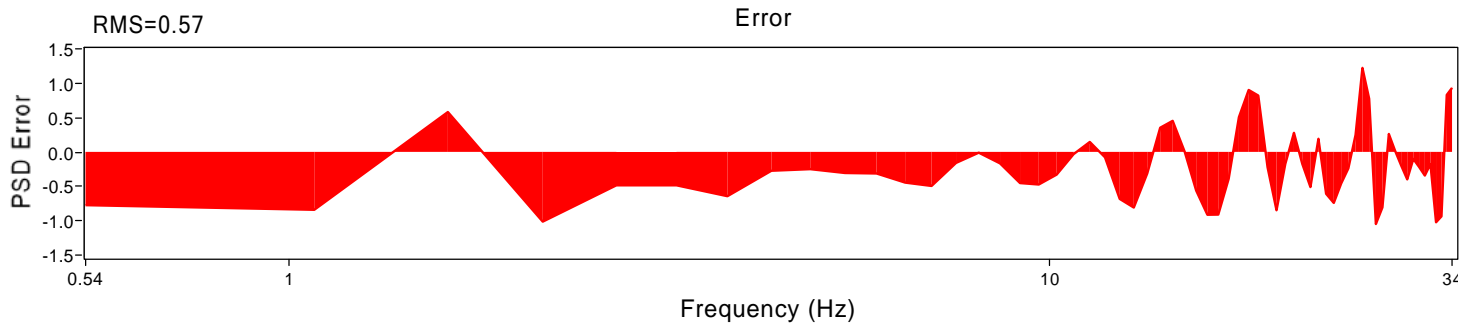
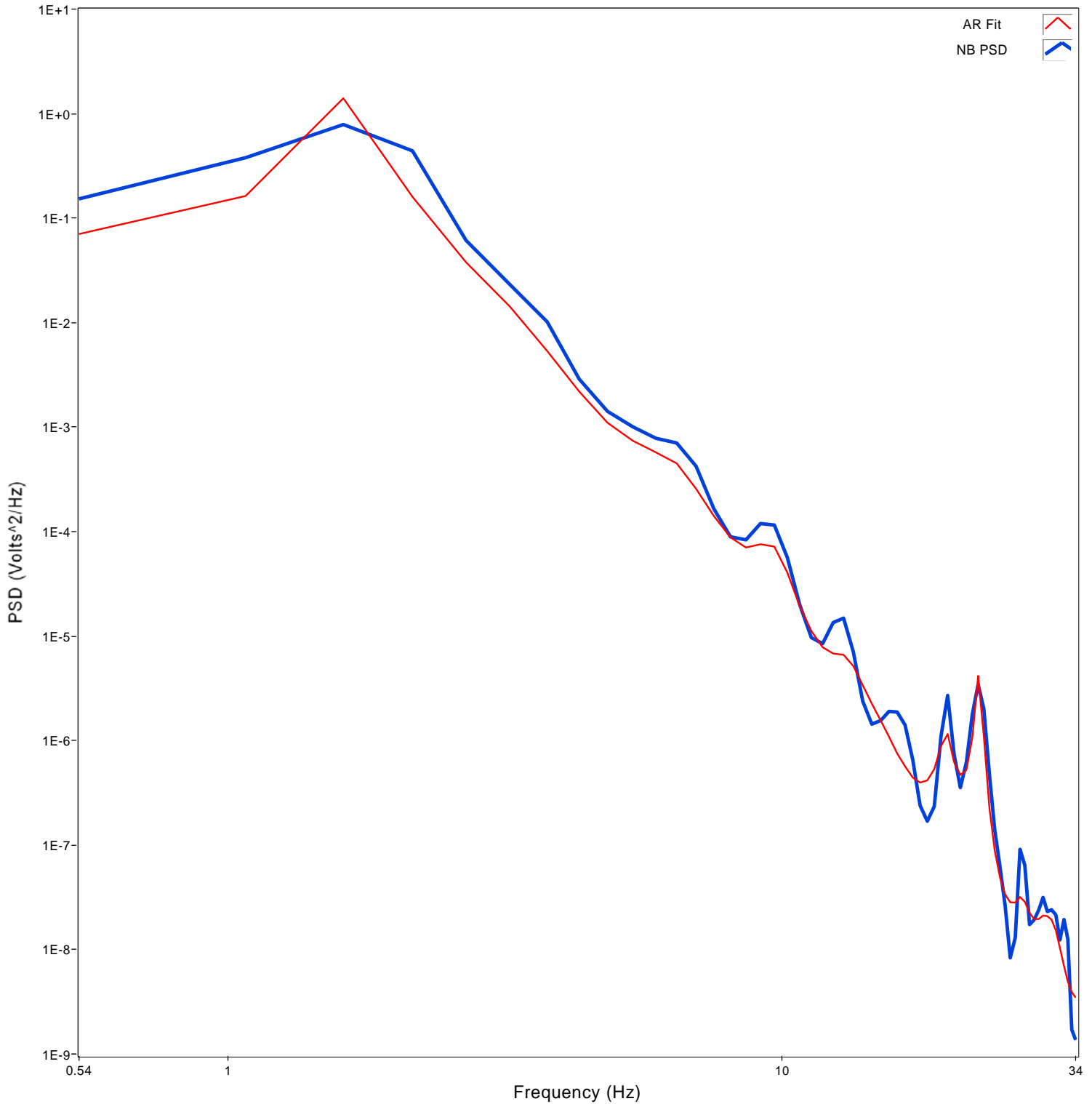




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0494	STM FLOW	FU2_2010-07_0003.psd	564 : 512	0.538777	34.481708	19	Least-Squares	15-Jul-2010 13:36:44

NB PSD and AR PSD



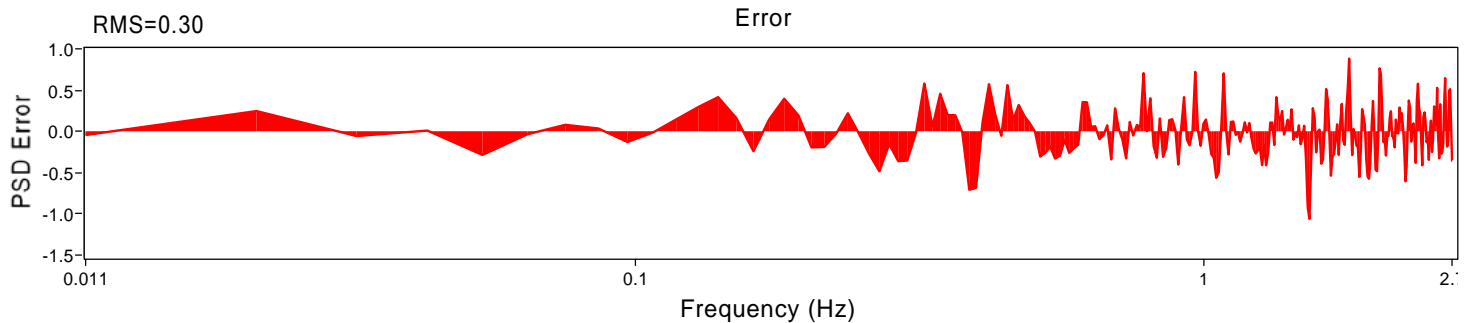
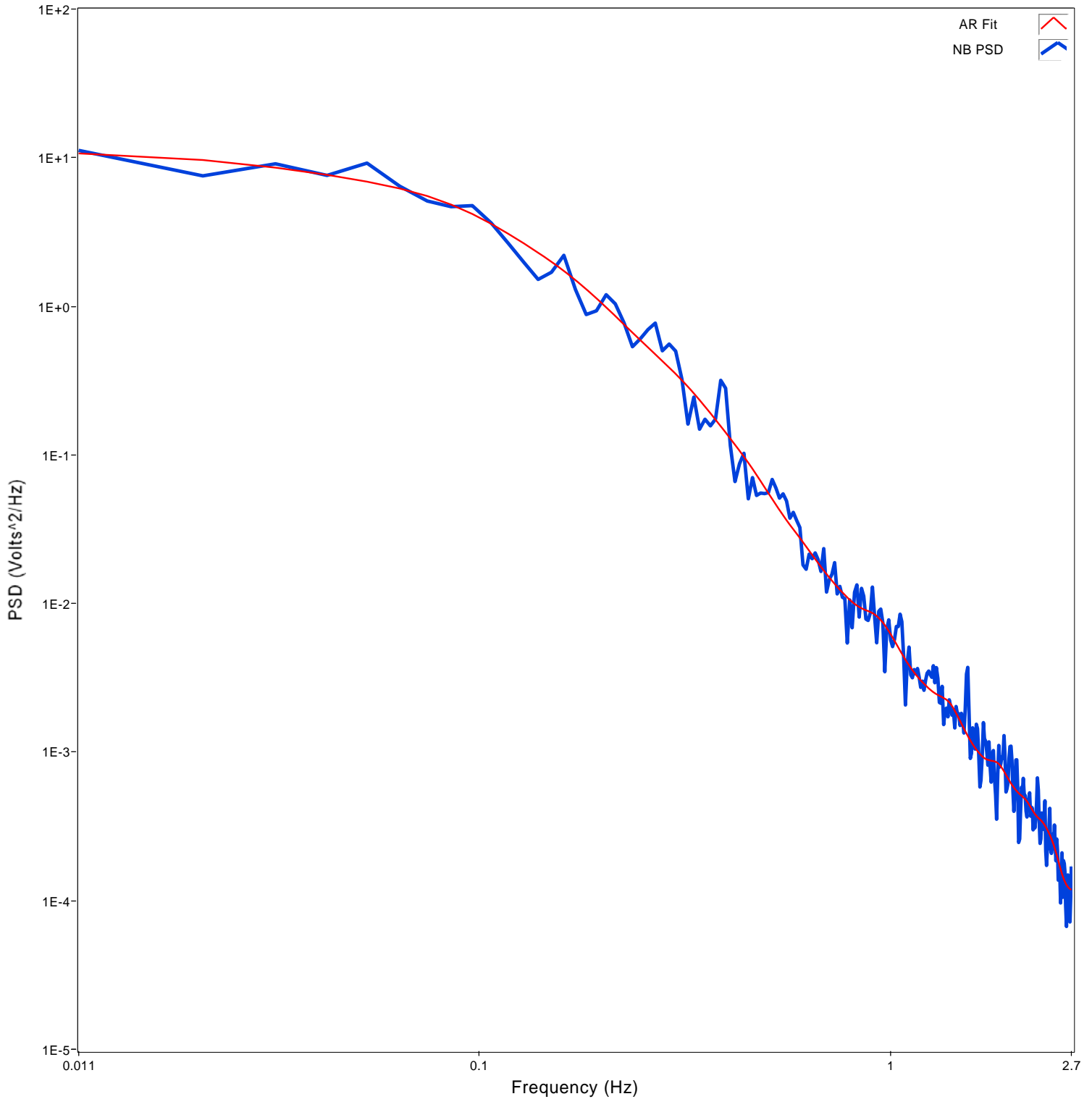




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0477	FW FLOW	FU2_2010-07_0003.psd	11 : 512	0.010731	2.747169	17	Least-Squares	15-Jul-2010 13:36:44

NB PSD and AR PSD

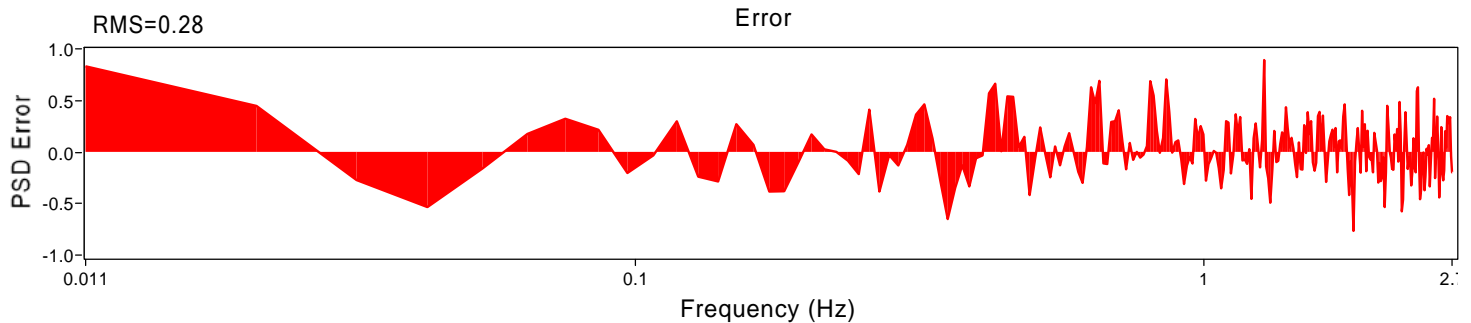
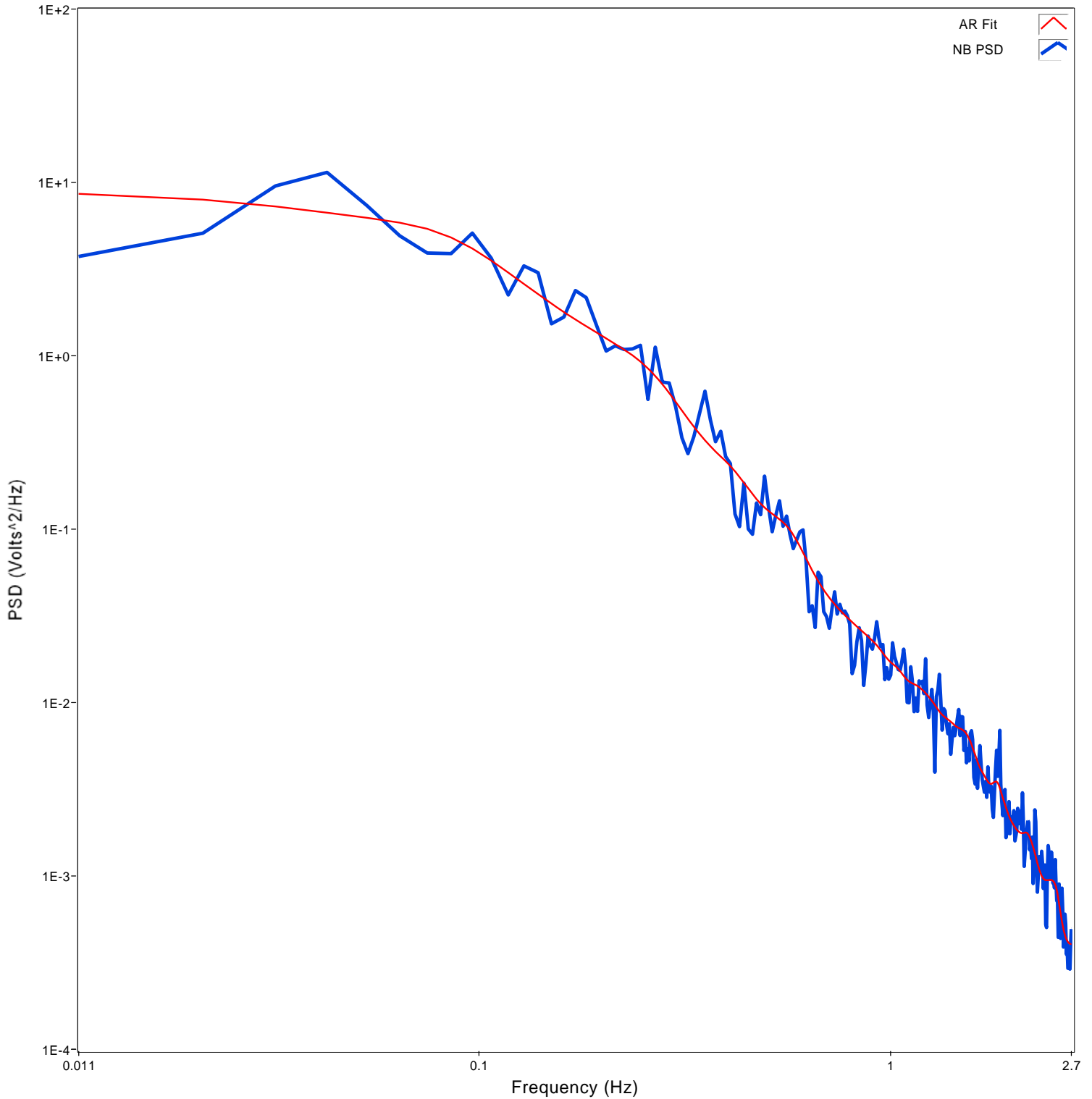




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0487	FW FLOW	FU2_2010-07_0003.psd	11 : 512	0.010731	2.747169	21	Least-Squares	15-Jul-2010 13:36:44

NB PSD and AR PSD

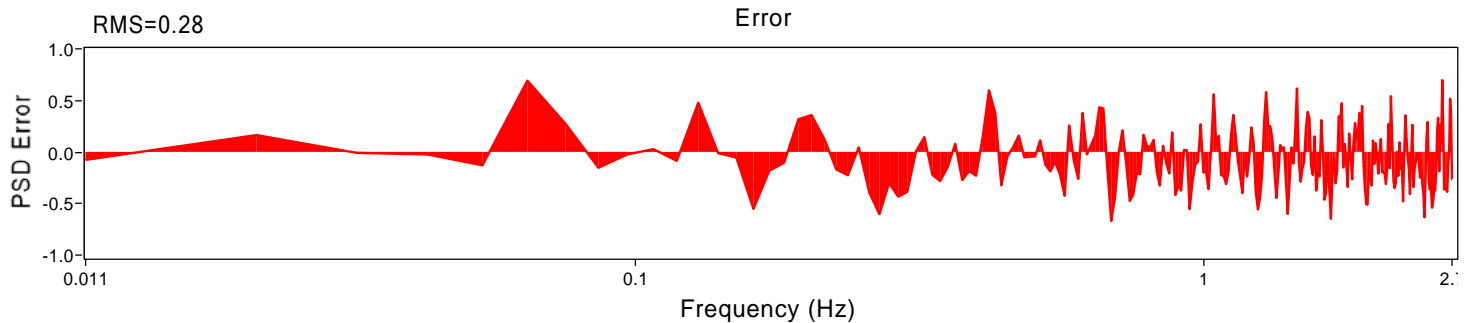
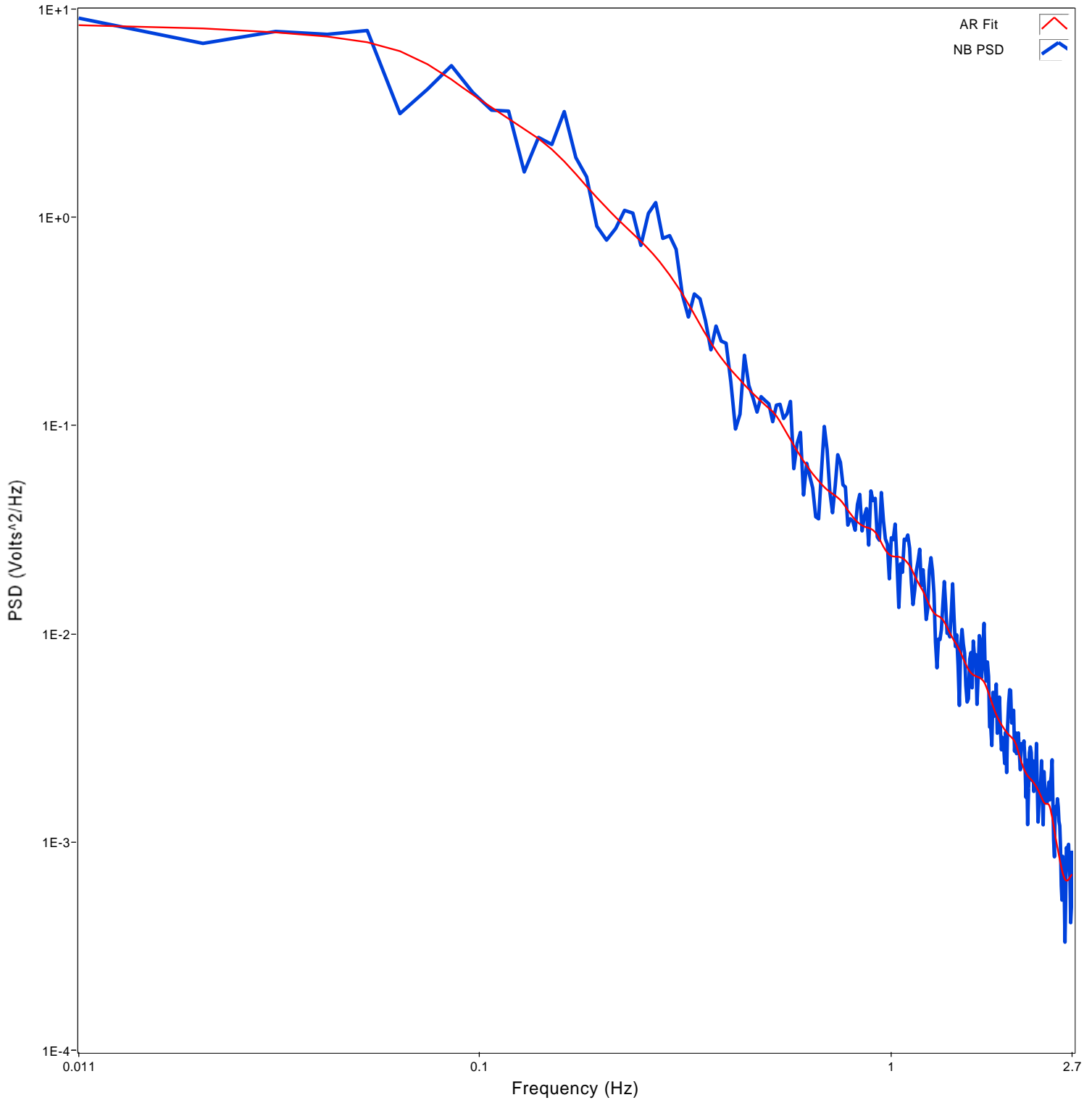




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0497	FW FLOW	FU2_2010-07_0003.psd	11 : 512	0.010731	2.747169	21	Least-Squares	15-Jul-2010 13:36:44

NB PSD and AR PSD

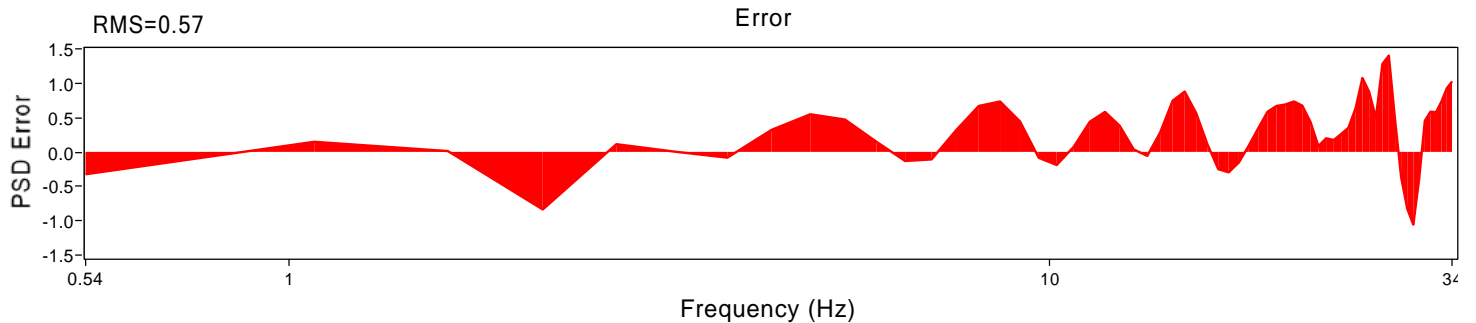
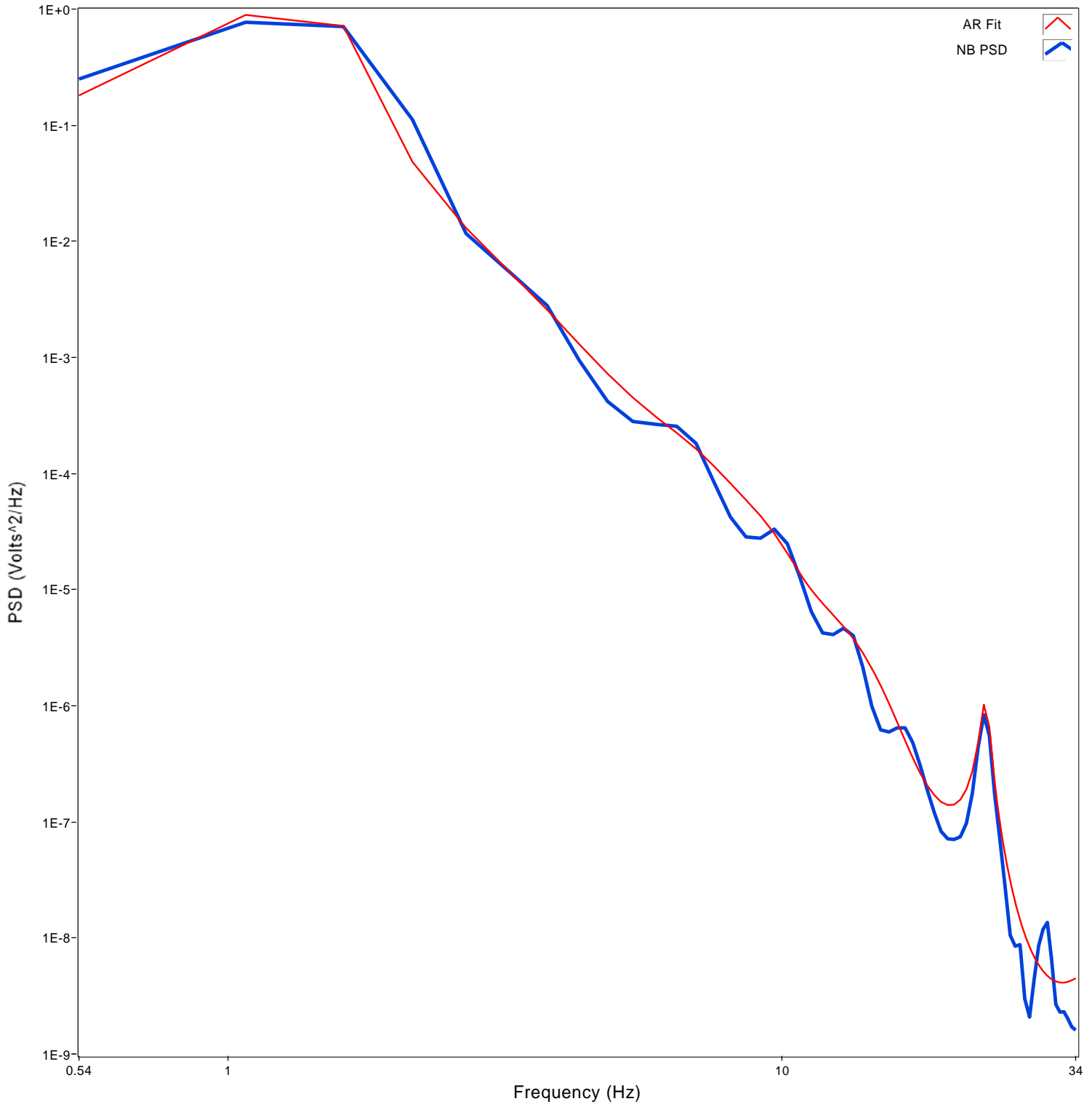




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0475	STM FLOW	FU2_2010-07_0004.psd	564 : 512	0.538777	34.481708	11	Forward-Backward	15-Jul-2010 13:36:44

NB PSD and AR PSD

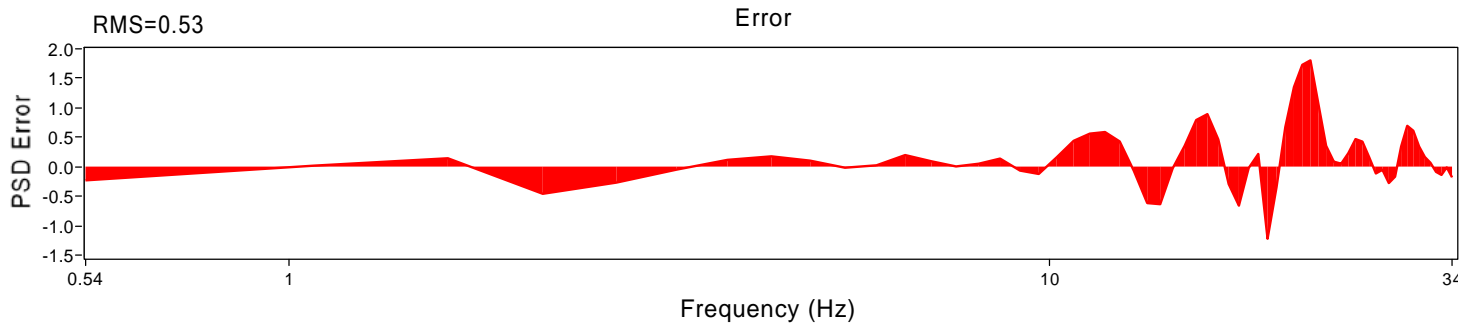
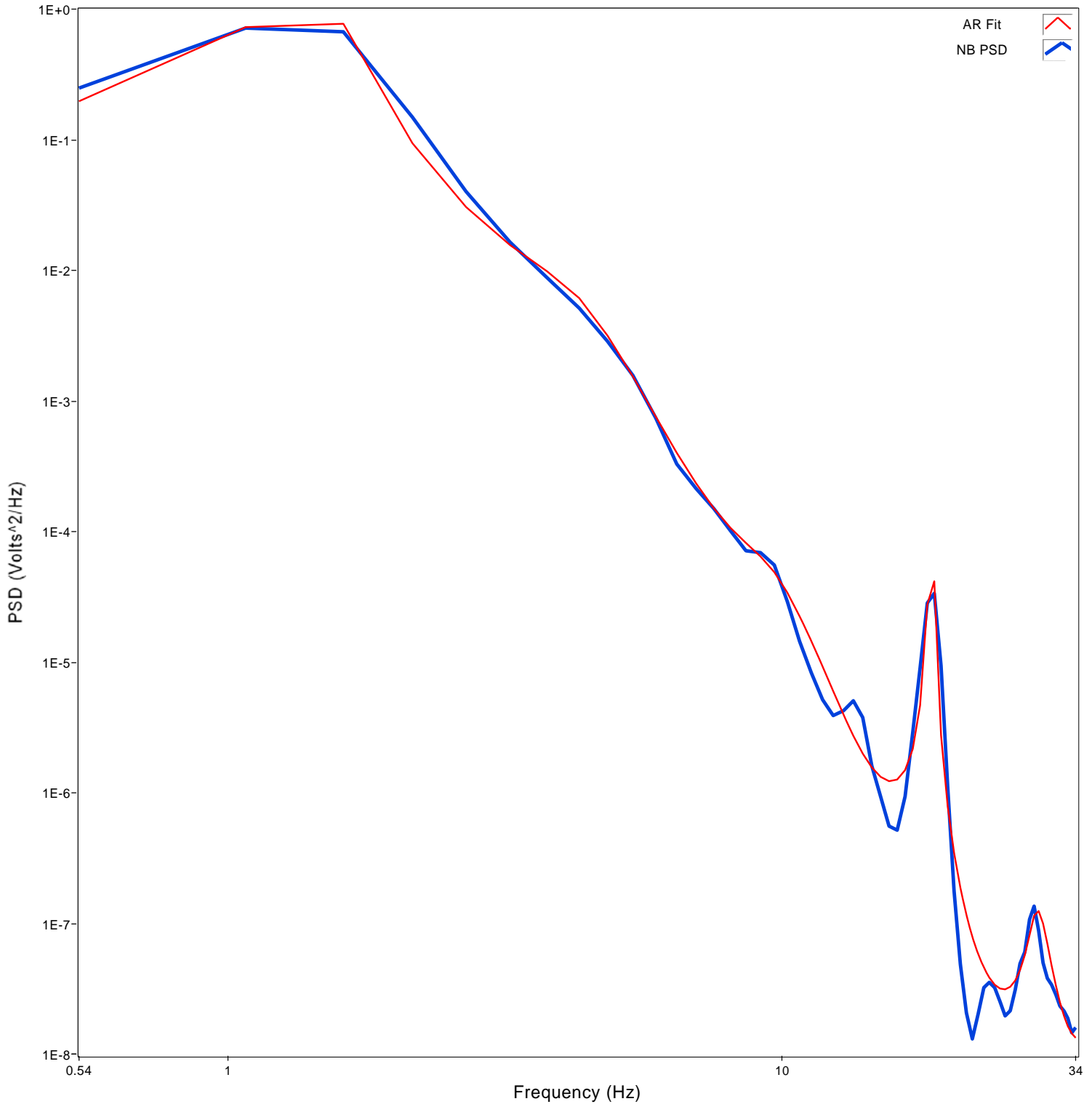




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0485	STM FLOW	FU2_2010-07_0004.psd	564 : 512	0.538777	34.481708	11	Forward-Backward	15-Jul-2010 13:36:44

NB PSD and AR PSD

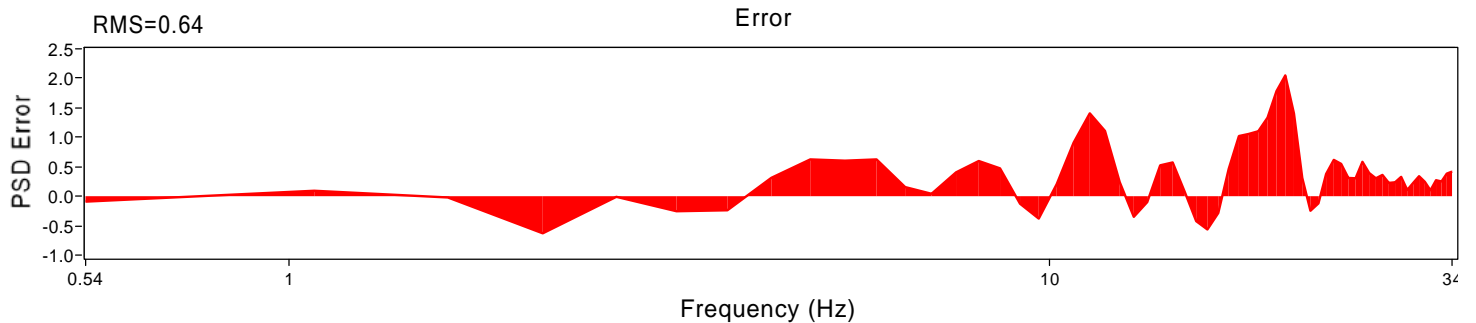
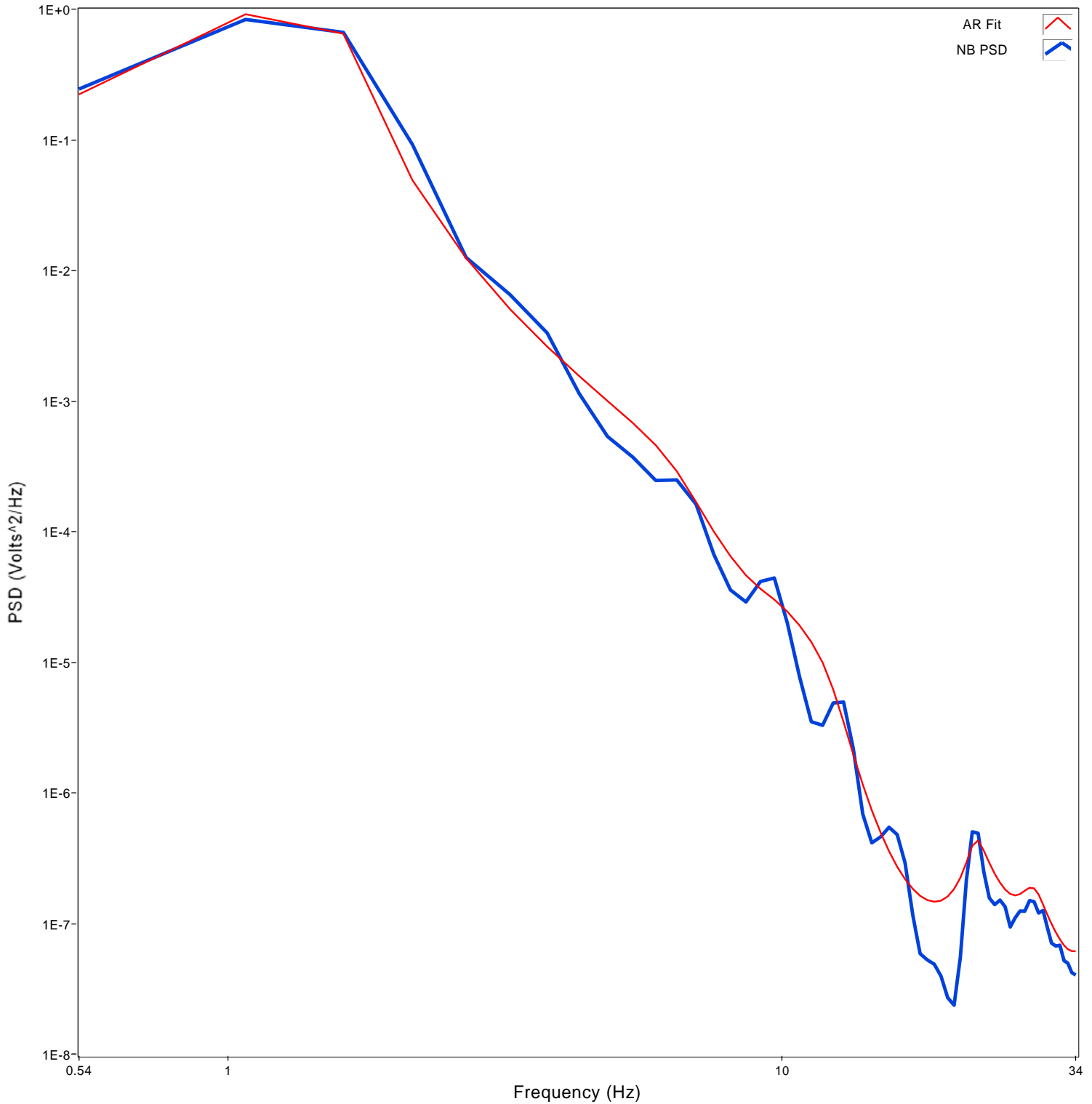




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0495	STM FLOW	FU2_2010-07_0004.psd	564 : 512	0.538777	34.481708	11	Forward-Backward	15-Jul-2010 13:36:44

NB PSD and AR PSD

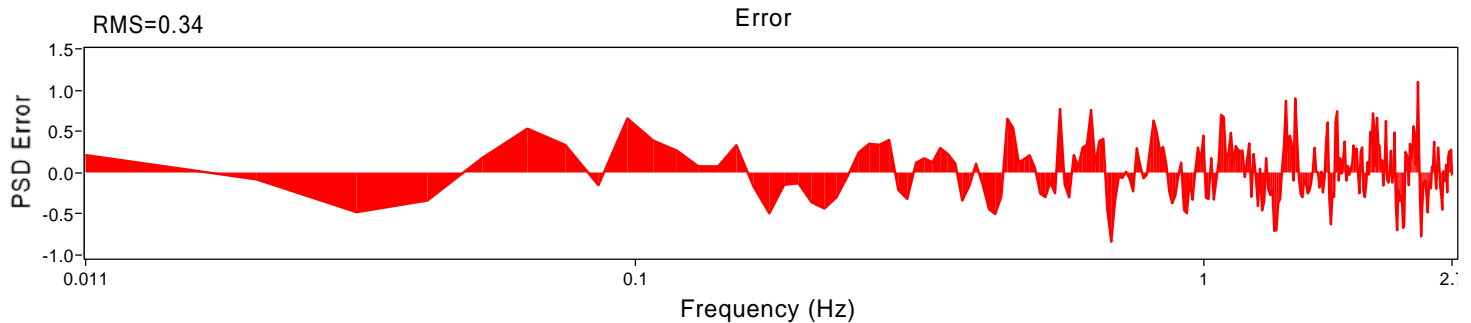
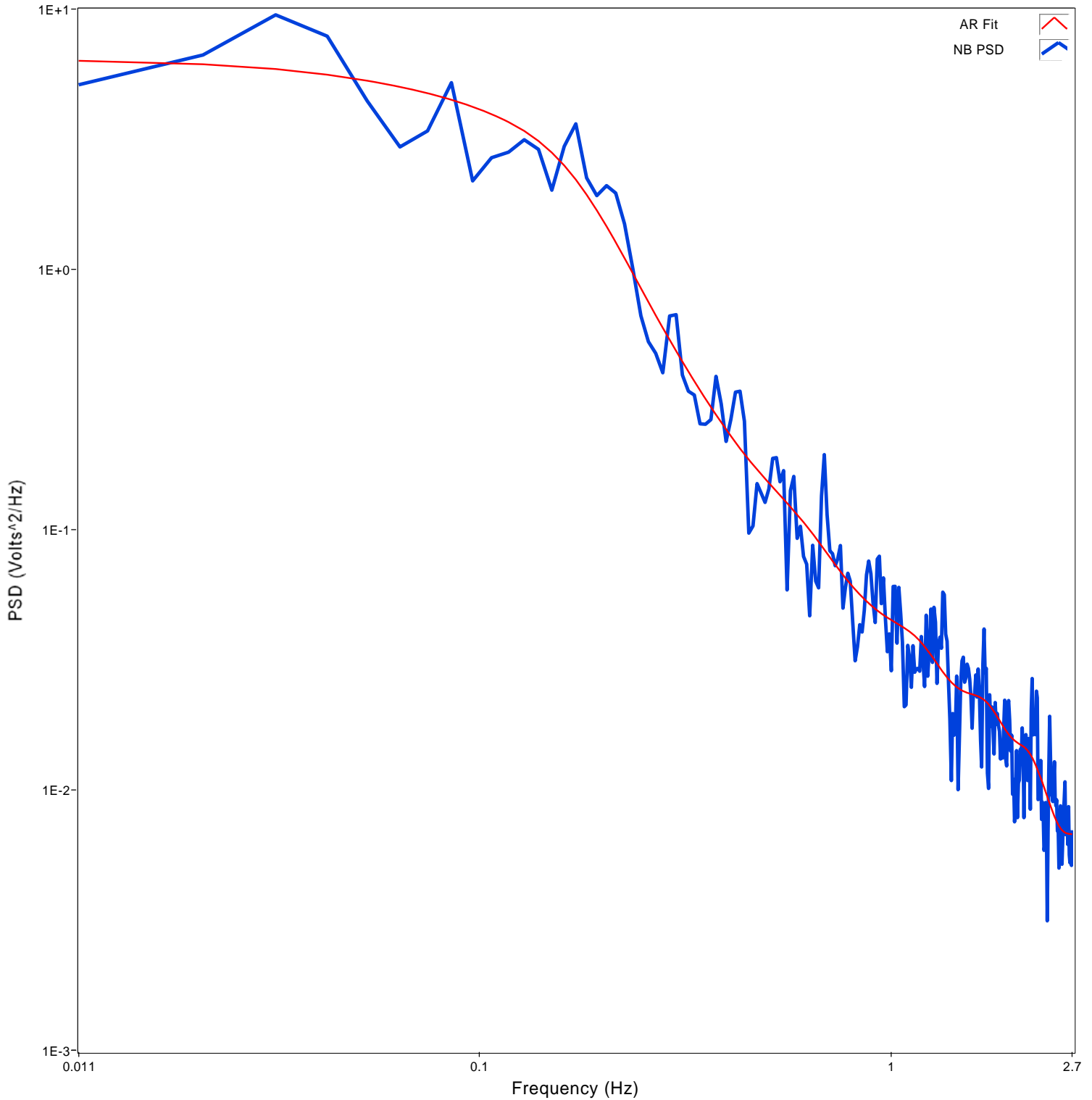




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0476	FW FLOW	FU2_2010-07_0004.psd	11 : 512	0.010731	2.747169	11	Forward-Backward	15-Jul-2010 13:36:44

NB PSD and AR PSD

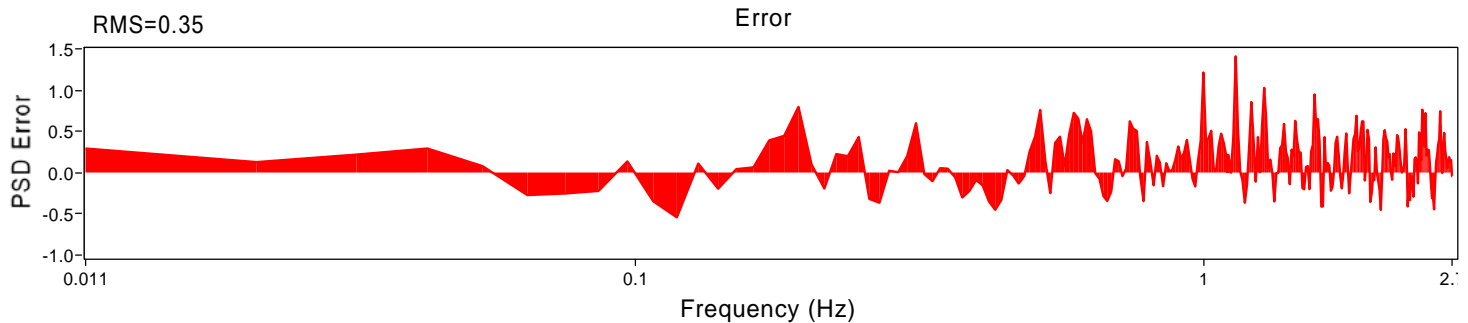
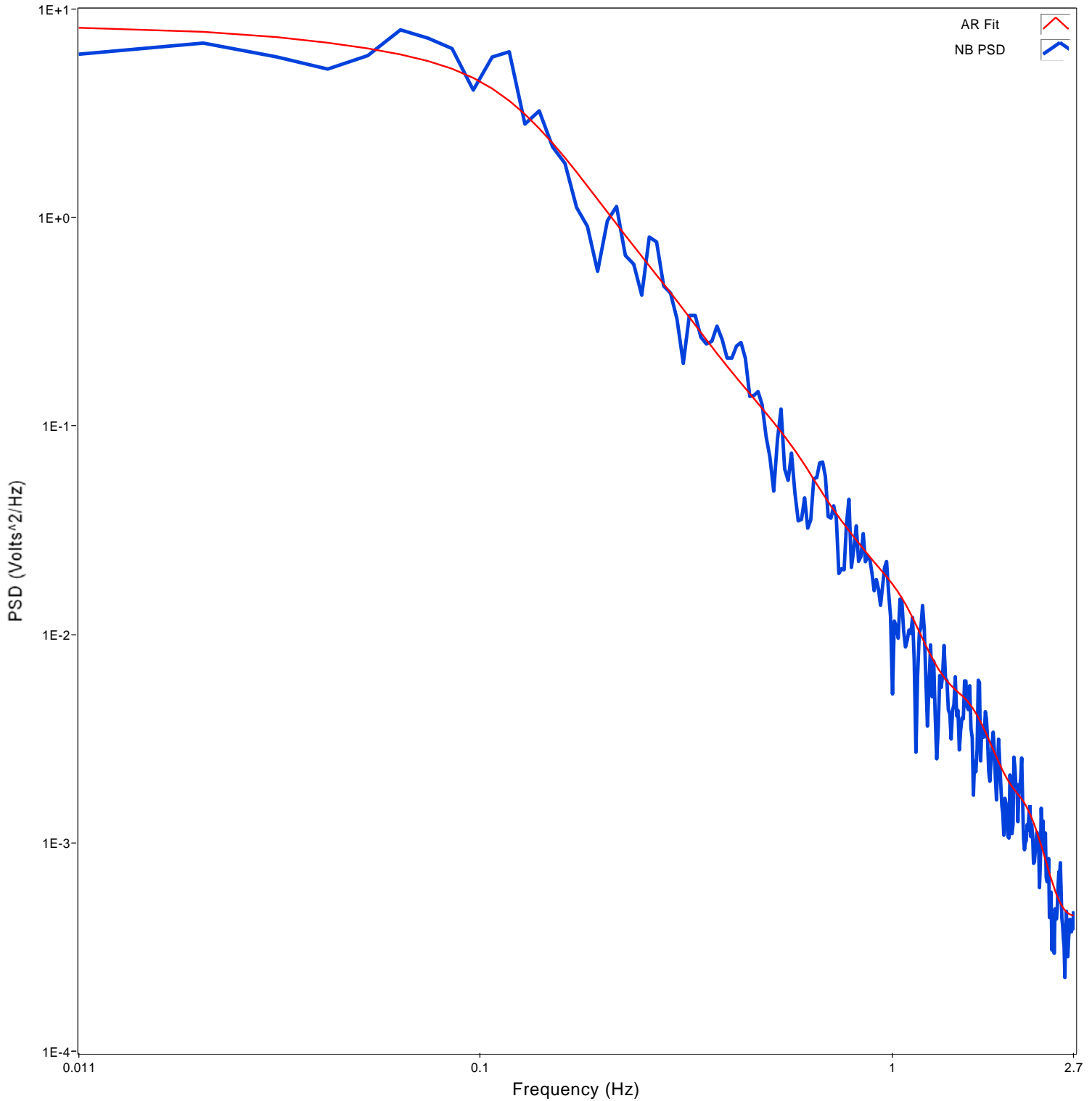




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0486	FW FLOW	FU2_2010-07_0004.psd	11 : 512	0.010731	2.747169	11	Forward-Backward	15-Jul-2010 13:36:44

NB PSD and AR PSD



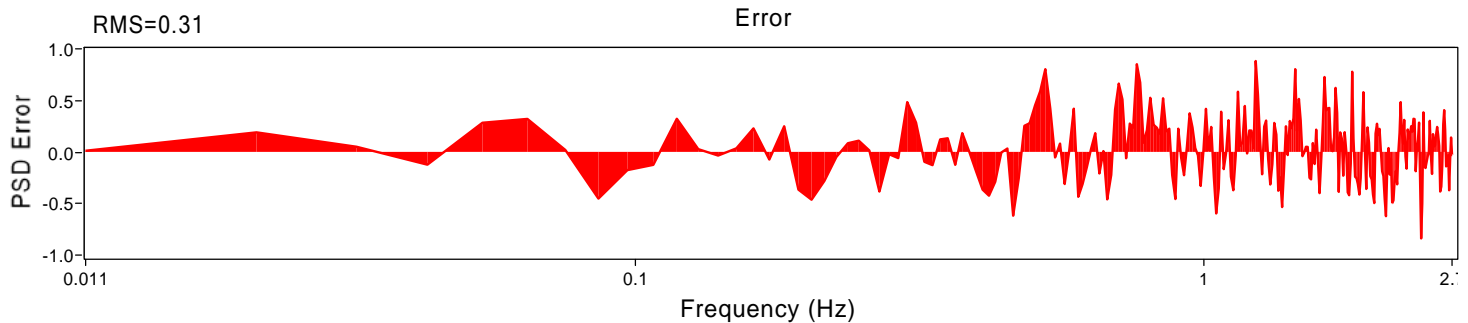
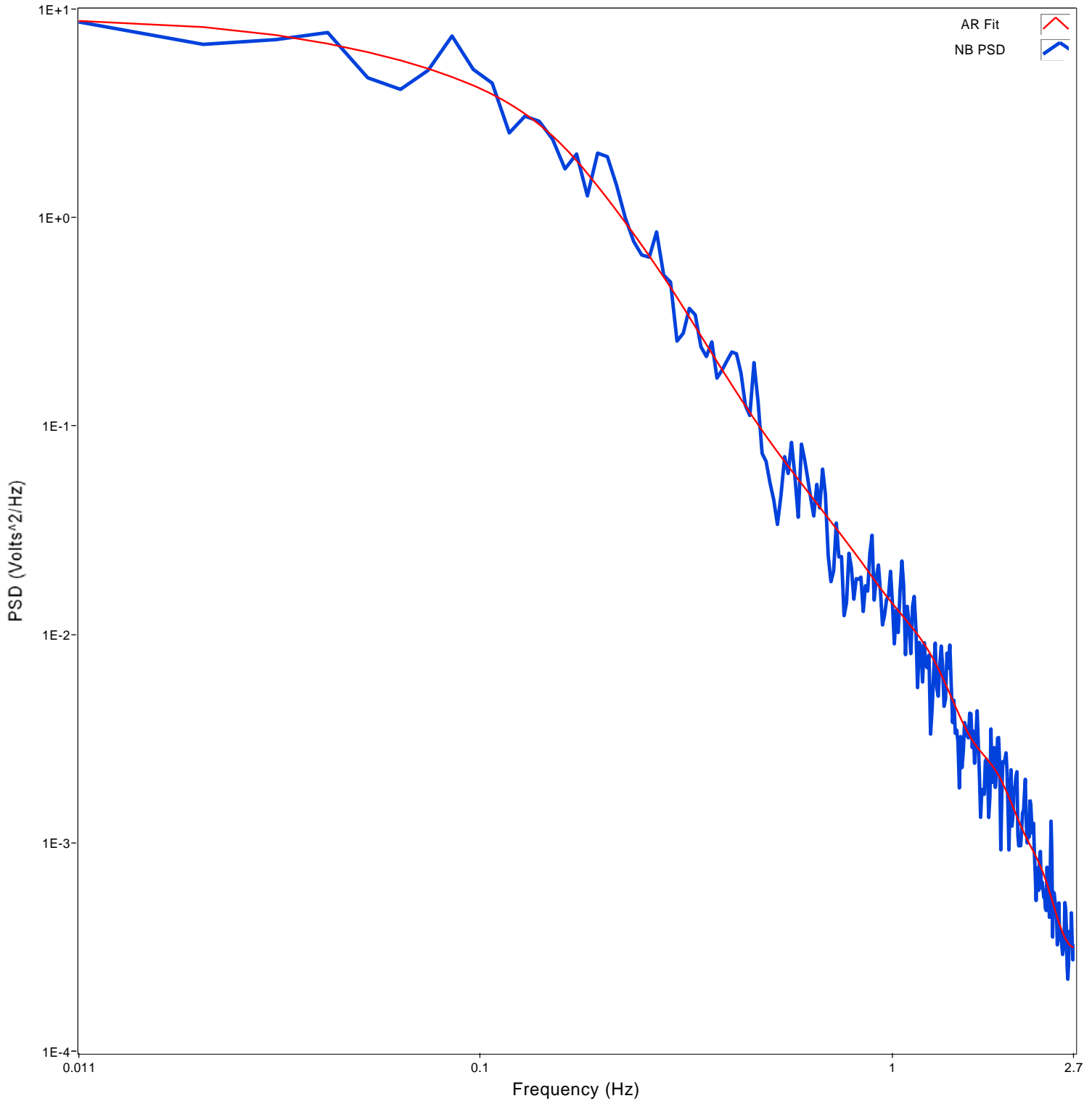




# OLM Autoregressive Fitting of Narrow Band PSD

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0496	FW FLOW	FU2_2010-07_0004.psd	11 : 512	0.010731	2.747169	11	Forward-Backward	15-Jul-2010 13:36:44

NB PSD and AR PSD

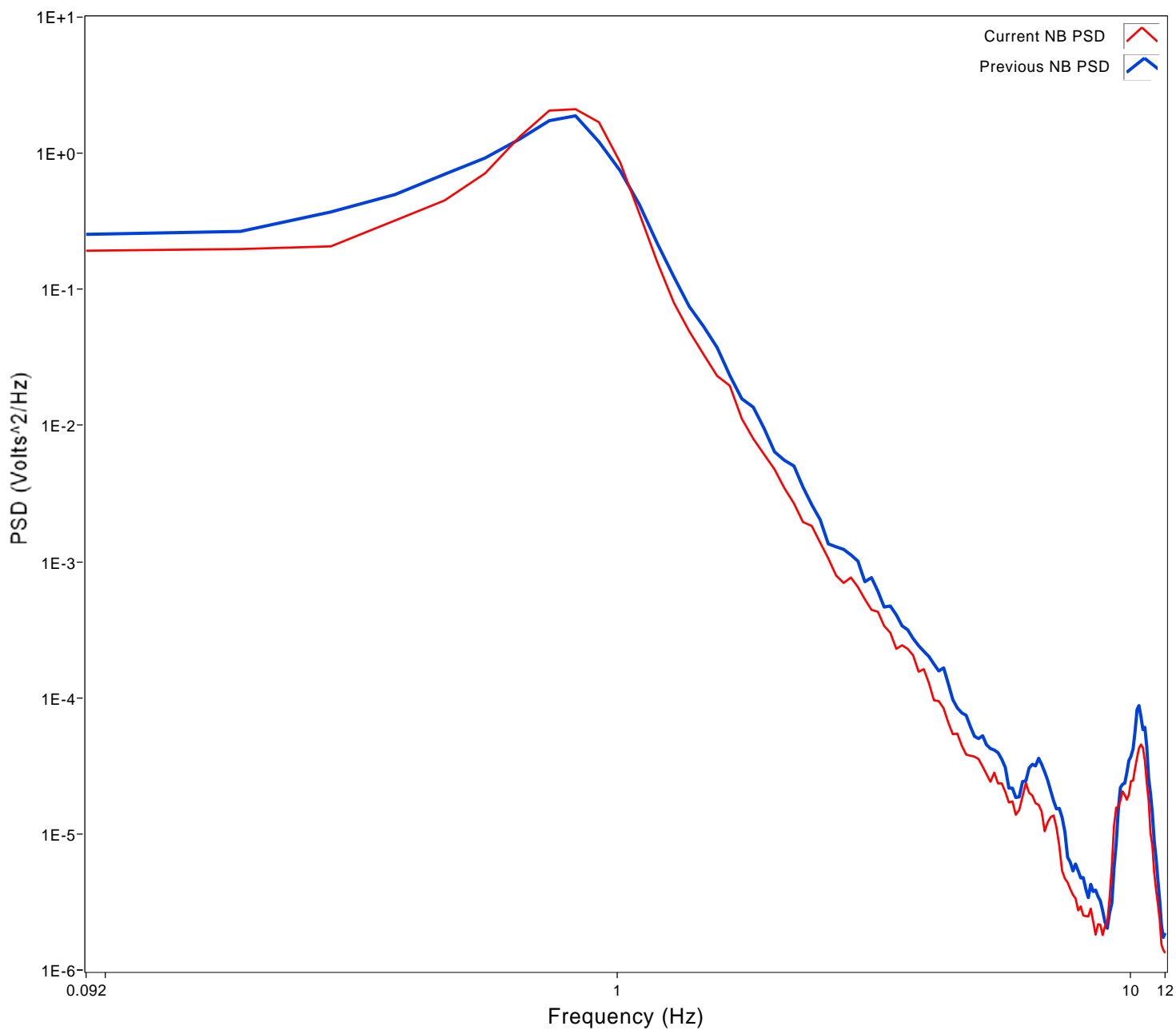




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

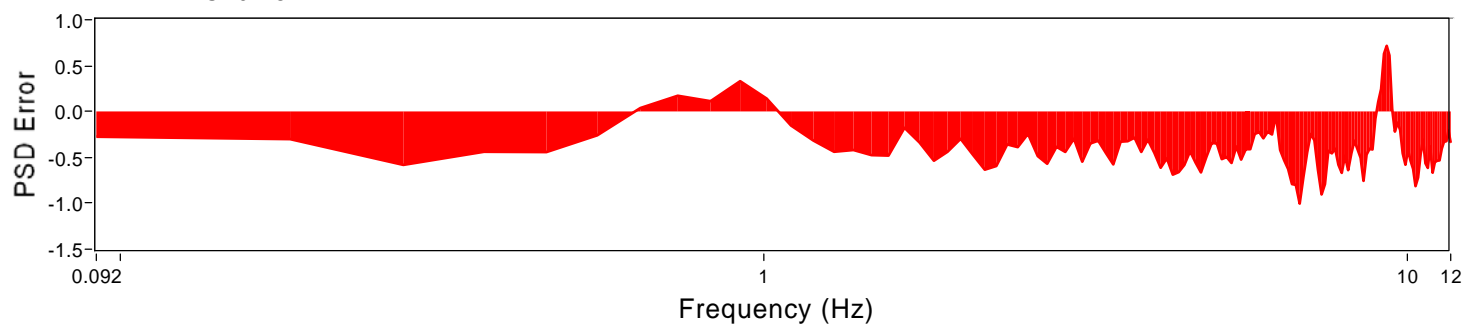
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	LT0474	SG LVL	FU2_2010-07_0001.psd	96 : 512	0.091909	11.764348	11	Forward-Backward	15-Jul-2010 13:36:44

Current NB PSD vs. Previous NP PSD



RMS=0.48

Compare Previous Error

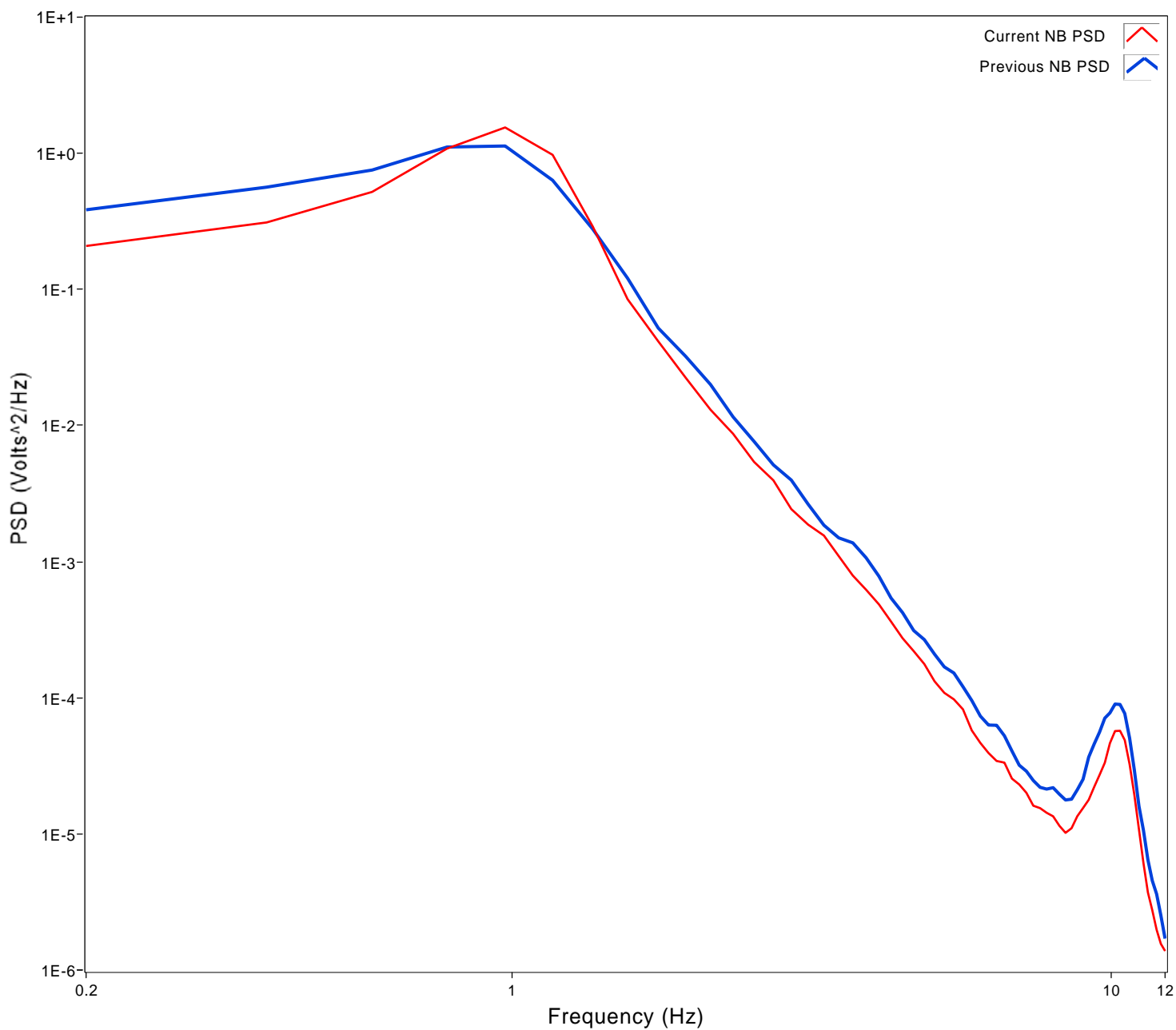




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

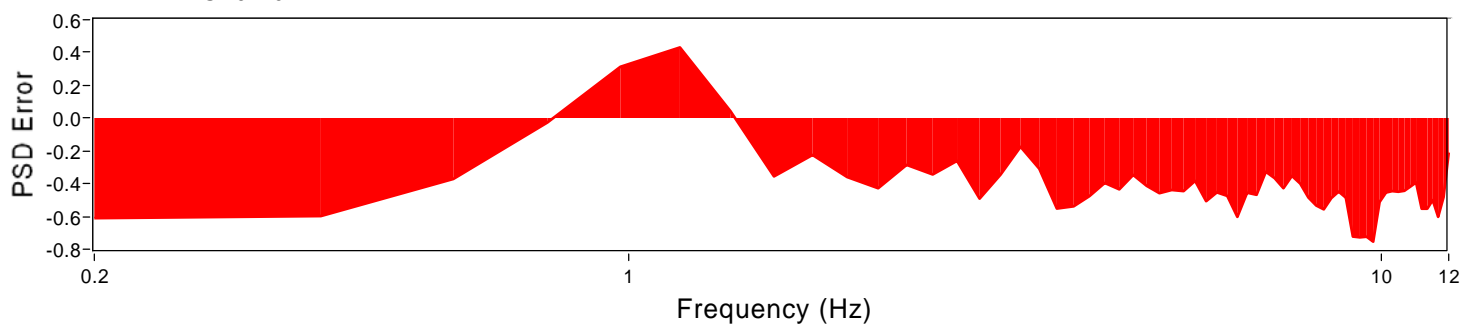
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	LT0484	SG LVL	FU2_2010-07_0001.psd	204 : 512	0.195307	12.499619	11	Forward-Backward	15-Jul-2010 13:36:44

Current NB PSD vs. Previous NP PSD



RMS=0.46

Compare Previous Error

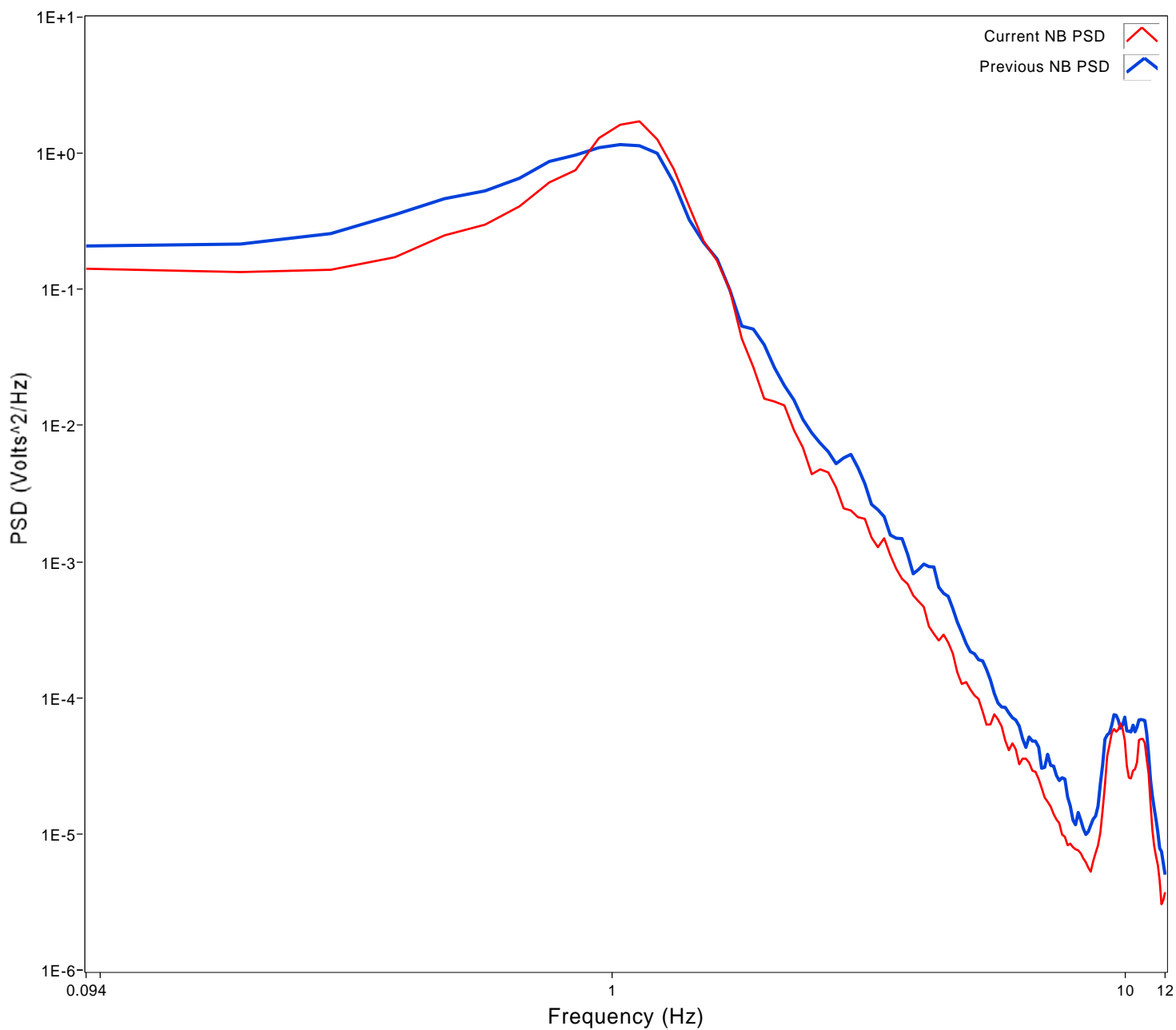




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

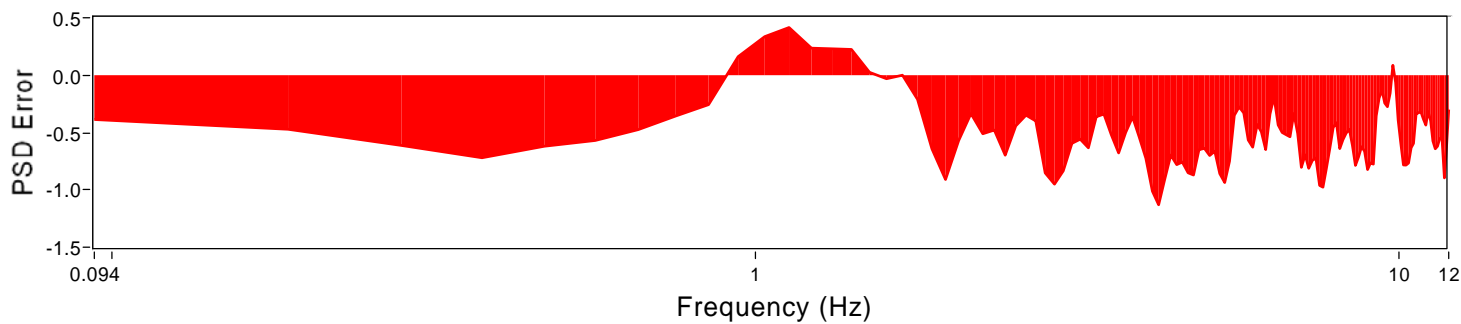
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	LT0494	SG LVL	FU2_2010-07_0001.psd	98 : 512	0.094124	12.047826	11	Forward-Backward	15-Jul-2010 13:36:44

Current NB PSD vs. Previous NP PSD



RMS=0.59

Compare Previous Error

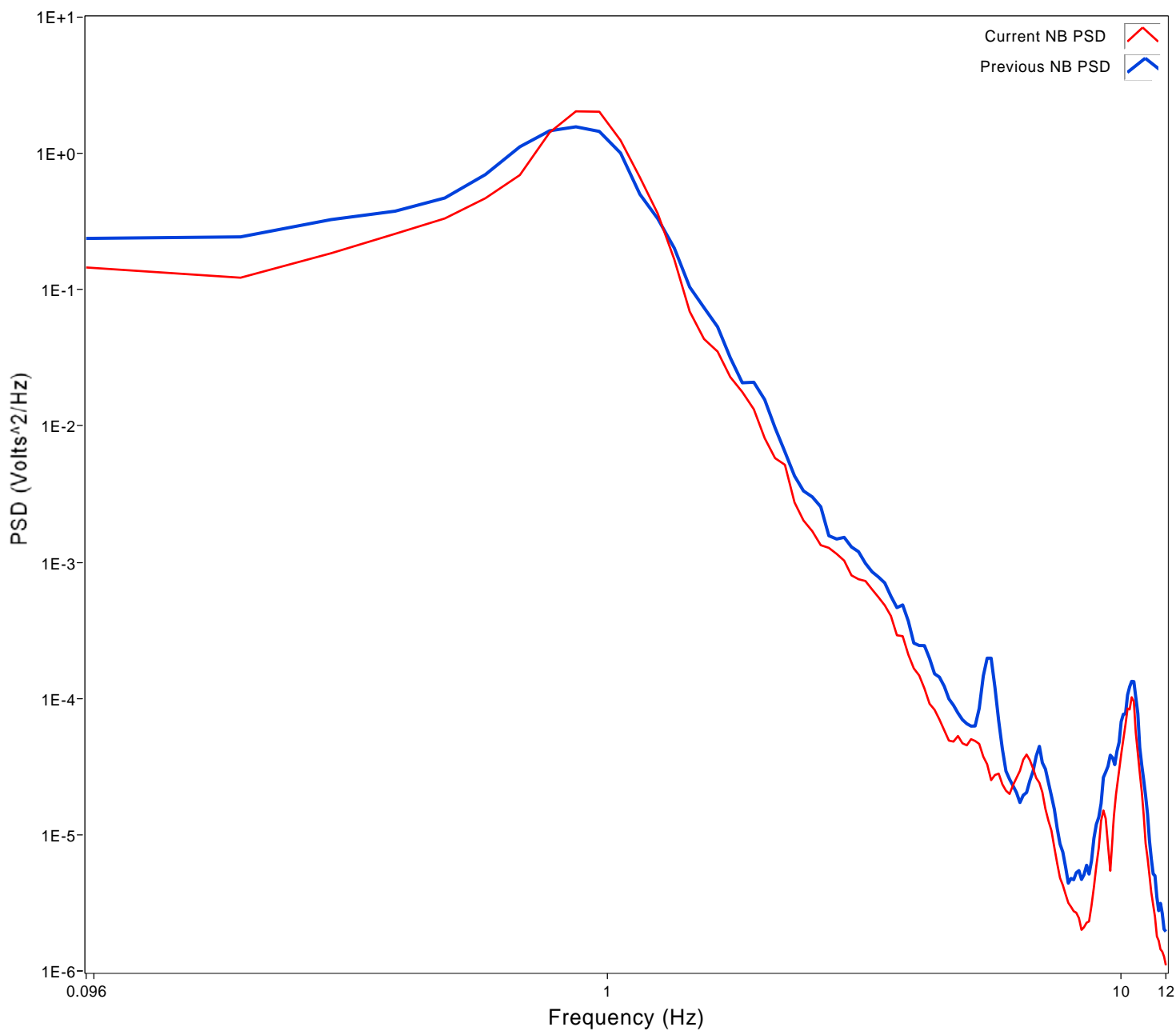




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

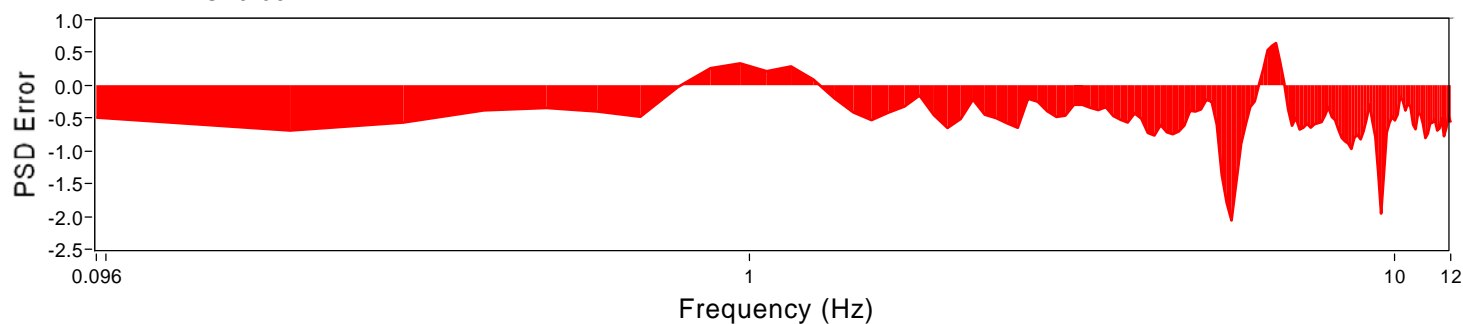
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	LT0475	SG LVL	FU2_2010-07_0002.psd	101 : 512	0.096448	12.345303	18	Least-Squares	15-Jul-2010 13:36:44

Current NB PSD vs. Previous NP PSD



RMS=0.65

Compare Previous Error

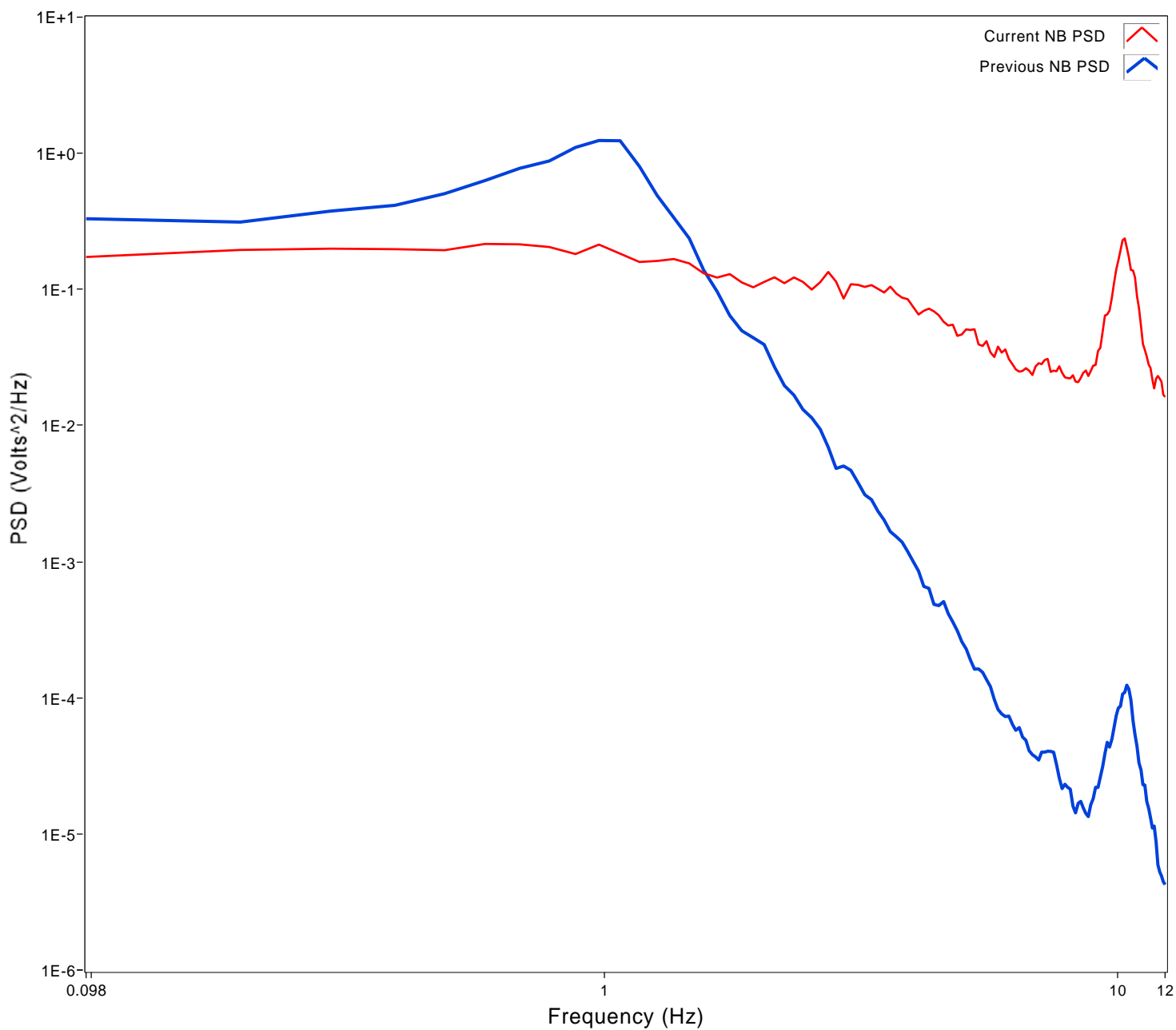




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

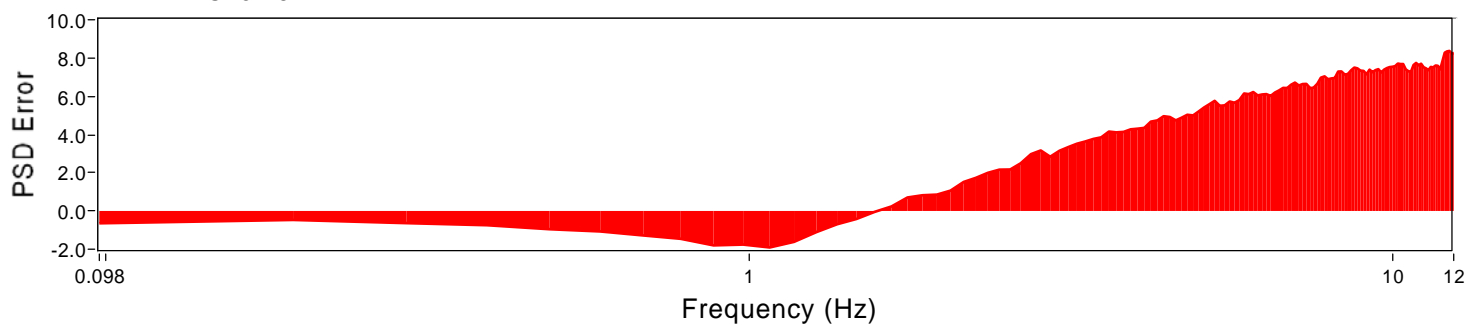
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	LT0485	SG LVL	FU2_2010-07_0002.psd	102 : 512	0.097653	12.499619	18	Least-Squares	15-Jul-2010 13:36:44

Current NB PSD vs. Previous NP PSD



RMS=5.78

Compare Previous Error

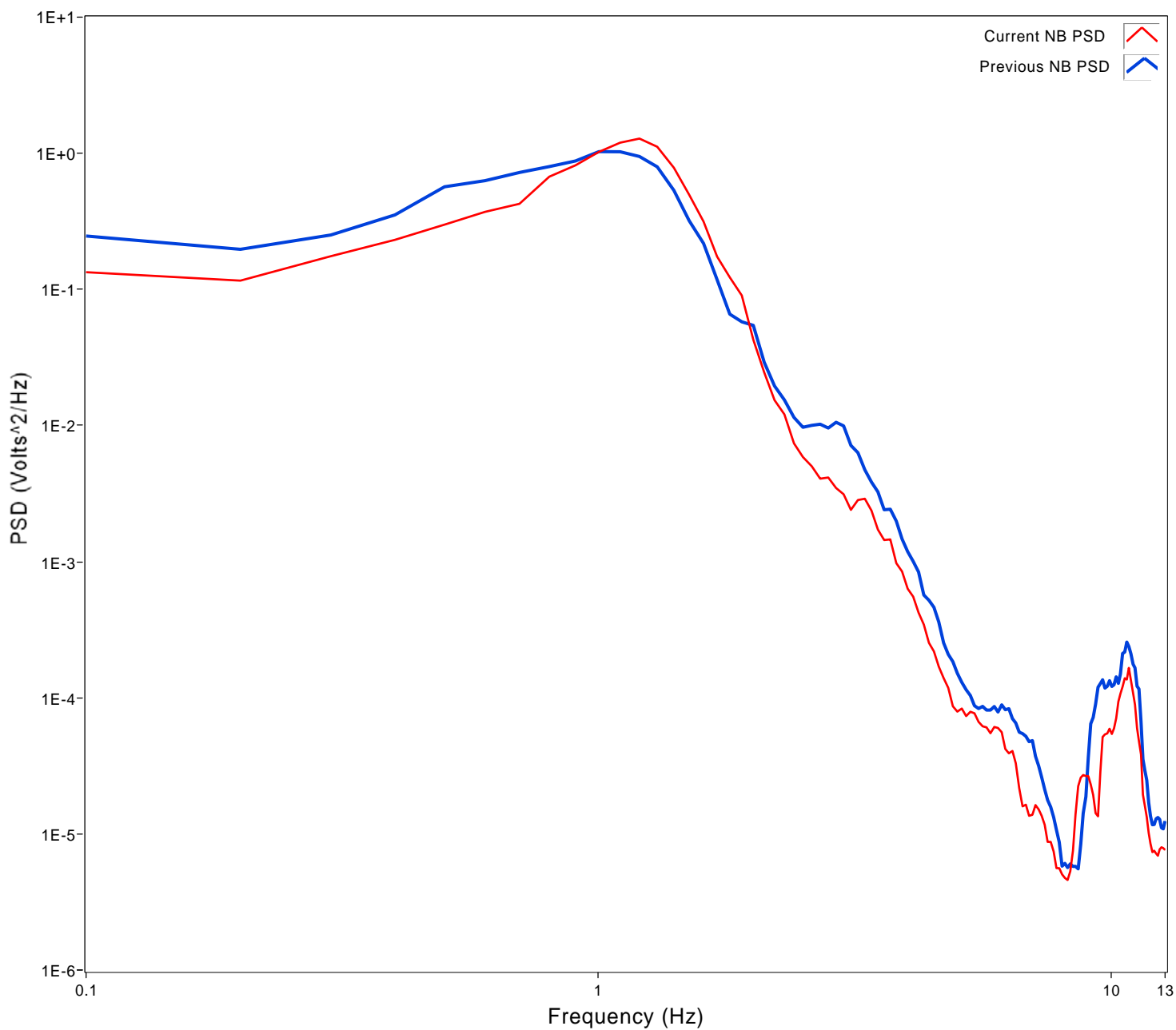




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

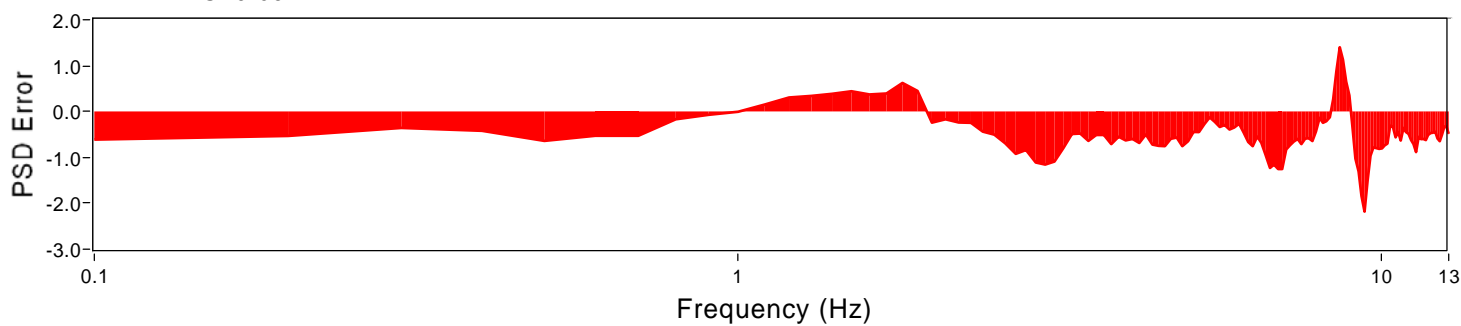
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	LT0495	SG LVL	FU2_2010-07_0002.psd	104 : 512	0.100157	12.820122	18	Least-Squares	15-Jul-2010 13:36:44

Current NB PSD vs. Previous NP PSD



RMS=0.69

Compare Previous Error

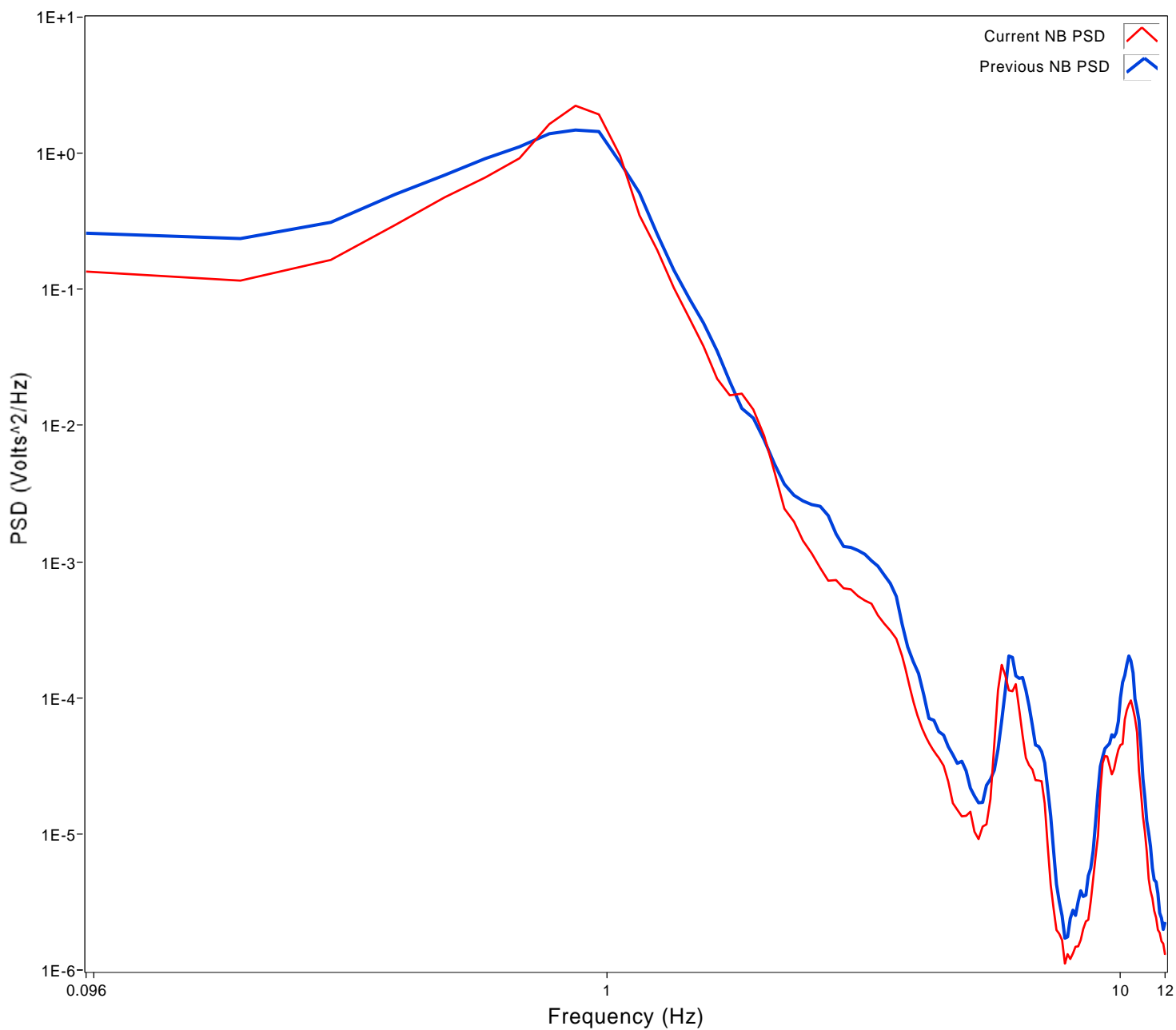




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

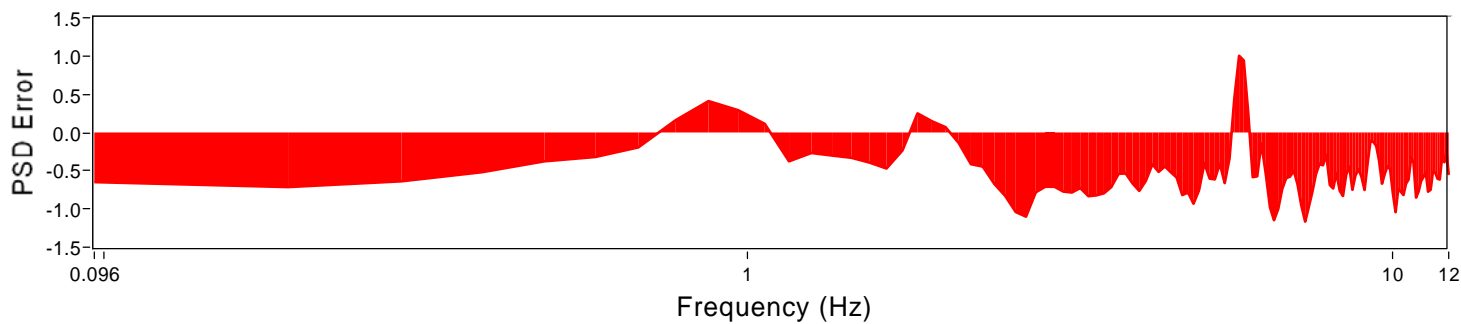
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	LT0476	SG LVL	FU2_2010-07_0003.psd	101 : 512	0.096448	12.345303	11	Least-Squares	15-Jul-2010 13:36:44

Current NB PSD vs. Previous NP PSD



RMS=0.63

Compare Previous Error



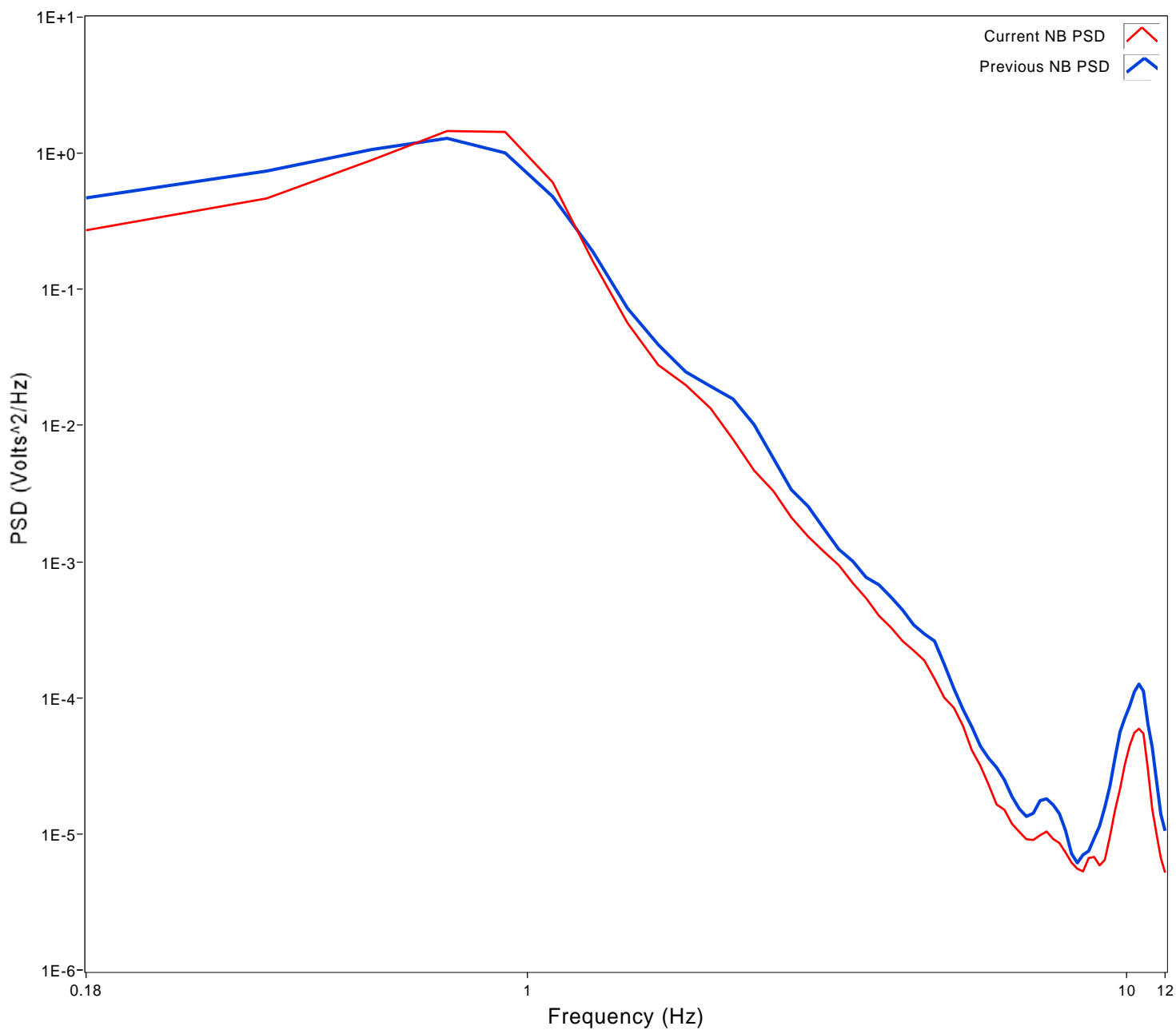




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

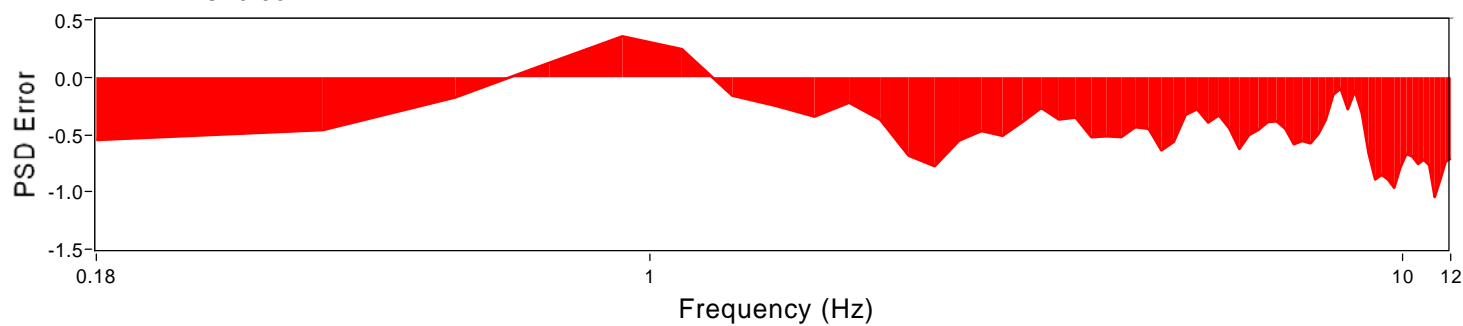
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	LT0486	SG LVL	FU2_2010-07_0003.psd	192 : 512	0.183818	11.764348	20	Least-Squares	15-Jul-2010 13:36:44

Current NB PSD vs. Previous NP PSD



RMS=0.55

Compare Previous Error

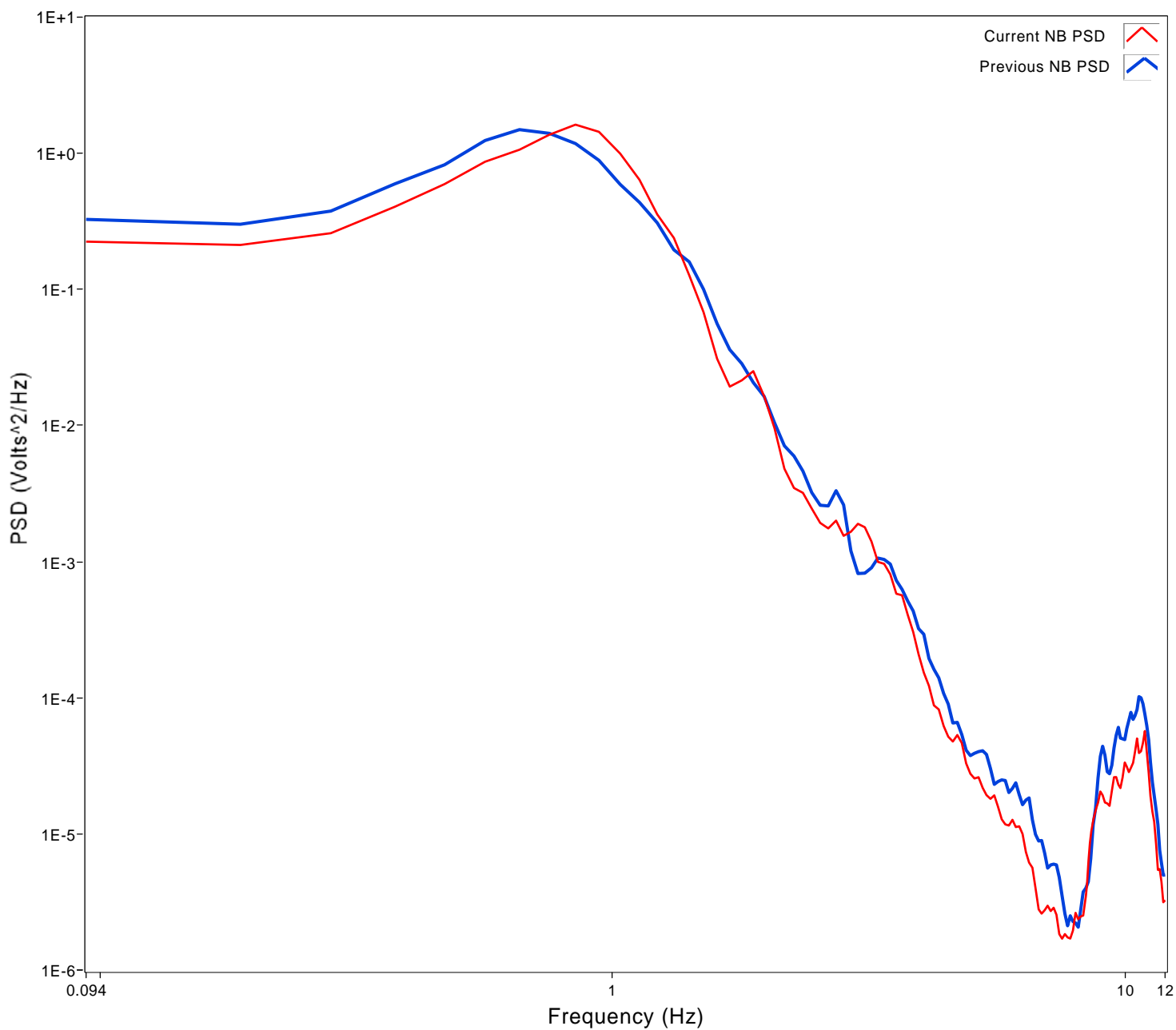




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

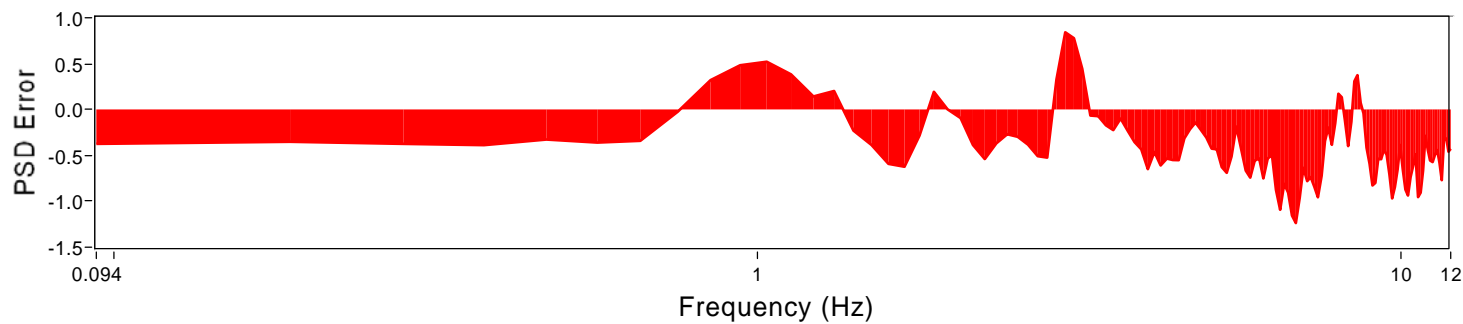
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	LT0496	SG LVL	FU2_2010-07_0003.psd	98 : 512	0.094124	12.047826	20	Least-Squares	15-Jul-2010 13:36:44

Current NB PSD vs. Previous NP PSD



RMS=0.55

Compare Previous Error

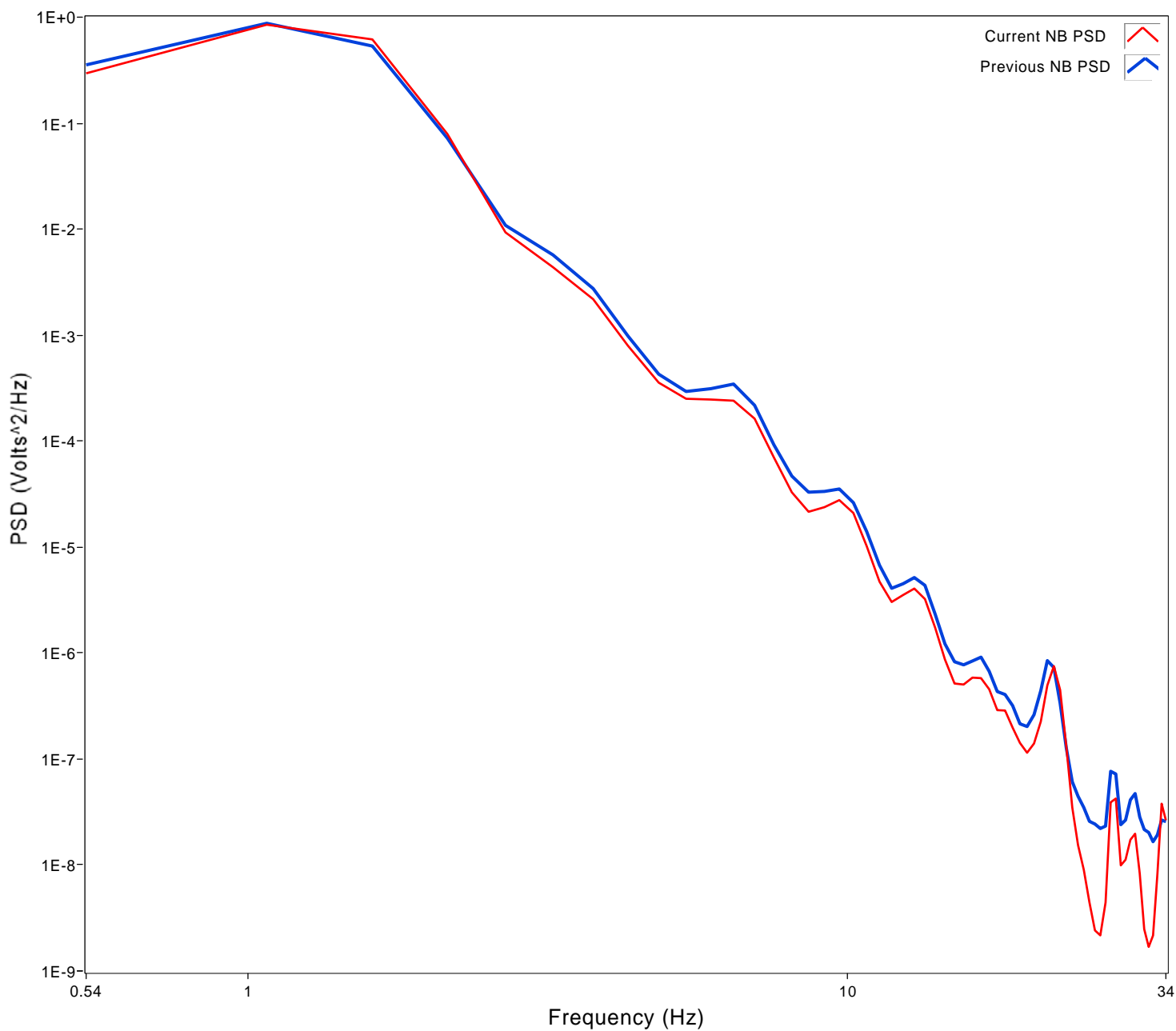




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

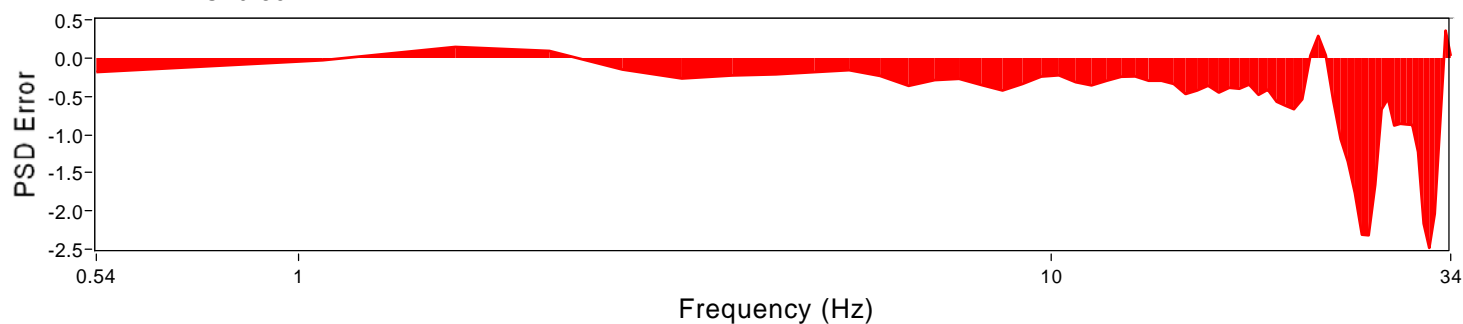
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0474	STM FLOW	FU2_2010-07_0003.psd	564 : 512	0.538777	34.481708	20	Least-Squares	15-Jul-2010 13:36:44

Current NB PSD vs. Previous NP PSD



RMS=0.85

Compare Previous Error

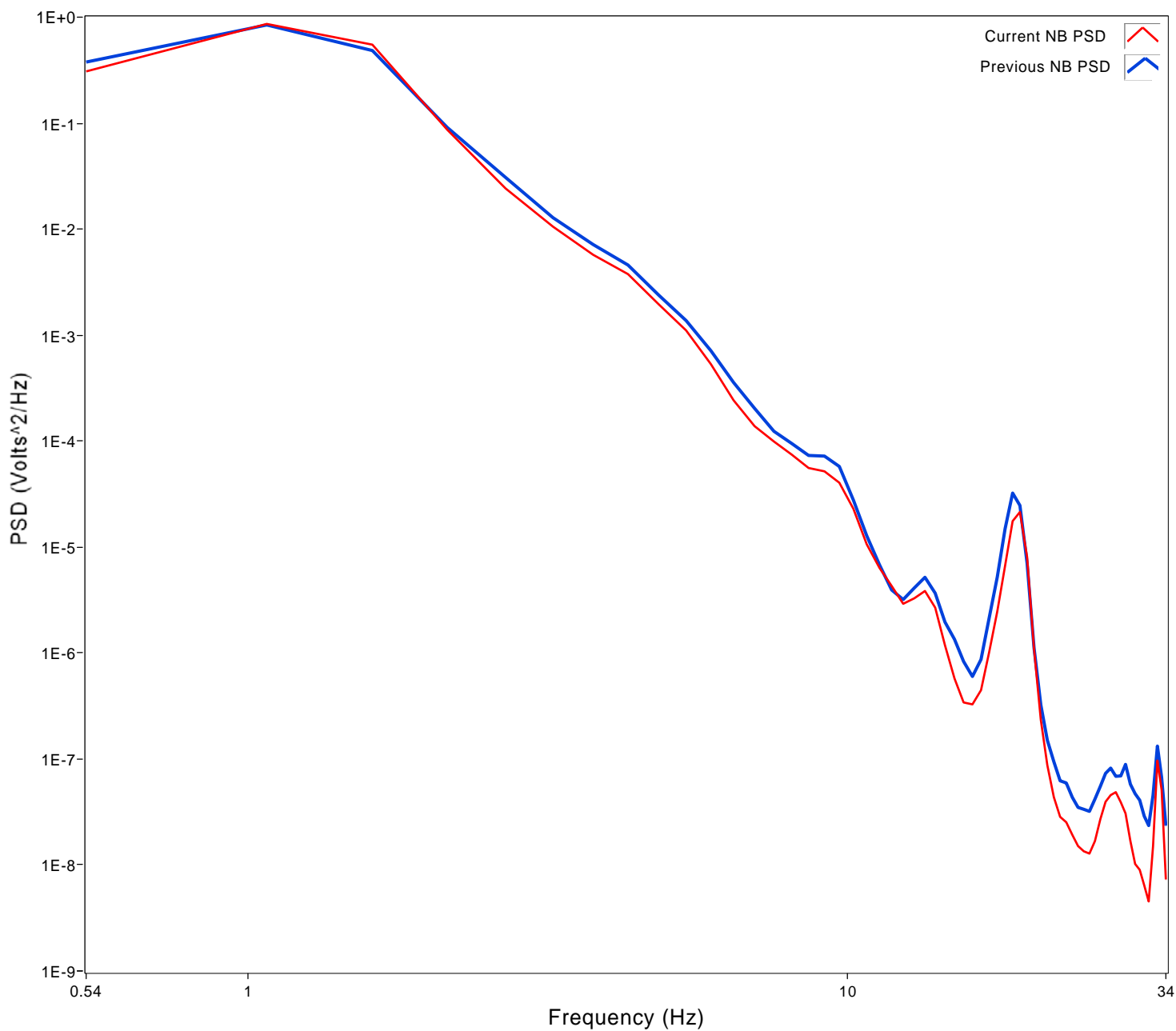




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

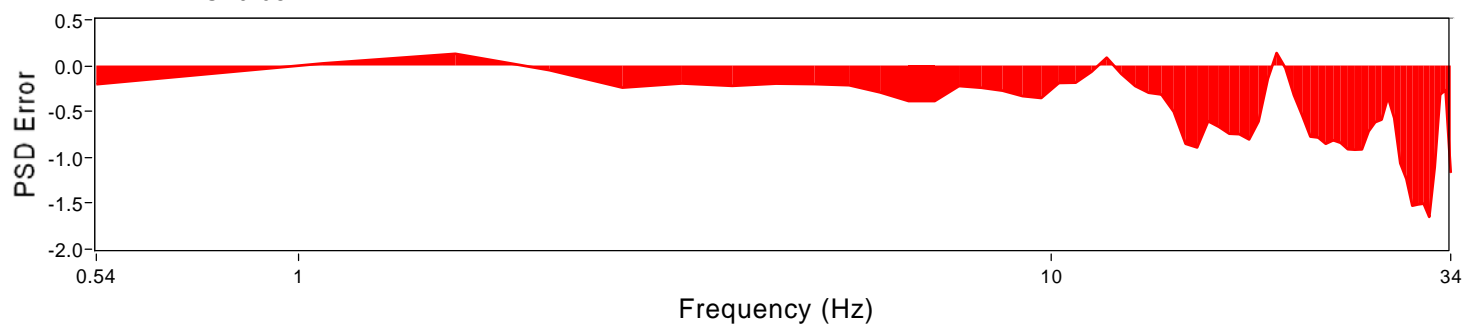
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0484	STM FLOW	FU2_2010-07_0003.psd	564 : 512	0.538777	34.481708	18	Least-Squares	15-Jul-2010 13:36:44

Current NB PSD vs. Previous NP PSD



RMS=0.68

Compare Previous Error

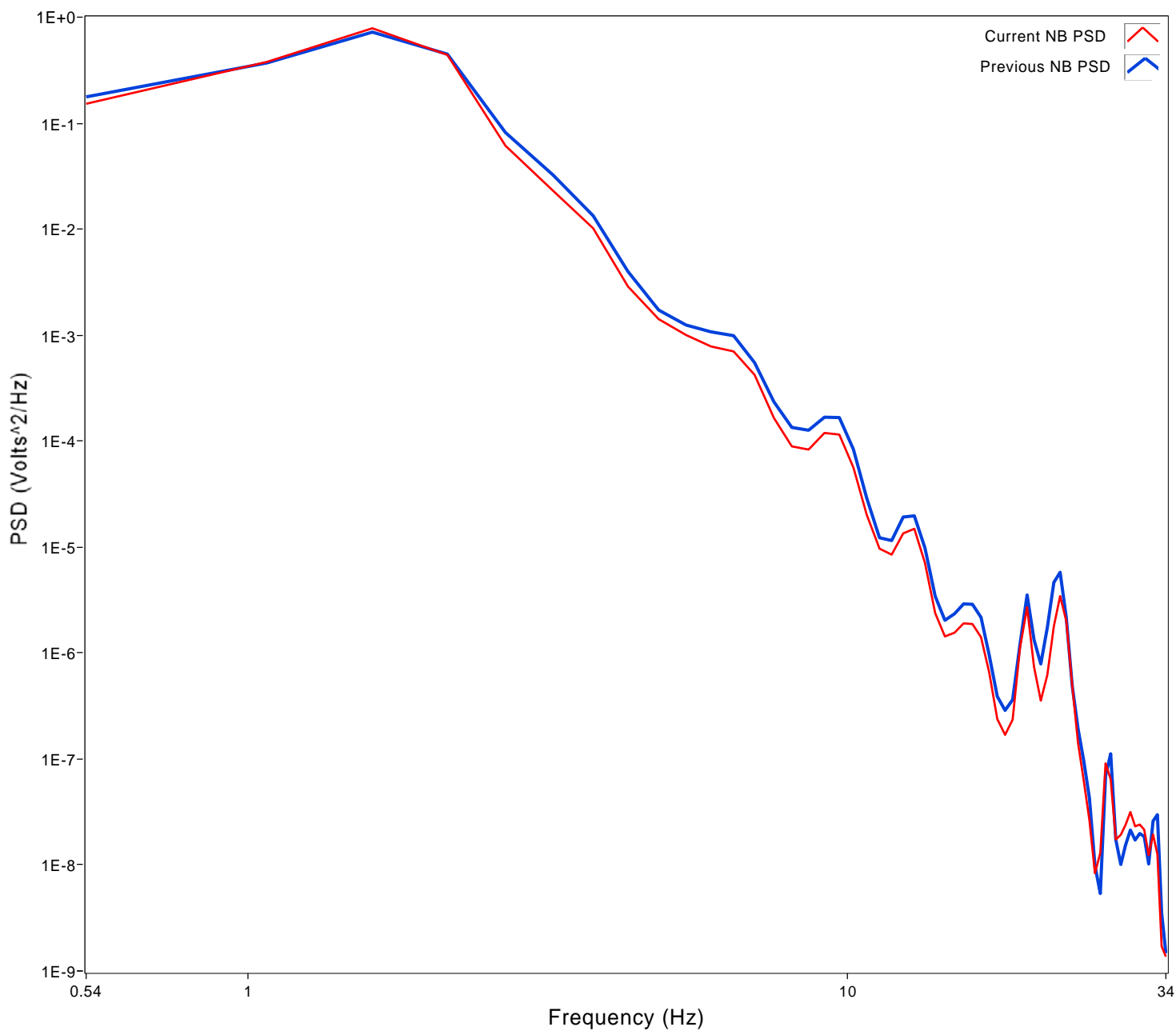




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

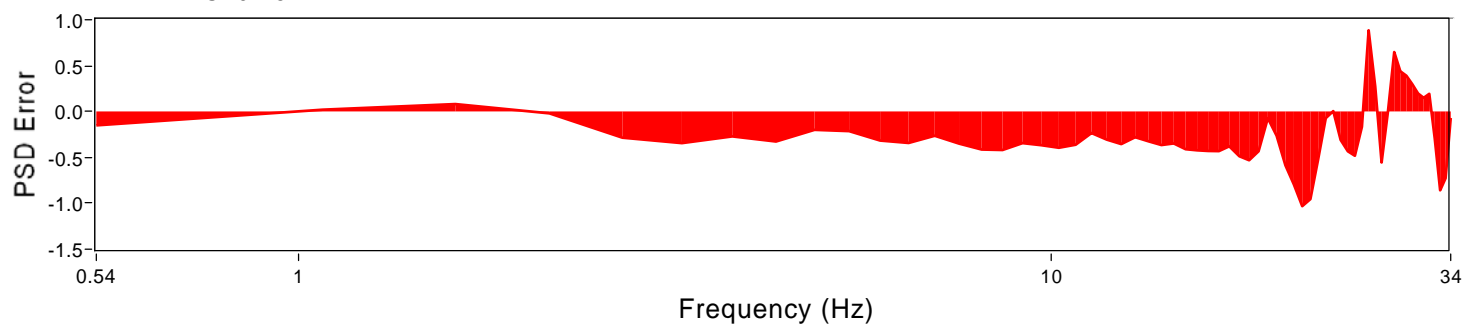
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0494	STM FLOW	FU2_2010-07_0003.psd	564 : 512	0.538777	34.481708	19	Least-Squares	15-Jul-2010 13:36:44

Current NB PSD vs. Previous NP PSD



RMS=0.43

Compare Previous Error

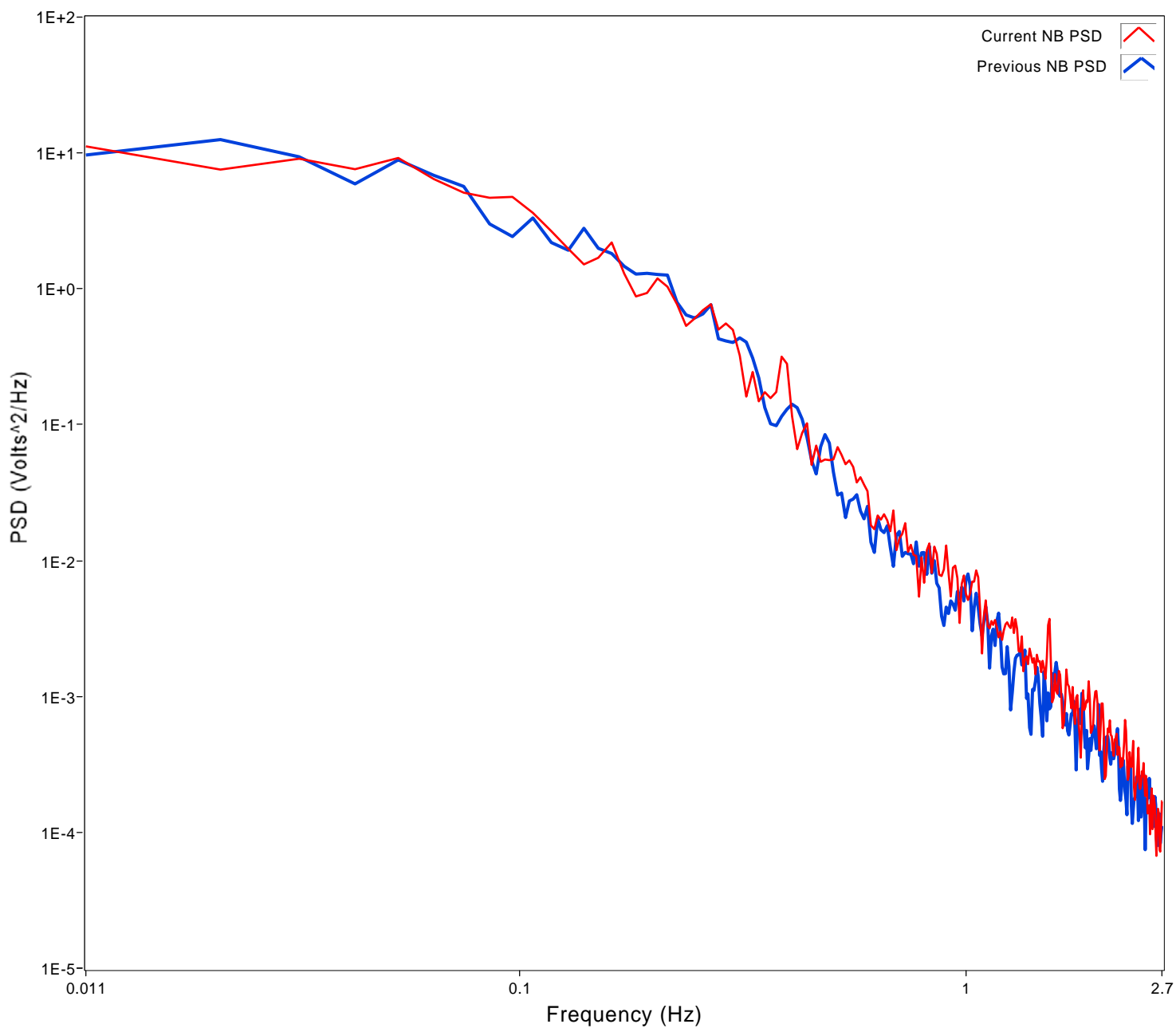




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

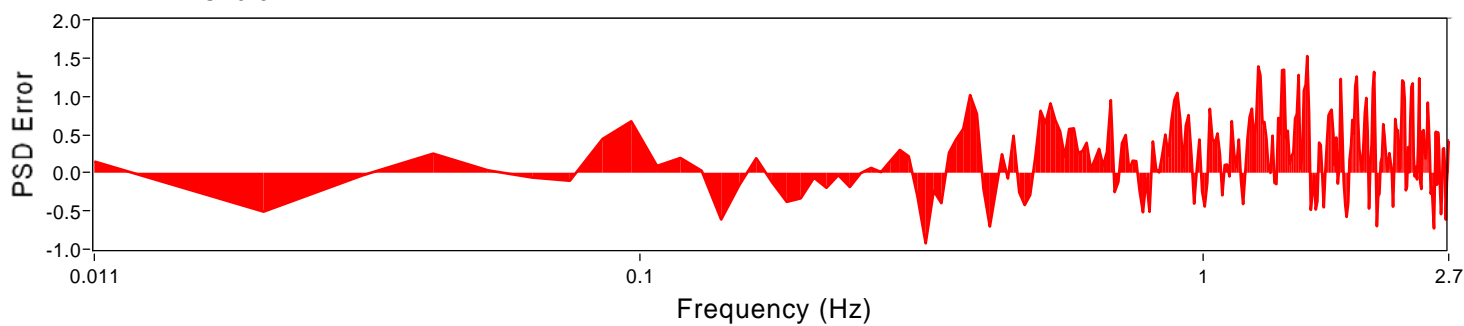
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0477	FW FLOW	FU2_2010-07_0003.psd	11 : 512	0.010731	2.747169	17	Least-Squares	15-Jul-2010 13:36:44

Current NB PSD vs. Previous NP PSD



RMS=0.54

Compare Previous Error

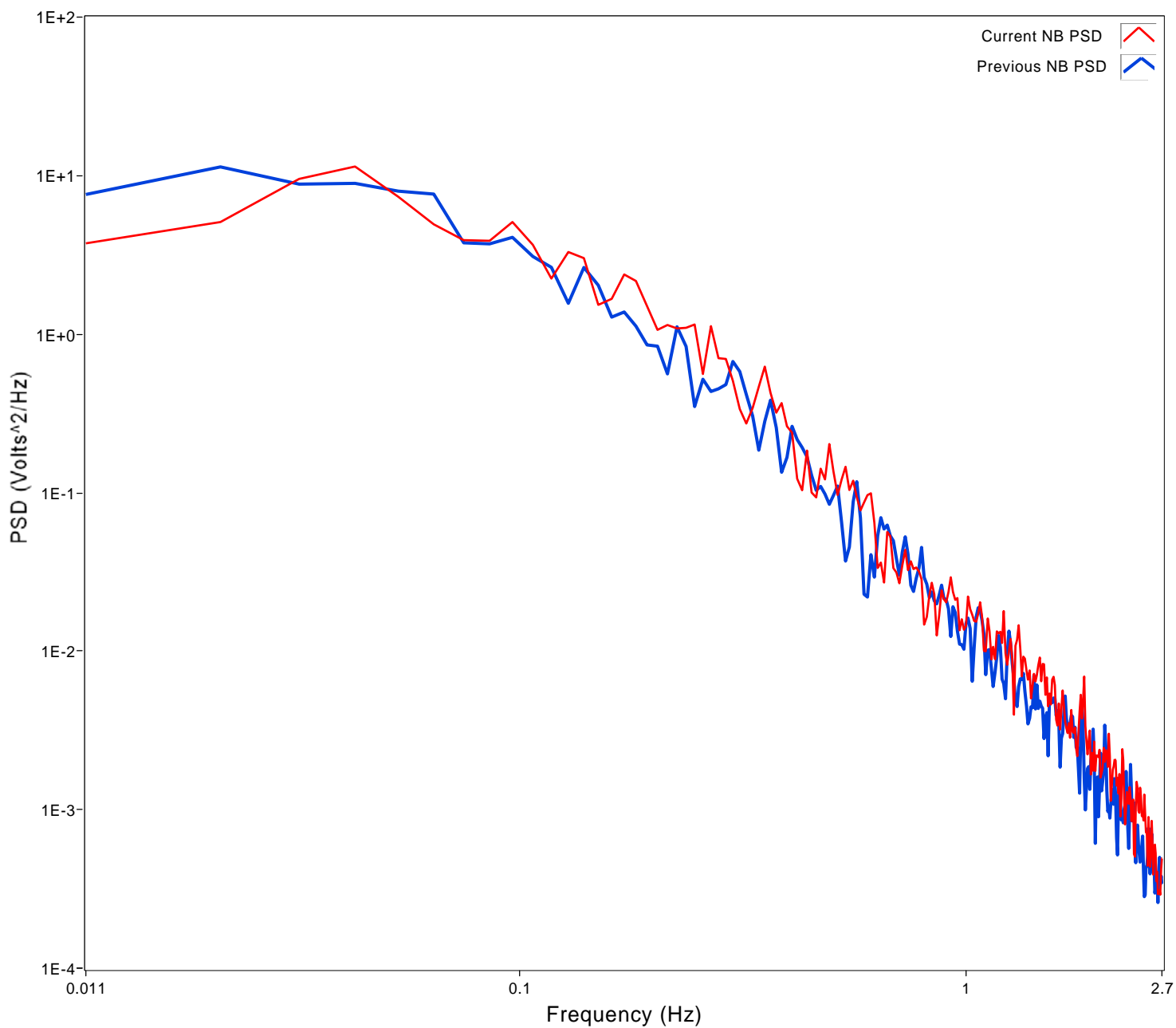




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

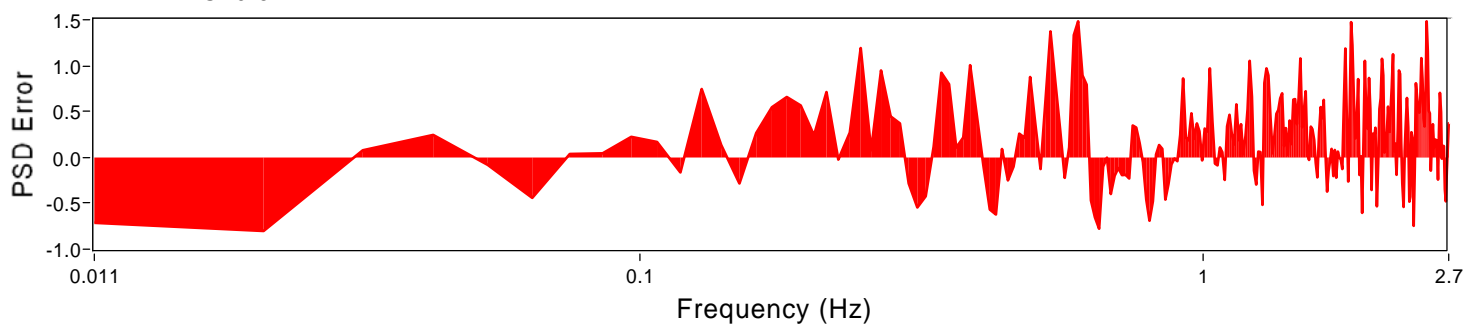
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0487	FW FLOW	FU2_2010-07_0003.psd	11 : 512	0.010731	2.747169	21	Least-Squares	15-Jul-2010 13:36:44

Current NB PSD vs. Previous NP PSD



RMS=0.52

Compare Previous Error

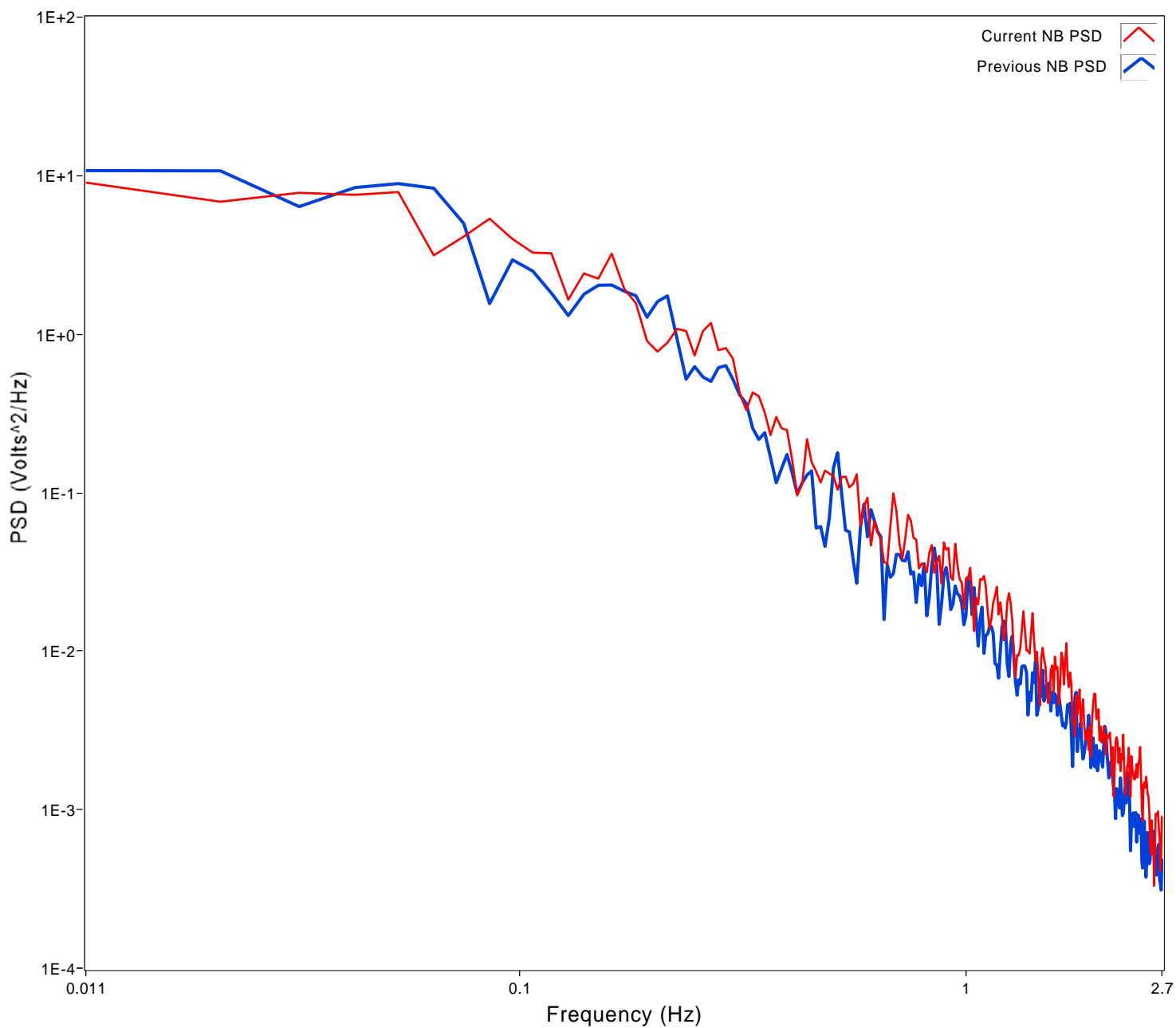




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

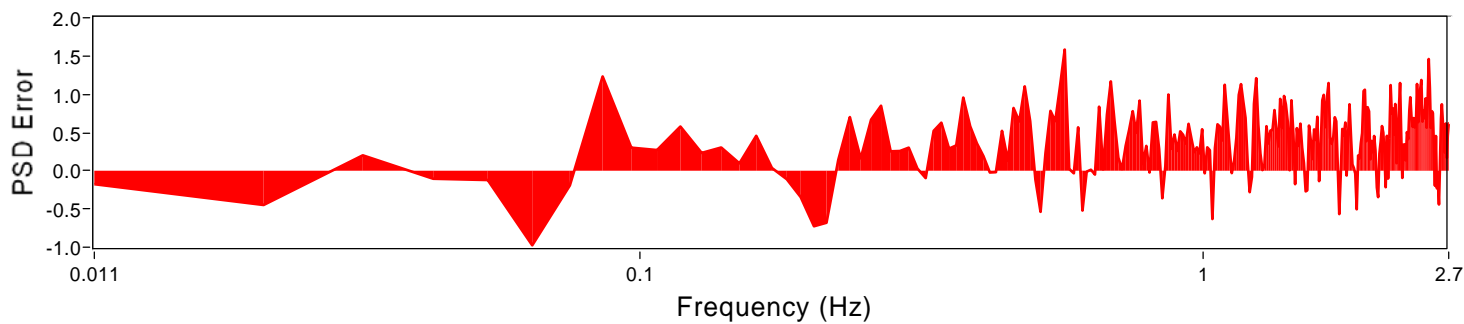
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0497	FW FLOW	FU2_2010-07_0003.psd	11 : 512	0.010731	2.747169	21	Least-Squares	15-Jul-2010 13:36:44

Current NB PSD vs. Previous NP PSD



RMS=0.59

Compare Previous Error



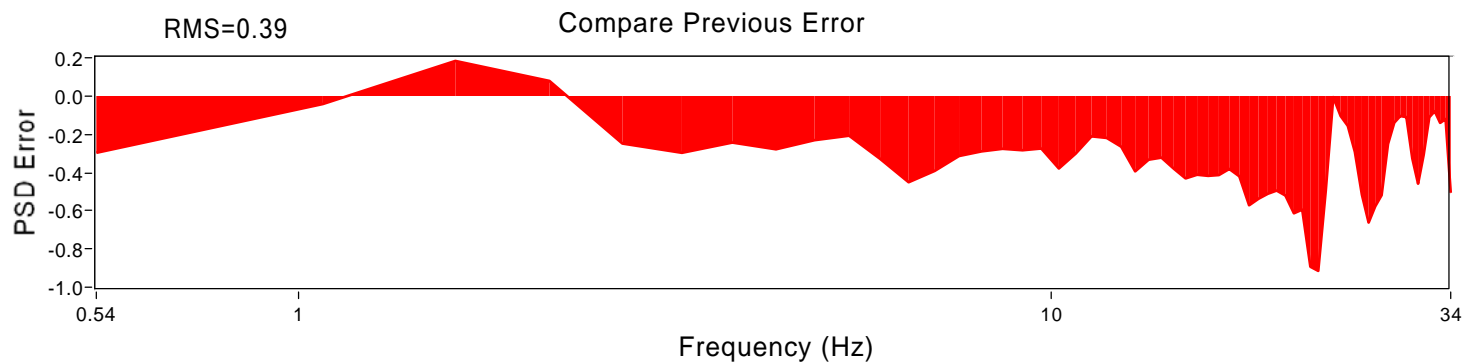
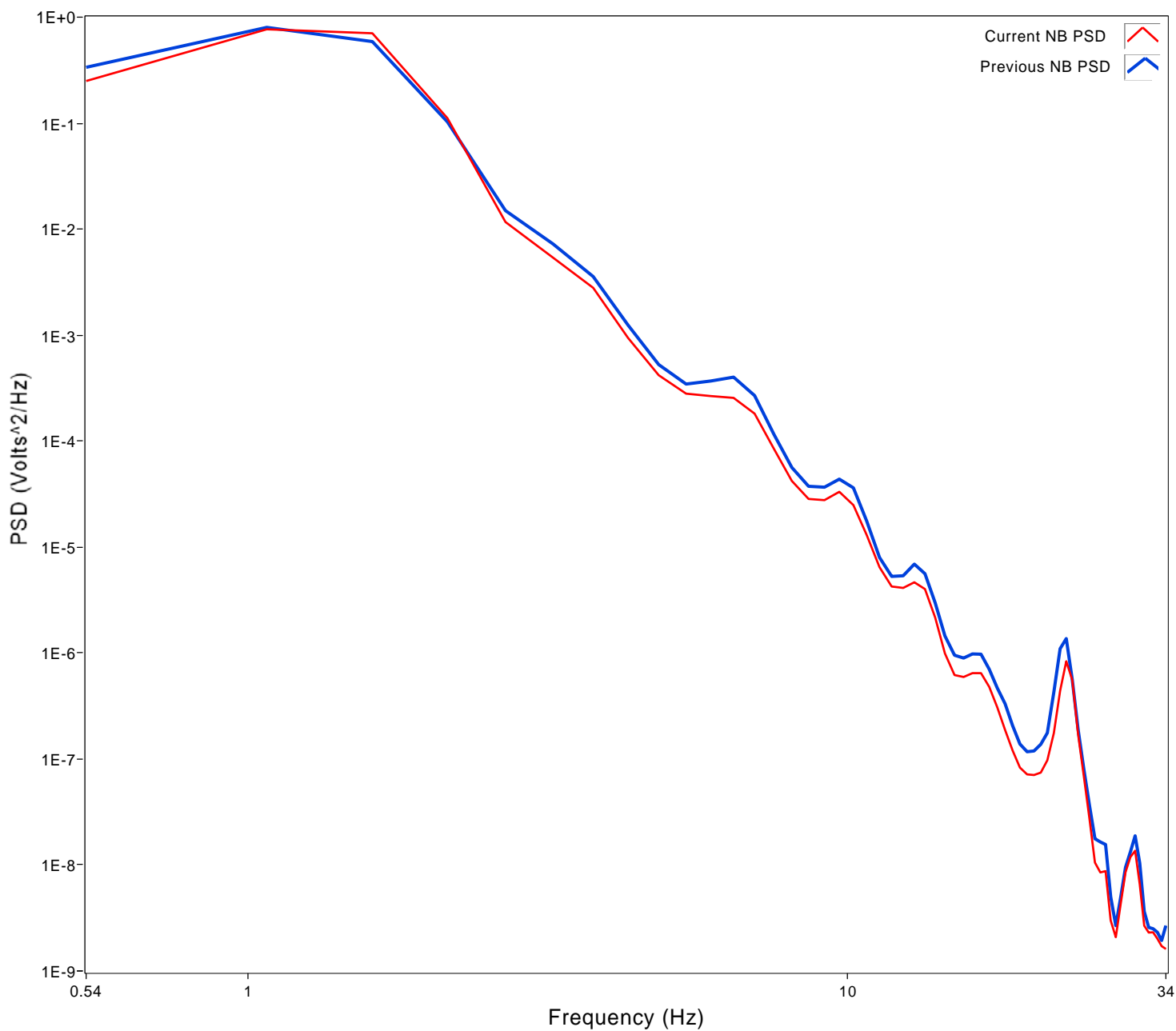




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0475	STM FLOW	FU2_2010-07_0004.psd	564 : 512	0.538777	34.481708	11	Forward-Backward	15-Jul-2010 13:36:44

Current NB PSD vs. Previous NP PSD

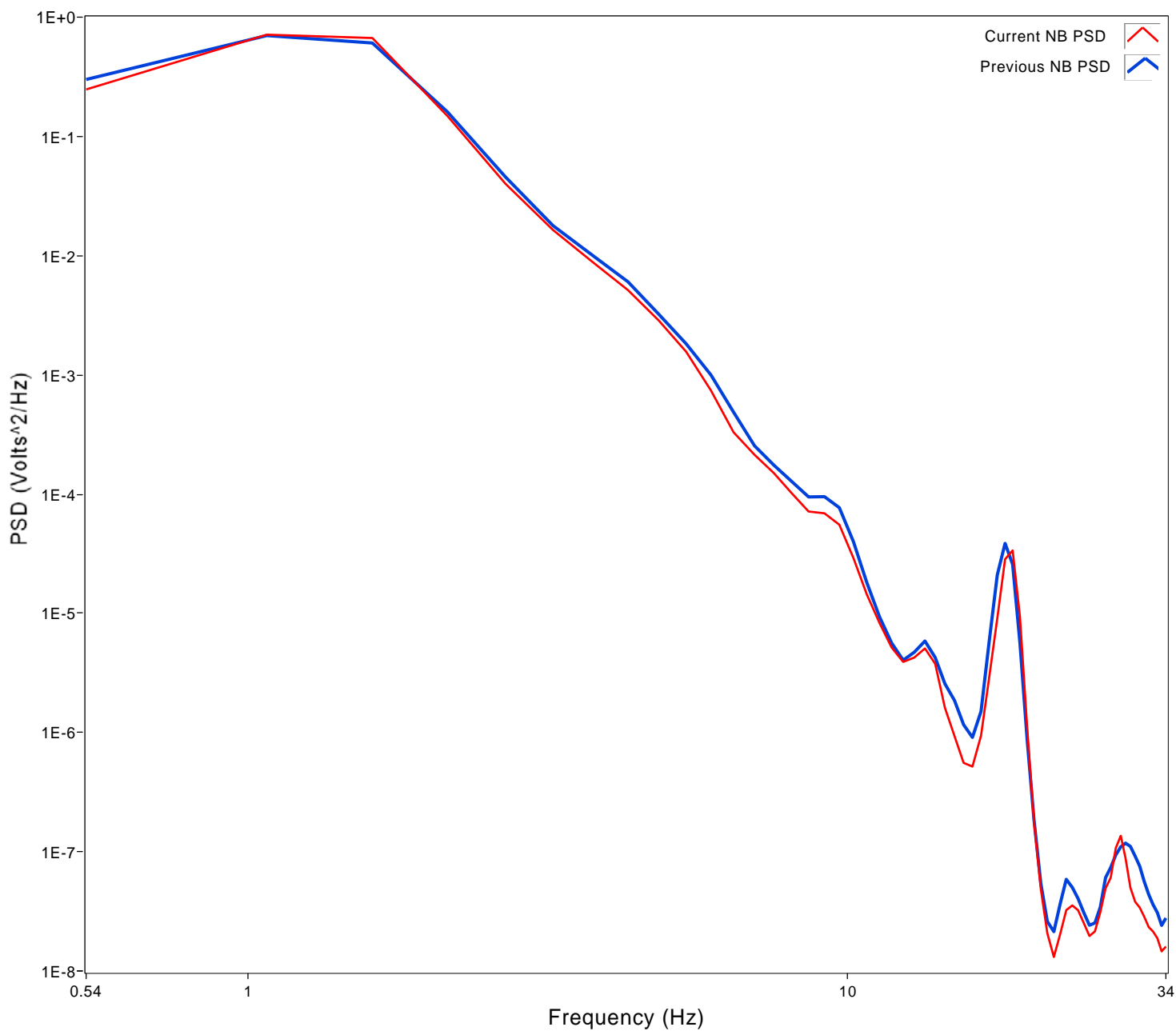




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

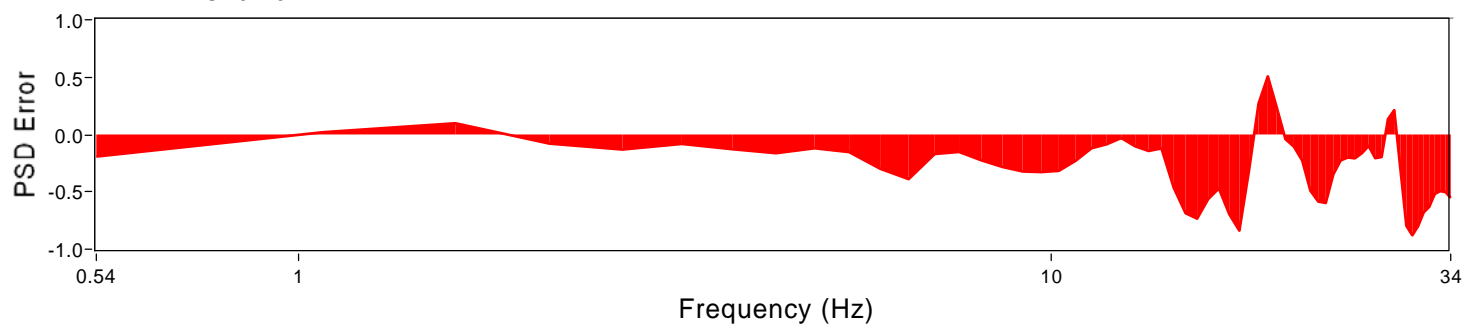
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0485	STM FLOW	FU2_2010-07_0004.psd	564 : 512	0.538777	34.481708	11	Forward-Backward	15-Jul-2010 13:36:44

Current NB PSD vs. Previous NP PSD



RMS=0.40

Compare Previous Error

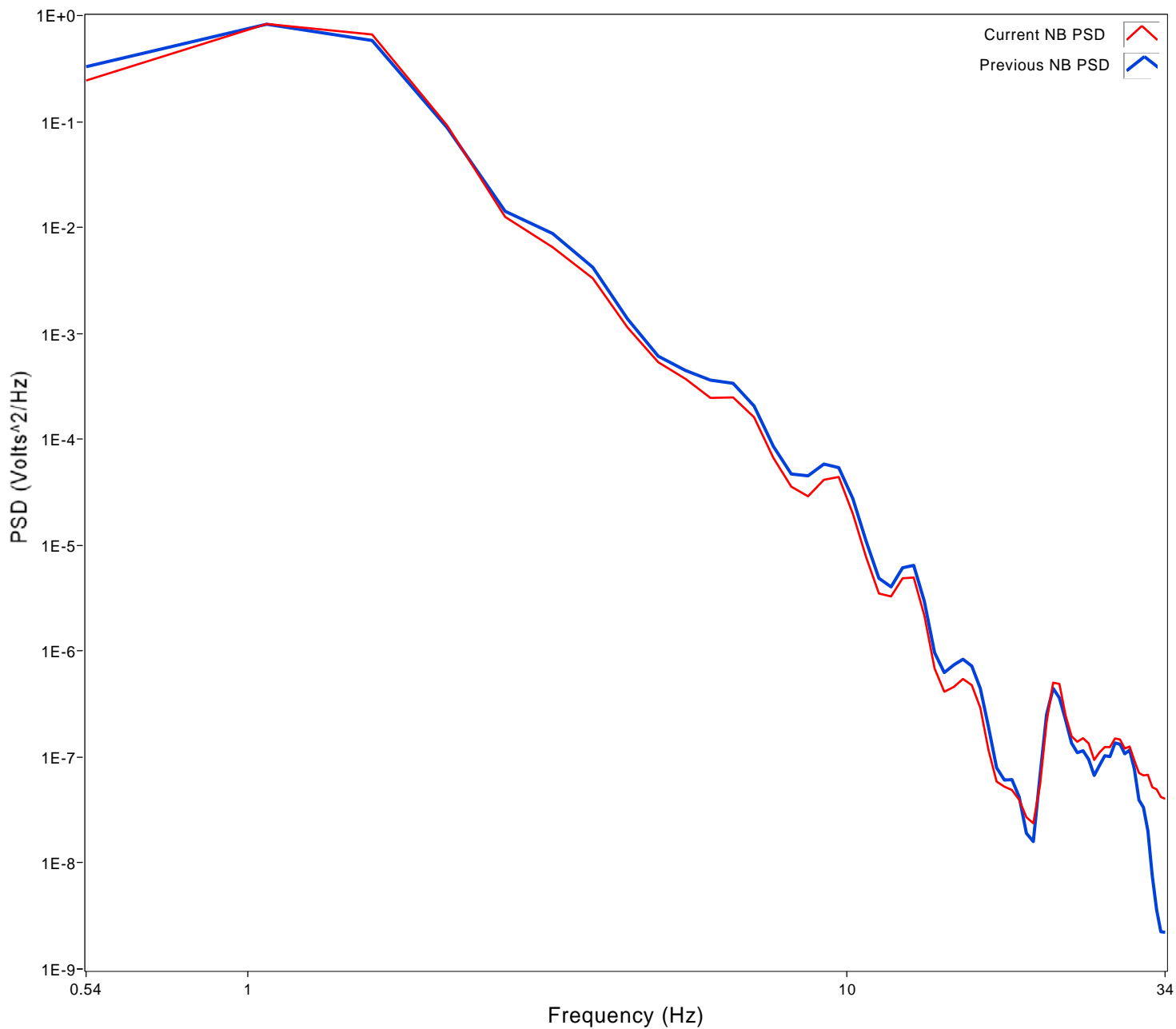




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

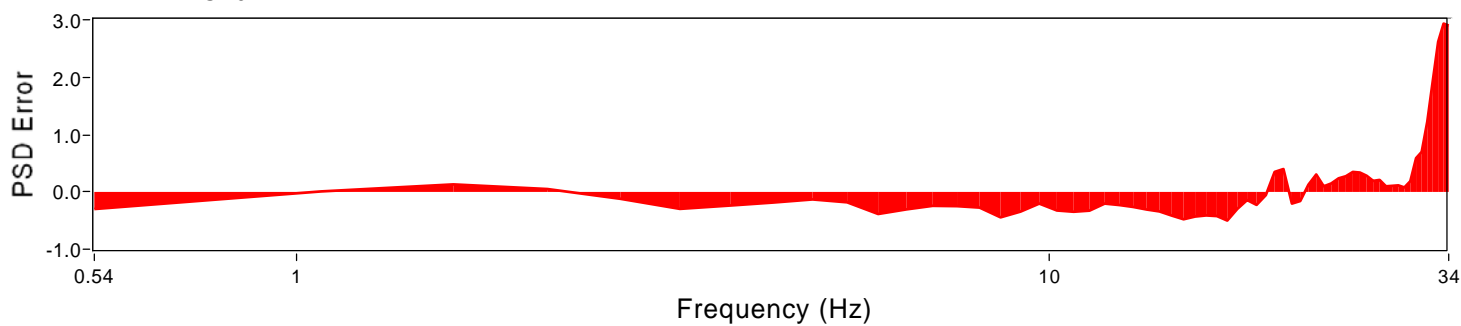
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0495	STM FLOW	FU2_2010-07_0004.psd	564 : 512	0.538777	34.481708	11	Forward-Backward	15-Jul-2010 13:36:44

Current NB PSD vs. Previous NP PSD



RMS=0.74

Compare Previous Error

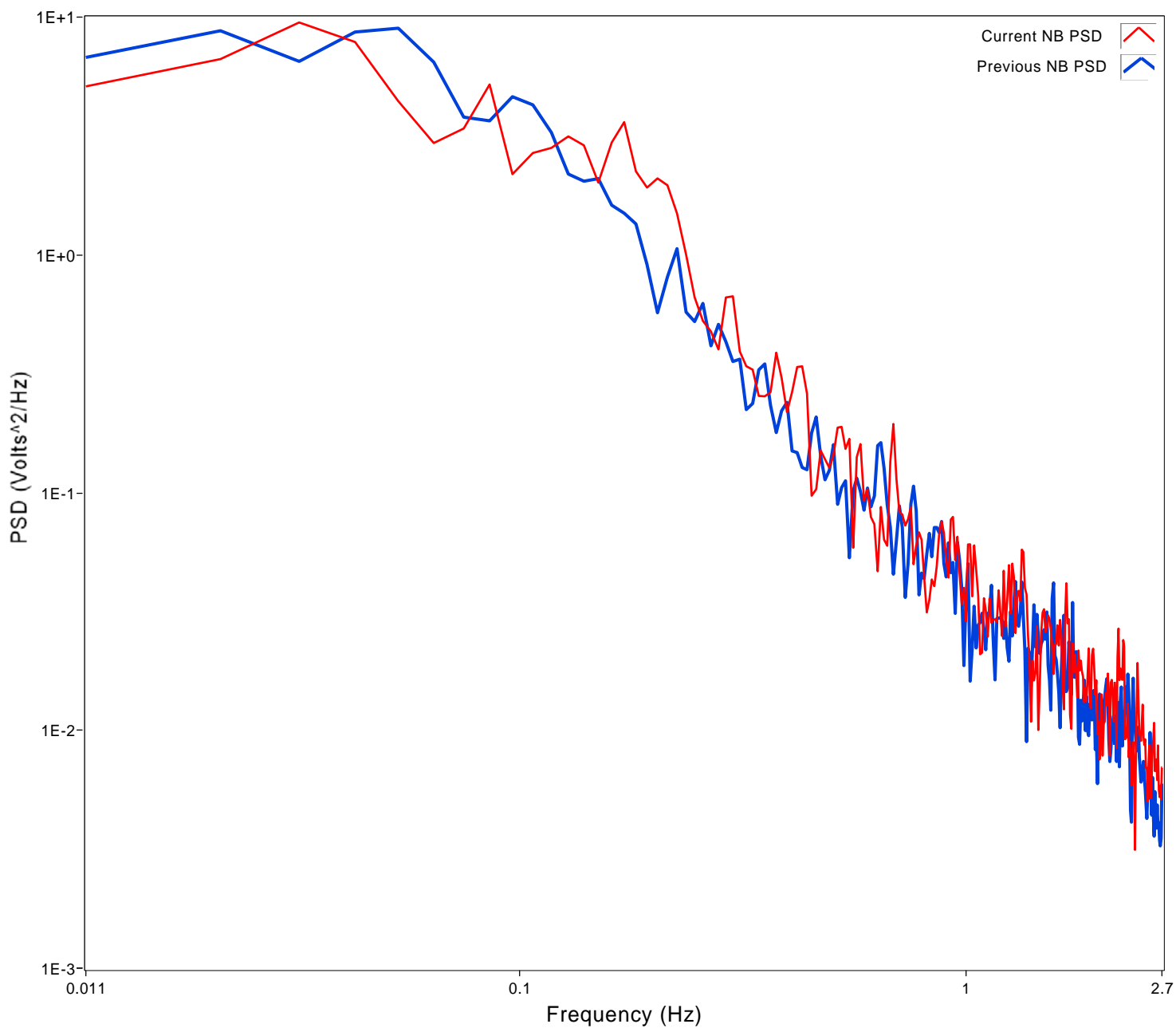




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

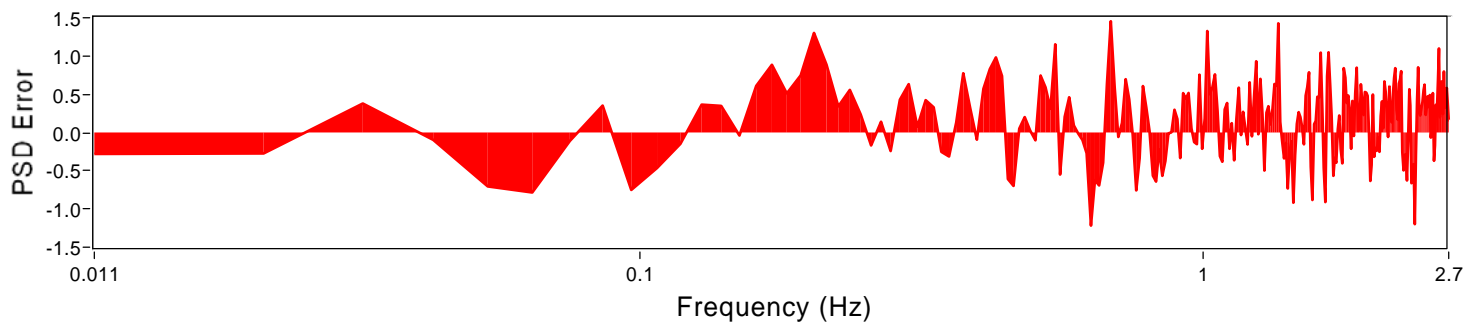
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0476	FW FLOW	FU2_2010-07_0004.psd	11 : 512	0.010731	2.747169	11	Forward-Backward	15-Jul-2010 13:36:44

Current NB PSD vs. Previous NP PSD



RMS=0.51

Compare Previous Error

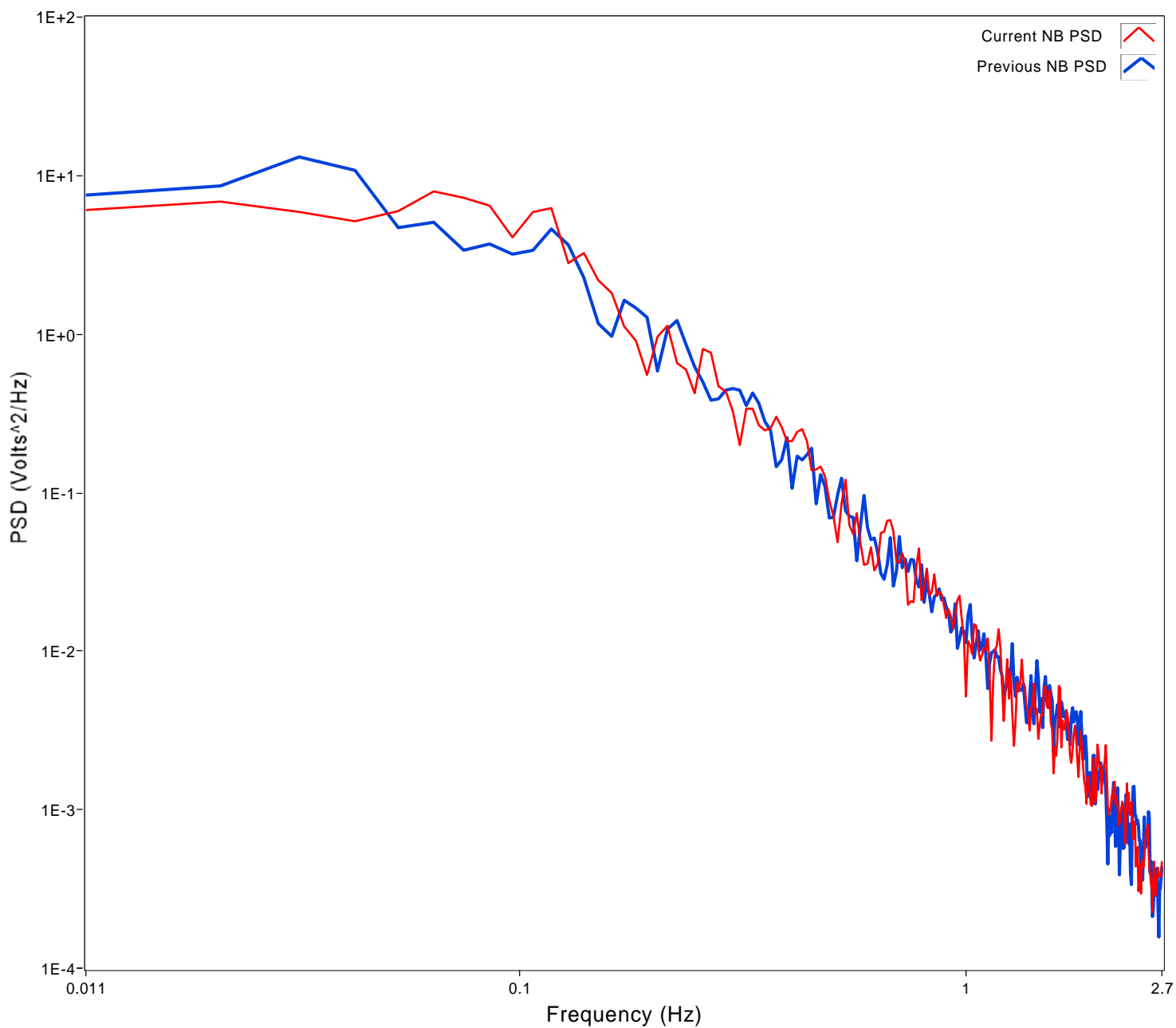




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

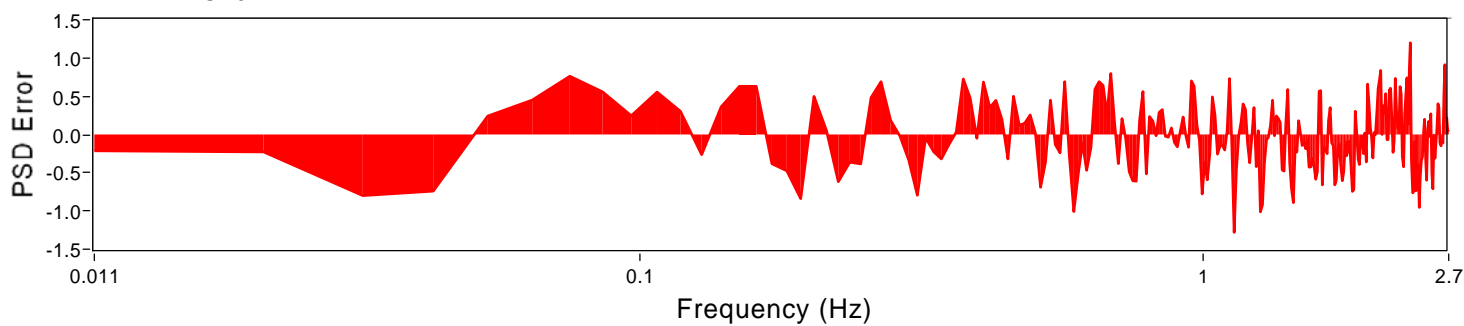
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0486	FW FLOW	FU2_2010-07_0004.psd	11 : 512	0.010731	2.747169	11	Forward-Backward	15-Jul-2010 13:36:44

Current NB PSD vs. Previous NP PSD



RMS=0.44

Compare Previous Error

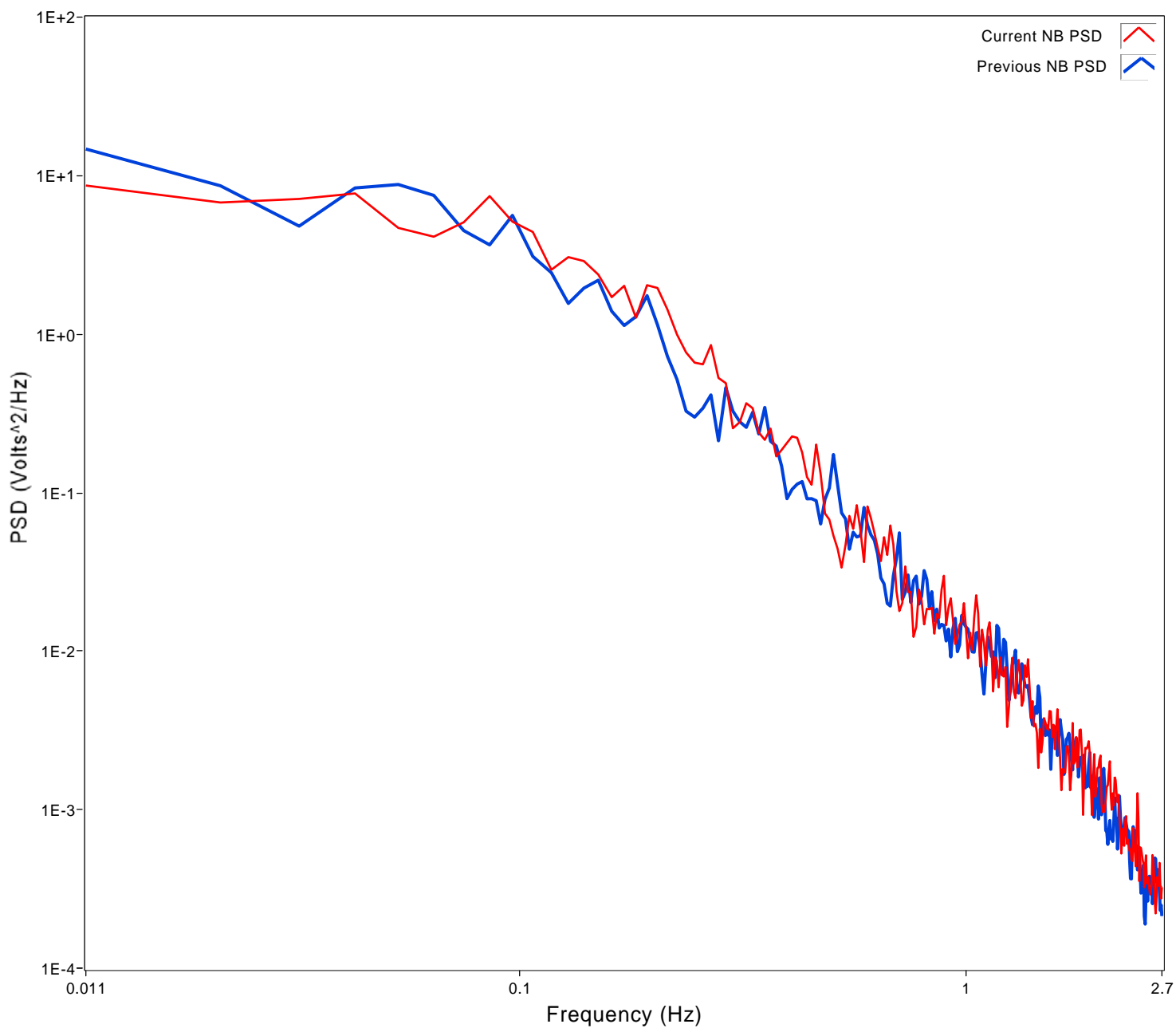




# OLM DYNAMIC ANALYSIS RESULTS COMPARE

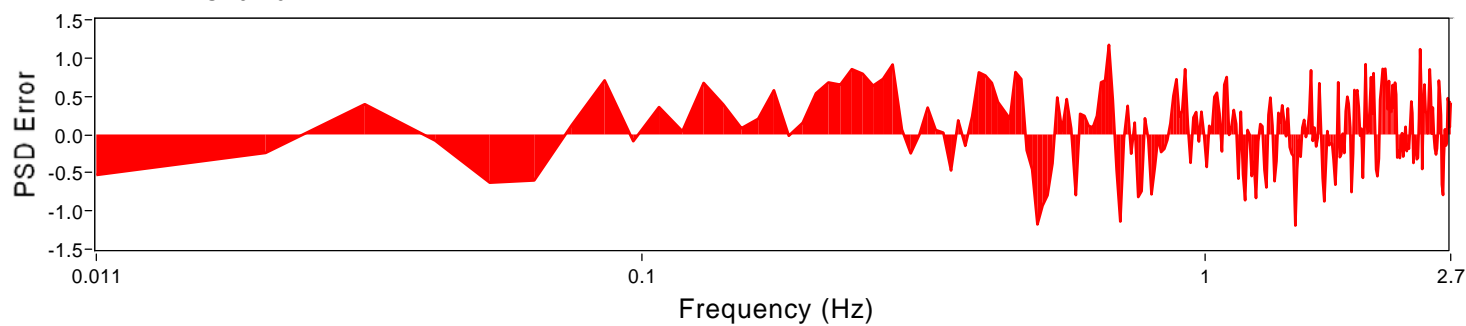
Reactor and Unit	Tag Number	Service	Filename	Blocks : Blocksize	Trim Low Freq. (Hz)	Trim High Freq. (Hz)	AR Order	AR Method	Test Date
Farley Unit 2	FT0496	FW FLOW	FU2_2010-07_0004.psd	11 : 512	0.010731	2.747169	11	Forward-Backward	15-Jul-2010 13:36:44

Current NB PSD vs. Previous NP PSD



RMS=0.46

Compare Previous Error





## **APPENDIX F**

### **North Anna Unit 1 OLM Results (Cycle 20)**





Item	Tagname	Service	1 Jan 2008	1 Feb 2008	1 Apr 2008	1 May 2008	1 Jun 2008	1 Jul 2008	1 Sep 2008	1 Oct 2008	1 Nov 2008	2 Dec 2008	2 Jan 2009	2 Feb 2009	2 Mar 2009	Drift	Final	Comment
1	F1MS001A	SG A STEAM FLOW															PASS	
2	F1MS002A	SG A STEAM FLOW															PASS	
3	F1FW004A	FW FLOW TO SG A															PASS	
4	F1FW005A	FW FLOW TO SG A															PASS	
5	L1FW001A	SG A NARROW RANGE LEVEL															PASS	
6	L1FW002A	SG A NARROW RANGE LEVEL															PASS	
7	L1FW003A	SG A NARROW RANGE LEVEL															PASS	
8	L1FW004A	SG A WIDE RANGE LEVEL															PASS	
9	P1MS001A	SG A OUTLET PRESSURE															PASS	
10	P1MS002A	SG A OUTLET PRESSURE															PASS	
11	P1MS003A	SG A OUTLET PRESSURE															PASS	
12	F1MS003A	SG B STEAM FLOW															PASS	
13	F1MS004A	SG B STEAM FLOW															PASS	
14	F1FW006A	FW FLOW TO SG B															PASS	
15	F1FW007A	FW FLOW TO SG B															PASS	
16	L1FW005A	SG B NARROW RANGE LEVEL															PASS	
17	L1FW006A	SG B NARROW RANGE LEVEL															PASS	
18	L1FW007A	SG B NARROW RANGE LEVEL															PASS	
19	L1FW008A	SG B WIDE RANGE LEVEL															PASS	
20	P1MS004A	SG B OUTLET PRESSURE															PASS	
21	P1MS005A	SG B OUTLET PRESSURE															PASS	
22	P1MS006A	SG B OUTLET PRESSURE															PASS	
23	F1MS005A	SG C STEAM FLOW															PASS	
24	F1MS006A	SG C STEAM FLOW															PASS	
25	F1FW008A	FW FLOW TO SG C															PASS	
26	F1FW009A	FW FLOW TO SG C															PASS	

*R = Exceeded Redundant Sensor Analysis Limits    M = Exceeded Model Analysis Limits    D = Exceeded Drift Limits*

**Table F.1 North Anna Unit 1 OLM Results Summary (Cycle 20)**



Item	Tagname	Service	1 Jan 2008	1 Feb 2008	1 Apr 2008	1 May 2008	1 Jun 2008	1 Jul 2008	1 Sep 2008	1 Oct 2008	1 Nov 2008	2 Dec 2008	2 Jan 2009	2 Feb 2009	2 Mar 2009	Drift	Final	Comment
27	L1FW009A	SG C NARROW RANGE LEVEL															PASS	
28	L1FW010A	SG C NARROW RANGE LEVEL															PASS	
29	L1FW011A	SG C NARROW RANGE LEVEL															PASS	
30	L1FW012A	SG C WIDE RANGE LEVEL															PASS	
31	P1MS007A	SG C OUTLET PRESSURE															PASS	
32	P1MS008A	SG C OUTLET PRESSURE															PASS	
33	P1MS009A	SG C OUTLET PRESSURE															PASS	
34	L1RC001A	PRESSURIZER LEVEL															PASS	
35	L1RC002A	PRESSURIZER LEVEL															PASS	
36	L1RC003A	PRESSURIZER LEVEL															PASS	
37	P1RC001A	PRESSURIZER PRESSURE															PASS	
38	P1RC002A	PRESSURIZER PRESSURE															PASS	
39	P1RC003A	PRESSURIZER PRESSURE															PASS	
40	F1RC001A	RCS LOOP A FLOW															PASS	
41	F1RC002A	RCS LOOP A FLOW															PASS	
42	F1RC003A	RCS LOOP A FLOW															PASS	
43	F1RC004A	RCS LOOP B FLOW															PASS	
44	F1RC005A	RCS LOOP B FLOW															PASS	
45	F1RC006A	RCS LOOP B FLOW															PASS	
46	F1RC007A	RCS LOOP C FLOW															PASS	
47	F1RC008A	RCS LOOP C FLOW															PASS	
48	F1RC009A	RCS LOOP C FLOW															PASS	
49	P1RC005A	RCS WIDE RANGE PRESSURE LOOP A															PASS	
50	P1RC006A	RCS WIDE RANGE PRESSURE LOOP C															PASS	
51	P0398A	TURBINE FIRST STAGE PRESSURE		M	M	M	M	M	M	M	M	M	M	M	M		FAIL	Drift high over cycle
52	P0399A	TURBINE FIRST STAGE PRESSURE					M	M	M	M							FAIL	Drift high over cycle

*R = Exceeded Redundant Sensor Analysis Limits    M = Exceeded Model Analysis Limits    D = Exceeded Drift Limits*

**Table F.1 (continued) North Anna Unit 1 OLM Results Summary (Cycle 20)**



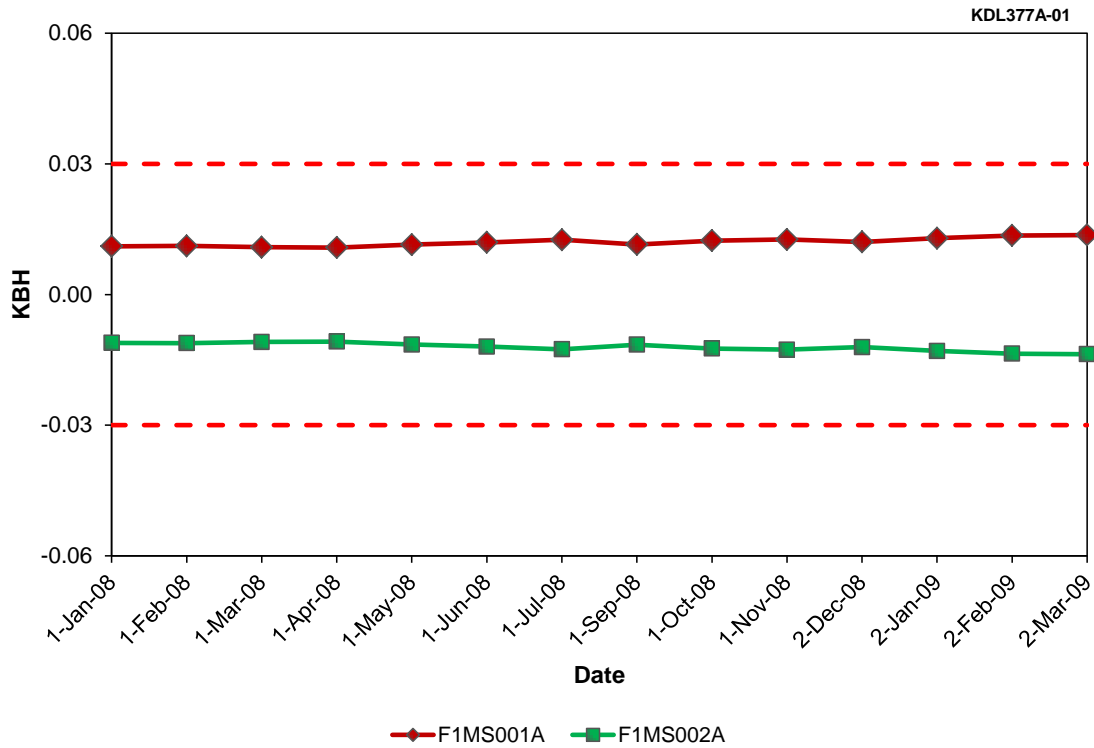


Figure F.1 SG A STEAM FLOW Steady-State Deviation at North Anna Unit 1 (Cycle 20)

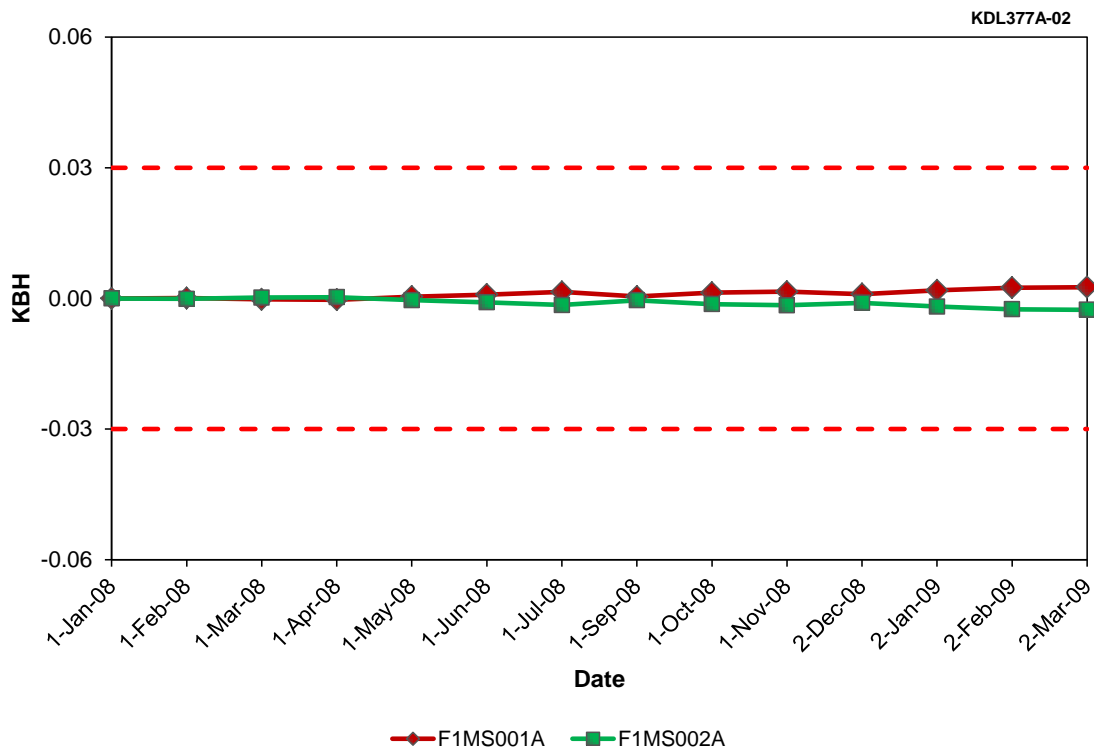


Figure F.2 SG A STEAM FLOW Steady-State Drift at North Anna Unit 1 (Cycle 20)

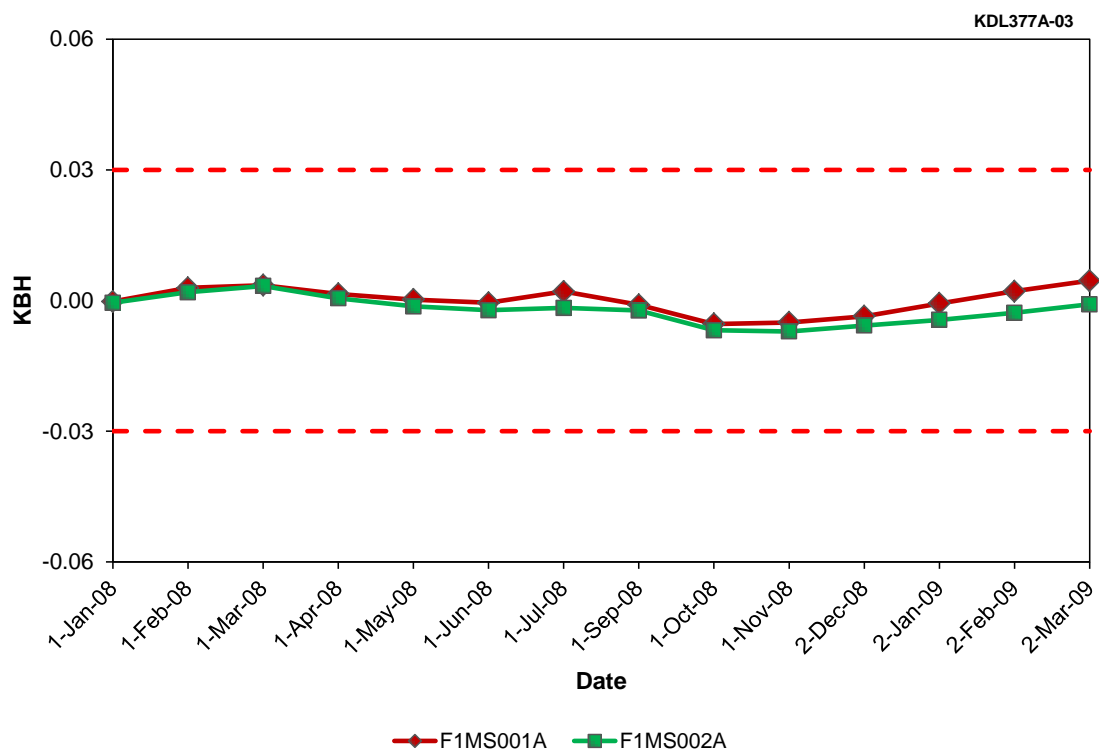
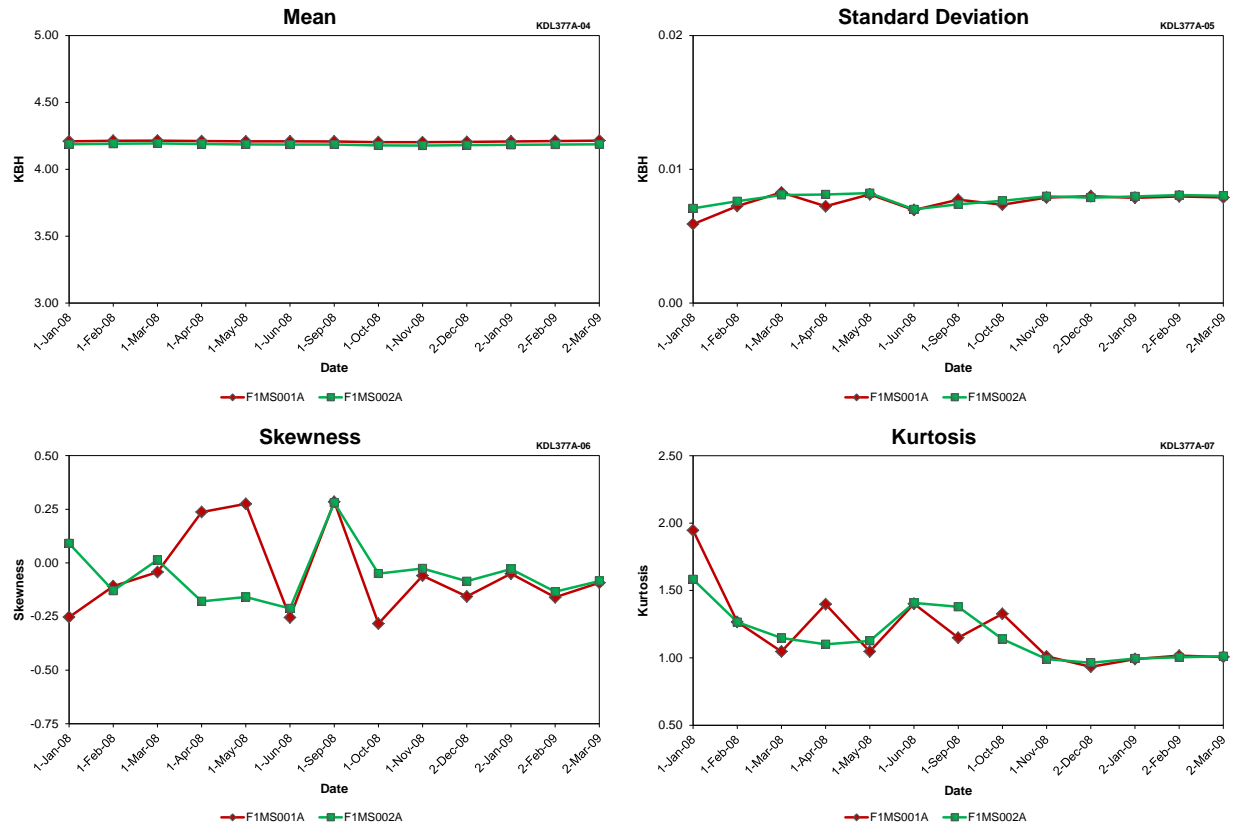


Figure F.3 SG A STEAM FLOW Steady-State Residual AAKR at North Anna Unit 1 (Cycle 20)



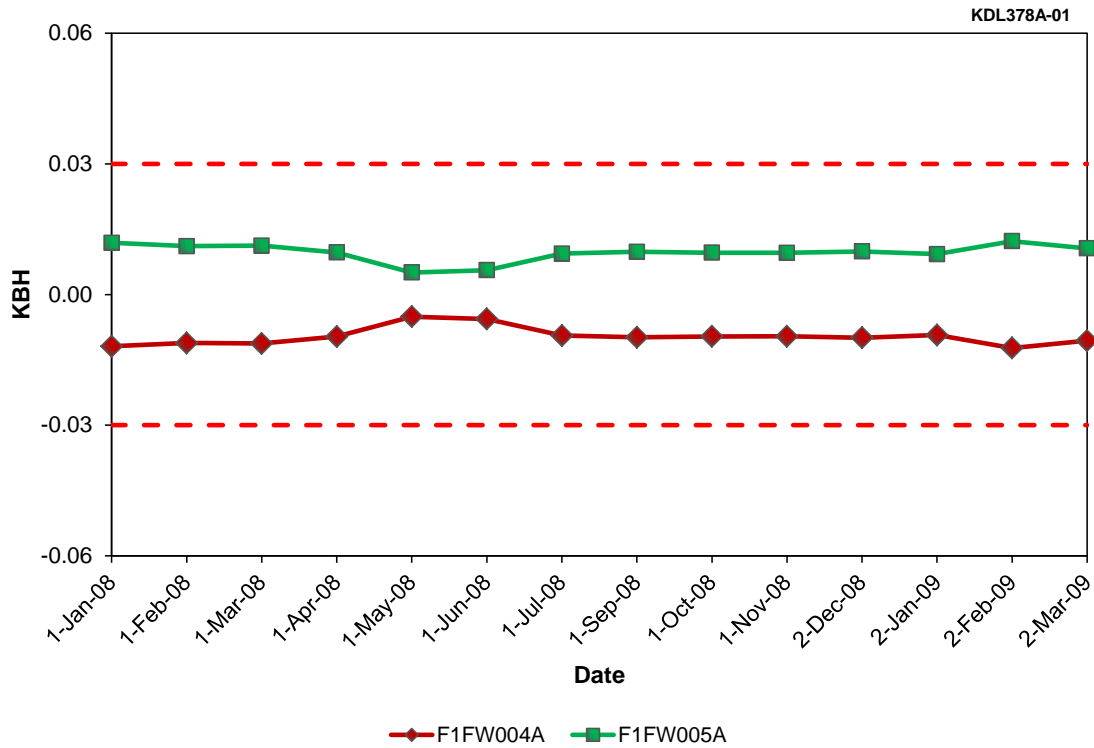
**Figure F.4 SG A STEAM FLOW Data Quality Statistics at North Anna Unit 1 (Cycle 20)**

**Table F.2 SG A STEAM FLOW Data Quality for North Anna Unit 1 (Cycle 20)**

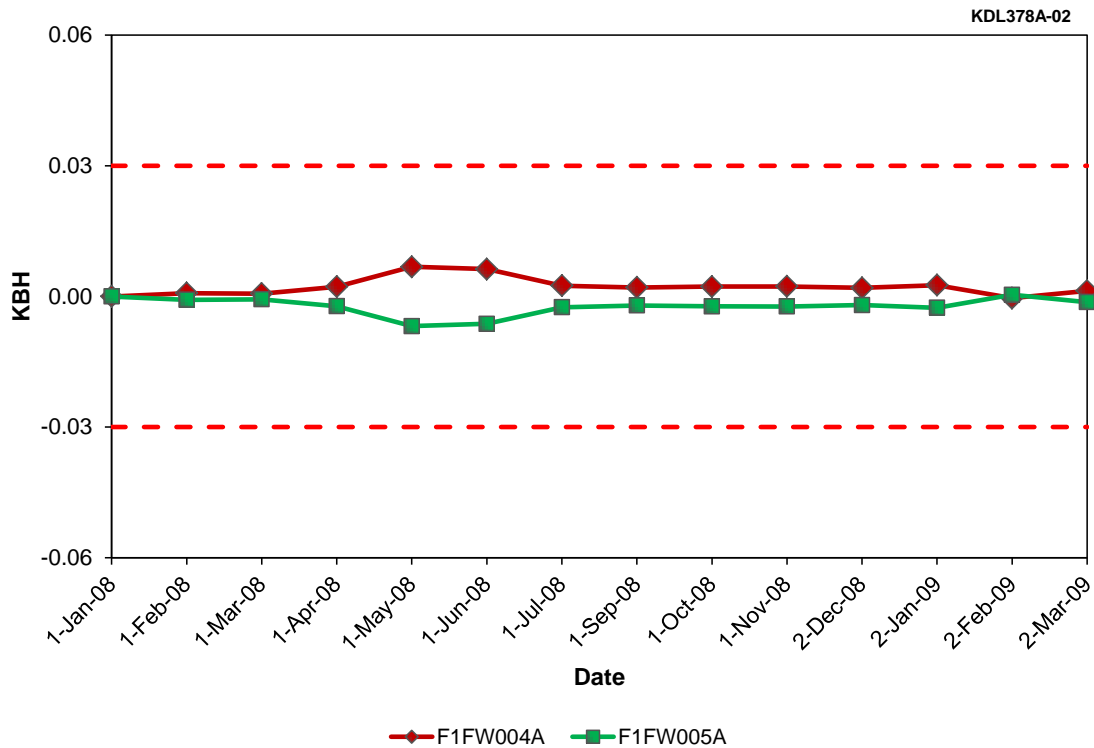
Result Type	Tag Names	
	F1MS001A	F1MS002A
Mean	4.21	4.19
Std. Dev.	0.01	0.01
Skewness	-0.05	-0.05
Kurtosis	1.20	1.16







**Figure F.5 FW FLOW TO SG A Steady-State Deviation at North Anna Unit 1 (Cycle 20)**



**Figure F.6 FW FLOW TO SG A Steady-State Drift at North Anna Unit 1 (Cycle 20)**

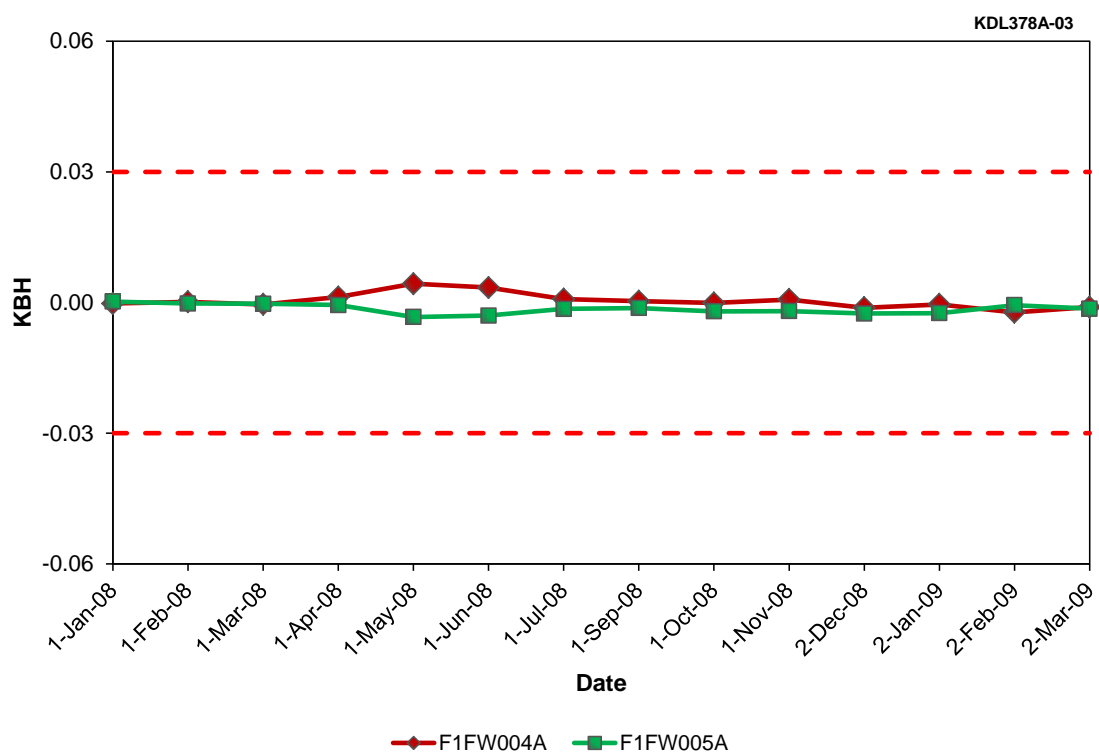
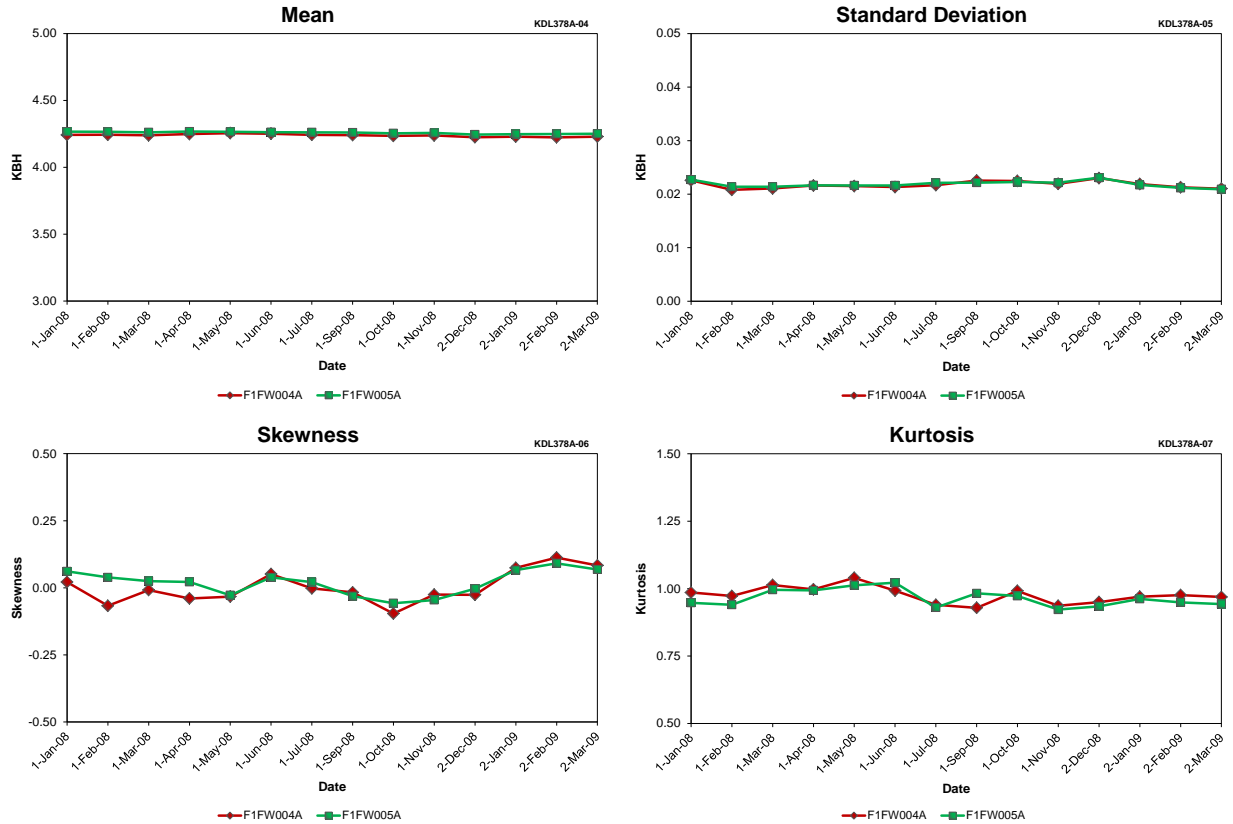


Figure F.7 FW FLOW TO SG A Steady-State Residual AAKR at North Anna Unit 1 (Cycle 20)

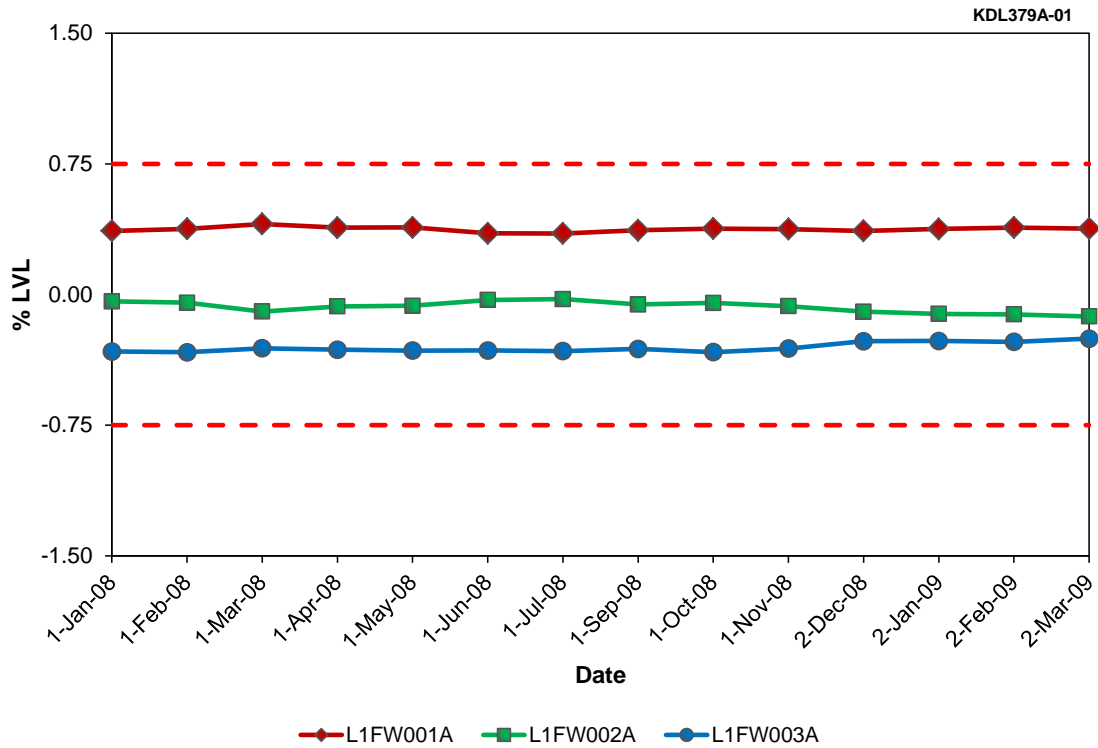


**Figure F.8 FW FLOW TO SG A Data Quality Statistics at North Anna Unit 1 (Cycle 20)**

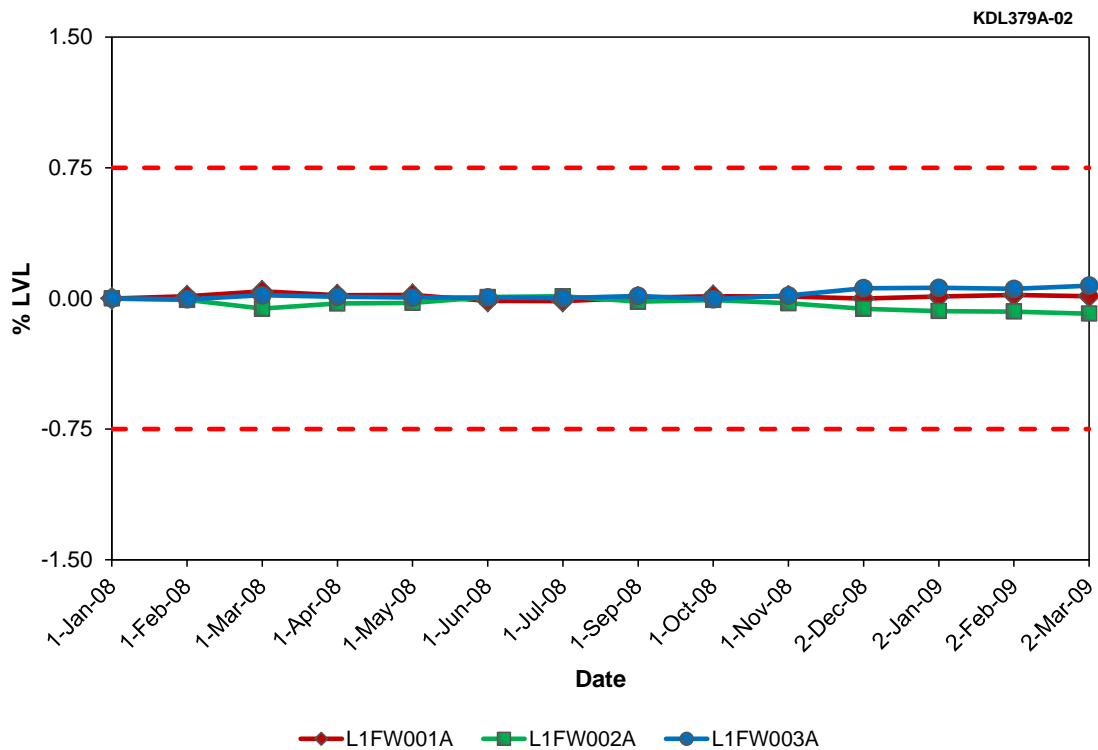
**Table F.3 FW FLOW TO SG A Data Quality for North Anna Unit 1 (Cycle 20)**

Result Type	Tag Names	
	F1FW004A	F1FW005A
Mean	4.24	4.26
Std. Dev.	0.02	0.02
Skewness	0.00	0.02
Kurtosis	0.98	0.96

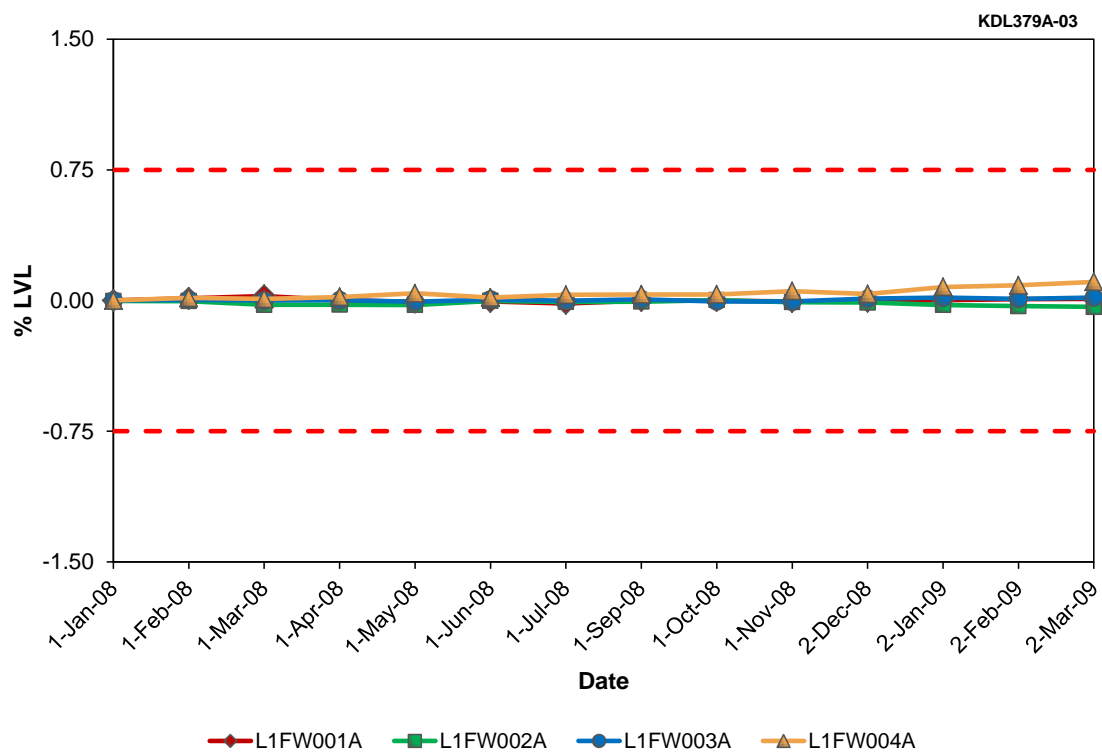




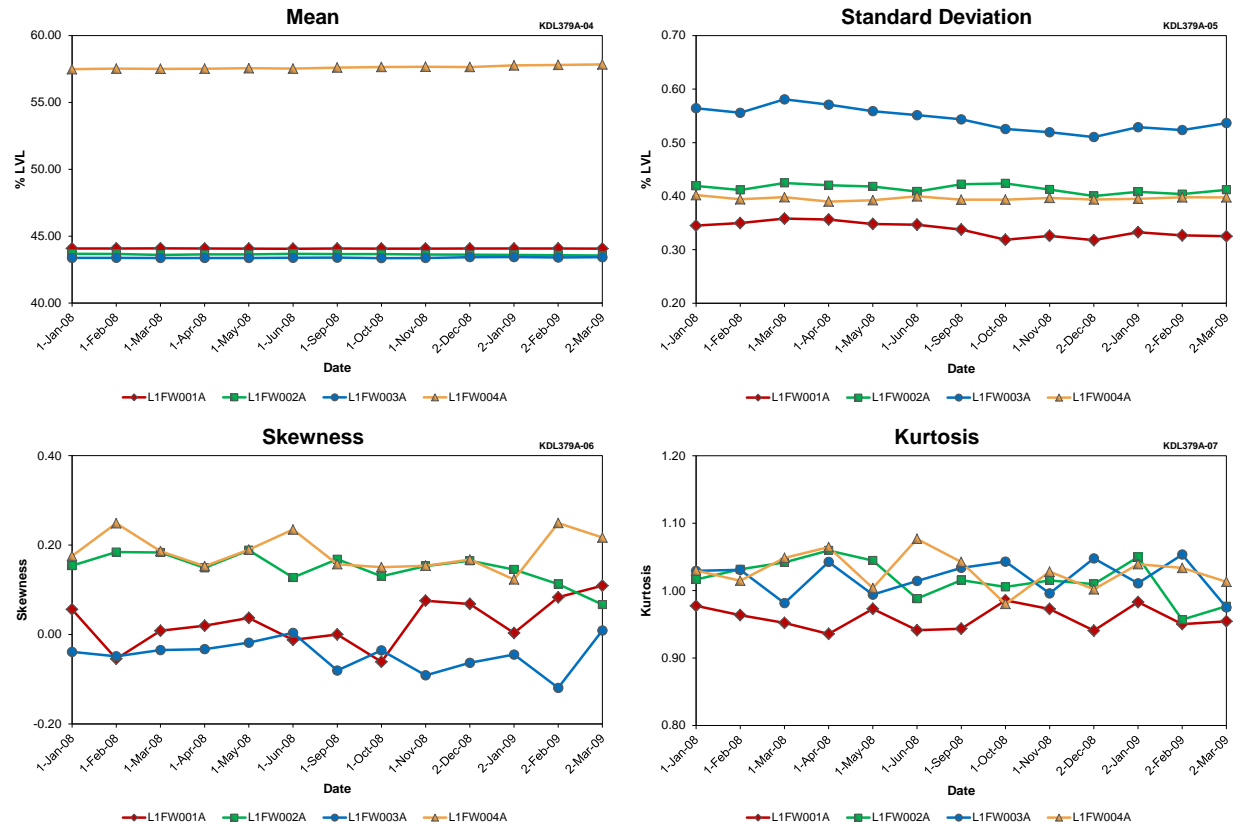
**Figure F.9 SG A LEVEL Steady-State Deviation at North Anna Unit 1 (Cycle 20)**



**Figure F.10 SG A LEVEL Steady-State Drift at North Anna Unit 1 (Cycle 20)**



**Figure F.11 SG A LEVEL Steady-State Residual AAKR at North Anna Unit 1 (Cycle 20)**



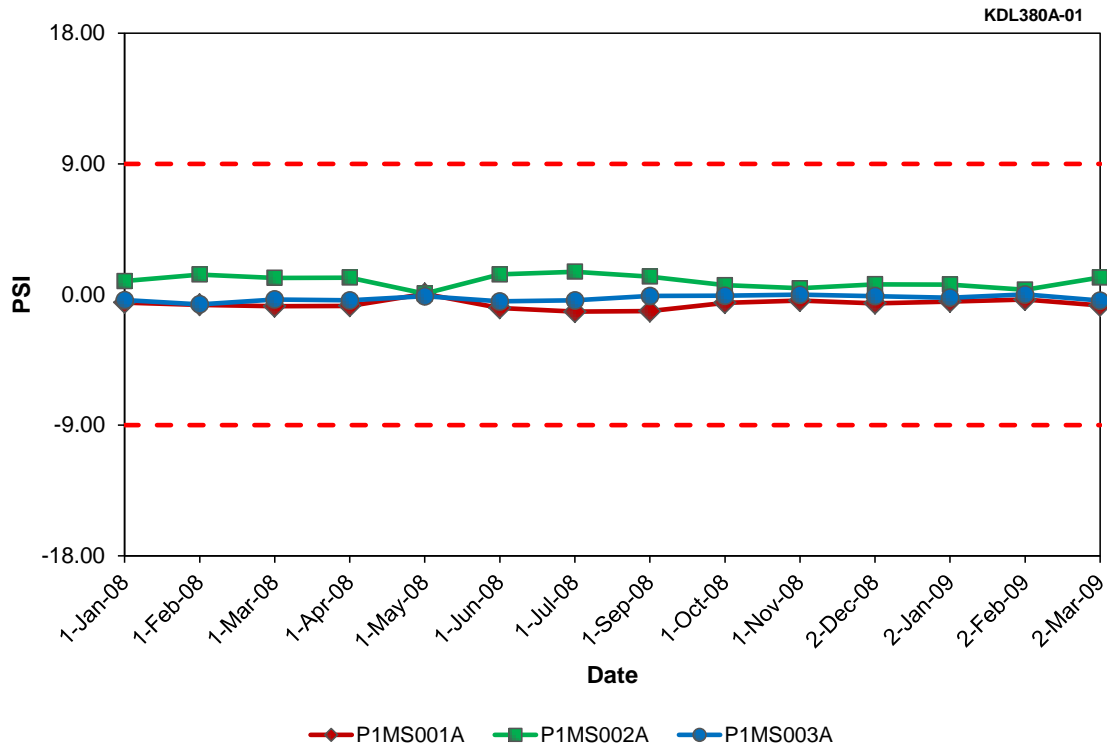
**Figure F.12 SG A LEVEL Data Quality Statistics at North Anna Unit 1 (Cycle 20)**

**Table F.4 SG A LEVEL Data Quality for North Anna Unit 1 (Cycle 20)**

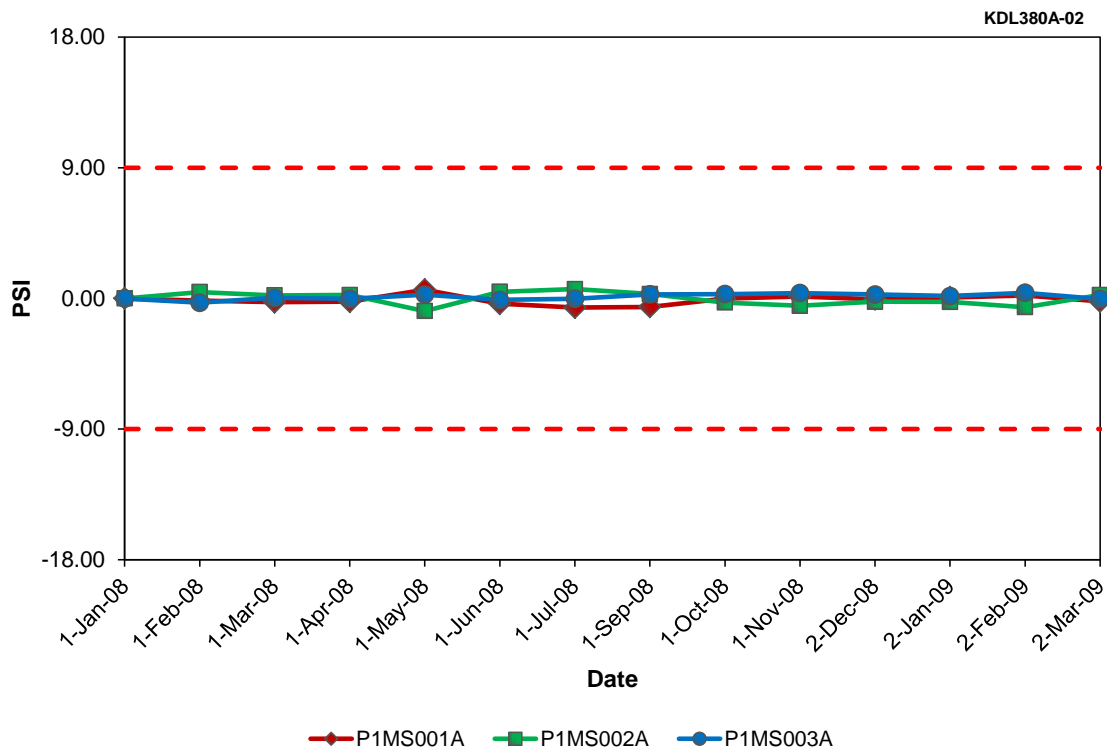
Result Type	Tag Names			
	L1FW001A	L1FW002A	L1FW003A	L1FW004A
Mean	44.07	43.63	43.39	57.63
Std. Dev.	0.34	0.41	0.54	0.40
Skewness	0.03	0.15	-0.05	0.19
Kurtosis	0.96	1.02	1.02	1.03



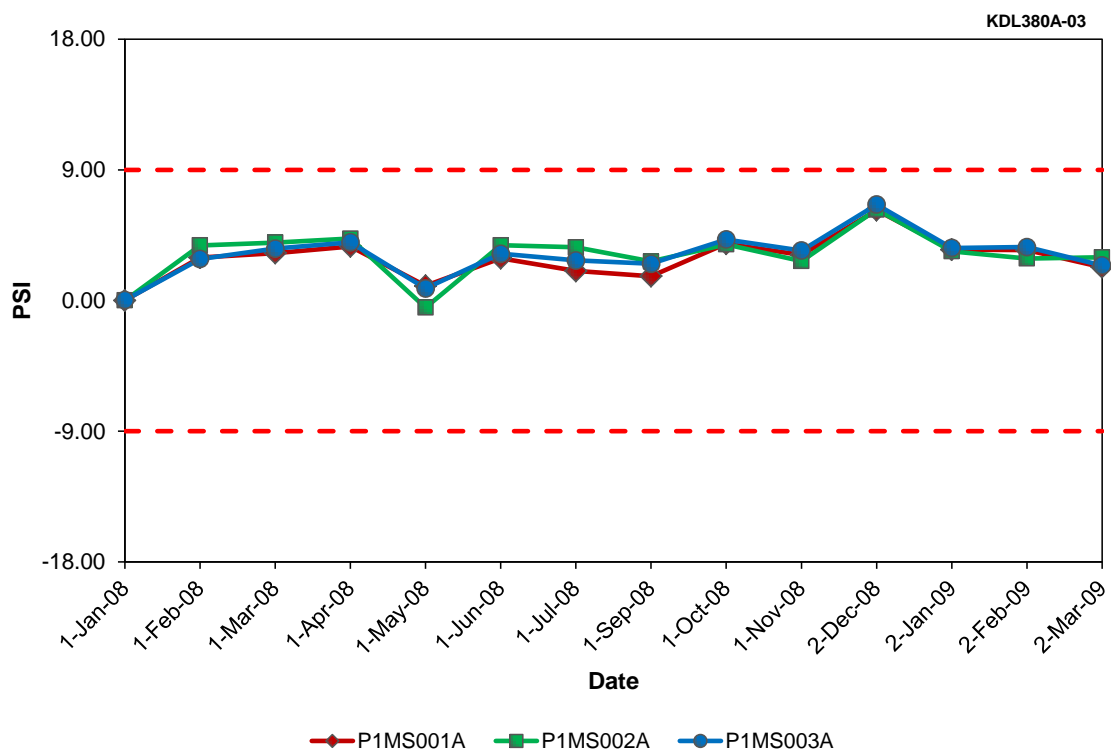




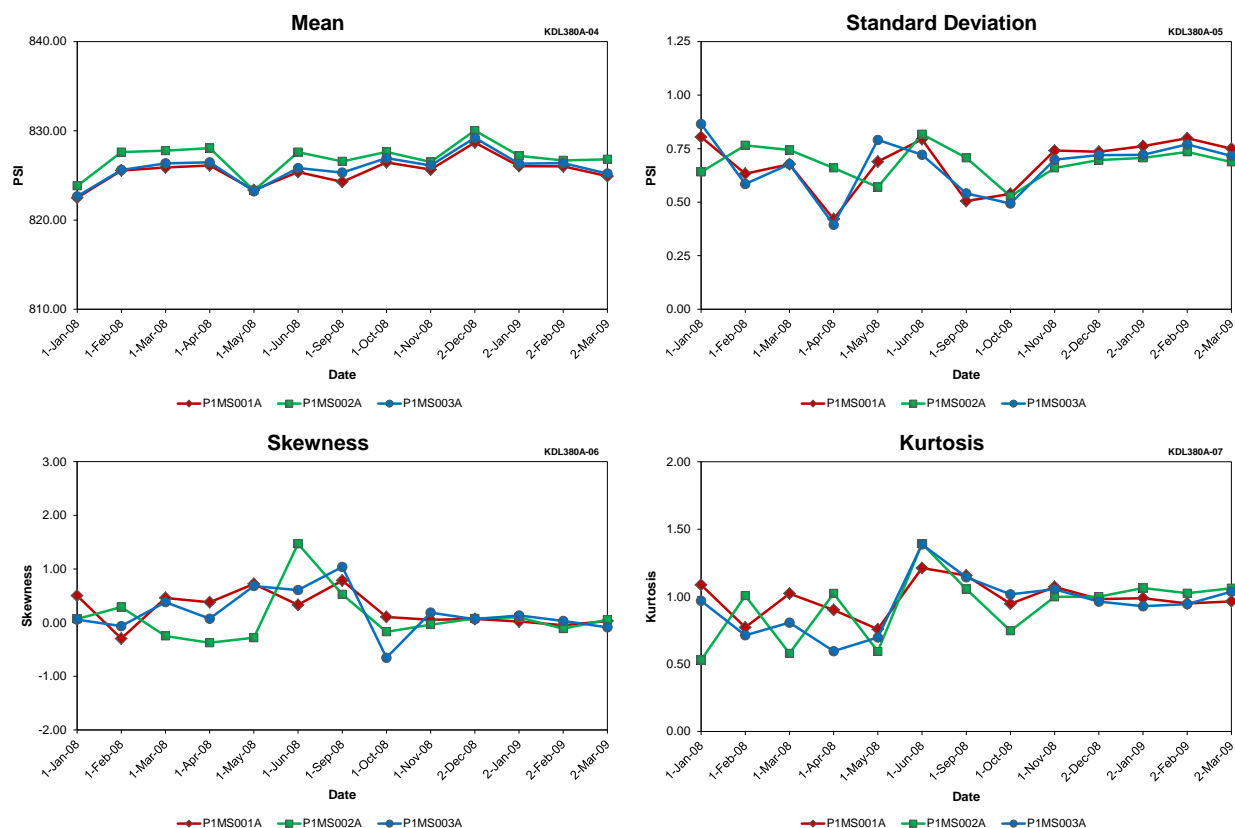
**Figure F.13 SG A OUTLET PRESSURE Steady-State Deviation at North Anna Unit 1 (Cycle 20)**



**Figure F.14 SG A OUTLET PRESSURE Steady-State Drift at North Anna Unit 1 (Cycle 20)**



**Figure F.15 SG A OUTLET PRESSURE Steady-State Residual AAKR at North Anna Unit 1 (Cycle 20)**

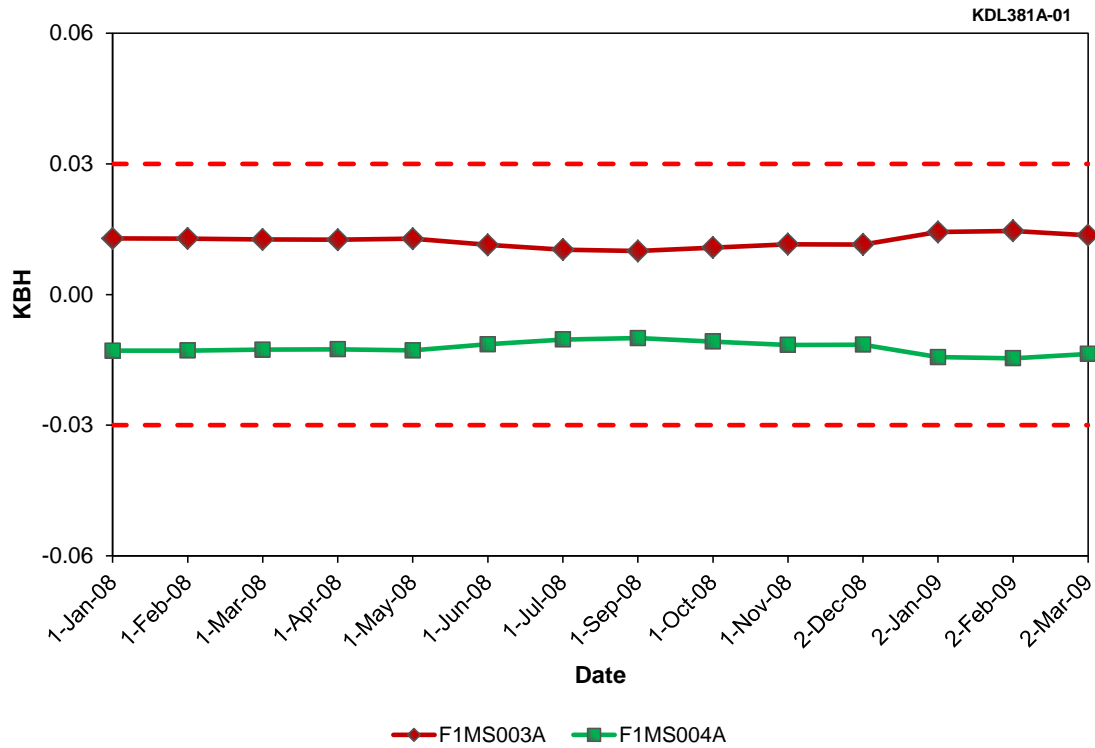


**Figure F.16 SG A OUTLET PRESSURE Data Quality Statistics at North Anna Unit 1 (Cycle 20)**

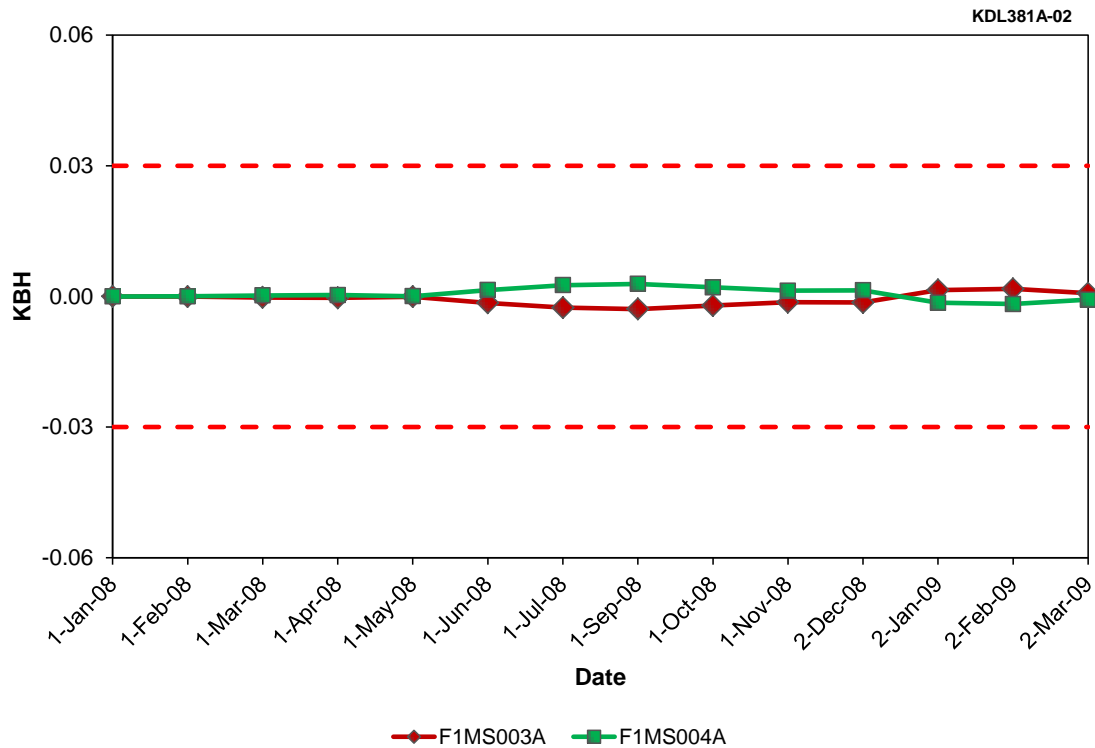
**Table F.5 SG A OUTLET PRESSURE Data Quality for North Anna Unit 1 (Cycle 20)**

Result Type	Tag Names		
	P1MS001A	P1MS002A	P1MS003A
Mean	825.45	826.89	825.82
Std. Dev.	0.68	0.69	0.67
Skewness	0.24	0.10	0.19
Kurtosis	0.99	0.93	0.94





**Figure F.17 SG B STEAM FLOW Steady-State Deviation at North Anna Unit 1 (Cycle 20)**



**Figure F.18 SG B STEAM FLOW Steady-State Drift at North Anna Unit 1 (Cycle 20)**

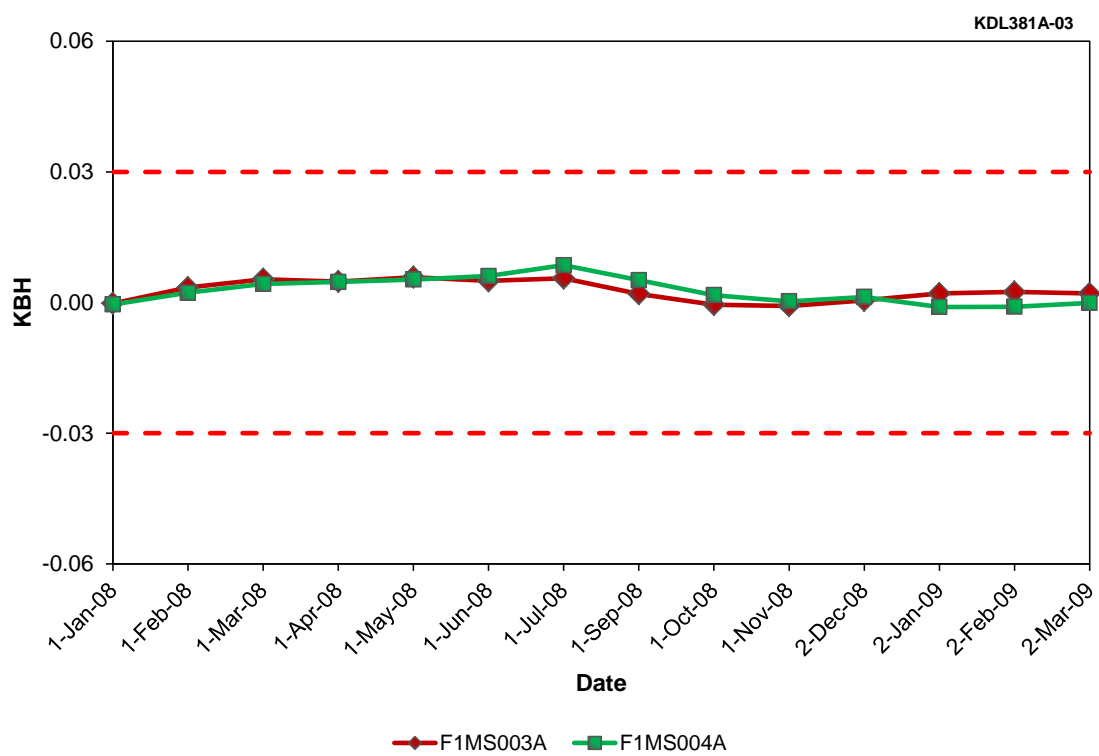
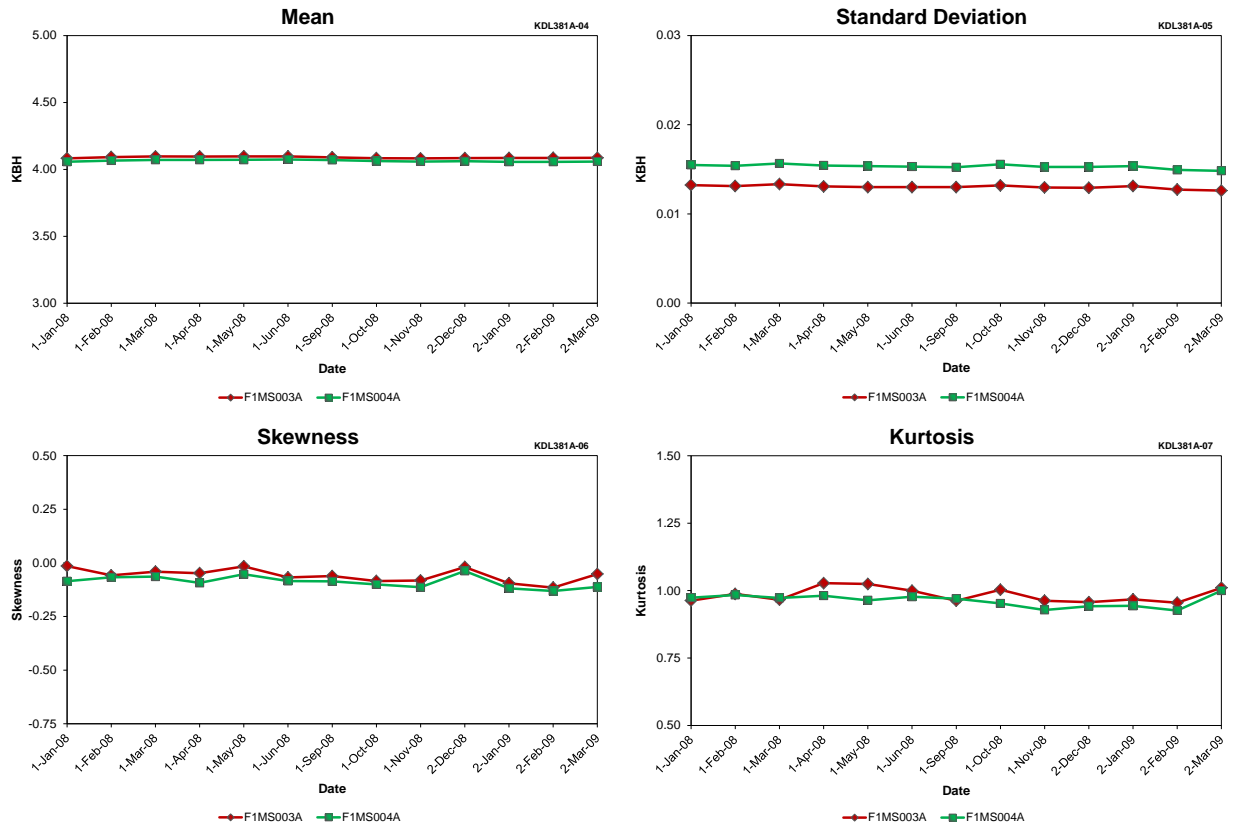


Figure F.19 SG B STEAM FLOW Steady-State Residual AAKR at North Anna Unit 1 (Cycle 20)



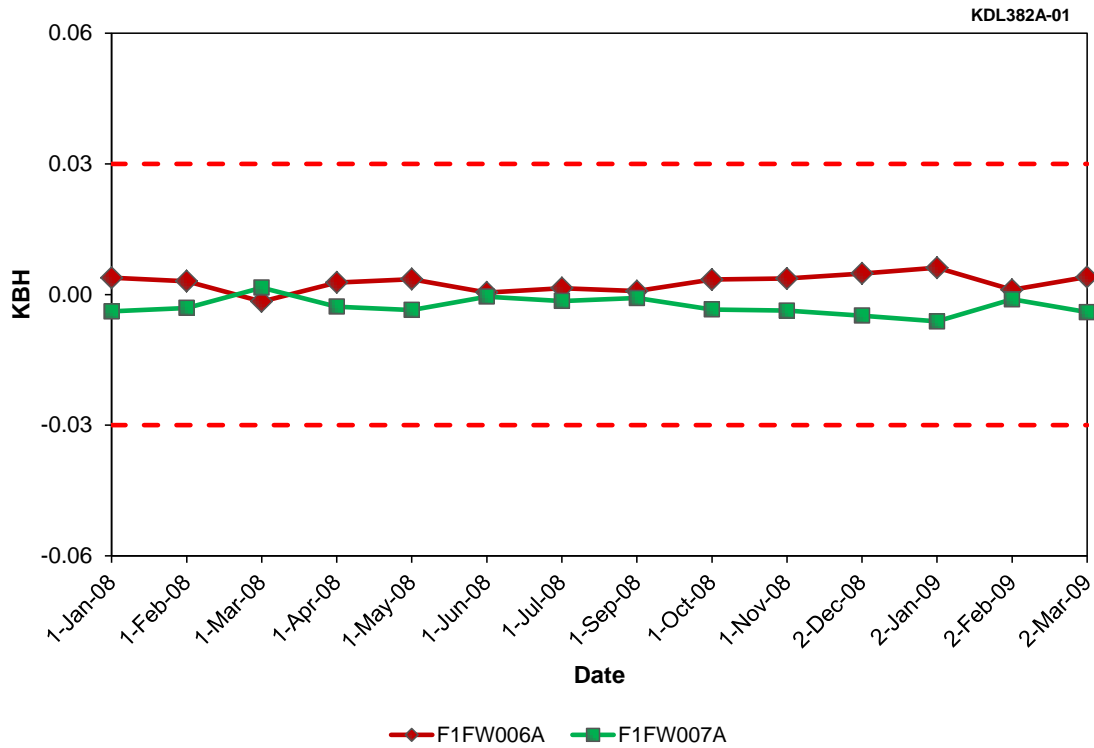
**Figure F.20 SG B STEAM FLOW Data Quality Statistics at North Anna Unit 1 (Cycle 20)**

**Table F.6 SG B STEAM FLOW Data Quality for North Anna Unit 1 (Cycle 20)**

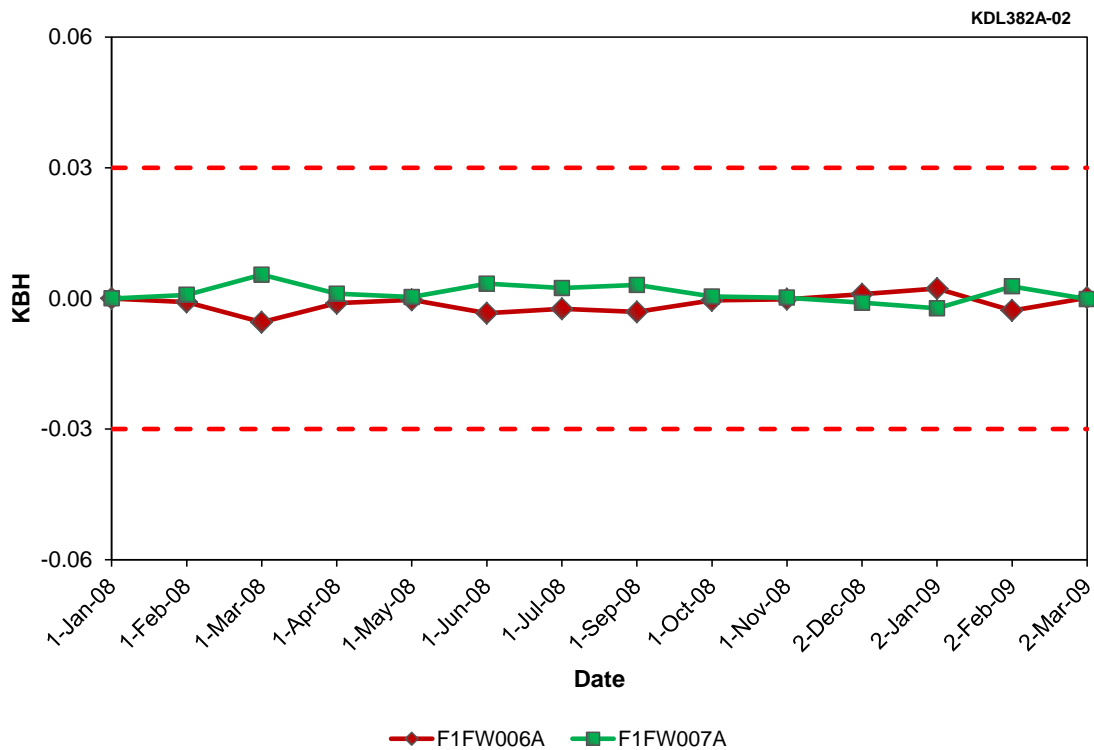
Result Type	Tag Names	
	F1MS003A	F1MS004A
Mean	4.09	4.06
Std. Dev.	0.01	0.02
Skewness	-0.06	-0.09
Kurtosis	0.98	0.96







**Figure F.21 FW FLOW TO SG B Steady-State Deviation at North Anna Unit 1 (Cycle 20)**



**Figure F.22 FW FLOW TO SG B Steady-State Drift at North Anna Unit 1 (Cycle 20)**

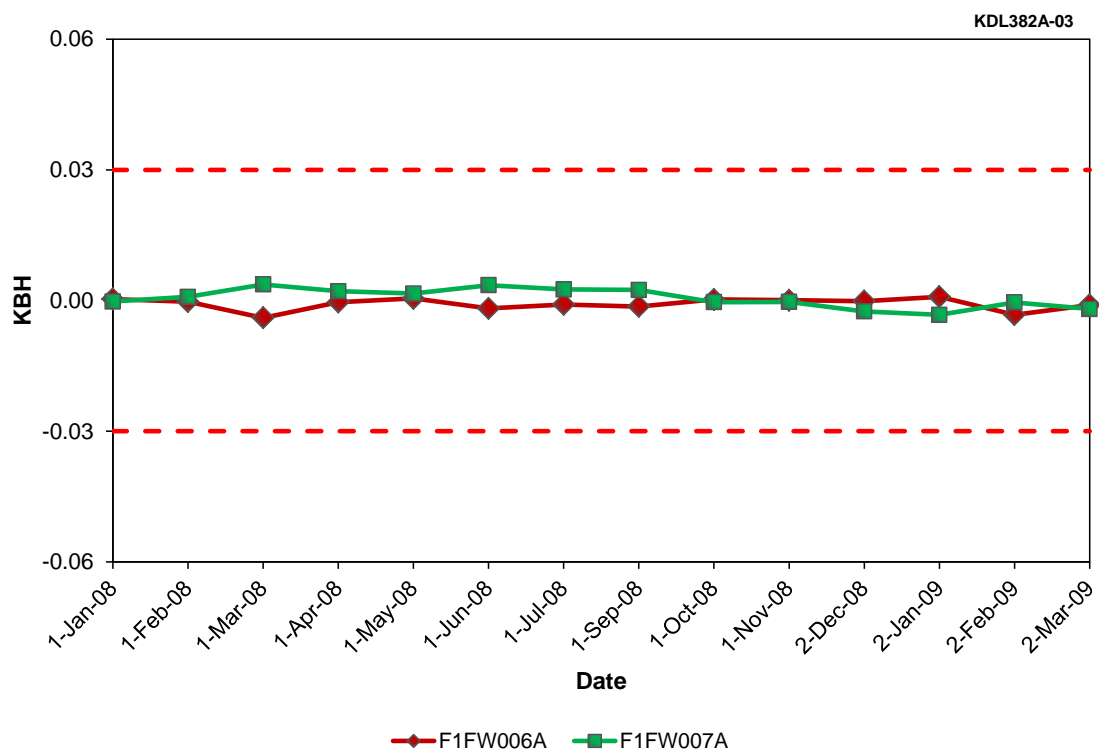
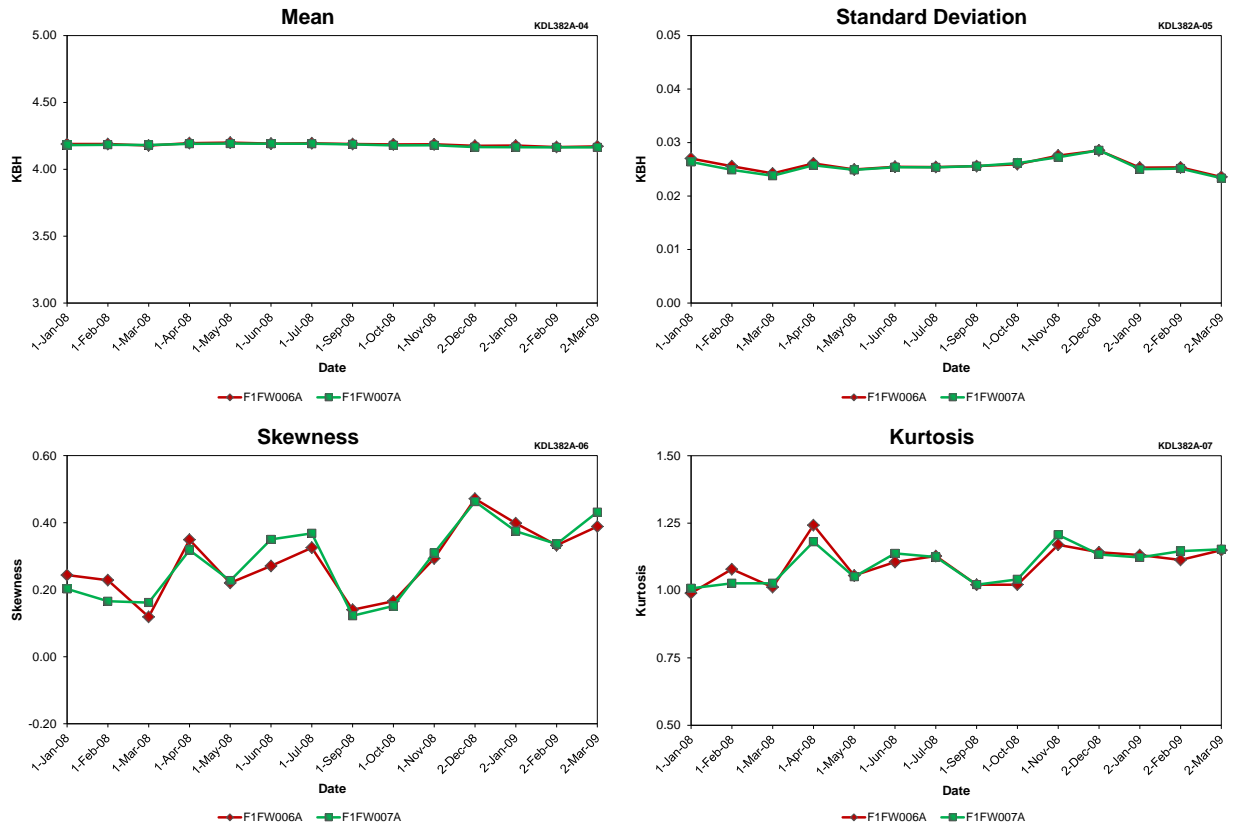


Figure F.23 FW FLOW TO SG B Steady-State Residual AAKR at North Anna Unit 1 (Cycle 20)

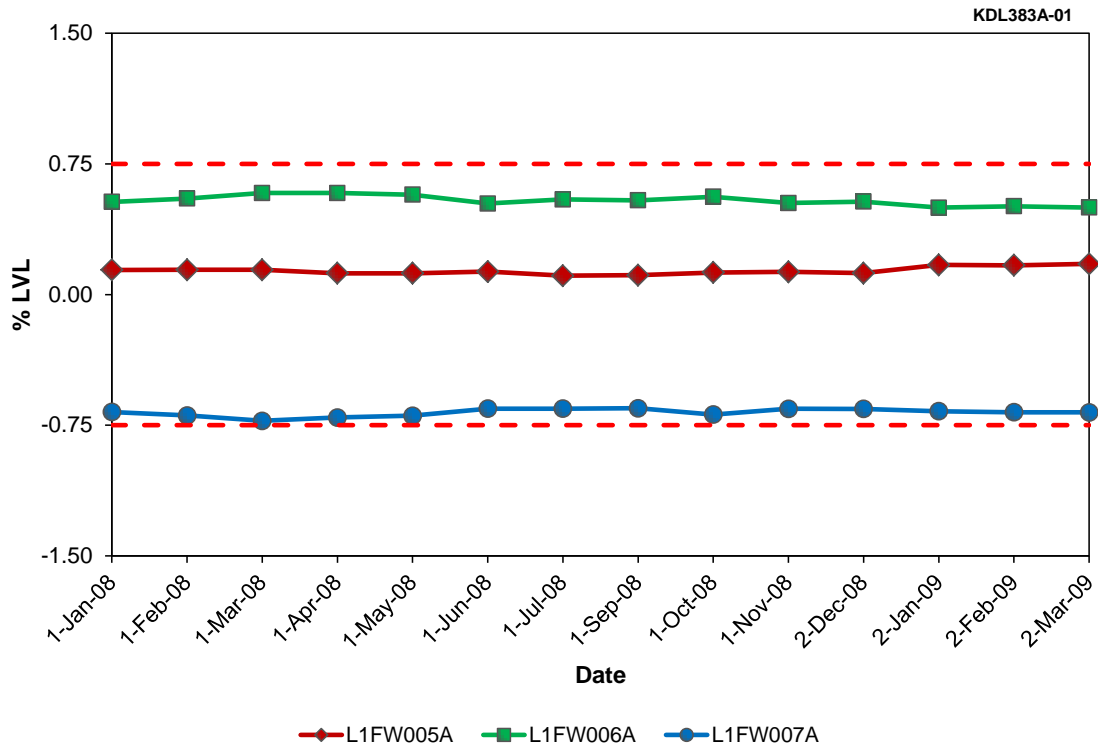


**Figure F.24 FW FLOW TO SG B Data Quality Statistics at North Anna Unit 1 (Cycle 20)**

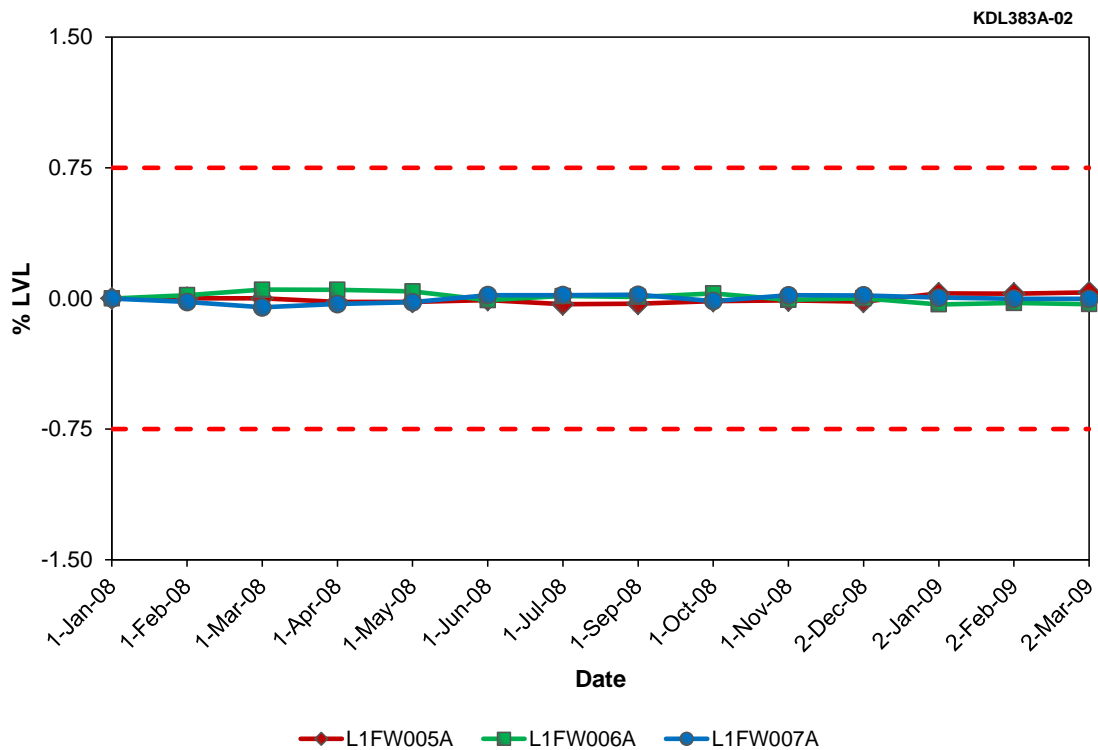
**Table F.7 FW FLOW TO SG B Data Quality for North Anna Unit 1 (Cycle 20)**

Result Type	Tag Names	
	F1FW006A	F1FW007A
Mean	4.19	4.18
Std. Dev.	0.03	0.03
Skewness	0.28	0.28
Kurtosis	1.10	1.10

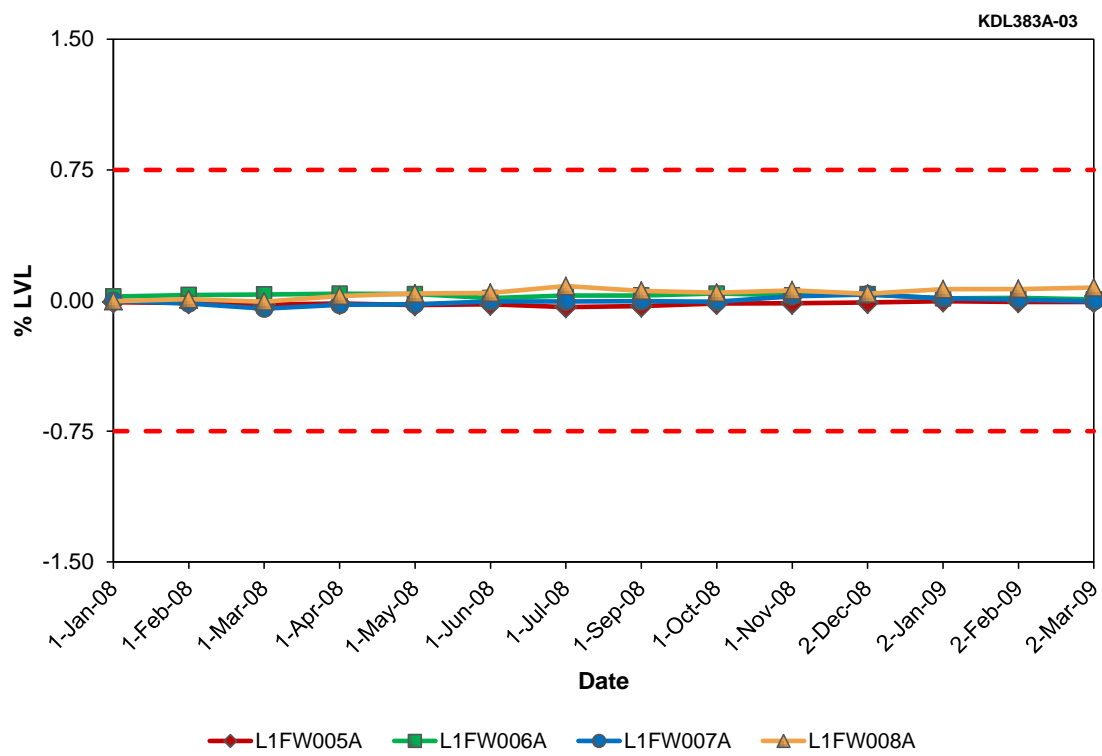




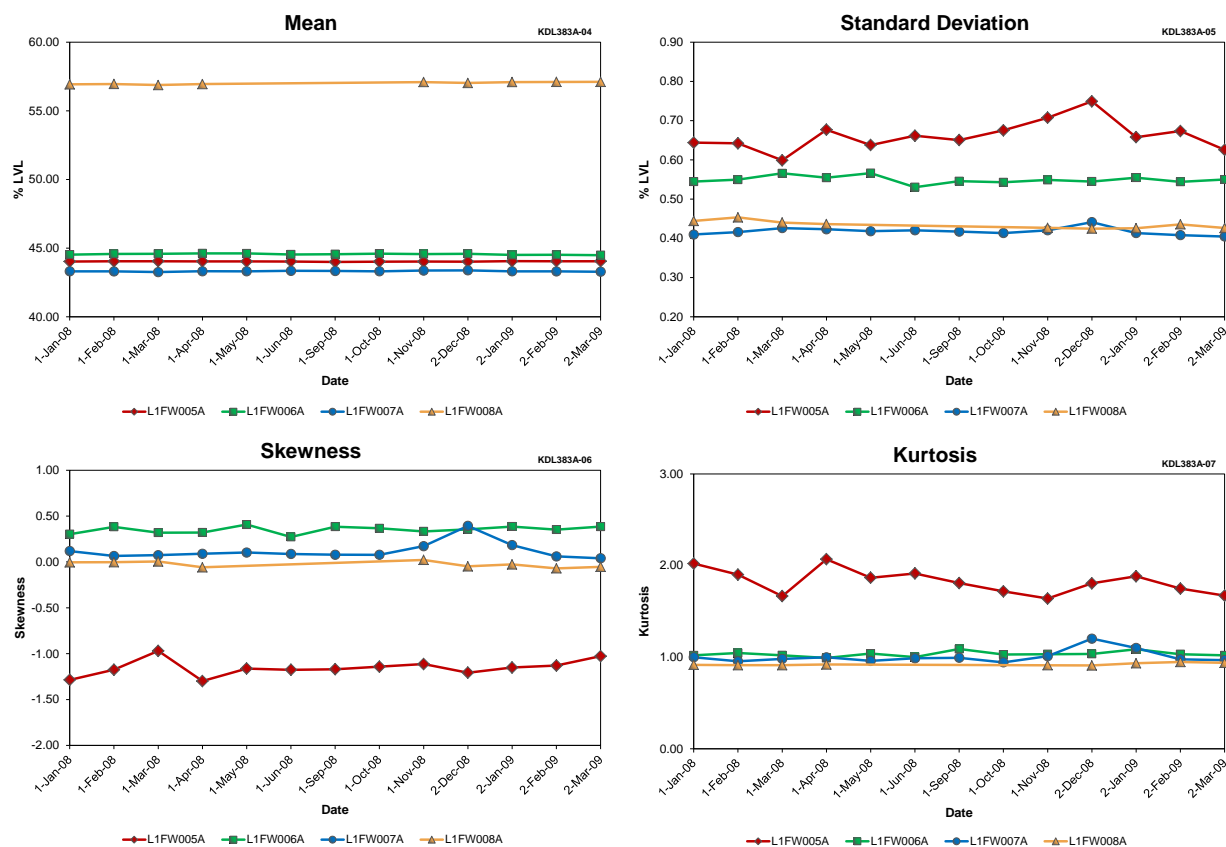
**Figure F.25 SG B LEVEL Steady-State Deviation at North Anna Unit 1 (Cycle 20)**



**Figure F.26 SG B LEVEL Steady-State Drift at North Anna Unit 1 (Cycle 20)**



**Figure F.27 SG B LEVEL Steady-State Residual AAKR at North Anna Unit 1 (Cycle 20)**



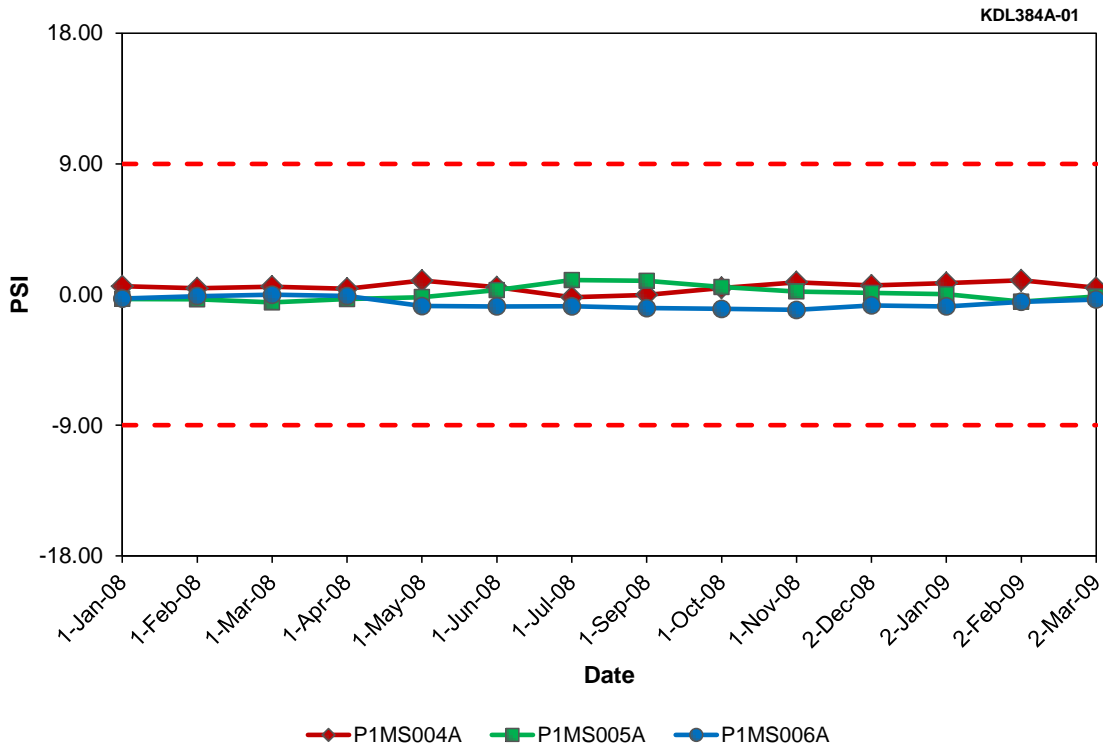
**Figure F.28 SG B LEVEL Data Quality Statistics at North Anna Unit 1 (Cycle 20)**

**Table F.8 SG B LEVEL Data Quality for North Anna Unit 1 (Cycle 20)**

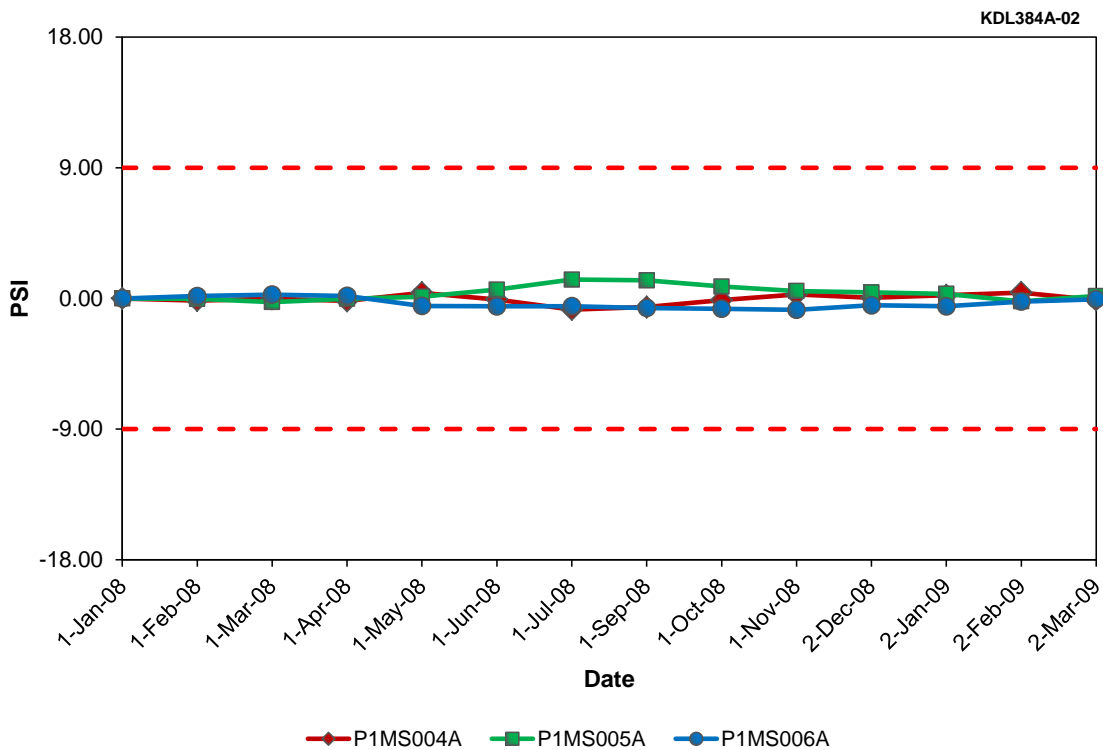
Result Type	Tag Names			
	L1FW005A	L1FW006A	L1FW007A	L1FW008A
Mean	44.03	44.56	43.32	57.01
Std. Dev.	0.66	0.55	0.42	0.43
Skewness	-1.15	0.35	0.12	-0.03
Kurtosis	1.82	1.03	1.01	0.92



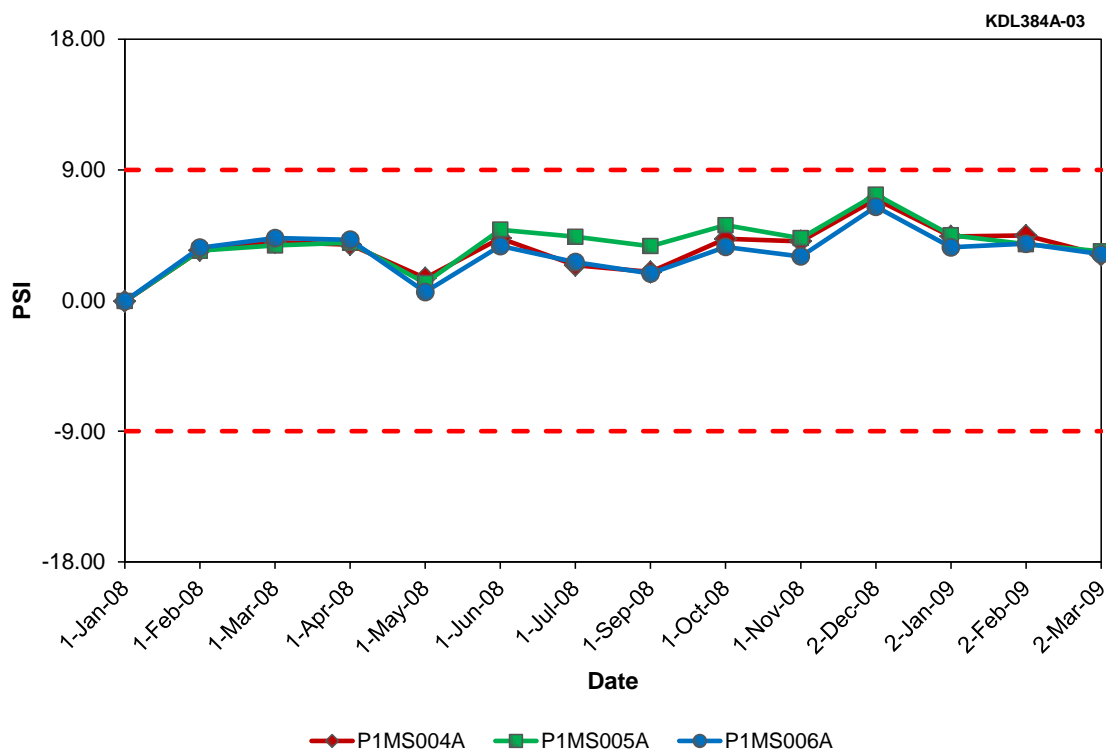




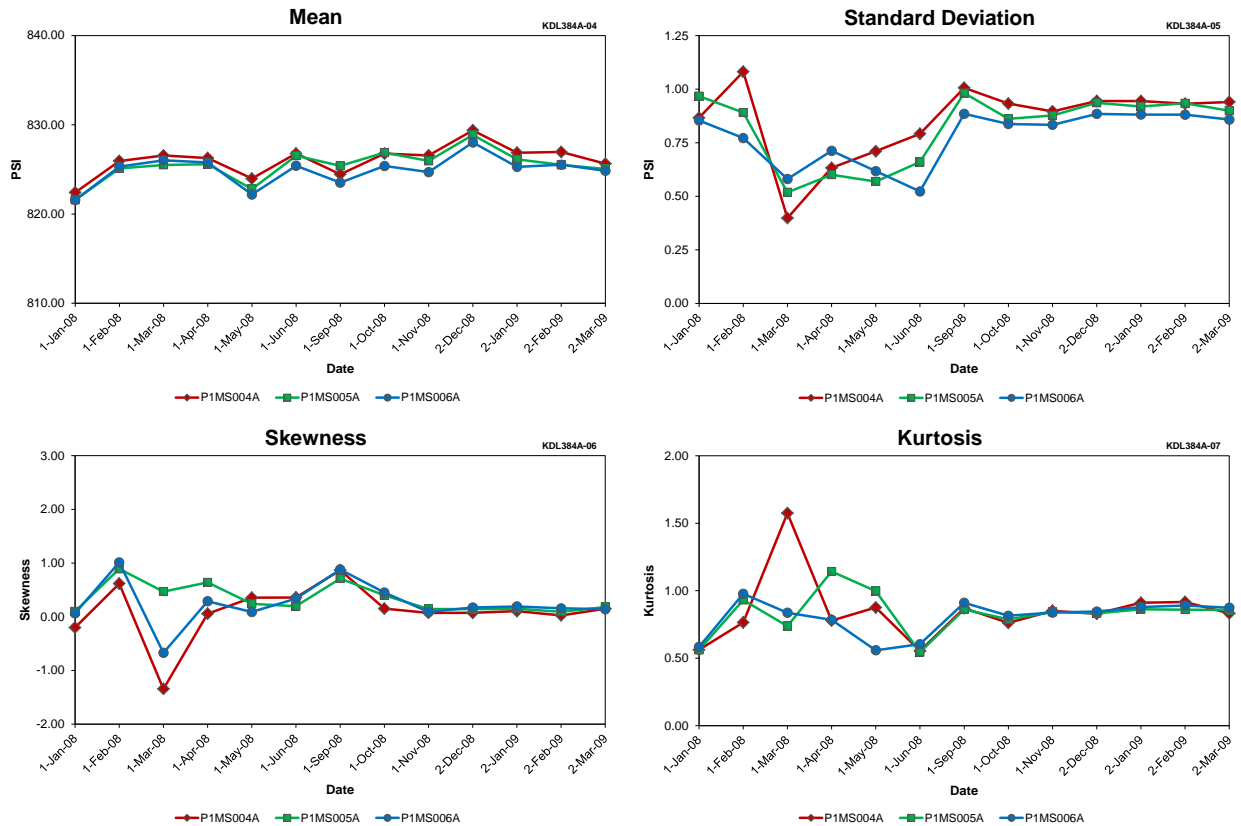
**Figure F.29 SG B OUTLET PRESSURE Steady-State Deviation at North Anna Unit 1 (Cycle 20)**



**Figure F.30 SG B OUTLET PRESSURE Steady-State Drift at North Anna Unit 1 (Cycle 20)**



**Figure F.31 SG B OUTLET PRESSURE Steady-State Residual AAKR at North Anna Unit 1 (Cycle 20)**



**Figure F.32 SG B OUTLET PRESSURE Data Quality Statistics at North Anna Unit 1 (Cycle 20)**

**Table F.9 SG B OUTLET PRESSURE Data Quality for North Anna Unit 1 (Cycle 20)**

Result Type	Tag Names		
	P1MS004A	P1MS005A	P1MS006A
Mean	826.05	825.45	824.89
Std. Dev.	0.85	0.82	0.78
Skewness	0.10	0.34	0.25
Kurtosis	0.85	0.83	0.80



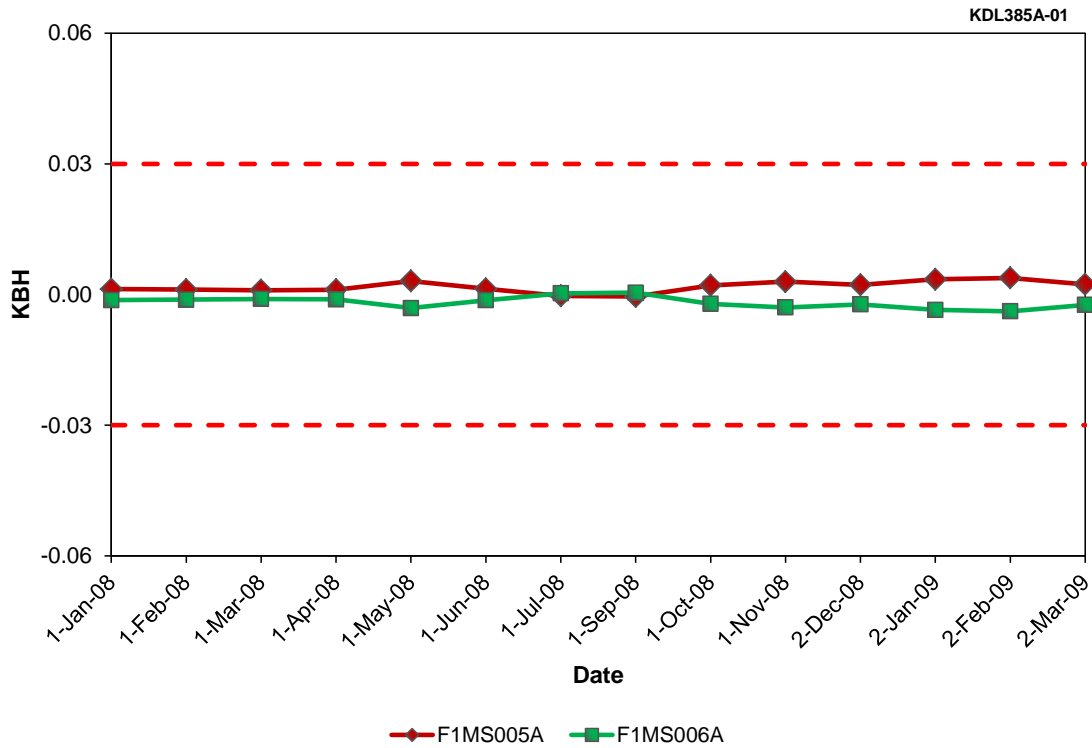


Figure F.33 SG C STEAM FLOW Steady-State Deviation at North Anna Unit 1 (Cycle 20)

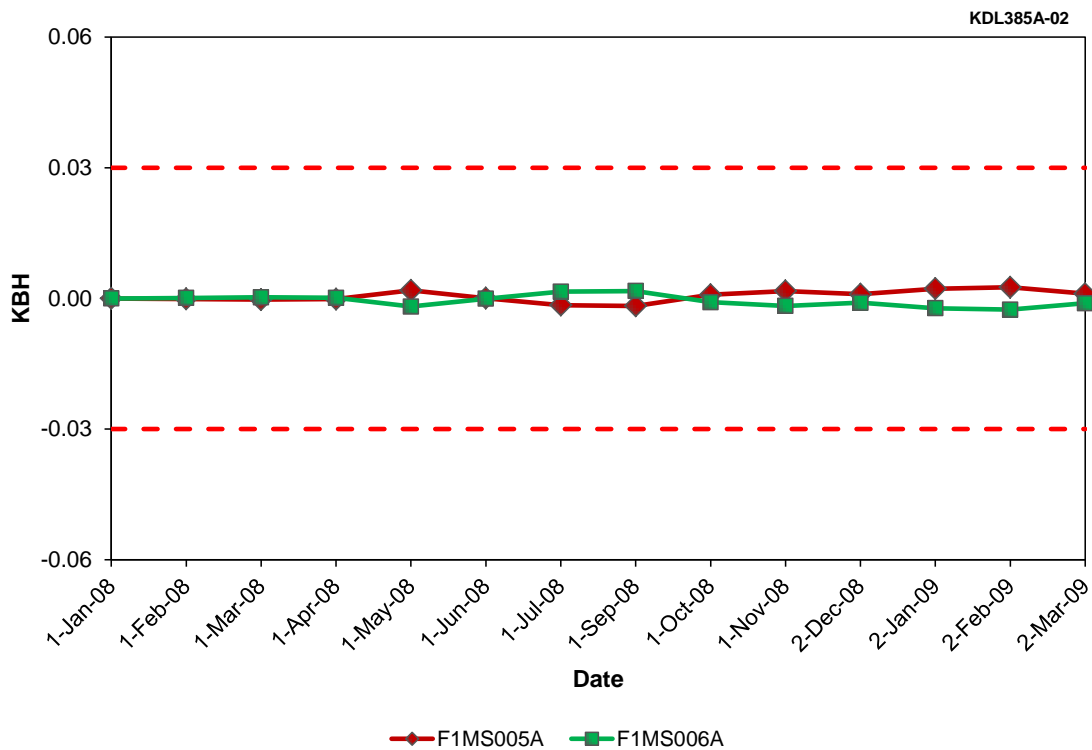


Figure F.34 SG C STEAM FLOW Steady-State Drift at North Anna Unit 1 (Cycle 20)

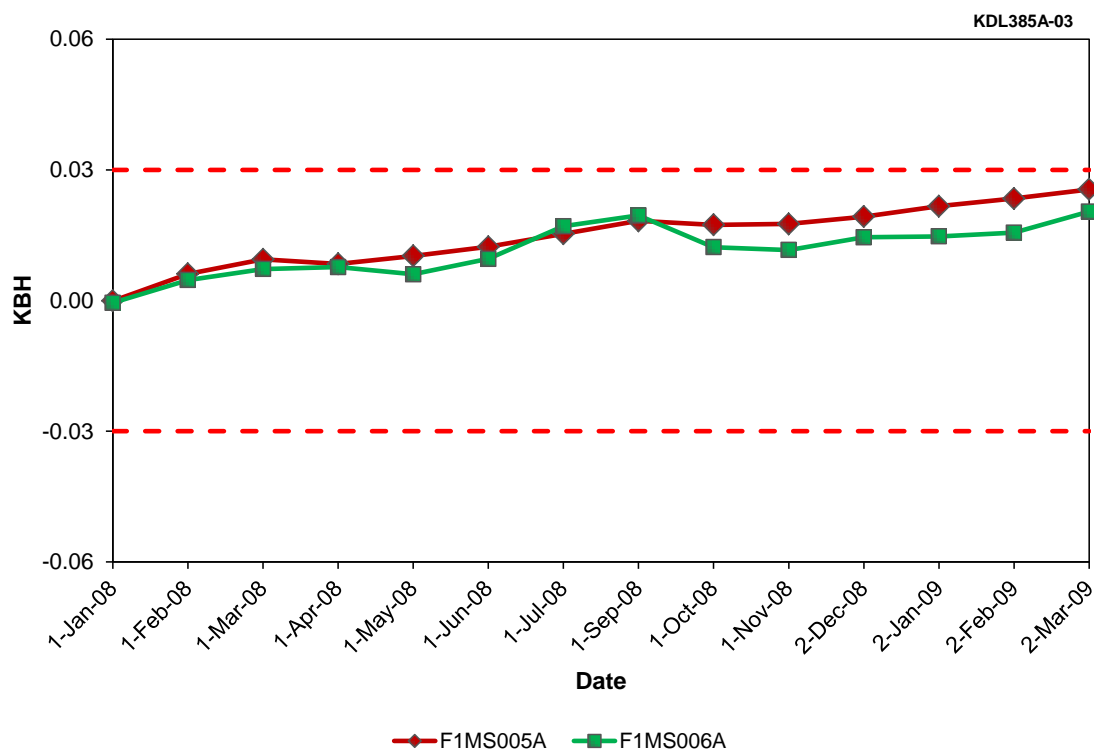
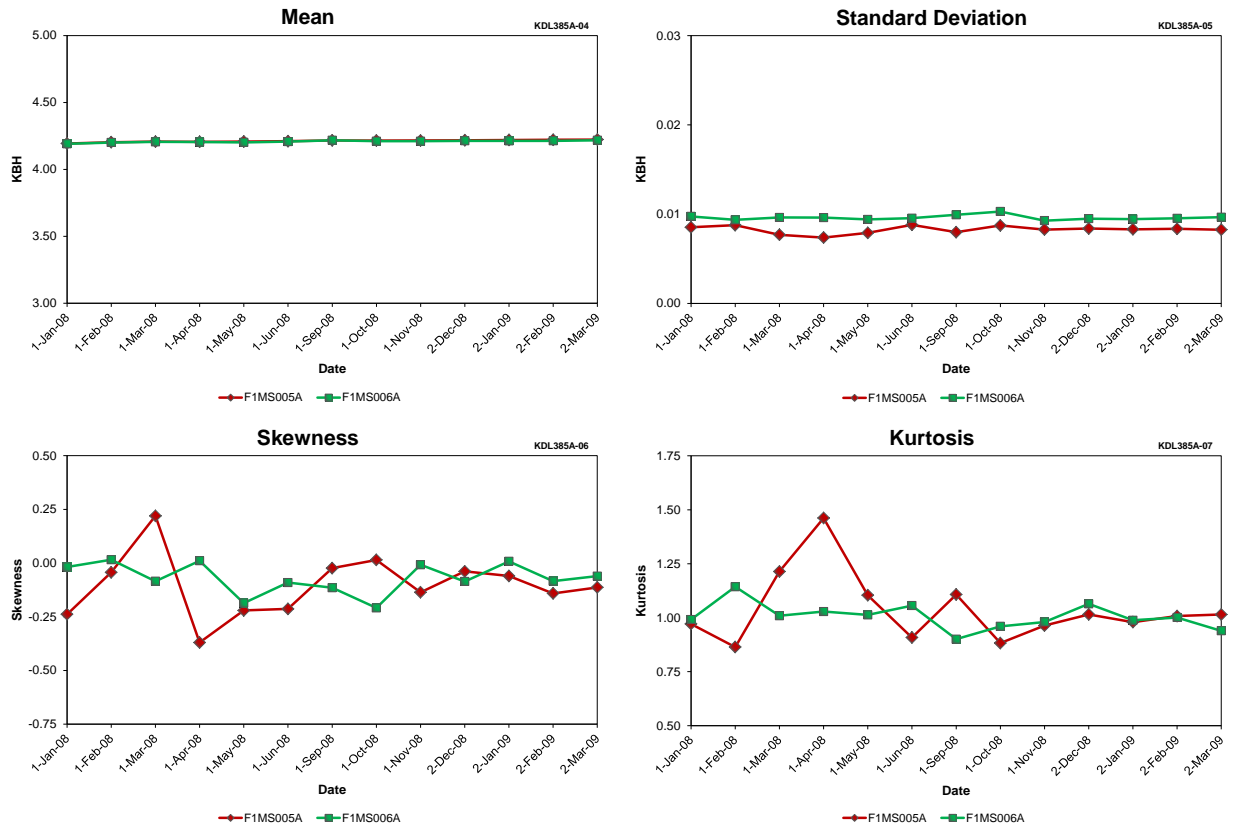


Figure F.35 SG C STEAM FLOW Steady-State Residual AAKR at North Anna Unit 1 (Cycle 20)



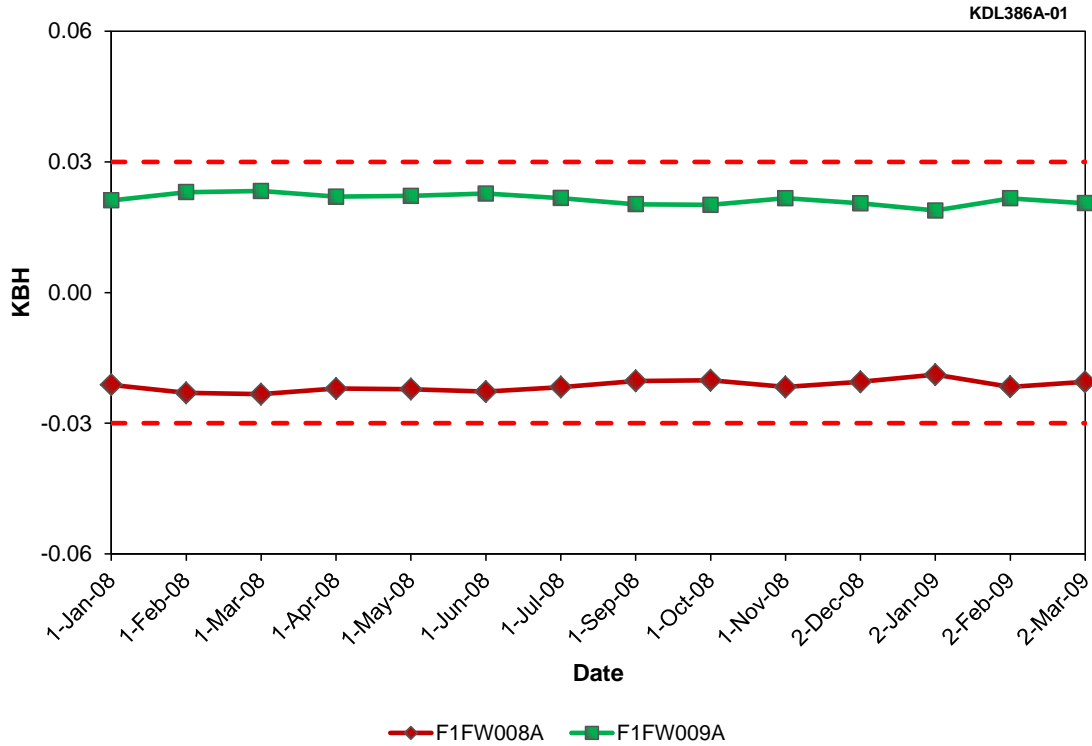
**Figure F.36 SG C STEAM FLOW Data Quality Statistics at North Anna Unit 1 (Cycle 20)**

**Table F.10 SG C STEAM FLOW Data Quality for North Anna Unit 1 (Cycle 20)**

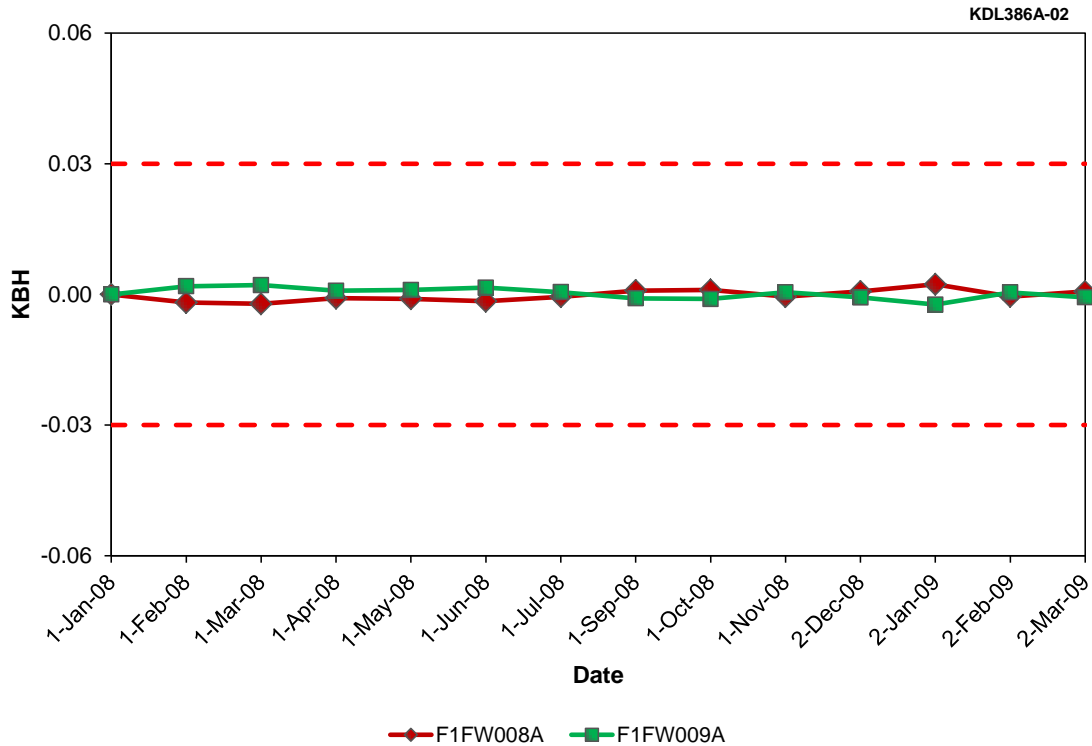
Result Type	Tag Names	
	F1MS005A	F1MS006A
Mean	4.21	4.21
Std. Dev.	0.01	0.01
Skewness	-0.10	-0.07
Kurtosis	1.04	1.01







**Figure F.37 FW FLOW TO SG C Steady-State Deviation at North Anna Unit 1 (Cycle 20)**



**Figure F.38 FW FLOW TO SG C Steady-State Drift at North Anna Unit 1 (Cycle 20)**

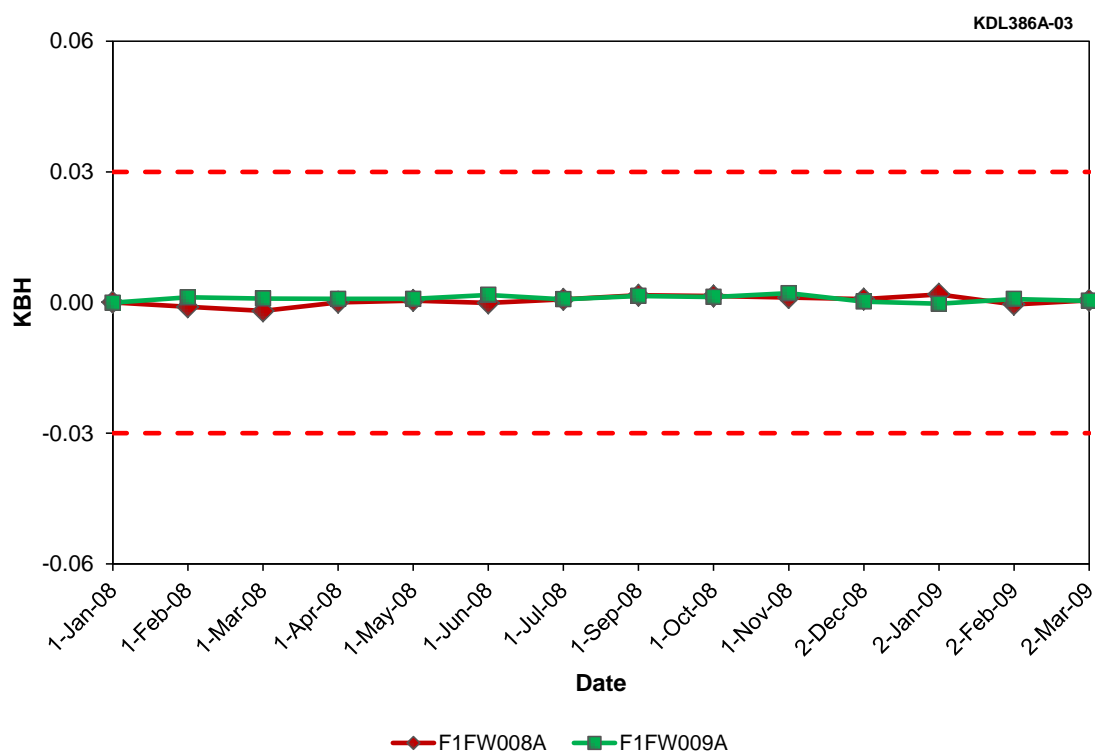
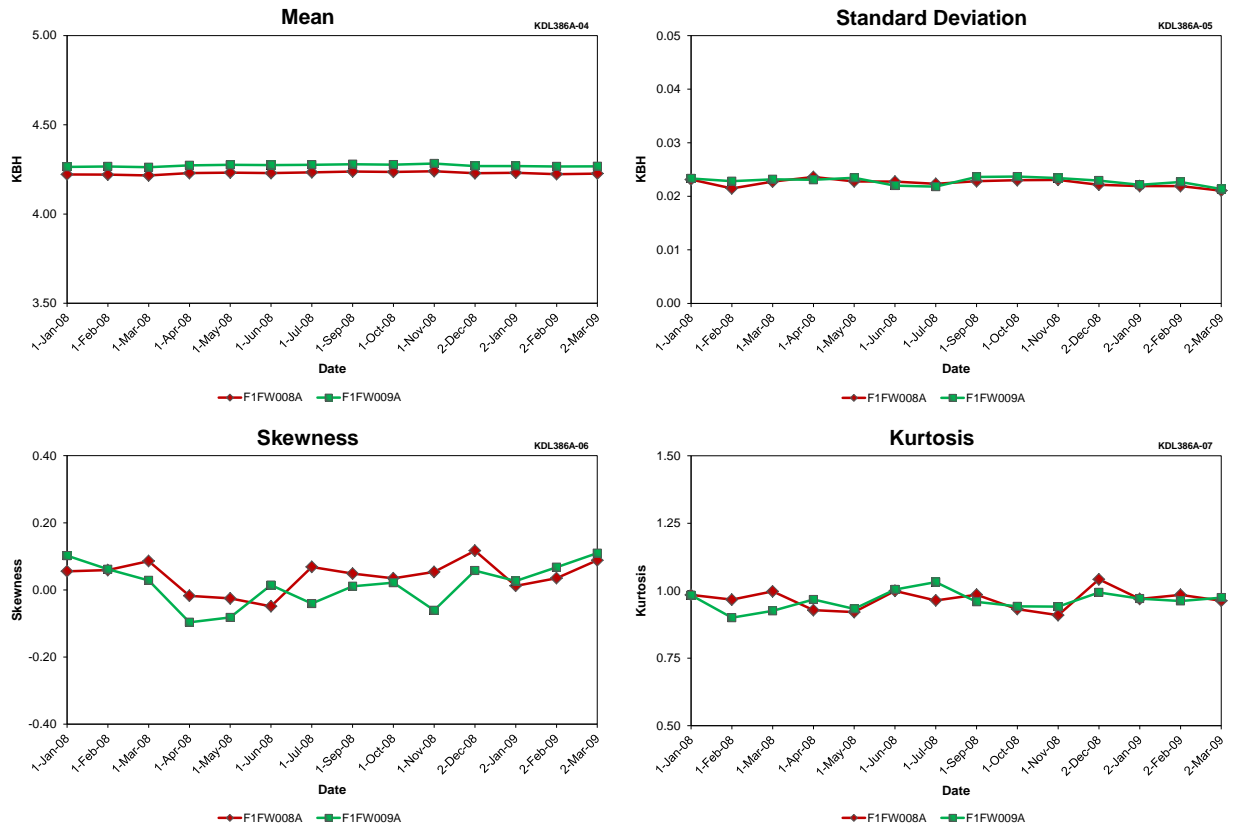


Figure F.39 FW FLOW TO SG C Steady-State Residual AAKR at North Anna Unit 1 (Cycle 20)

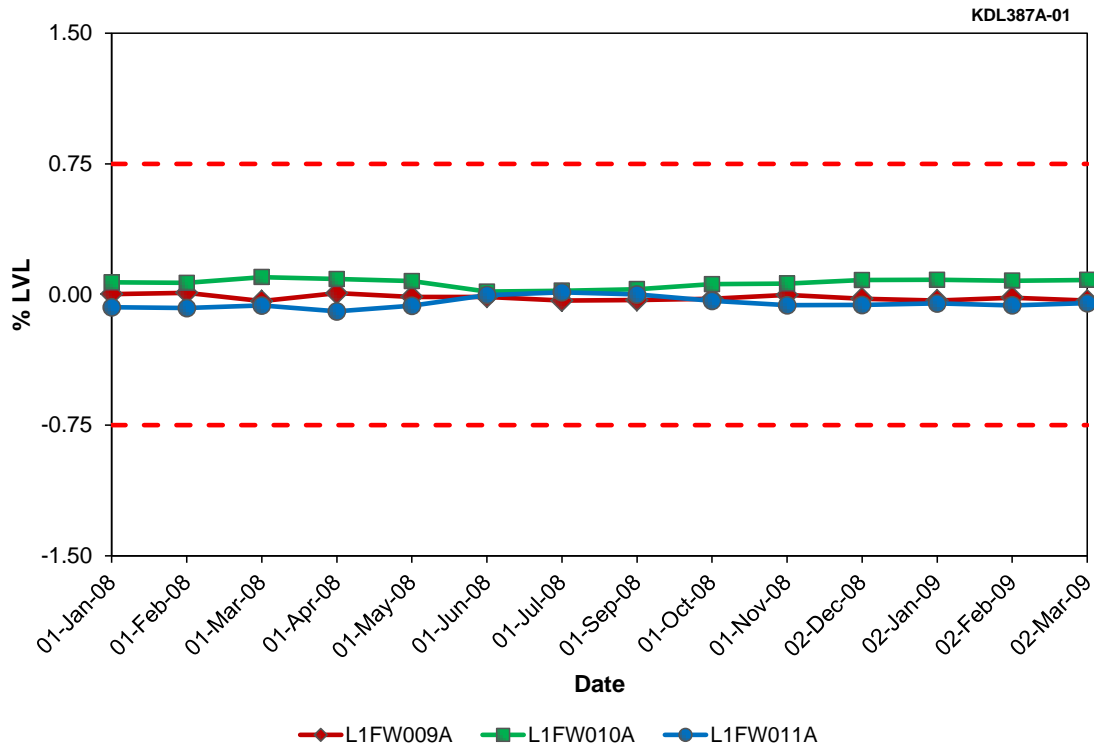


**Figure F.40 FW FLOW TO SG C Data Quality Statistics at North Anna Unit 1 (Cycle 20)**

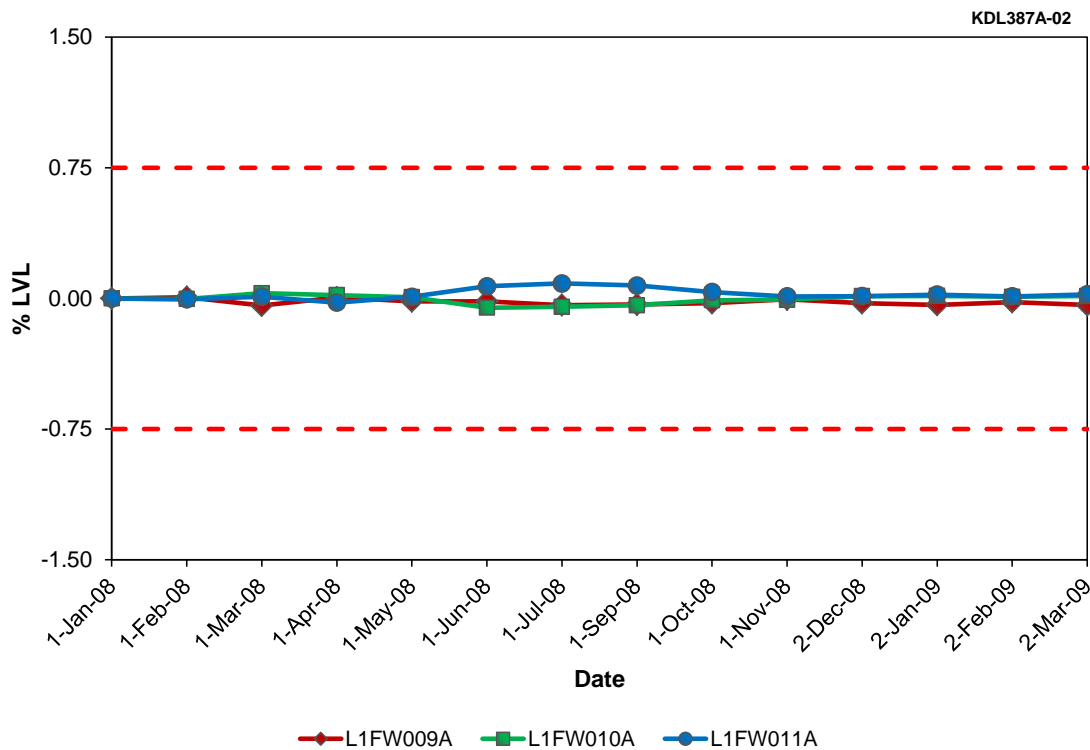
**Table F.11 FW FLOW TO SG C Data Quality for North Anna Unit 1 (Cycle 20)**

Result Type	Tag Names	
	F1FW008A	F1FW009A
Mean	4.23	4.27
Std. Dev.	0.02	0.02
Skewness	0.04	0.02
Kurtosis	0.97	0.96

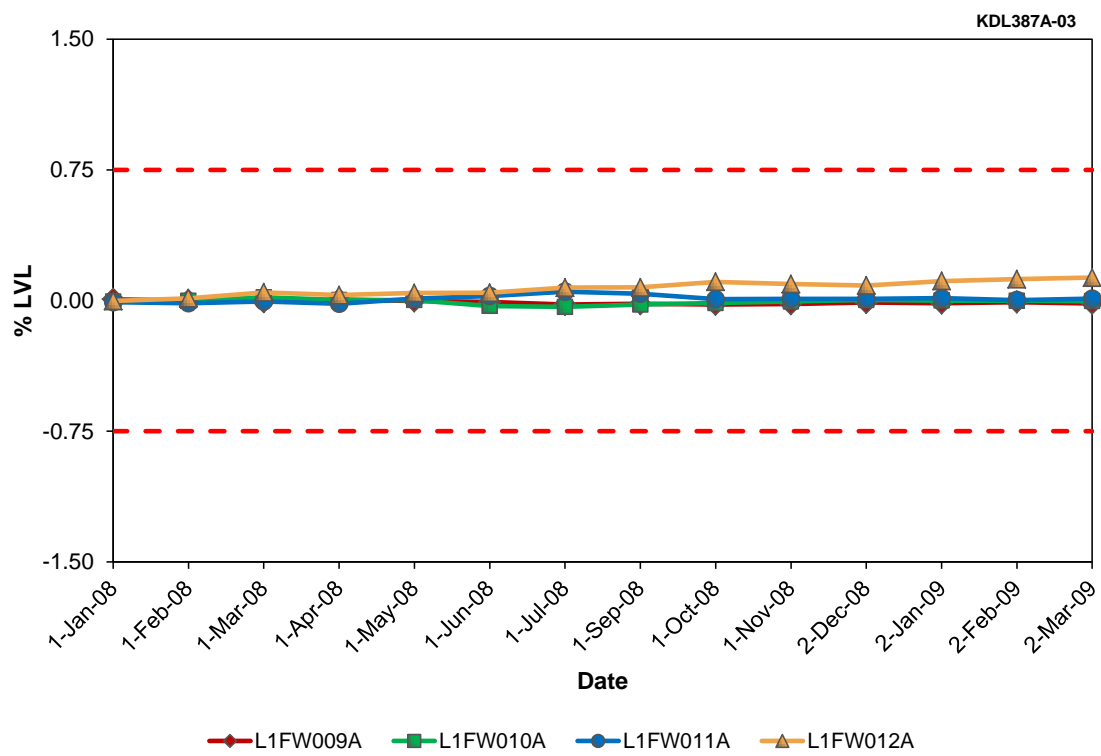




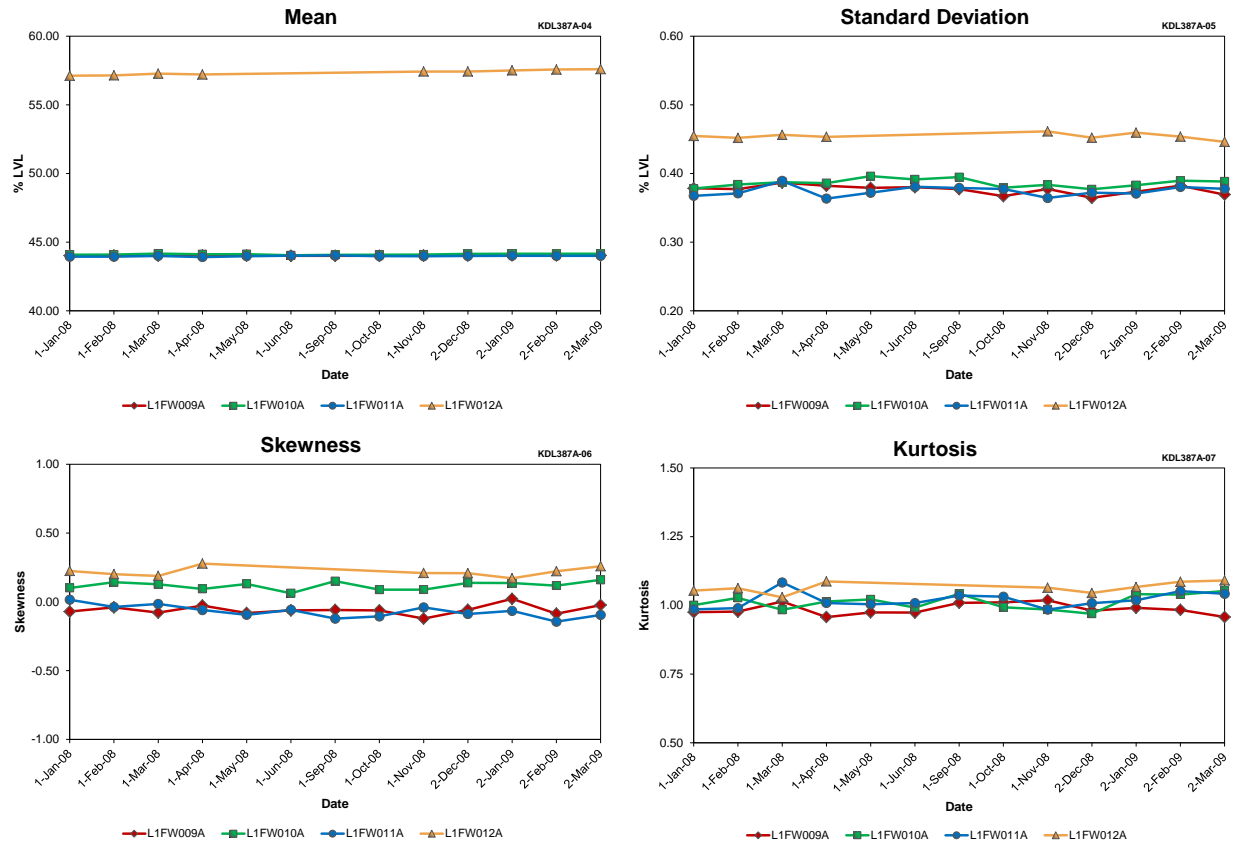
**Figure F.41 SG C LEVEL Steady-State Deviation at North Anna Unit 1 (Cycle 20)**



**Figure F.42 SG C LEVEL Steady-State Drift at North Anna Unit 1 (Cycle 20)**



**Figure F.43 SG C LEVEL Steady-State Residual AAKR at North Anna Unit 1 (Cycle 20)**



**Figure F.44 SG C LEVEL Data Quality Statistics at North Anna Unit 1 (Cycle 20)**

**Table F.12 SG C LEVEL Data Quality for North Anna Unit 1 (Cycle 20)**

Result Type	Tag Names			
	L1FW009A	L1FW010A	L1FW011A	L1FW012A
Mean	44.02	44.12	43.98	57.36
Std. Dev.	0.38	0.39	0.37	0.45
Skewness	-0.06	0.12	-0.07	0.22
Kurtosis	0.99	1.01	1.02	1.06





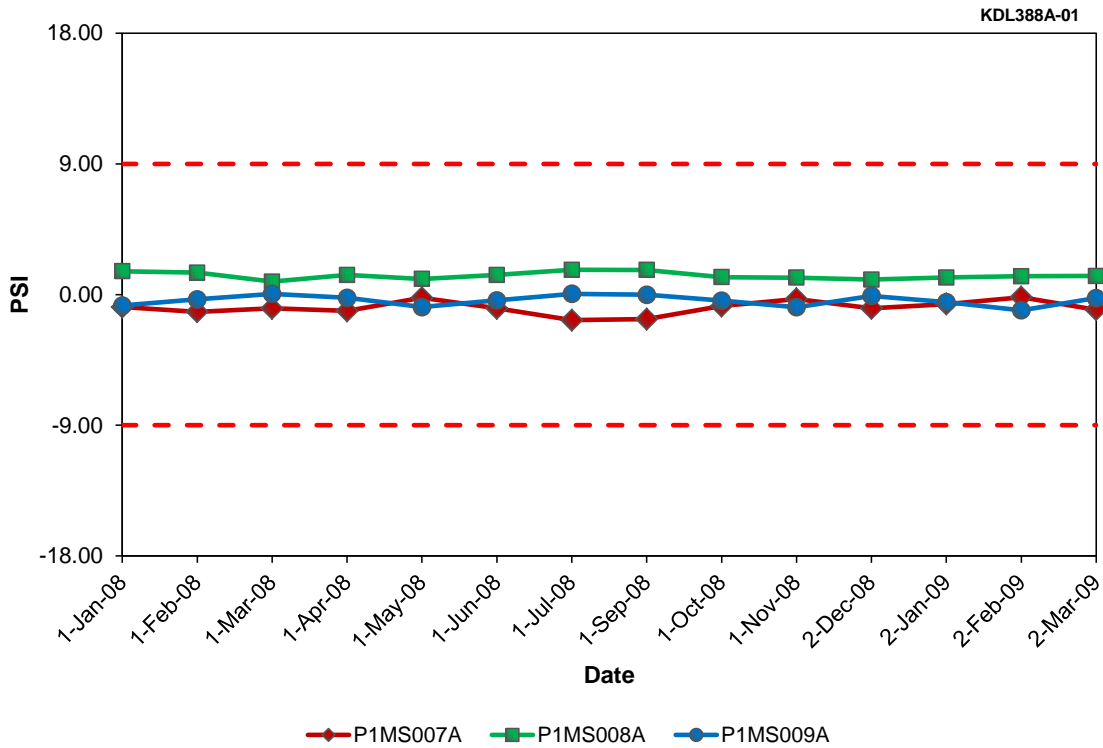


Figure F.45 SG C OUTLET PRESSURE Steady-State Deviation at North Anna Unit 1 (Cycle 20)

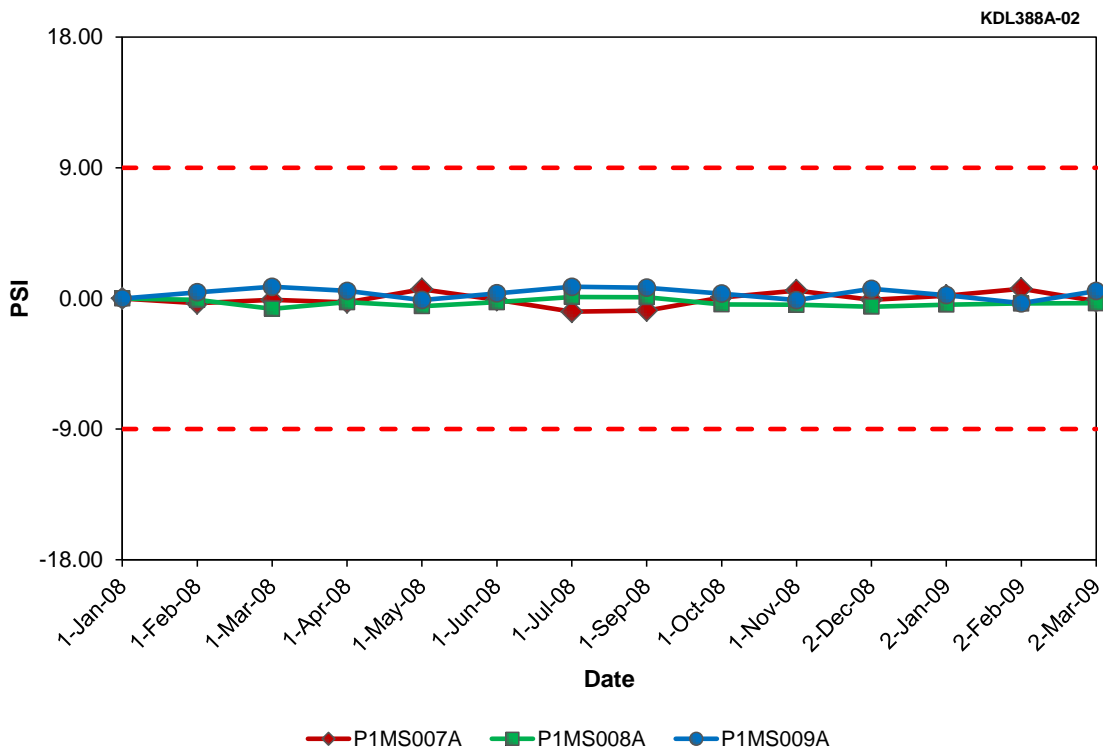


Figure F.46 SG C OUTLET PRESSURE Steady-State Drift at North Anna Unit 1 (Cycle 20)

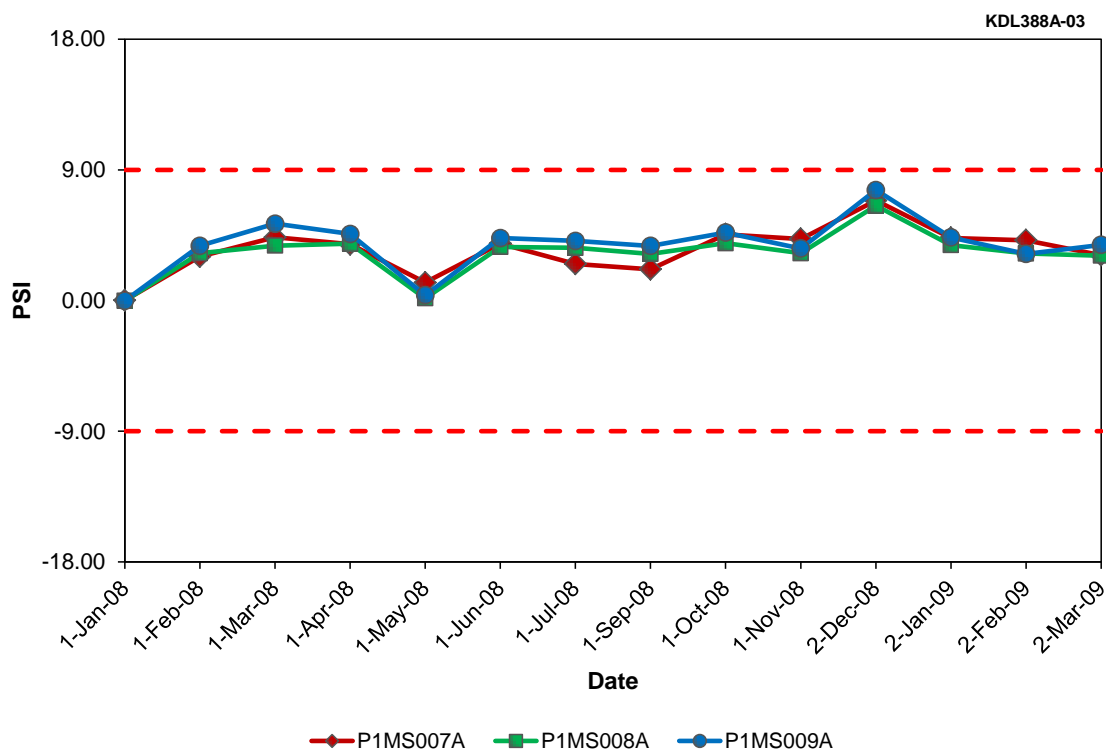


Figure F.47 SG C OUTLET PRESSURE Steady-State Residual AAKR at North Anna Unit 1 (Cycle 20)

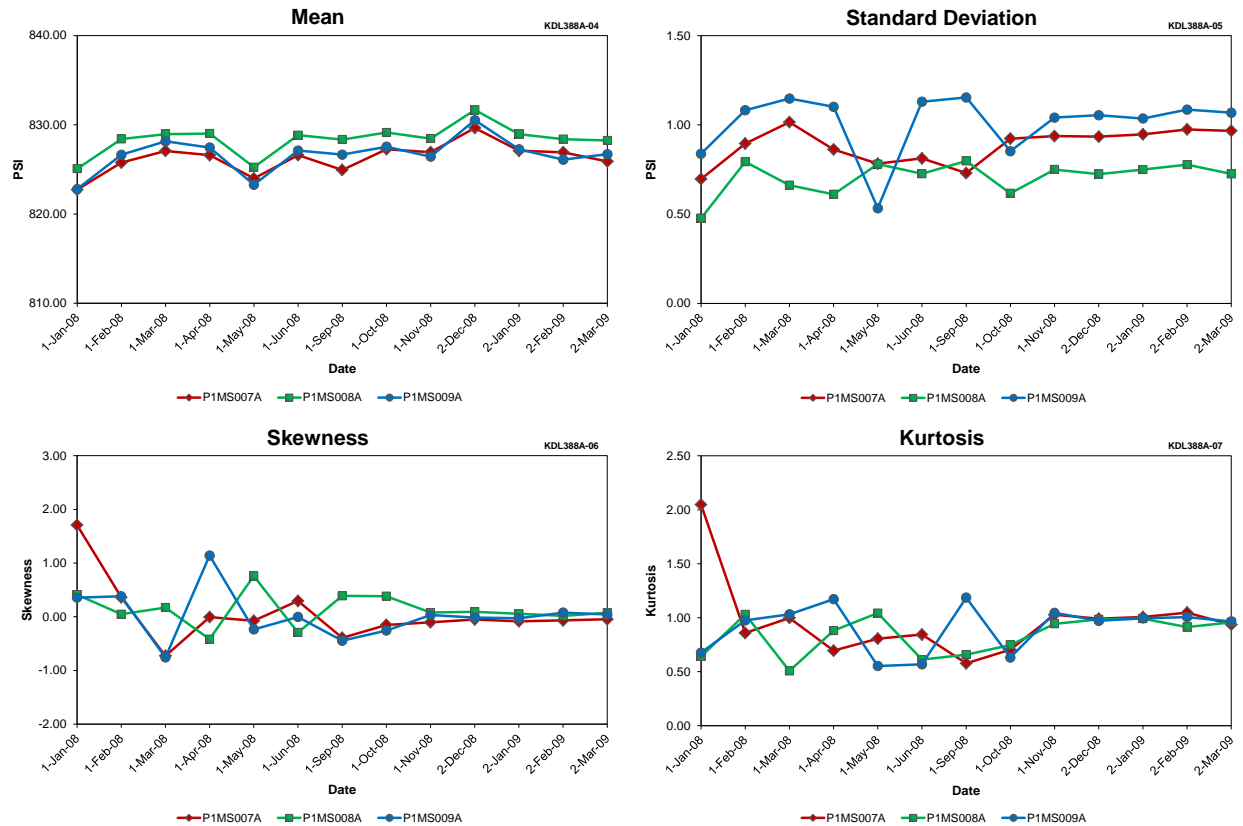
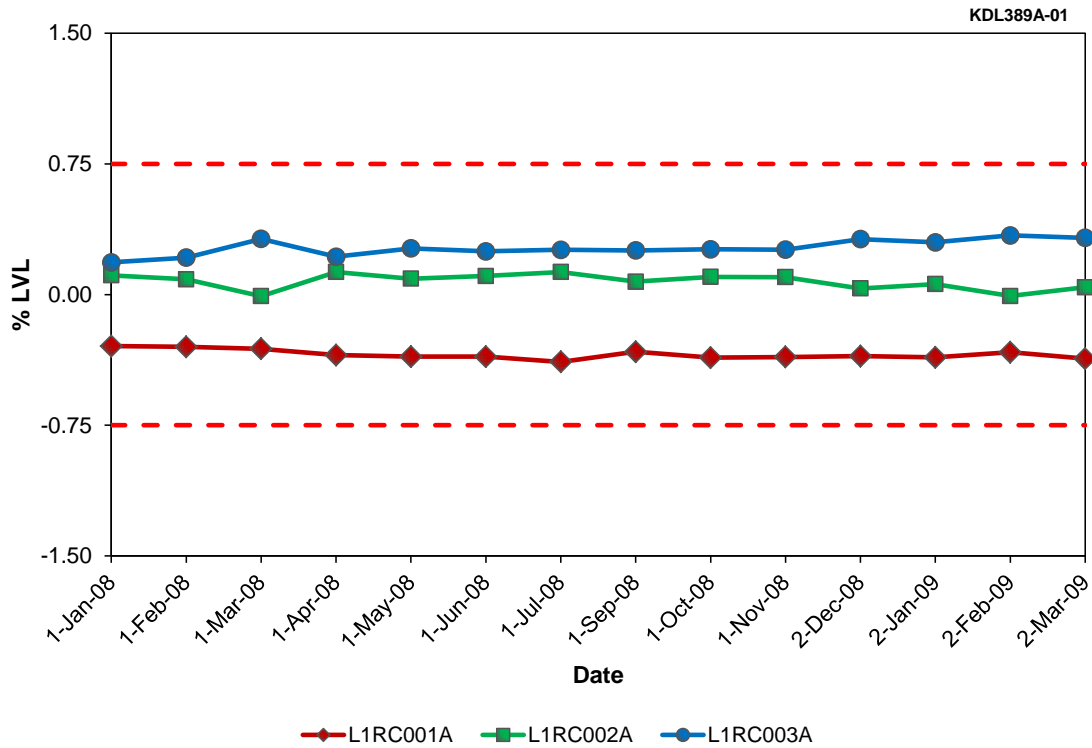


Figure F.48 SG C OUTLET PRESSURE Data Quality Statistics at North Anna Unit 1 (Cycle 20)

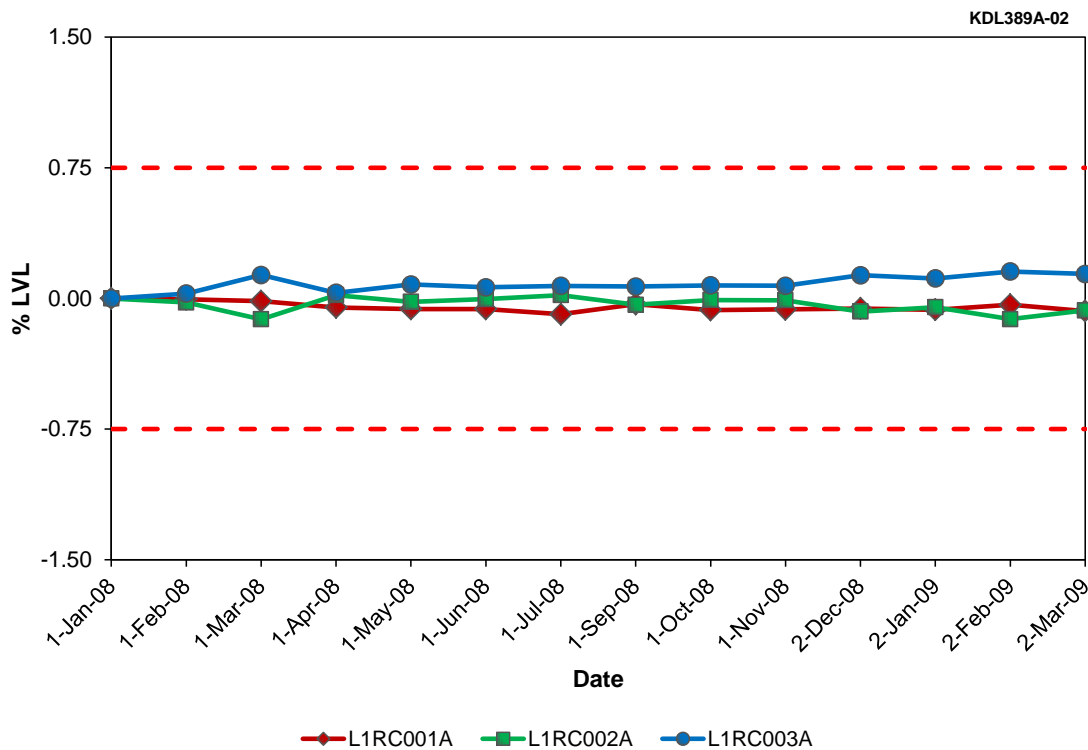
Table F.13 SG C OUTLET PRESSURE Data Quality for North Anna Unit 1 (Cycle 20)

Result Type	Tag Names		
	P1MS007A	P1MS008A	P1MS009A
Mean	826.26	828.36	826.66
Std. Dev.	0.88	0.71	1.01
Skewness	0.05	0.14	0.02
Kurtosis	0.96	0.84	0.91





**Figure F.49 PRESSURIZER LEVEL Steady-State Deviation at North Anna Unit 1 (Cycle 20)**



**Figure F.50 PRESSURIZER LEVEL Steady-State Drift at North Anna Unit 1 (Cycle 20)**

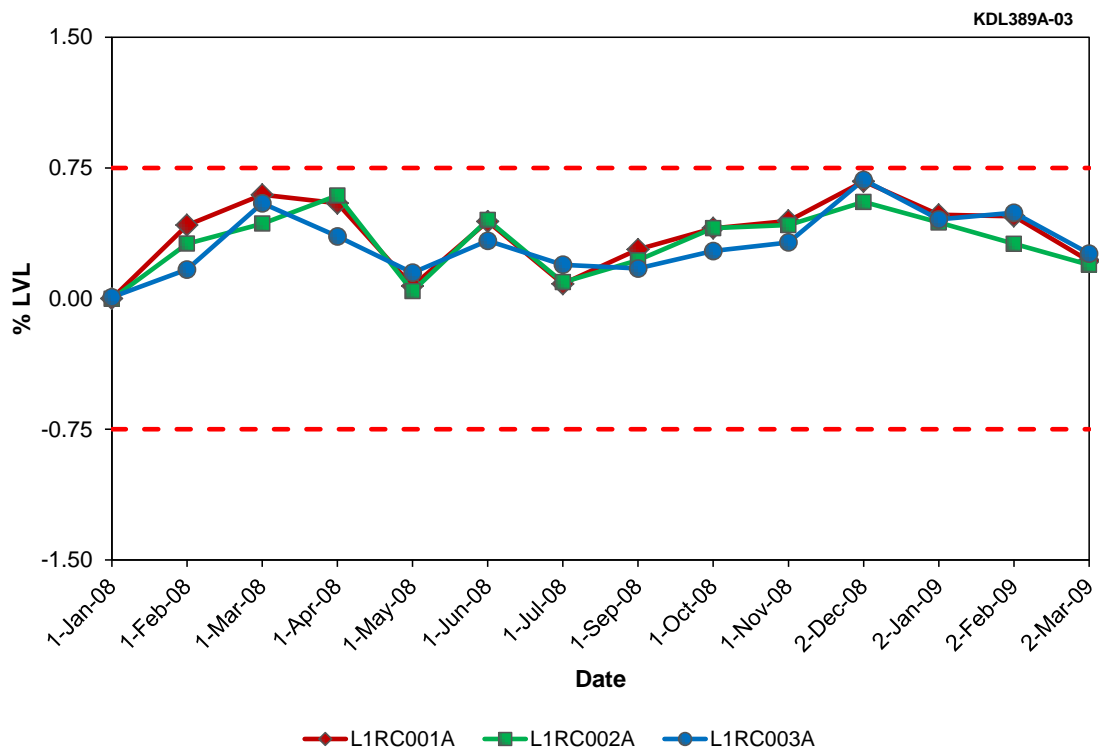
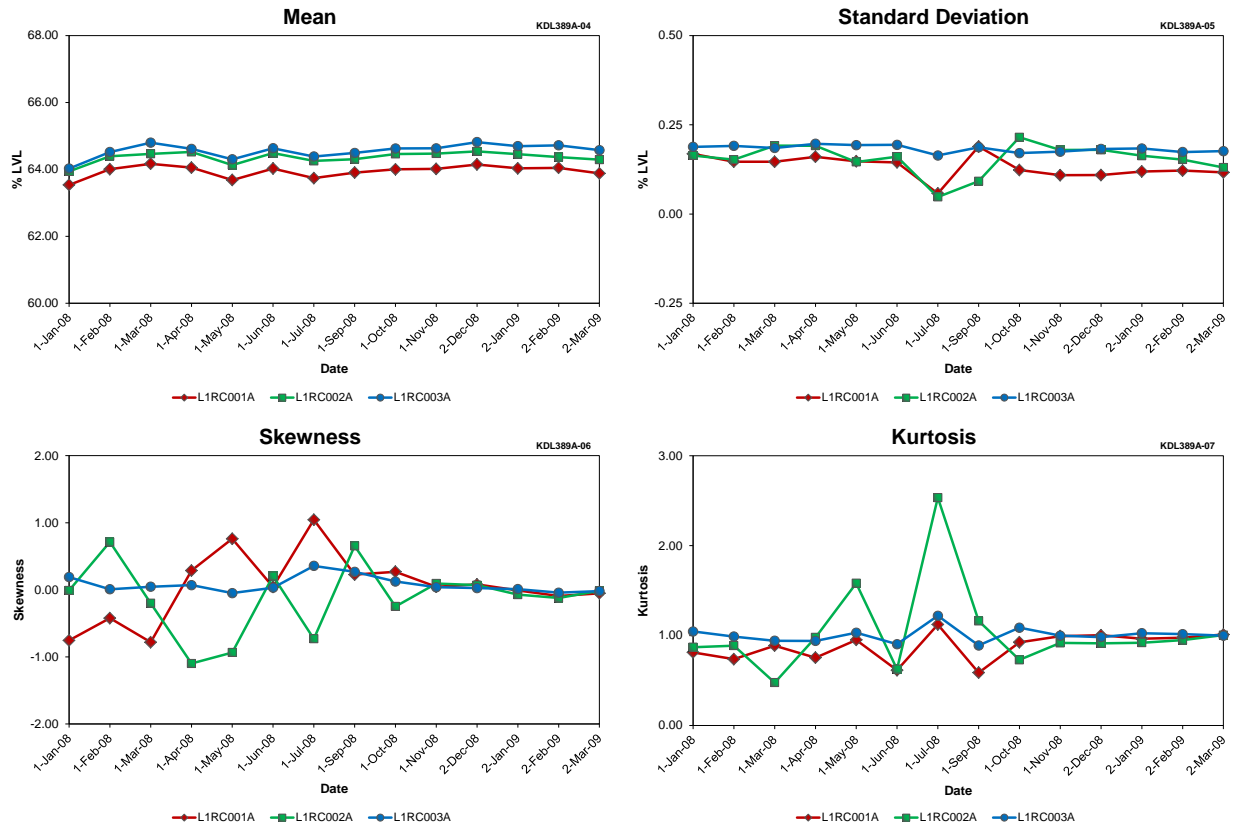


Figure F.51 PRESSURIZER LEVEL Steady-State Residual AAKR at North Anna Unit 1 (Cycle 20)



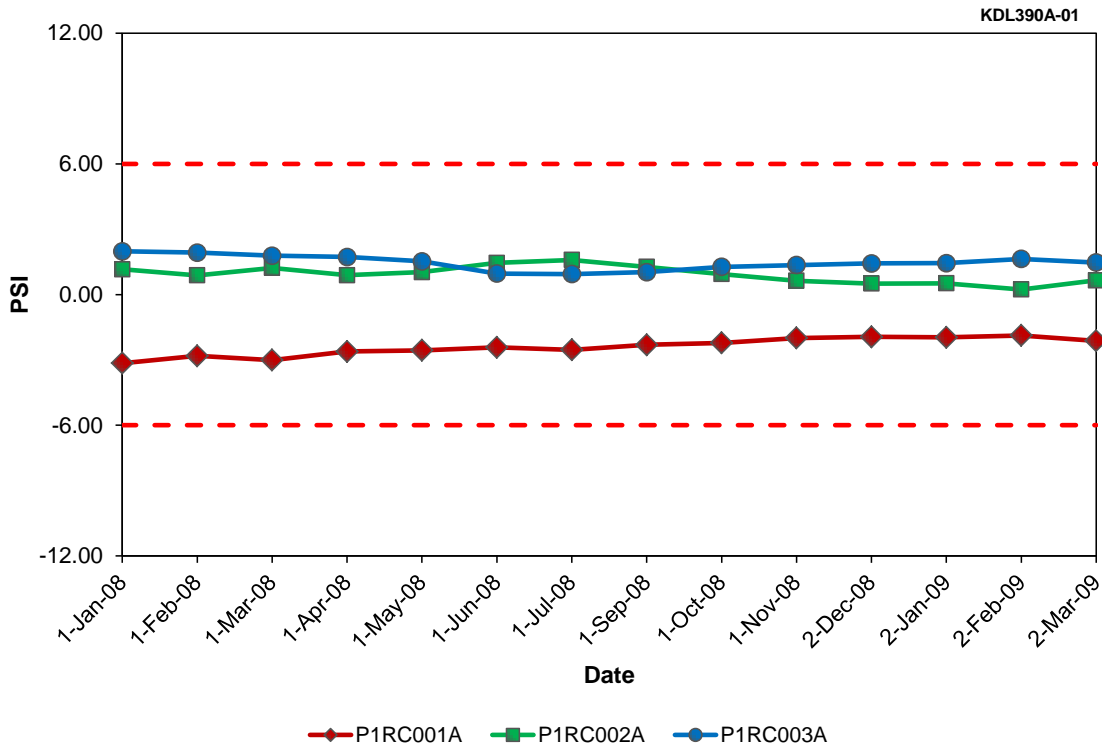
**Figure F.52 PRESSURIZER LEVEL Data Quality Statistics at North Anna Unit 1 (Cycle 20)**

**Table F.14 PRESSURIZER LEVEL Data Quality for North Anna Unit 1 (Cycle 20)**

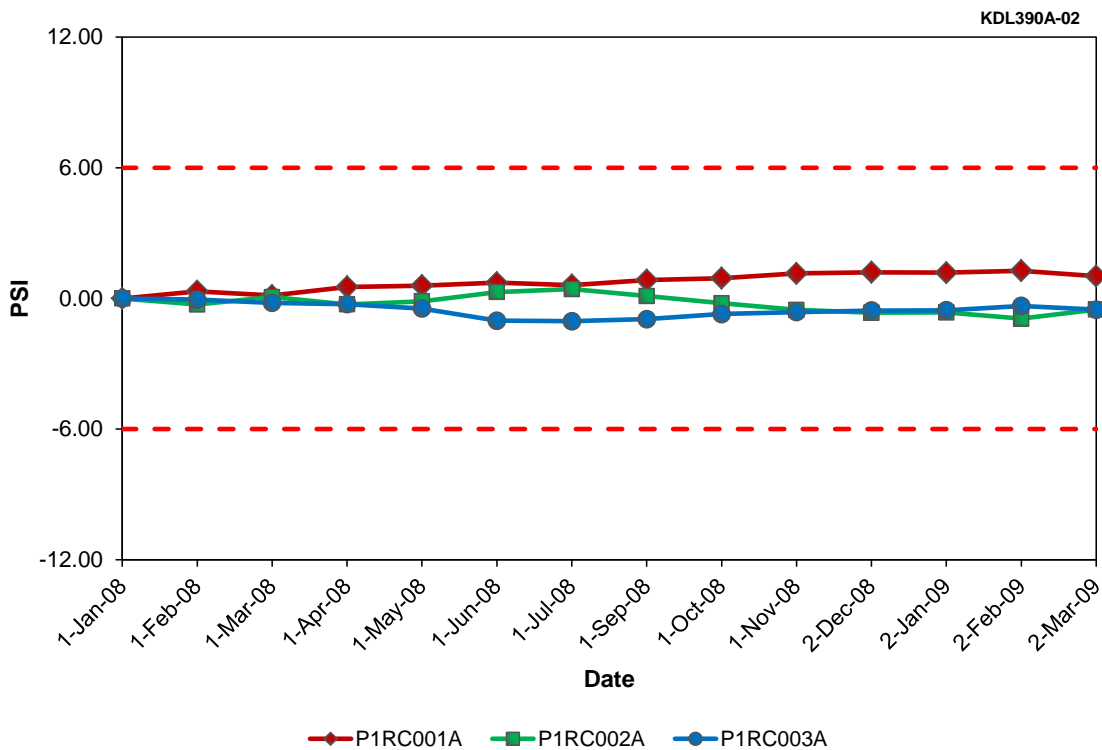
Result Type	Tag Names		
	L1RC001A	L1RC002A	L1RC003A
Mean	63.95	64.36	64.56
Std. Dev.	0.13	0.15	0.18
Skewness	0.05	-0.12	0.08
Kurtosis	0.88	1.04	1.01



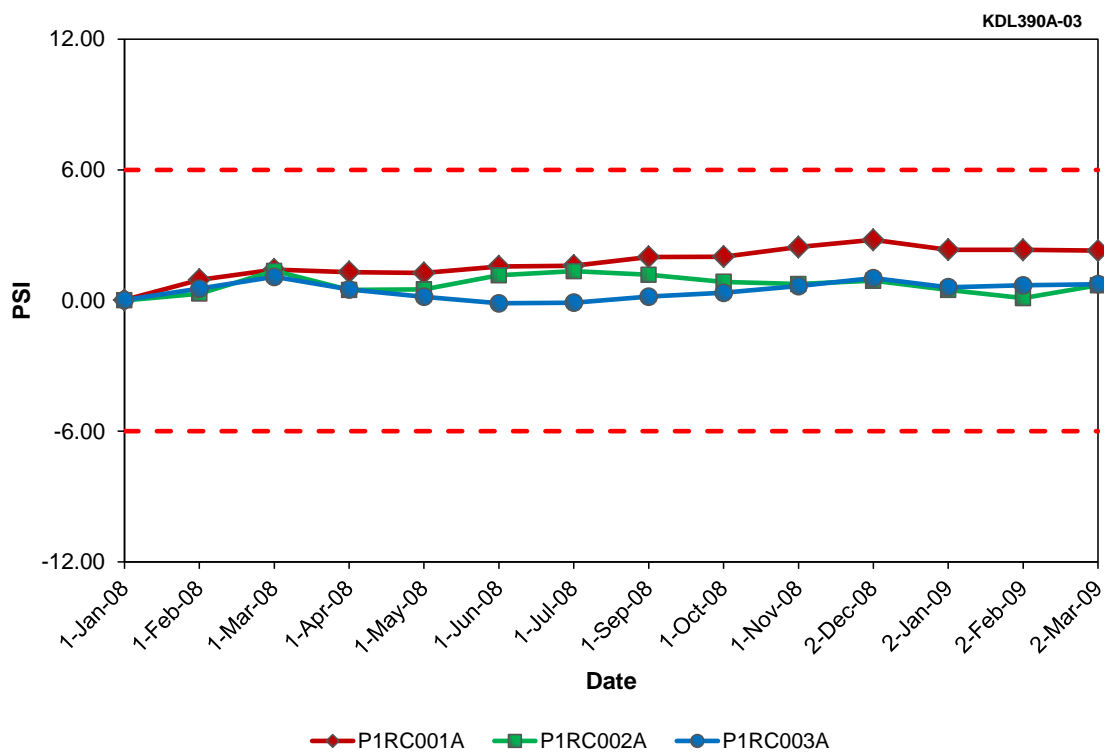




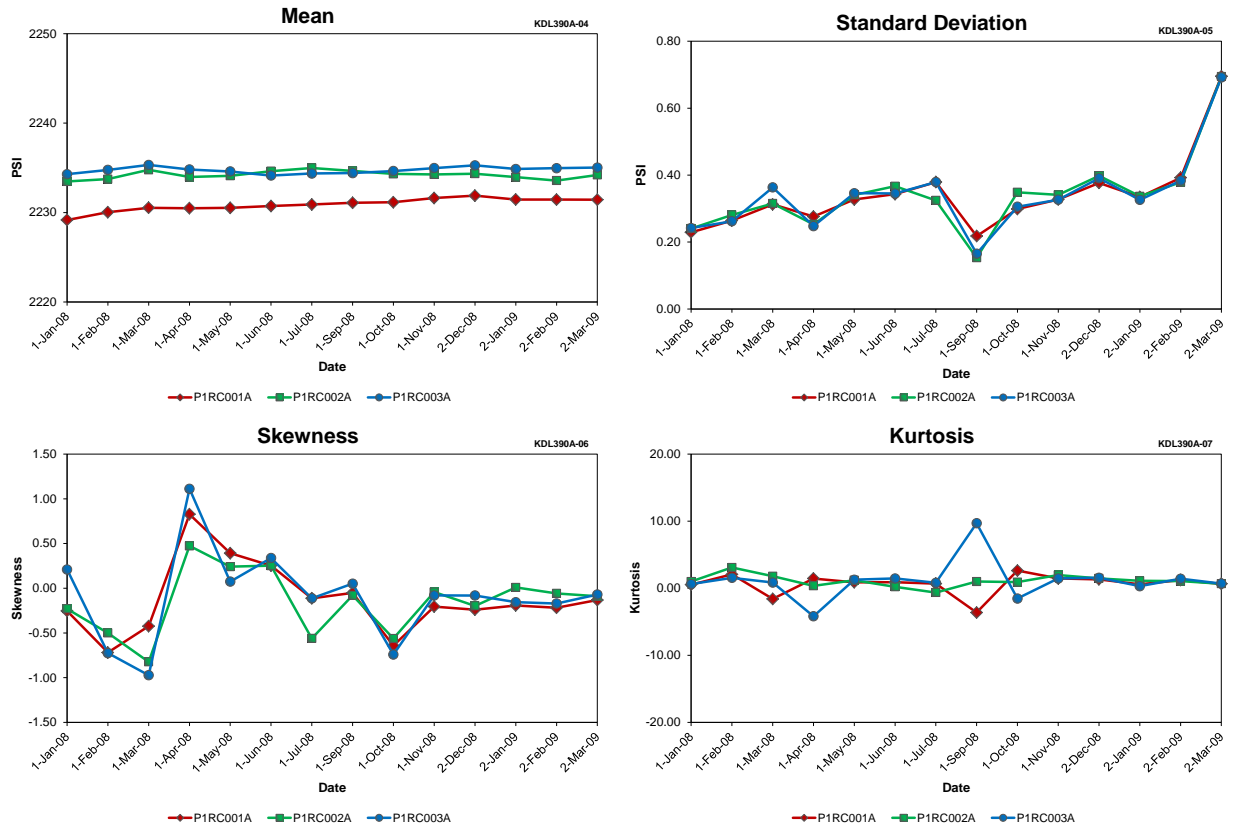
**Figure F.53 PRESSURIZER PRESSURE Steady-State Deviation at North Anna Unit 1 (Cycle 20)**



**Figure F.54 PRESSURIZER PRESSURE Steady-State Drift at North Anna Unit 1 (Cycle 20)**



**Figure F.55 PRESSURIZER PRESSURE Steady-State Residual AAKR at North Anna Unit 1 (Cycle 20)**



**Figure F.56 PRESSURIZER PRESSURE Data Quality Statistics at North Anna Unit 1 (Cycle 20)**

**Table F.15 PRESSURIZER PRESSURE Data Quality for North Anna Unit 1 (Cycle 20)**

Result Type	Tag Names		
	P1RC001A	P1RC002A	P1RC003A
Mean	2230.89	2234.21	2234.75
Std. Dev.	0.34	0.34	0.34
Skewness	-0.12	-0.16	-0.09
Kurtosis	0.66	1.08	1.14



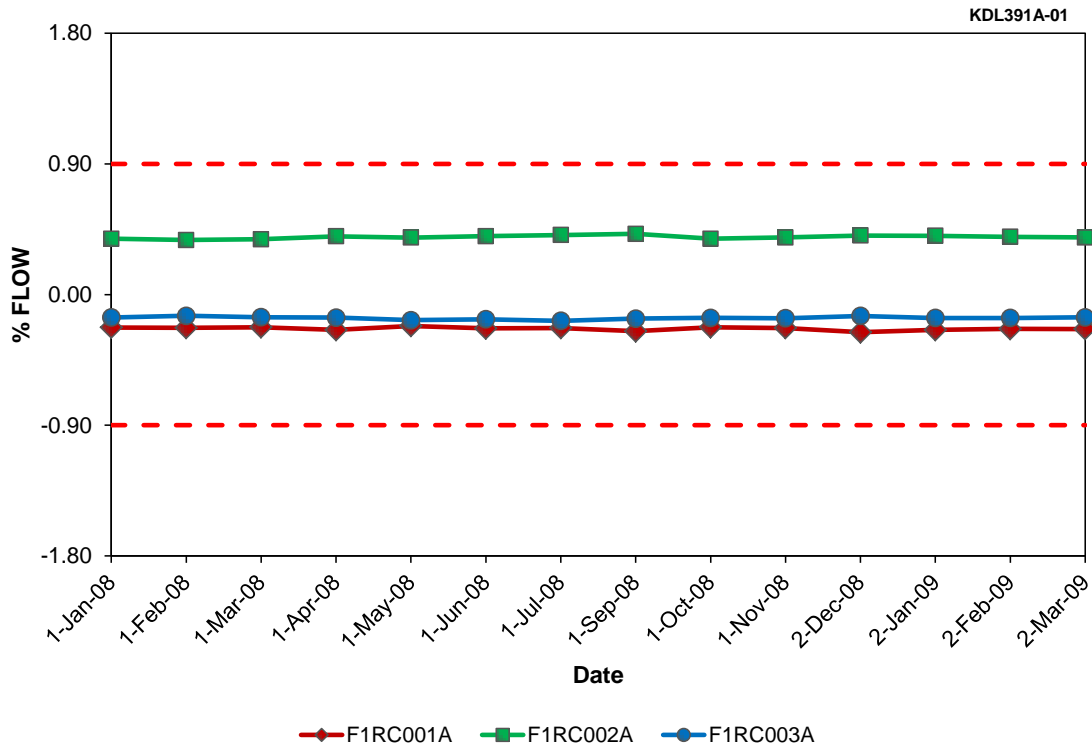


Figure F.57 RCS LOOP A FLOW Steady-State Deviation at North Anna Unit 1 (Cycle 20)

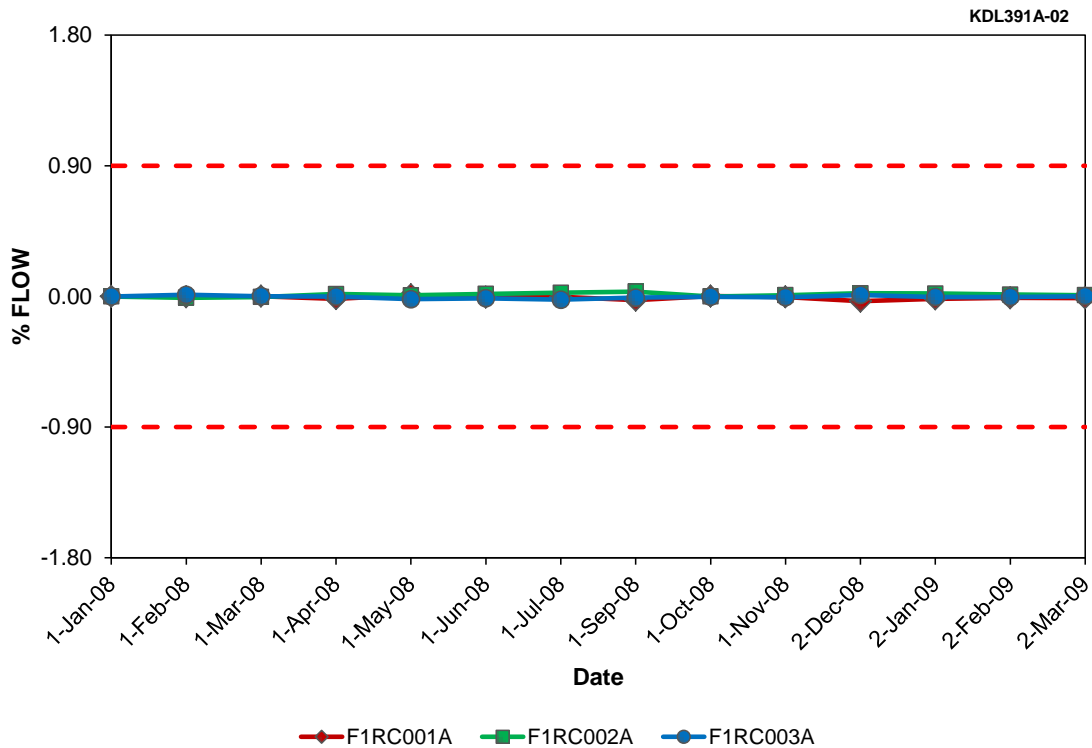
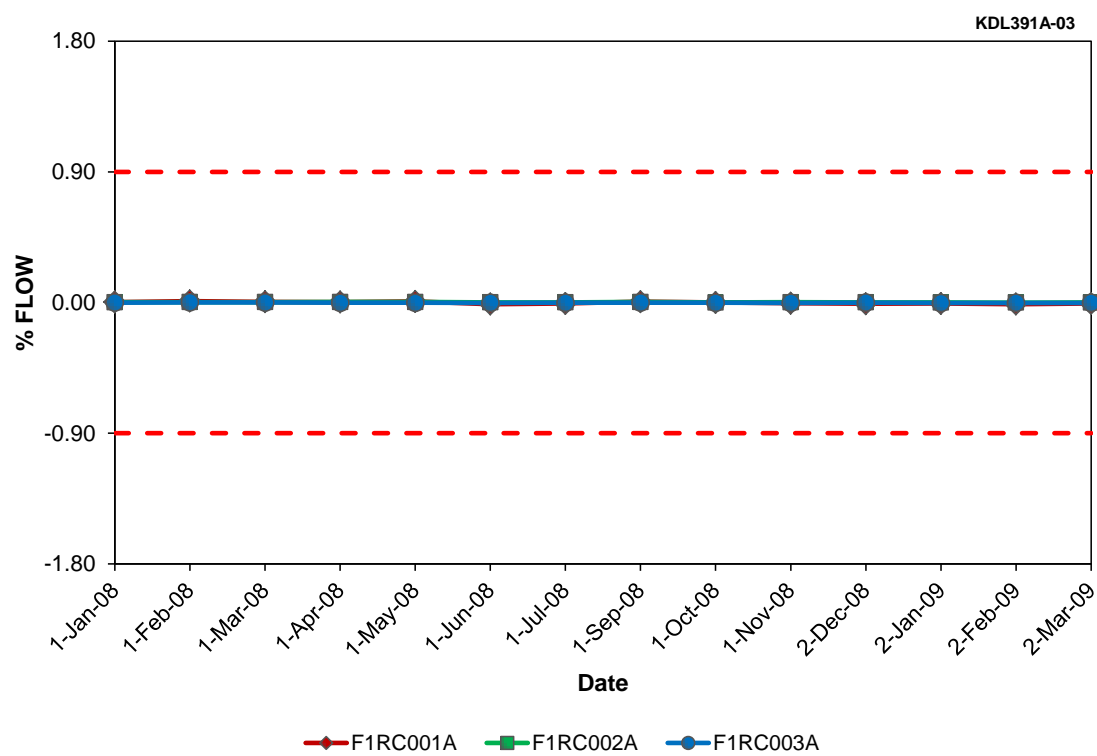


Figure F.58 RCS LOOP A FLOW Steady-State Drift at North Anna Unit 1 (Cycle 20)



**Figure F.59 RCS LOOP A FLOW Steady-State Residual AAKR at North Anna Unit 1 (Cycle 20)**

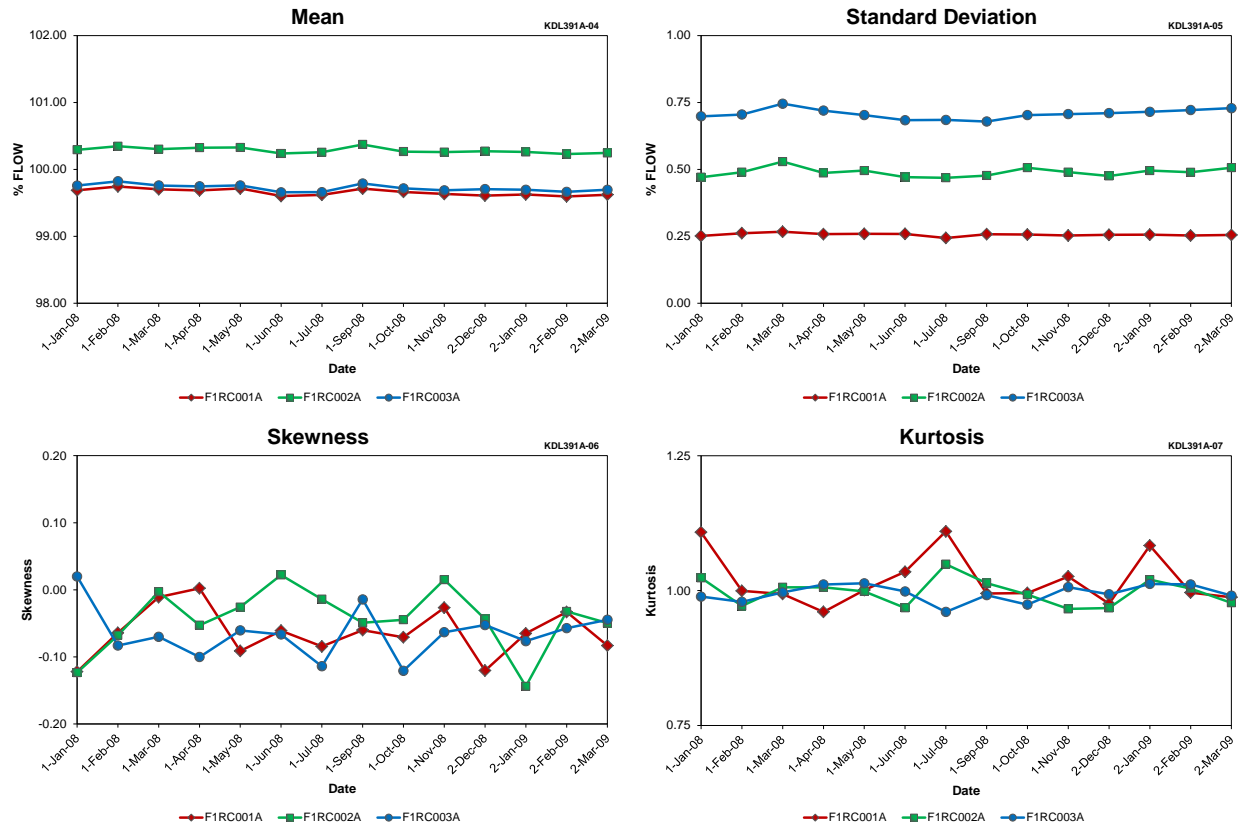


Figure F.60 RCS LOOP A FLOW Data Quality Statistics at North Anna Unit 1 (Cycle 20)

Table F.16 RCS LOOP A FLOW Data Quality for North Anna Unit 1 (Cycle 20)

Result Type	Tag Names		
	F1RC001A	F1RC002A	F1RC003A
Mean	99.66	100.29	99.72
Std. Dev.	0.26	0.49	0.71
Skewness	-0.06	-0.04	-0.06
Kurtosis	1.02	1.00	0.99





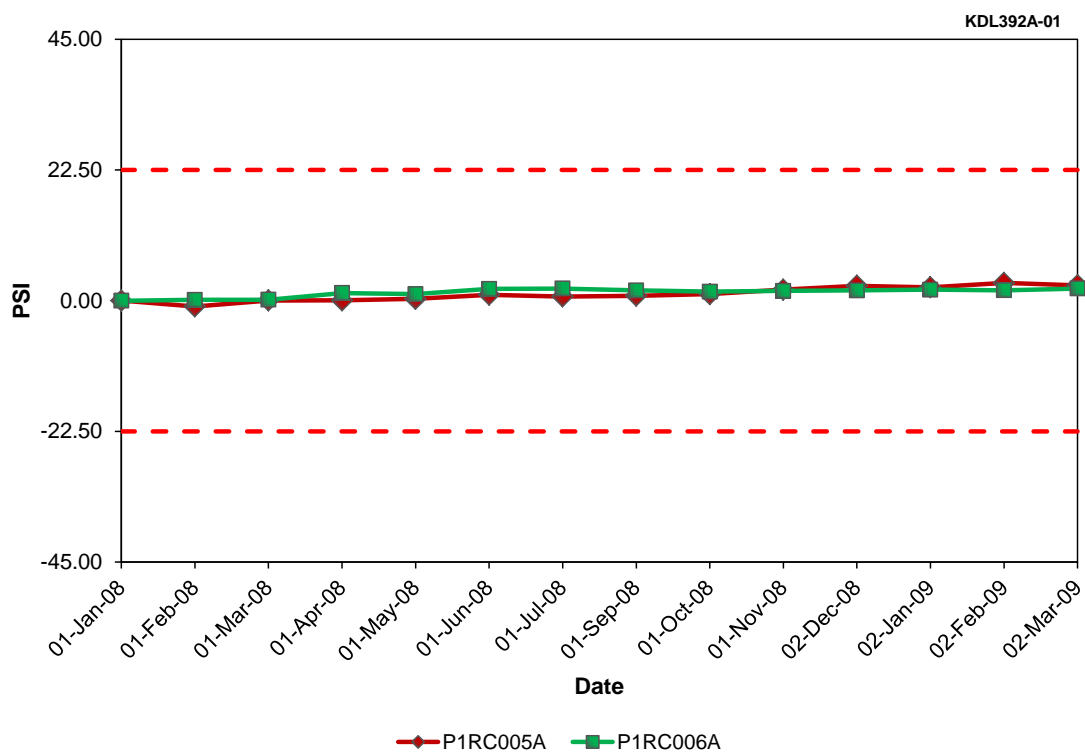
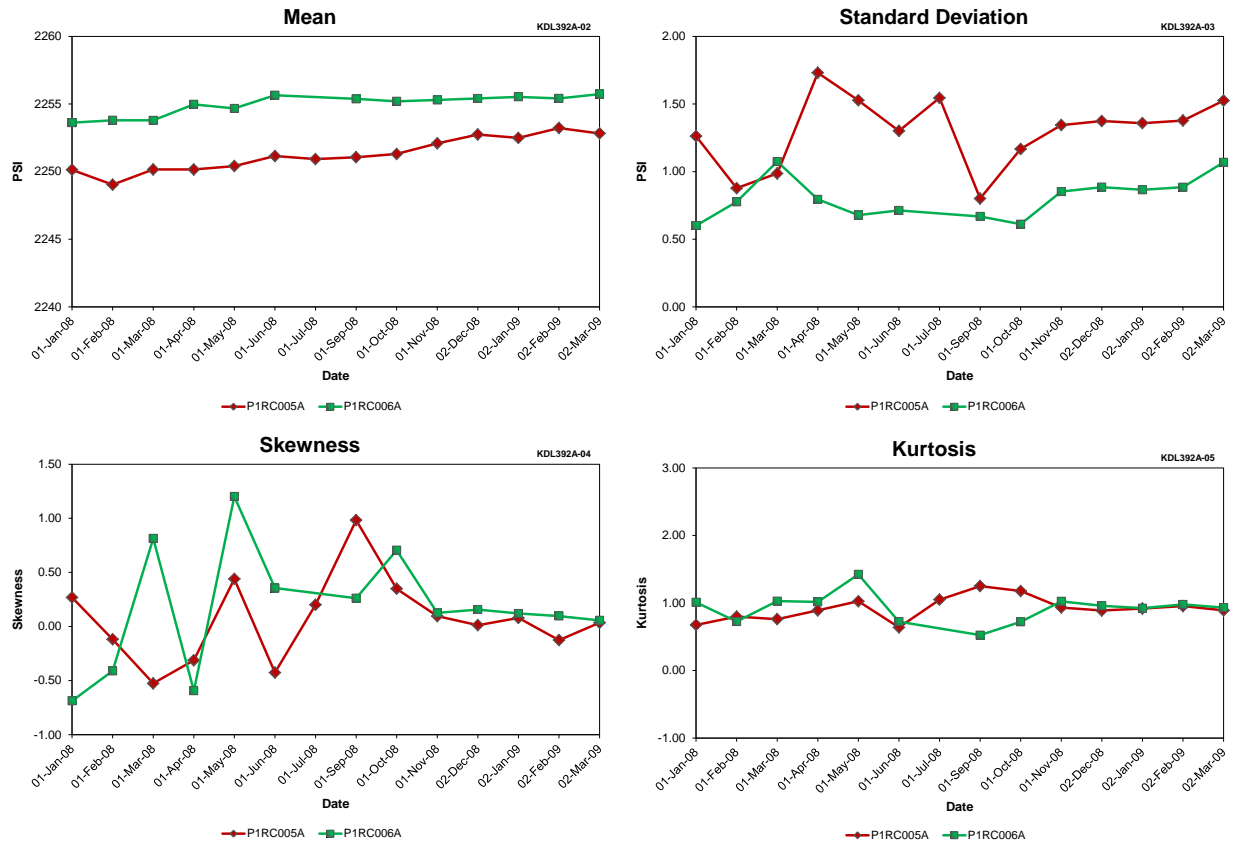


Figure F.61 RCS WIDE RANGE PRESSURE Steady-State Residual AAKR at North Anna Unit 1 (Cycle 20)



**Figure F.62 RCS WIDE RANGE PRESSURE Data Quality Statistics at North Anna Unit 1 (Cycle 20)**

**Table F.17 RCS WIDE RANGE PRESSURE Data Quality for North Anna Unit 1 (Cycle 20)**

Result Type	Tag Names	
	P1RC005A	P1RC006A
Mean	2251.26	2254.96
Std. Dev.	1.30	0.81
Skewness	0.07	0.17
Kurtosis	0.92	0.92

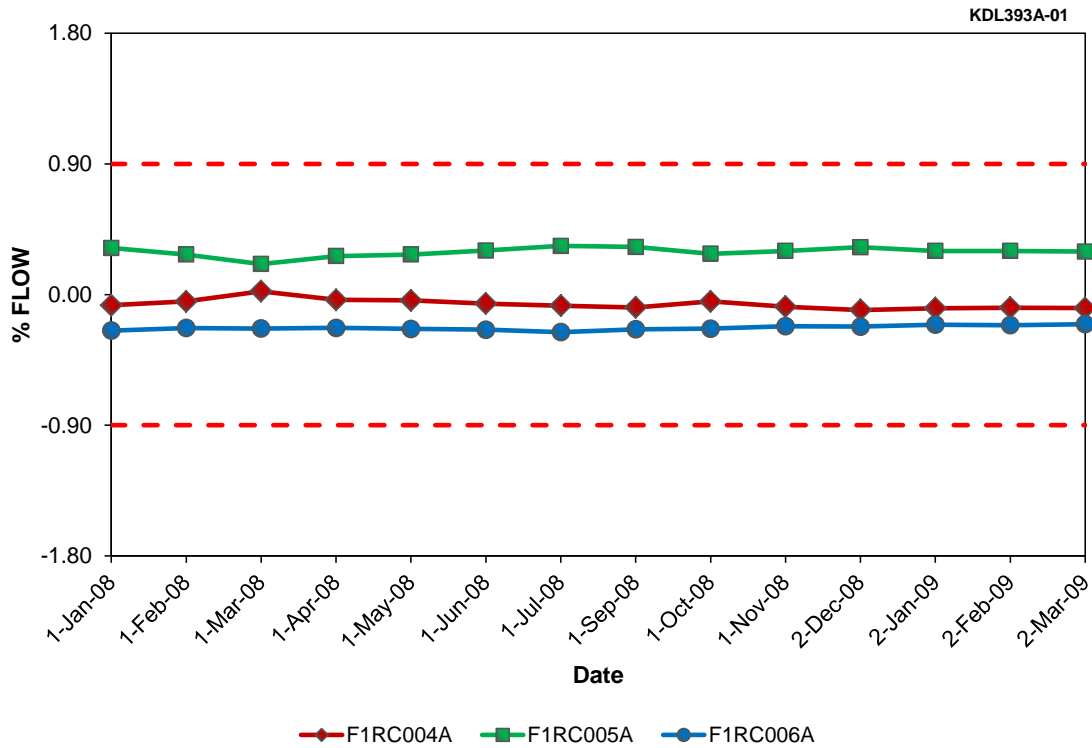


Figure F.63 RCS LOOP B FLOW Steady-State Deviation at North Anna Unit 1 (Cycle 20)

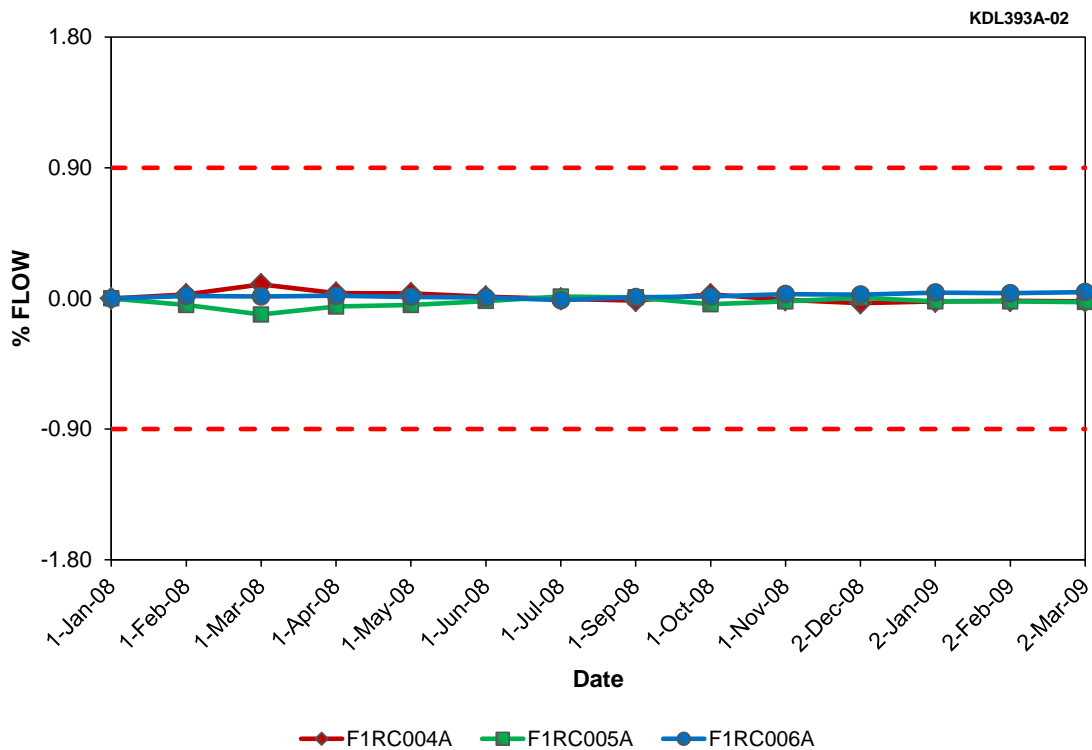
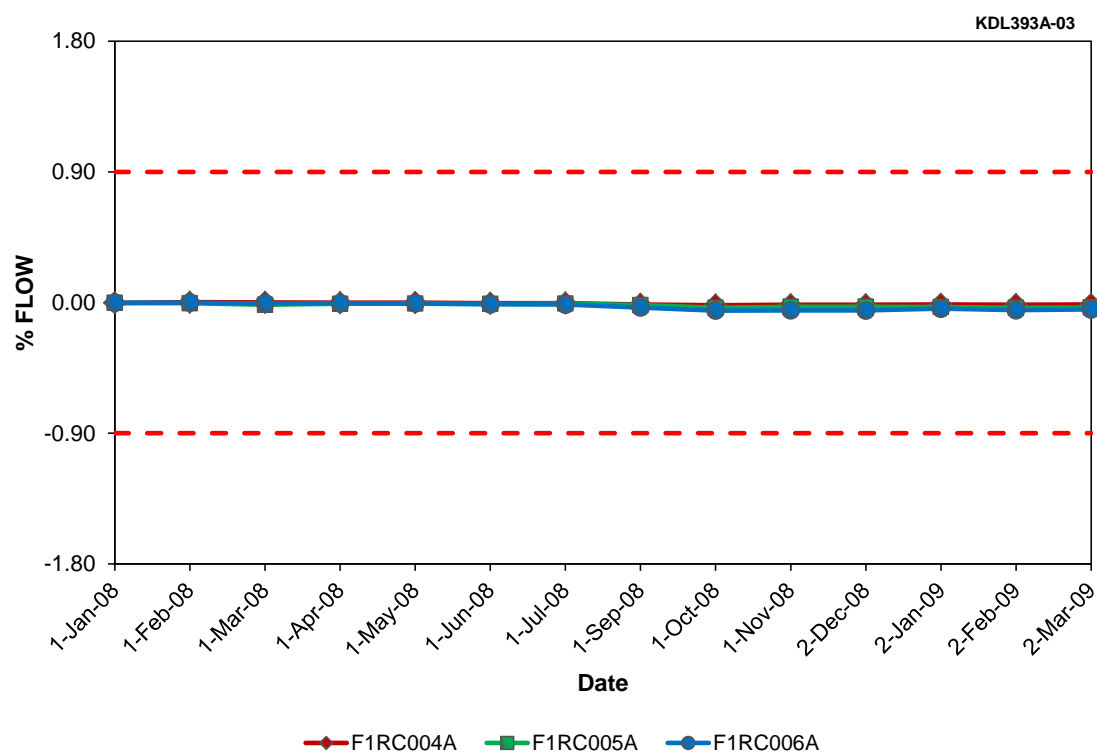


Figure F.64 RCS LOOP B FLOW Steady-State Drift at North Anna Unit 1 (Cycle 20)



**Figure F.65 RCS LOOP B FLOW Steady-State Residual AAKR at North Anna Unit 1 (Cycle 20)**

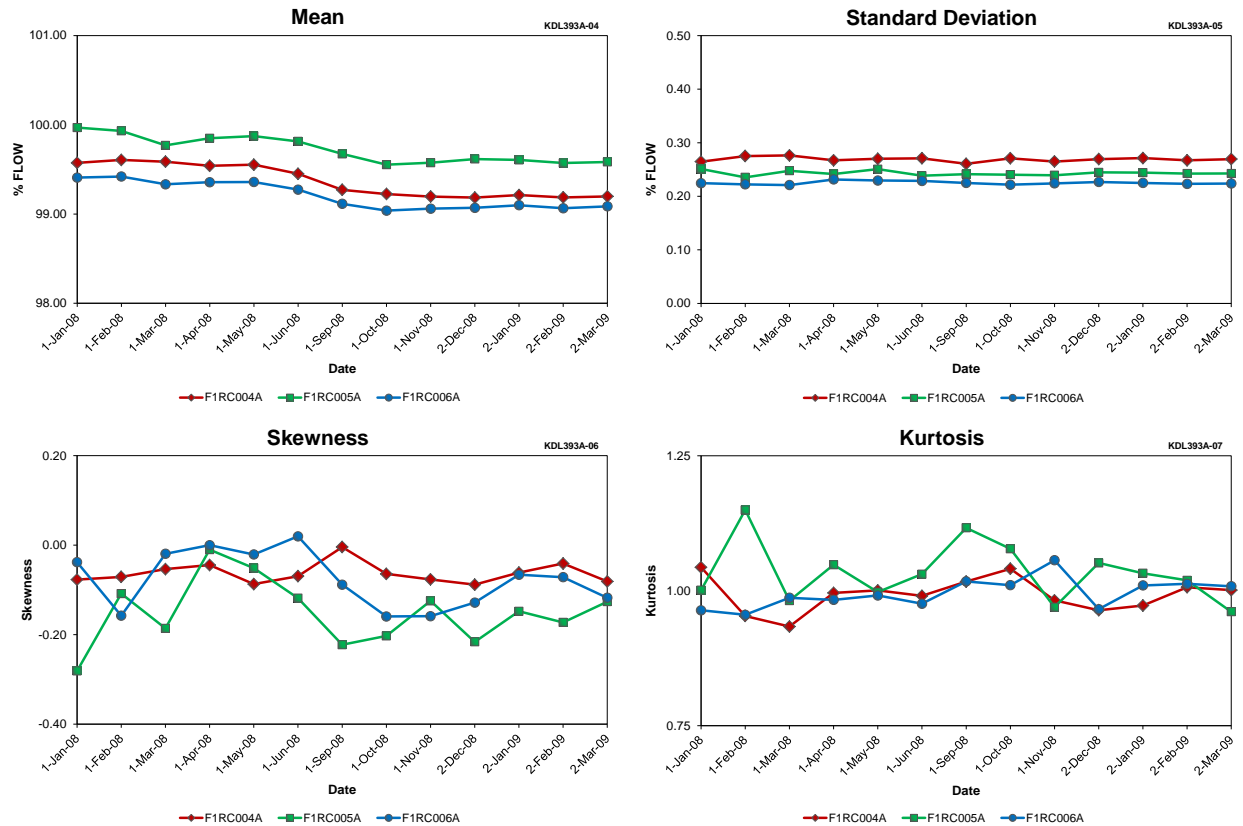
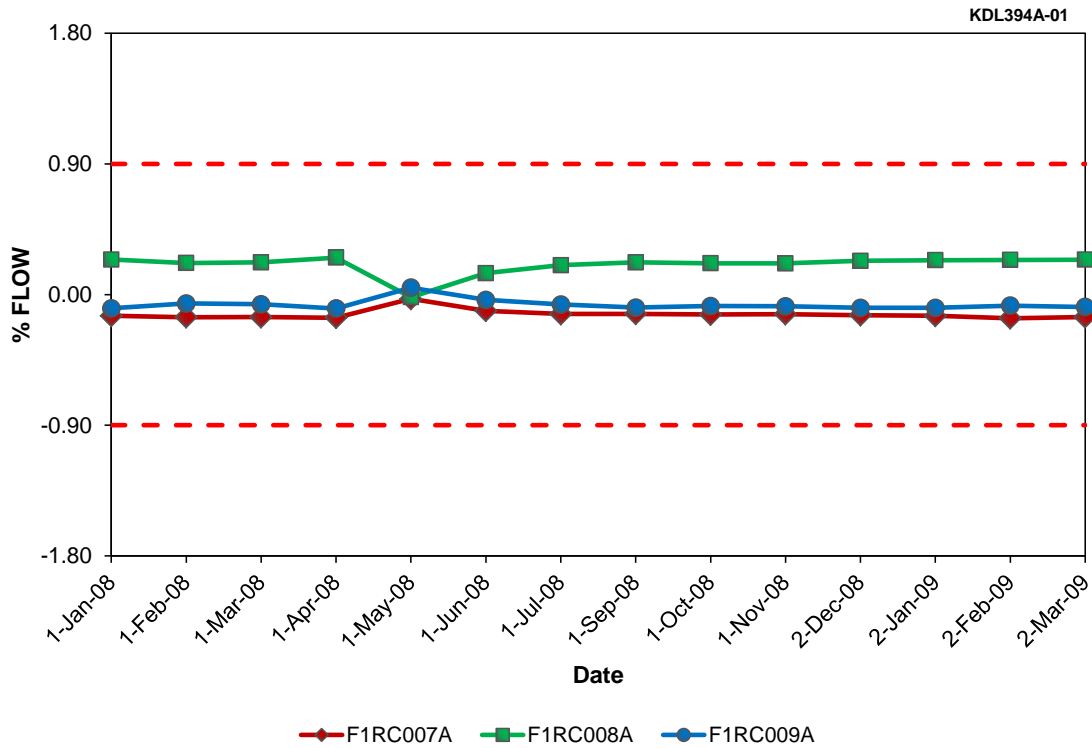


Figure F.66 RCS LOOP B FLOW Data Quality Statistics at North Anna Unit 1 (Cycle 20)

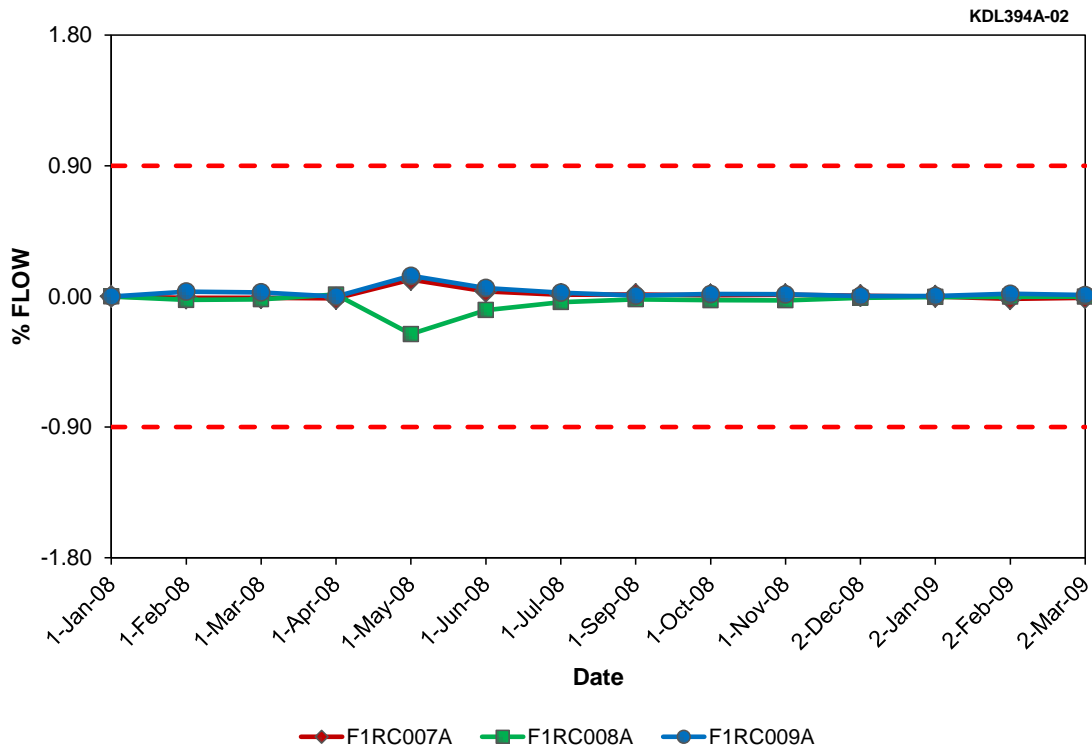
Table F.18 RCS LOOP B FLOW Data Quality for North Anna Unit 1 (Cycle 20)

Result Type	Tag Names		
	F1RC004A	F1RC005A	F1RC006A
Mean	99.37	99.72	99.21
Std. Dev.	0.27	0.24	0.23
Skewness	-0.06	-0.15	-0.08
Kurtosis	0.99	1.03	1.00



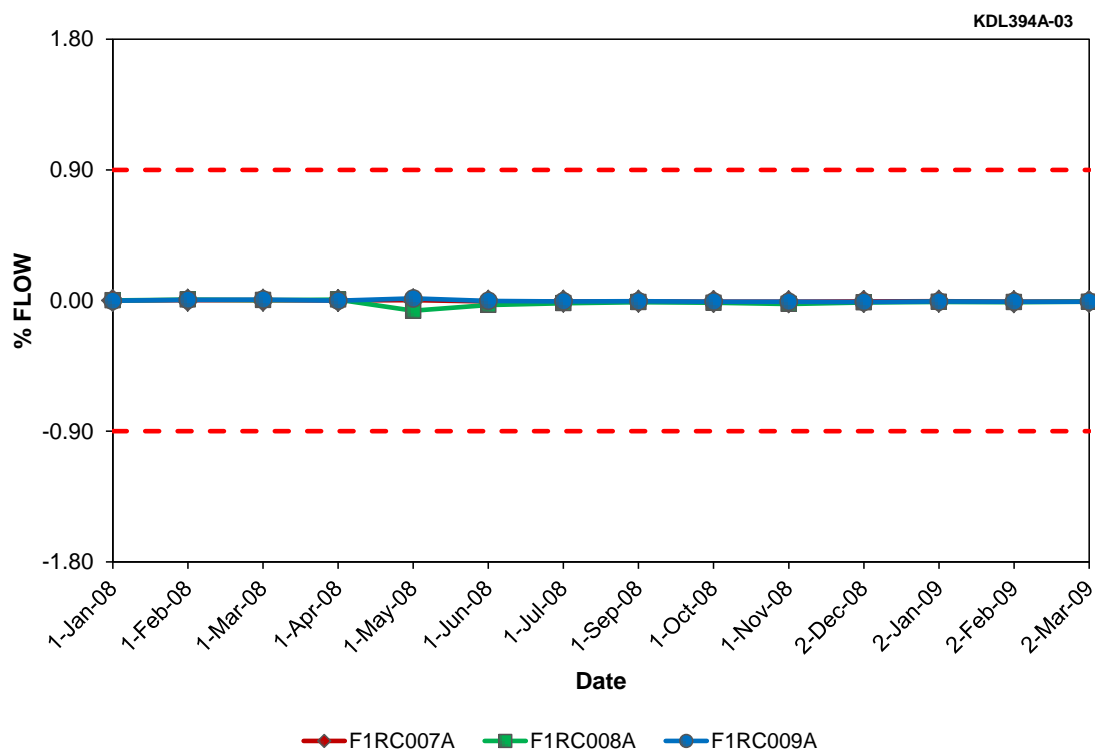


**Figure F.67 RCS LOOP C FLOW Steady-State Deviation at North Anna Unit 1 (Cycle 20)**



**Figure F.68 RCS LOOP C FLOW Steady-State Drift at North Anna Unit 1 (Cycle 20)**





**Figure F.69 RCS LOOP C FLOW Steady-State Residual AAKR at North Anna Unit 1 (Cycle 20)**

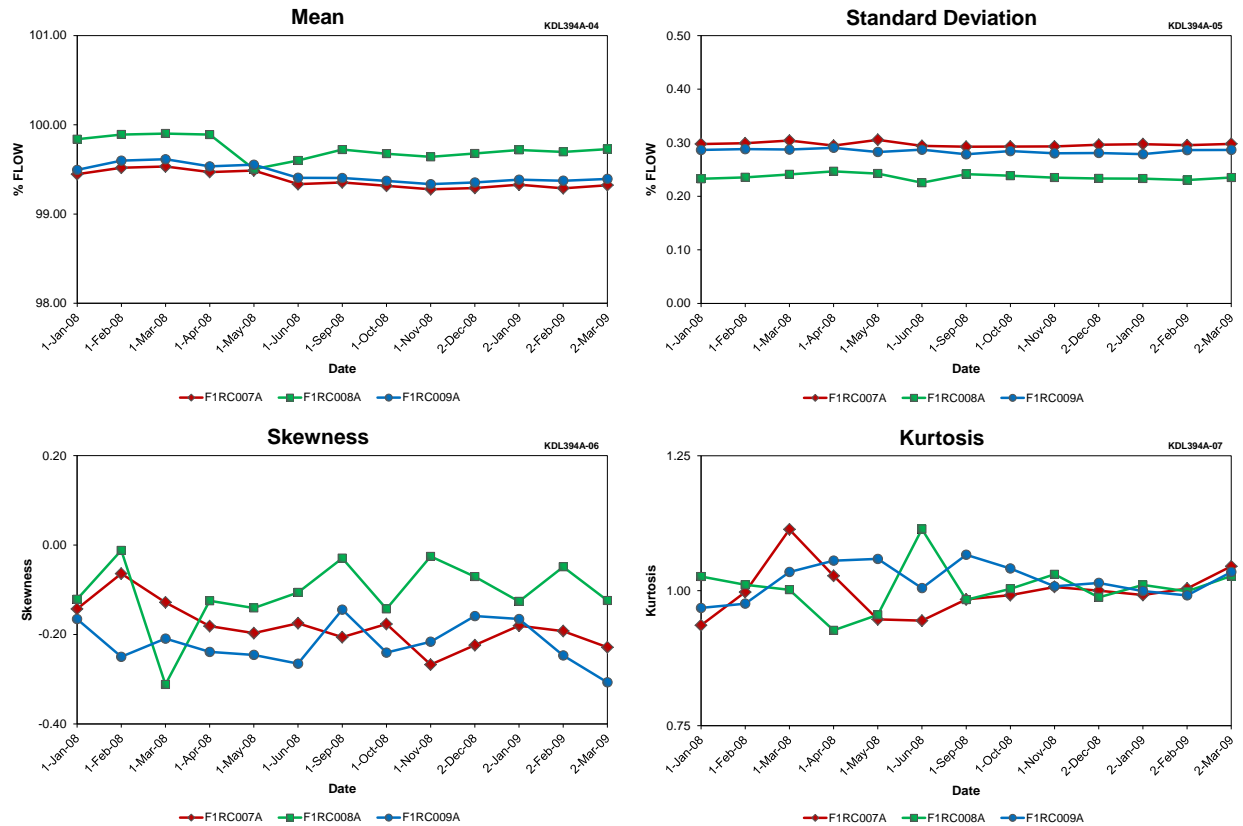
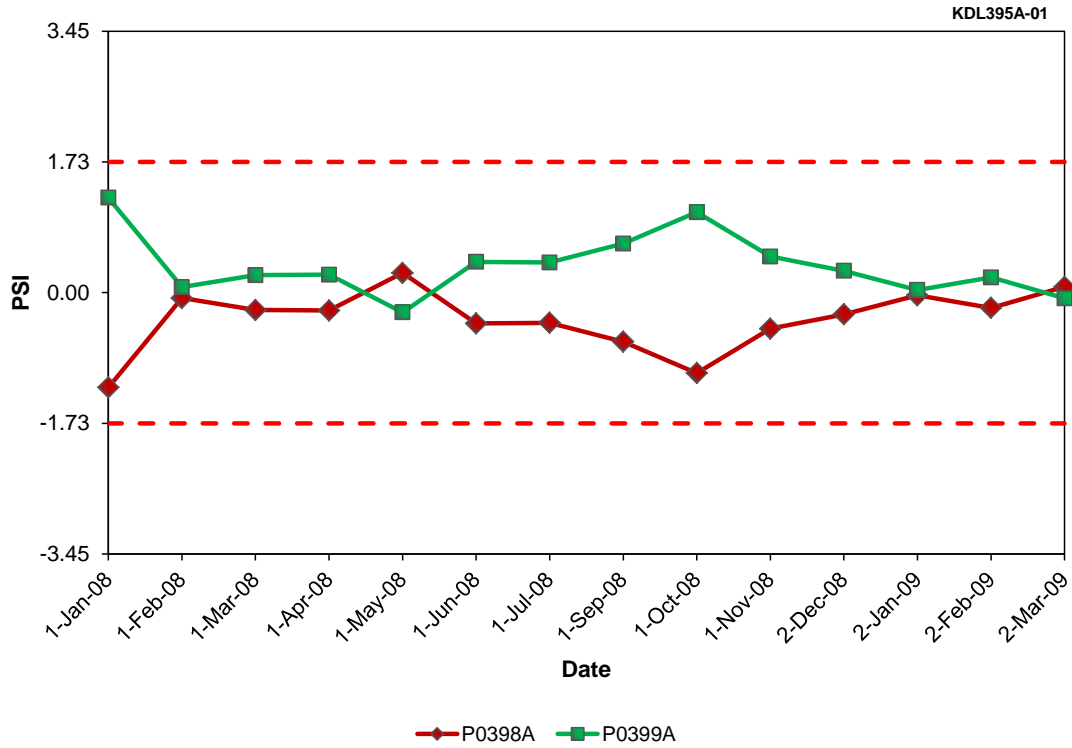


Figure F.70 RCS LOOP C FLOW Data Quality Statistics at North Anna Unit 1 (Cycle 20)

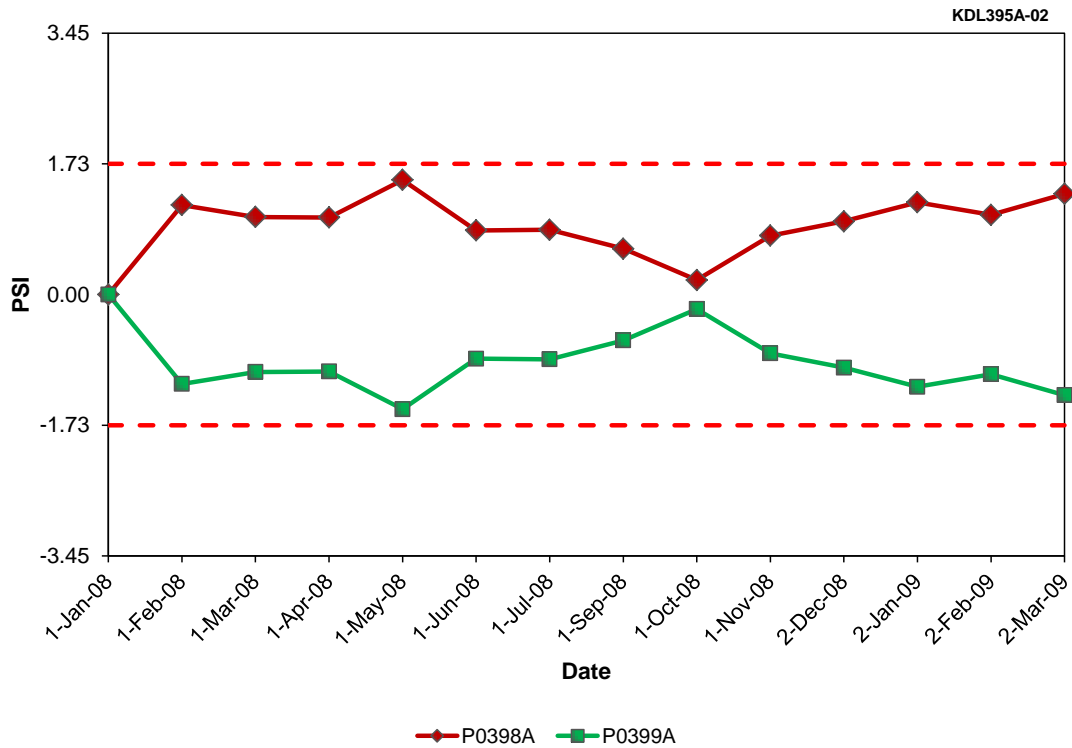
Table F.19 RCS LOOP C FLOW Data Quality for North Anna Unit 1 (Cycle 20)

Result Type	Tag Names		
	F1RC007A	F1RC008A	F1RC009A
Mean	99.38	99.73	99.45
Std. Dev.	0.30	0.24	0.28
Skewness	-0.18	-0.11	-0.22
Kurtosis	1.00	1.01	1.02





**Figure F.71 TBIN FIRST STAGE PRESSURE Steady-State Deviation at North Anna Unit 1 (Cycle 20)**



**Figure F.72 TBIN FIRST STAGE PRESSURE Steady-State Drift at North Anna Unit 1 (Cycle 20)**

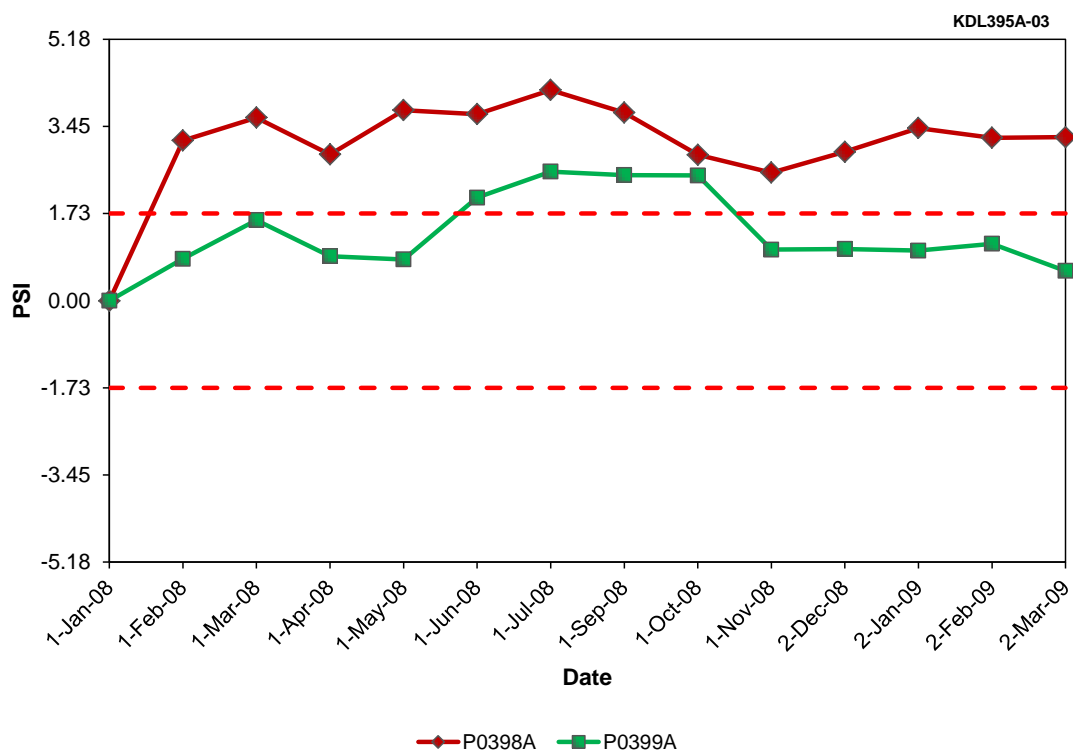
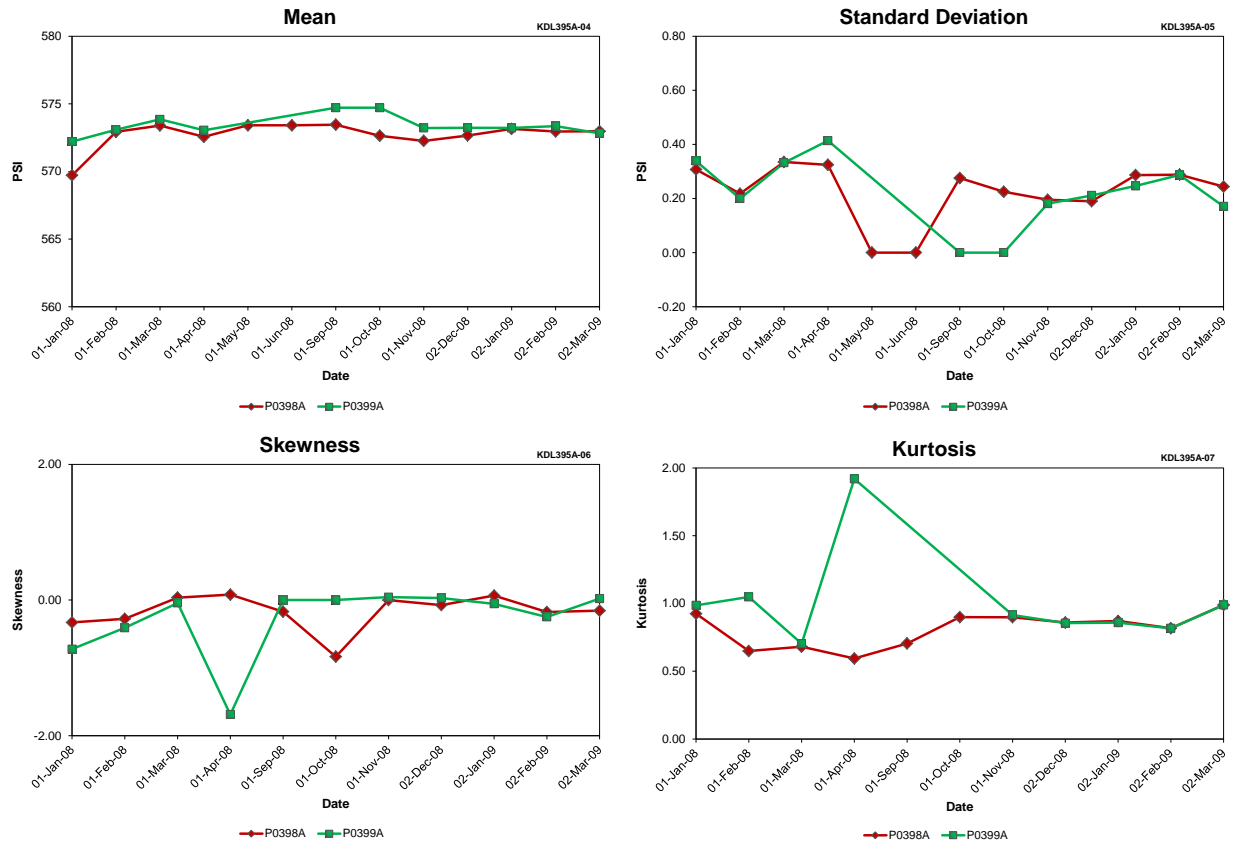


Figure F.73 TBIN FIRST STAGE PRESSURE Steady-State Residual AAKR at North Anna Unit 1 (Cycle 20)



**Figure F.74 TBIN FIRST STAGE PRESSURE Data Quality Statistics at North Anna Unit 1 (Cycle 20)**

**Table F.20 TBIN FIRST STAGE PRESSURE Data Quality for North Anna Unit 1 (Cycle 20)**

Result Type	Tag Names	
	P0398A	P0399A
Mean	572.73	573.41
Std. Dev.	0.22	0.22
Skewness	-0.17	-0.28
Kurtosis	0.81	1.01



## **APPENDIX G**

### **North Anna Unit 1 OLM Results (Cycle 21)**





Item	Tagname	Service	5 Apr 2009	2 May 2009	2 Jun 2009	2 Jul 2009	5 Aug 2009	9 Sep 2009	2 Oct 2009	2 Nov 2009	2 Dec 2010	5 Jan 2010	2 Feb 2010	2 Mar 2010	8 Apr 2010	2 May 2010	2 Jul 2010	2 Aug 2010	Drift	Final	Comment
1	F1MS001A	SG A STEAM FLOW	R														M	M		PASS	Process change
2	F1MS002A	SG A STEAM FLOW	R														M	M		PASS	Process change
3	F1FW004A	FW FLOW TO SG A																M		PASS	Process change
4	F1FW005A	FW FLOW TO SG A																M		PASS	Process change
5	L1FW001A	SG A NARROW RANGE LEVEL																		PASS	
6	L1FW002A	SG A NARROW RANGE LEVEL																		PASS	
7	L1FW003A	SG A NARROW RANGE LEVEL																		PASS	
8	L1FW004A	SG A WIDE RANGE LEVEL																		PASS	
9	P1MS001A	SG A OUTLET PRESSURE															M	M		PASS	Process change
10	P1MS002A	SG A OUTLET PRESSURE								M	M	M	M	M	M	M	M	M		PASS	Process change
11	P1MS003A	SG A OUTLET PRESSURE															M	M		PASS	Process change
12	F1MS003A	SG B STEAM FLOW																		PASS	
13	F1MS004A	SG B STEAM FLOW																M		PASS	Process change
14	F1FW006A	FW FLOW TO SG B																		PASS	
15	F1FW007A	FW FLOW TO SG B																		PASS	
16	L1FW005A	SG B NARROW RANGE LEVEL																		PASS	
17	L1FW006A	SG B NARROW RANGE LEVEL																		PASS	
18	L1FW007A	SG B NARROW RANGE LEVEL																		PASS	
19	L1FW008A	SG B WIDE RANGE LEVEL																		PASS	
20	P1MS004A	SG B OUTLET PRESSURE															M	M		PASS	Process change
21	P1MS005A	SG B OUTLET PRESSURE																M		PASS	Process change
22	P1MS006A	SG B OUTLET PRESSURE																M		PASS	Process change
23	F1MS005A	SG C STEAM FLOW	R															M		PASS	Process change
24	F1MS006A	SG C STEAM FLOW	R														M	M		PASS	Process change
25	F1FW008A	FW FLOW TO SG C																		PASS	
26	F1FW009A	FW FLOW TO SG C																		PASS	

*R = Exceeded Redundant Sensor Analysis Limits    M = Exceeded Model Analysis Limits    D = Exceeded Drift Limits*

**Table G.1 North Anna Unit 1 OLM Results Summary (Cycle 21)**



Item	Tagname	Service	5 Apr 2009	2 May 2009	2 Jun 2009	2 Jul 2009	5 Aug 2009	9 Sep 2009	2 Oct 2009	2 Nov 2009	2 Dec 2010	5 Jan 2010	2 Feb 2010	2 Mar 2010	8 Apr 2010	2 May 2010	2 Jul 2010	2 Aug 2010	Drift	Final	Comment
27	L1FW009A	SG C NARROW RANGE LEVEL																		PASS	
28	L1FW010A	SG C NARROW RANGE LEVEL																		PASS	
29	L1FW011A	SG C NARROW RANGE LEVEL																		PASS	
30	L1FW012A	SG C WIDE RANGE LEVEL																		PASS	
31	P1MS007A	SG C OUTLET PRESSURE																M		PASS	Process change
32	P1MS008A	SG C OUTLET PRESSURE																		PASS	
33	P1MS009A	SG C OUTLET PRESSURE																		PASS	
34	L1RC001A	PRESSURIZER LEVEL																		PASS	
35	L1RC002A	PRESSURIZER LEVEL																		PASS	
36	L1RC003A	PRESSURIZER LEVEL																		PASS	
37	P1RC001A	PRESSURIZER PRESSURE																		PASS	
38	P1RC002A	PRESSURIZER PRESSURE																		PASS	
39	P1RC003A	PRESSURIZER PRESSURE																		PASS	
40	F1RC001A	RCS LOOP A FLOW																		PASS	
41	F1RC002A	RCS LOOP A FLOW																		PASS	
42	F1RC003A	RCS LOOP A FLOW																		PASS	
43	F1RC004A	RCS LOOP B FLOW																		PASS	
44	F1RC005A	RCS LOOP B FLOW																		PASS	
45	F1RC006A	RCS LOOP B FLOW																		PASS	
46	F1RC007A	RCS LOOP C FLOW																		PASS	
47	F1RC008A	RCS LOOP C FLOW																		PASS	
48	F1RC009A	RCS LOOP C FLOW																		PASS	
49	P1RC005A	RCS WIDE RANGE PRESSURE LOOP A																		PASS	
50	P1RC006A	RCS WIDE RANGE PRESSURE LOOP C																		PASS	
51	P0398A	TURBINE FIRST STAGE PRESSURE							M		M	M	M	M	M	M		M		PASS	Process change
52	P0399A	TURBINE FIRST STAGE PRESSURE											M	M	M	M		M		PASS	Process change

*R = Exceeded Redundant Sensor Analysis Limits    M = Exceeded Model Analysis Limits    D = Exceeded Drift Limits*

**Table G.1 (continued) North Anna Unit 1 OLM Results Summary (Cycle 21)**



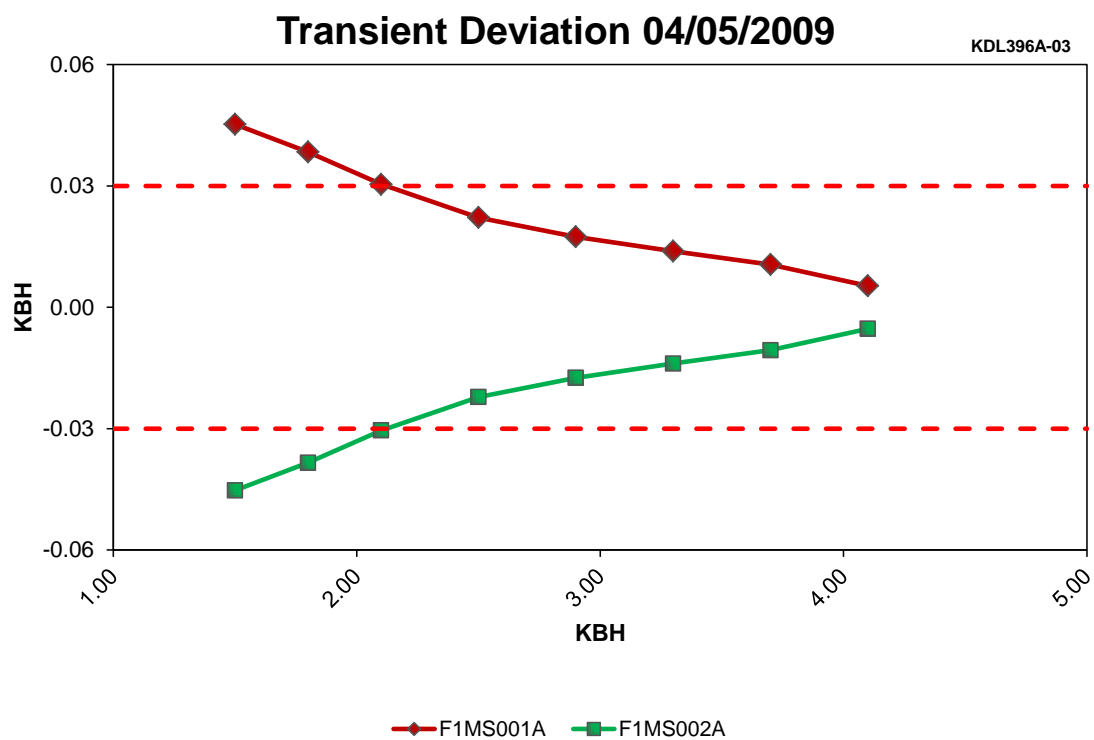
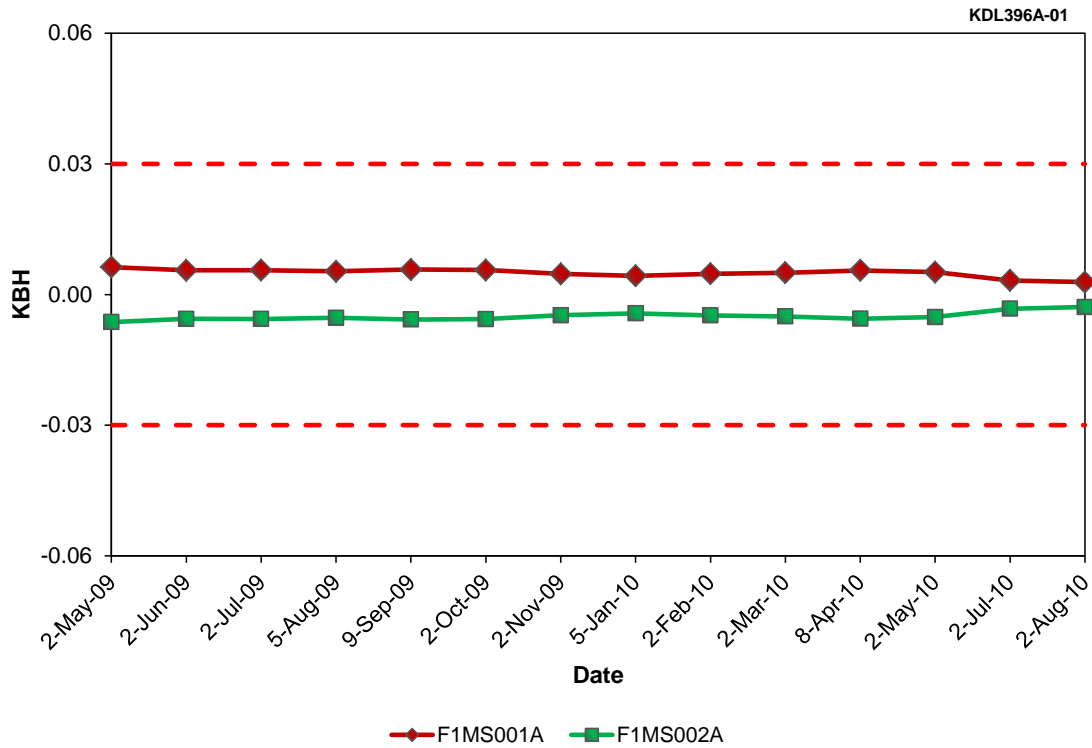
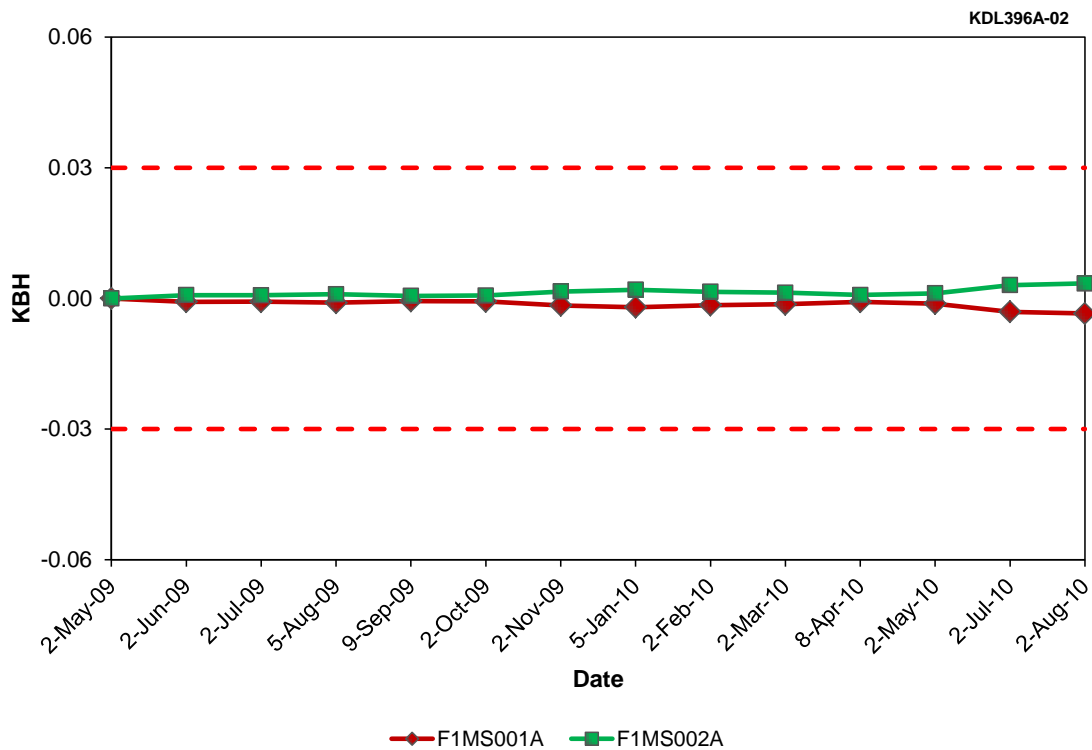


Figure G.1 SG A STEAM FLOW Transient Deviation at North Anna Unit 1 (Cycle 21)



**Figure G.2 SG A STEAM FLOW Steady-State Deviation at North Anna Unit 1 (Cycle 21)**



**Figure G.3 SG A STEAM FLOW Steady-State Drift at North Anna Unit 1 (Cycle 21)**

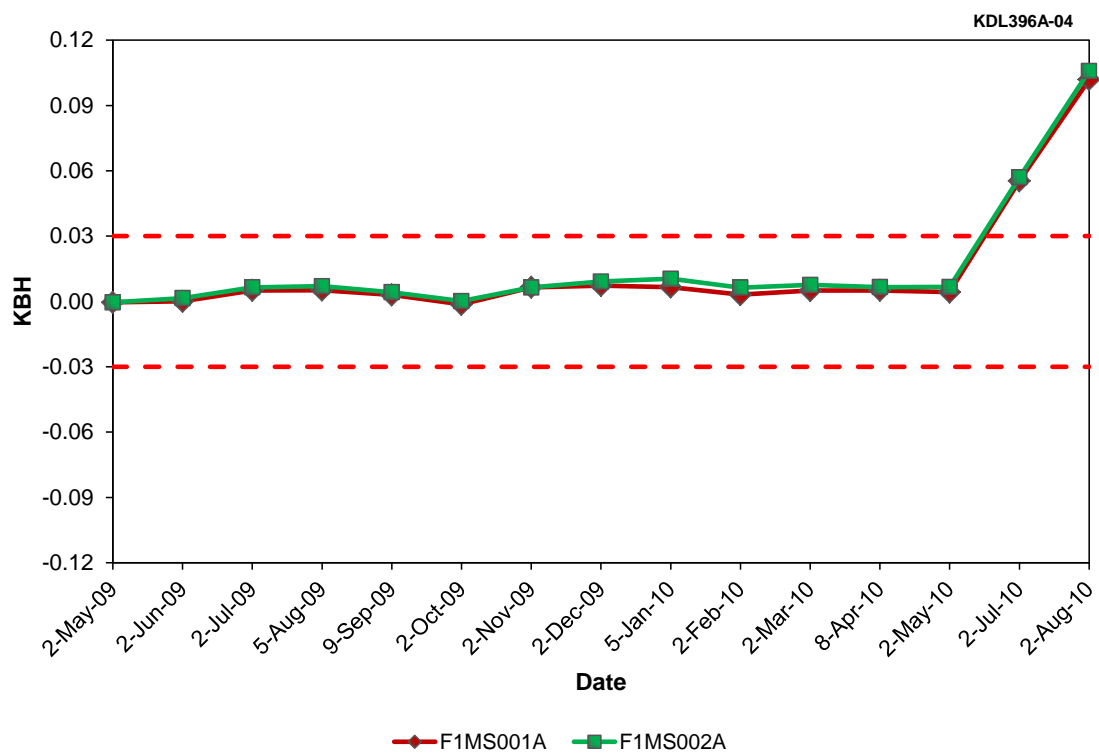
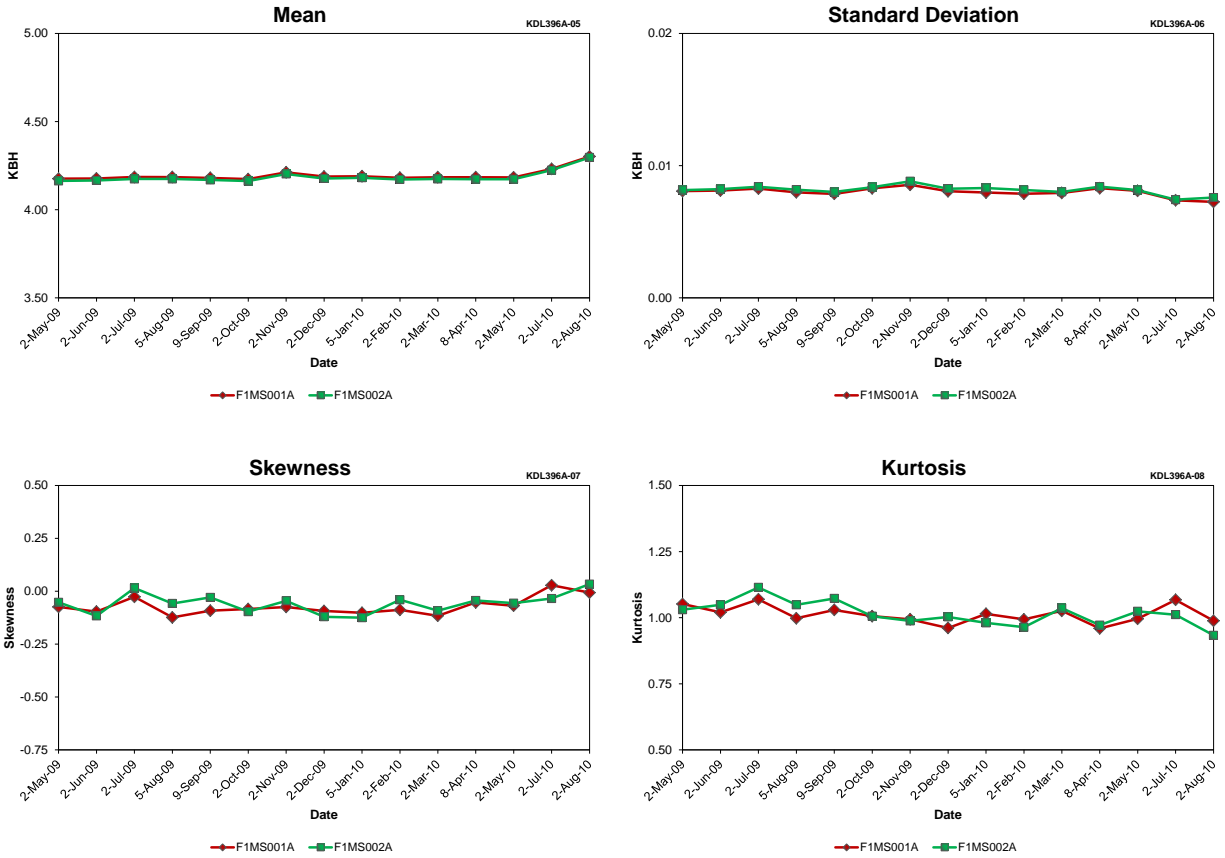


Figure G.4 SG A STEAM FLOW Steady-State Residual AAKR at North Anna Unit 1 (Cycle 21)

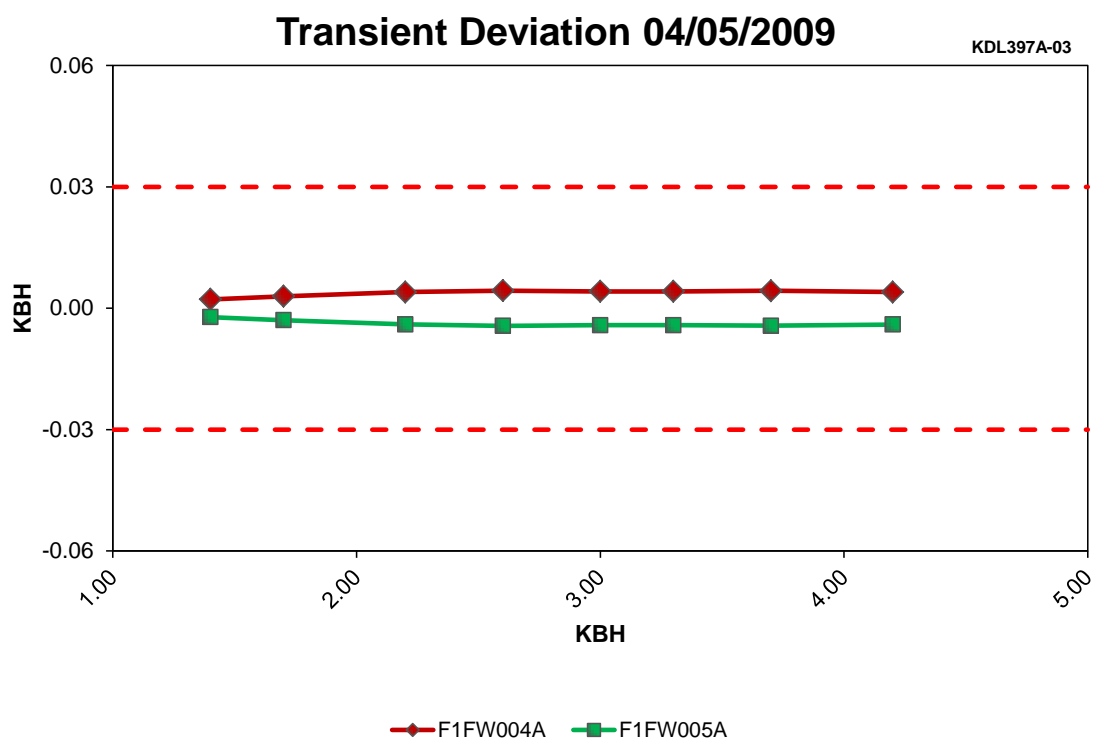




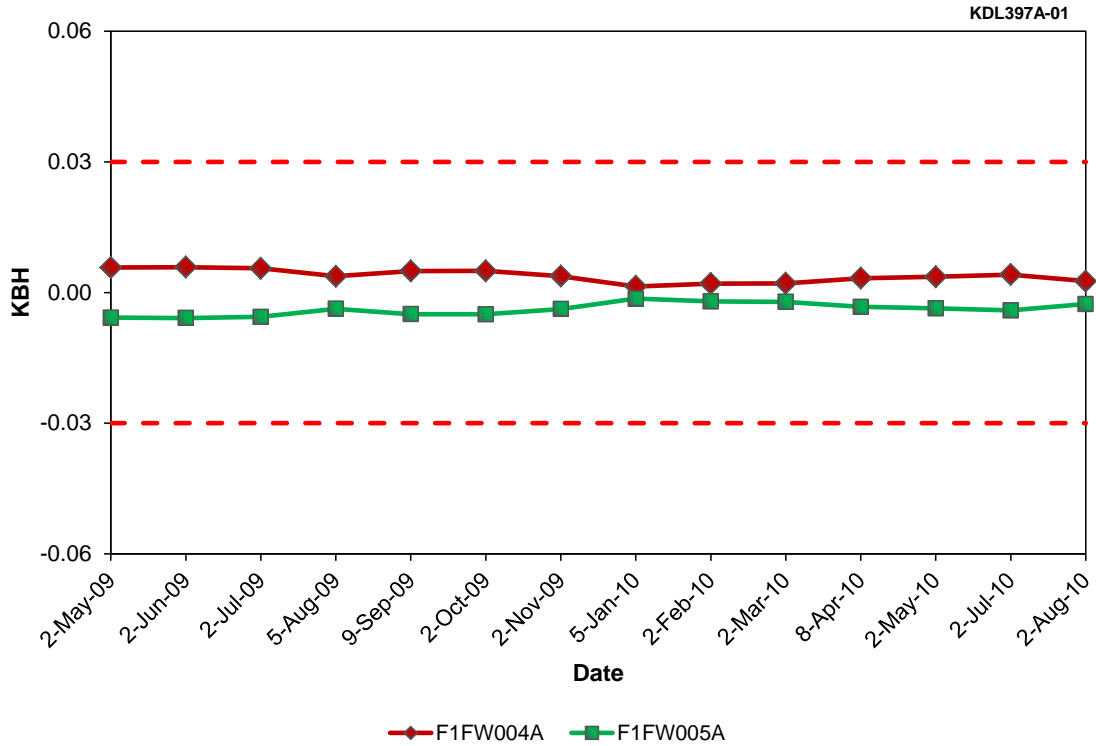
**Figure G.6 SG A STEAM FLOW Data Quality Statistics at North Anna Unit 1 (Cycle 21)**

**Table G.2 SG A STEAM FLOW Data Quality for North Anna Unit 1 (Cycle 21)**

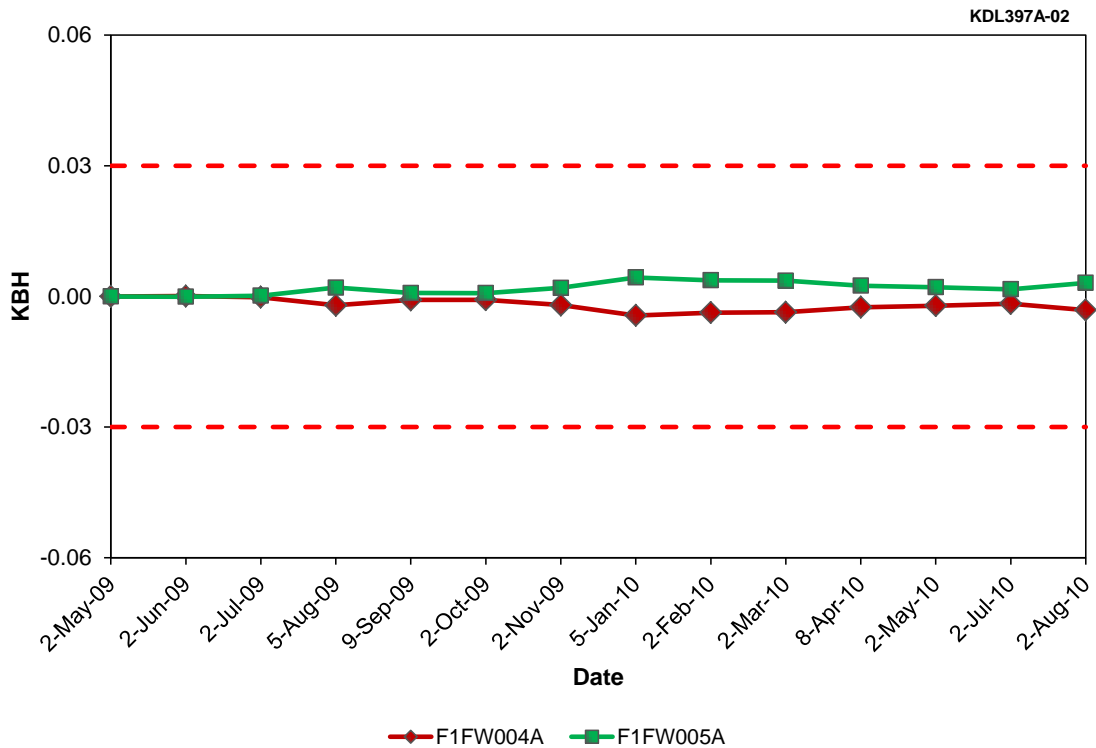
Result Type	Tag Names	
	F1MS001A	F1MS002A
Mean	4.20	4.19
Std. Dev.	0.01	0.01
Skewness	-0.07	-0.06
Kurtosis	1.01	1.02



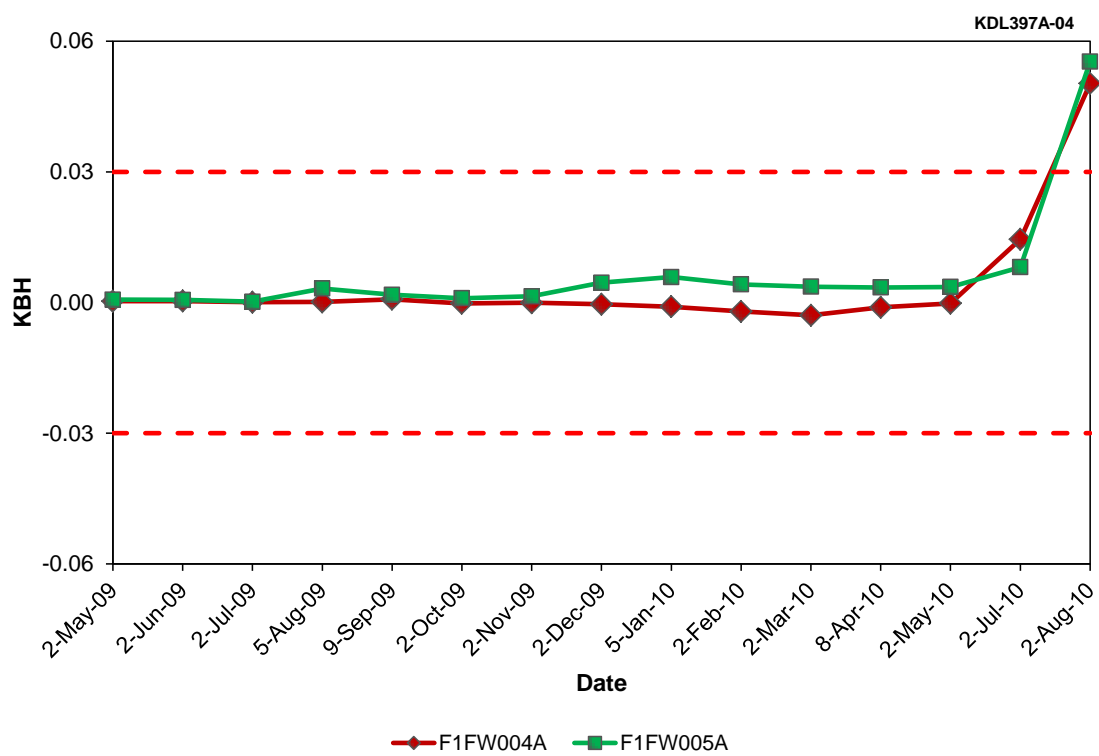
**Figure G.7 SG A FW FLOW Transient Deviation at North Anna Unit 1 (Cycle 21)**



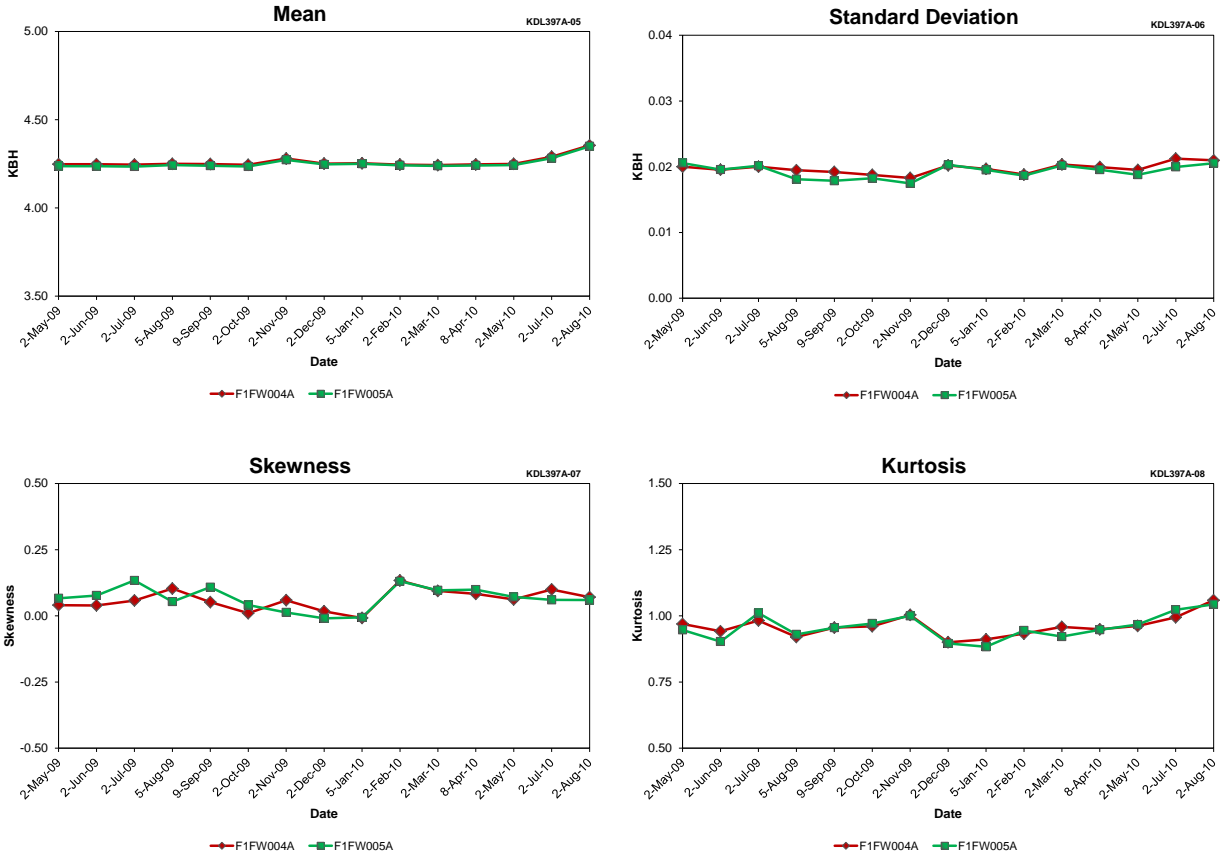
**Figure G.8 SG A FW FLOW Steady-State Deviation at North Anna Unit 1 (Cycle 21)**



**Figure G.9 SG A FW FLOW Steady-State Drift at North Anna Unit 1 (Cycle 21)**



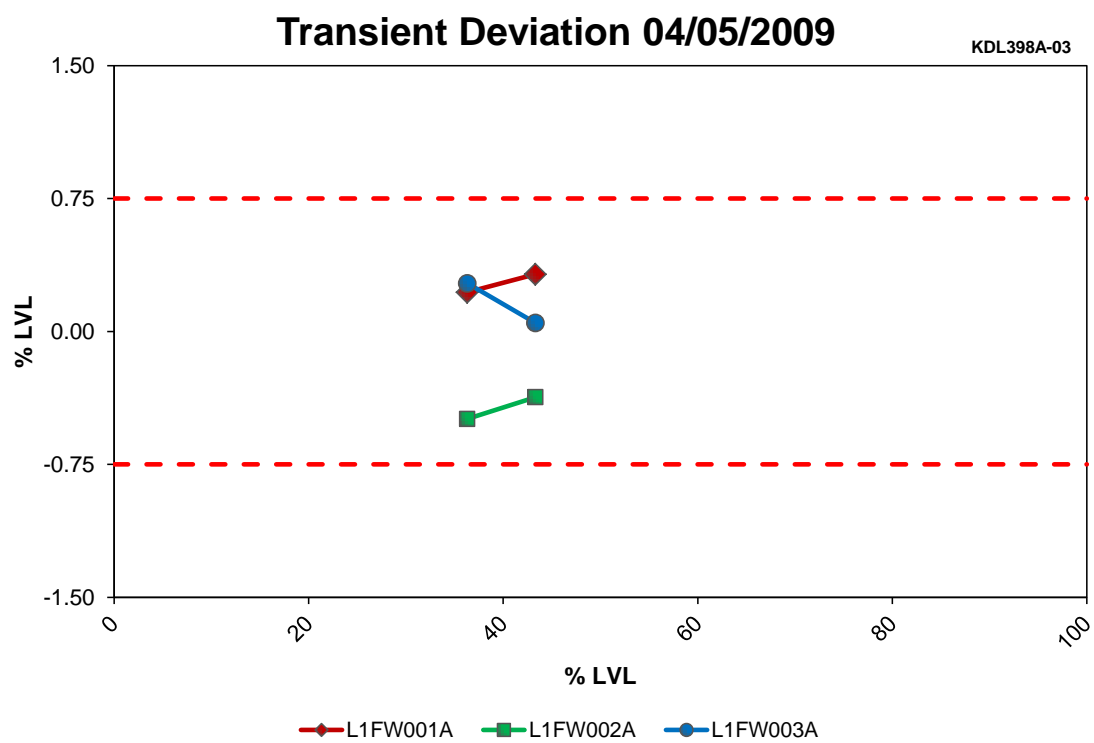
**Figure G.10 SG A FW FLOW Steady-State Residual AAKR at North Anna Unit 1 (Cycle 21)**



**Figure G.11 SG A FW FLOW Data Quality Statistics at North Anna Unit 1 (Cycle 21)**

**Table G.3 SG A FW FLOW Data Quality for North Anna Unit 1 (Cycle 21)**

Result Type	Tag Names	
	F1FW004A	F1FW005A
Mean	4.26	4.25
Std. Dev.	0.02	0.02
Skewness	0.06	0.07
Kurtosis	0.96	0.96



**Figure G.12 SG A LEVEL Transient Deviation at North Anna Unit 1 (Cycle 21)**

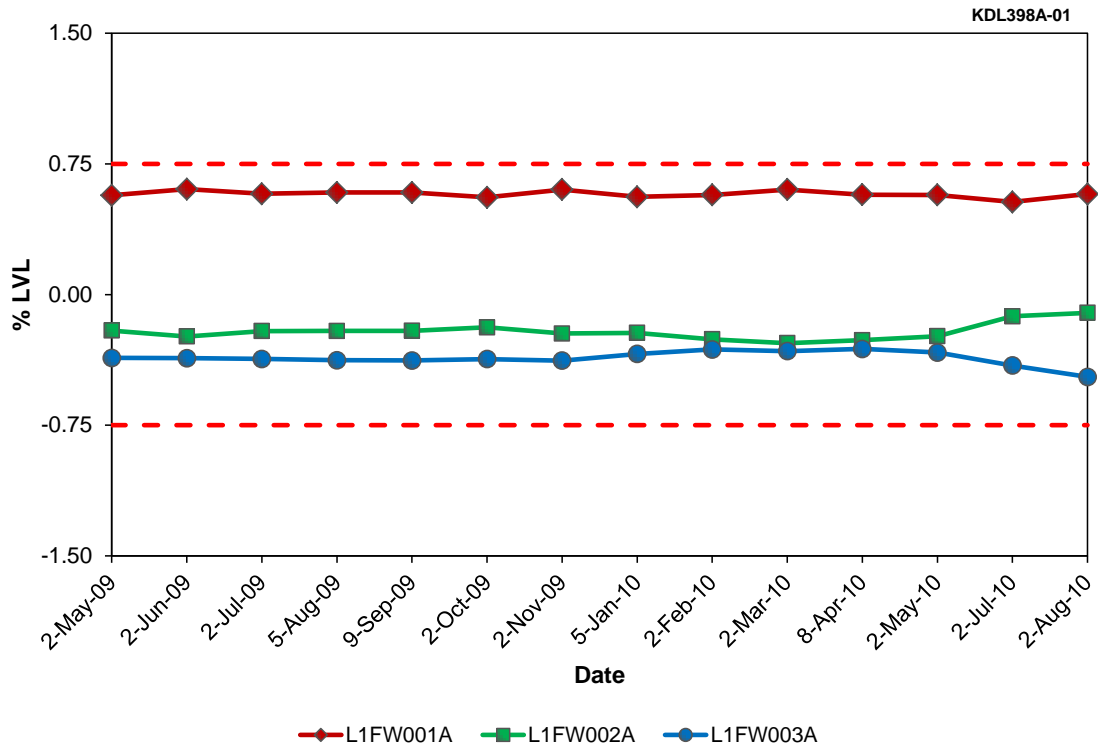


Figure G.13 SG A LEVEL Steady-State Deviation at North Anna Unit 1 (Cycle 21)

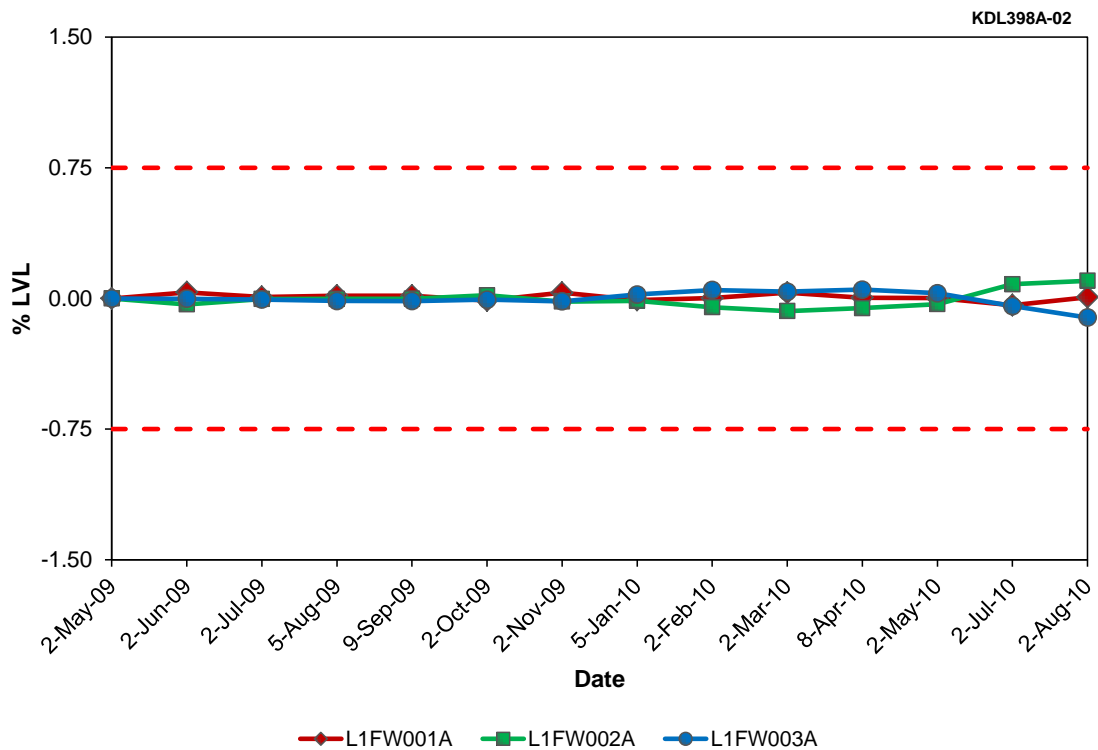
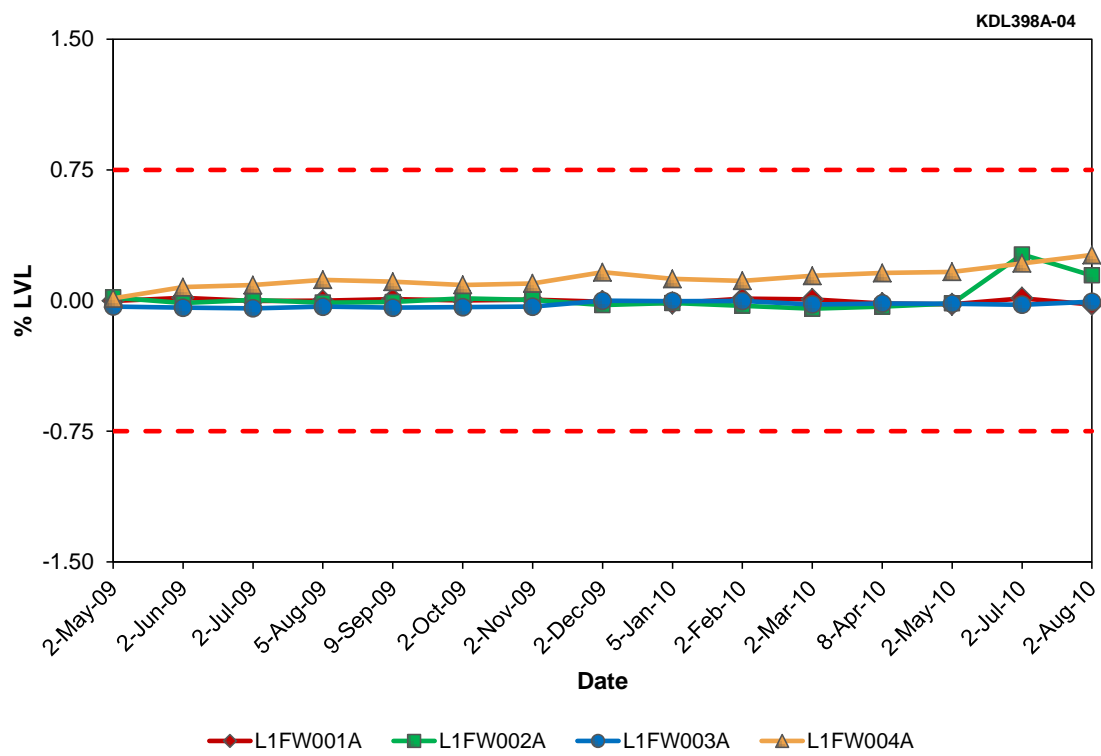
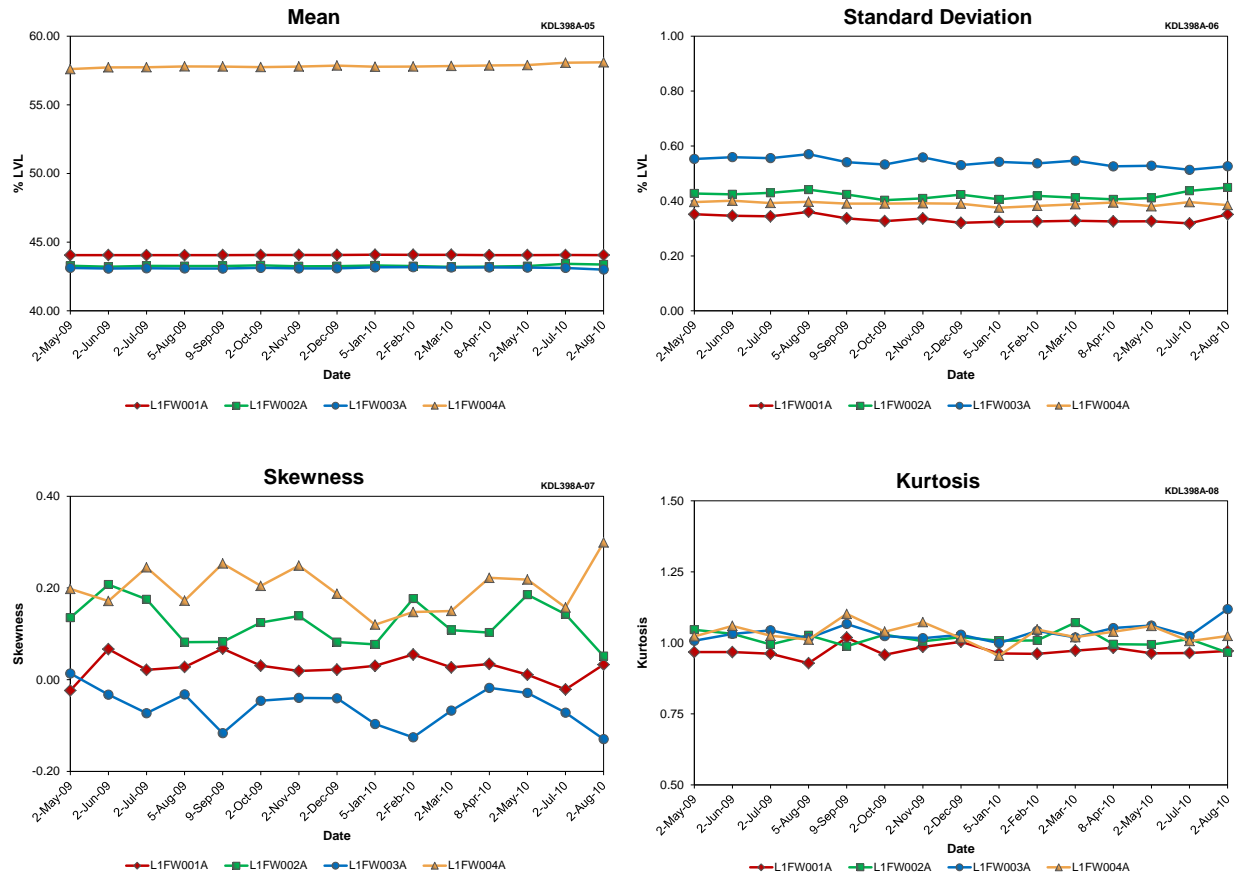


Figure G.14 SG A LEVEL Steady-State Drift at North Anna Unit 1 (Cycle 21)



**Figure G.15 SG A LEVEL Steady-State Residual AAKR at North Anna Unit 1 (Cycle 21)**

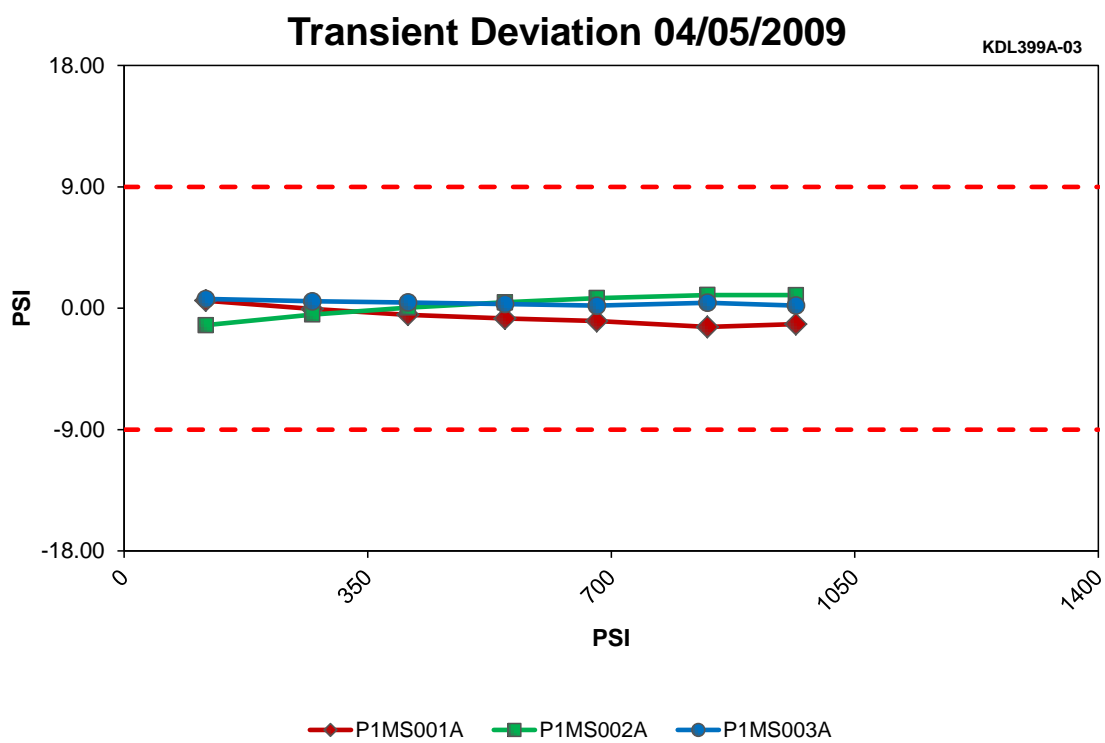




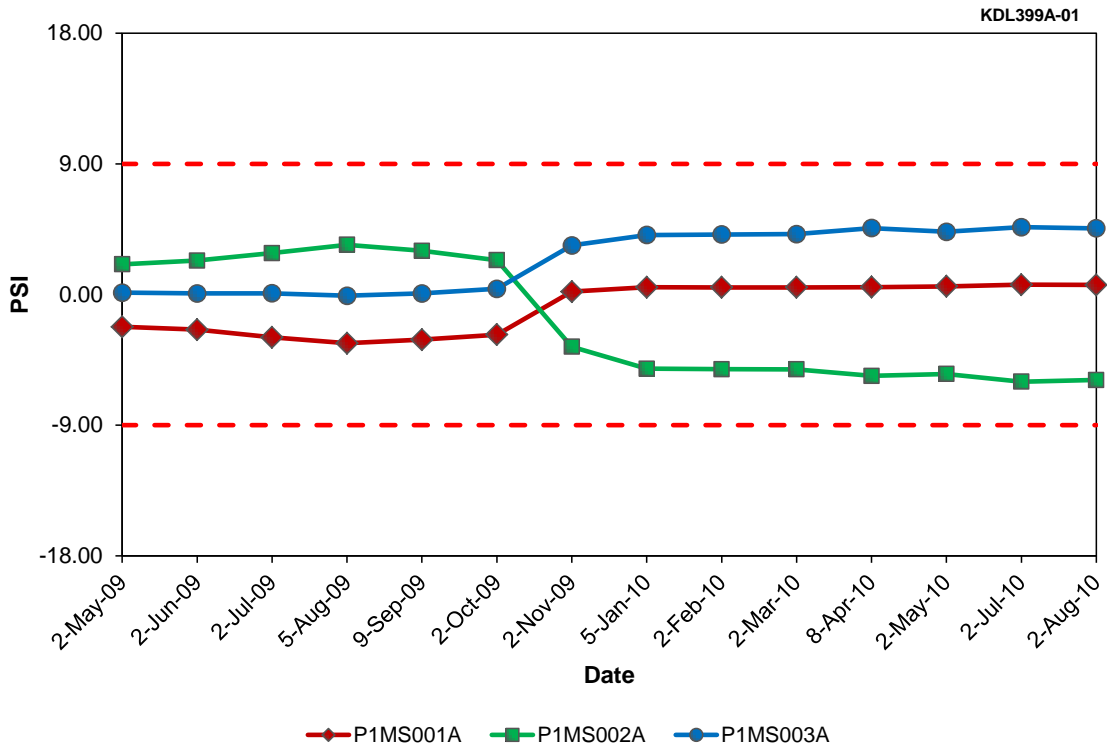
**Figure G.16 SG A LEVEL Data Quality Statistics at North Anna Unit 1 (Cycle 21)**

**Table G.4 SG A LEVEL Data Quality for North Anna Unit 1 (Cycle 21)**

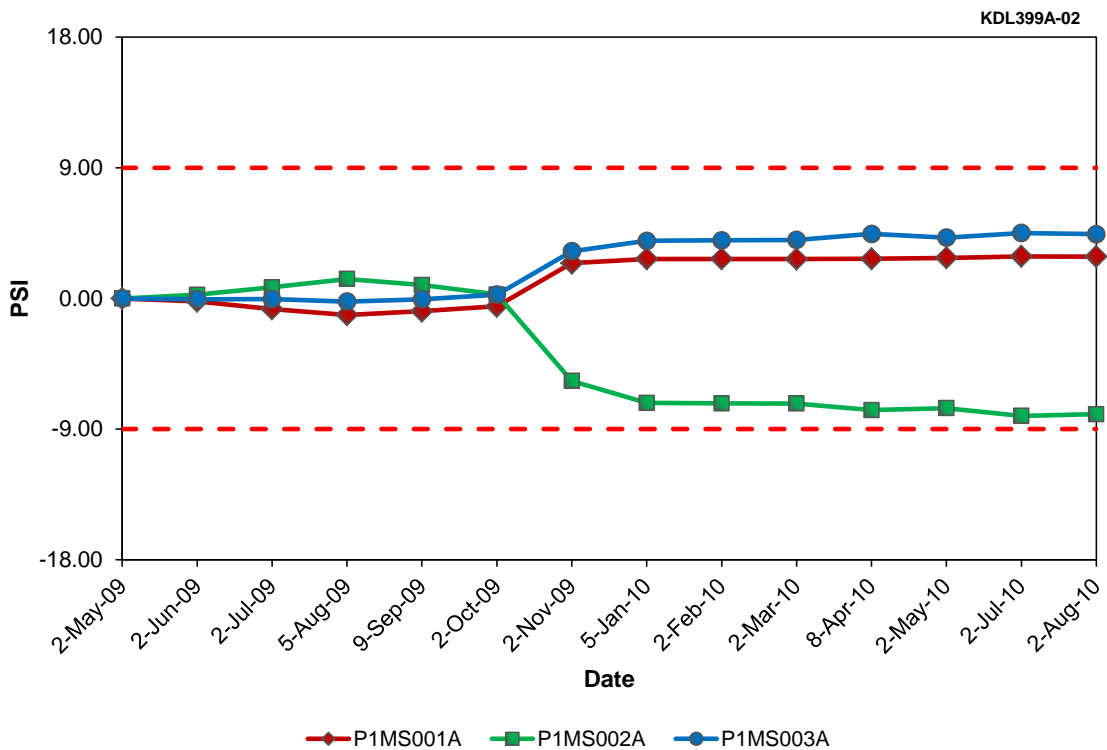
Result Type	Tag Names			
	L1FW001A	L1FW002A	L1FW003A	L1FW004A
Mean	44.06	43.28	43.11	57.82
Std. Dev.	0.33	0.42	0.54	0.39
Skewness	0.03	0.12	-0.06	0.20
Kurtosis	0.97	1.01	1.04	1.03



**Figure G.17 SG A OUTLET PRESSURE Transient Deviation at North Anna Unit 1 (Cycle 21)**

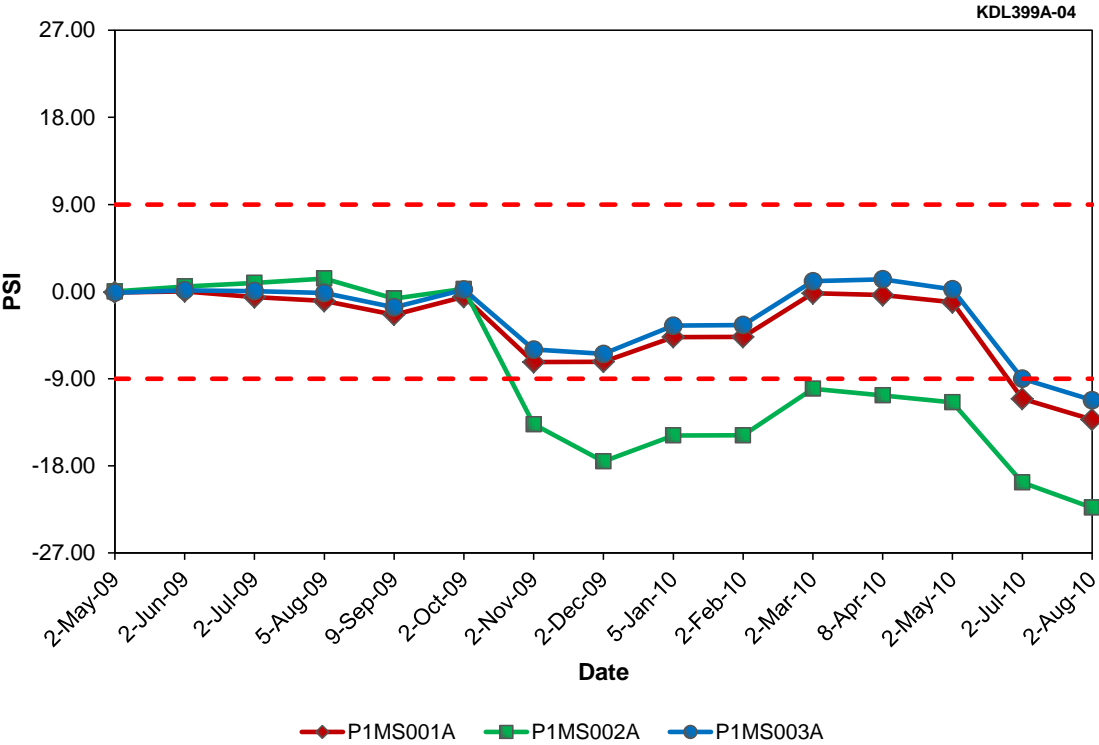


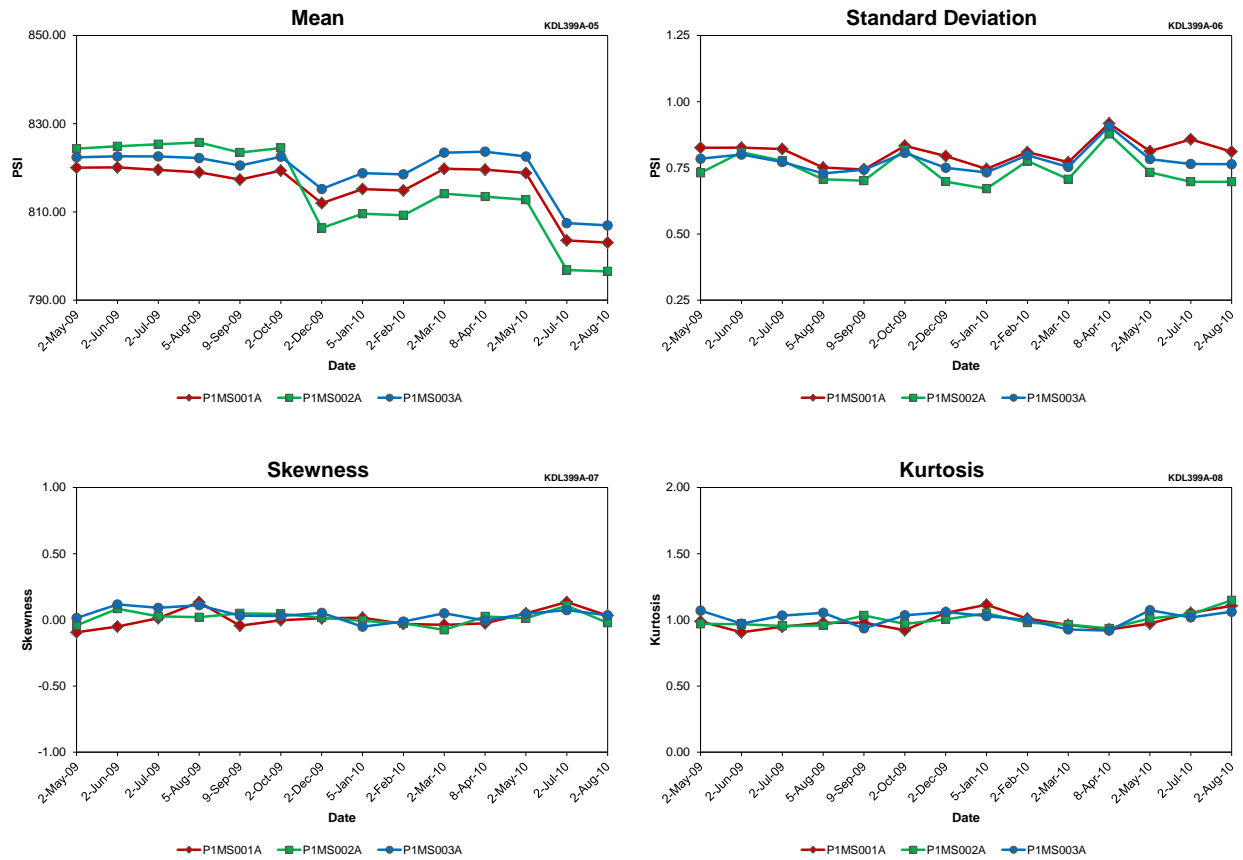
**Figure G.18 SG A OUTLET PRESSURE Steady-State Deviation at North Anna Unit 1 (Cycle 21)**



**Figure G.18 SG A OUTLET PRESSURE Steady-State Drift at North Anna Unit 1 (Cycle 21)**

Figure G.19 SG A OUTLET PRESSURE Steady-State Residual AAKR at North Anna Unit 1 (Cycle 21)



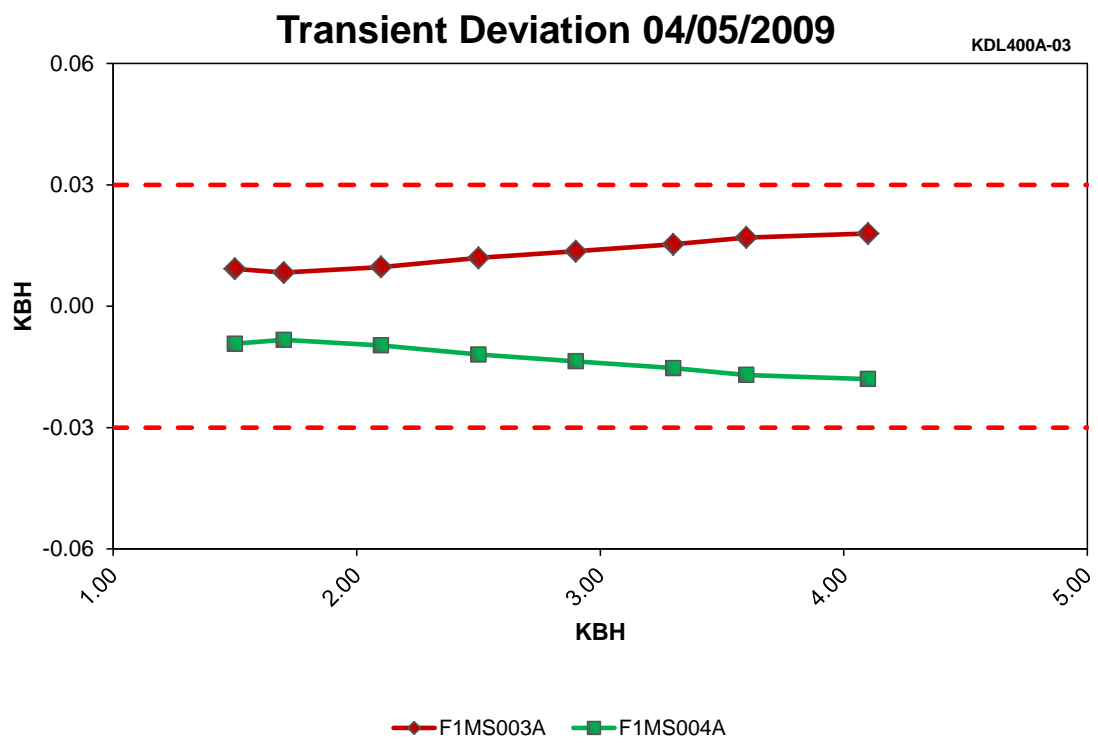


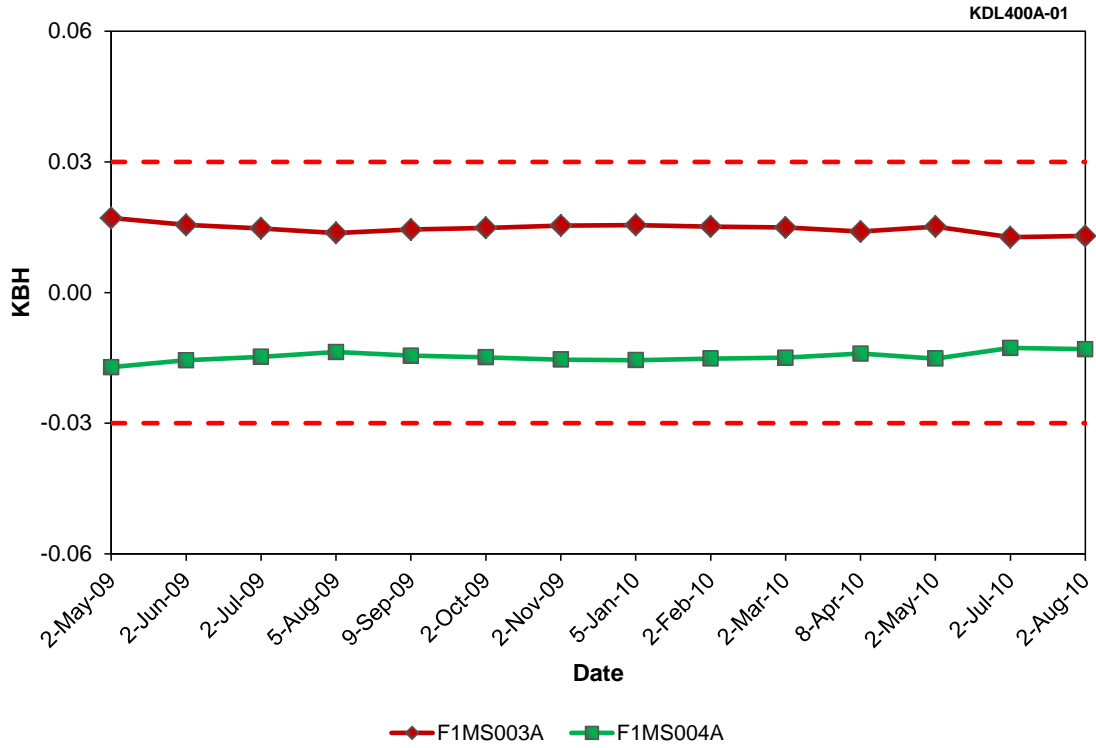
**Figure G.20 SG A OUTLET PRESSURE Data Quality Statistics at North Anna Unit 1 (Cycle 21)**

**Table G.5 SG A OUTLET PRESSURE Data Quality for North Anna Unit 1 (Cycle 21)**

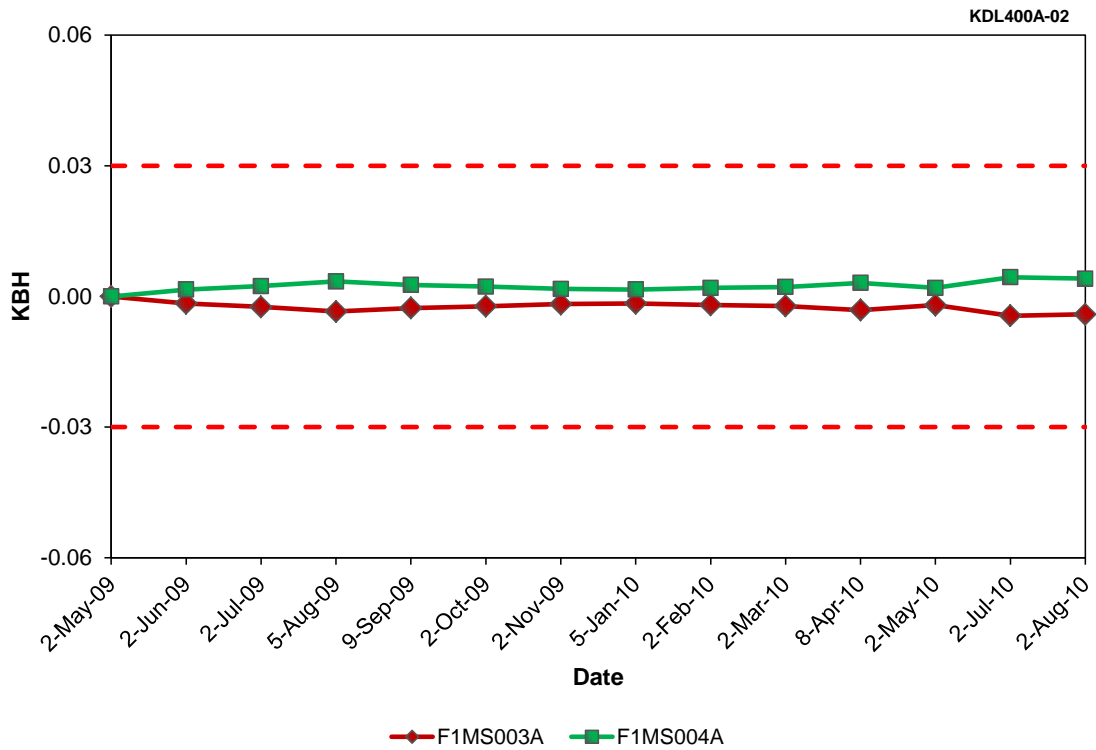
Result Type	Tag Names		
	P1MS001A	P1MS002A	P1MS003A
Mean	815.87	814.80	819.25
Std. Dev.	0.81	0.74	0.78
Skewness	0.01	0.01	0.01
Kurtosis	0.99	1.00	1.01

Figure G.21 SG B STEAM FLOW Transient Deviation at North Anna Unit 1 (Cycle 21)



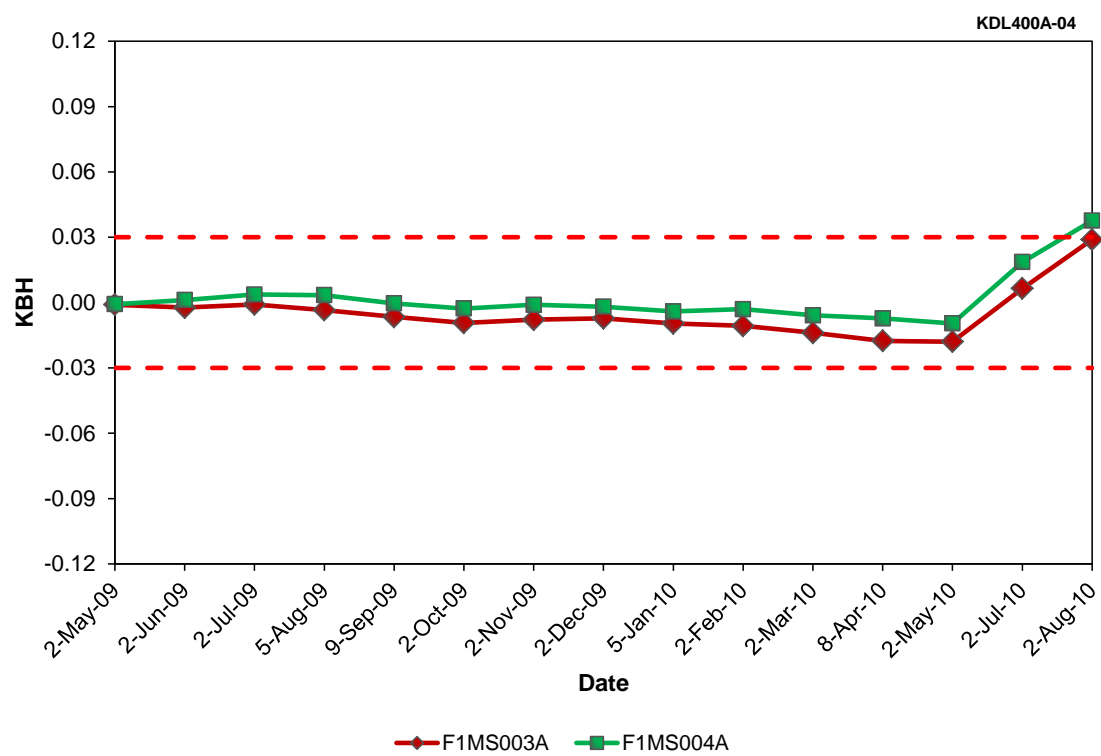


**Figure G.22 SG B STEAM FLOW Steady-State Deviation at North Anna Unit 1 (Cycle 21)**

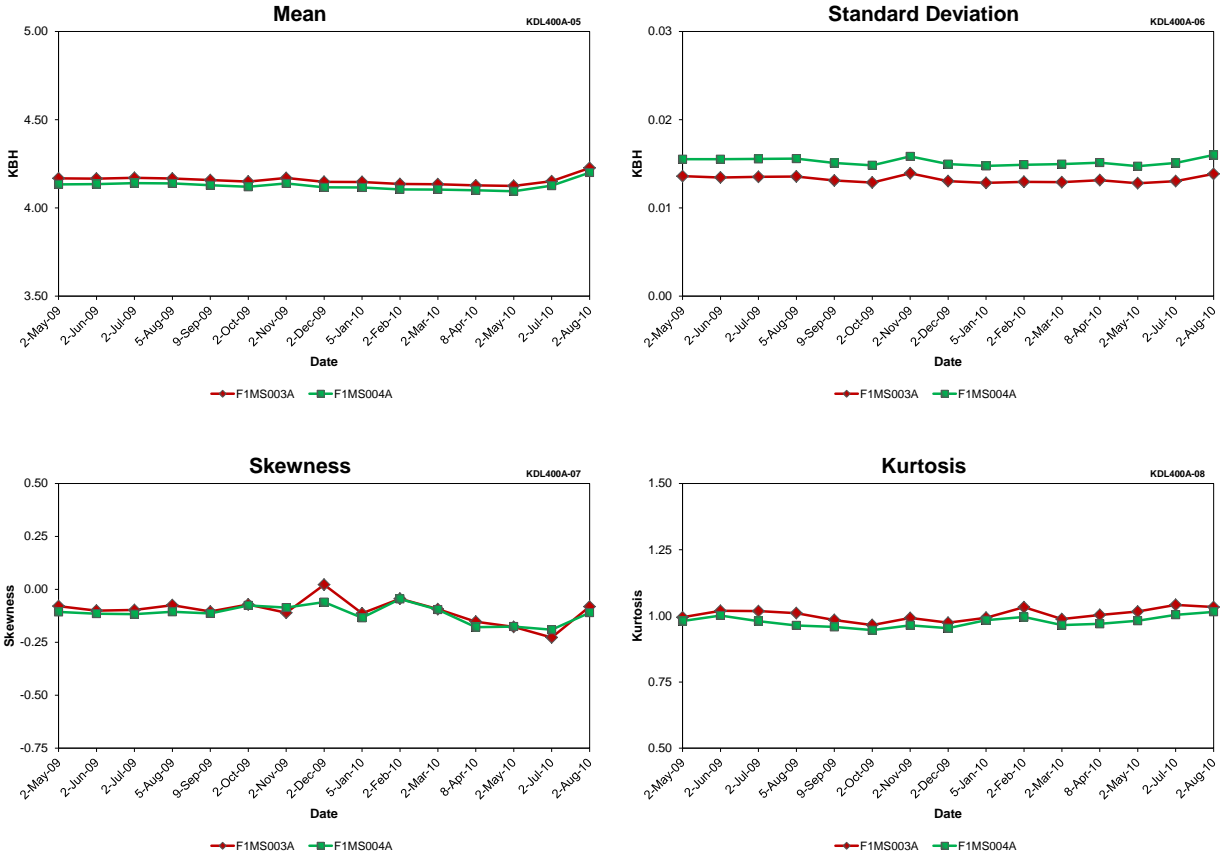


**Figure G.23 SG B STEAM FLOW Steady-State Drift at North Anna Unit 1 (Cycle 21)**

**Figure G.24 SG B STEAM FLOW Steady-State Residual AAKR at North Anna Unit 1 (Cycle 21)**





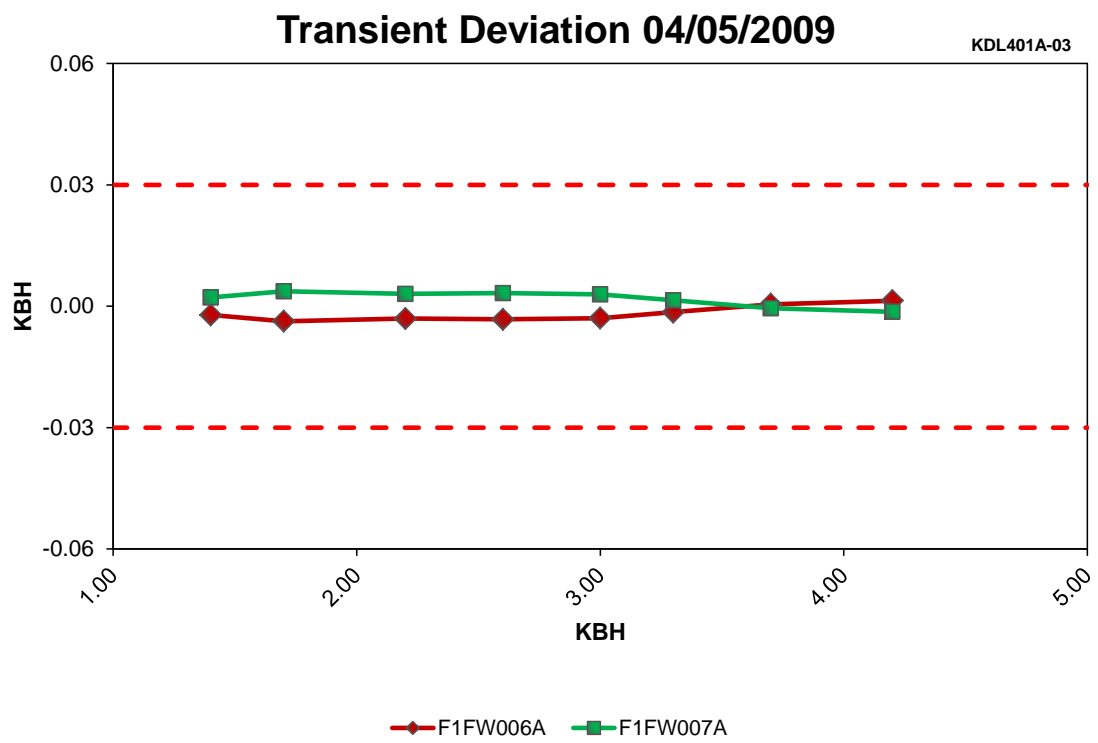


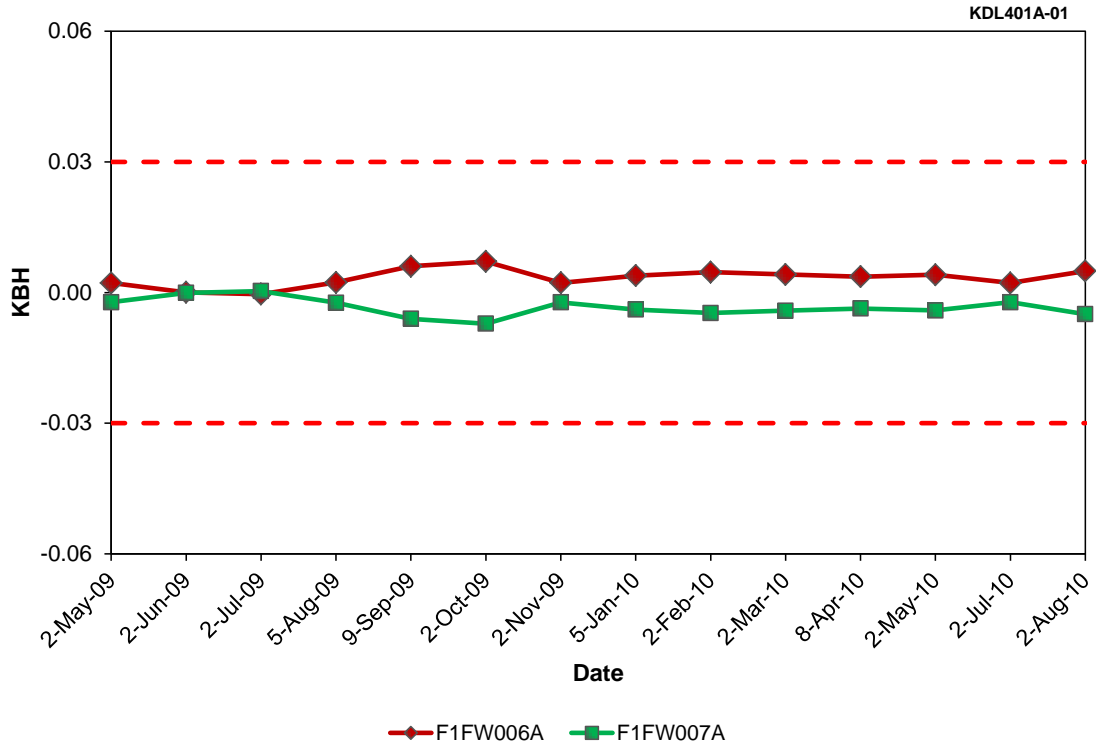
**Figure G.25 SG B STEAM FLOW Data Quality Statistics at North Anna Unit 1 (Cycle 21)**

**Table G.6 SG B STEAM FLOW Data Quality for North Anna Unit 1 (Cycle 21)**

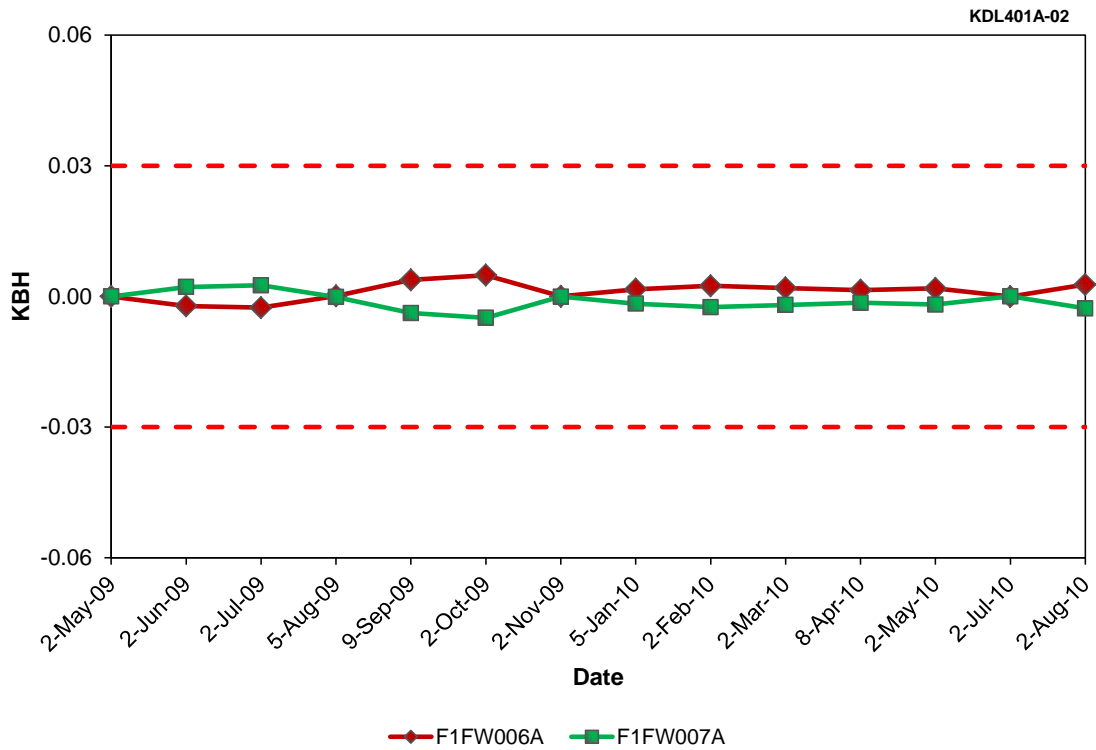
Result Type	Tag Names	
	F1MS003A	F1MS004A
Mean	4.16	4.13
Std. Dev.	0.01	0.02
Skewness	-0.10	-0.11
Kurtosis	1.00	0.98

Figure G.26 SG B FW FLOW Transient Deviation at North Anna Unit 1 (Cycle 21)



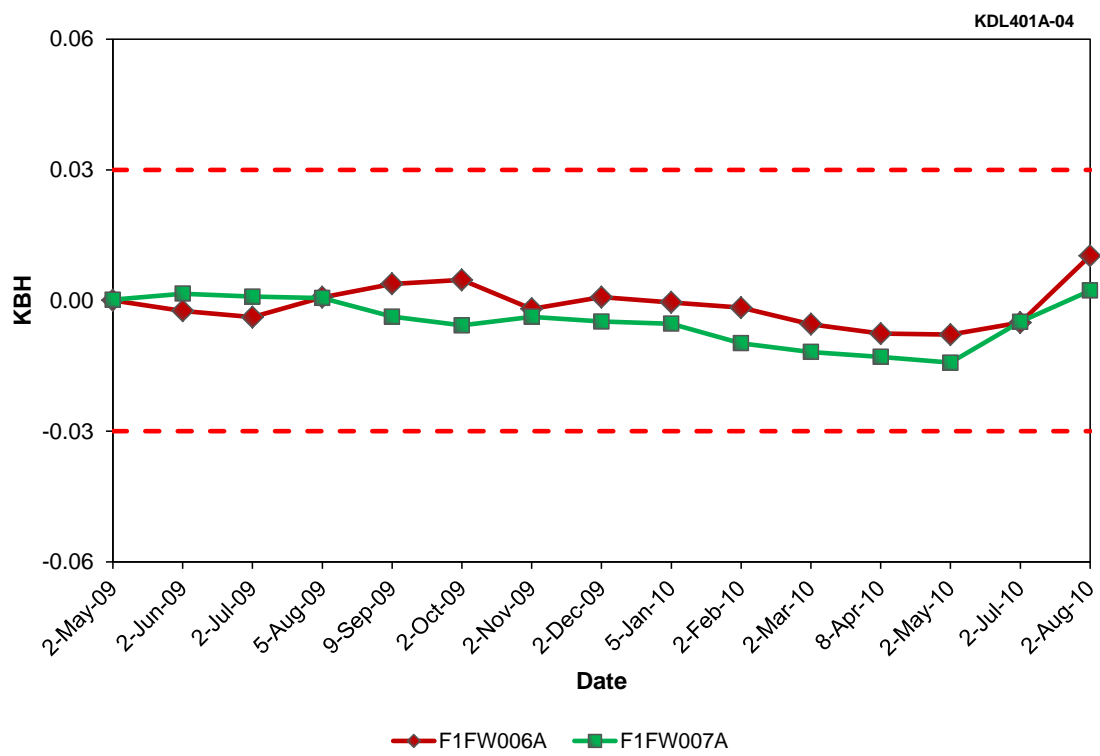


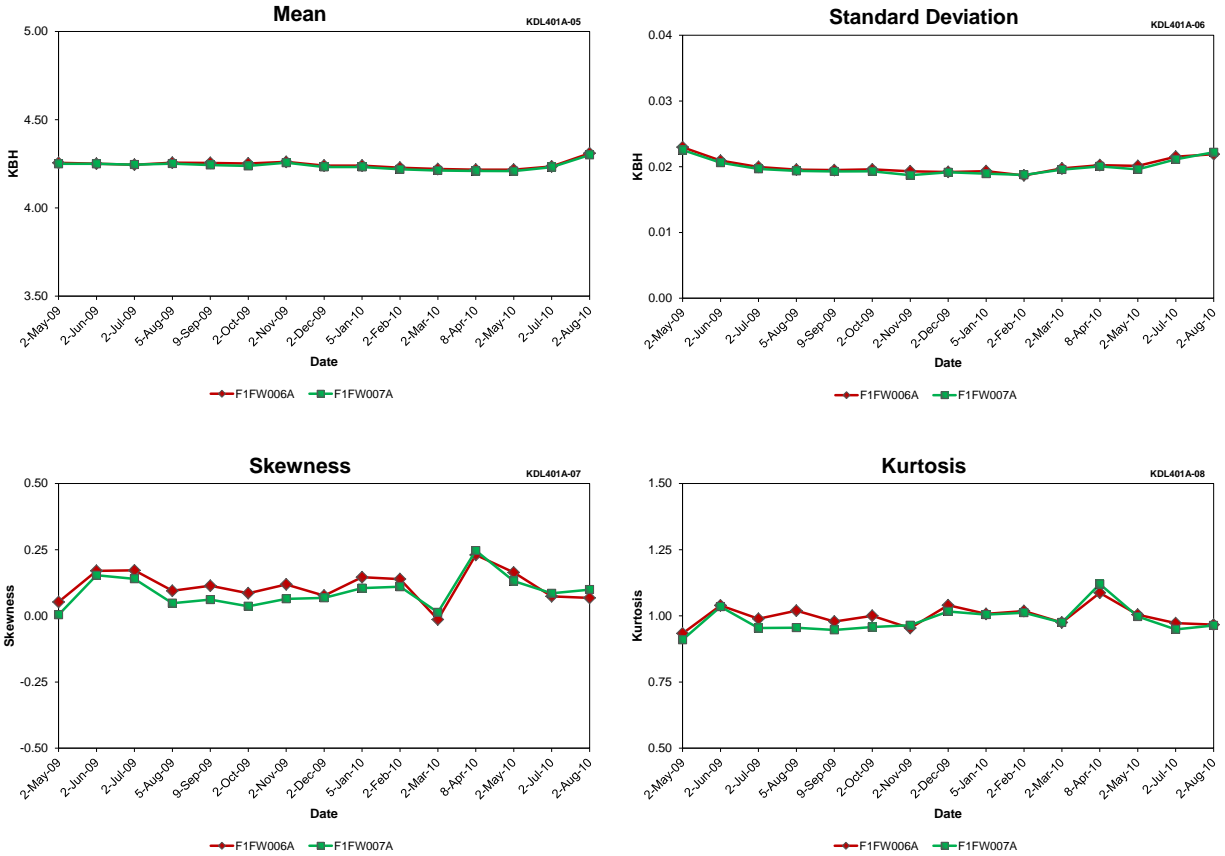
**Figure G.27 SG B FW FLOW Steady-State Deviation at North Anna Unit 1 (Cycle 21)**



**Figure G.28 SG B FW FLOW Steady-State Drift at North Anna Unit 1 (Cycle 21)**

Figure G.29 SG B FW FLOW Steady-State Residual AAKR at North Anna Unit 1 (Cycle 21)



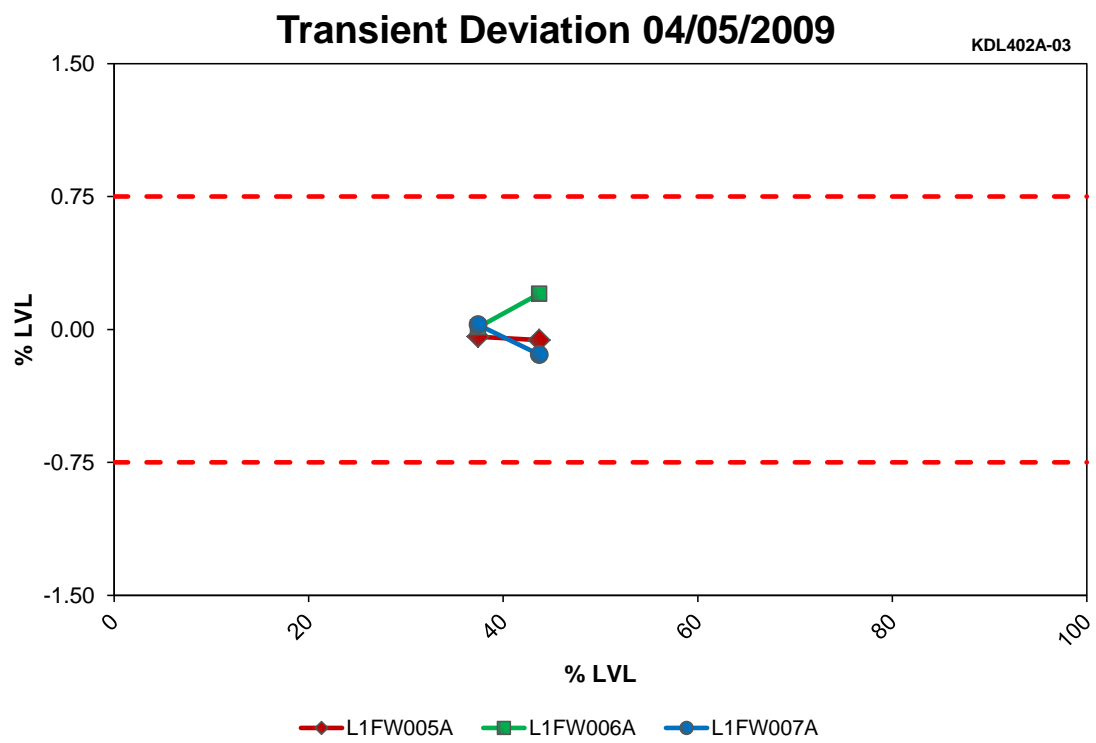


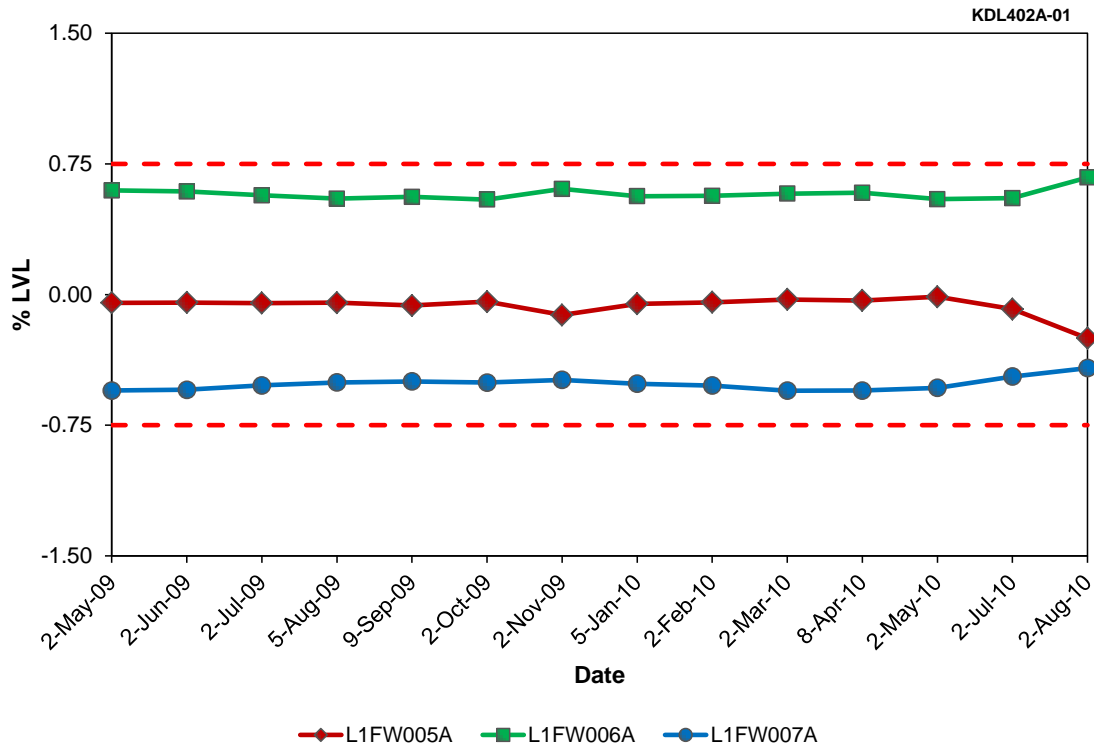
**Figure G.30 SG B FW FLOW Data Quality Statistics at North Anna Unit 1 (Cycle 21)**

**Table G.7 SG B STEAM FLOW Data Quality for North Anna Unit 1 (Cycle 21)**

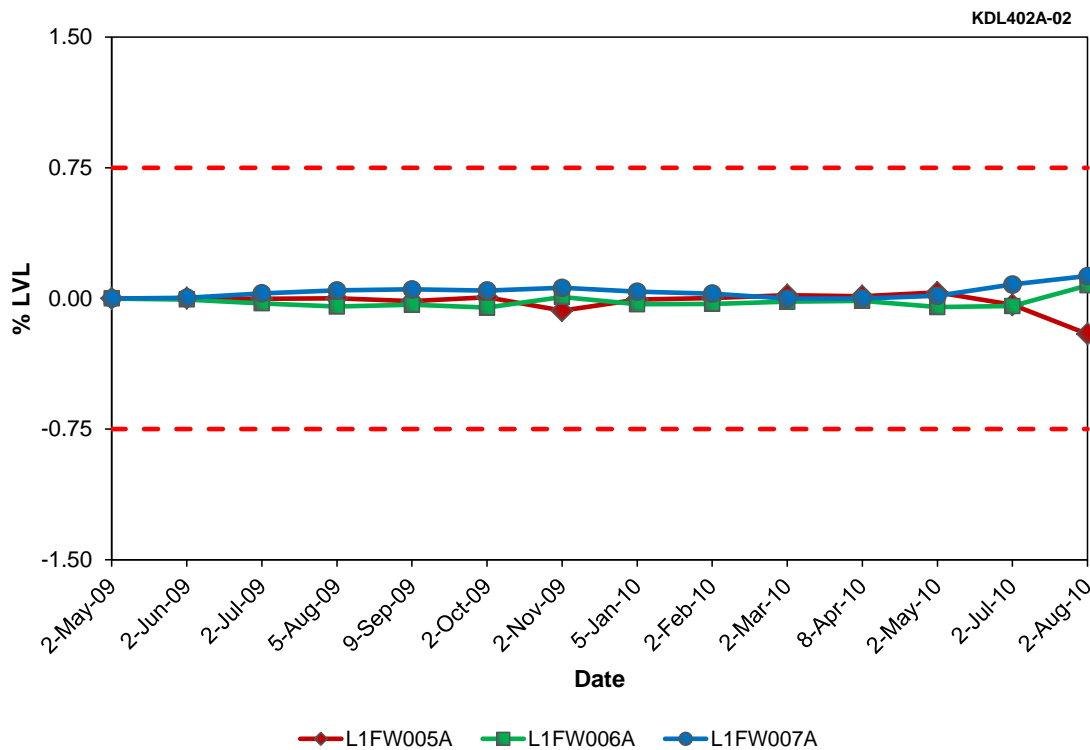
Result Type	Tag Names	
	F1FW006A	F1FW007A
Mean	4.25	4.24
Std. Dev.	0.02	0.02
Skewness	0.11	0.09
Kurtosis	1.00	0.98

Figure G.31 SG B LEVEL Transient Deviation at North Anna Unit 1 (Cycle 21)

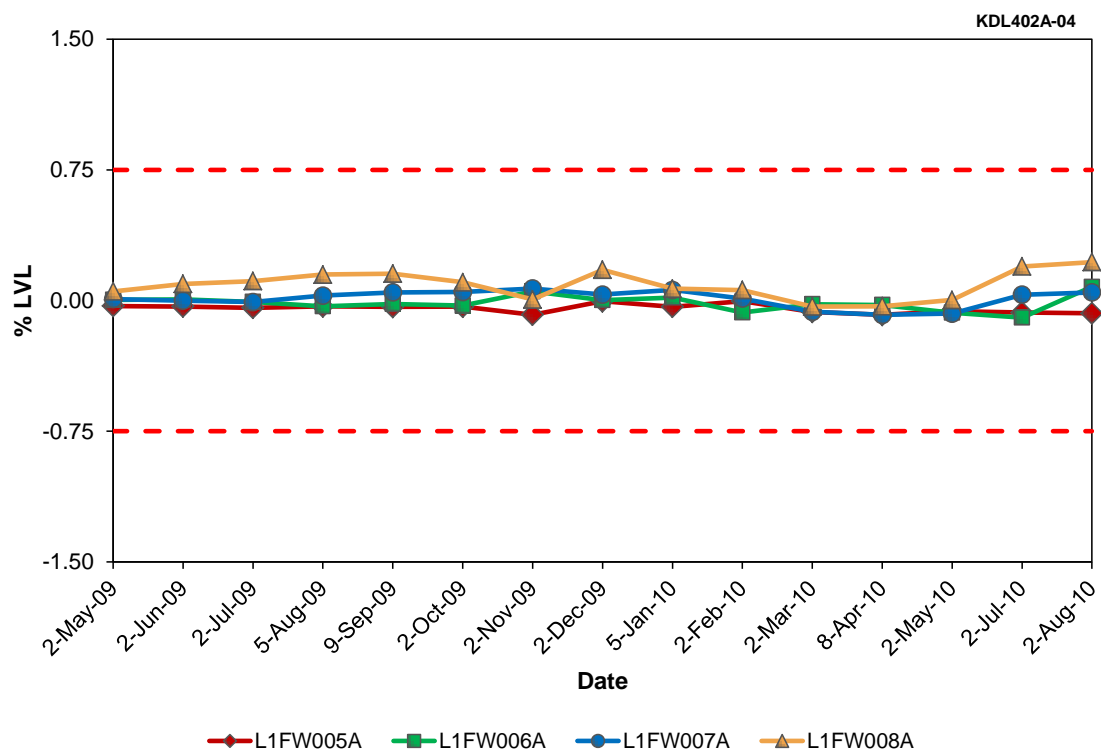




**Figure G.32 SG B LEVEL Steady-State Deviation at North Anna Unit 1 (Cycle 21)**



**Figure G.33 SG B LEVEL Steady-State Drift at North Anna Unit 1 (Cycle 21)**



**Figure G.34 SG B LEVEL Steady-State Residual AAKR at North Anna Unit 1 (Cycle 21)**



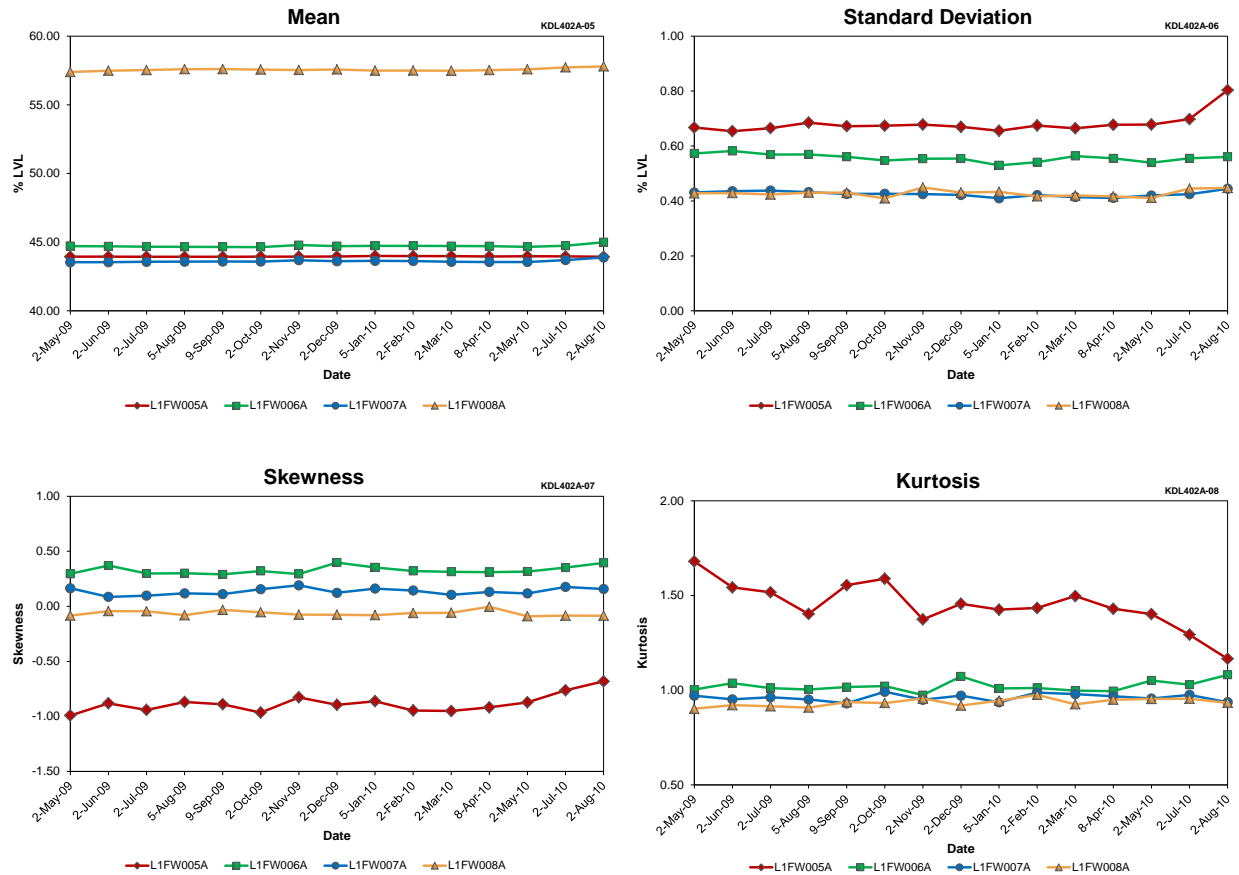
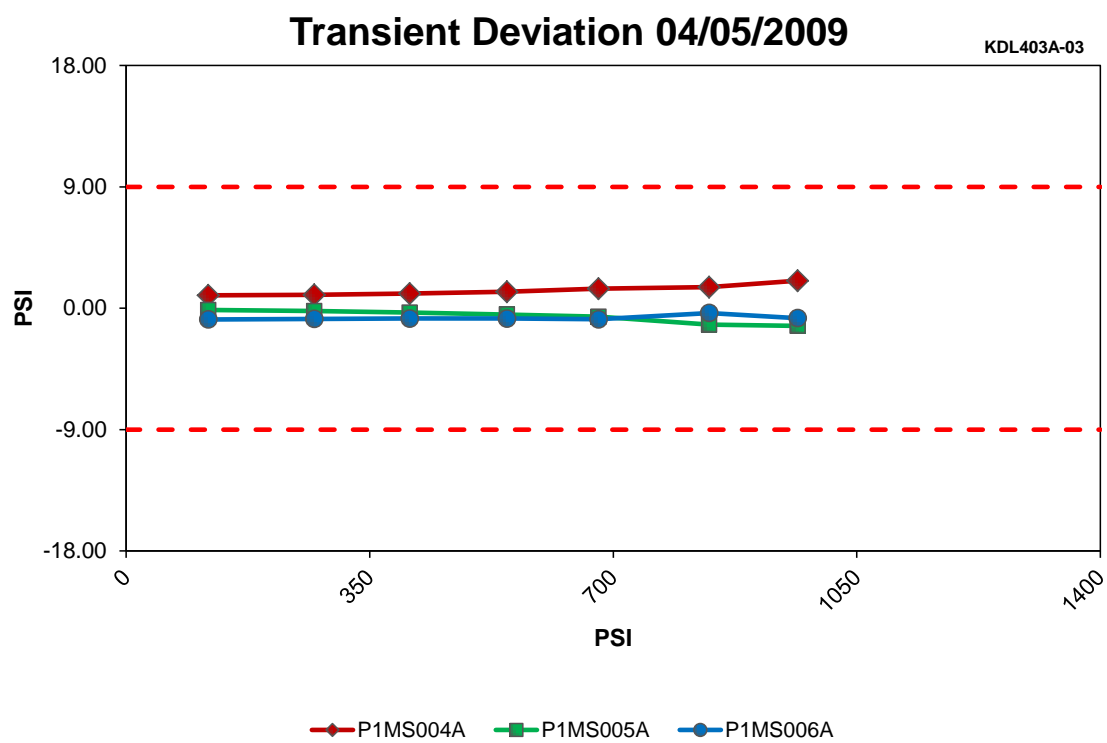


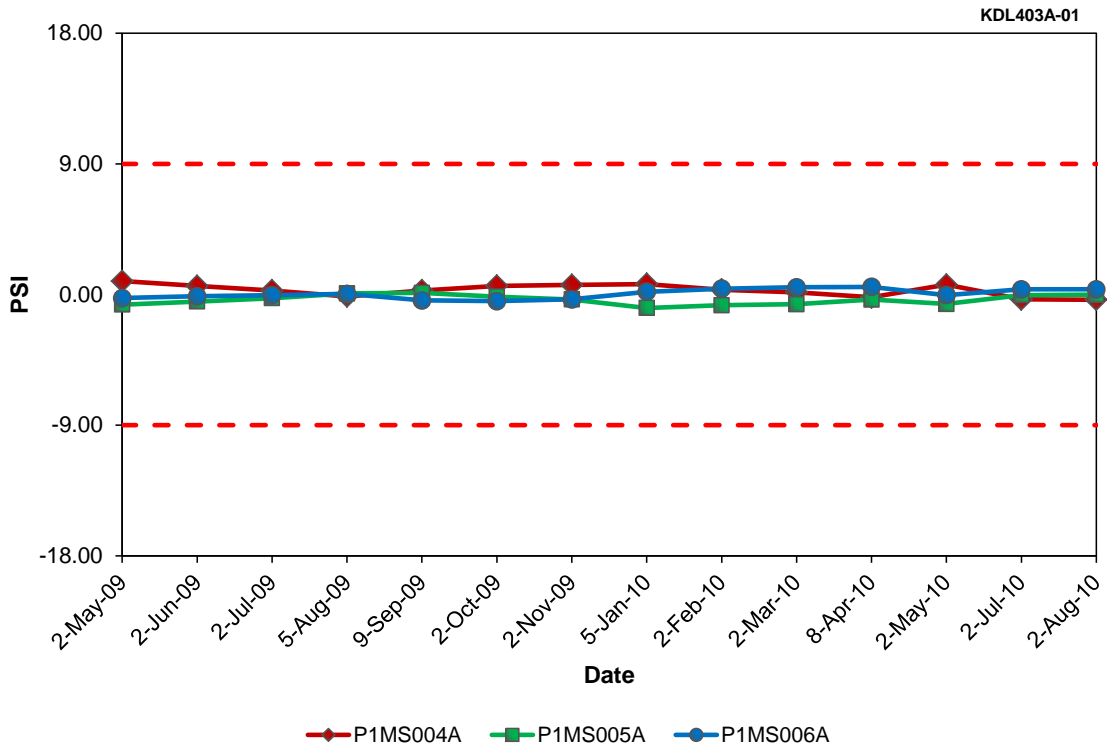
Figure G.35 SG B LEVEL Data Quality Statistics at North Anna Unit 1 (Cycle 21)

Table G.8 SG B LEVEL Data Quality for North Anna Unit 1 (Cycle 21)

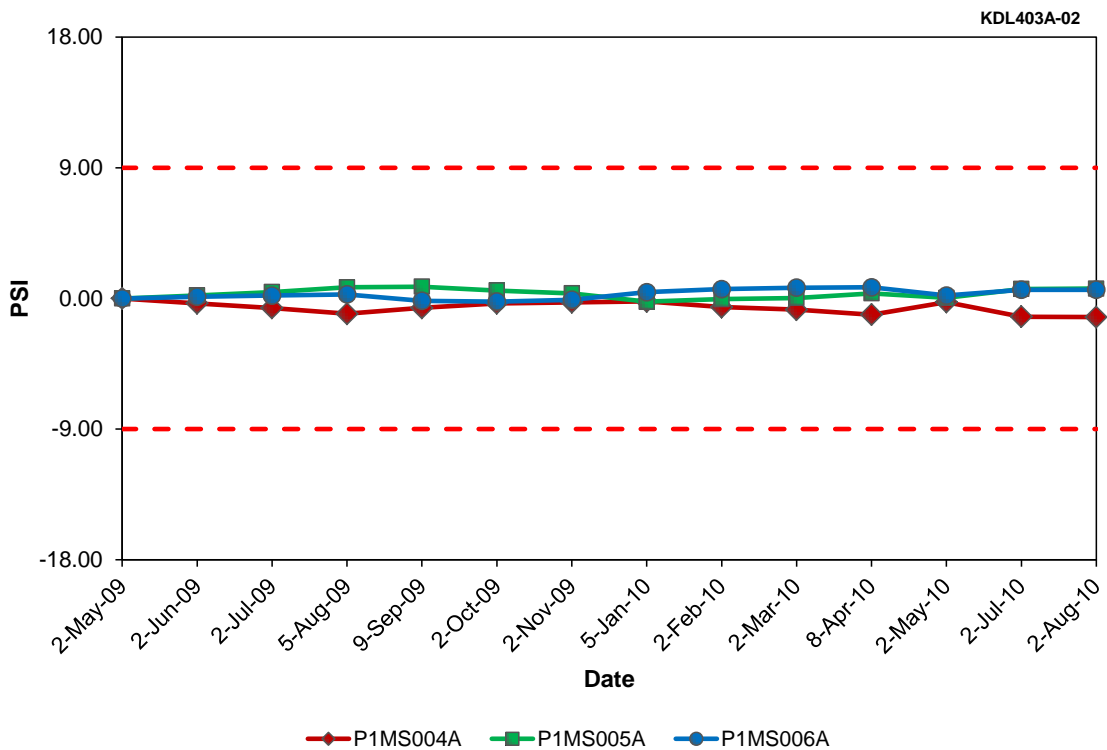
Result Type	Tag Names			
	L1FW005A	L1FW006A	L1FW007A	L1FW008A
Mean	43.96	44.72	43.62	57.56
Std. Dev.	0.68	0.56	0.43	0.43
Skewness	-0.88	0.33	0.14	-0.06
Kurtosis	1.45	1.02	0.96	0.94



**Figure G.36 SG B OUTLET PRESSURE Transient Deviation at North Anna Unit 1 (Cycle 21)**



**Figure G.37 SG B OUTLET PRESSURE Steady-State Deviation at North Anna Unit 1 (Cycle 21)**



**Figure G.38 SG B OUTLET PRESSURE Steady-State Drift at North Anna Unit 1 (Cycle 21)**

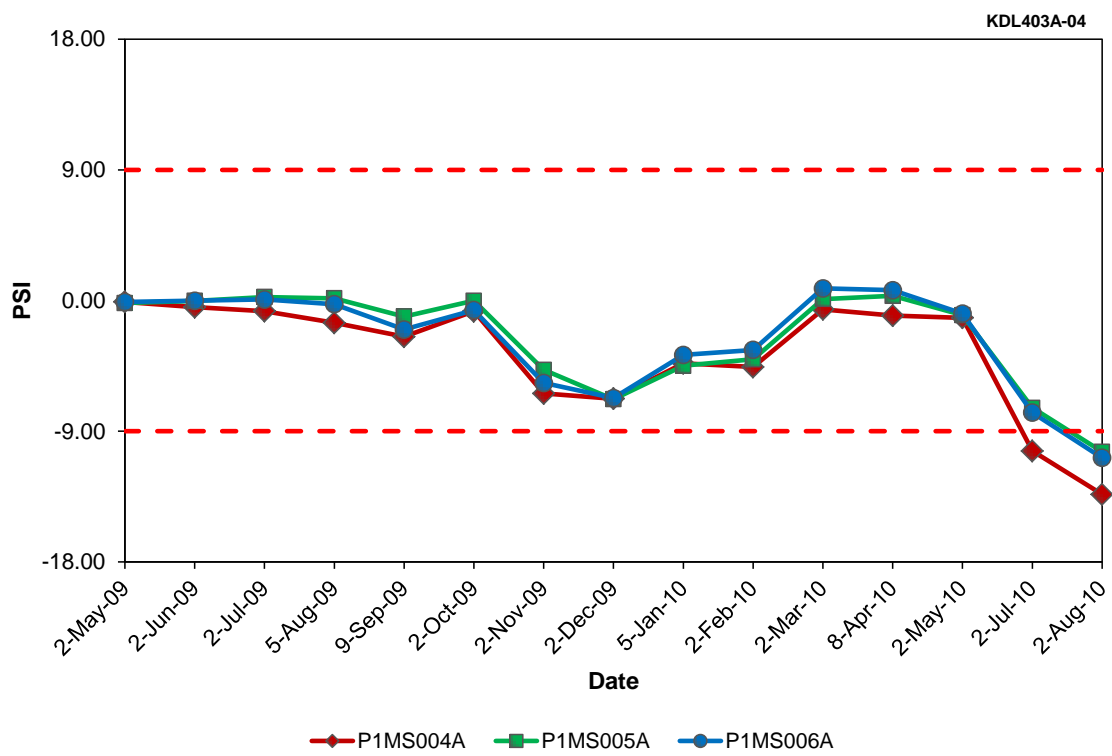
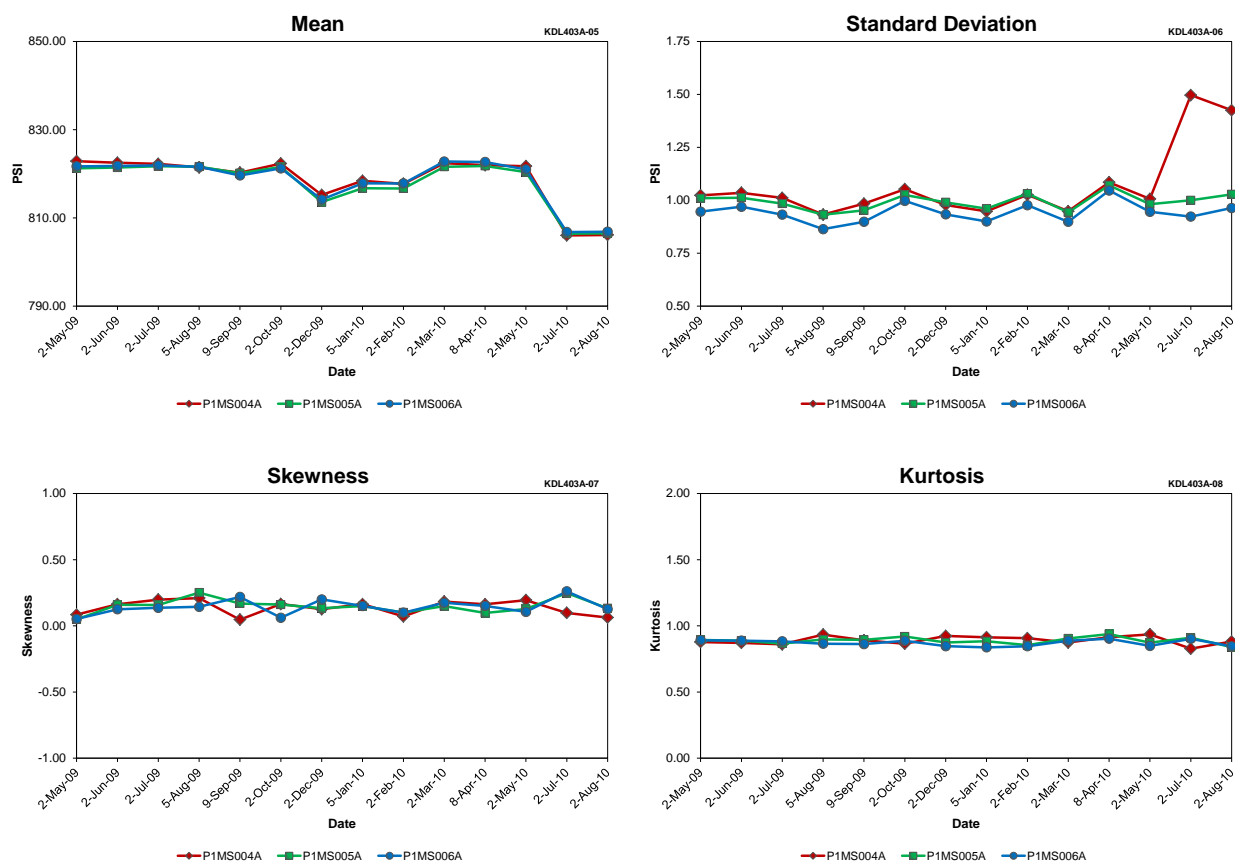


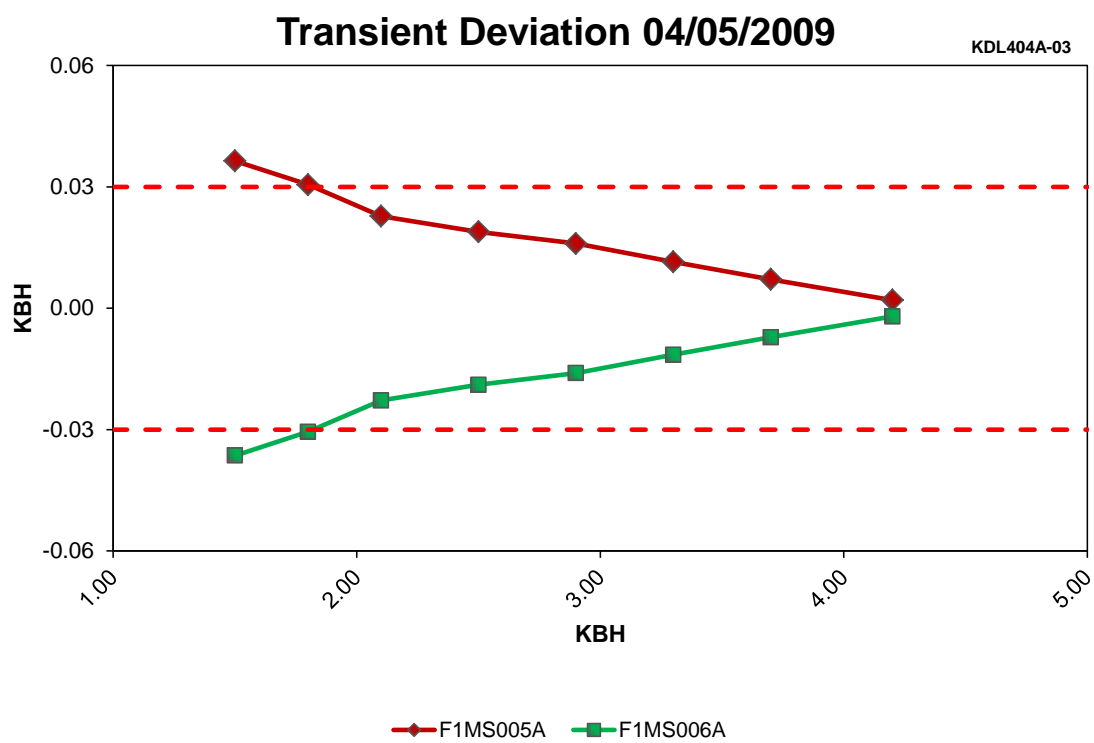
Figure G.39 SG B OUTLET PRESSURE Steady-State Residual AAKR at North Anna Unit 1 (Cycle 21)



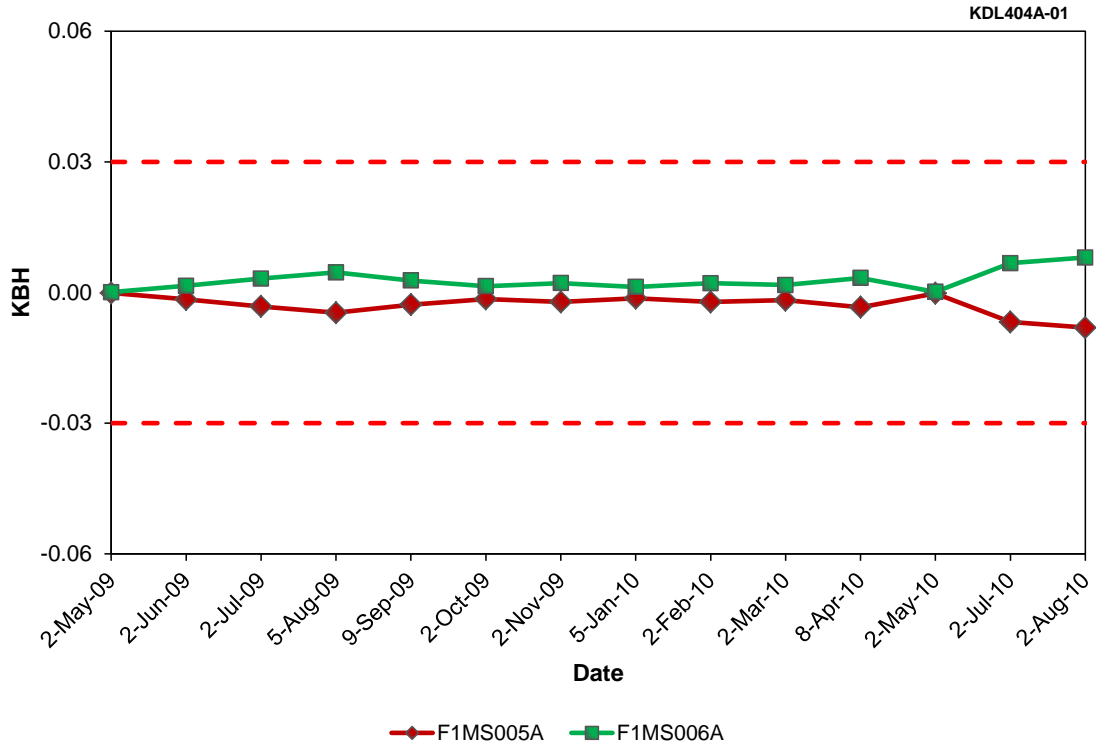
**Figure G.40 SG B OUTLET PRESSURE Data Quality Statistics at North Anna Unit 1 (Cycle 21)**

**Table G.9 SG B OUTLET PRESSURE Data Quality for North Anna Unit 1 (Cycle 21)**

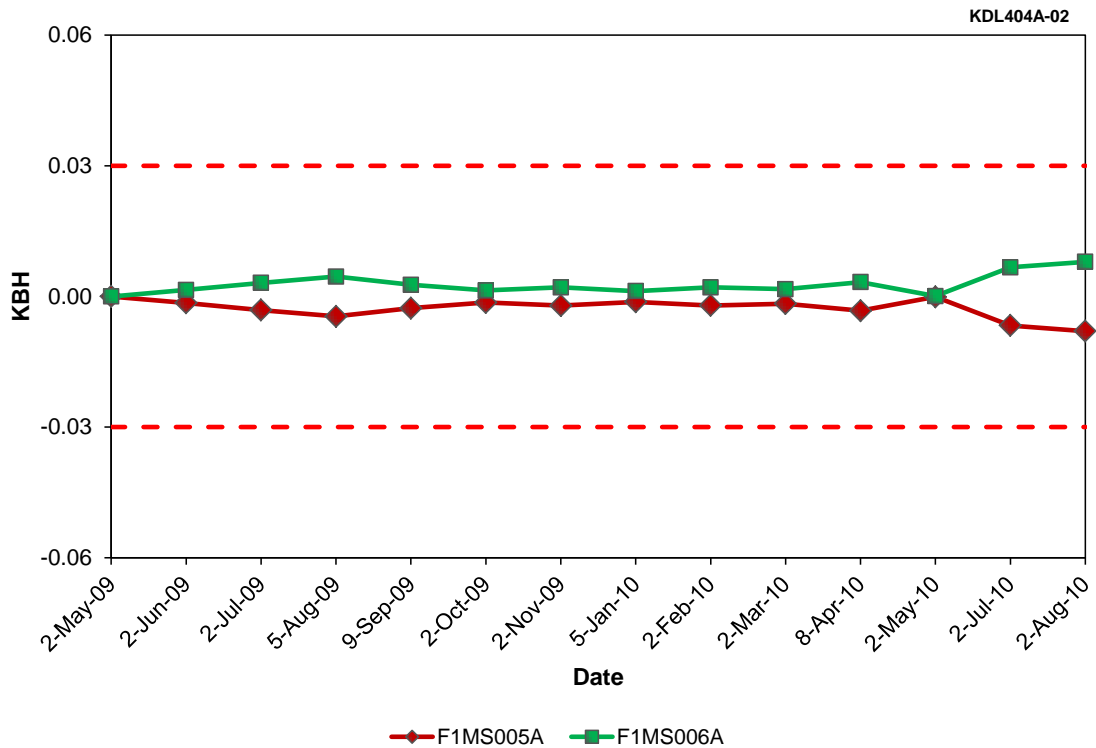
Result Type	Tag Names		
	P1MS004A	P1MS005A	P1MS006A
Mean	818.67	817.96	818.42
Std. Dev.	1.07	0.99	0.94
Skewness	0.14	0.14	0.14
Kurtosis	0.89	0.89	0.87



**Figure G.41 SG C STEAM FLOW Transient Deviation at North Anna Unit 1 (Cycle 21)**



**Figure G.41 SG C STEAM FLOW Steady-State Deviation at North Anna Unit 1 (Cycle 21)**

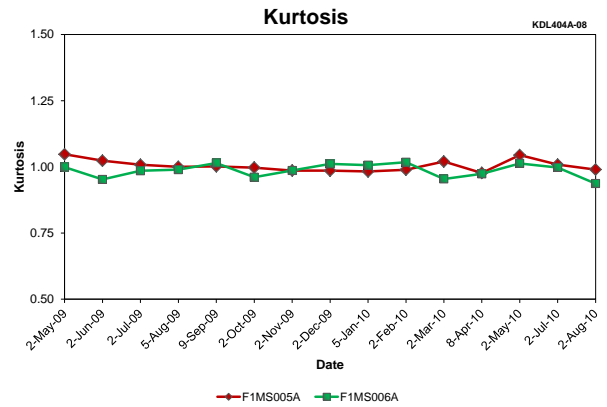
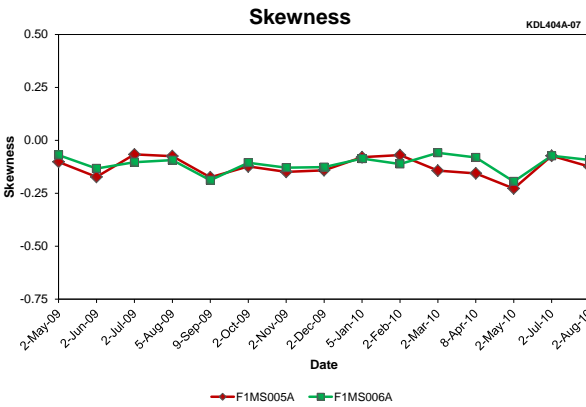
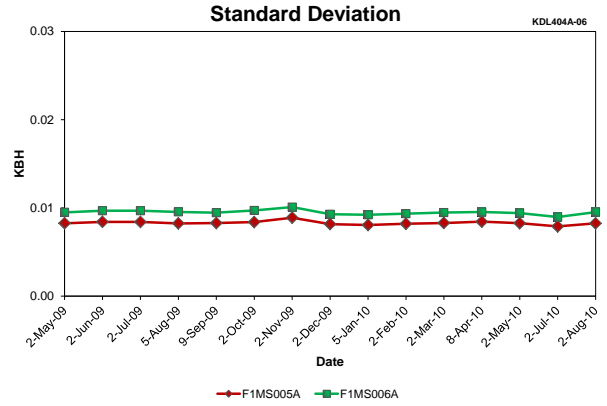
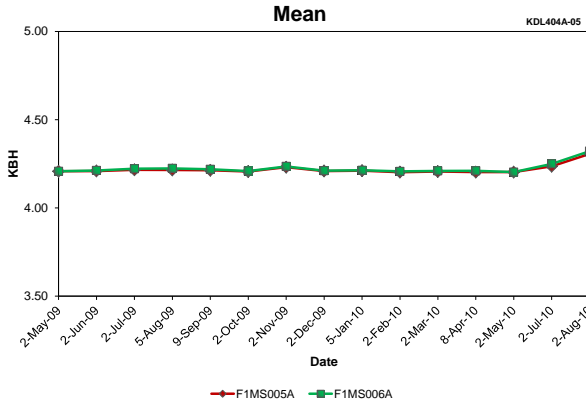


**Figure G.42 SG C STEAM FLOW Steady-State Drift at North Anna Unit 1 (Cycle 21)**



**Figure G.43 SG C STEAM FLOW Steady-State Residual AAKR at North Anna Unit 1 (Cycle 21)**

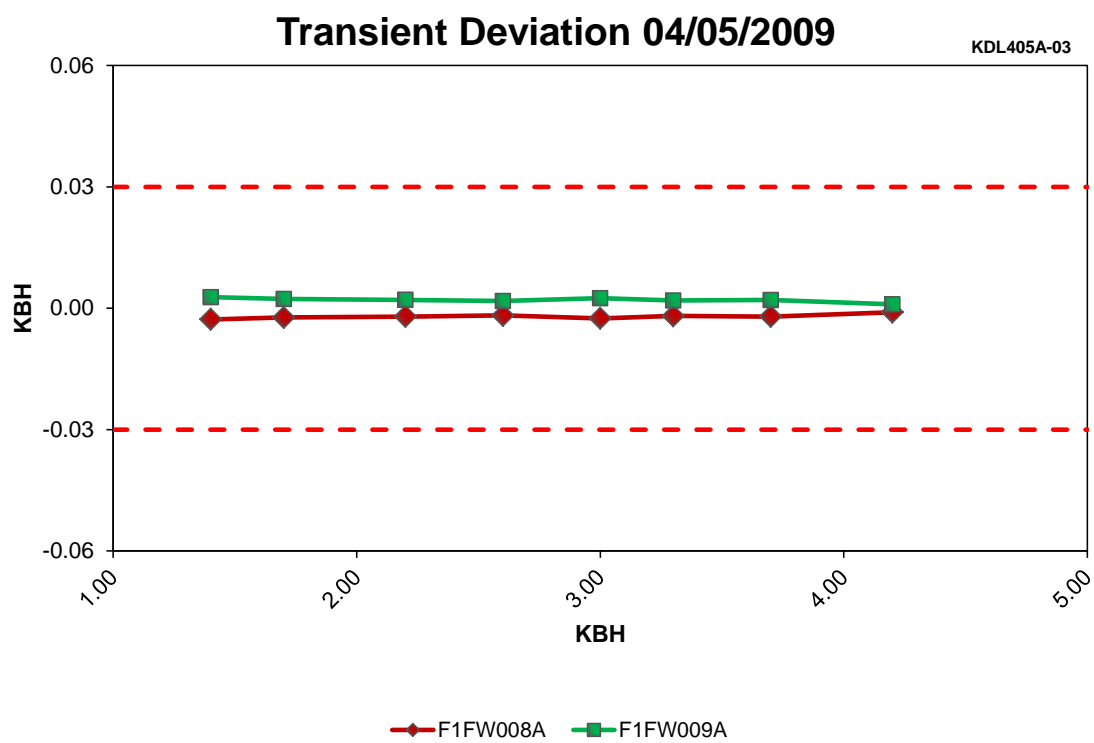




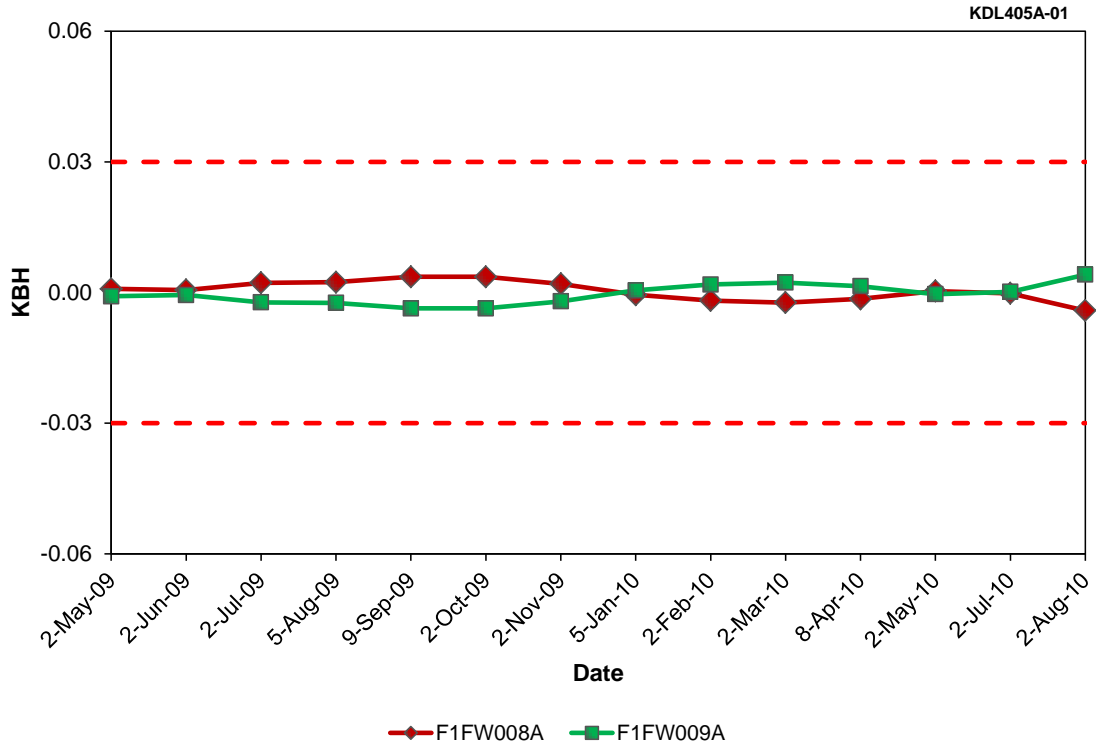
**Figure G.44 SG C STEAM FLOW Data Quality Statistics at North Anna Unit 1 (Cycle 21)**

**Table G.10 SG C STEAM FLOW Data Quality for North Anna Unit 1 (Cycle 21)**

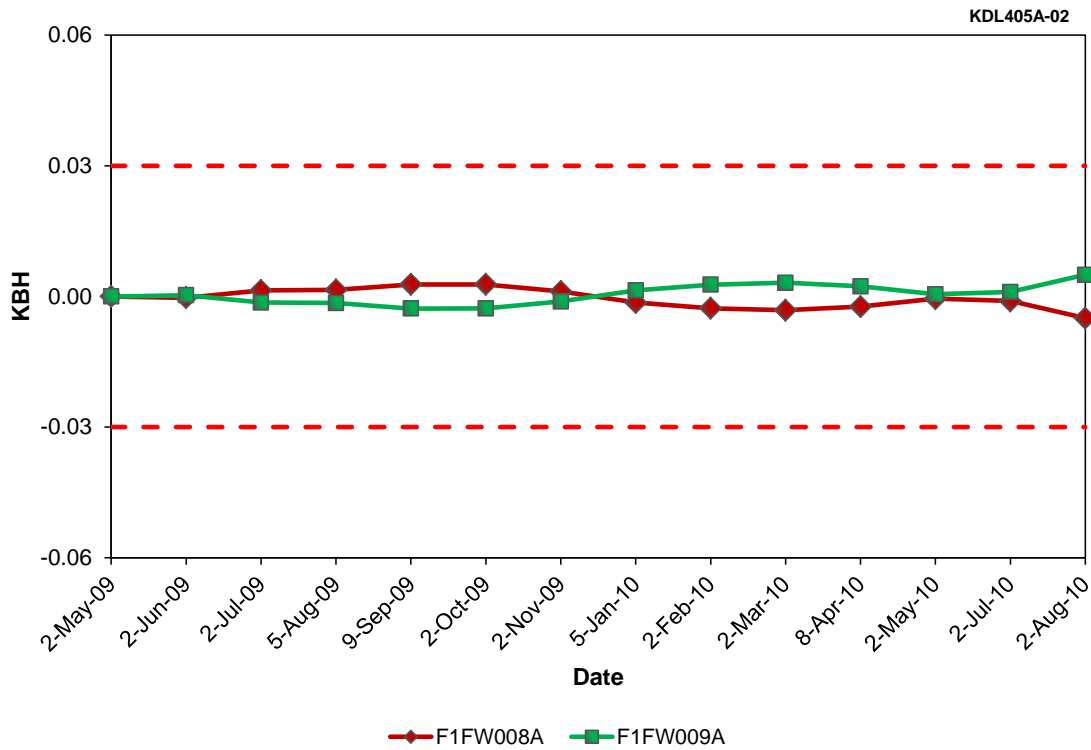
Result Type	Tag Names	
	F1MS005A	F1MS006A
Mean	4.22	4.22
Std. Dev.	0.01	0.01
Skewness	-0.12	-0.11
Kurtosis	1.00	0.99



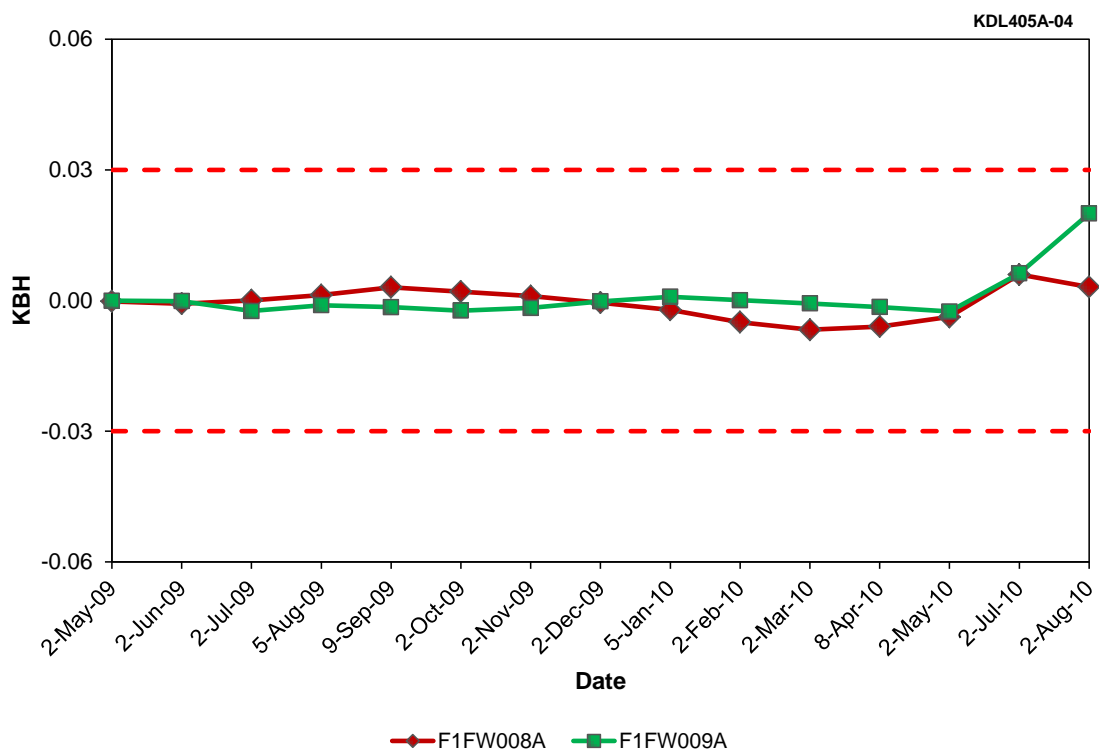
**Figure G.45 SG C FW FLOW Transient Deviation at North Anna Unit 1 (Cycle 21)**



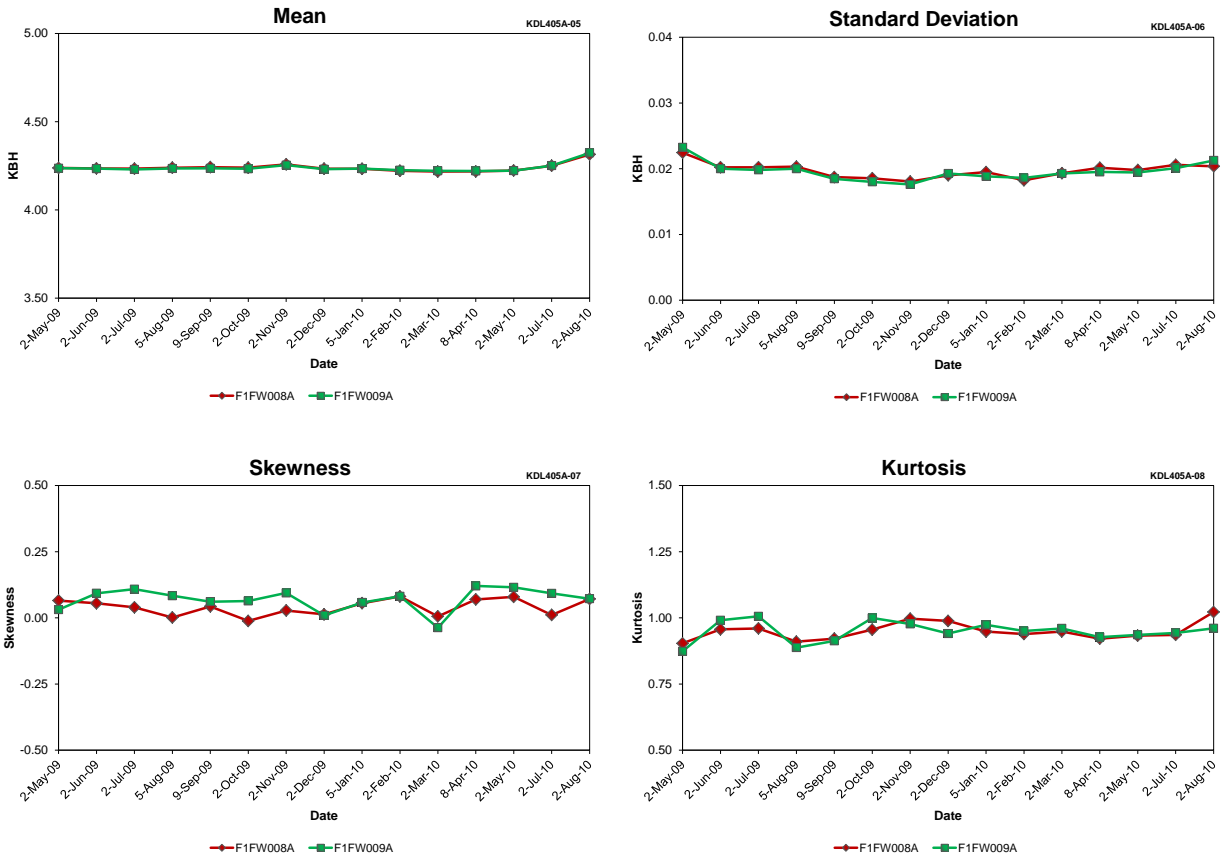
**Figure G.46 SG C FW FLOW Steady-State Deviation at North Anna Unit 1 (Cycle 21)**



**Figure G.47 SG C FW FLOW Steady-State Drift at North Anna Unit 1 (Cycle 21)**



**Figure G.48 SG C FW FLOW Steady-State Residual AAKR at North Anna Unit 1 (Cycle 21)**



**Figure G.49 SG C FW FLOW Data Quality Statistics at North Anna Unit 1 (Cycle 21)**

**Table G.11 SG C FW FLOW Data Quality for North Anna Unit 1 (Cycle 21)**

Result Type	Tag Names	
	F1FW008A	F1FW009A
Mean	4.24	4.24
Std. Dev.	0.02	0.02
Skewness	0.04	0.07
Kurtosis	0.95	0.95

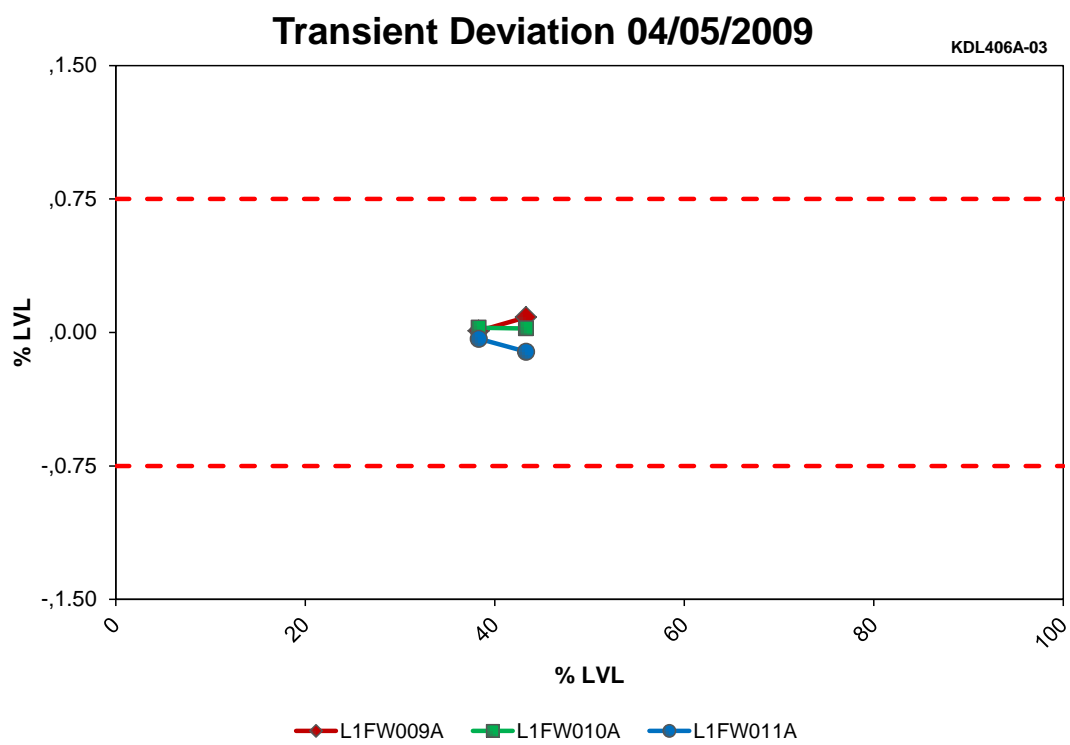
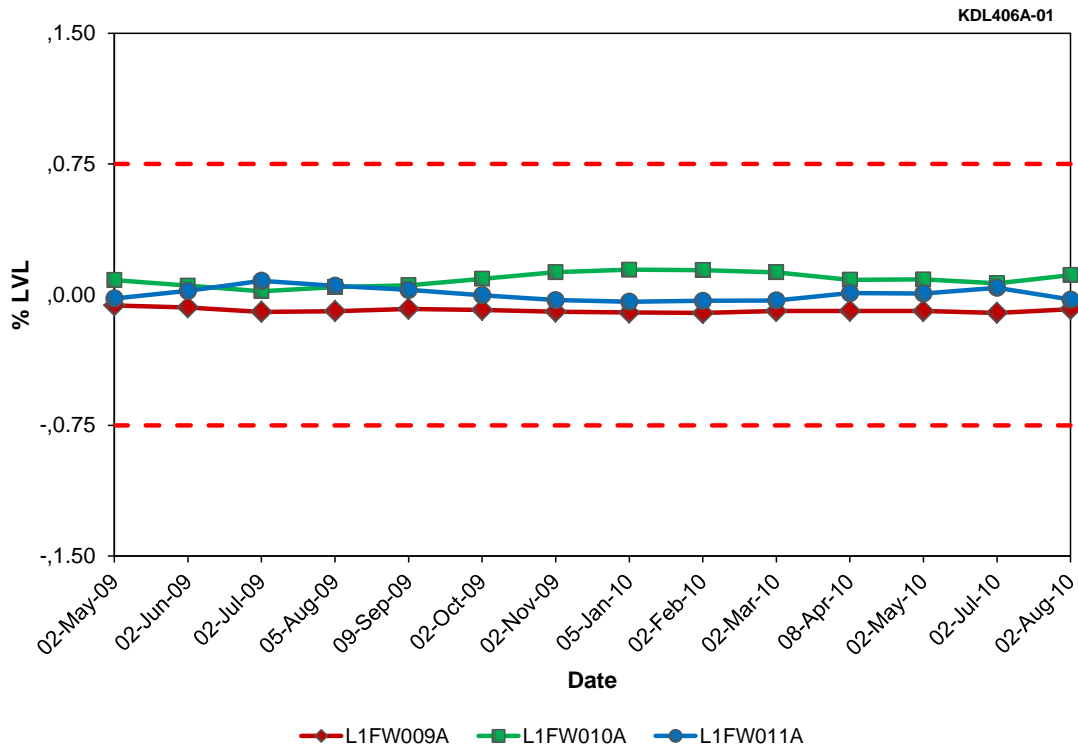
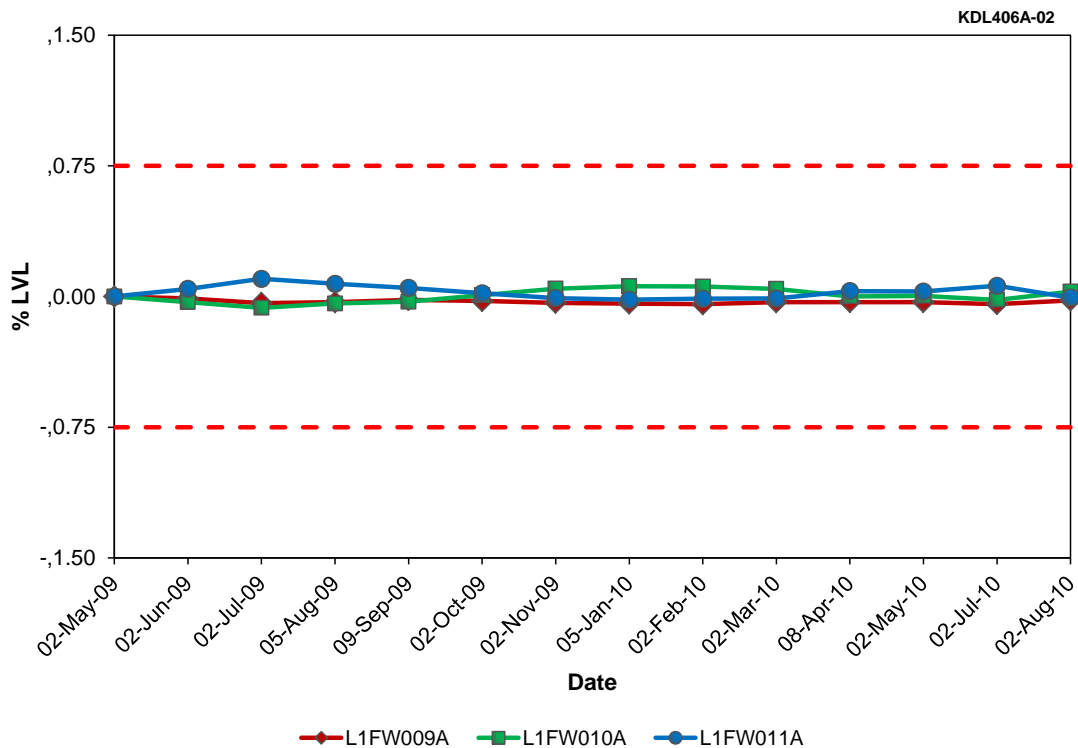


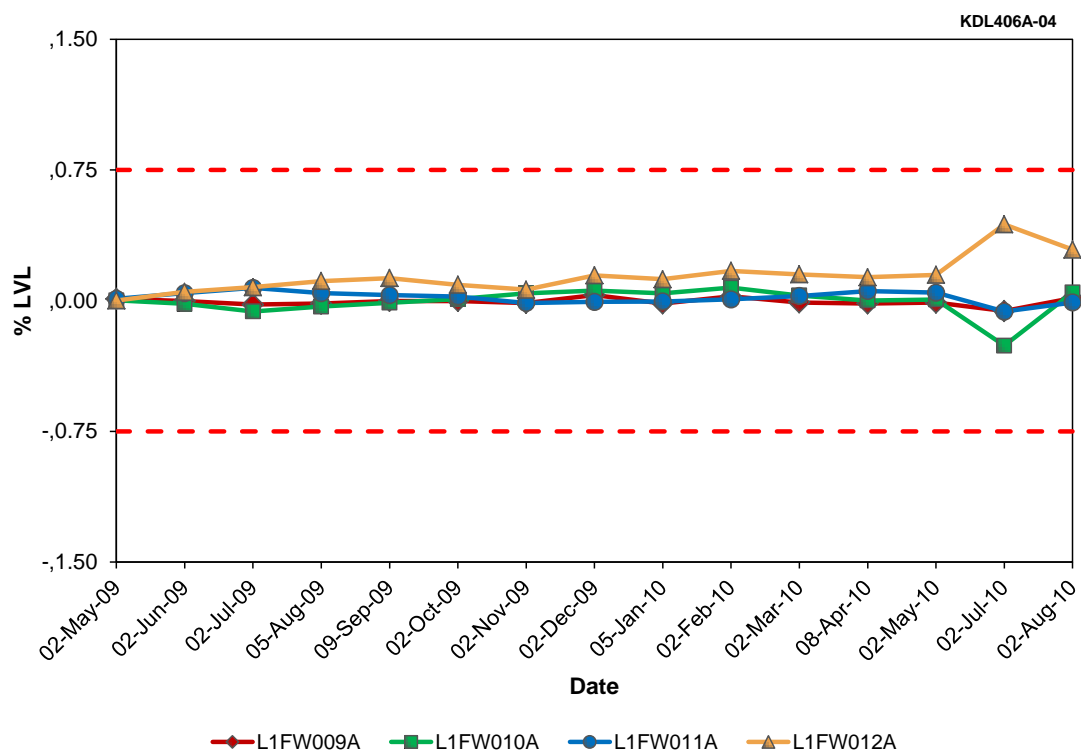
Figure G.61 SG C LEVEL Transient Deviation at North Anna Unit 1 (Cycle 21)



**Figure G.62 SG C LEVEL Steady-State Deviation at North Anna Unit 1 (Cycle 21)**

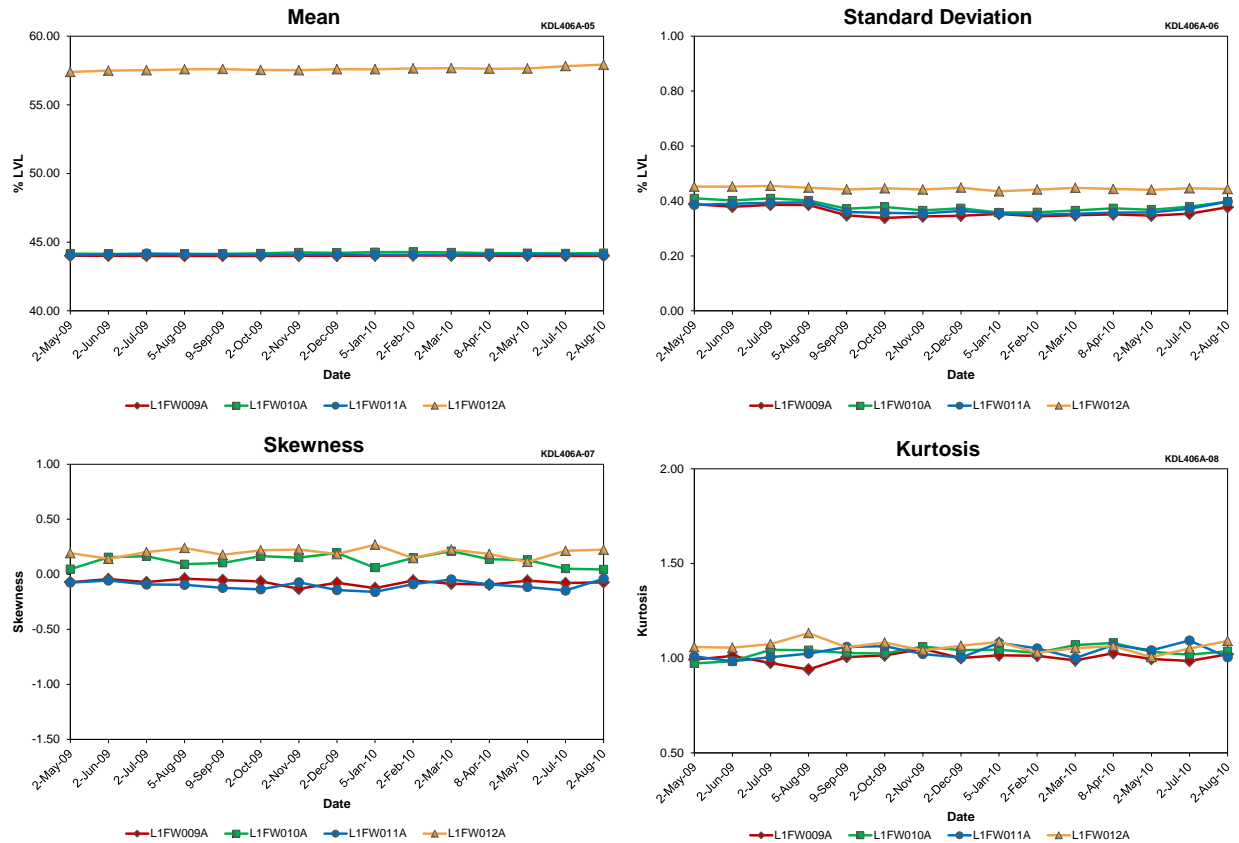


**Figure G.63 SG C LEVEL Steady-State Drift at North Anna Unit 1 (Cycle 21)**



**Figure G.64 SG C LEVEL Steady-State Residual AAKR at North Anna Unit 1 (Cycle 21)**

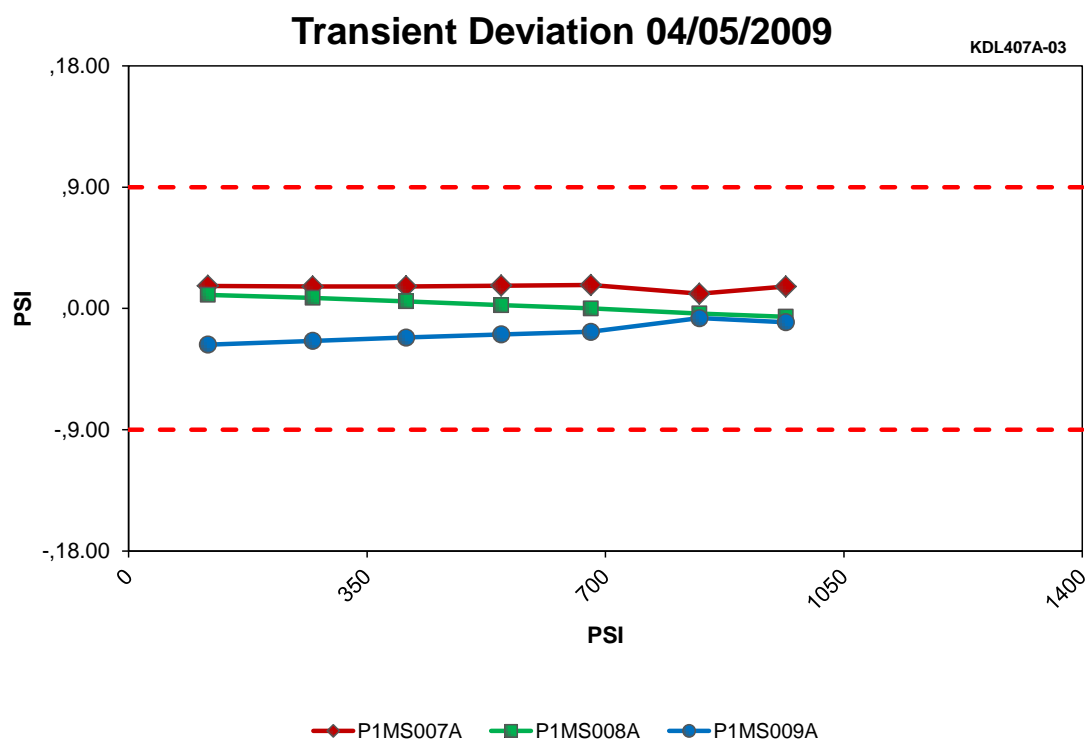




**Figure G.65 SG C LEVEL Data Quality Statistics at North Anna Unit 1 (Cycle 21)**

Result Type	Tag Names			
	L1FW009A	L1FW010A	L1FW011A	L1FW012A
Mean	44.01	44.20	44.10	57.61
Std. Dev.	0.36	0.38	0.37	0.45
Skewness	-0.07	0.12	-0.10	0.20
Kurtosis	1.00	1.03	1.03	1.06

**Table G.12 SG C LEVEL Data Quality for North Anna Unit 1 (Cycle 21)**



**Figure G.66 SG C OUTLET PRESSURE Transient Deviation at North Anna Unit 1 (Cycle 21)**

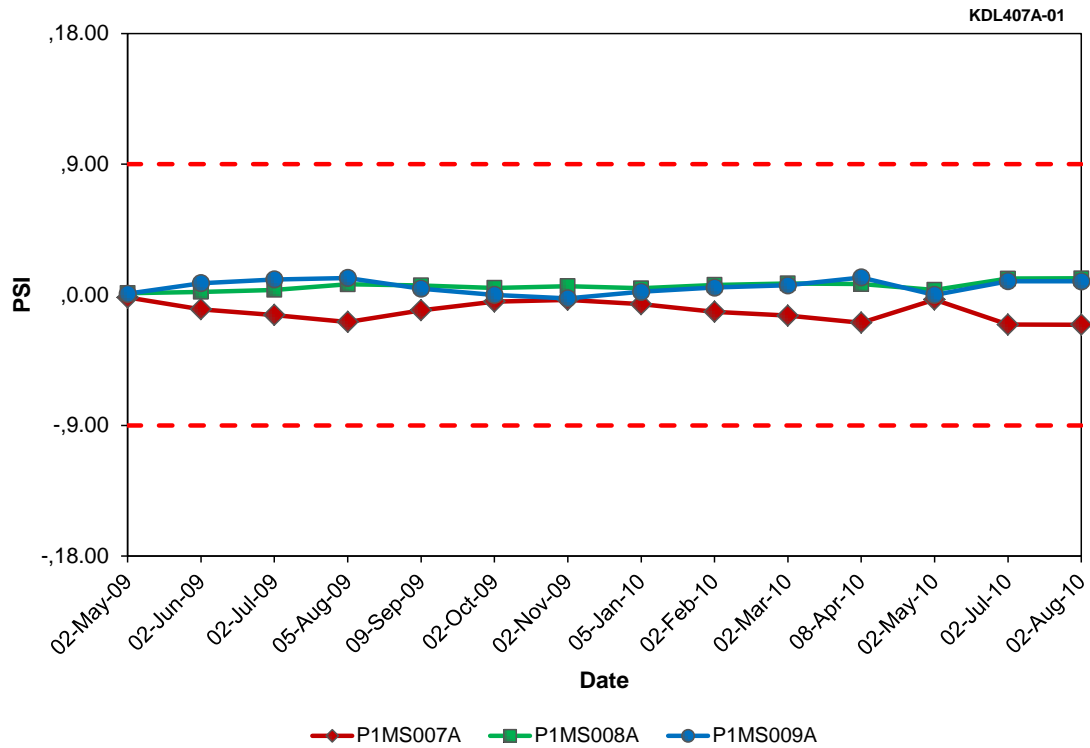


Figure G.67 SG C OUTLET PRESSURE Steady State Deviation at North Anna Unit 1 (Cycle 21)

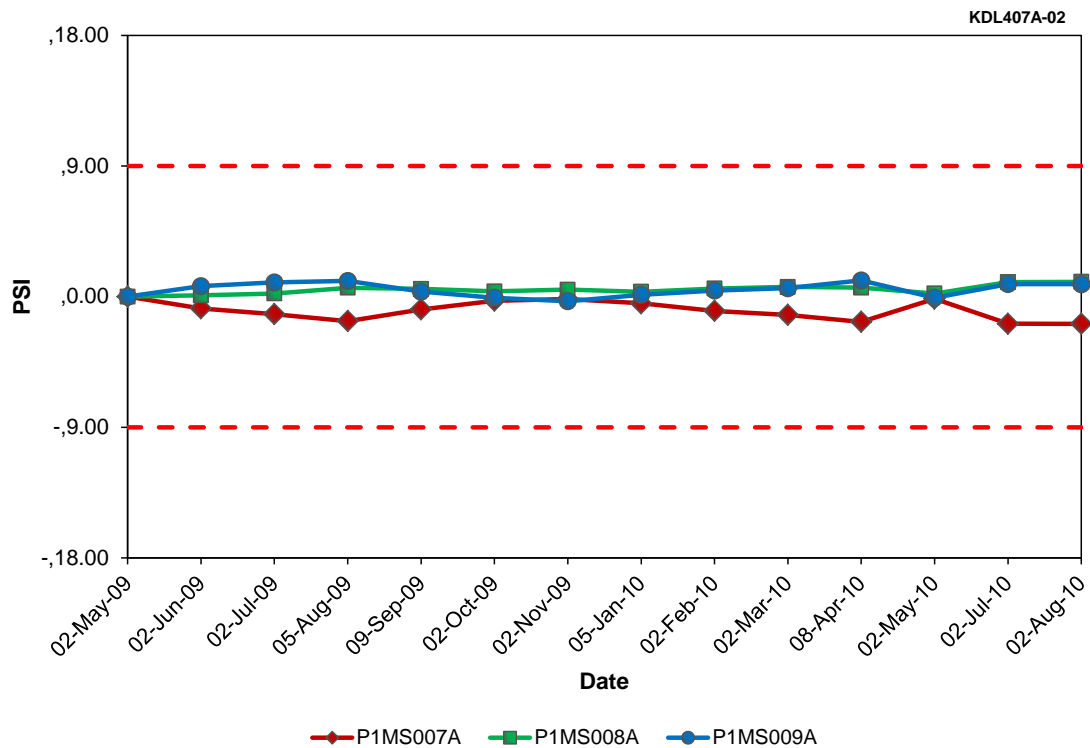


Figure G.68 SG C OUTLET PRESSURE Steady State Drift at North Anna Unit 1 (Cycle 21)

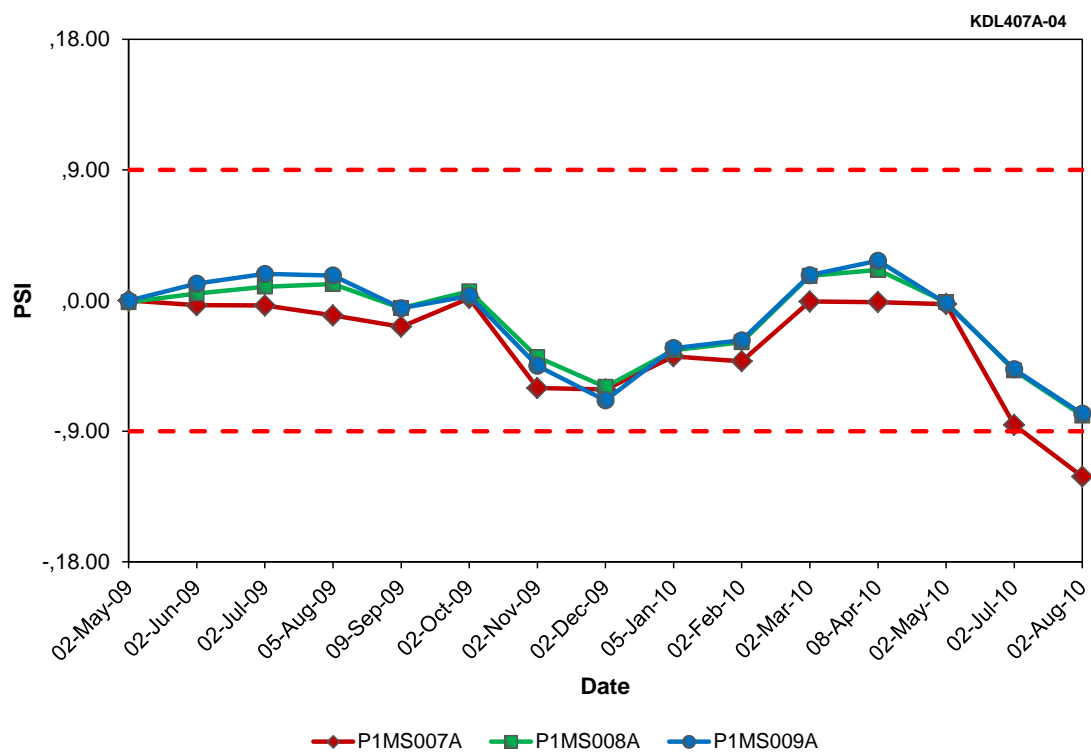
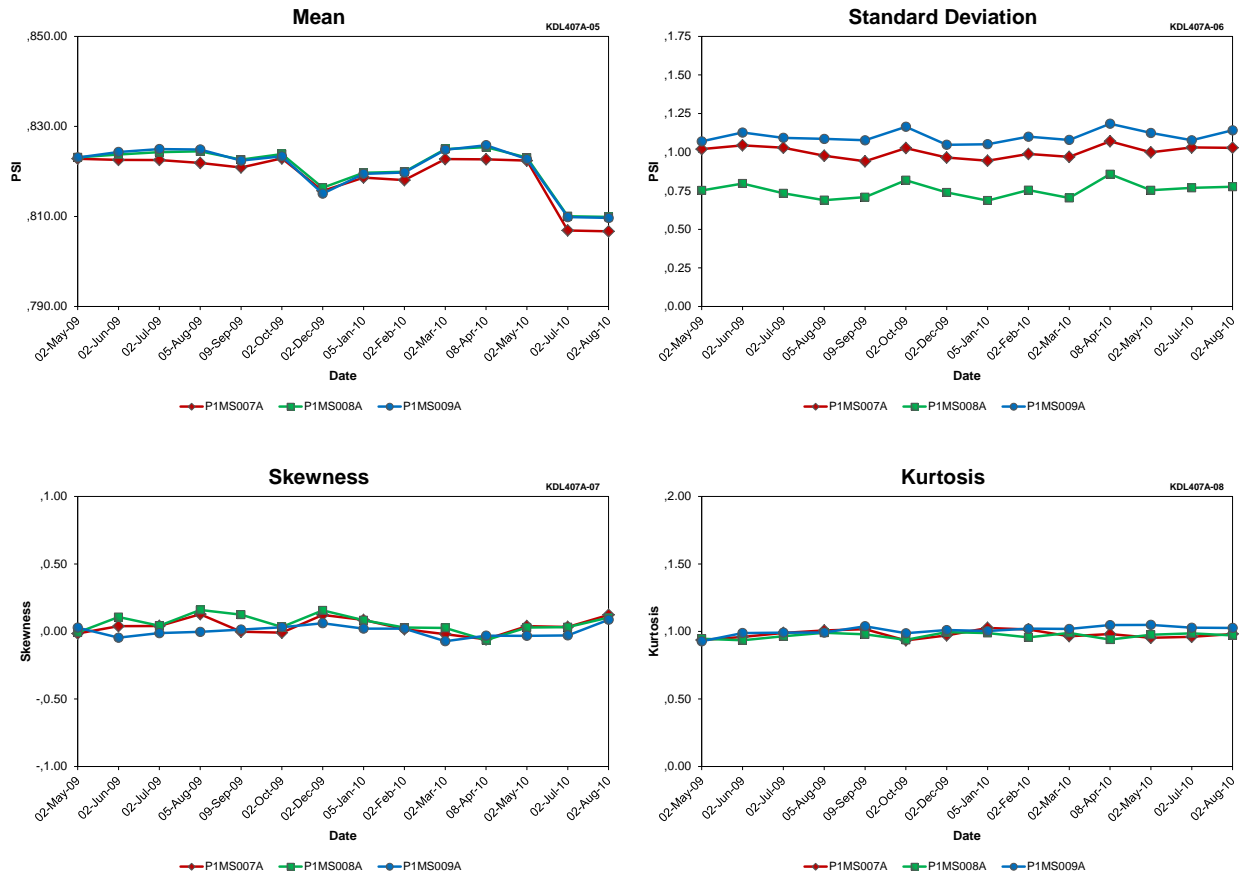


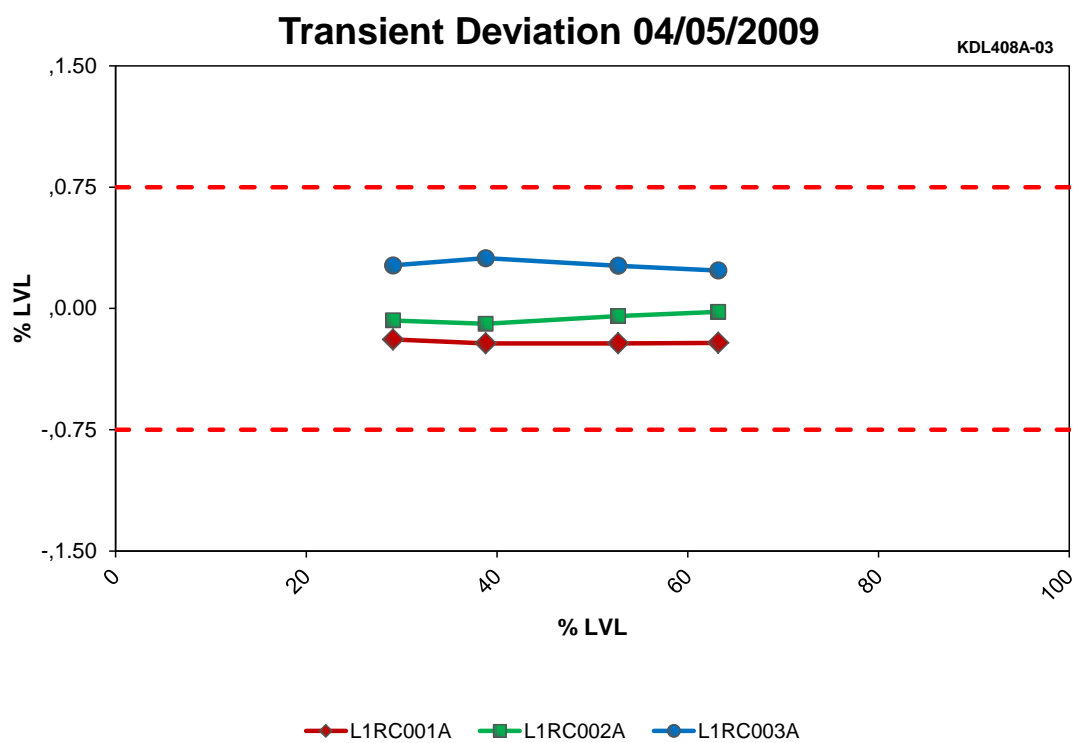
Figure G.69 SG C OUTLET PRESSURE Steady-State Residual AAKR at North Anna Unit 1 (Cycle 21)



**Figure G.70 SG C OUTLET PRESSURE Data Quality Statistics at North Anna Unit 1 (Cycle 21)**

**Table G.13 SG C OUTLET PRESSURE Data Quality for North Anna Unit 1 (Cycle 21)**

Result Type	Tag Names		
	P1MS007A	P1MS008A	P1MS009A
Mean	819.10	820.82	820.73
Std. Dev.	1.00	0.75	1.10
Skewness	0.04	0.04	0.04
Kurtosis	0.98	0.97	1.01



**Figure G.71 PRESSURIZER LEVEL Transient Deviation at North Anna Unit 1 (Cycle 21)**

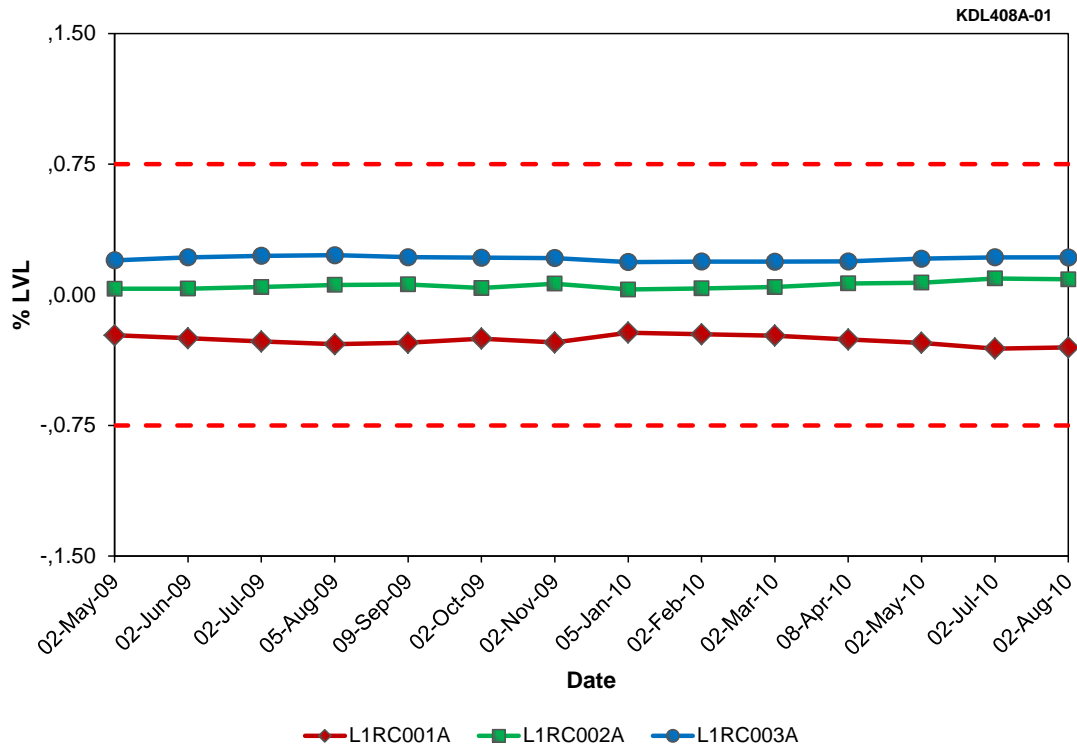


Figure G.72 PRESSURIZER LEVEL Steady-State Deviation at North Anna Unit 1 (Cycle 21)

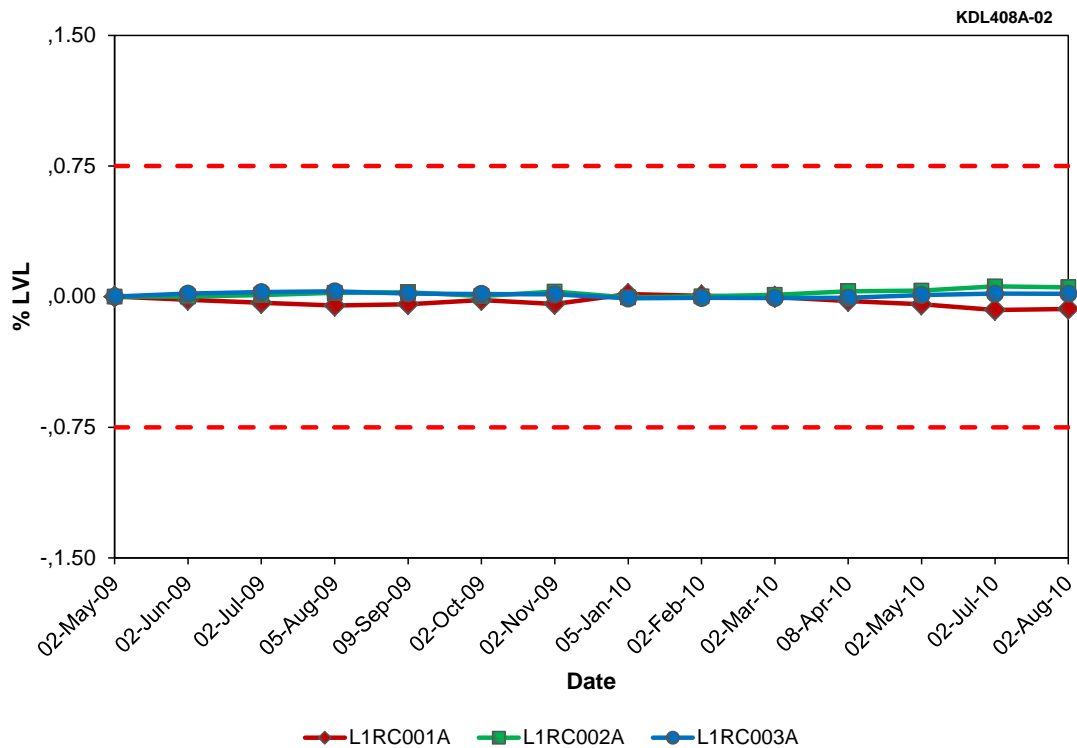


Figure G.73 PRESSURIZER LEVEL Steady-State Drift at North Anna Unit 1 (Cycle 21)

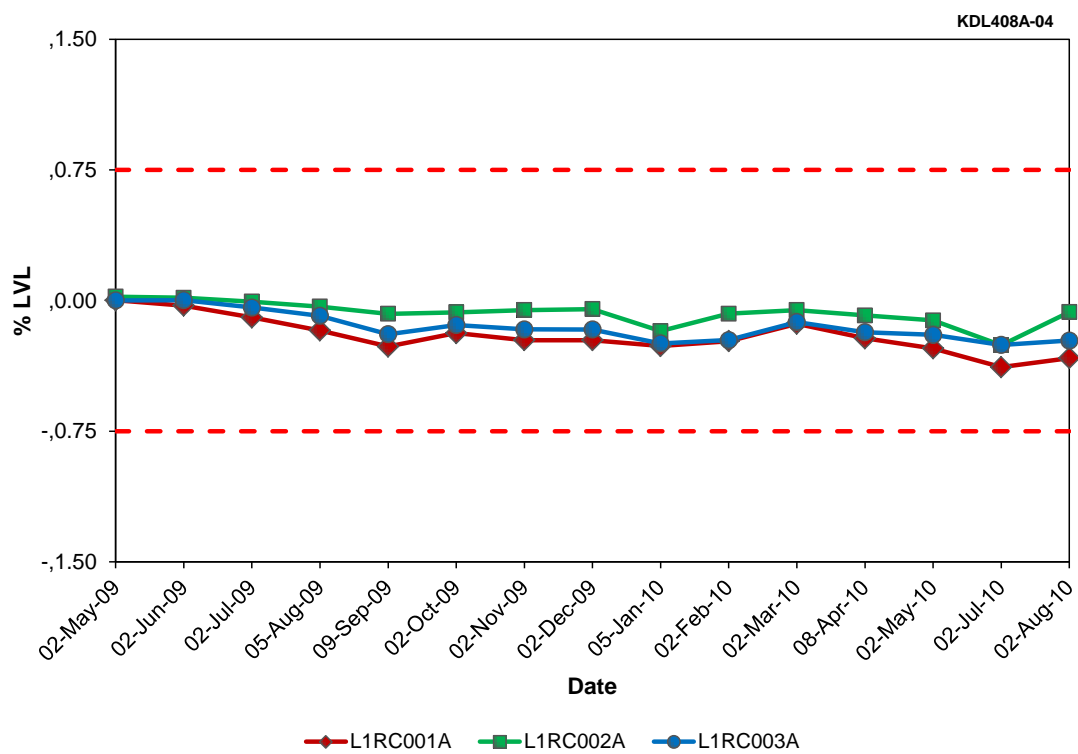
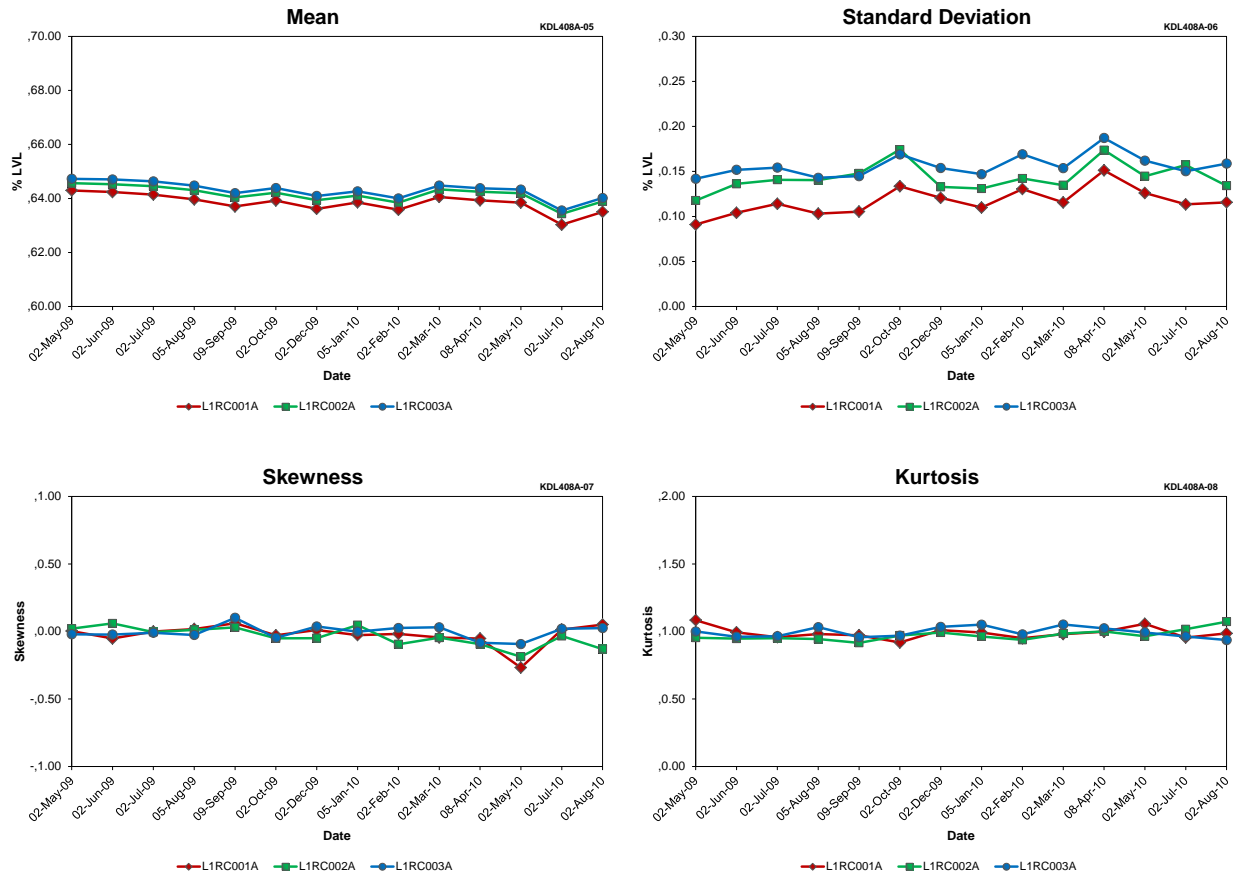


Figure G.74 PRESSURIZER LEVEL Steady-State Residual AAKR at North Anna Unit 1 (Cycle 21)

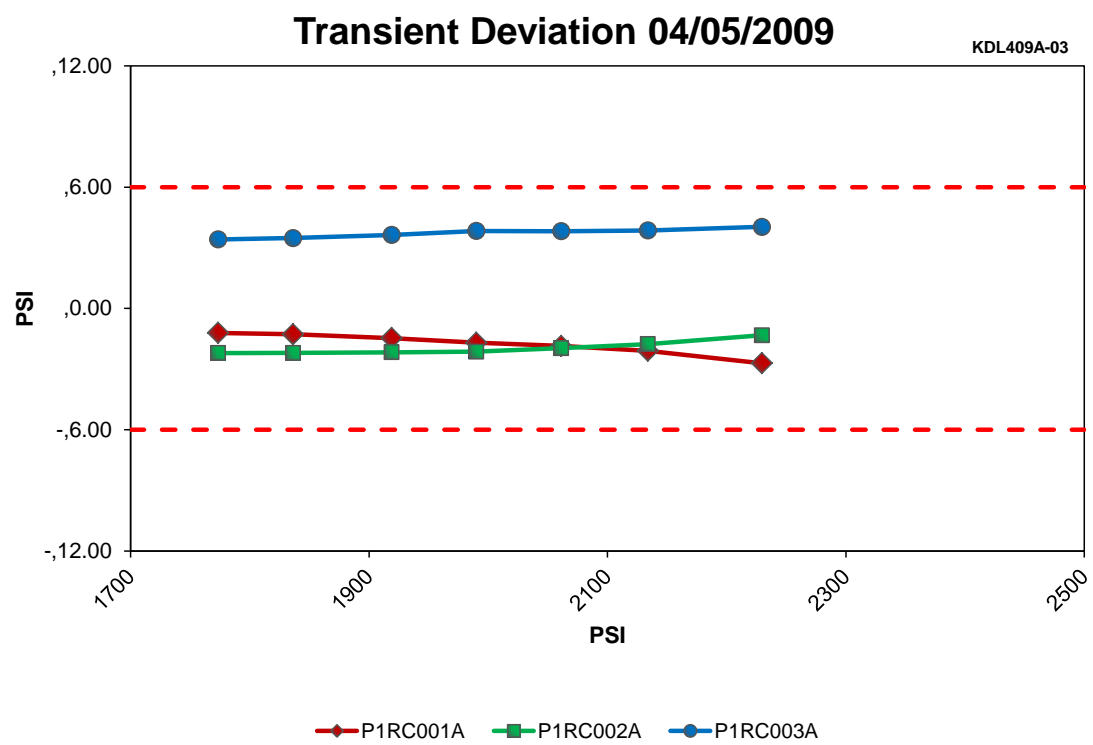




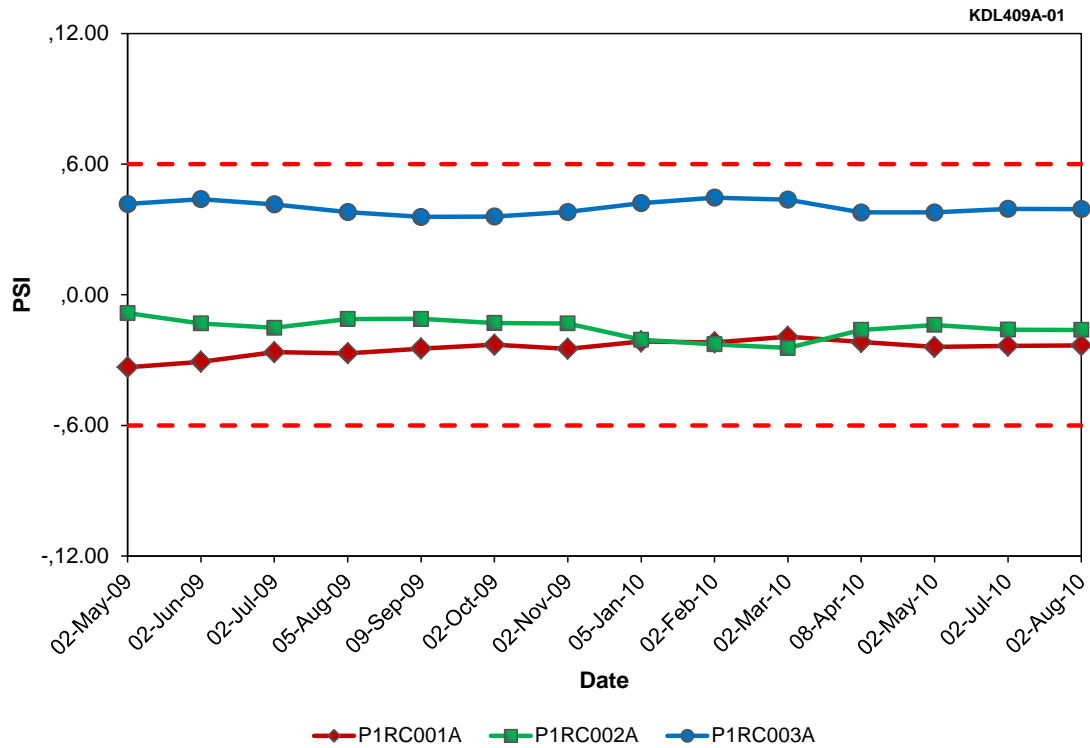
**Figure G.75 PRESSURIZER LEVEL Data Quality Statistics at North Anna Unit 1 (Cycle 21)**

**Table G.14 PRESSURIZER LEVEL Data Quality for North Anna Unit 1 (Cycle 21)**

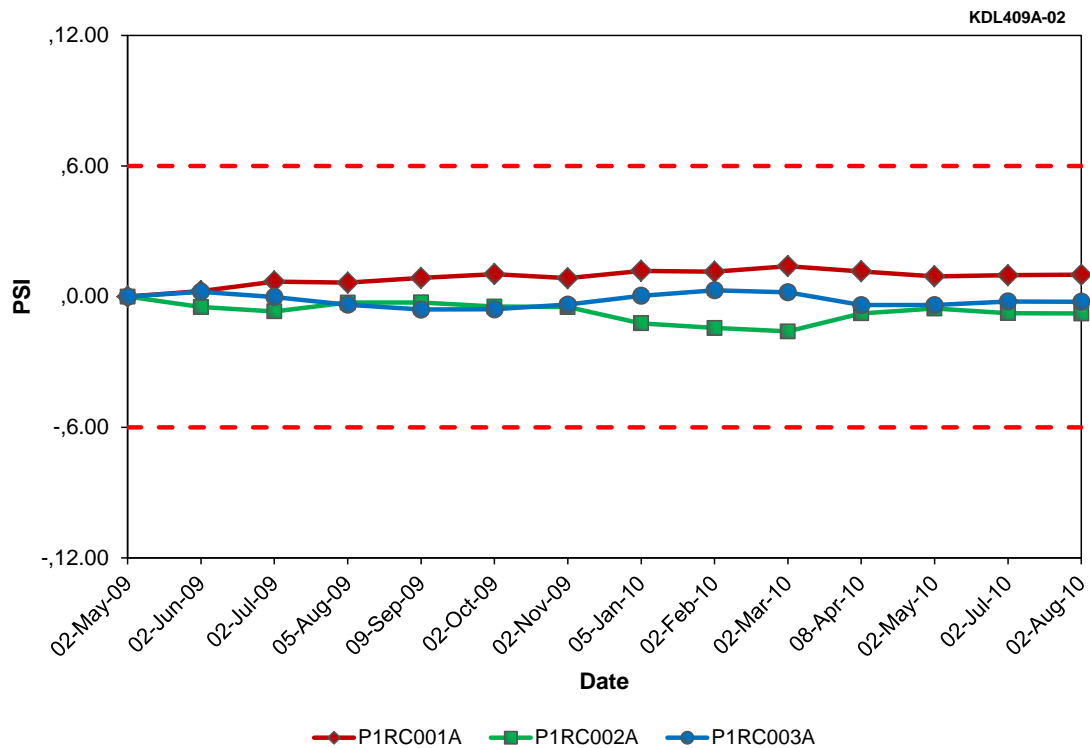
Result Type	Tag Names		
	L1RC001A	L1RC002A	L1RC003A
Mean	63.83	64.15	64.30
Std. Dev.	0.12	0.14	0.16
Skewness	-0.02	-0.02	-0.02
Kurtosis	0.99	0.97	0.99



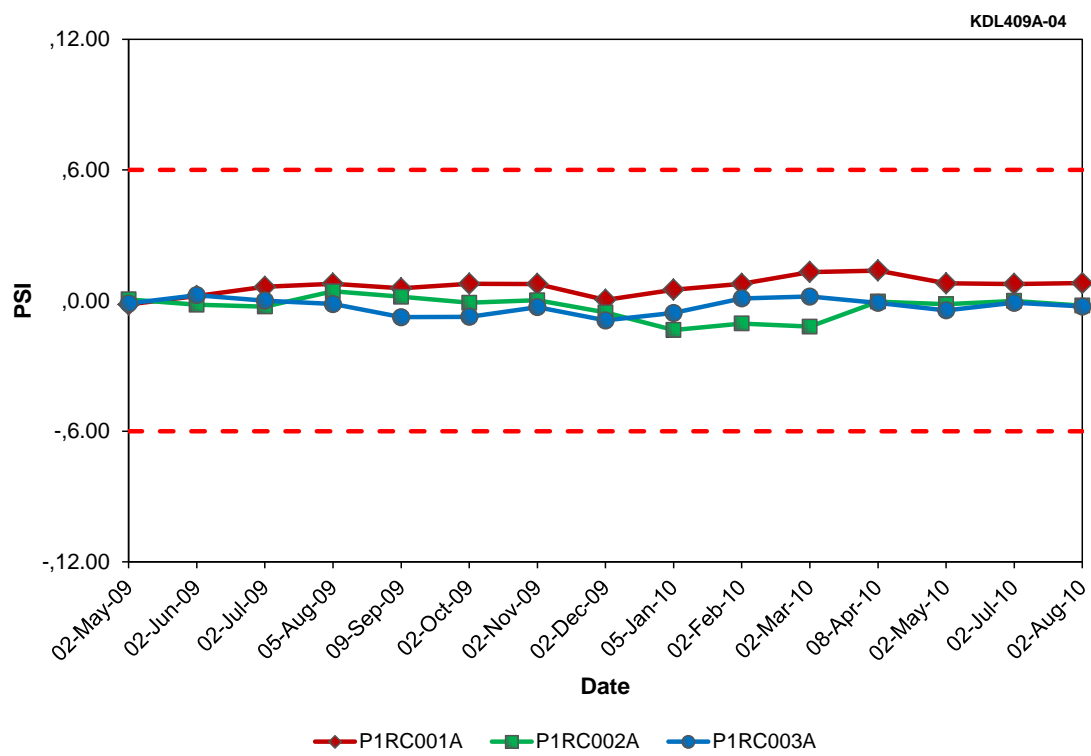
**Figure G.76 PRESSURIZER PRESSURE Transient Deviation at North Anna Unit 1 (Cycle 21)**



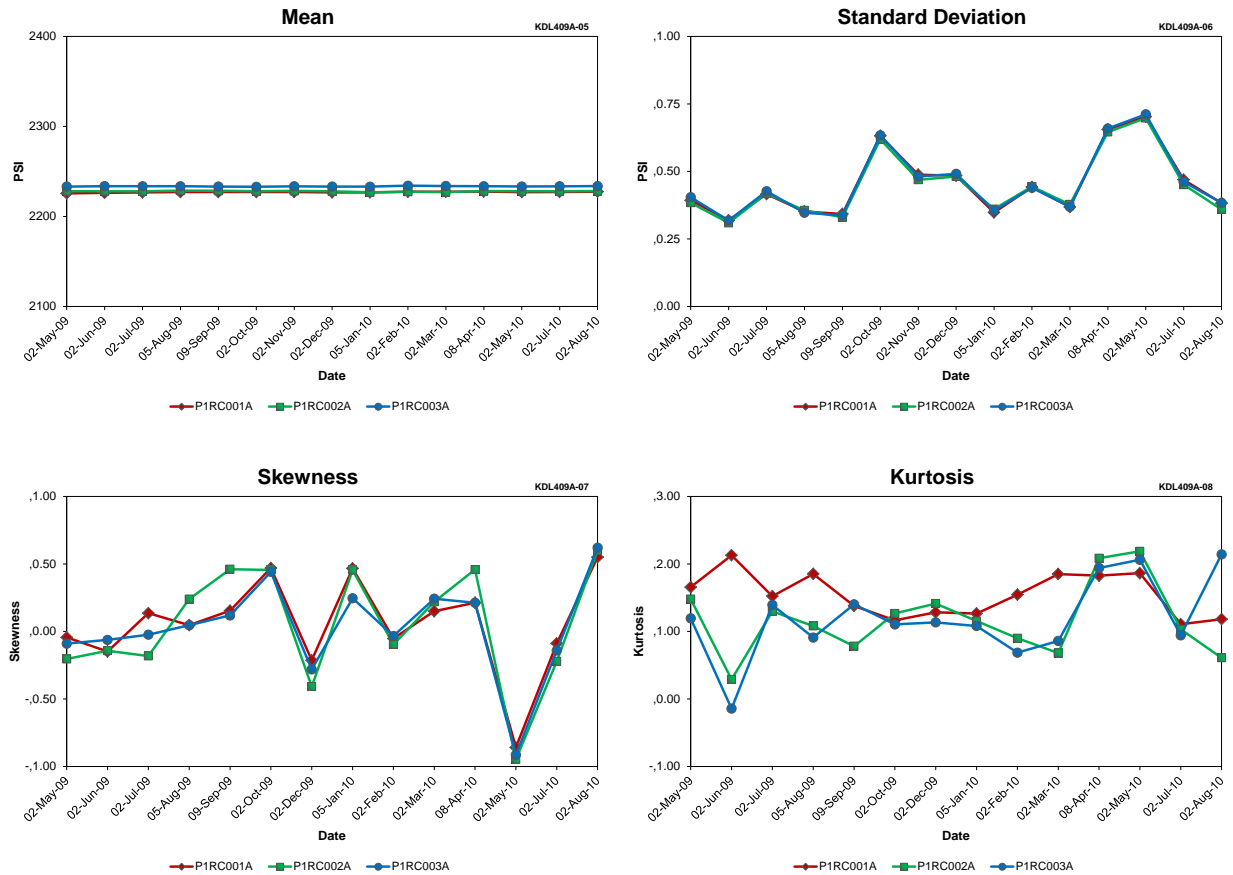
**Figure G.77 PRESSURIZER PRESSURE Steady-State Deviation at North Anna Unit 1 (Cycle 21)**



**Figure G.78 PRESSURIZER PRESSURE Steady-State Drift at North Anna Unit 1 (Cycle 21)**



**Figure G.79 PRESSURIZER PRESSURE Steady-State Residual AAKR at North Anna Unit 1 (Cycle 21)**



**Figure G.80 PRESSURIZER PRESSURE Data Quality Statistics at North Anna Unit 1 (Cycle 21)**

**Table G.15 PRESSURIZER PRESSURE Data Quality for North Anna Unit 1 (Cycle 21)**

Result Type	Tag Names		
	P1RC001A	P1RC002A	P1RC003A
Mean	2227.00	2227.94	2233.45
Std. Dev.	0.45	0.45	0.45
Skewness	0.06	0.06	0.03
Kurtosis	1.48	1.14	1.15

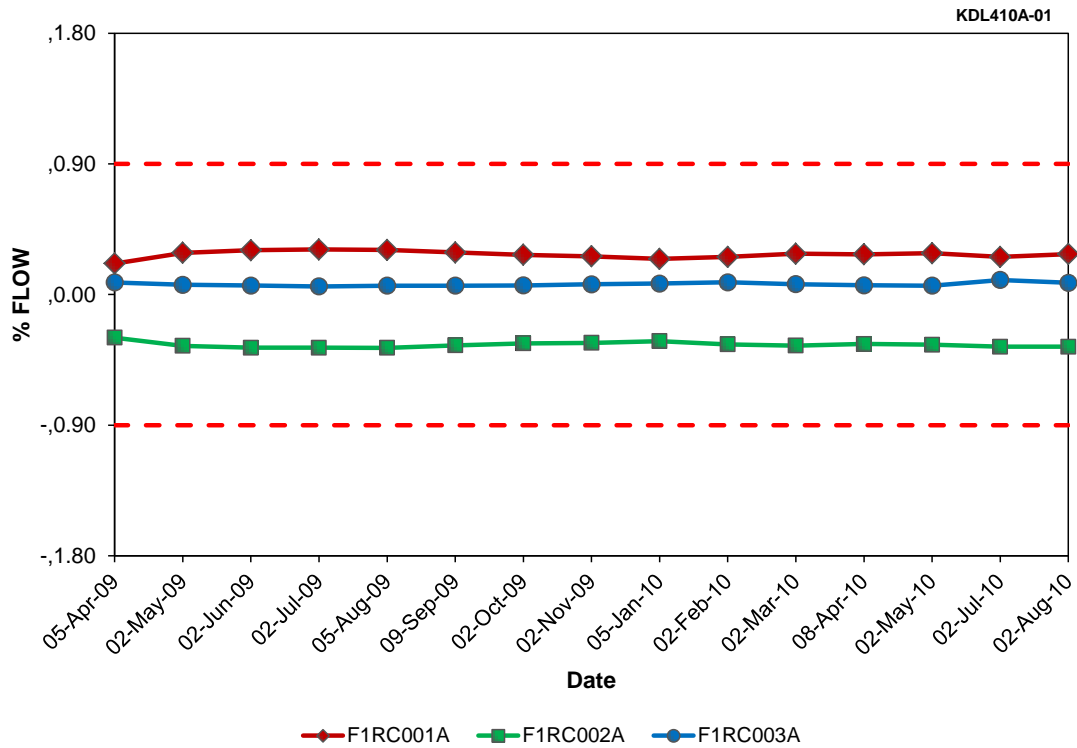


Figure G.81 RCS LOOP A FLOW Steady-State Deviation at North Anna Unit 1 (Cycle 21)

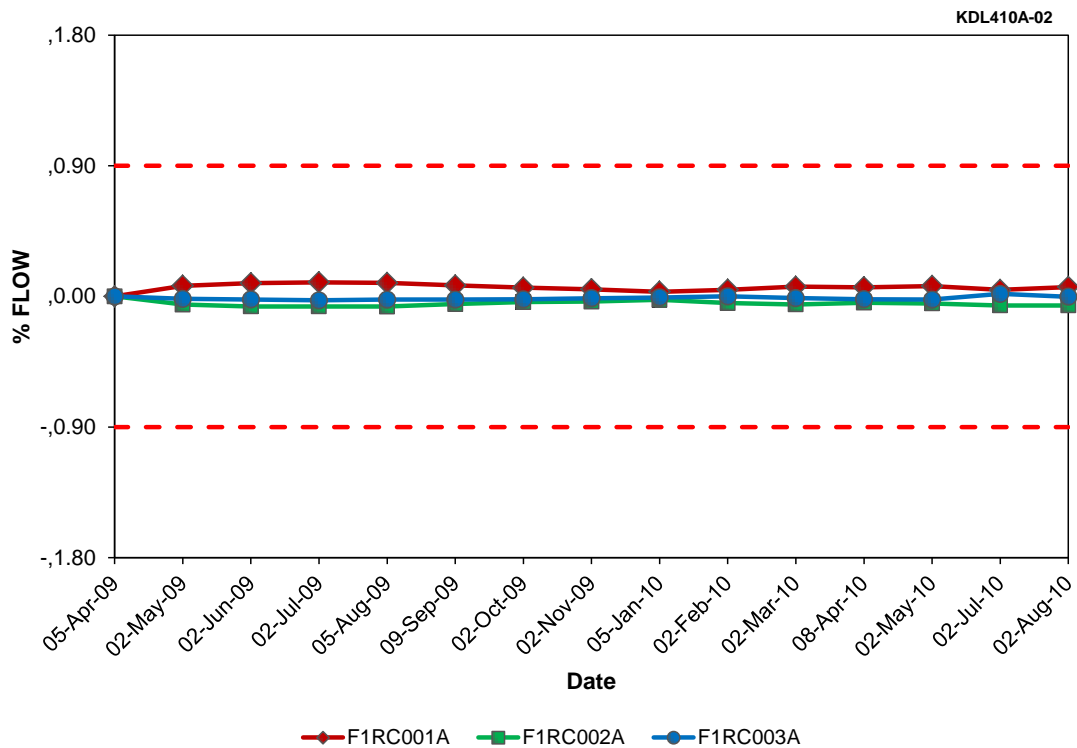
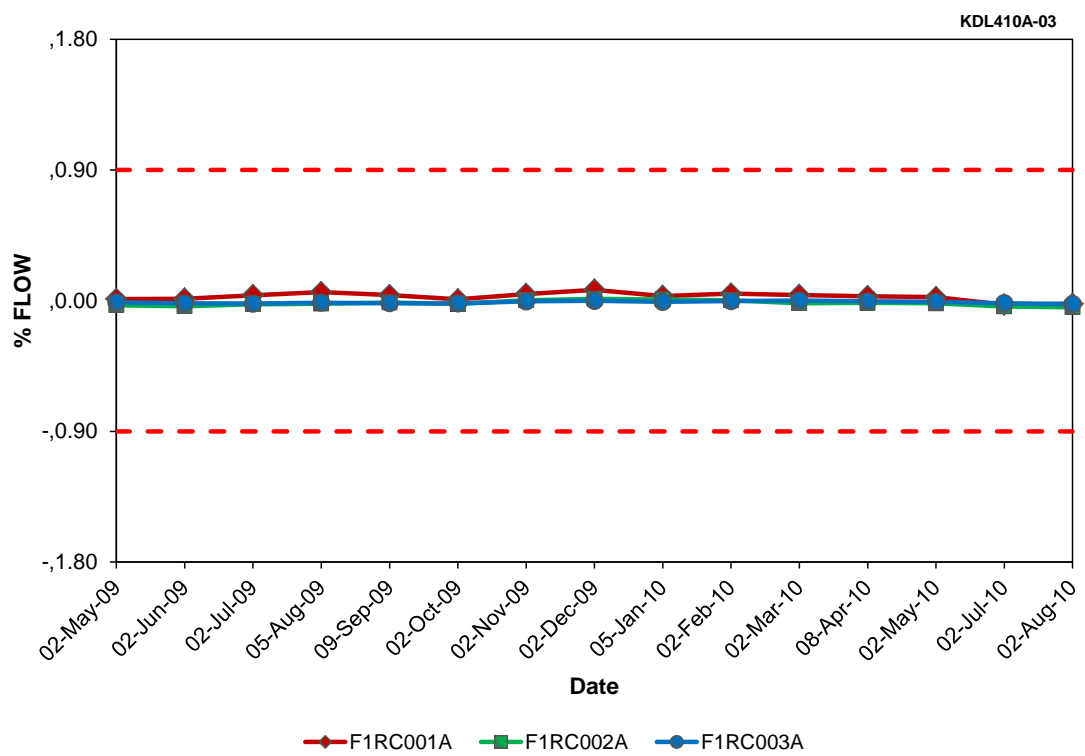
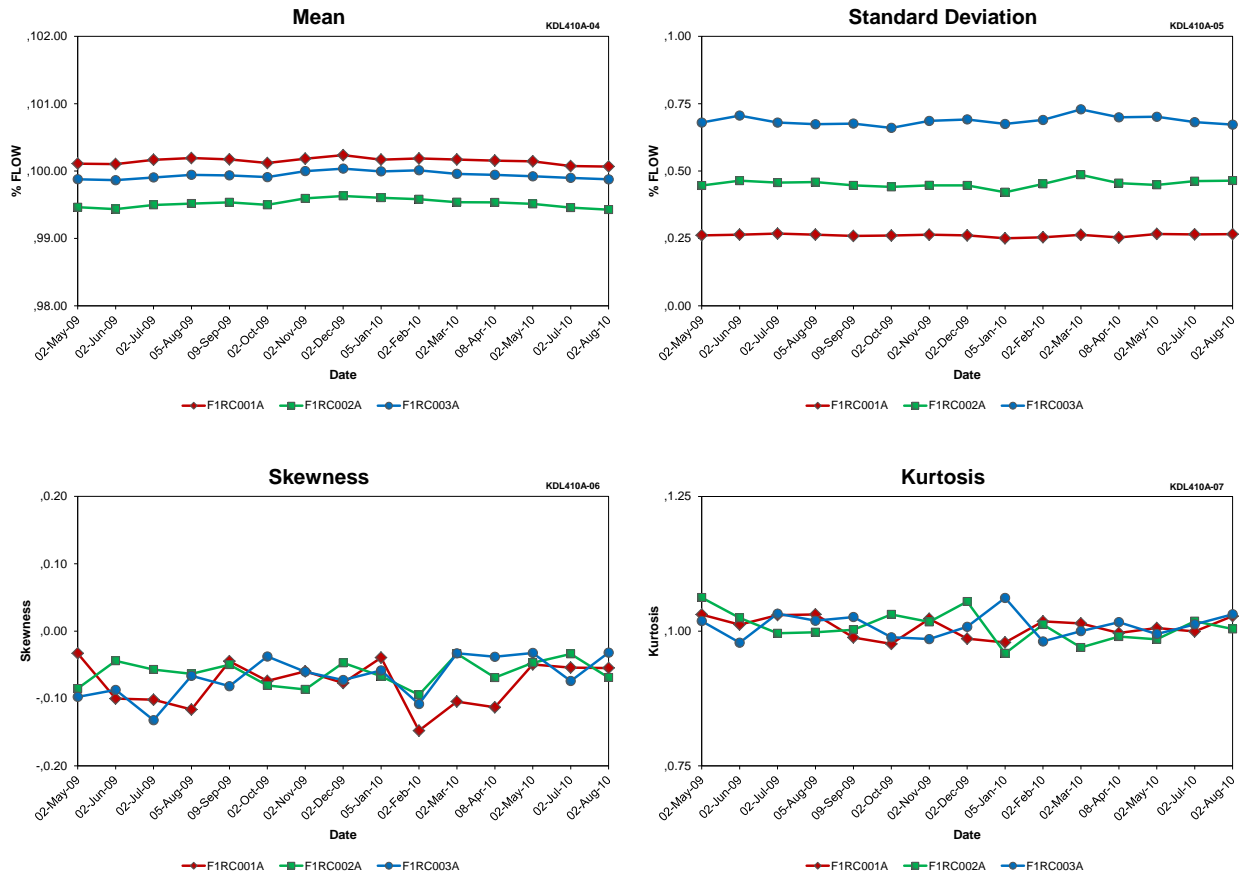


Figure G.82 RCS LOOP A FLOW Steady-State Drift at North Anna Unit 1 (Cycle 21)



**Figure G.83 RCS LOOP A FLOW Steady-State Residual AAKR at North Anna Unit 1 (Cycle 21)**



**Figure G.84 RCS LOOP A FLOW Data Quality Statistics at North Anna Unit 1 (Cycle 21)**

**Table G.16 RCS LOOP A FLOW Data Quality for North Anna Unit 1 (Cycle 21)**

Result Type	Tag Names		
	F1RC001A	F1RC002A	F1RC003A
Mean	100.15	99.52	99.94
Std. Dev.	0.26	0.45	0.69
Skewness	-0.08	-0.06	-0.07
Kurtosis	1.01	1.01	1.01





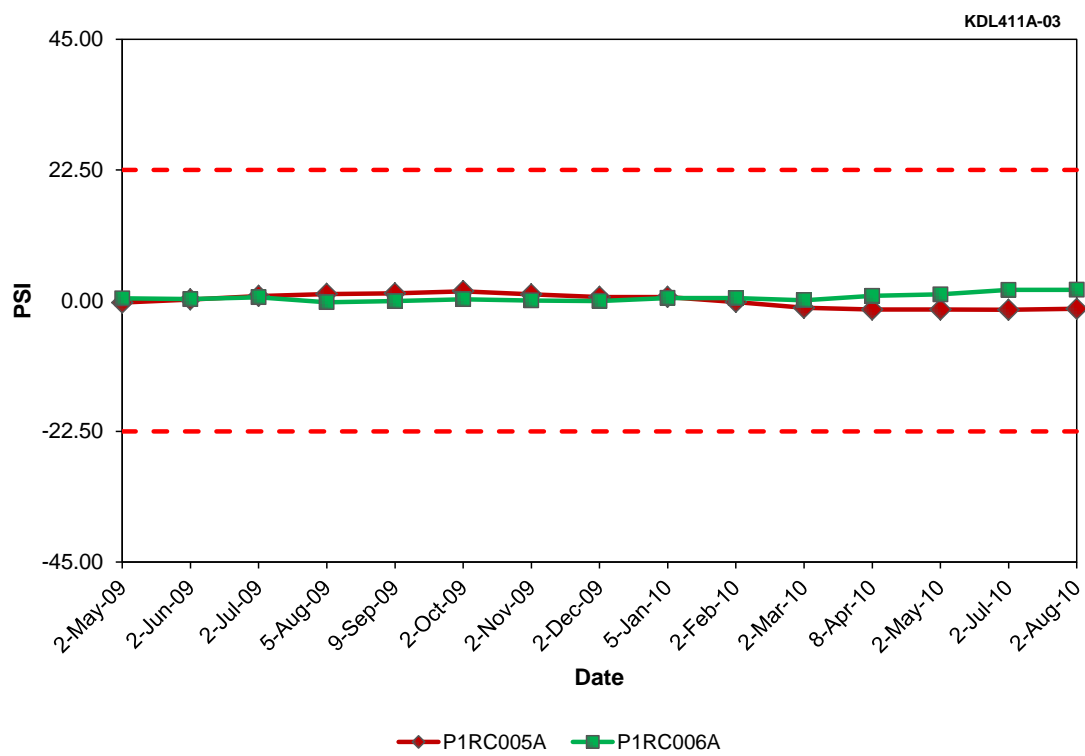
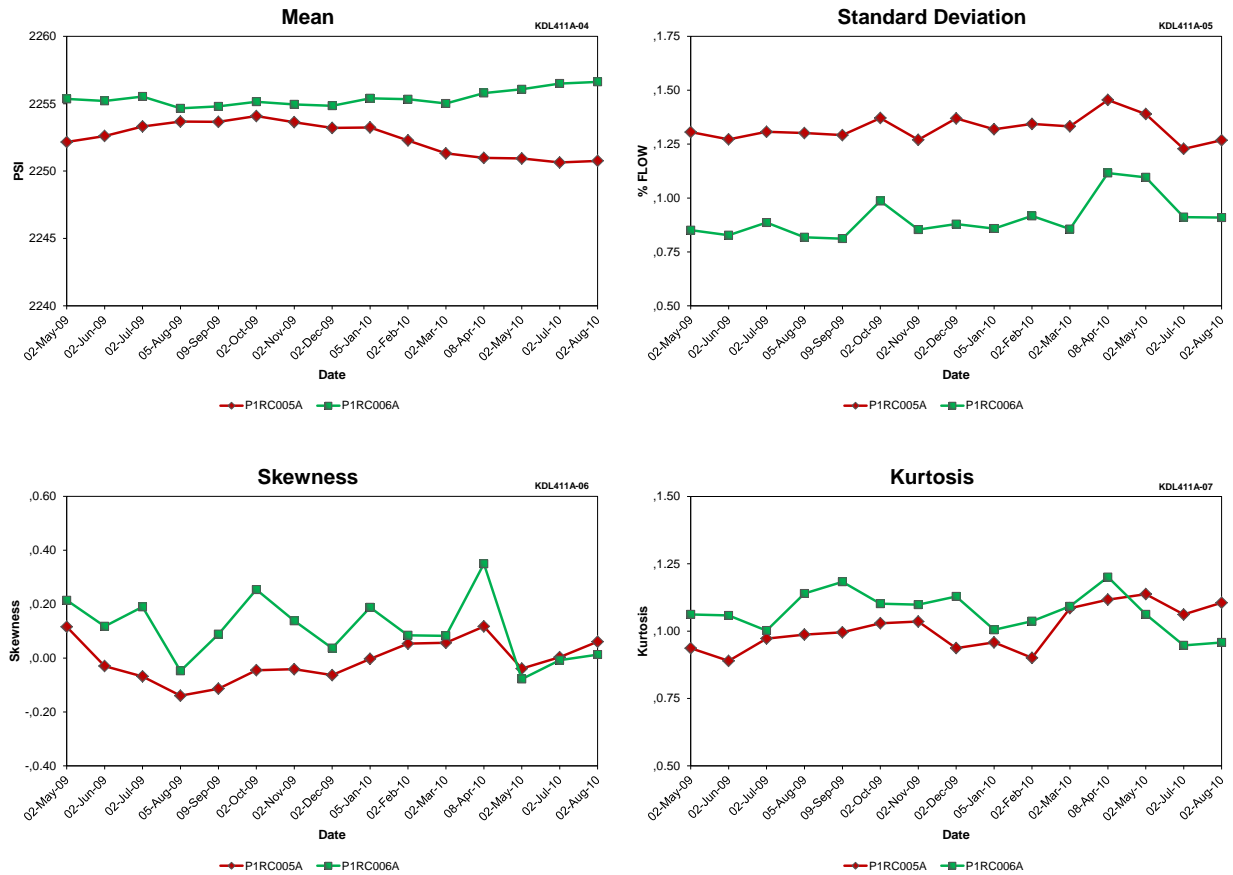


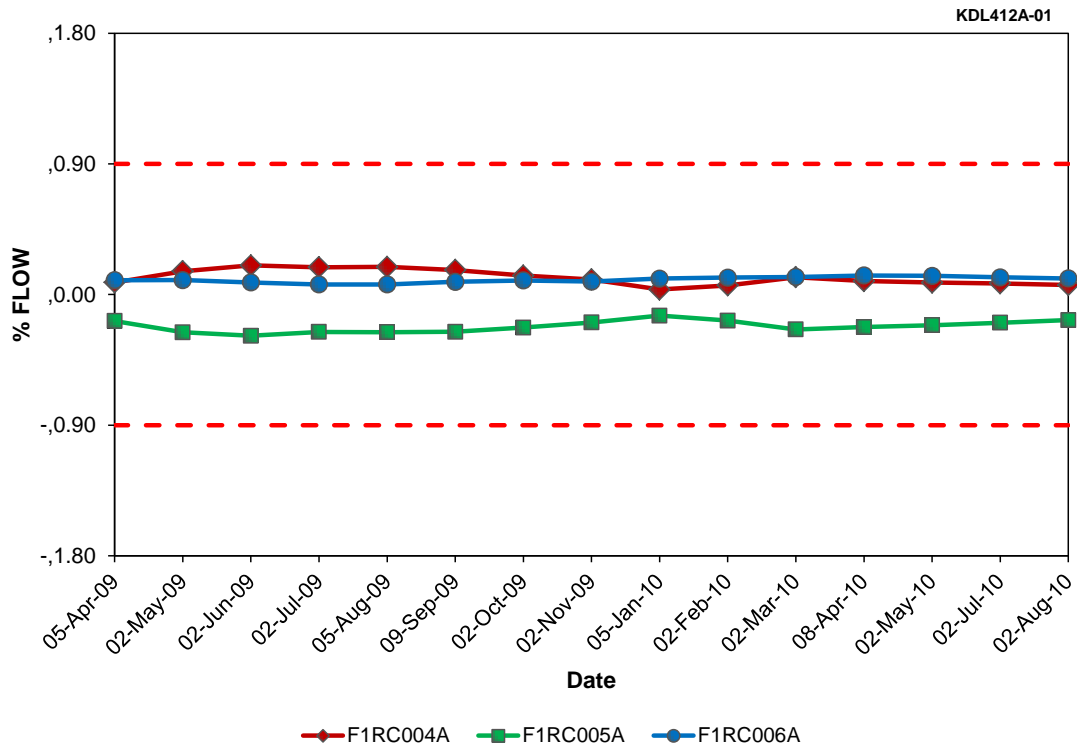
Figure G.85 RCS WIDE RANGE PRESSURE Steady-State Residual AAKR at North Anna Unit 1 (Cycle 21)



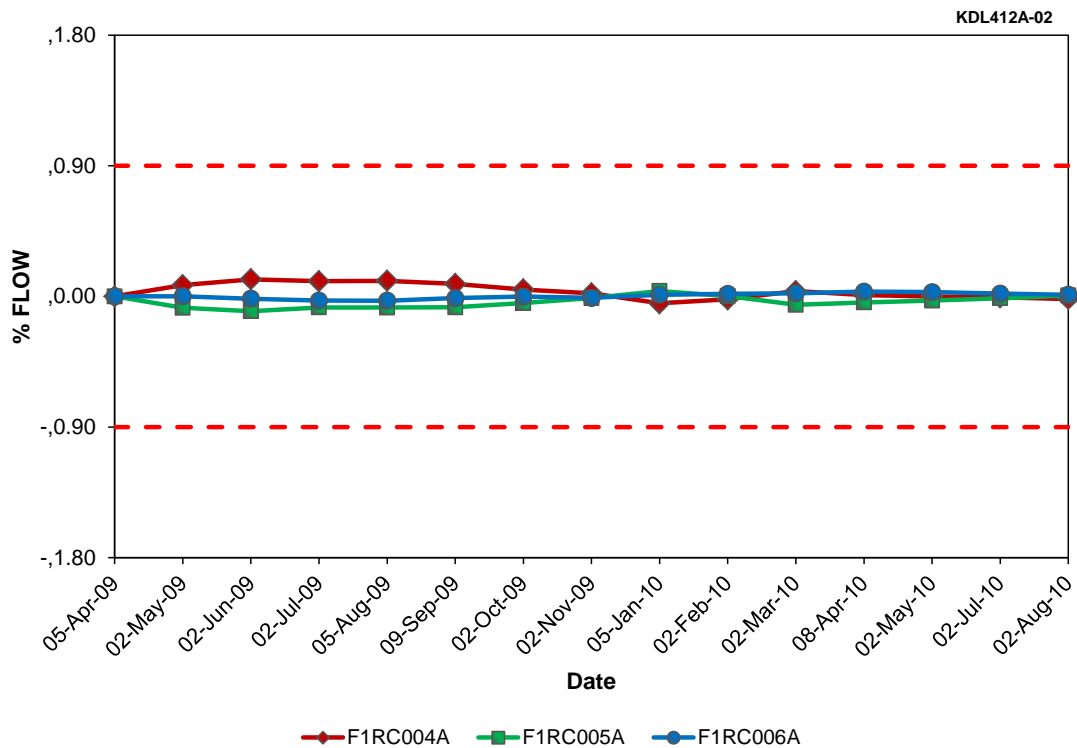
**Figure G.86 RCS WIDE RANGE PRESSURE Data Quality Statistics at North Anna Unit 1 (Cycle 21)**

**Table G.17 RCS WIDE RANGE PRESSURE Data Quality for North Anna Unit 1 (Cycle 21)**

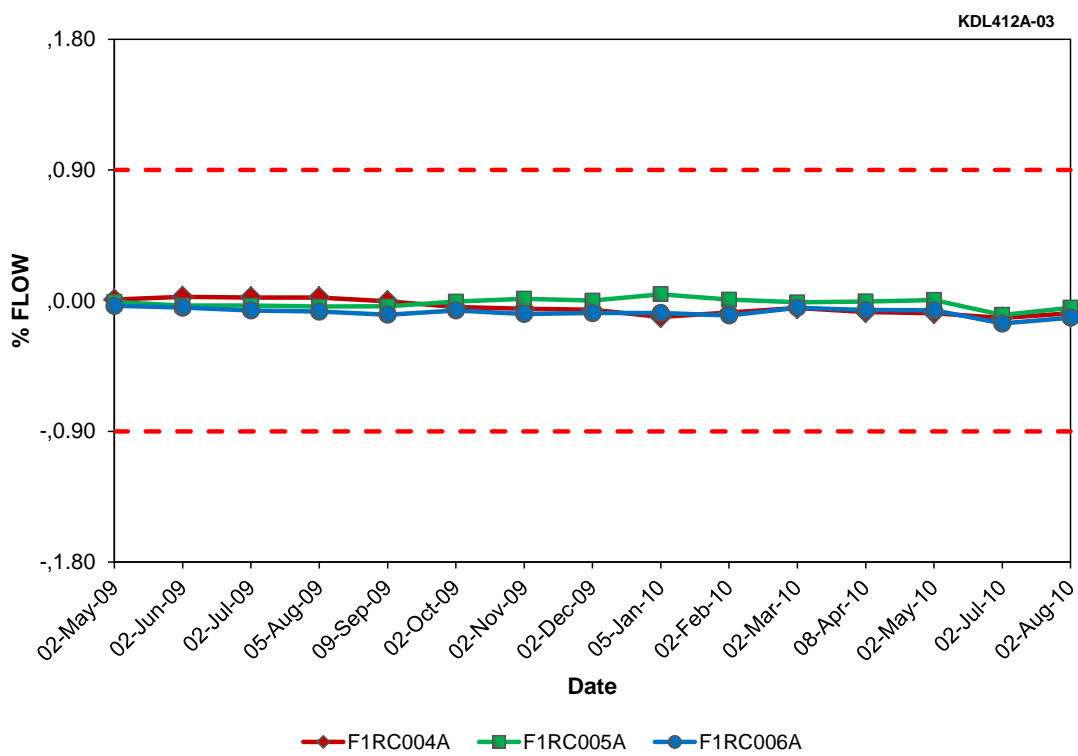
Result Type	Tag Names	
	P1RC005A	P1RC006A
Mean	2252.43	2255.41
Std. Dev.	1.32	0.91
Skewness	-0.01	0.11
Kurtosis	1.01	1.07



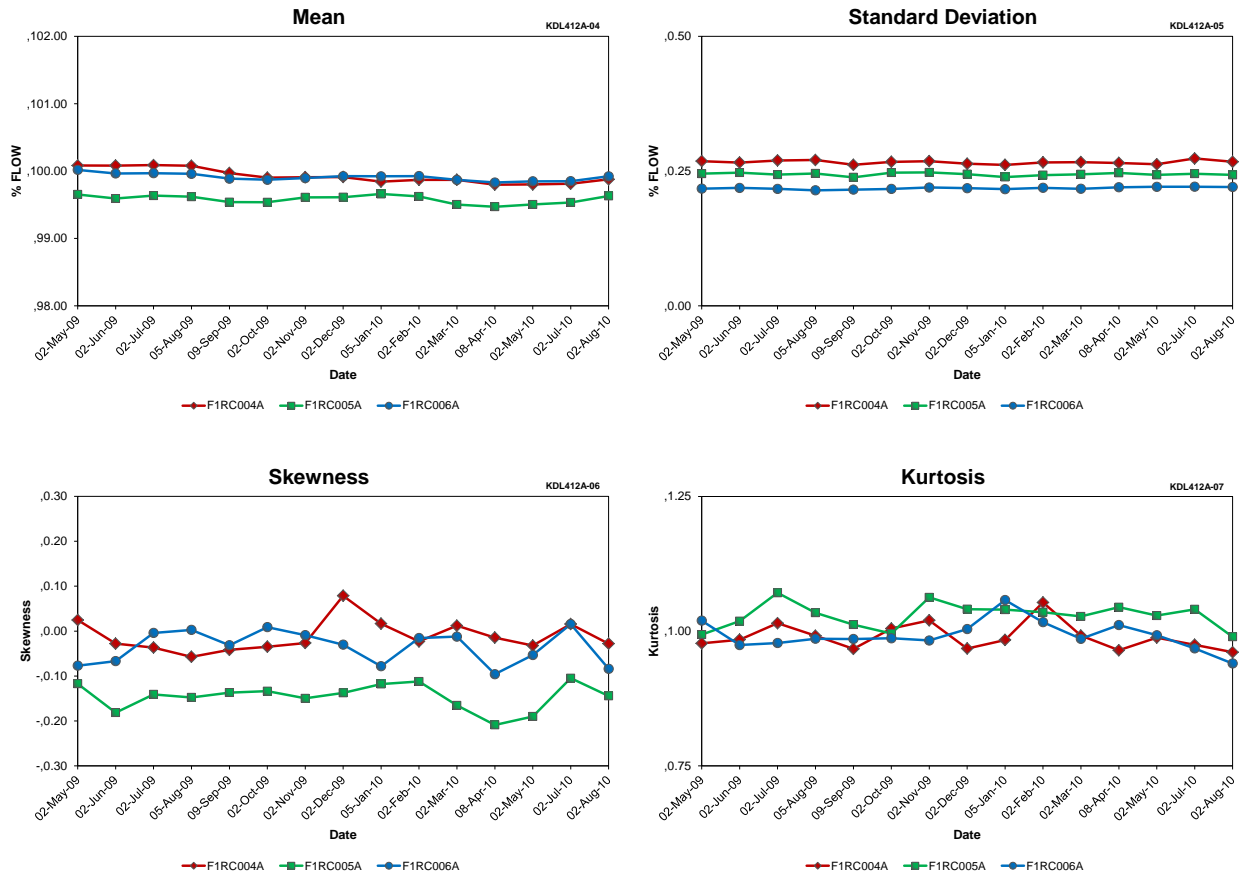
**Figure G.87 RCS LOOP B FLOW Steady-State Deviation at North Anna Unit 1 (Cycle 21)**



**Figure G.88 RCS LOOP B FLOW Steady-State Drift at North Anna Unit 1 (Cycle 21)**



**Figure G.89 RCS LOOP B FLOW Steady-State Residual AAKR at North Anna Unit 1 (Cycle 21)**



**Figure G.90 RCS LOOP B FLOW Data Quality Statistics at North Anna Unit 1 (Cycle 21)**

**Table G.18 RCS LOOP B FLOW Data Quality for North Anna Unit 1 (Cycle 21)**

Result Type	Tag Names		
	F1RC004A	F1RC005A	F1RC006A
Mean	99.93	99.58	99.91
Std. Dev.	0.27	0.24	0.22
Skewness	-0.01	-0.15	-0.04
Kurtosis	0.99	1.03	0.99



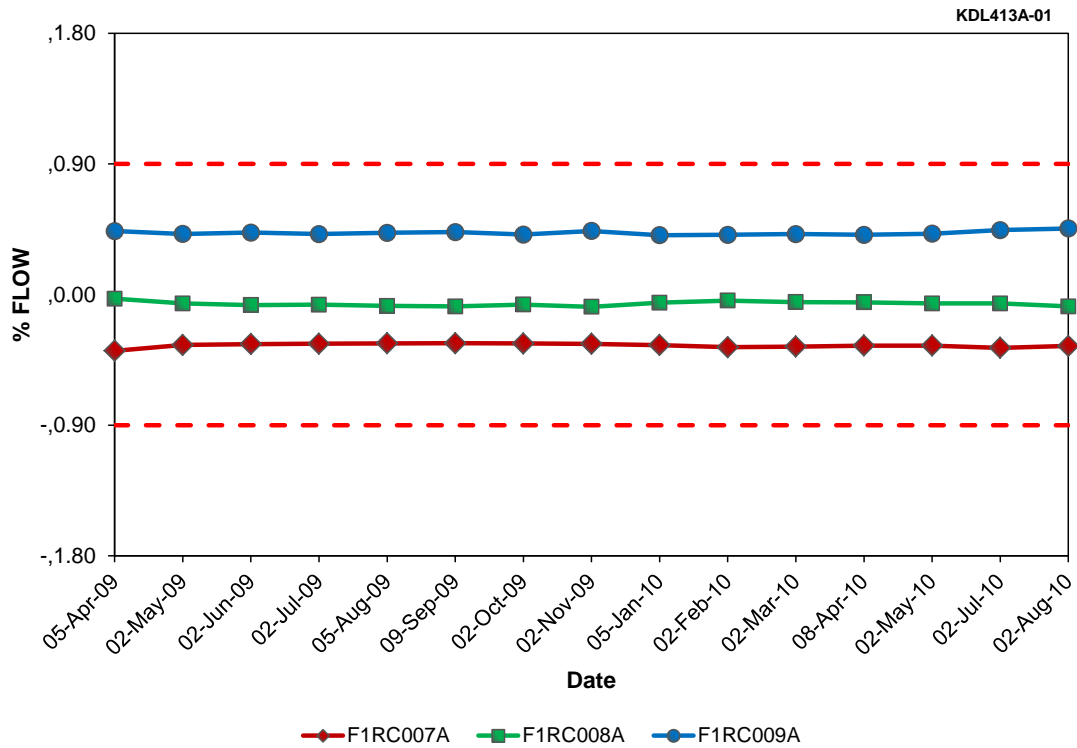


Figure G.91 RCS LOOP C FLOW Steady-State Deviation at North Anna Unit 1 (Cycle 21)

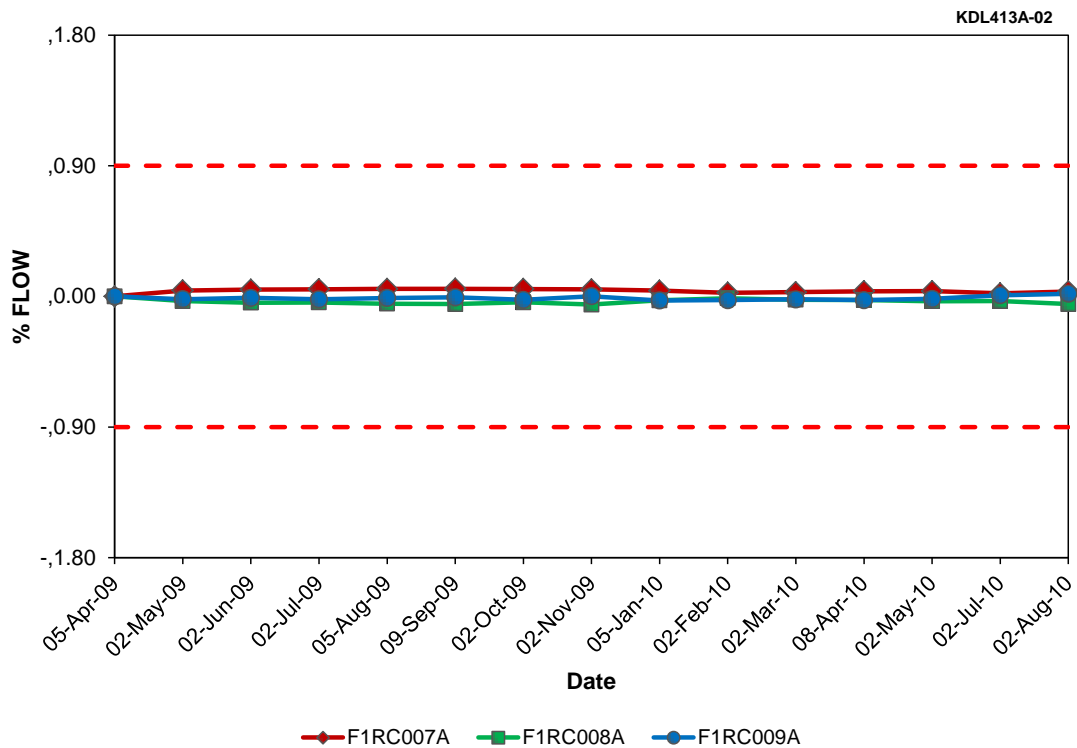
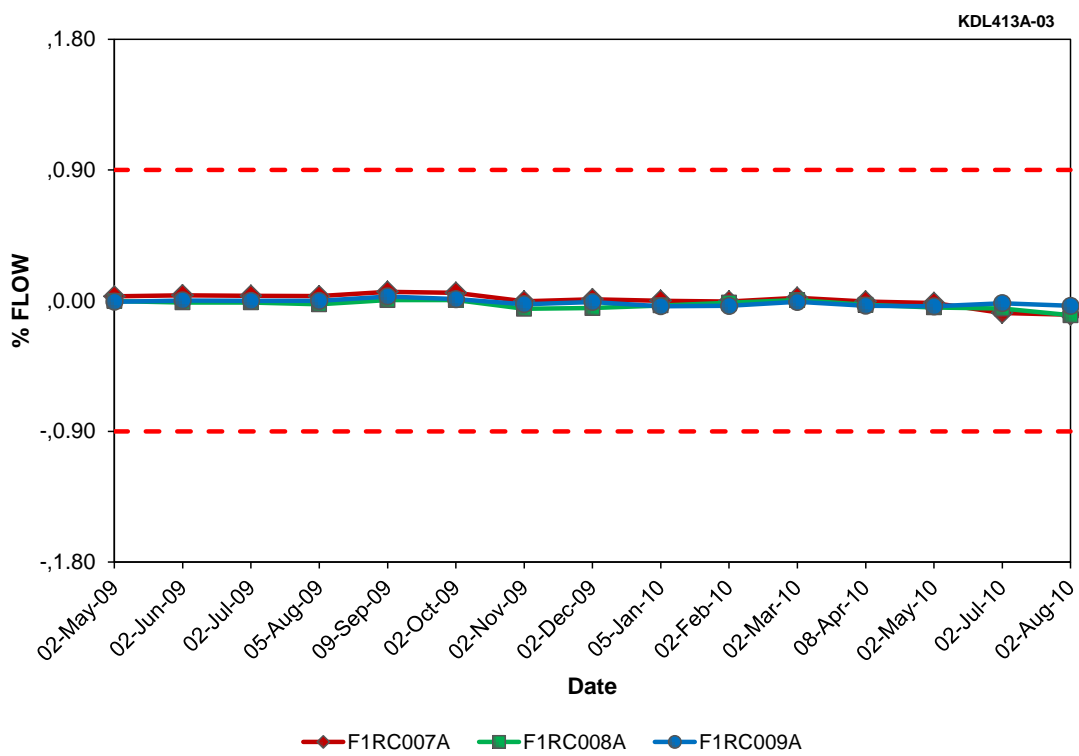
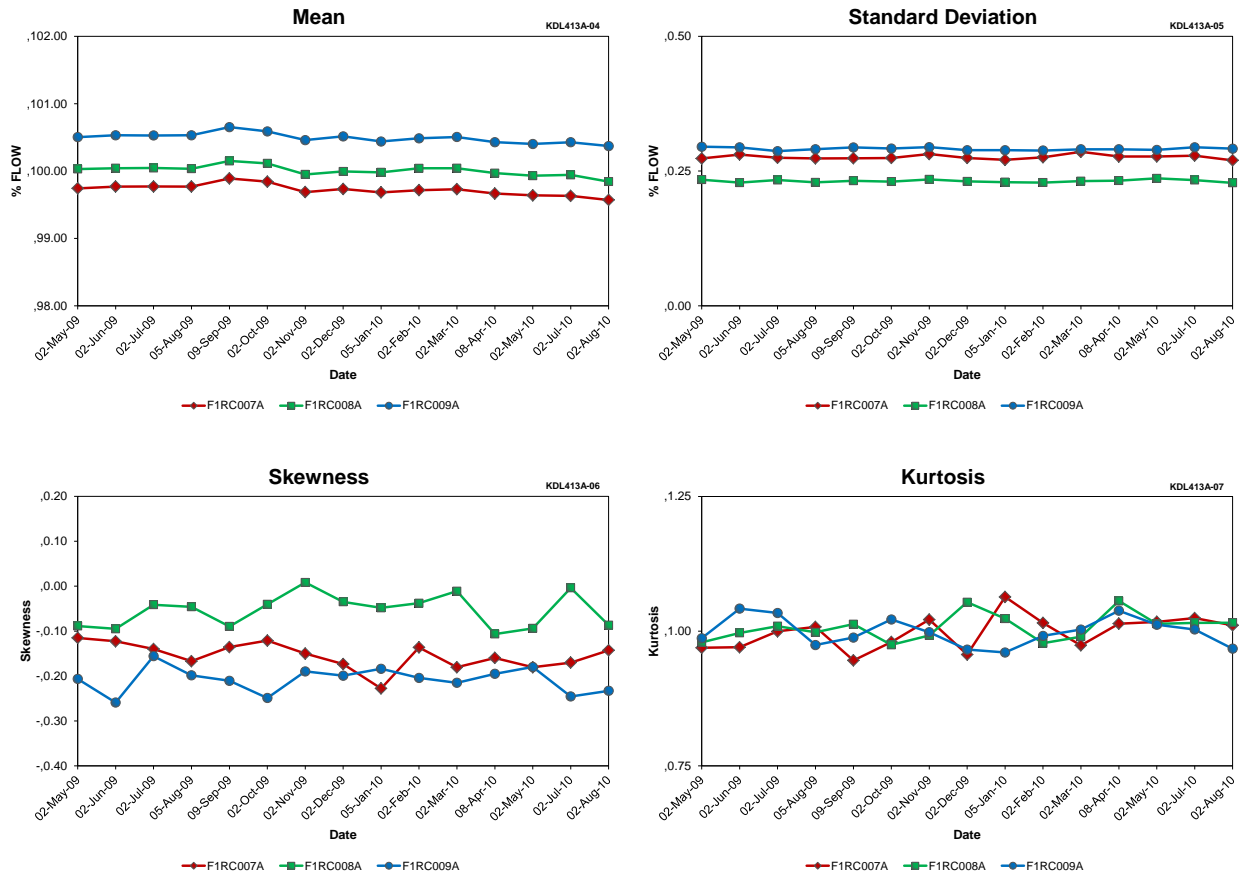


Figure G.92 RCS LOOP C FLOW Steady-State Drift at North Anna Unit 1 (Cycle 21)





**Figure G.93 RCS LOOP C FLOW Steady-State Residual AAKR at North Anna Unit 1 (Cycle 21)**

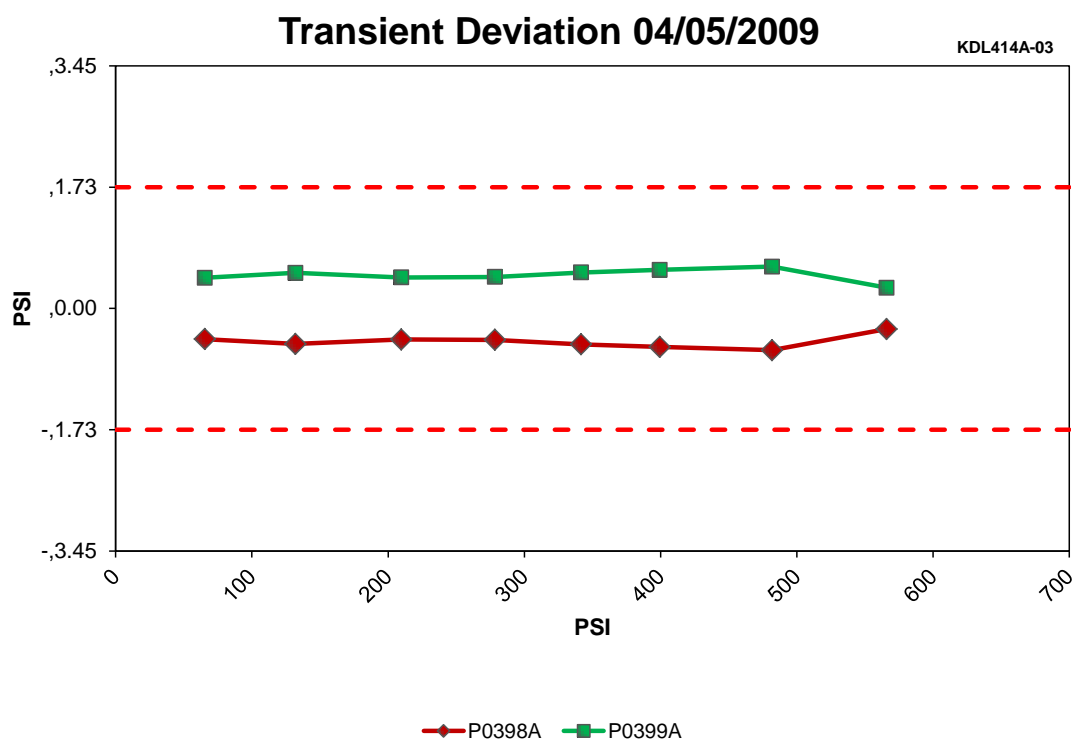


**Figure G.94 RCS LOOP C FLOW Data Quality Statistics at North Anna Unit 1 (Cycle 21)**

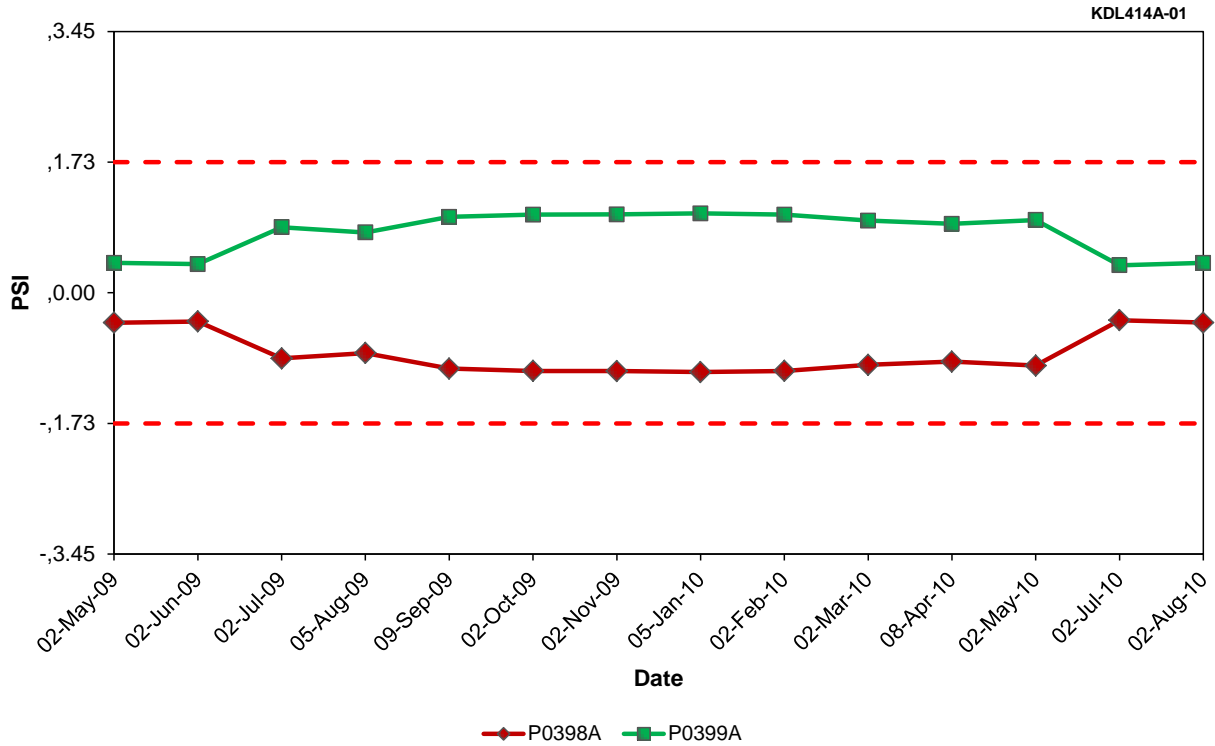
**Table G.19 RCS LOOP C FLOW Data Quality for North Anna Unit 1 (Cycle 21)**

Result Type	Tag Names		
	F1RC007A	F1RC008A	F1RC009A
Mean	99.72	100.01	100.49
Std. Dev.	0.28	0.23	0.29
Skewness	-0.15	-0.05	-0.21
Kurtosis	1.00	1.01	1.00

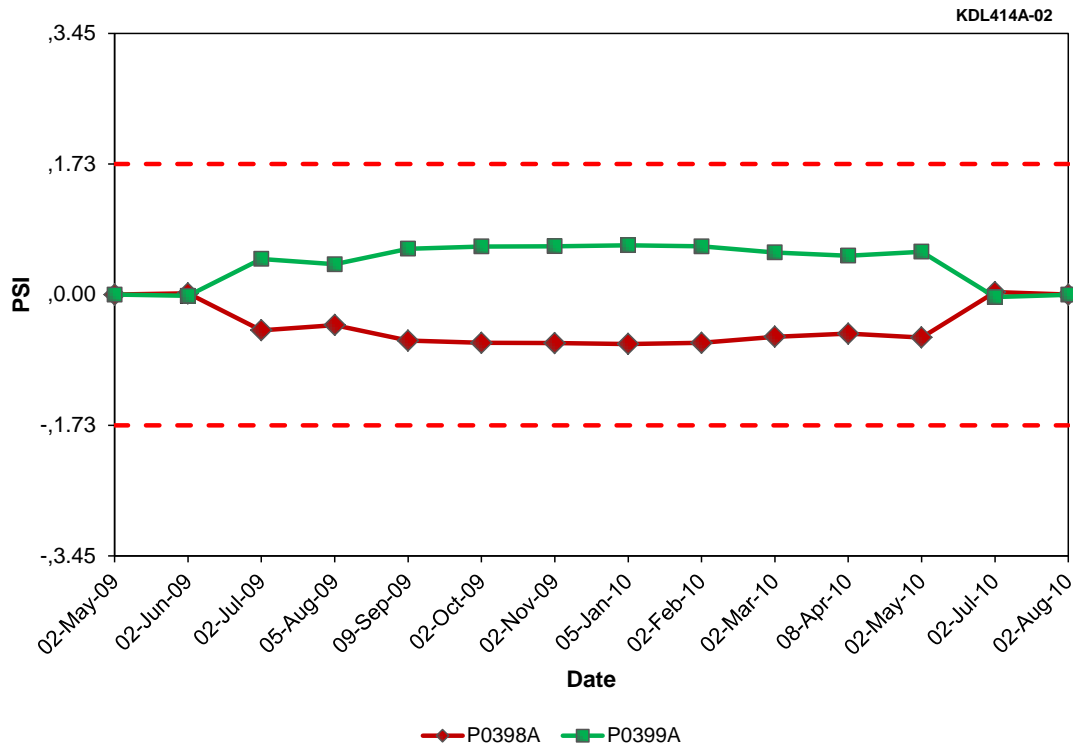




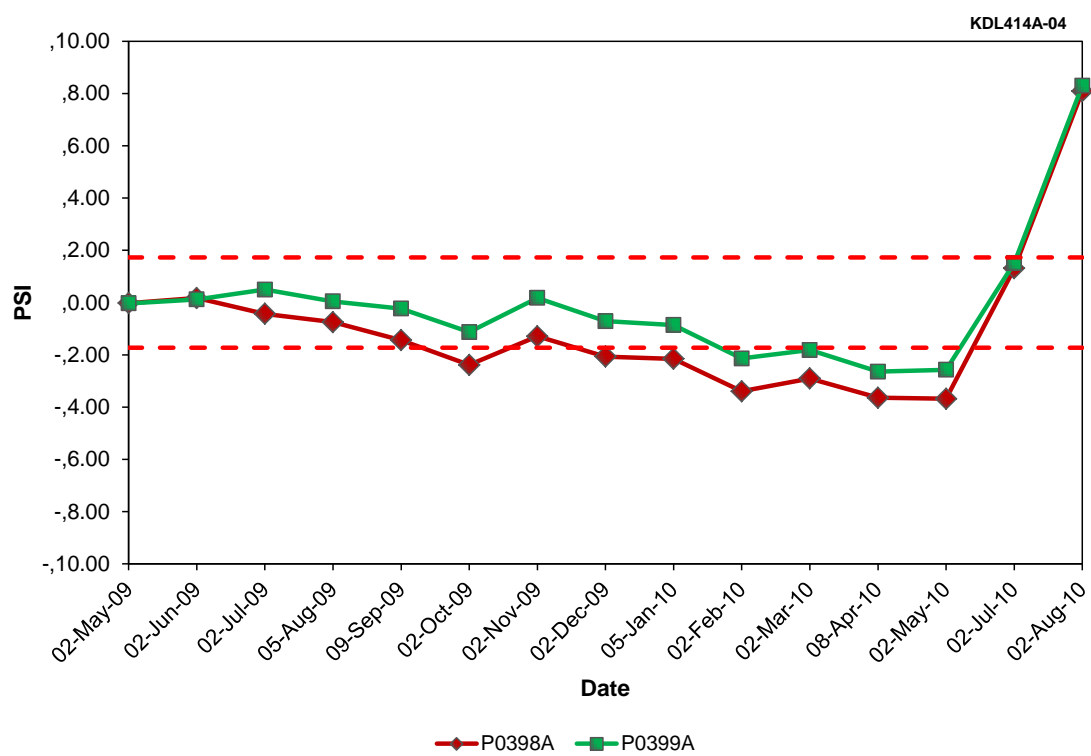
**Figure G.95 TURBINE FIRST STAGE PRESSURE Transient Deviation at North Anna Unit 1 (Cycle 21)**



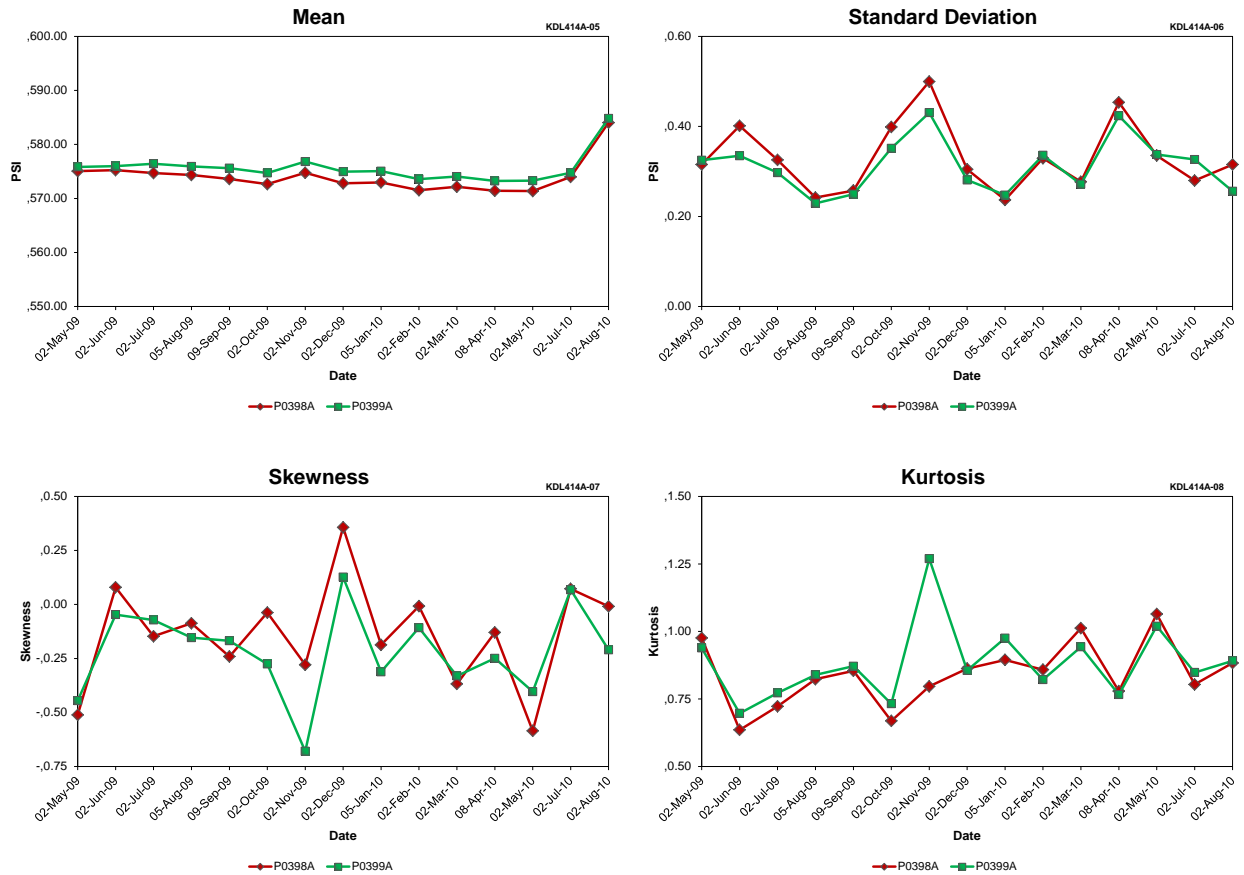
**Figure G.96 TURBINE FIRST STAGE PRESSURE Steady-State Deviation at North Anna Unit 1 (Cycle 21)**



**Figure G.97 TURBINE FIRST STAGE PRESSURE Steady-State Drift at North Anna Unit 1 (Cycle 21)**



**Figure G.98 TBIN FIRST STAGE PRESSURE Steady-State Residual AAKR at North Anna Unit 1 (Cycle 21)**



**Figure G.99 TURBINE FIRST STAGE PRESSURE Data Quality Statistics at North Anna Unit 1 (Cycle 21)**

**Table G.20 TURBINE FIRST STAGE PRESSURE Data Quality for North Anna Unit 1 (Cycle 21)**

Result Type	Tag Names	
	P0398A	P0399A
Mean	574.04	575.67
Std. Dev.	0.33	0.31
Skewness	-0.14	-0.22
Kurtosis	0.84	0.88

## **APPENDIX H**

### **North Anna Unit 1 OLM Results (Cycle 22)**





Item	Tagname	Service	6 Nov 2010	11 Dec 2010	2 Jan 2011	2 Feb 2011	2 Mar 2011	2 Apr 2011	Drift	Final	Comment
1	F1MS001A	SG A STEAM FLOW								PASS	
2	F1MS002A	SG A STEAM FLOW								PASS	
3	F1FW004A	FW FLOW TO SG A								PASS	
4	F1FW005A	FW FLOW TO SG A								PASS	
5	L1FW001A	SG A NARROW RANGE LEVEL								PASS	
6	L1FW002A	SG A NARROW RANGE LEVEL								PASS	
7	L1FW003A	SG A NARROW RANGE LEVEL								PASS	
8	L1FW004A	SG A WIDE RANGE LEVEL								PASS	
9	P1MS001A	SG A OUTLET PRESSURE								PASS	
10	P1MS002A	SG A OUTLET PRESSURE								PASS	
11	P1MS003A	SG A OUTLET PRESSURE								PASS	
12	F1MS003A	SG B STEAM FLOW								PASS	
13	F1MS004A	SG B STEAM FLOW								PASS	
14	F1FW006A	FW FLOW TO SG B								PASS	
15	F1FW007A	FW FLOW TO SG B								PASS	
16	L1FW005A	SG B NARROW RANGE LEVEL								PASS	
17	L1FW006A	SG B NARROW RANGE LEVEL								PASS	
18	L1FW007A	SG B NARROW RANGE LEVEL								PASS	
19	L1FW008A	SG B WIDE RANGE LEVEL								PASS	
20	P1MS004A	SG B OUTLET PRESSURE								PASS	
21	P1MS005A	SG B OUTLET PRESSURE								PASS	
22	P1MS006A	SG B OUTLET PRESSURE								PASS	
23	F1MS005A	SG C STEAM FLOW								PASS	
24	F1MS006A	SG C STEAM FLOW								PASS	
25	F1FW008A	FW FLOW TO SG C								PASS	
26	F1FW009A	FW FLOW TO SG C								PASS	

*R = Exceeded Redundant Sensor Analysis Limits    M = Exceeded Model Analysis Limits    D = Exceeded Drift Limits*

**Table H.1 North Anna Unit 1 OLM Results Summary (Cycle 22)**

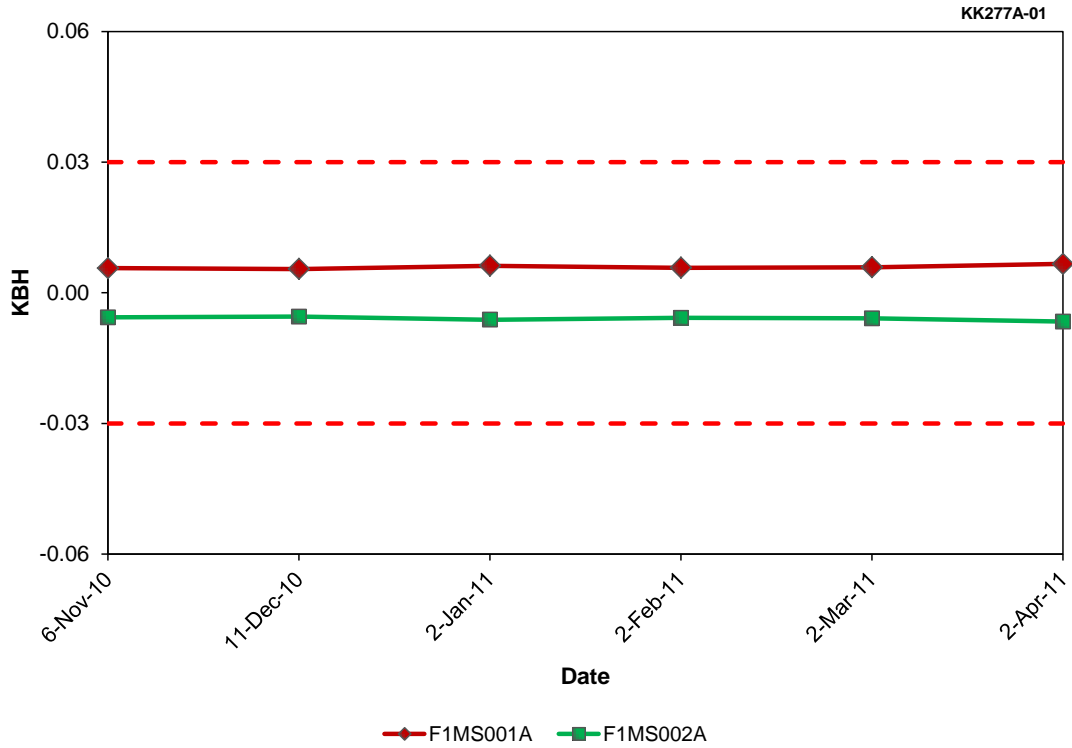


Item	Tagname	Service	6 Nov 2010	11 Dec 2010	2 Jan 2011	2 Feb 2011	2 Mar 2011	2 Apr 2011	Drift	Final	Comment
27	L1FW009A	SG C NARROW RANGE LEVEL								PASS	
28	L1FW010A	SG C NARROW RANGE LEVEL								PASS	
29	L1FW011A	SG C NARROW RANGE LEVEL								PASS	
30	L1FW012A	SG C WIDE RANGE LEVEL								PASS	
31	P1MS007A	SG C OUTLET PRESSURE								PASS	
32	P1MS008A	SG C OUTLET PRESSURE			M	M		M		PASS	Process change
33	P1MS009A	SG C OUTLET PRESSURE			M	M	M	M		PASS	Process change
34	L1RC001A	PRESSURIZER LEVEL								PASS	
35	L1RC002A	PRESSURIZER LEVEL								PASS	
36	L1RC003A	PRESSURIZER LEVEL								PASS	
37	P1RC001A	PRESSURIZER PRESSURE								PASS	
38	P1RC002A	PRESSURIZER PRESSURE								PASS	
39	P1RC003A	PRESSURIZER PRESSURE								PASS	
40	F1RC001A	RCS LOOP A FLOW								PASS	
41	F1RC002A	RCS LOOP A FLOW								PASS	
42	F1RC003A	RCS LOOP A FLOW								PASS	
43	F1RC004A	RCS LOOP B FLOW								PASS	
44	F1RC005A	RCS LOOP B FLOW								PASS	
45	F1RC006A	RCS LOOP B FLOW								PASS	
46	F1RC007A	RCS LOOP C FLOW								PASS	
47	F1RC008A	RCS LOOP C FLOW								PASS	
48	F1RC009A	RCS LOOP C FLOW								PASS	
49	P1RC005A	RCS WIDE RANGE PRESSURE LOOP A								PASS	
50	P1RC006A	RCS WIDE RANGE PRESSURE LOOP C								PASS	
51	P0398A	TURBINE FIRST STAGE PRESSURE								PASS	
52	P0399A	TURBINE FIRST STAGE PRESSURE								PASS	

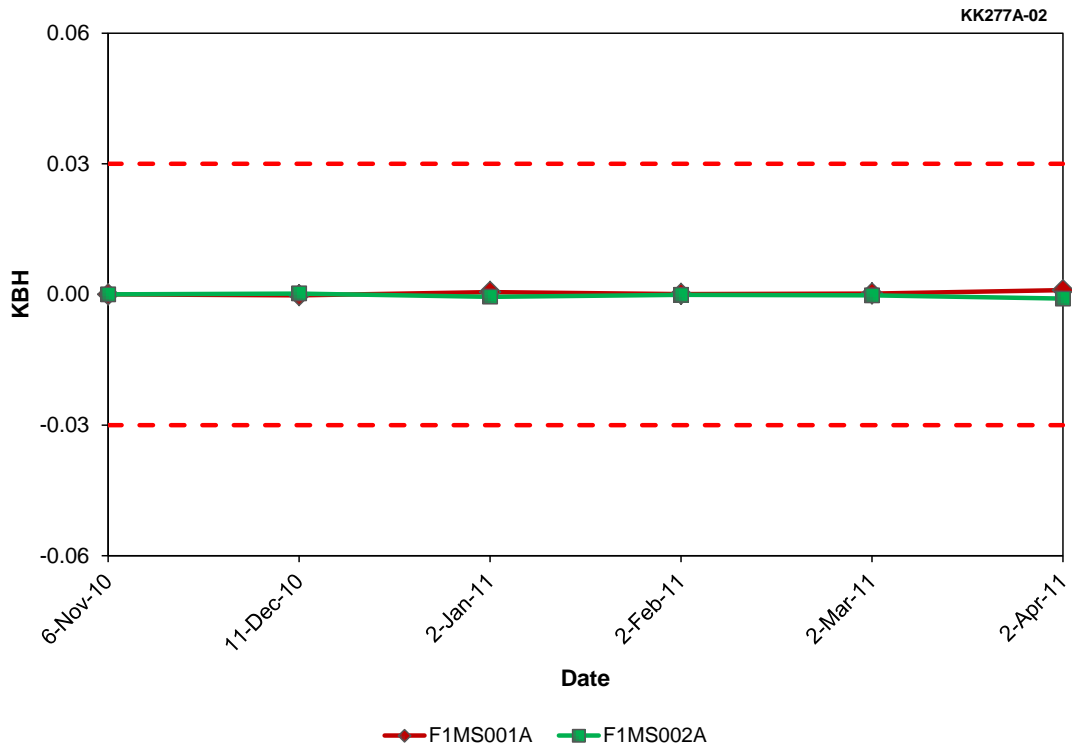
*R = Exceeded Redundant Sensor Analysis Limits    M = Exceeded Model Analysis Limits    D = Exceeded Drift Limits*

**Table H.1 (continued) North Anna Unit 1 OLM Results Summary (Cycle 22)**

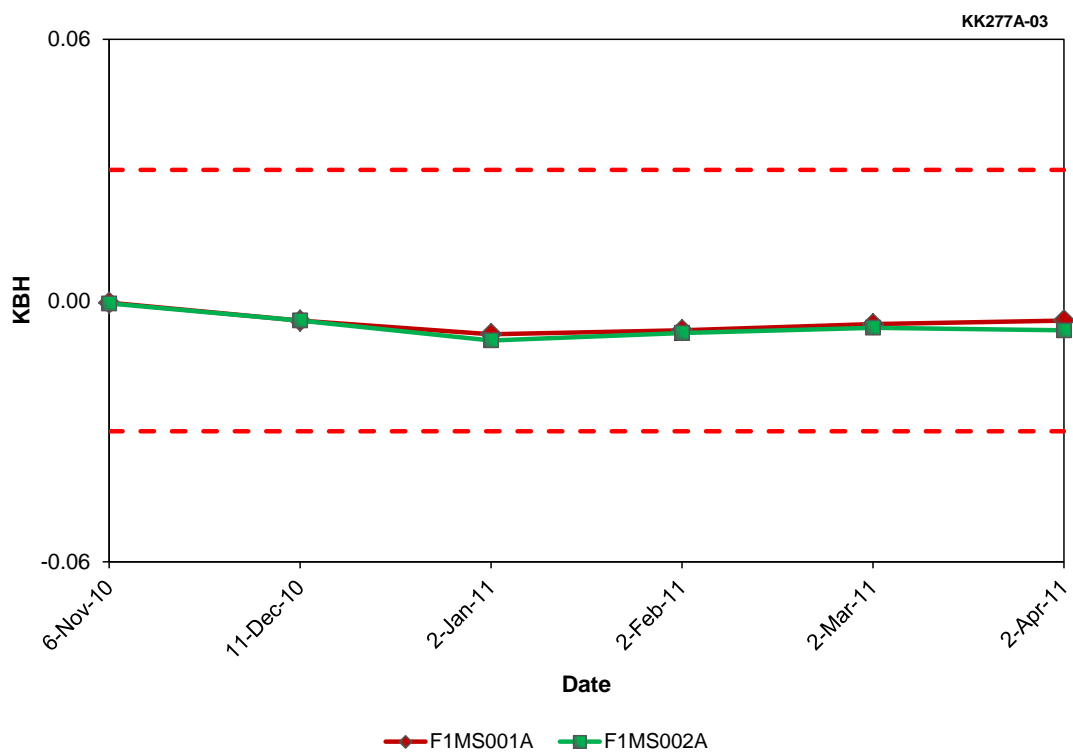




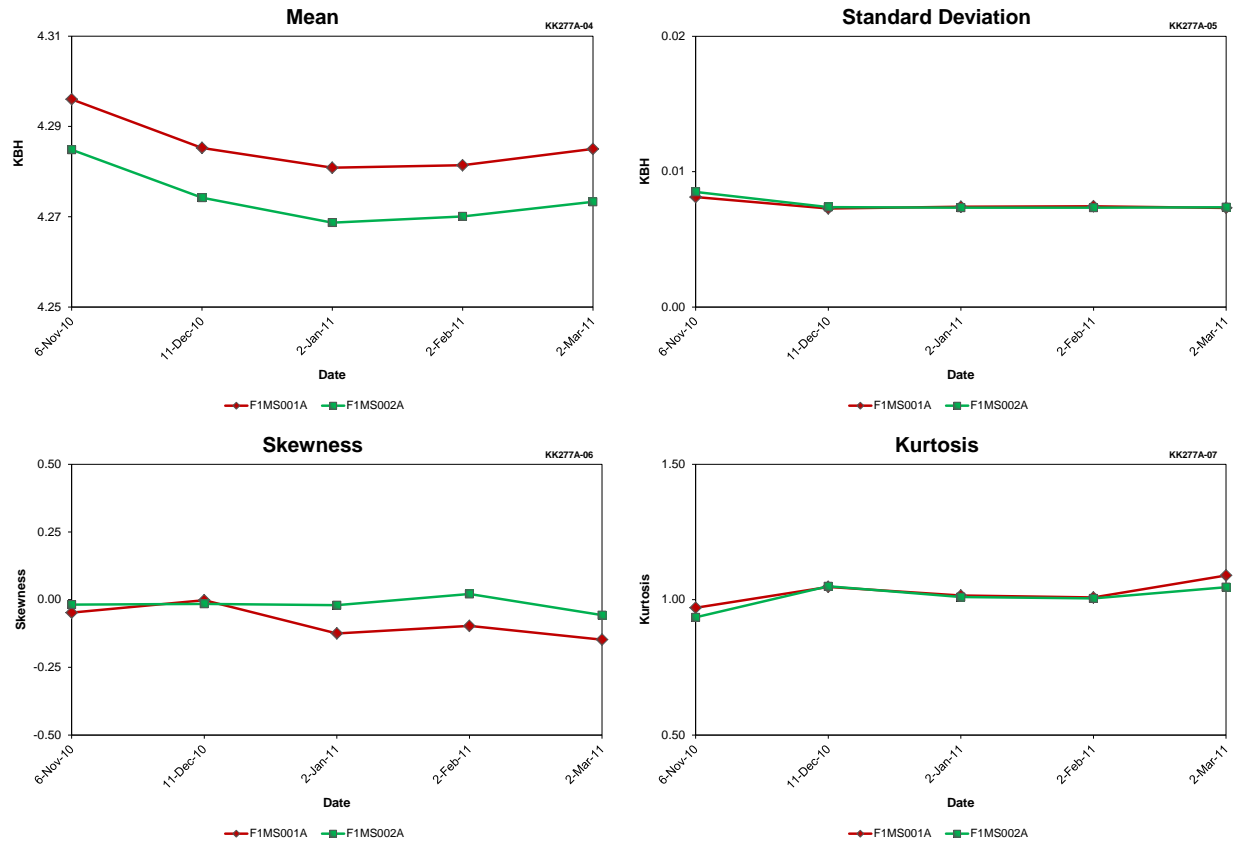
**Figure H.1 SG A STEAM FLOW Steady-State Deviation at North Anna Unit 1 (Cycle 22)**



**Figure H.2 SG A STEAM FLOW Steady-State Drift at North Anna Unit 1 (Cycle 22)**



**Figure H.3 SG A STEAM FLOW Steady-State Residual AAKR at North Anna Unit 1 (Cycle 22)**



**Figure H.4 SG A STEAM FLOW Data Quality Statistics at North Anna Unit 1 (Cycle 22)**

**Table H.2 SG A STEAM FLOW Data Quality for North Anna Unit 1 (Cycle 22)**

Result Type	Tag Names	
	F1MS001A	F1MS002A
Mean	4.29	4.27
Std. Dev.	0.01	0.01
Skewness	-0.08	-0.02
Kurtosis	1.03	1.01





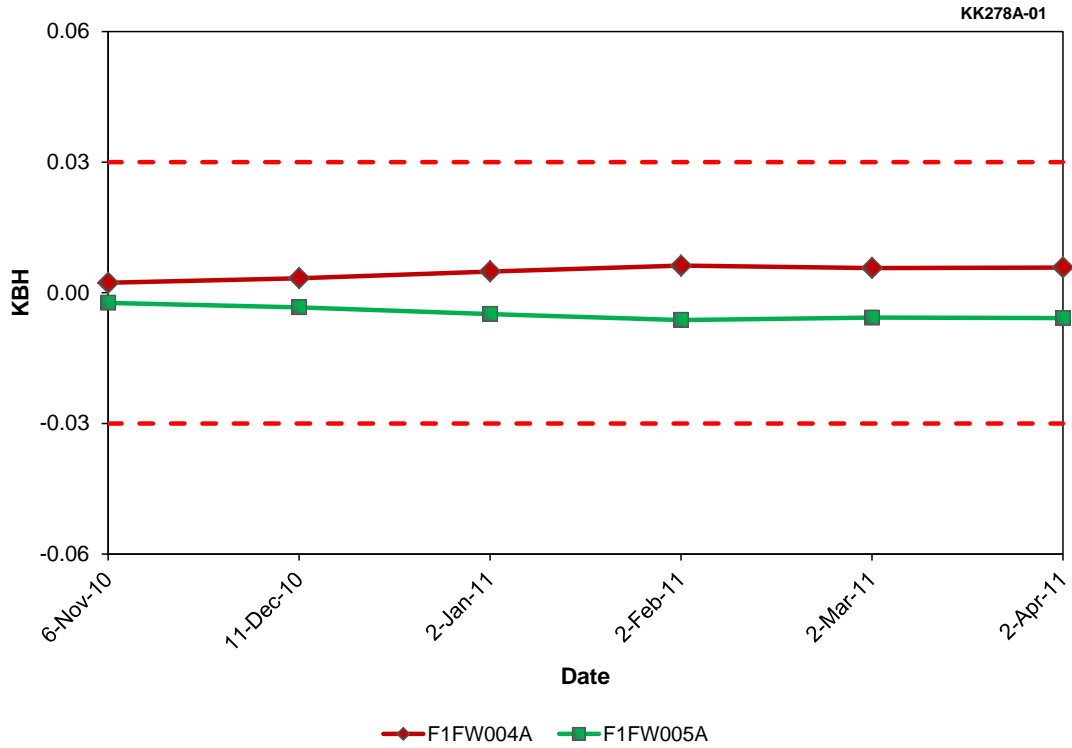


Figure H.5 FW FLOW TO SG A Steady-State Deviation at North Anna Unit 1 (Cycle 22)

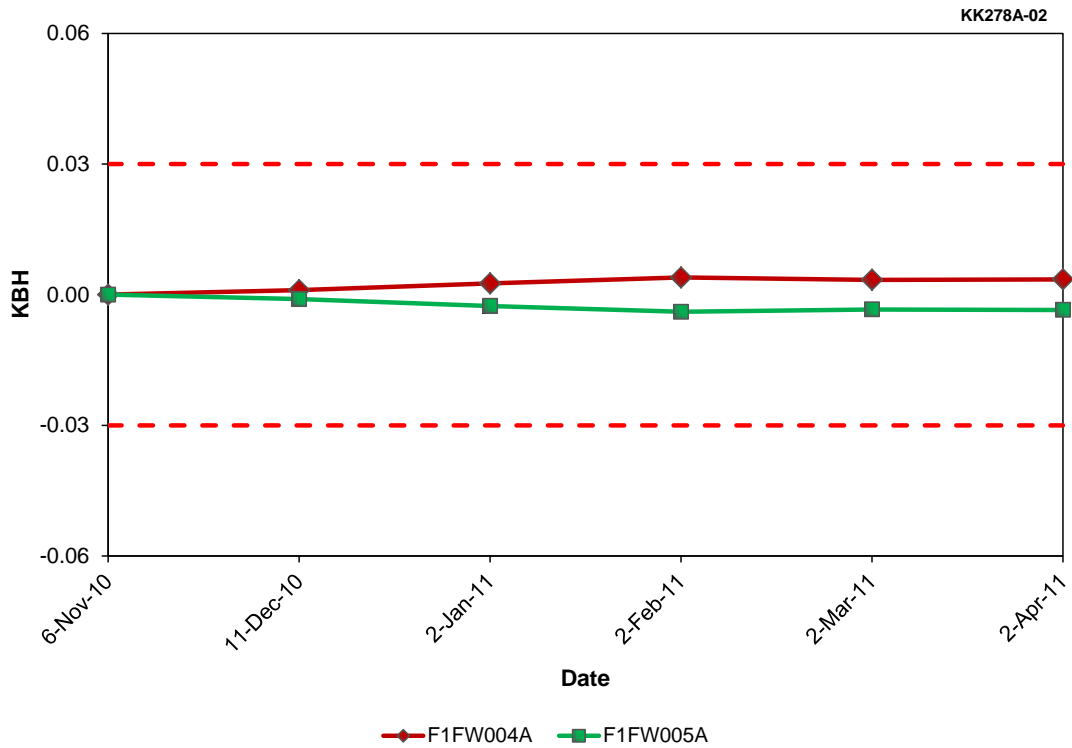
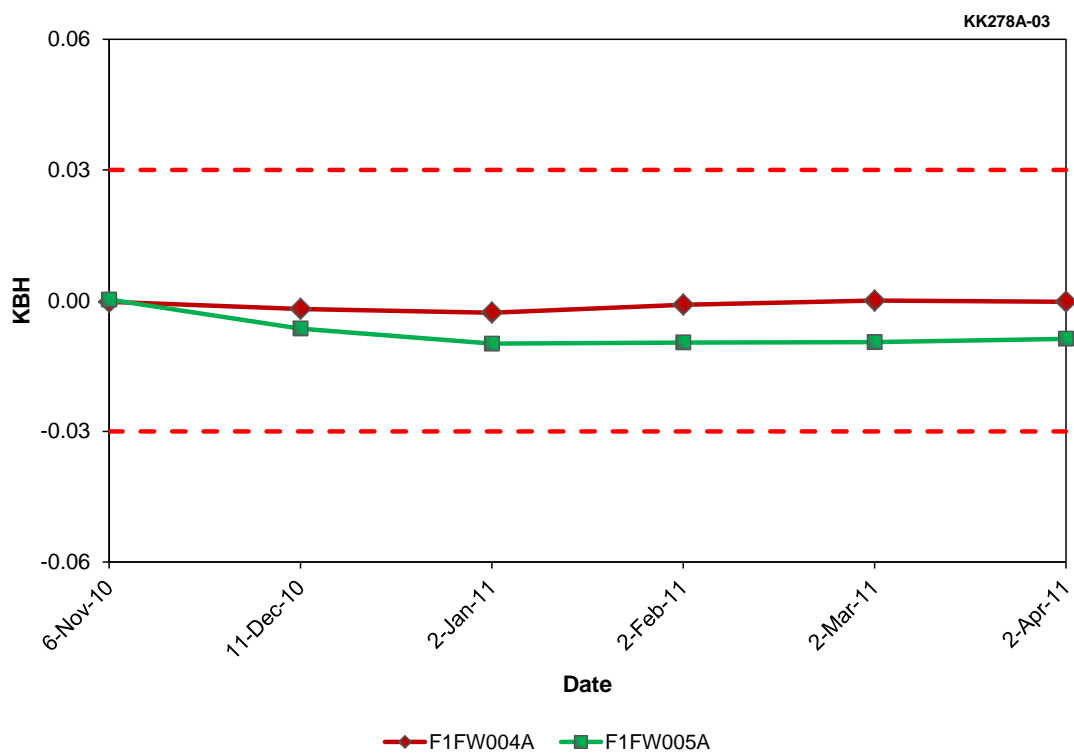
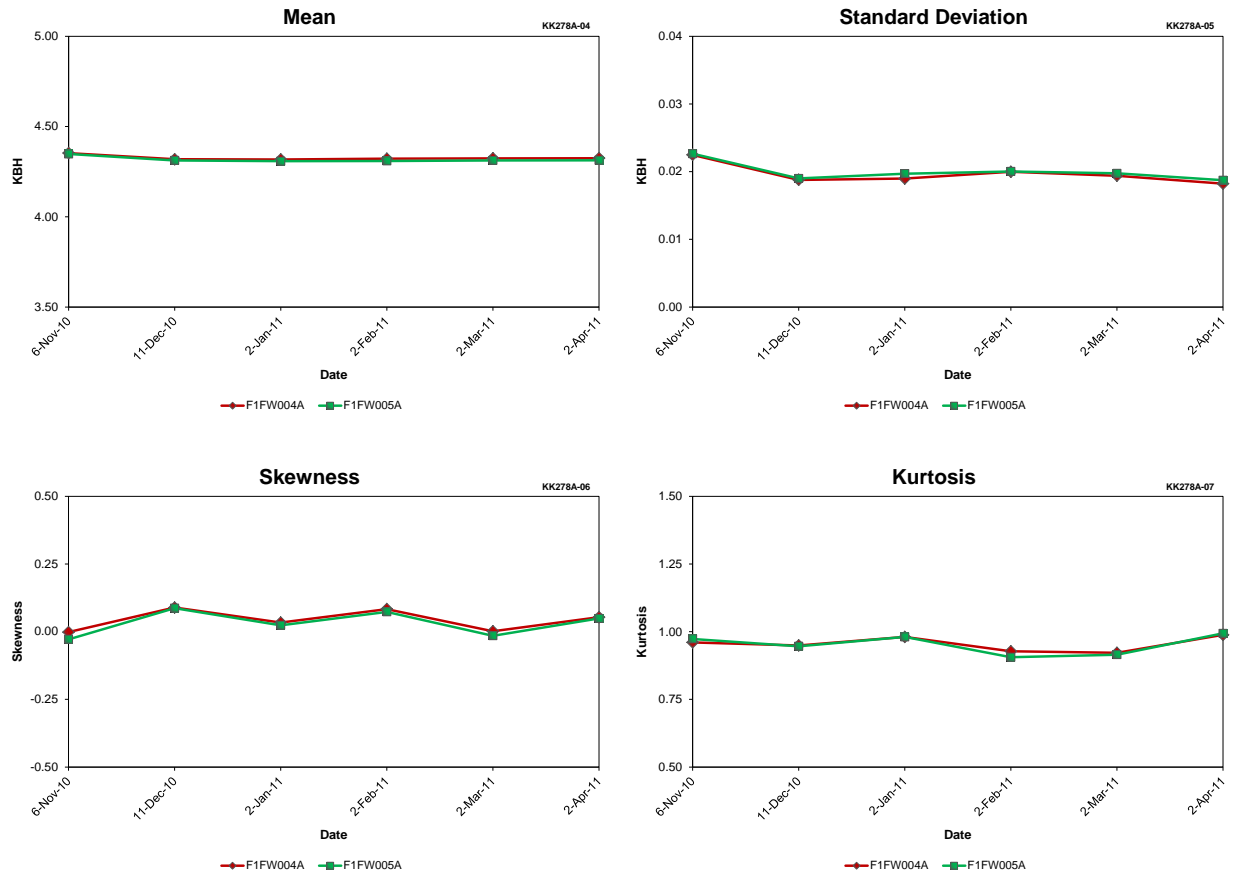


Figure H.6 FW FLOW TO SG A Steady-State Drift at North Anna Unit 1 (Cycle 22)



**Figure H.7 FW FLOW TO SG A Steady-State Residual AAKR at North Anna Unit 1 (Cycle 22)**

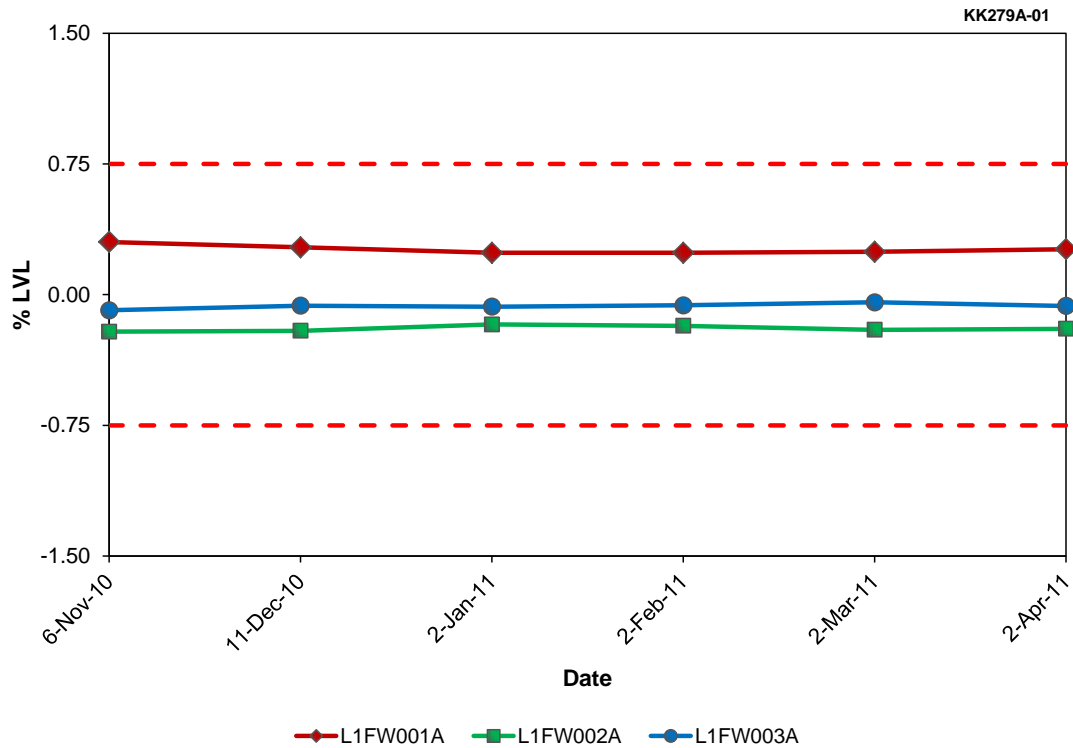


**Figure H.8 FW FLOW TO SG A Data Quality Statistics at North Anna Unit 1 (Cycle 22)**

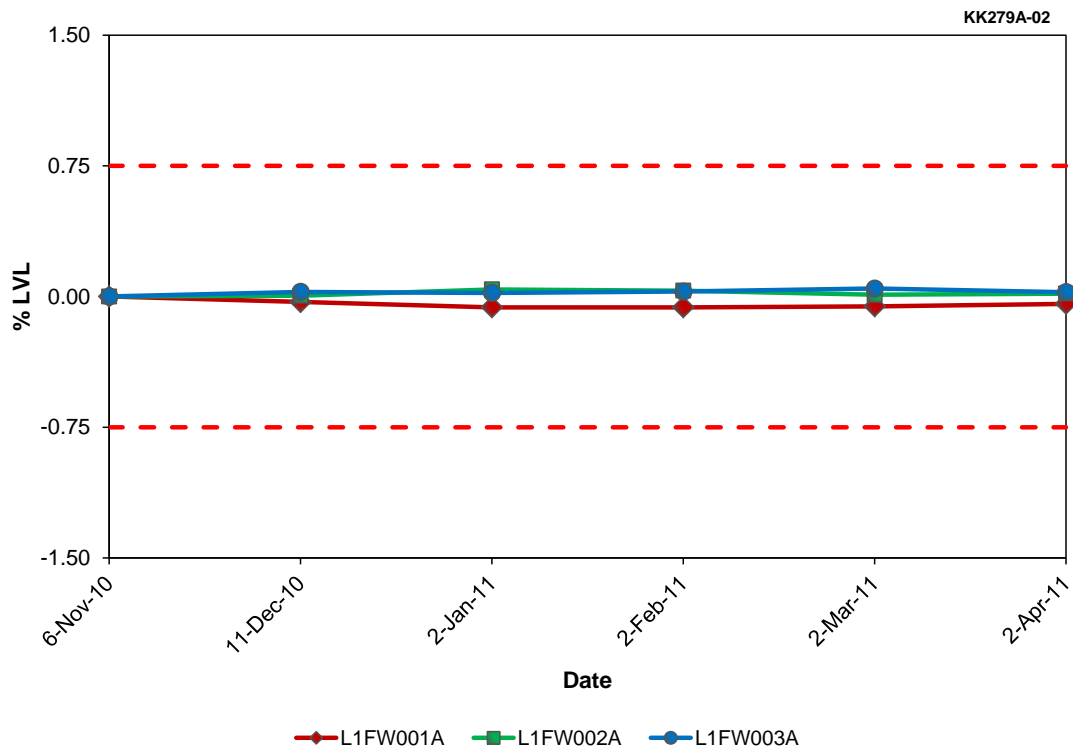
**Table H.3 FW FLOW TO SG A Data Quality for North Anna Unit 1 (Cycle 22)**

Result Type	Tag Names	
	F1FW004A	F1FW005A
Mean	4.33	4.32
Std. Dev.	0.02	0.02
Skewness	0.04	0.03
Kurtosis	0.95	0.95

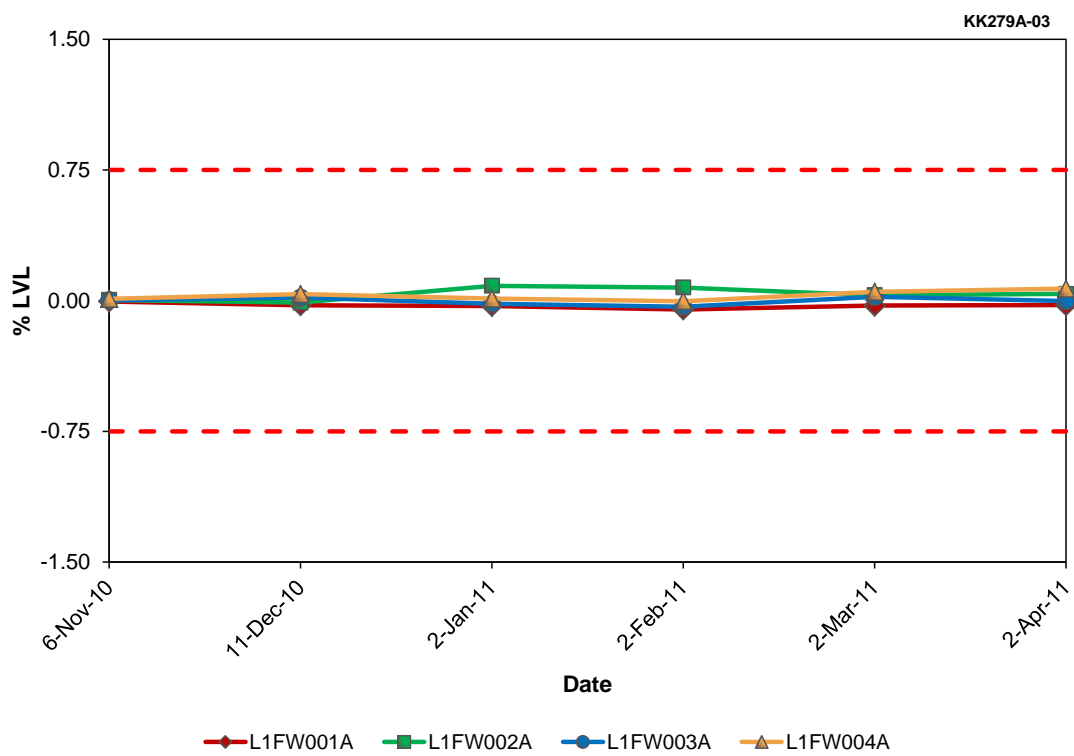




**Figure H.9 SG A LEVEL Steady-State Deviation at North Anna Unit 1 (Cycle 22)**



**Figure H.10 SG A LEVEL Steady-State Drift at North Anna Unit 1 (Cycle 22)**



**Figure H.11 SG A LEVEL Steady-State Residual AAKR at North Anna Unit 1 (Cycle 22)**

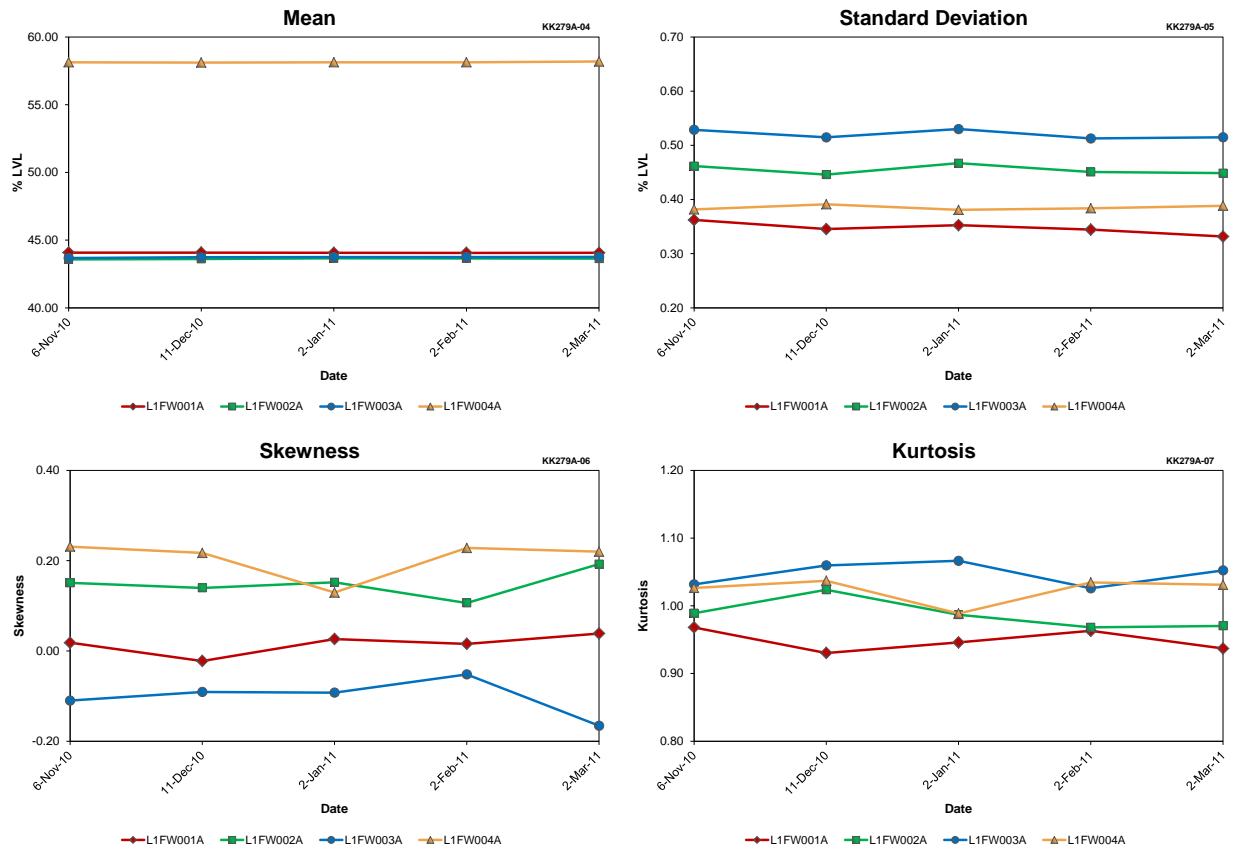


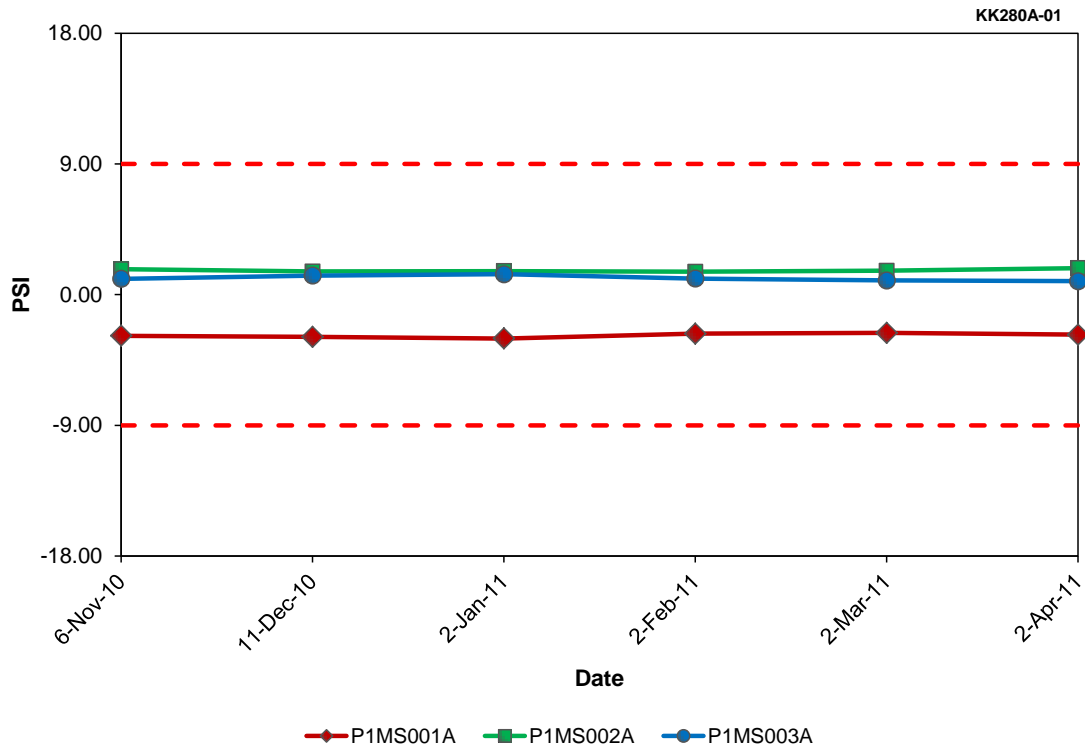
Figure H.12 SG A LEVEL Data Quality Statistics at North Anna Unit 1 (Cycle 22)

Table H.4 SG A LEVEL Data Quality for North Anna Unit 1 (Cycle 22)

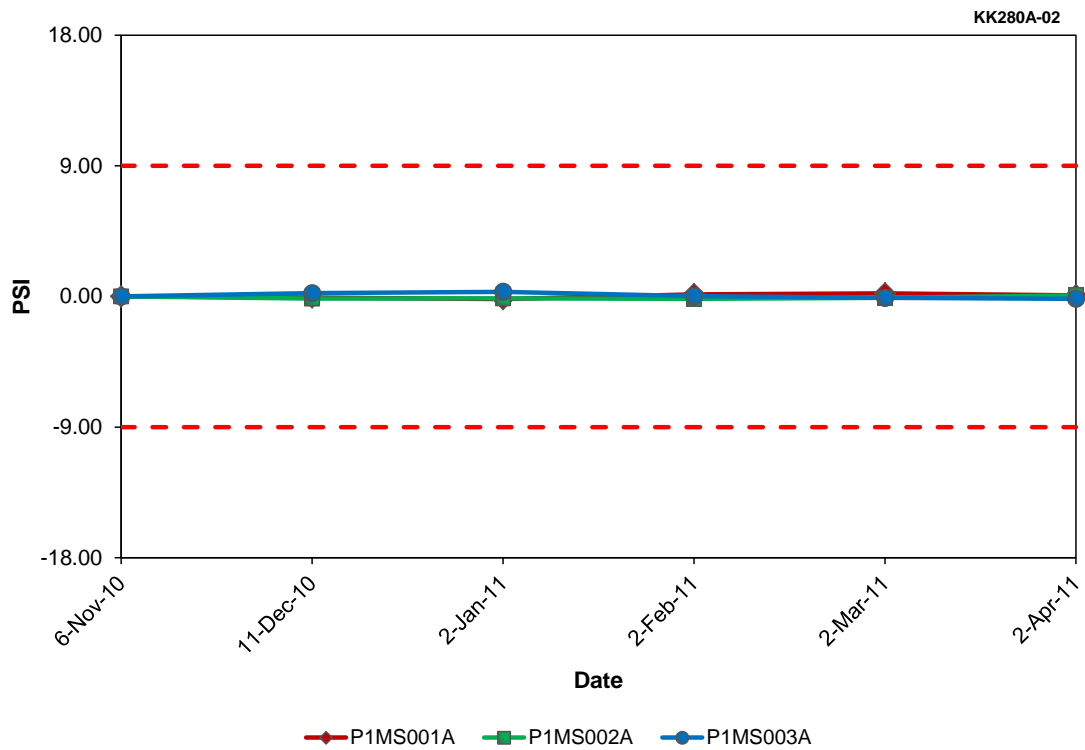
Result Type	Tag Names			
	L1FW001A	L1FW002A	L1FW003A	L1FW004A
Mean	44.07	43.62	43.73	58.14
Std. Dev.	0.35	0.45	0.52	0.39
Skewness	0.02	0.15	-0.10	0.21
Kurtosis	0.95	0.99	1.05	1.02







**Figure H.13 SG A OUTLET PRESSURE Steady-State Deviation at North Anna Unit 1 (Cycle 22)**



**Figure H.14 SG A OUTLET PRESSURE Steady-State Drift at North Anna Unit 1 (Cycle 22)**

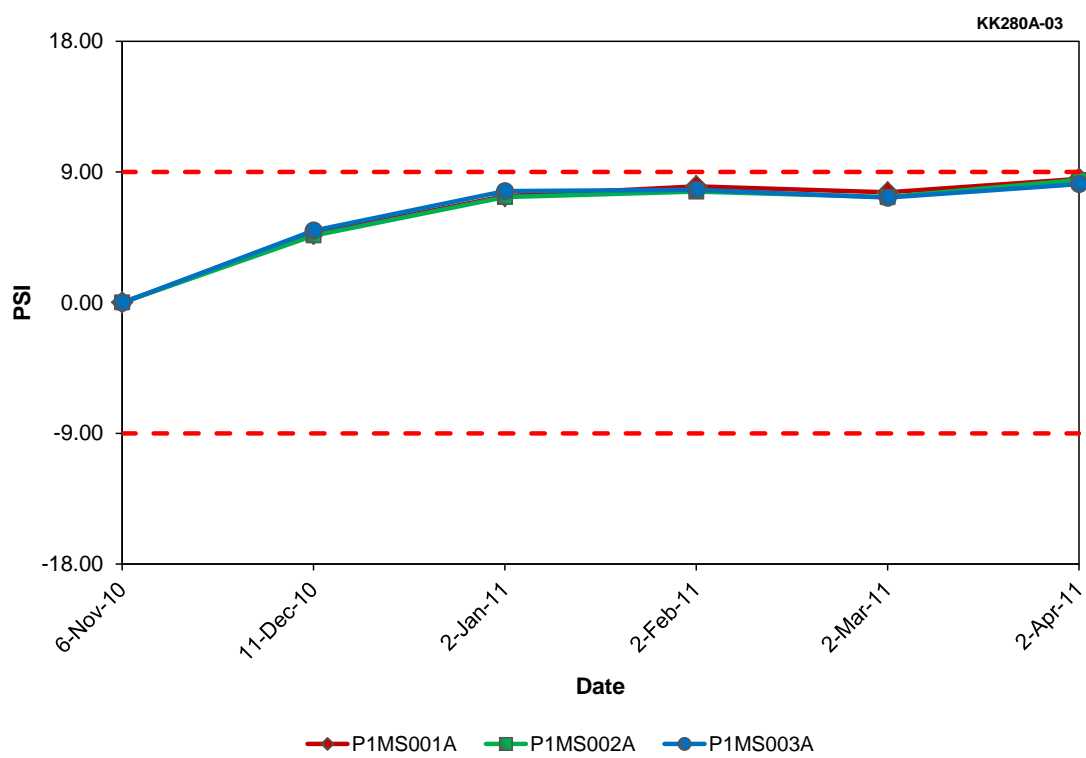
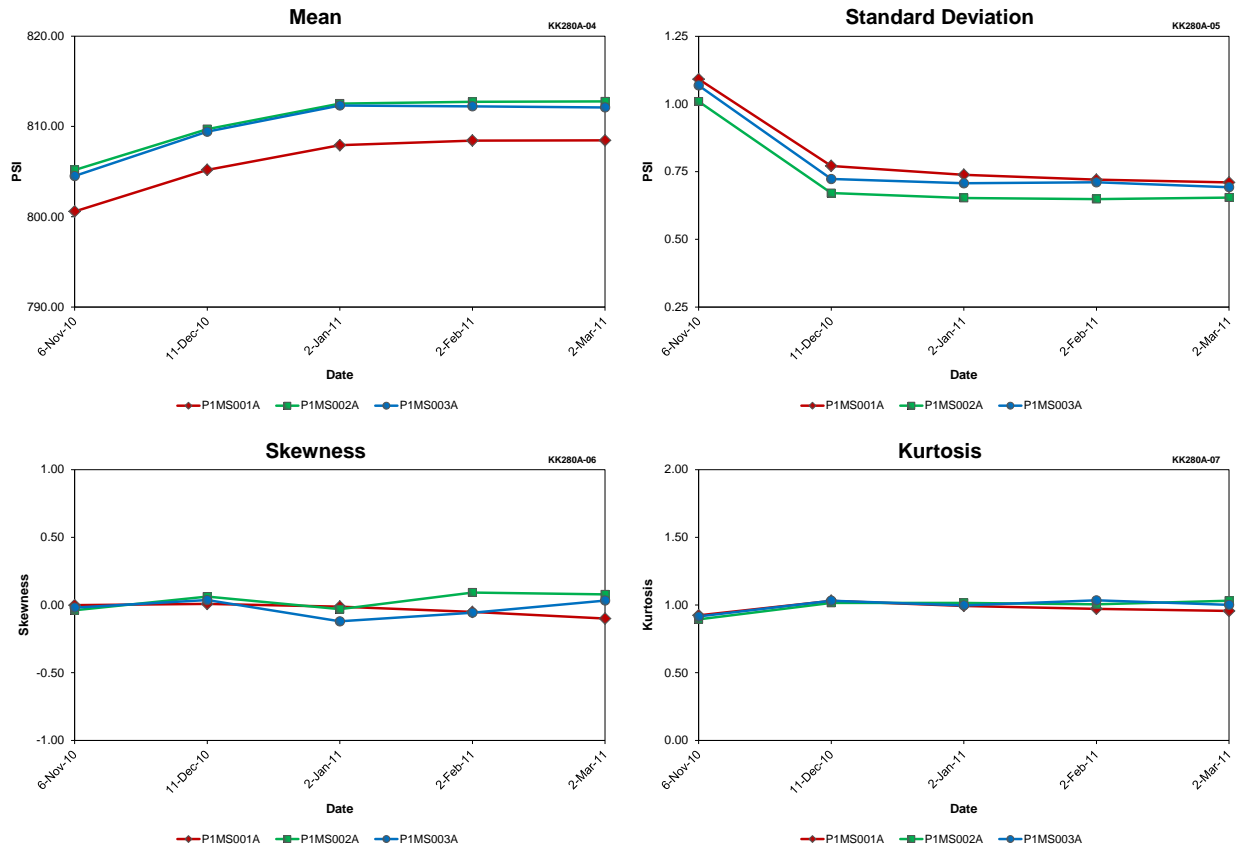


Figure H.15 SG A OUTLET PRESSURE Steady-State Residual AAKR at North Anna Unit 1 (Cycle 22)

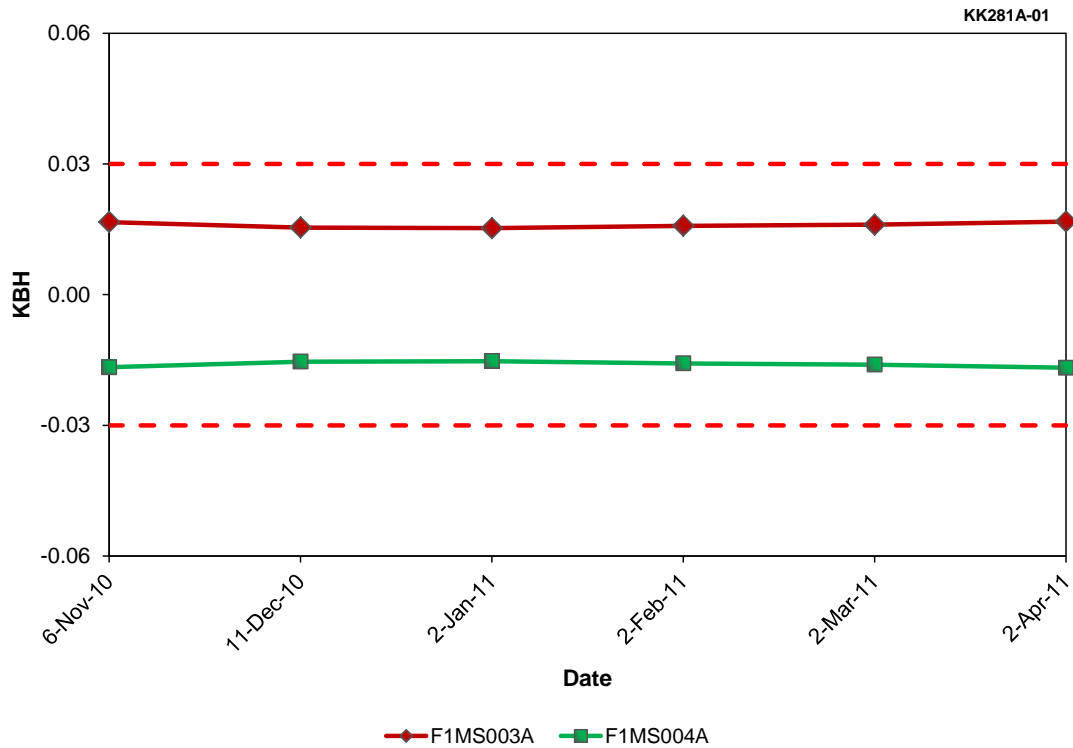


**Figure H.16 SG A OUTLET PRESSURE Data Quality Statistics at North Anna Unit 1 (Cycle 22)**

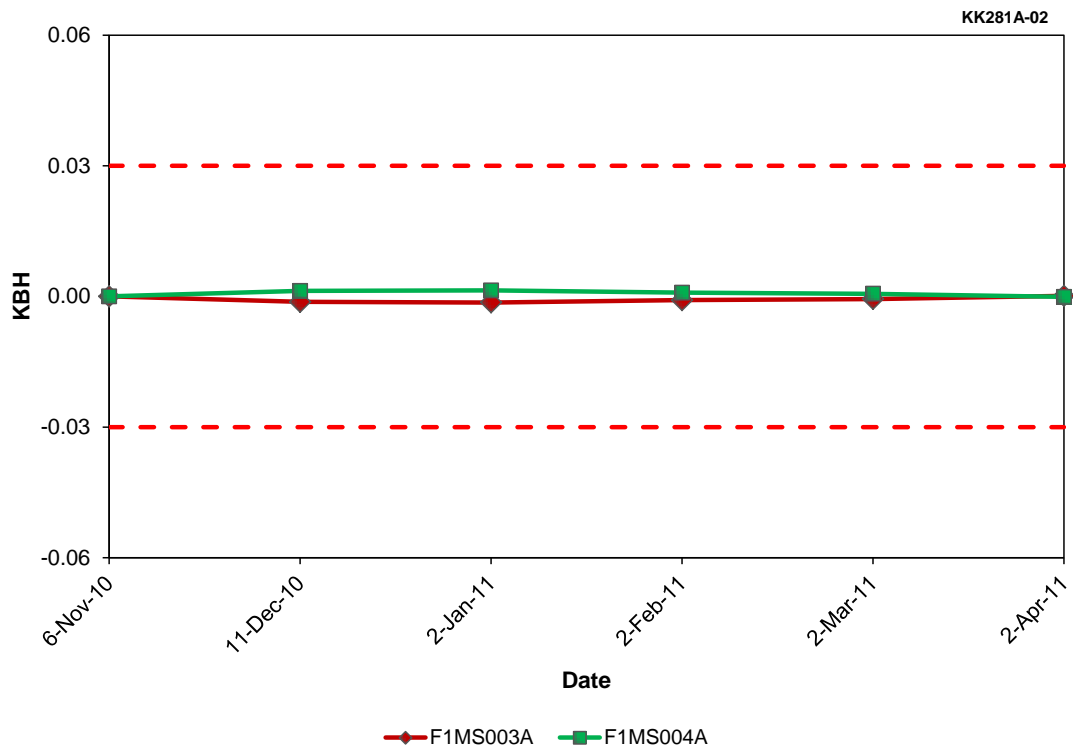
**Table H.5 SG A OUTLET PRESSURE Data Quality for North Anna Unit 1 (Cycle 22)**

Result Type	Tag Names		
	P1MS001A	P1MS002A	P1MS003A
Mean	806.12	810.58	810.11
Std. Dev.	0.81	0.73	0.78
Skewness	-0.03	0.03	-0.03
Kurtosis	0.98	0.99	1.00

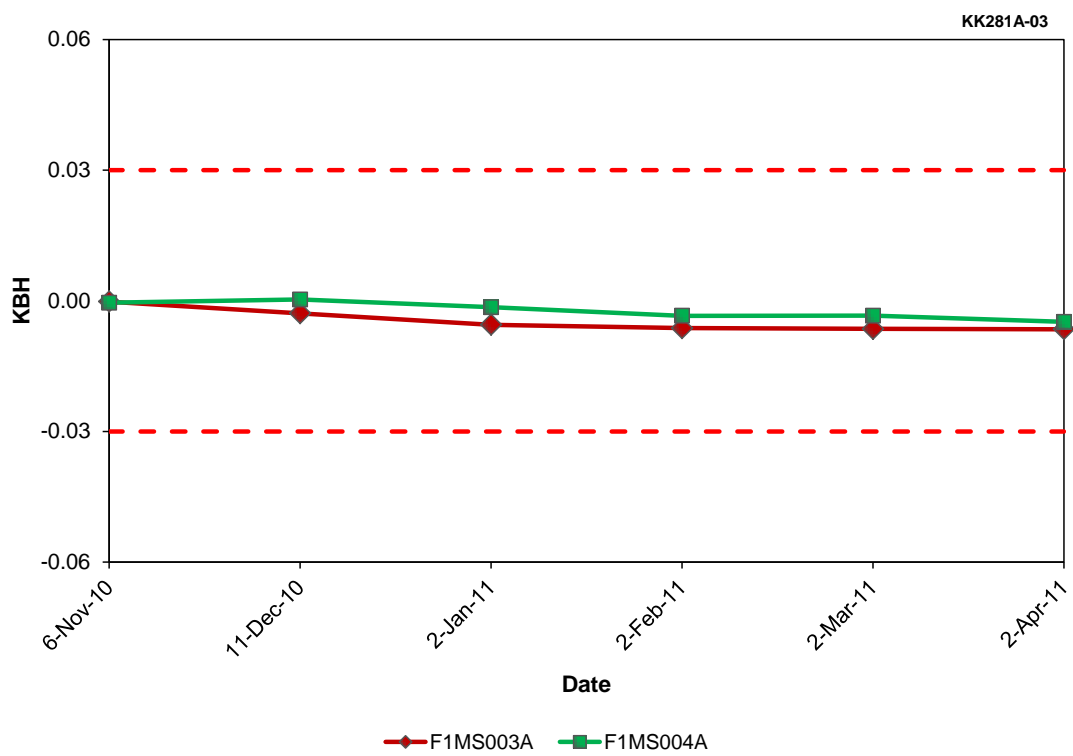




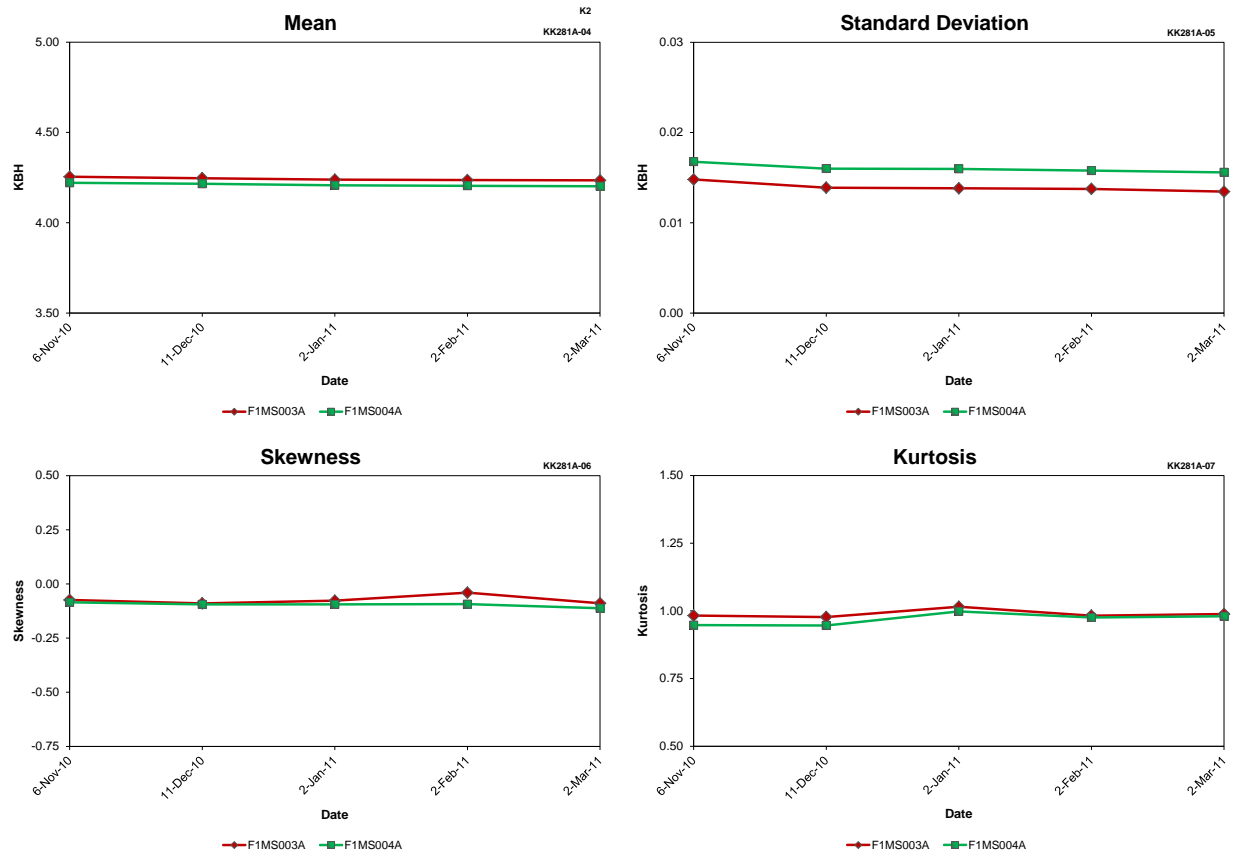
**Figure H.17 SG B STEAM FLOW Steady-State Deviation at North Anna Unit 1 (Cycle 22)**



**Figure H.18 SG B STEAM FLOW Steady-State Drift at North Anna Unit 1 (Cycle 22)**



**Figure H.19 SG B STEAM FLOW Steady-State Residual AAKR at North Anna Unit 1 (Cycle 22)**



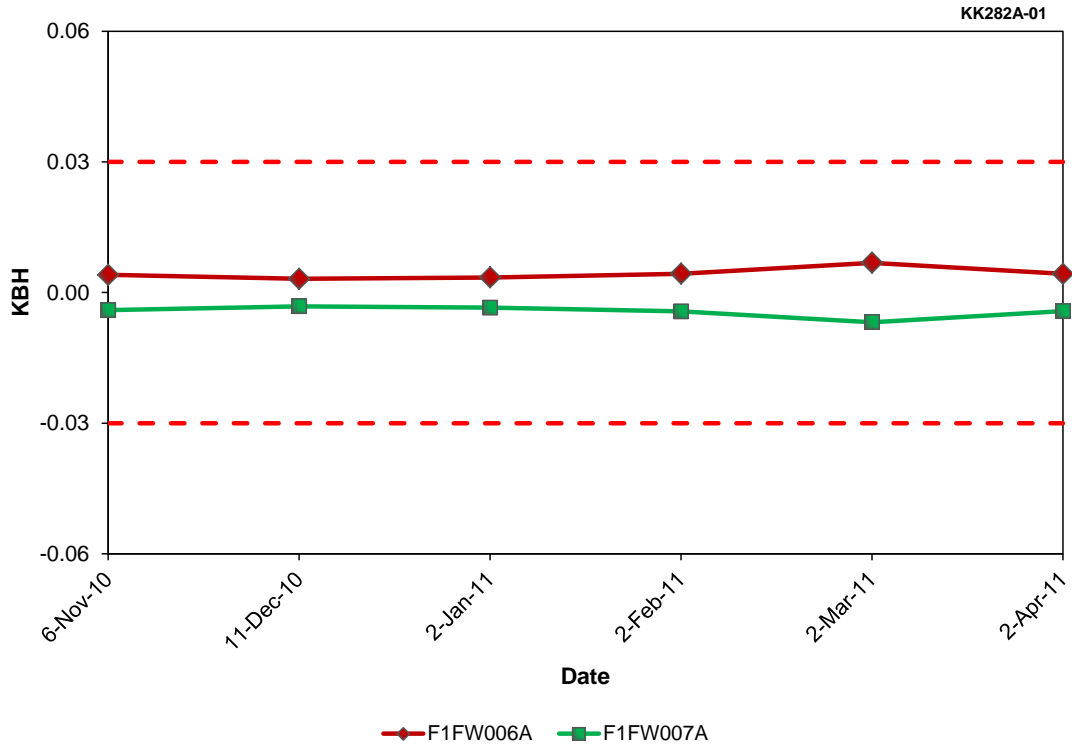
**Figure H.20 SG B STEAM FLOW Data Quality Statistics at North Anna Unit 1 (Cycle 22)**

**Table H.6 SG B STEAM FLOW Data Quality for North Anna Unit 1 (Cycle 22)**

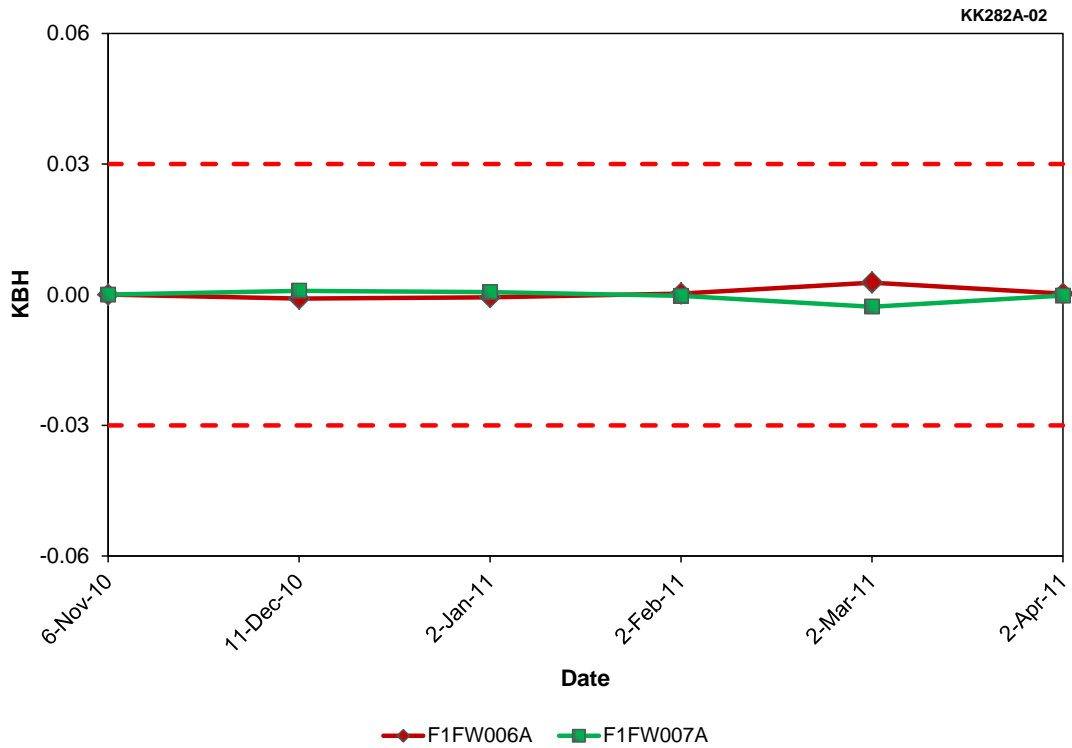
Result Type	Tag Names	
	F1MS003A	F1MS004A
Mean	4.24	4.21
Std. Dev.	0.01	0.02
Skewness	-0.07	-0.10
Kurtosis	0.99	0.97



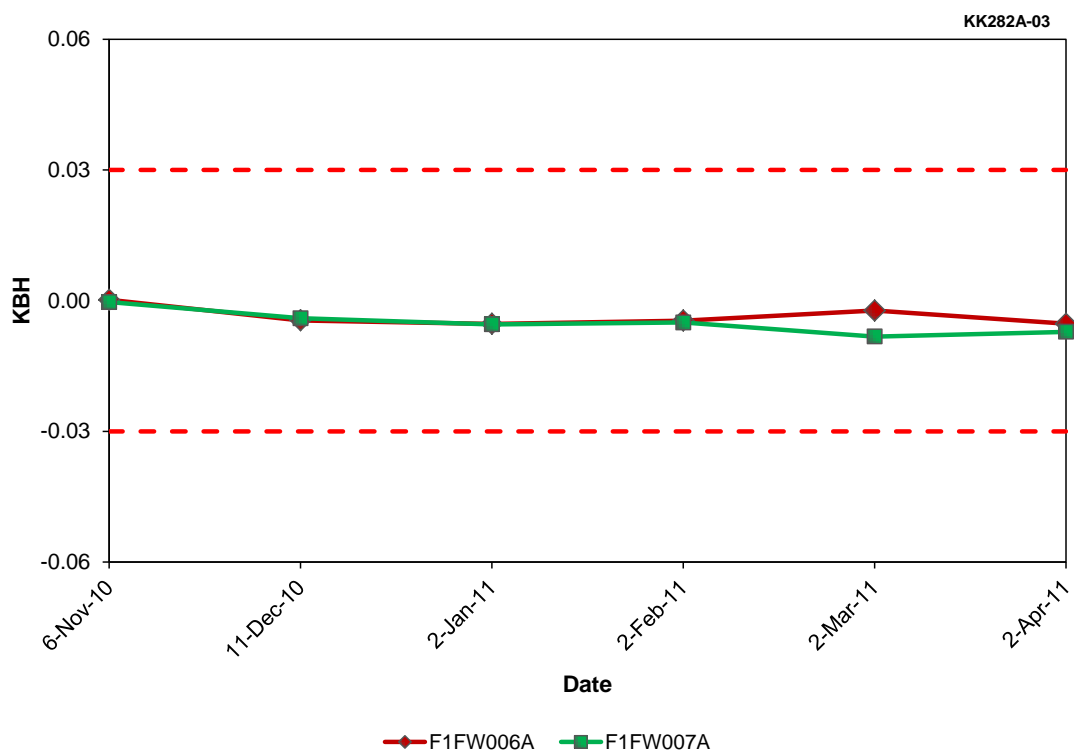




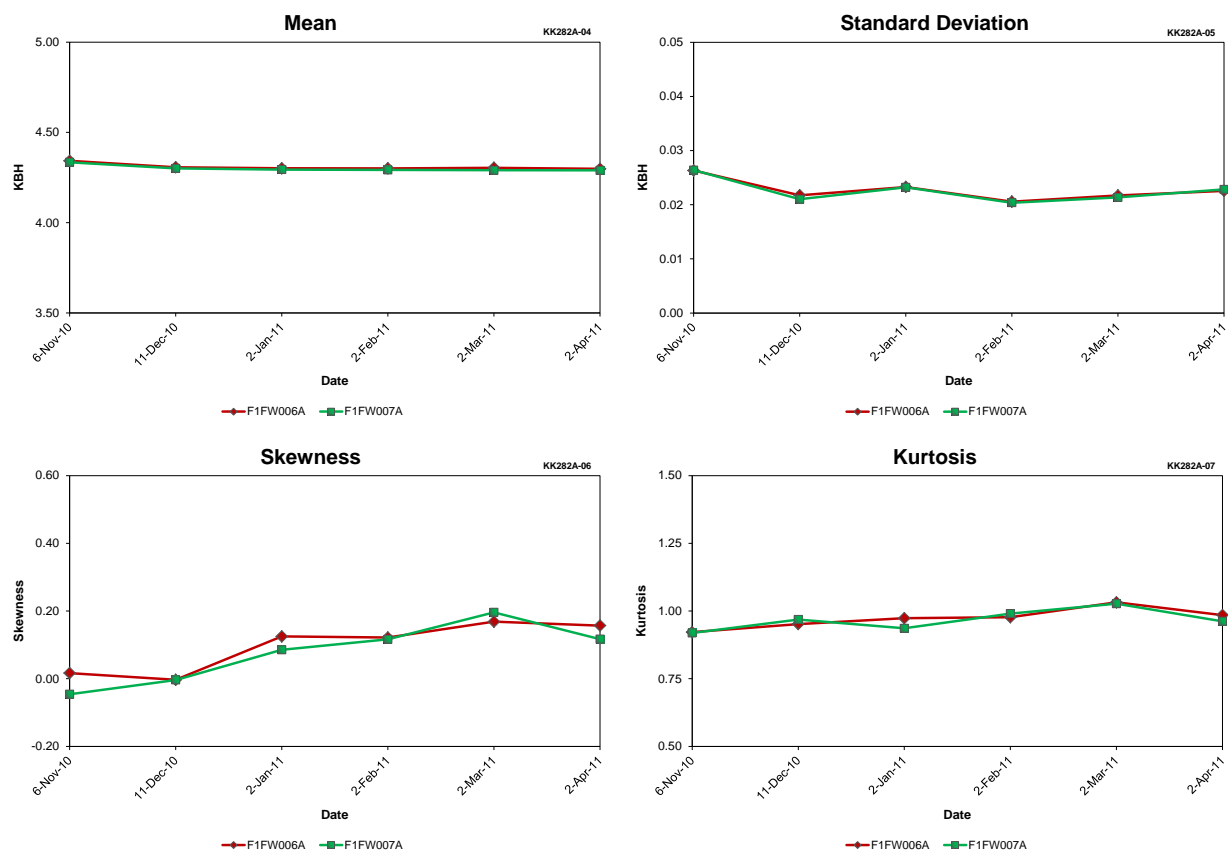
**Figure H.21 FBW FLOW TO SG B Steady-State Deviation at North Anna Unit 1 (Cycle 22)**



**Figure H.22 FBW FLOW TO SG B Steady-State Drift at North Anna Unit 1 (Cycle 22)**



**Figure H.23 FW FLOW TO SG B Steady-State Residual AAKR at North Anna Unit 1 (Cycle 22)**

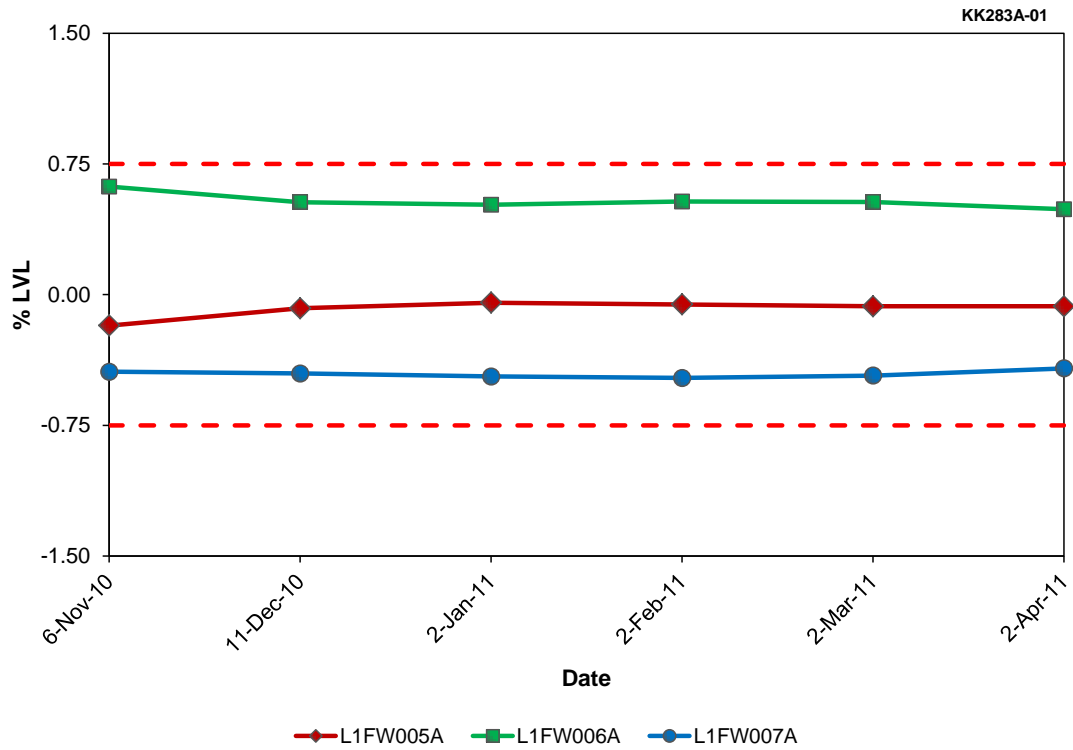


**Figure H.24 FW FLOW TO SG B Data Quality Statistics at North Anna Unit 1 (Cycle 22)**

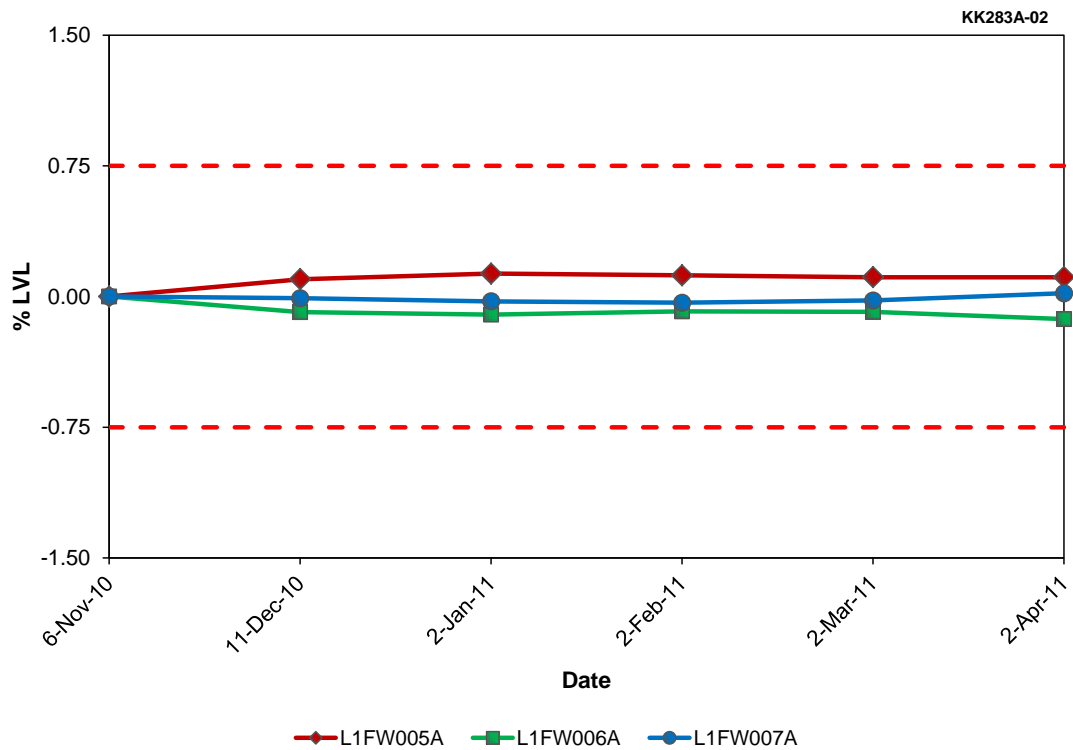
**Table H.7 FW FLOW TO SG B Data Quality for North Anna Unit 1 (Cycle 22)**

Result Type	Tag Names	
	F1FW006A	F1FW007A
Mean	4.31	4.30
Std. Dev.	0.02	0.02
Skewness	0.10	0.08
Kurtosis	0.97	0.97

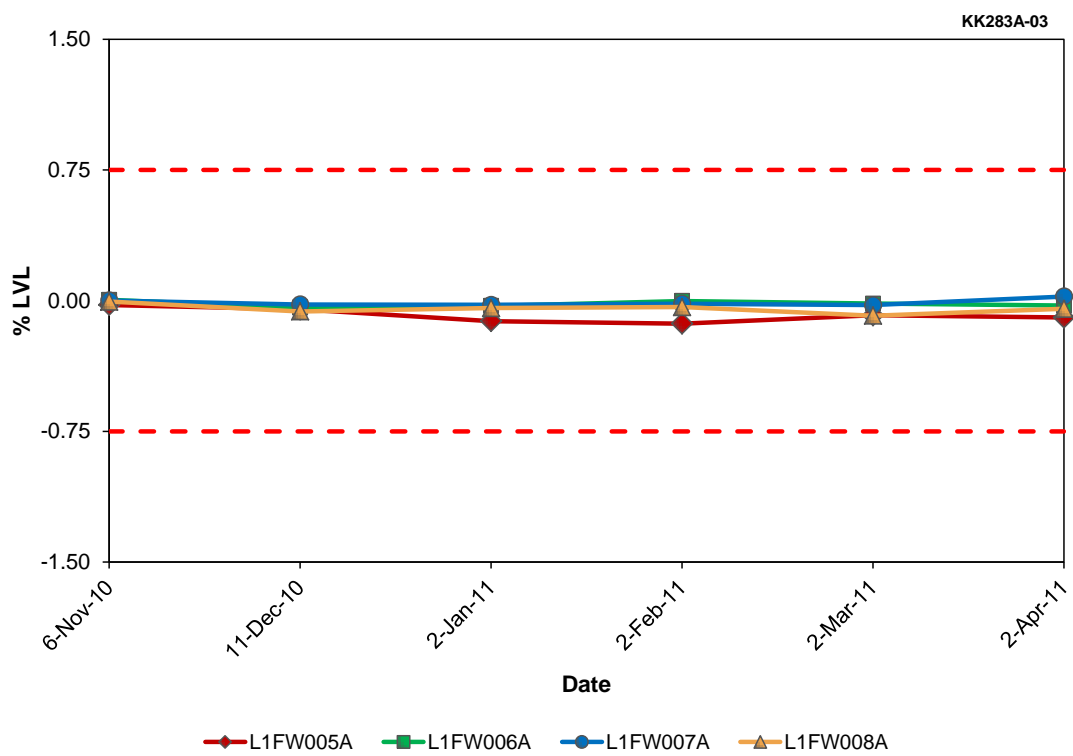




**Figure H.25 SG B LEVEL Steady-State Deviation at North Anna Unit 1 (Cycle 22)**



**Figure H.26 SG B LEVEL Steady-State Drift at North Anna Unit 1 (Cycle 22)**



**Figure H.27 SG B LEVEL Steady-State Residual AAKR at North Anna Unit 1 (Cycle 22)**

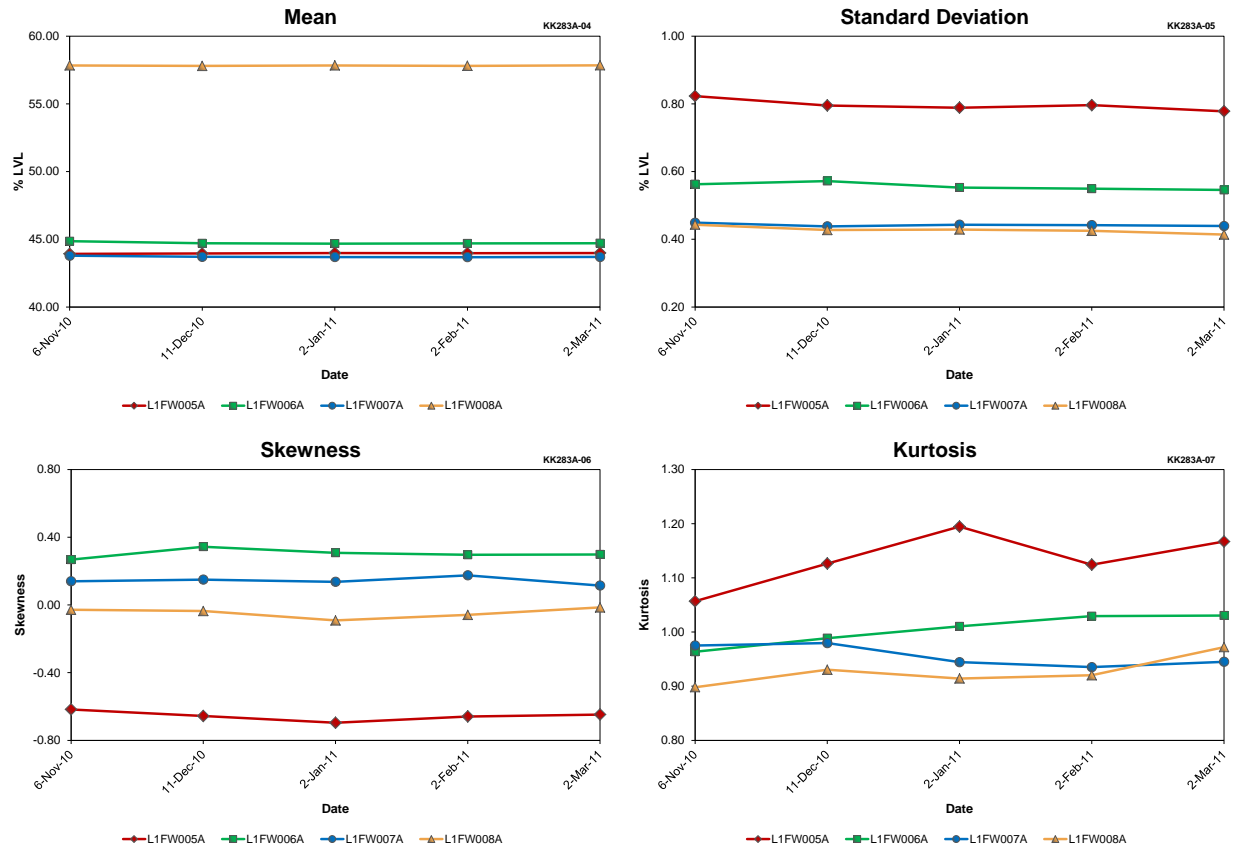


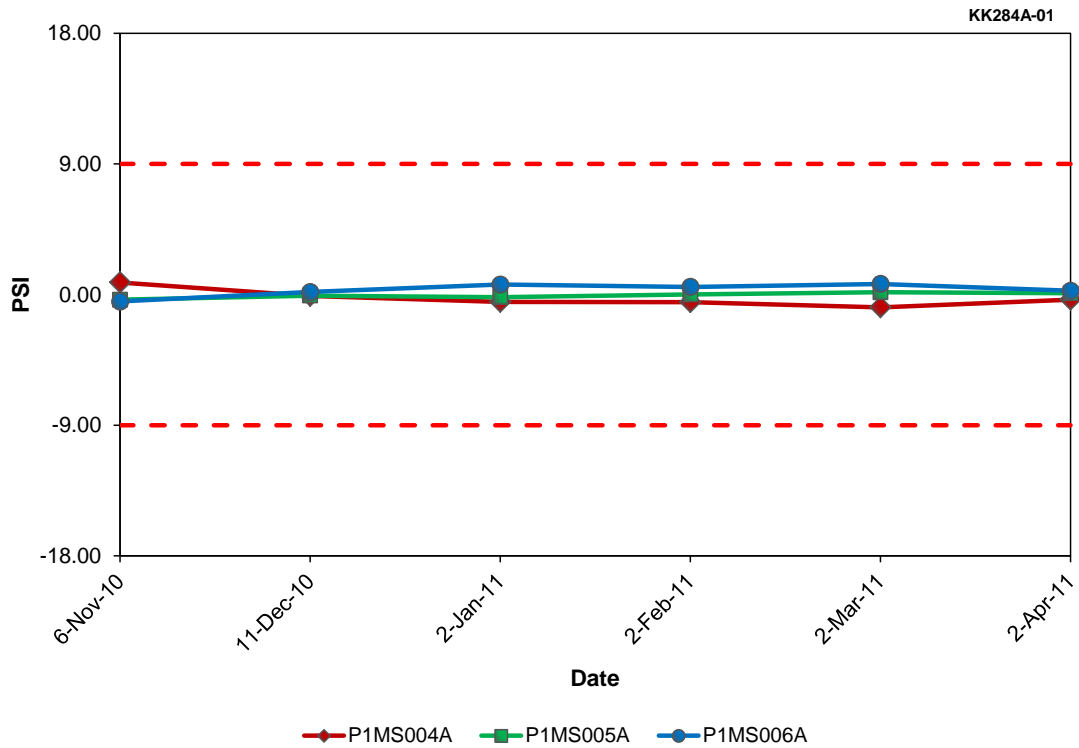
Figure H.28 SG B LEVEL Data Quality Statistics at North Anna Unit 1 (Cycle 22)

Table H.8 SG B LEVEL Data Quality for North Anna Unit 1 (Cycle 22)

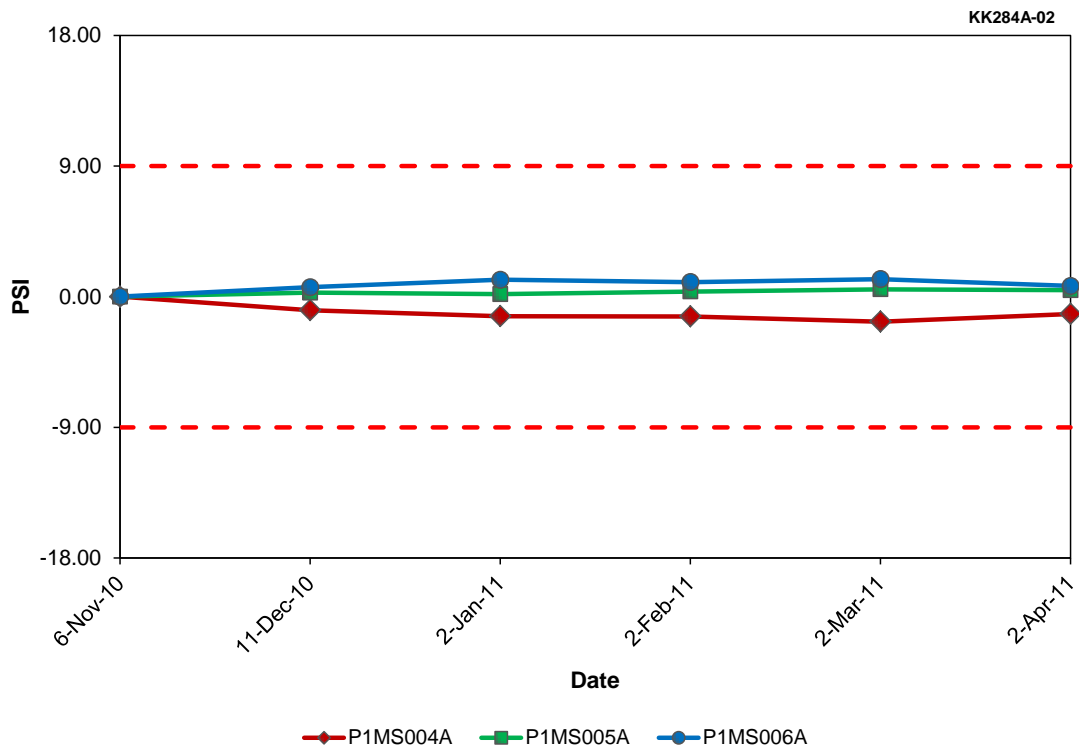
Result Type	Tag Names			
	L1FW005A	L1FW006A	L1FW007A	L1FW008A
Mean	43.97	44.73	43.71	57.82
Std. Dev.	0.80	0.56	0.44	0.43
Skewness	-0.66	0.30	0.14	-0.05
Kurtosis	1.13	1.00	0.96	0.93



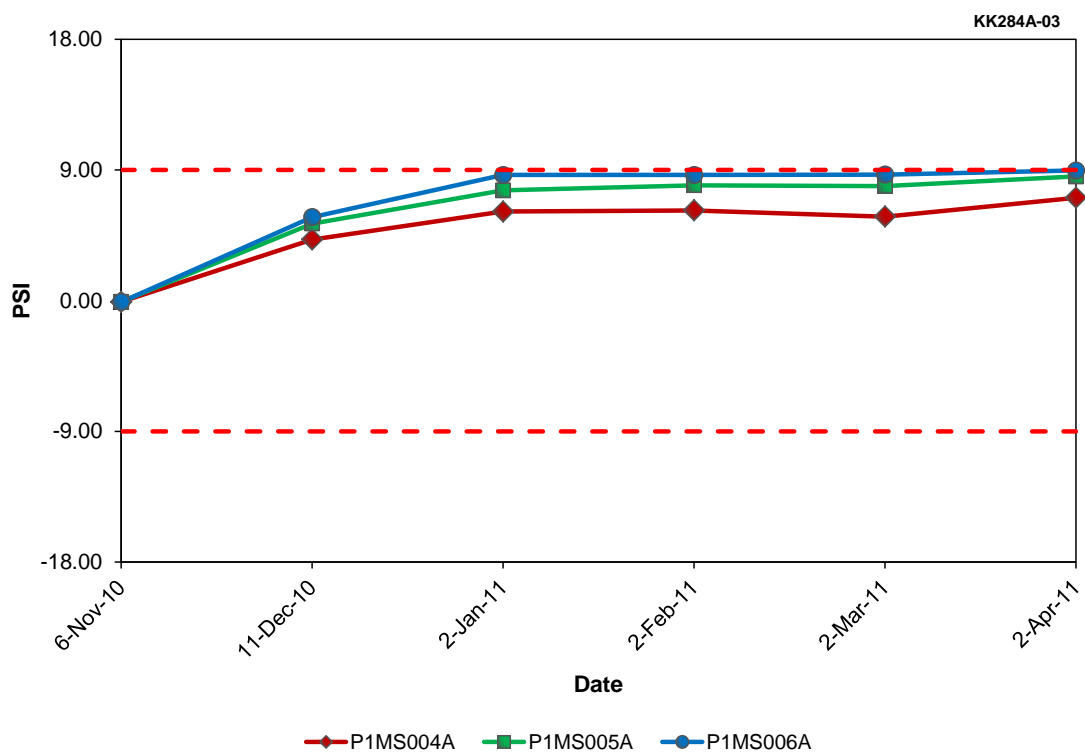




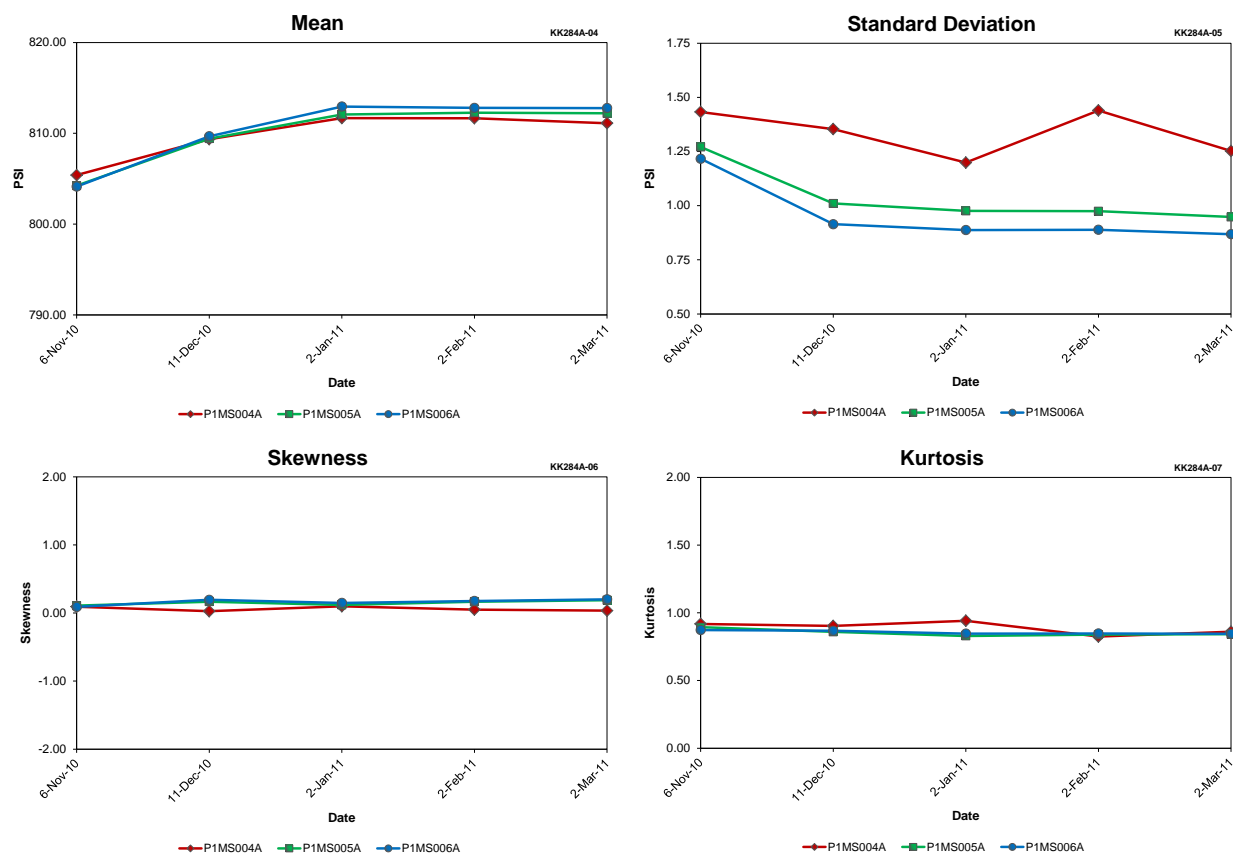
**Figure H.29 SG B OUTLET PRESSURE Steady-State Deviation at North Anna Unit 1 (Cycle 22)**



**Figure H.30 SG B OUTLET PRESSURE Steady-State Drift at North Anna Unit 1 (Cycle 22)**



**Figure H.31 SG B OUTLET PRESSURE Steady-State Residual AAKR at North Anna Unit 1 (Cycle 22)**

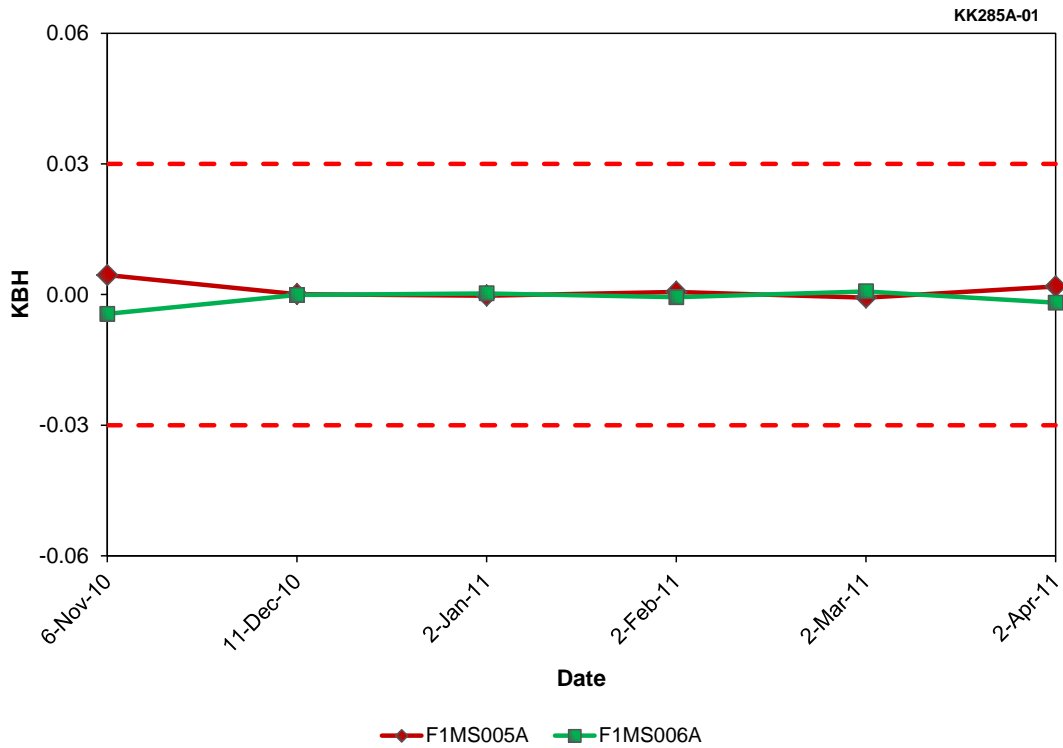


**Figure H.32 SG B OUTLET PRESSURE Data Quality Statistics at North Anna Unit 1 (Cycle 22)**

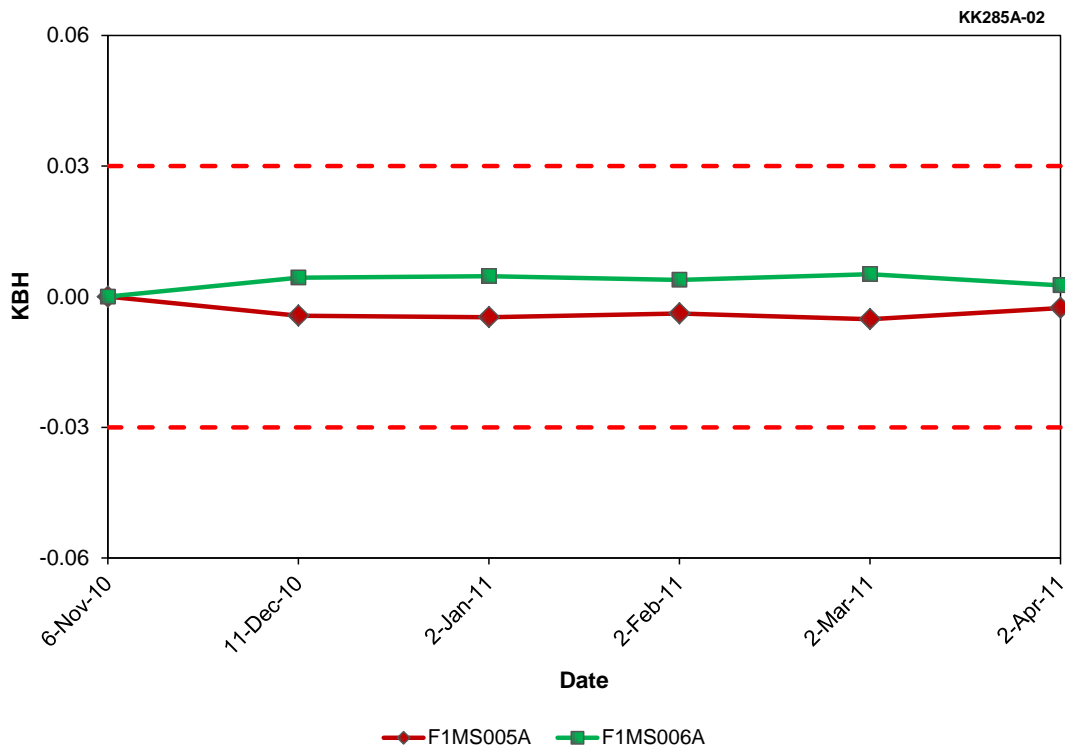
**Table H.9 SG B OUTLET PRESSURE Data Quality for North Anna Unit 1 (Cycle 22)**

Result Type	Tag Names		
	P1MS004A	P1MS005A	P1MS006A
Mean	809.84	810.03	810.47
Std. Dev.	1.34	1.04	0.96
Skewness	0.06	0.15	0.16
Kurtosis	0.89	0.85	0.86

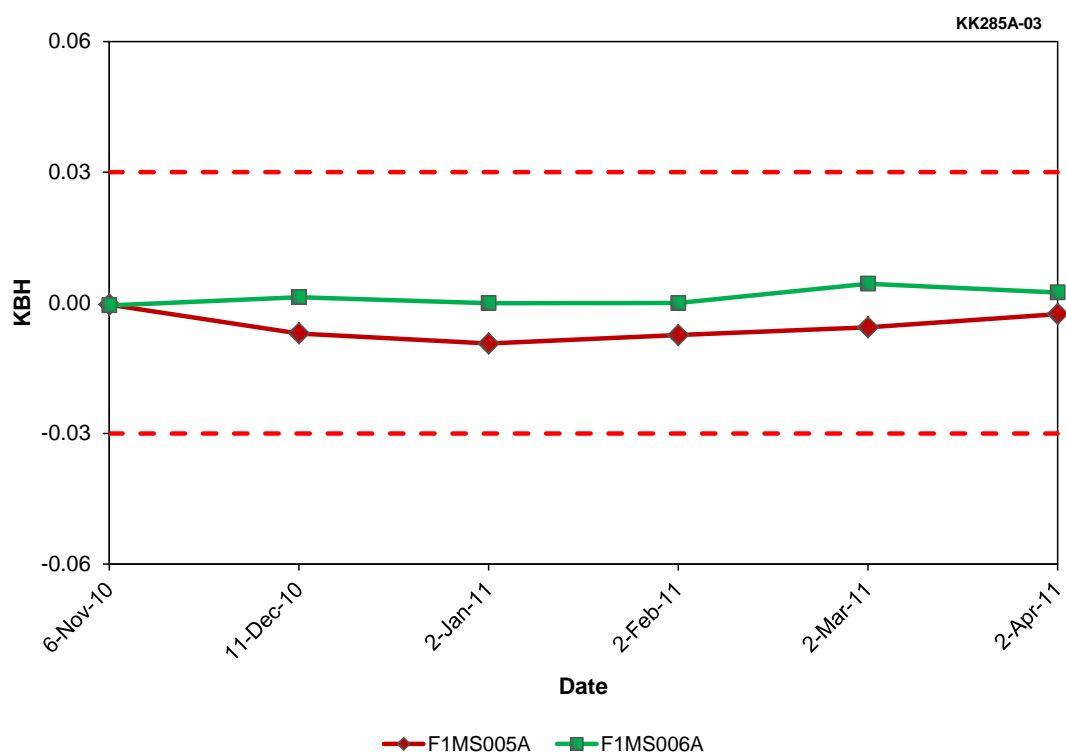




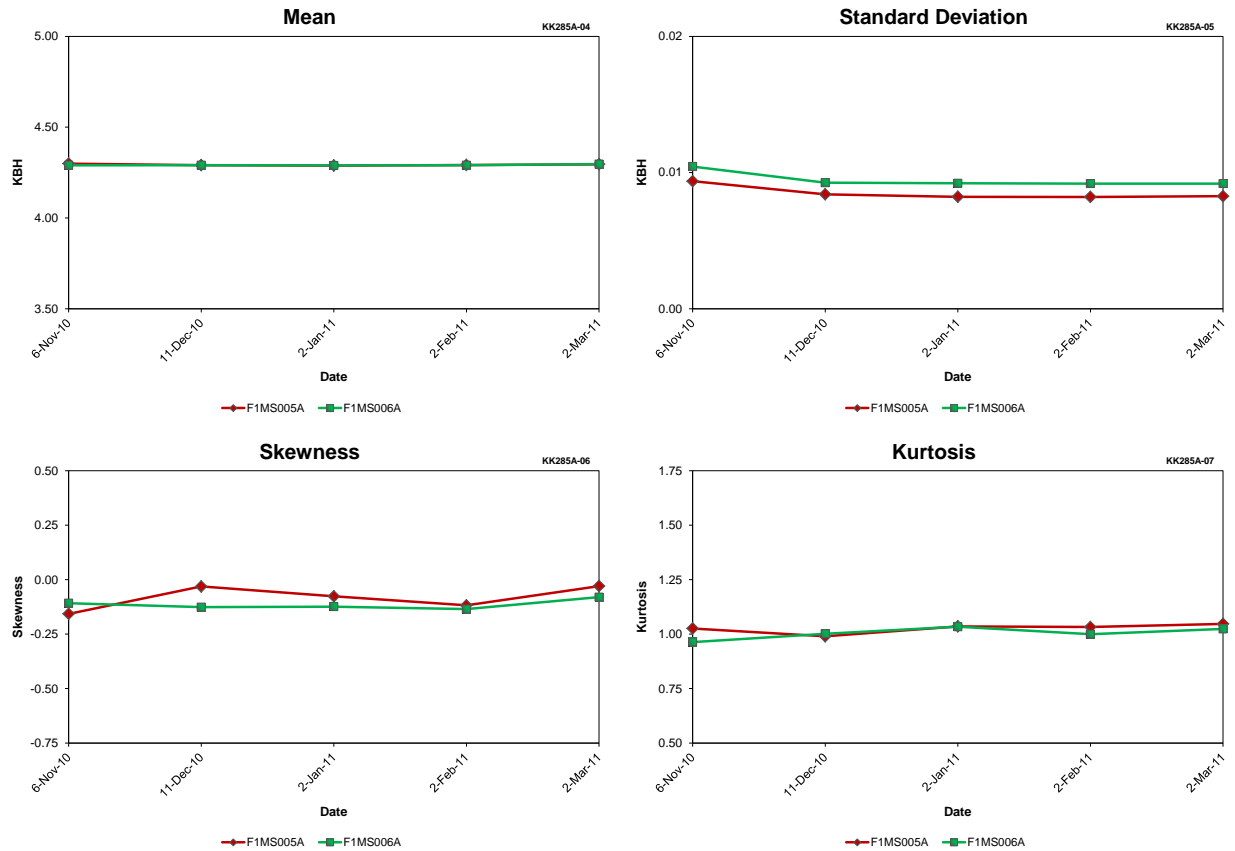
**Figure H.33 SG C STEAM FLOW Steady-State Deviation at North Anna Unit 1 (Cycle 22)**



**Figure H.34 SG C STEAM FLOW Steady-State Drift at North Anna Unit 1 (Cycle 22)**



**Figure H.35 SG C STEAM FLOW Steady-State Residual AAKR at North Anna Unit 1 (Cycle 22)**



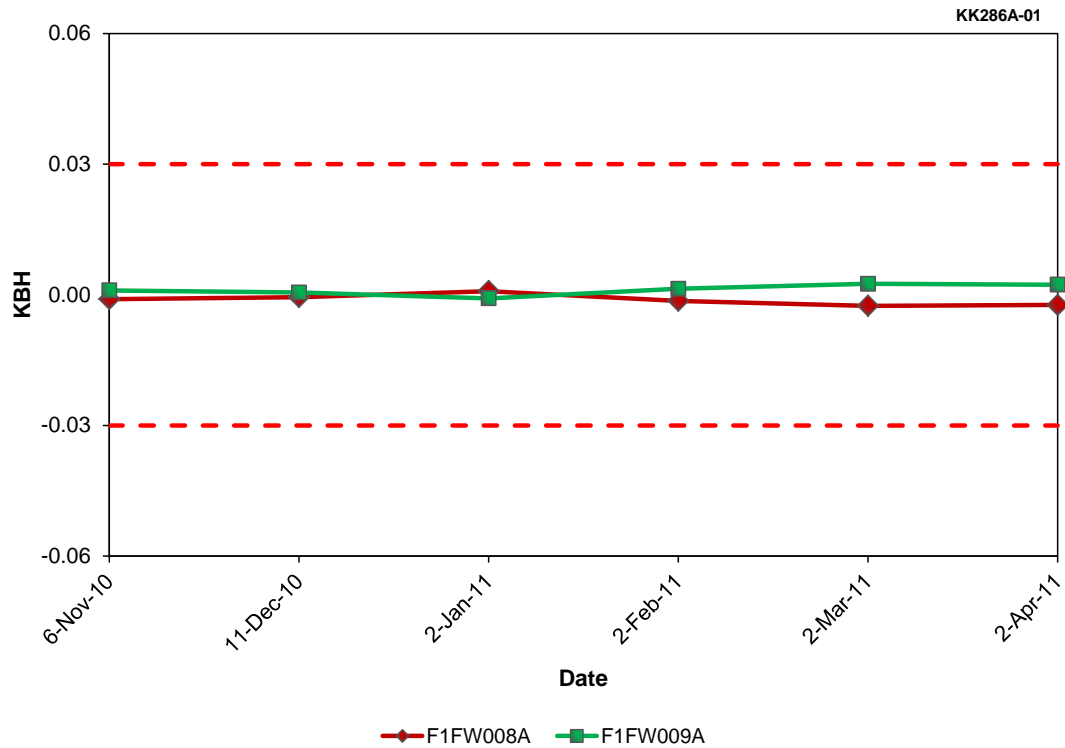
**Figure H.36 SG C STEAM FLOW Data Quality Statistics at North Anna Unit 1 (Cycle 22)**

**Table H.10 SG C STEAM FLOW Data Quality for North Anna Unit 1 (Cycle 22)**

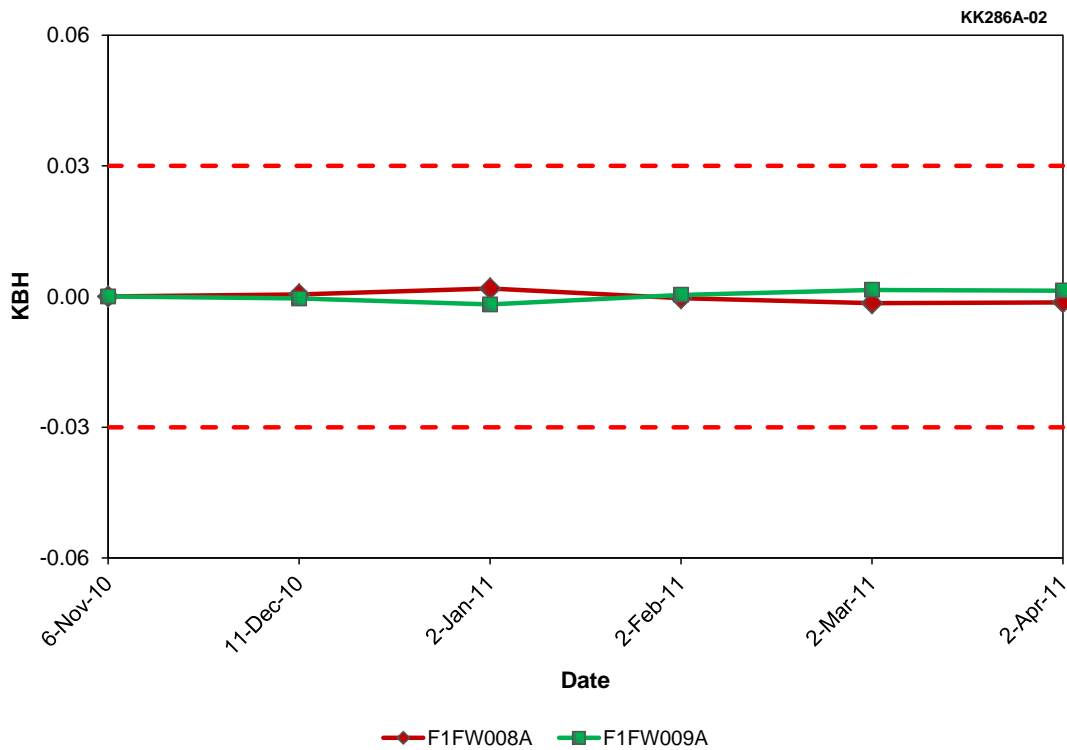
Result Type	Tag Names	
	F1MS005A	F1MS006A
Mean	4.29	4.29
Std. Dev.	0.01	0.01
Skewness	-0.08	-0.11
Kurtosis	1.03	1.00



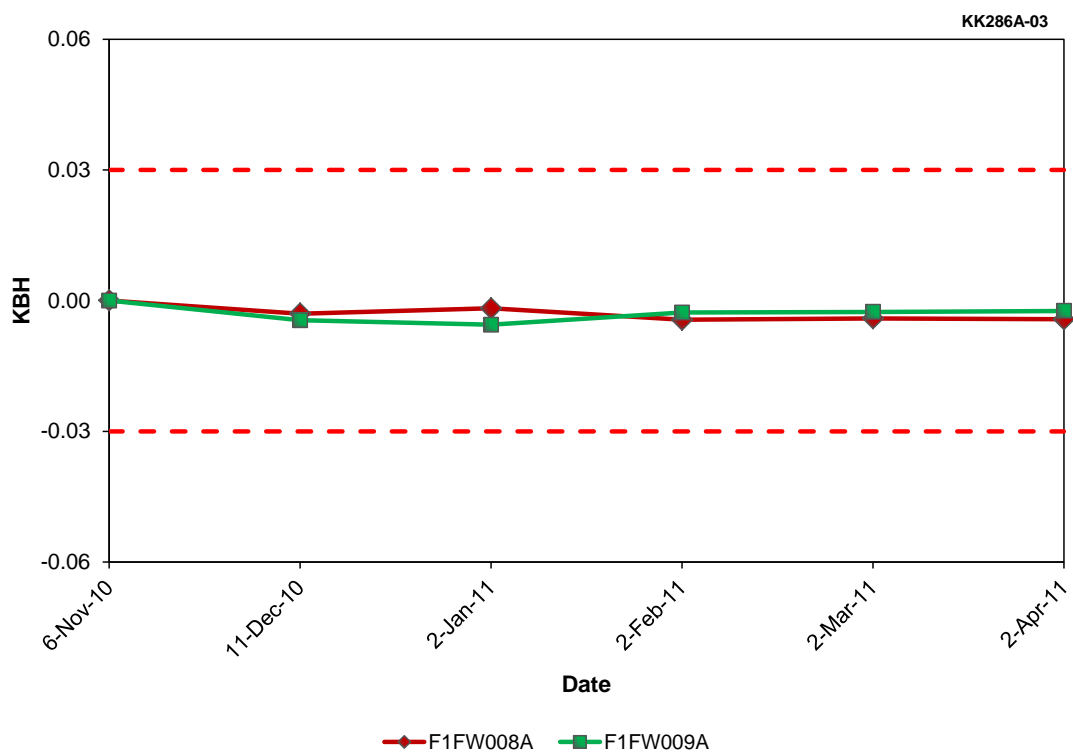




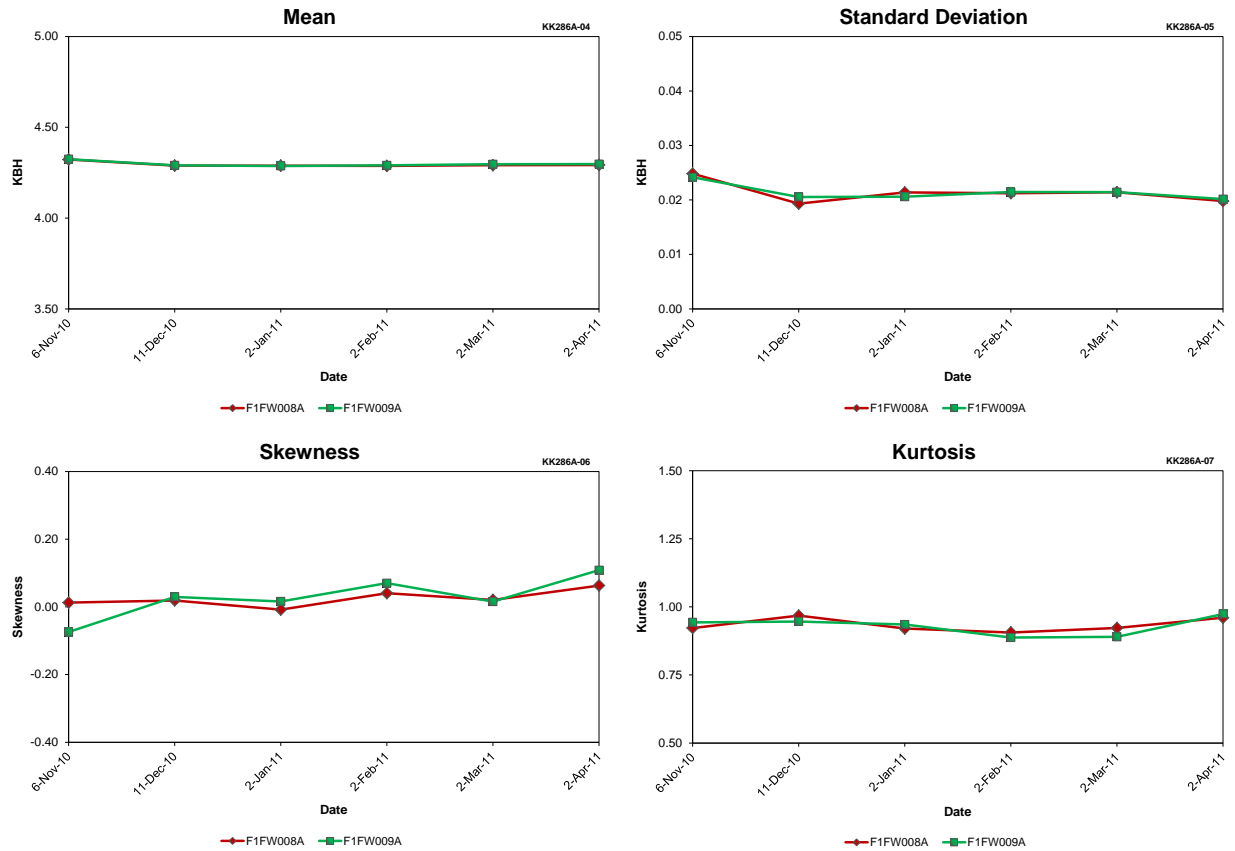
**Figure H.37 FW FLOW TO SG C Steady-State Deviation at North Anna Unit 1 (Cycle 22)**



**Figure H.38 FW FLOW TO SG C Steady-State Drift at North Anna Unit 1 (Cycle 22)**



**Figure H.39 FW FLOW TO SG C Steady-State Residual AAKR at North Anna Unit 1 (Cycle 22)**

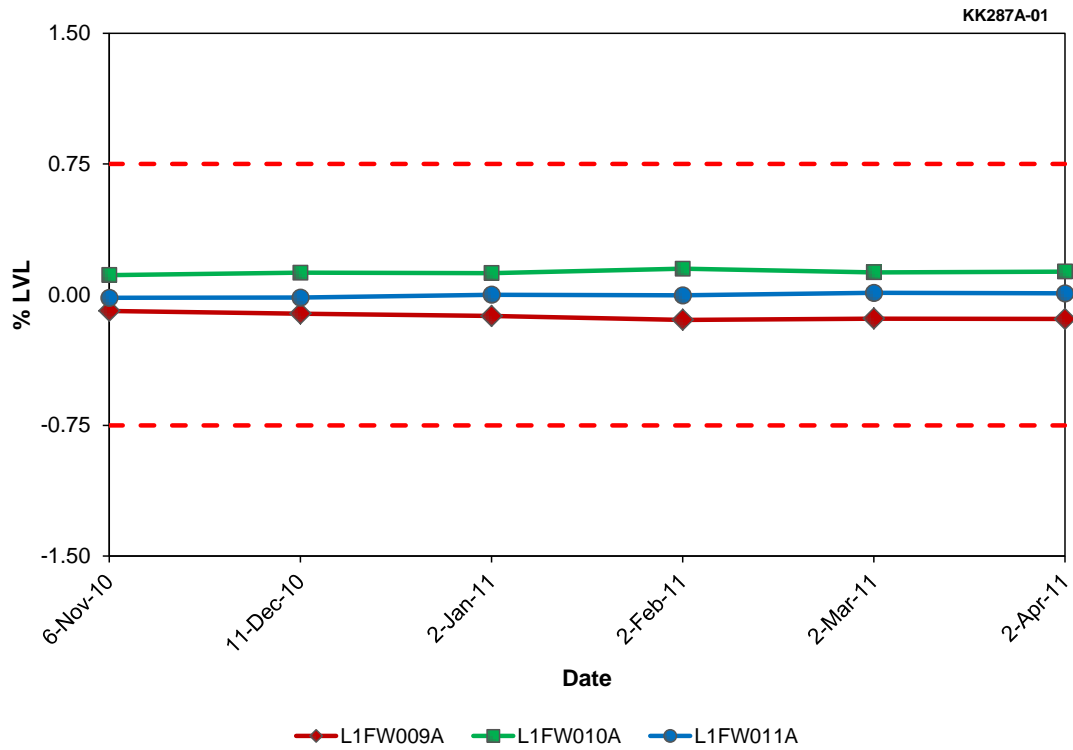


**Figure H.40 FW FLOW TO SG C Data Quality Statistics at North Anna Unit 1 (Cycle 22)**

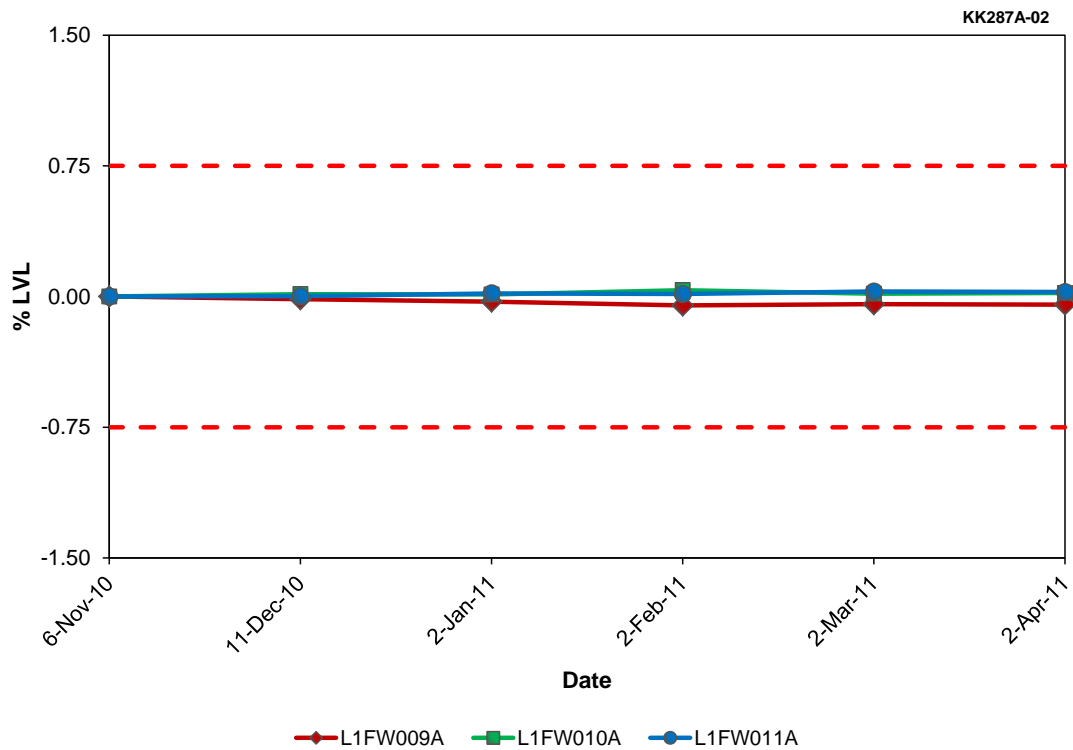
**Table H.11 FW FLOW TO SG C Data Quality for North Anna Unit 1 (Cycle 22)**

Result Type	Tag Names	
	F1FW008A	F1FW009A
Mean	4.30	4.30
Std. Dev.	0.02	0.02
Skewness	0.02	0.03
Kurtosis	0.93	0.93

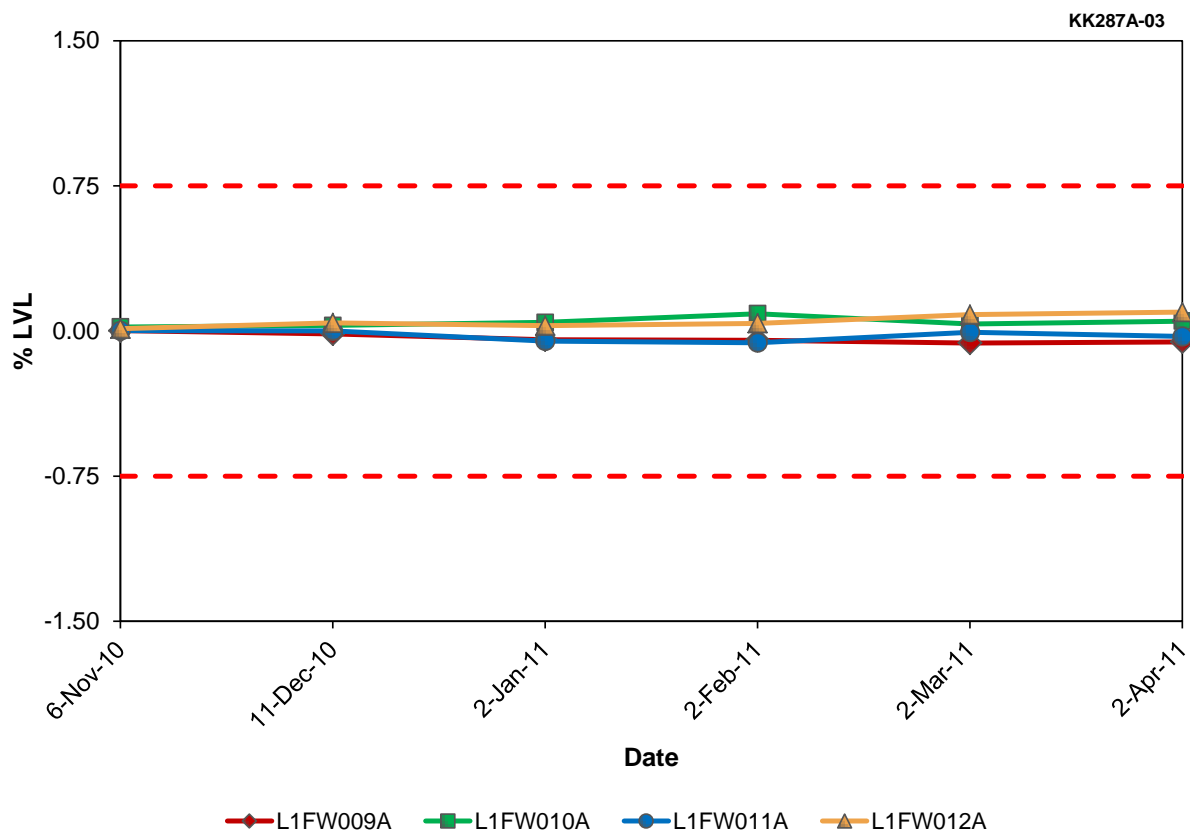




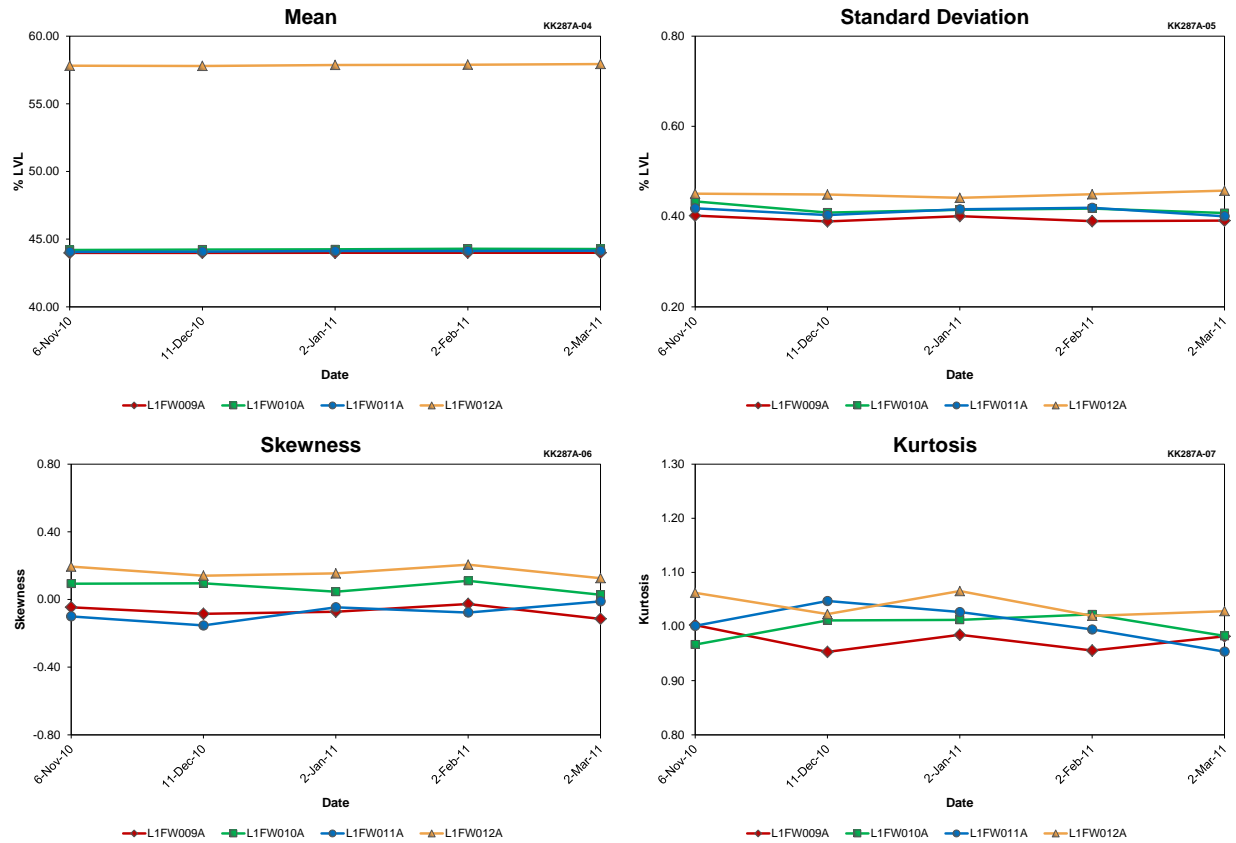
**Figure H.41 SG C LEVEL Steady-State Deviation at North Anna Unit 1 (Cycle 22)**



**Figure H.42 SG C LEVEL Steady-State Drift at North Anna Unit 1 (Cycle 22)**



**Figure H.43 SG C LEVEL Steady-State Residual AAKR at North Anna Unit 1 (Cycle 22)**



**Figure H.44 SG C LEVEL Data Quality Statistics at North Anna Unit 1 (Cycle 22)**

**Table H.12 SG C LEVEL Data Quality for North Anna Unit 1 (Cycle 22)**

Result Type	Tag Names			
	L1FW009A	L1FW010A	L1FW011A	L1FW012A
Mean	43.99	44.25	44.11	57.86
Std. Dev.	0.39	0.42	0.41	0.45
Skewness	-0.07	0.07	-0.08	0.16
Kurtosis	0.98	1.00	1.00	1.04





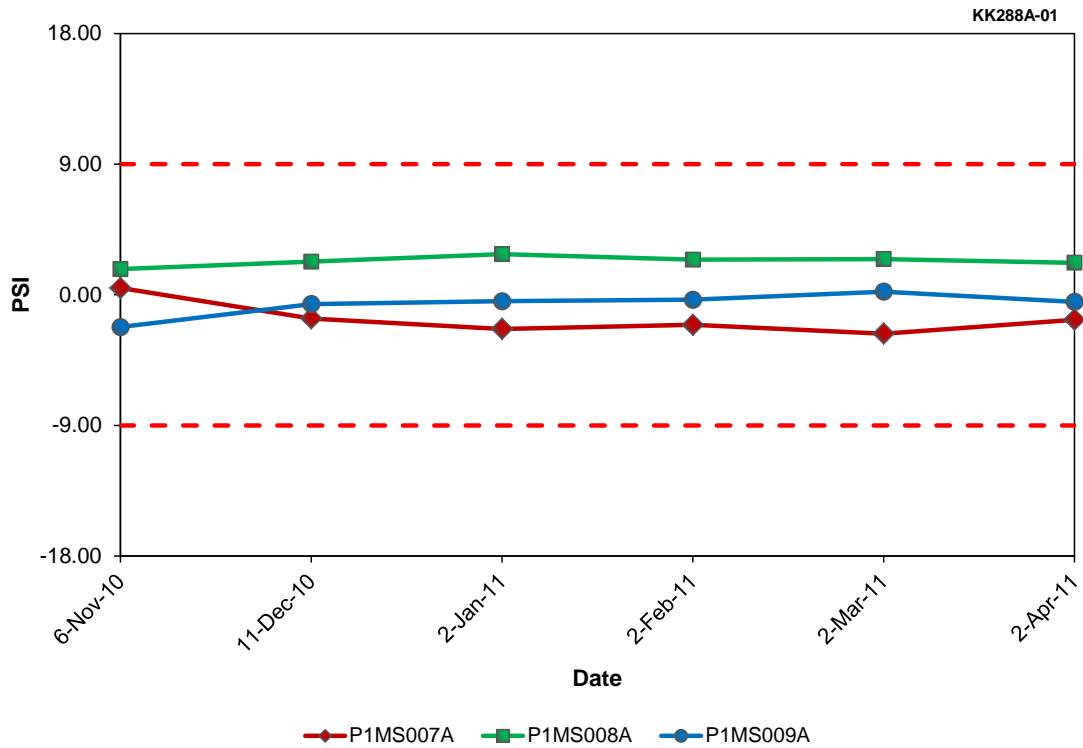


Figure H.45 SG C OUTLET PRESSURE Steady-State Deviation at North Anna Unit 1 (Cycle 22)

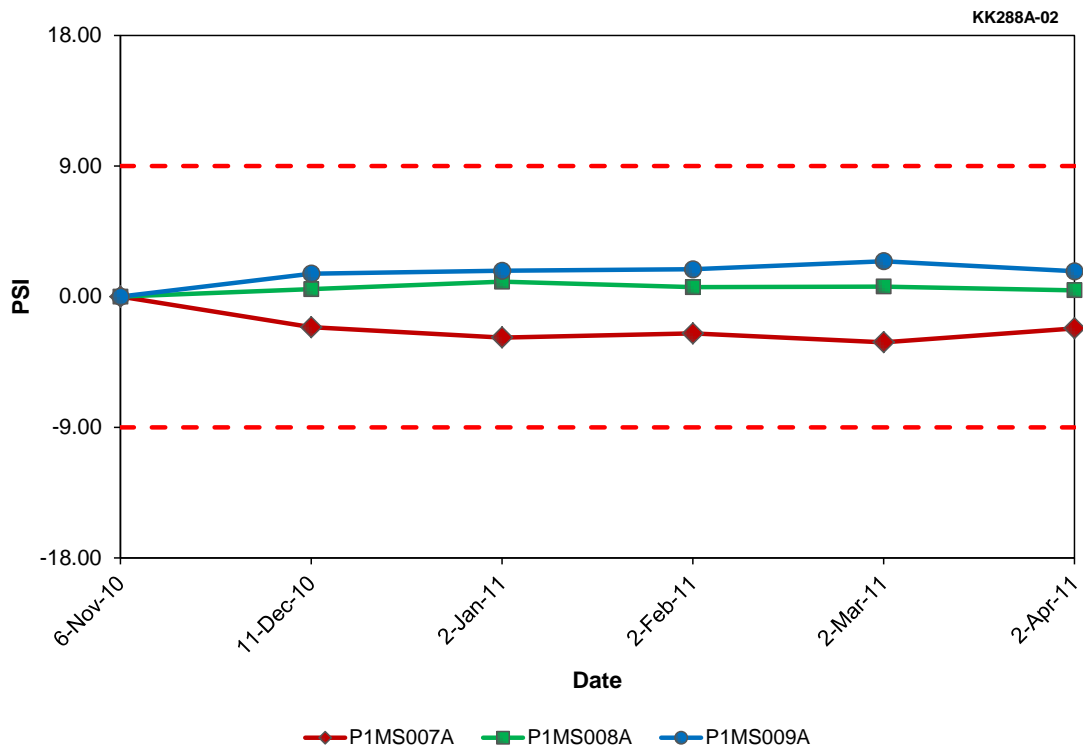
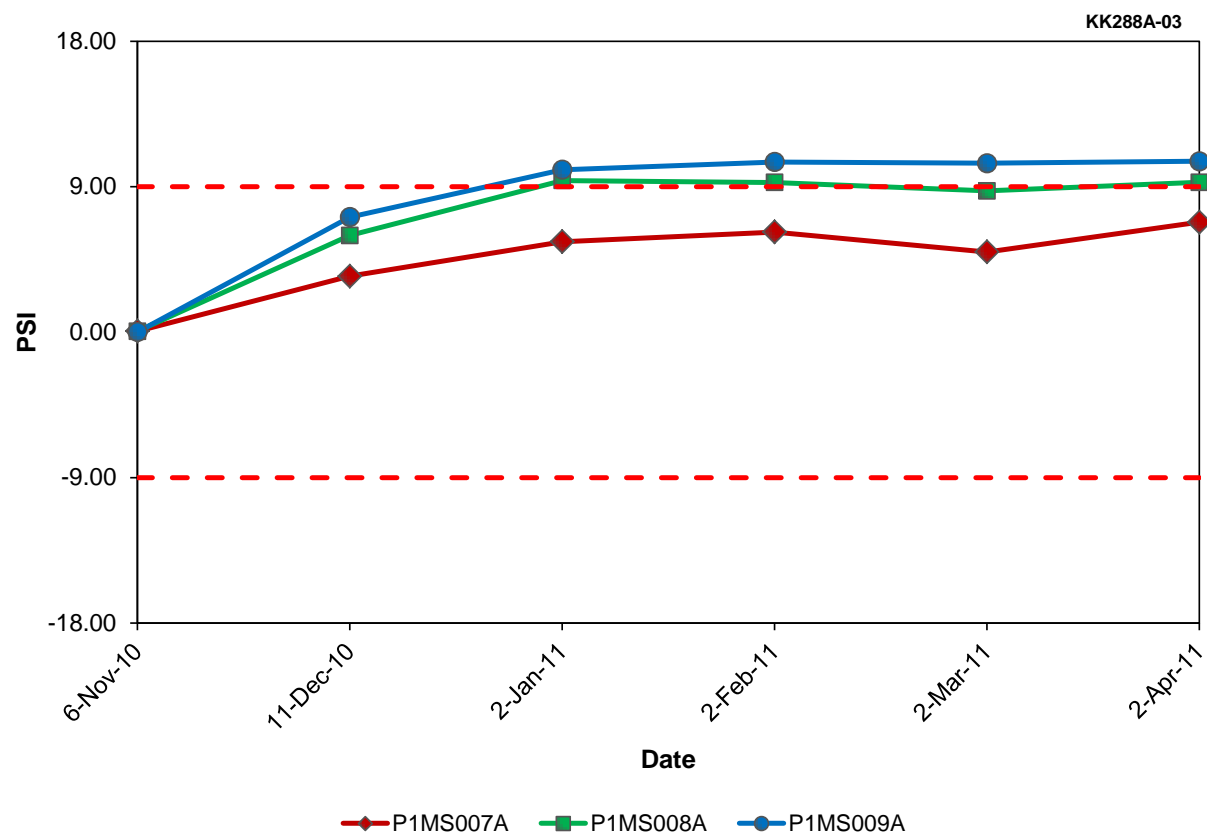
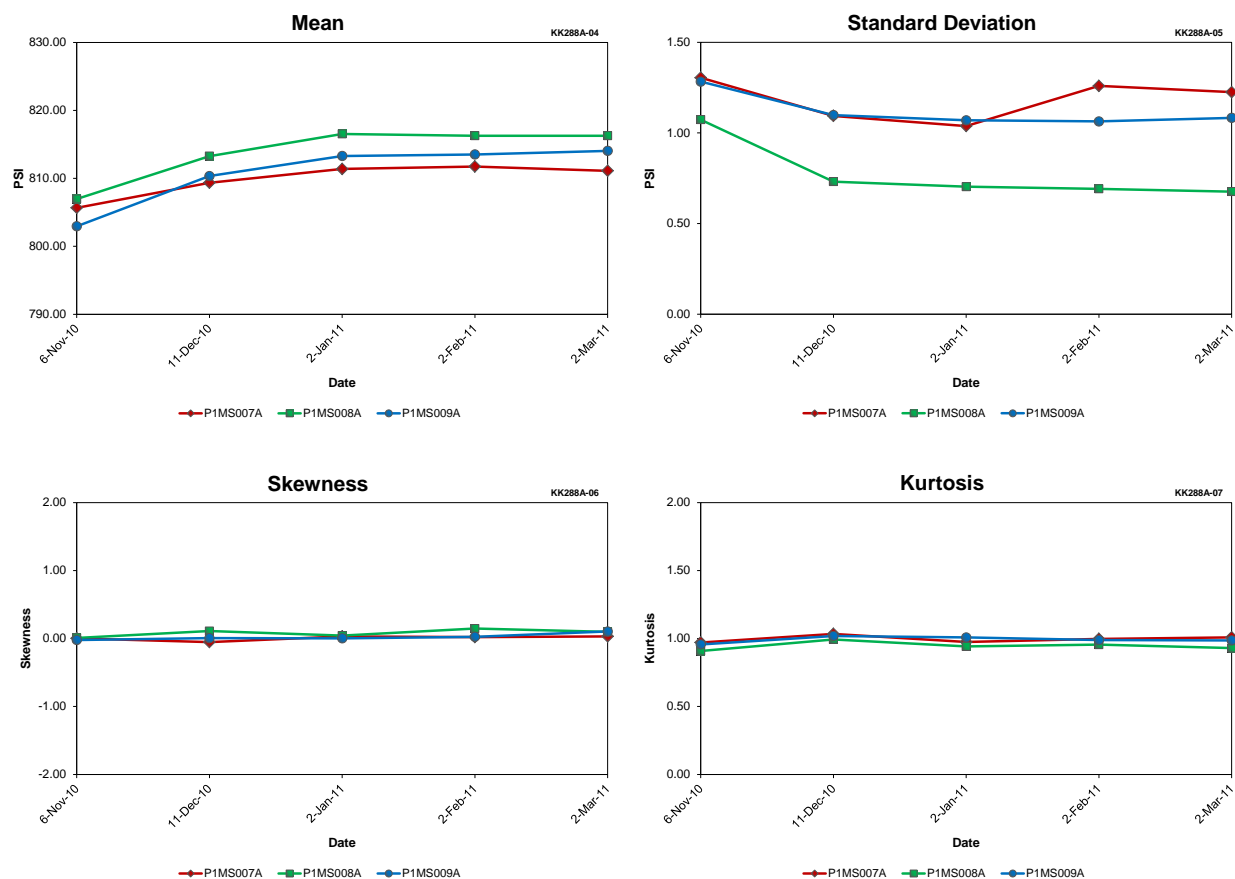


Figure H.46 SG C OUTLET PRESSURE Steady-State Drift at North Anna Unit 1 (Cycle 22)



**Figure H.47 SG C OUTLET PRESSURE Steady-State Residual AAKR at North Anna Unit 1 (Cycle 22)**

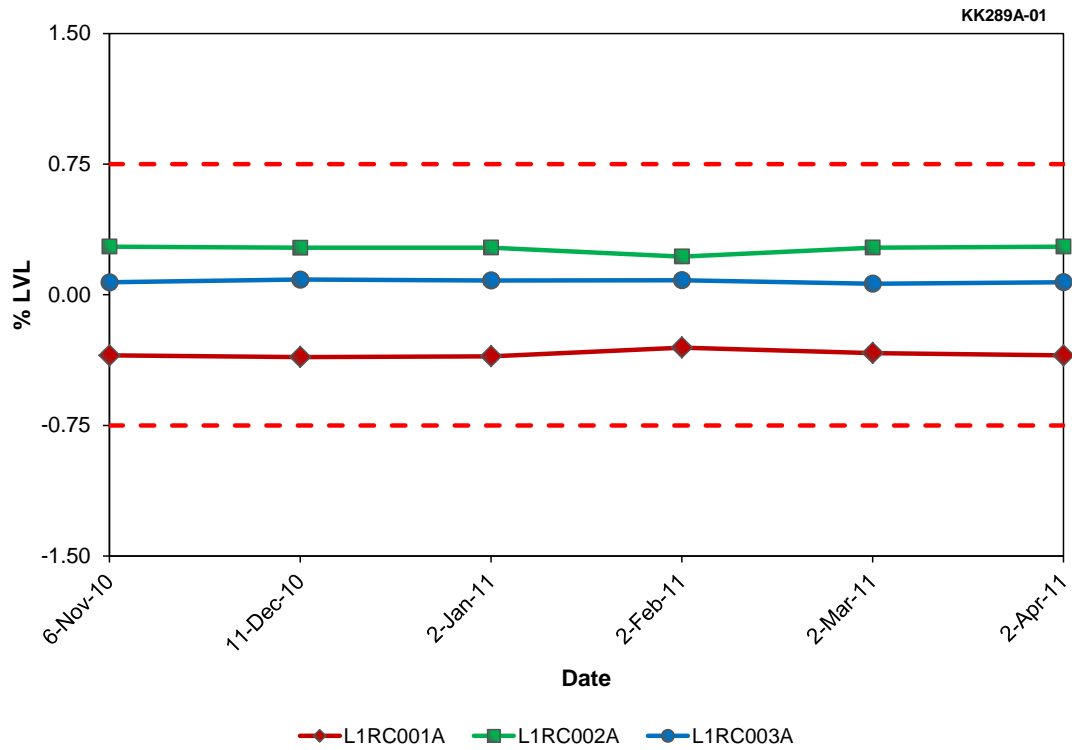


**Figure H.48 SG C OUTLET PRESSURE Data Quality Statistics at North Anna Unit 1 (Cycle 22)**

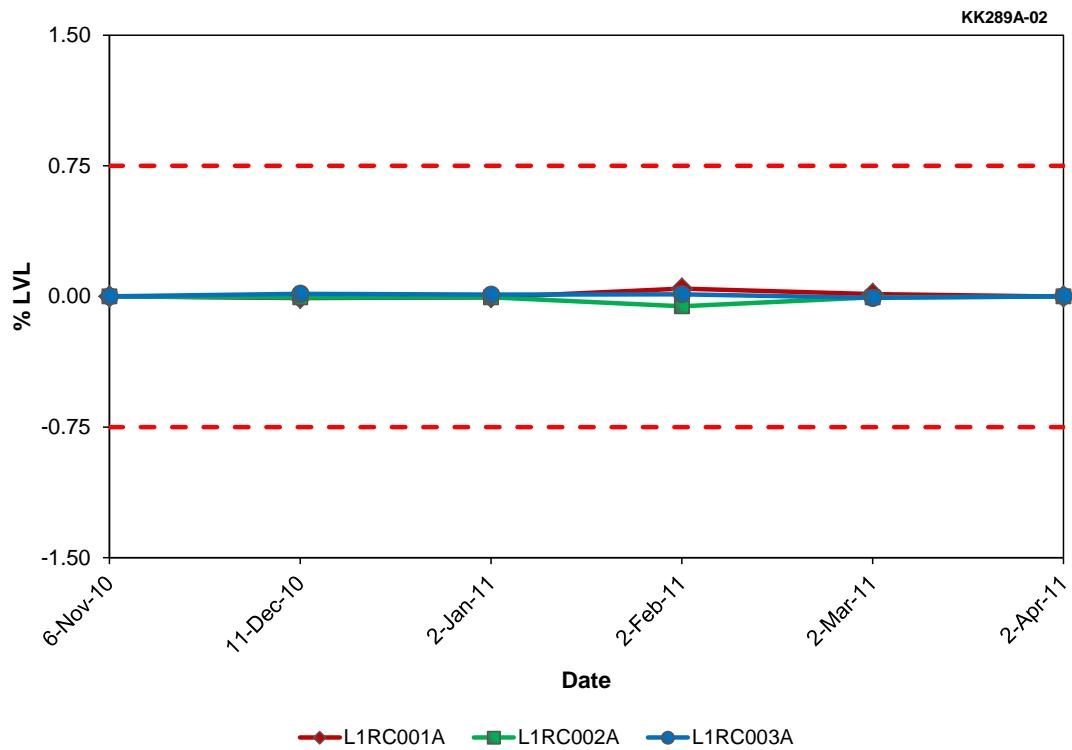
**Table H.13 SG C OUTLET PRESSURE Data Quality for North Anna Unit 1 (Cycle 22)**

Result Type	Tag Names		
	P1MS007A	P1MS008A	P1MS009A
Mean	809.85	813.86	810.83
Std. Dev.	1.18	0.78	1.12
Skewness	0.01	0.08	0.02
Kurtosis	1.00	0.95	0.99

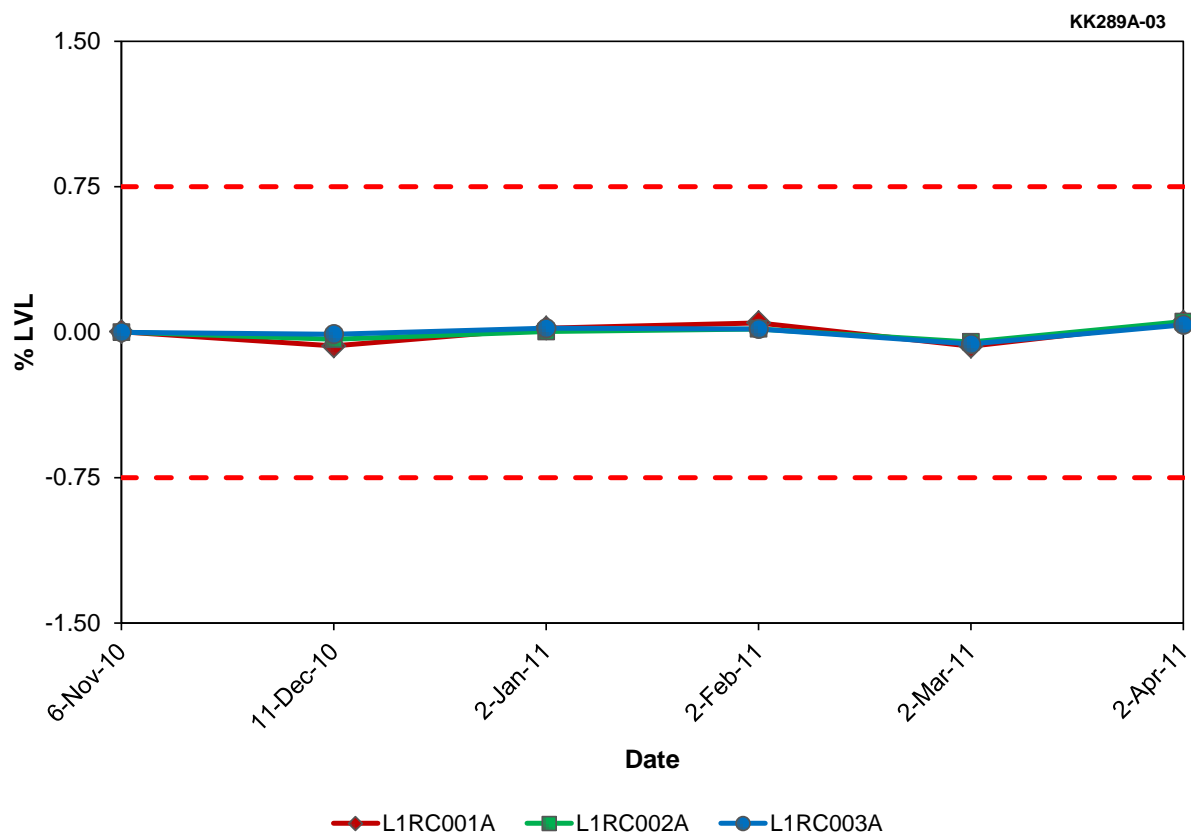




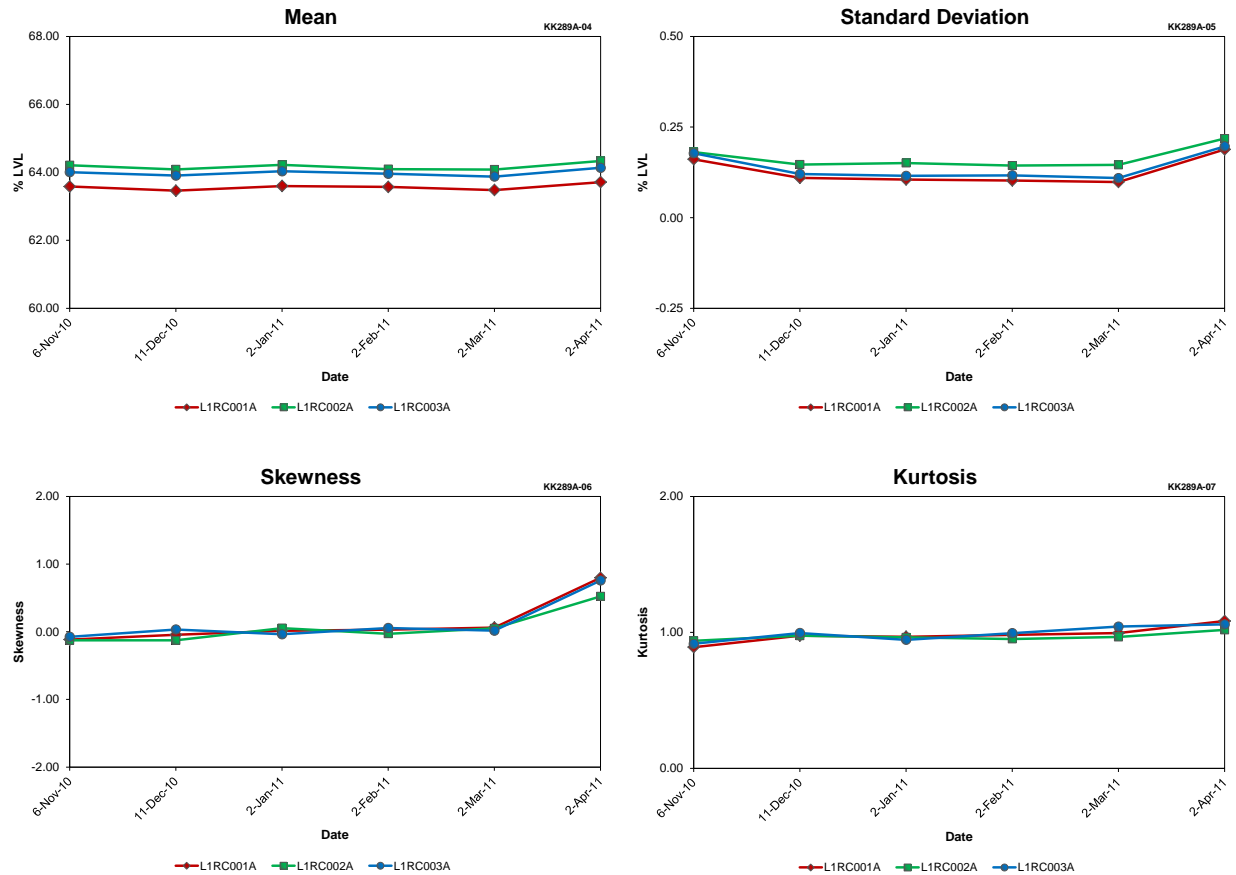
**Figure H.49 PRESSURIZER LEVEL Steady-State Deviation at North Anna Unit 1 (Cycle 22)**



**Figure H.50 PRESSURIZER LEVEL Steady-State Drift at North Anna Unit 1 (Cycle 22)**



**Figure H.51 PRESSURIZER LEVEL Steady-State Residual AAKR at North Anna Unit 1 (Cycle 22)**



**Figure H.52 PRESSURIZER LEVEL Data Quality Statistics at North Anna Unit 1 (Cycle 22)**

**Table H.14 PRESSURIZER LEVEL Data Quality for North Anna Unit 1 (Cycle 22)**

Result Type	Tag Names		
	L1RC001A	L1RC002A	L1RC003A
Mean	63.57	64.17	63.99
Std. Dev.	0.13	0.16	0.14
Skewness	0.12	0.06	0.13
Kurtosis	0.98	0.97	0.99





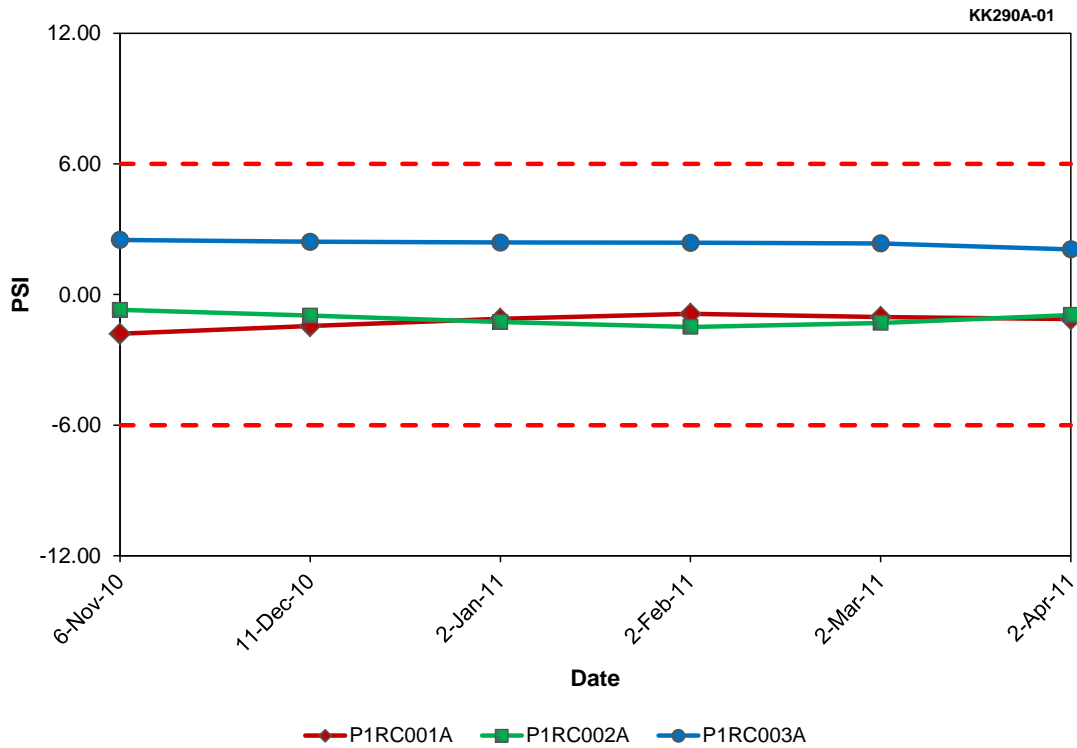


Figure H.53 PRESSURIZER PRESSURE Steady-State Deviation at North Anna Unit 1 (Cycle 22)

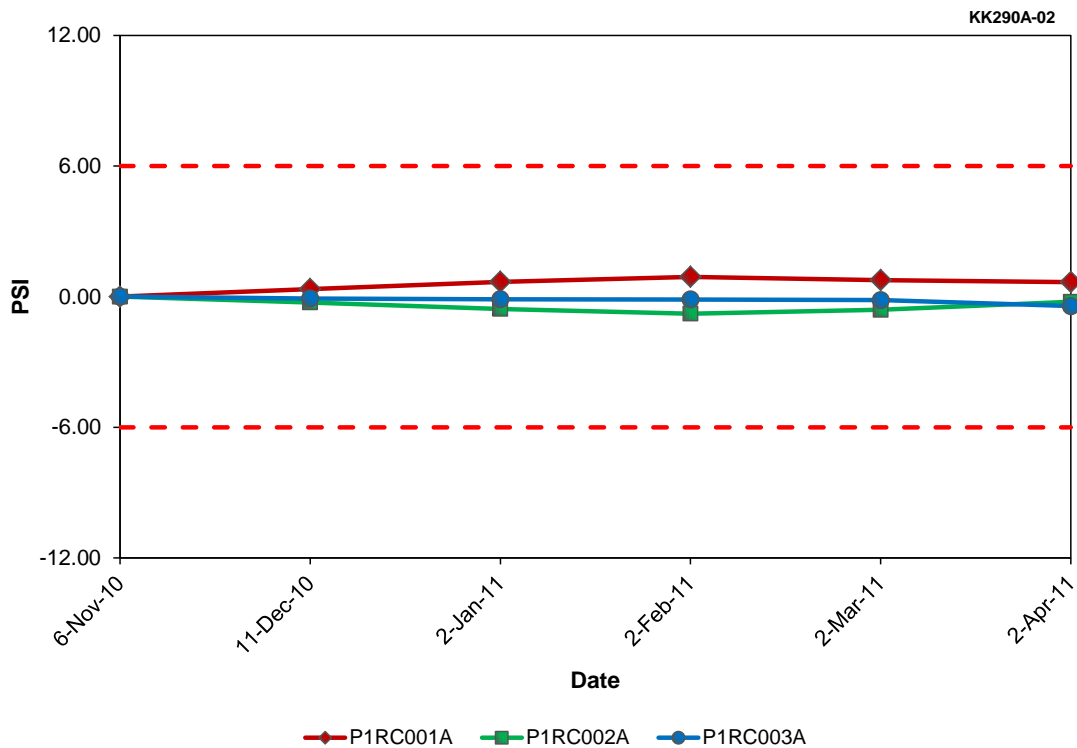
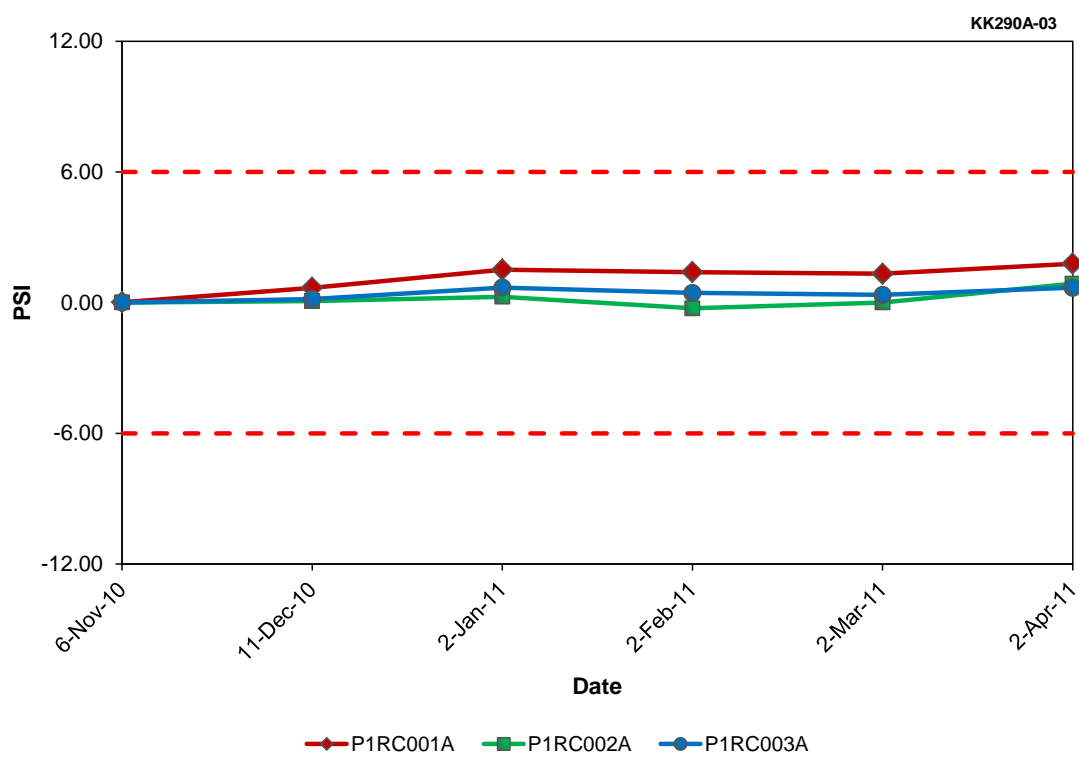
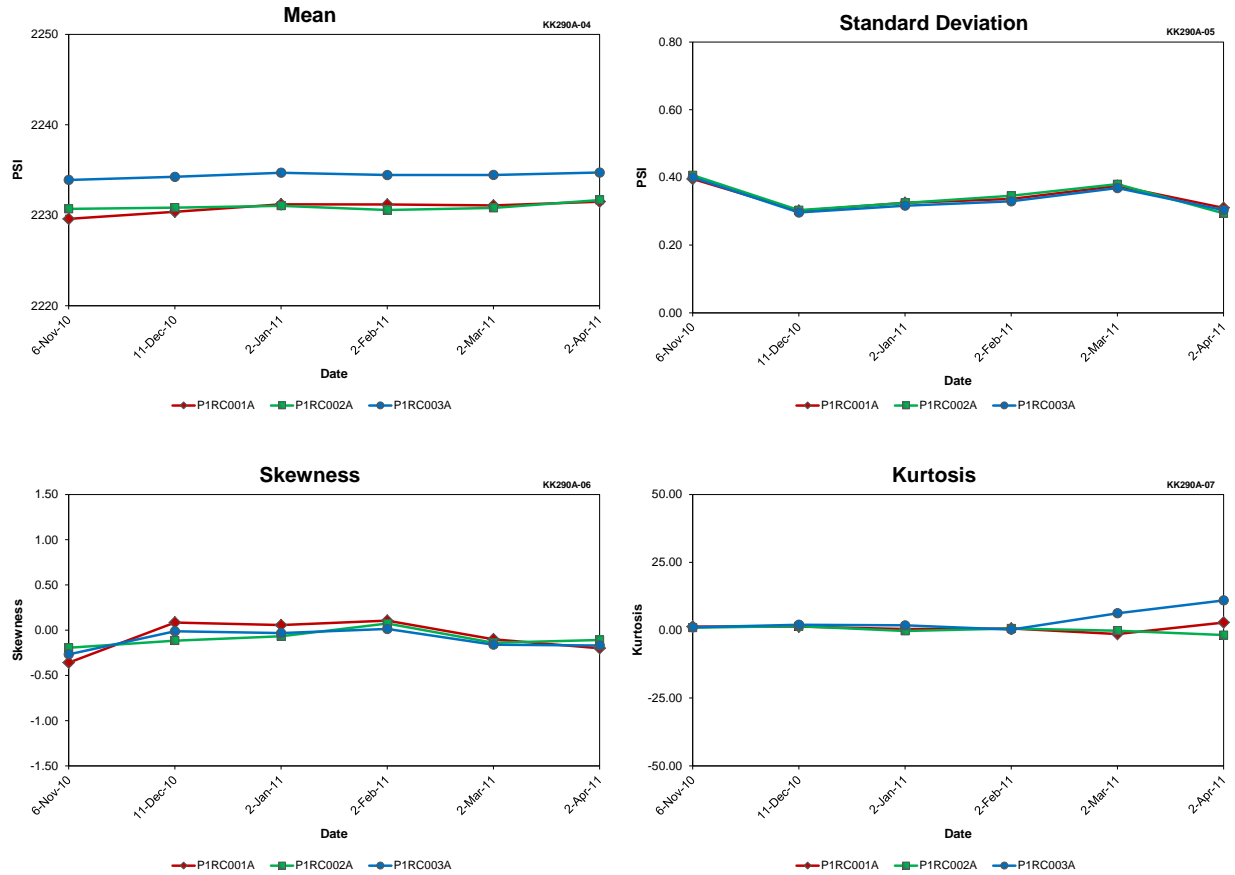


Figure H.54 PRESSURIZER PRESSURE Steady-State Drift at North Anna Unit 1 (Cycle 22)



**Figure H.55 PRESSURIZER PRESSURE Steady-State Residual AAKR at North Anna Unit 1 (Cycle 22)**

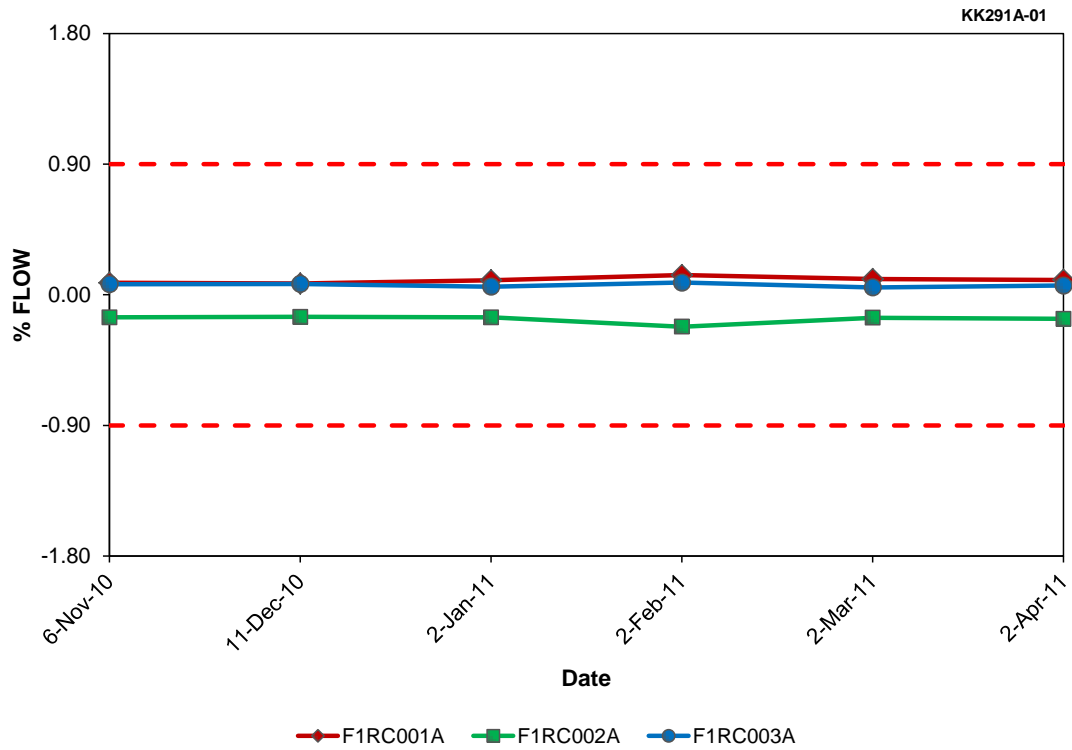


**Figure H.56 PRESSURIZER PRESSURE Data Quality Statistics at North Anna Unit 1 (Cycle 22)**

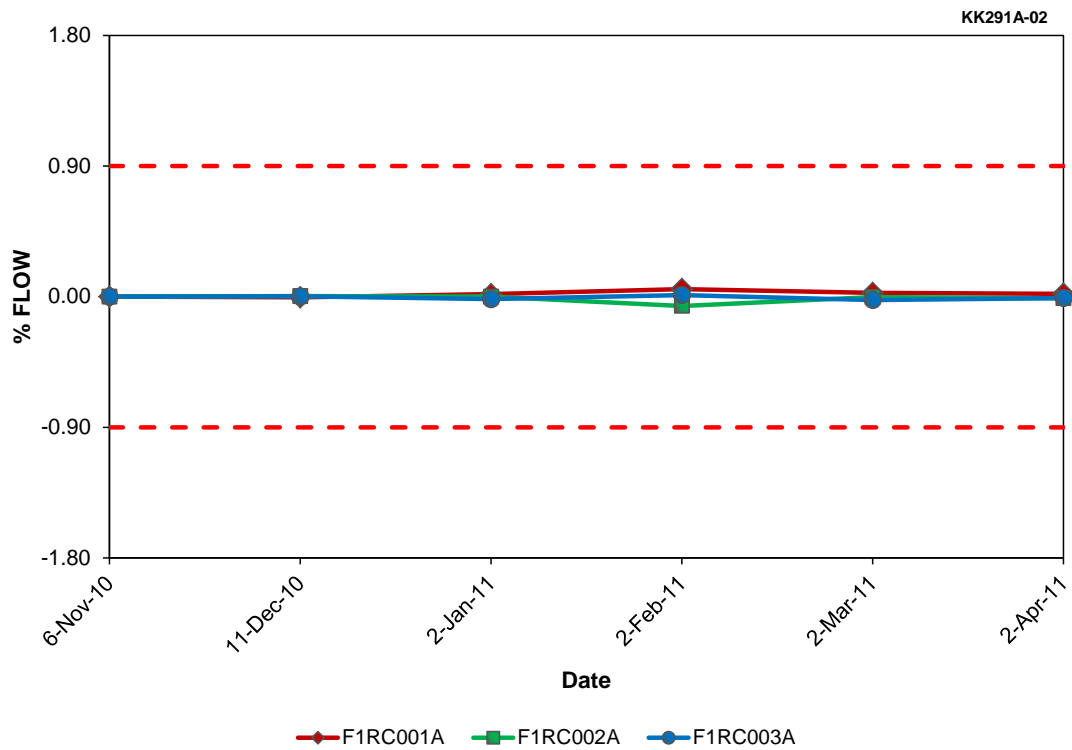
**Table H.15 PRESSURIZER PRESSURE Data Quality for North Anna Unit 1 (Cycle 22)**

Result Type	Tag Names		
	P1RC001A	P1RC002A	P1RC003A
Mean	2230.83	2230.94	2234.41
Std. Dev.	0.34	0.34	0.34
Skewness	-0.07	-0.09	-0.10
Kurtosis	0.84	0.12	3.72

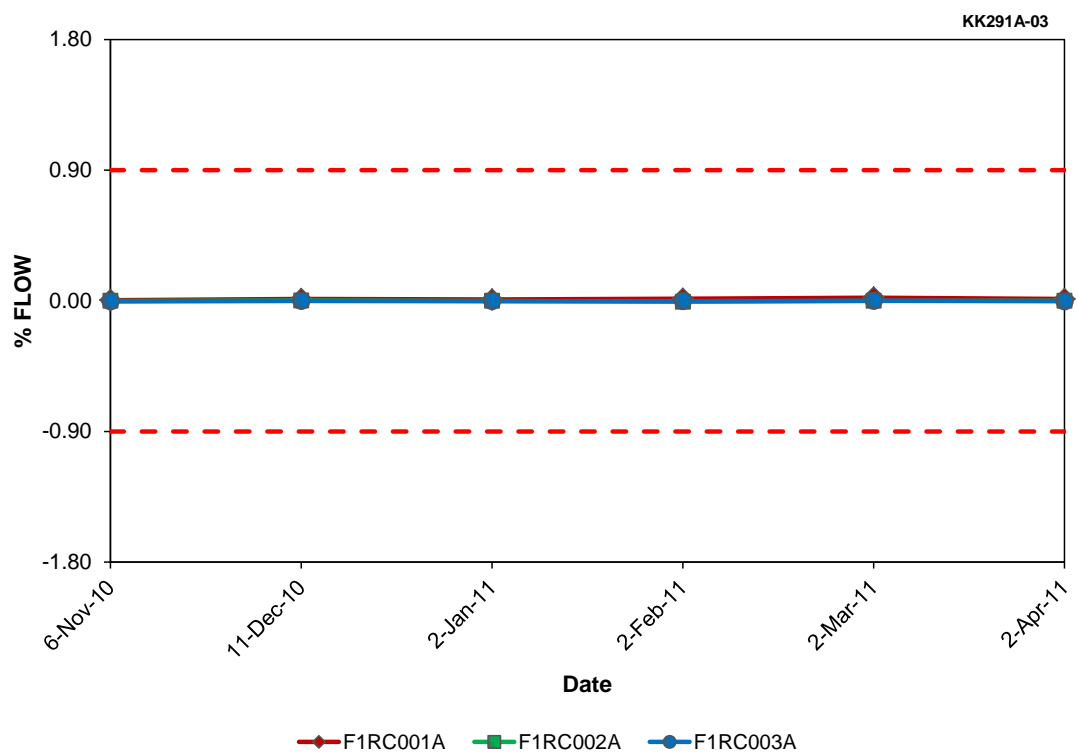




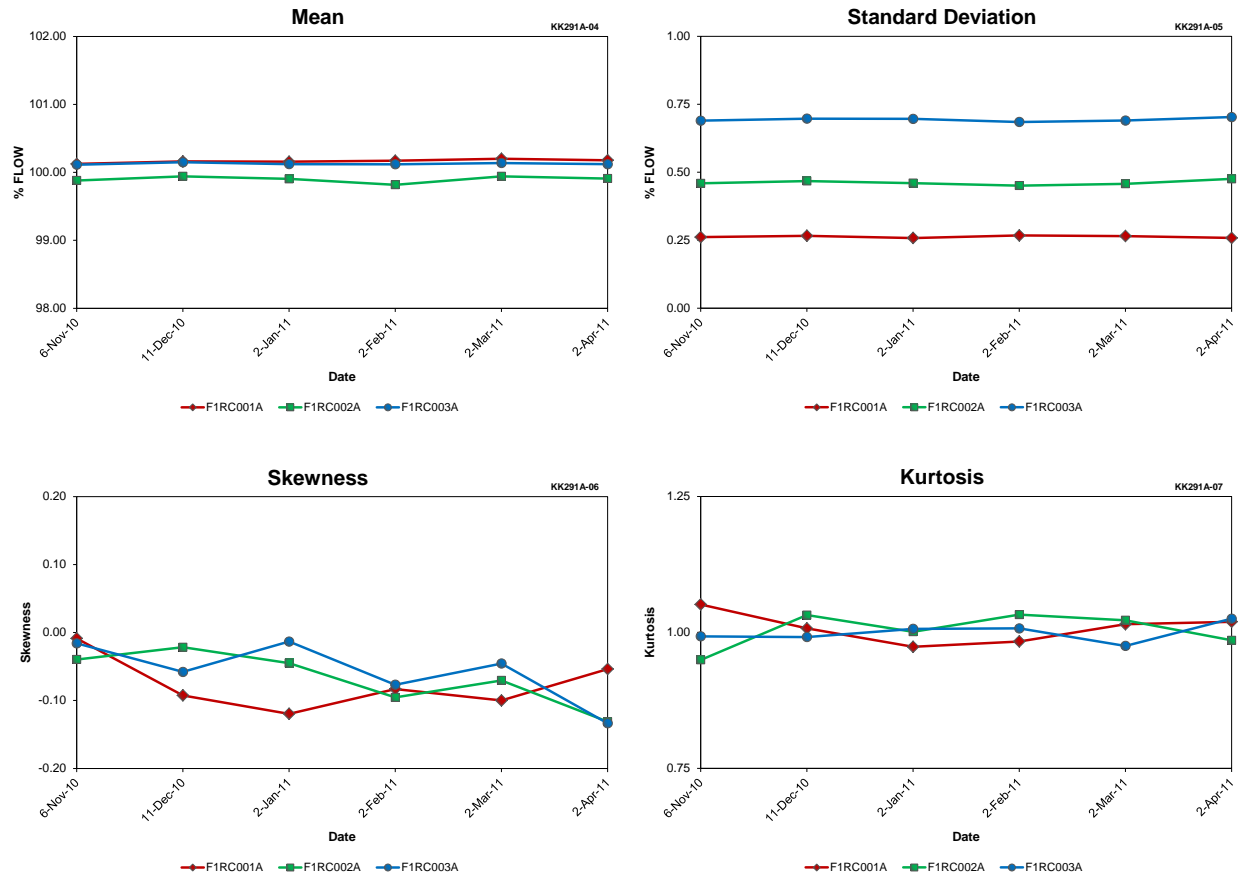
**Figure H.57 RCS LOOP A FLOW Steady-State Deviation at North Anna Unit 1 (Cycle 22)**



**Figure H.58 RCS LOOP A FLOW Steady-State Drift at North Anna Unit 1 (Cycle 22)**



**Figure H.59 RCS LOOP A FLOW Steady-State Residual AAKR at North Anna Unit 1 (Cycle 22)**



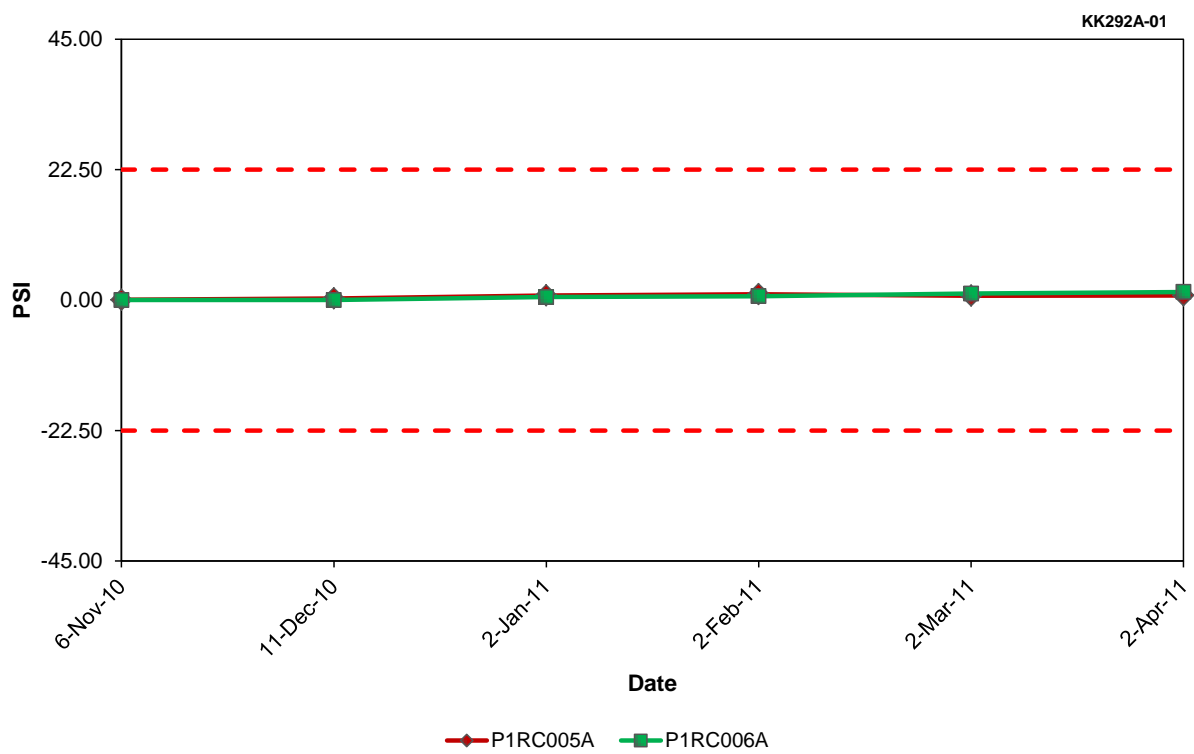
**Figure H.60 RCS LOOP A FLOW Data Quality Statistics at North Anna Unit 1 (Cycle 22)**

**Table H.16 RCS LOOP A FLOW Data Quality for North Anna Unit 1 (Cycle 22)**

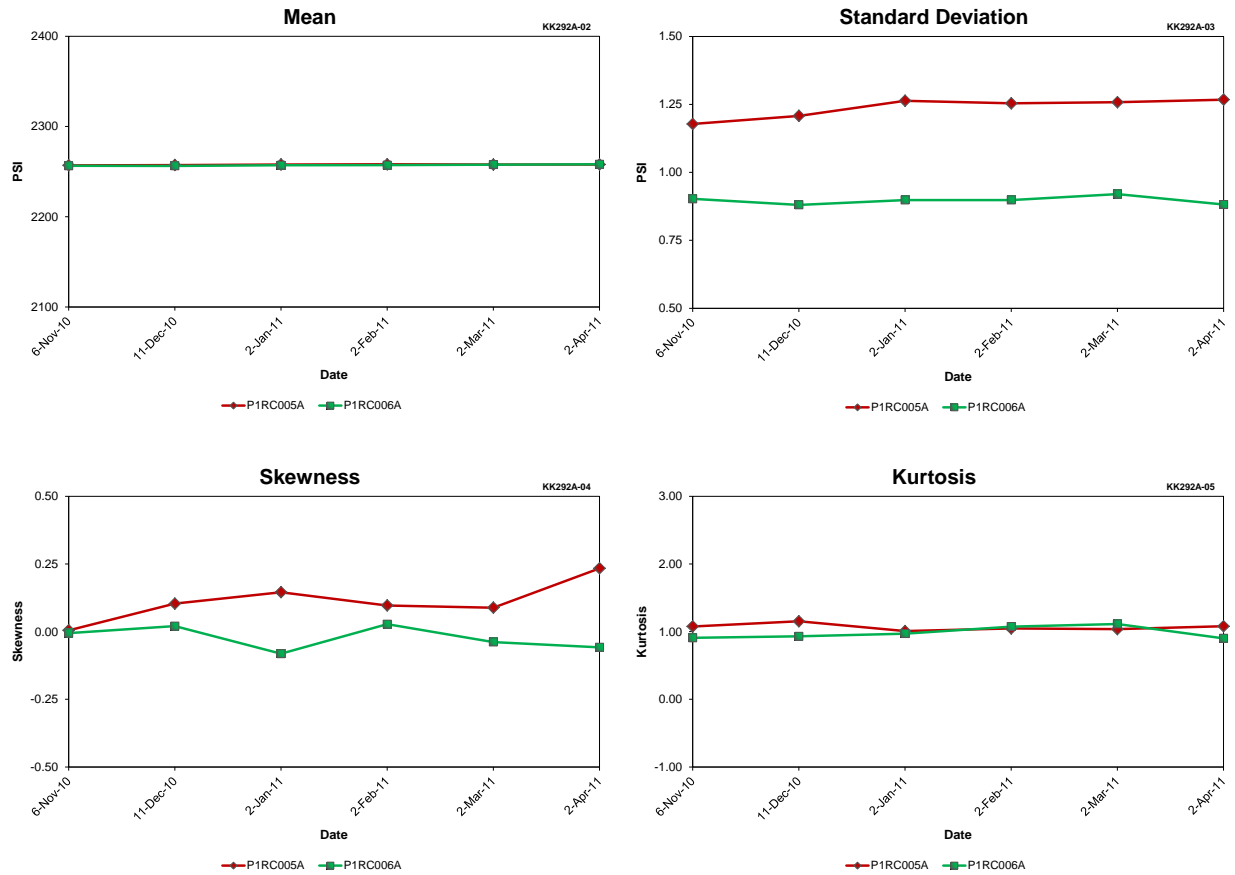
Result Type	Tag Names		
	F1RC001A	F1RC002A	F1RC003A
Mean	100.16	99.90	100.13
Std. Dev.	0.26	0.46	0.69
Skewness	-0.08	-0.07	-0.06
Kurtosis	1.01	1.00	1.00







**Figure H.61 RCS WIDE RANGE PRESSURE Steady-State Residual AAKR at North Anna Unit 1 (Cycle 22)**



**Figure H.62 RCS WIDE RANGE PRESSURE Data Quality Statistics at North Anna Unit 1 (Cycle 22)**

**Table H.17 RCS WIDE RANGE PRESSURE Data Quality for North Anna Unit 1 (Cycle 22)**

Result Type	Tag Names	
	P1RC005A	P1RC006A
Mean	2257.63	2257.12
Std. Dev.	1.24	0.90
Skewness	0.11	-0.02
Kurtosis	1.07	0.98

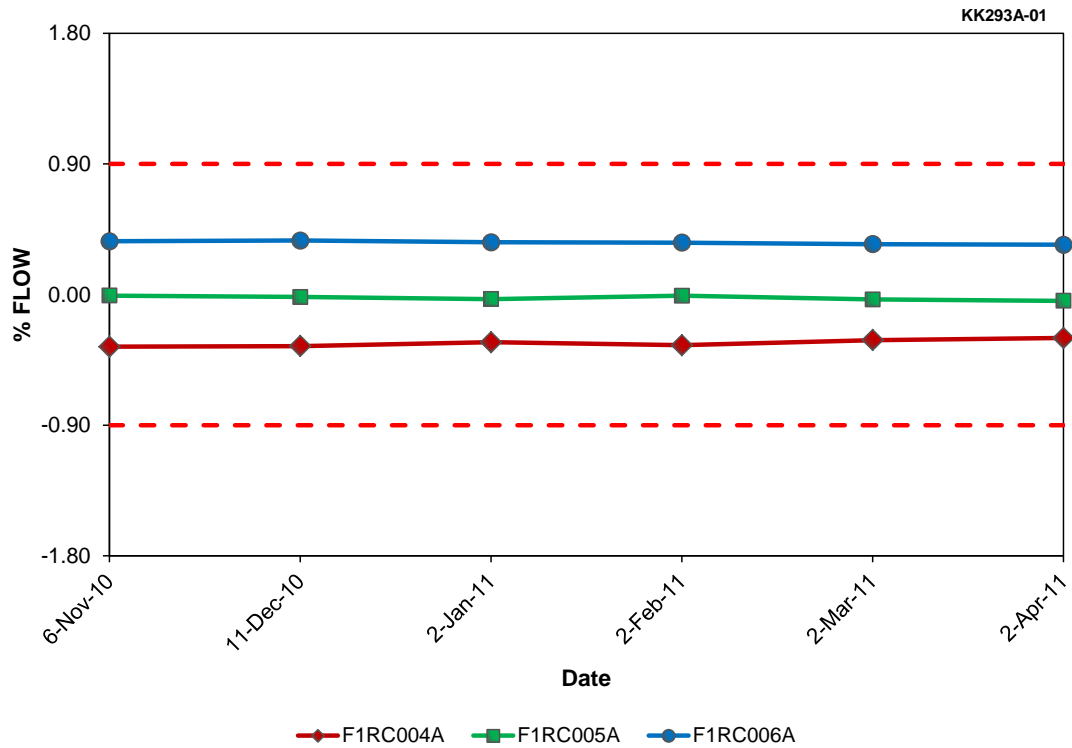


Figure H.63 RCS LOOP B FLOW Steady-State Deviation at North Anna Unit 1 (Cycle 22)

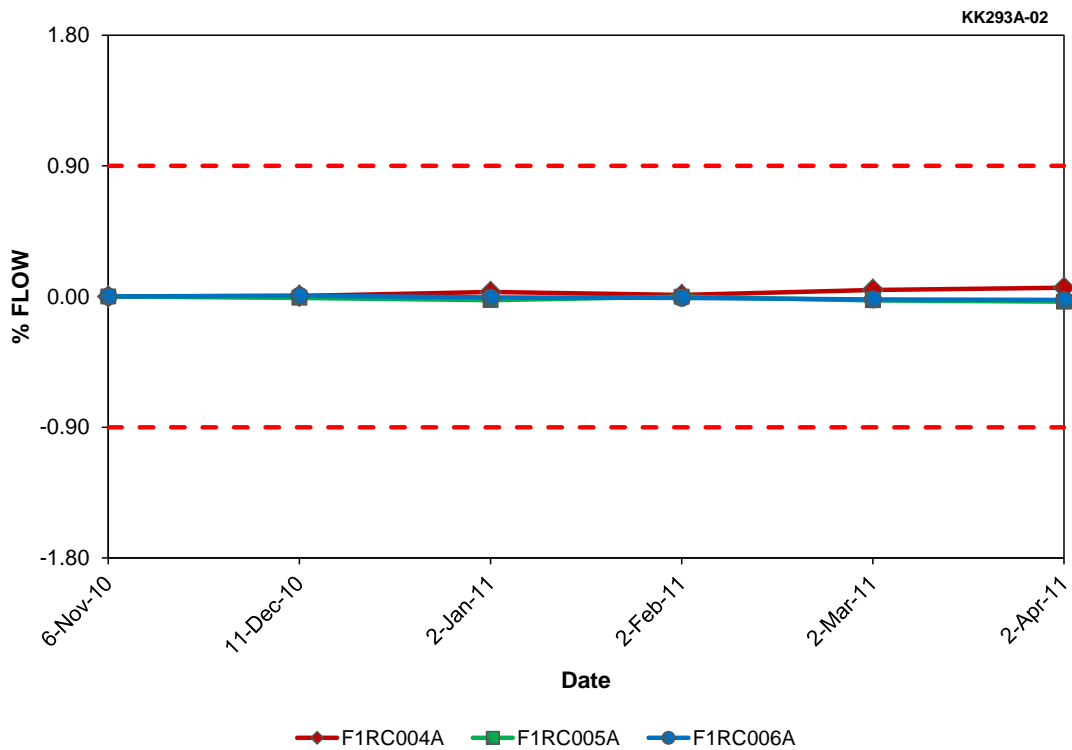
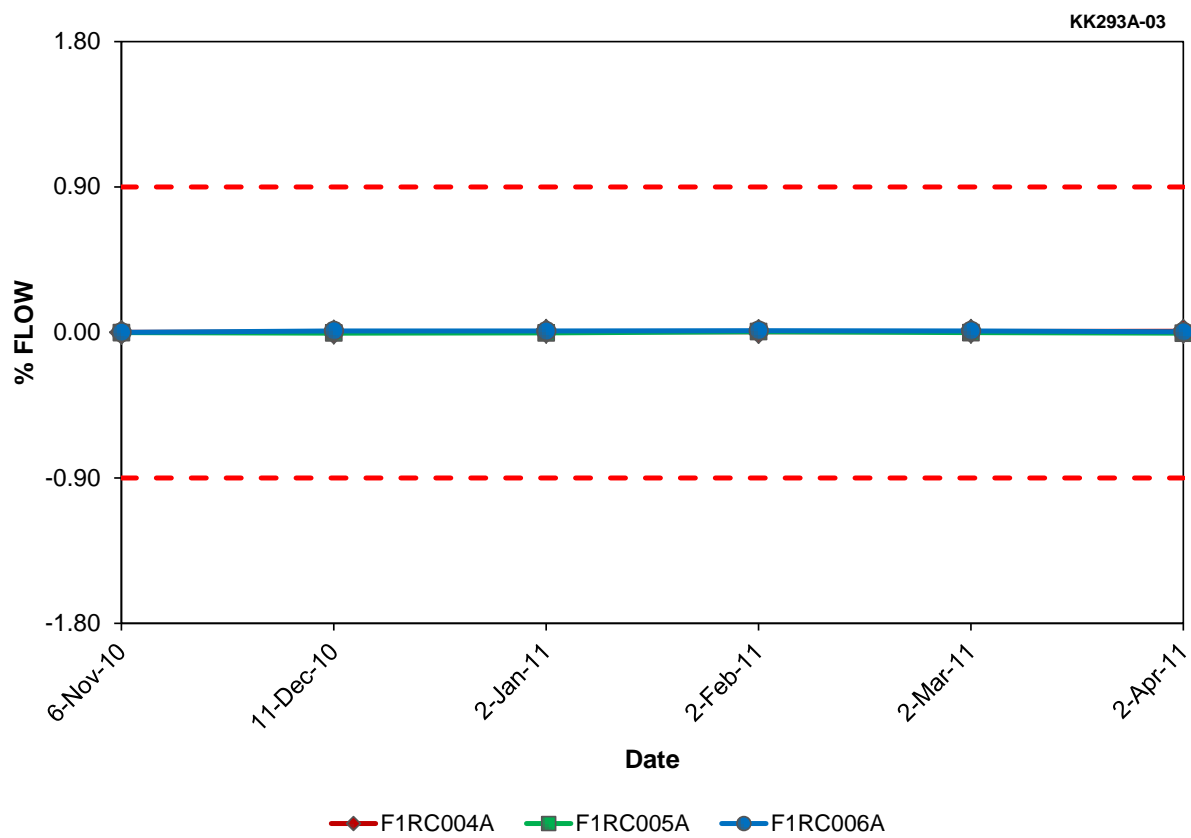


Figure H.64 RCS LOOP B FLOW Steady-State Drift at North Anna Unit 1 (Cycle 22)



**Figure H.65 RCS LOOP B FLOW Steady-State Residual AAKR at North Anna Unit 1 (Cycle 22)**

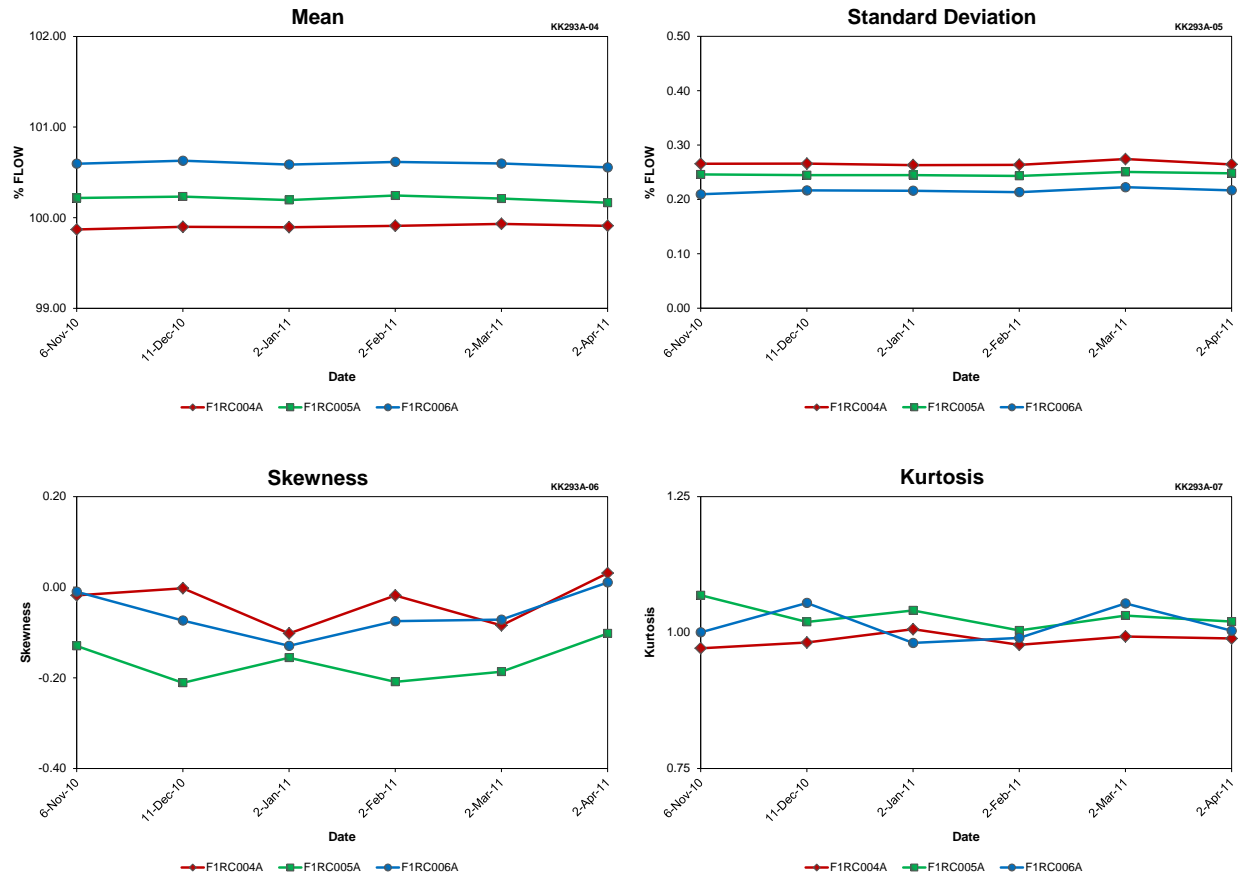
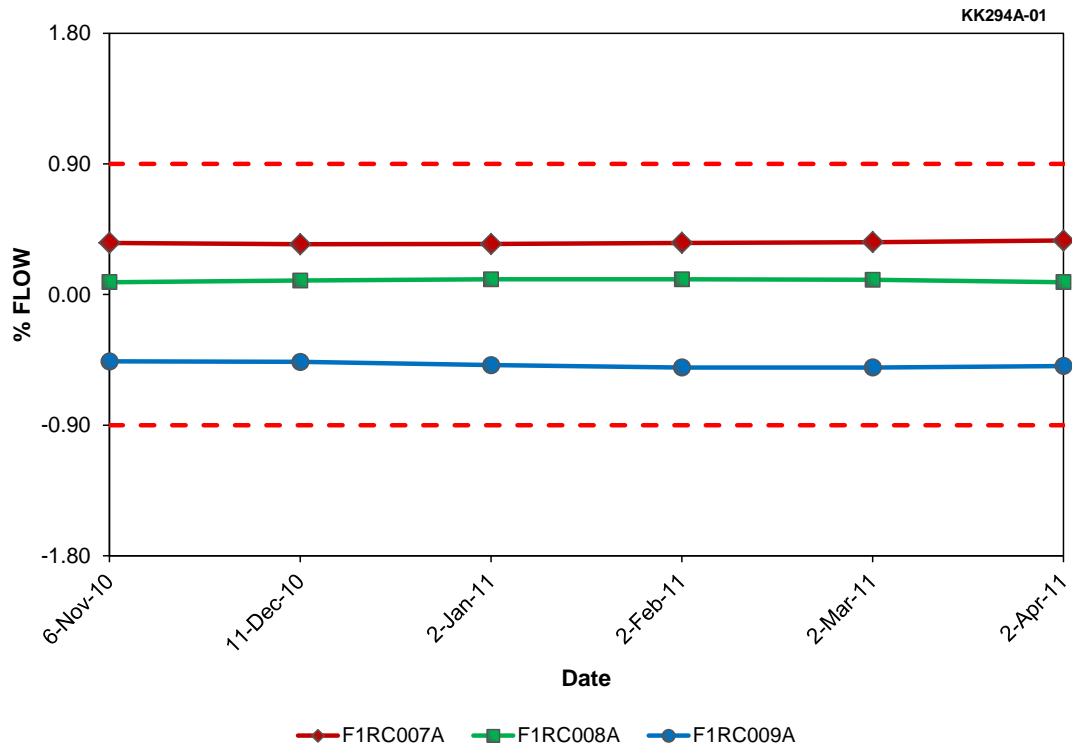


Figure H.66 RCS LOOP B FLOW Data Quality Statistics at North Anna Unit 1 (Cycle 22)

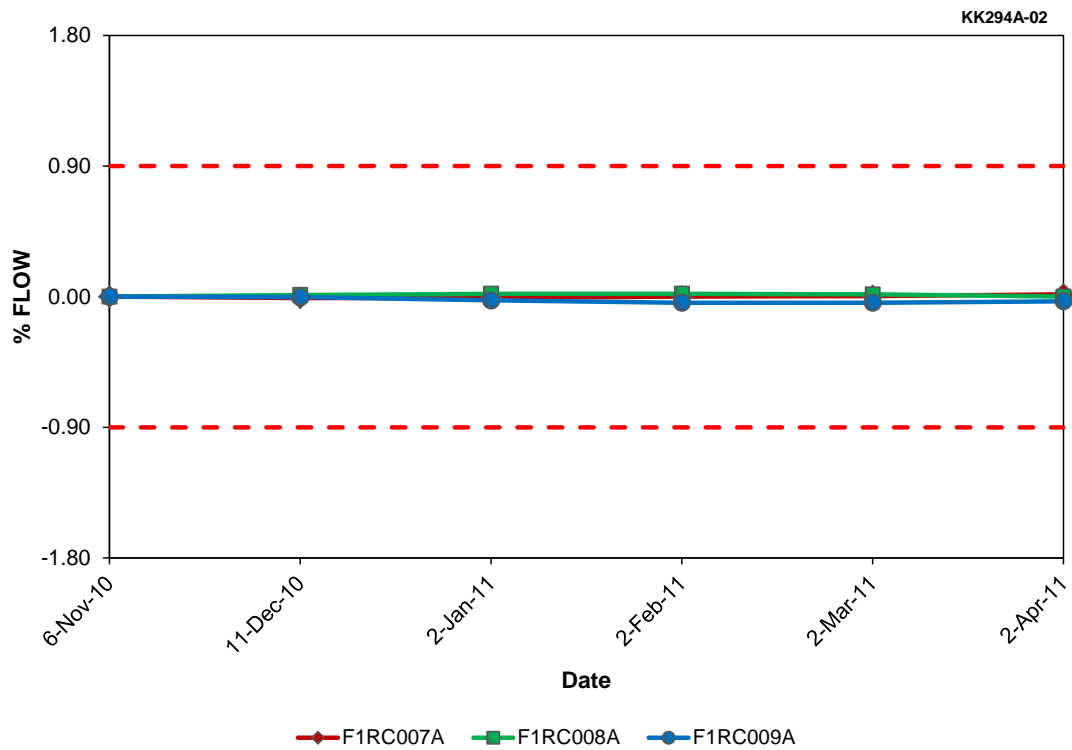
Table H.18 RCS LOOP B FLOW Data Quality for North Anna Unit 1 (Cycle 22)

Result Type	Tag Names		
	F1RC004A	F1RC005A	F1RC006A
Mean	99.90	100.21	100.60
Std. Dev.	0.27	0.25	0.22
Skewness	-0.03	-0.17	-0.06
Kurtosis	0.99	1.03	1.01



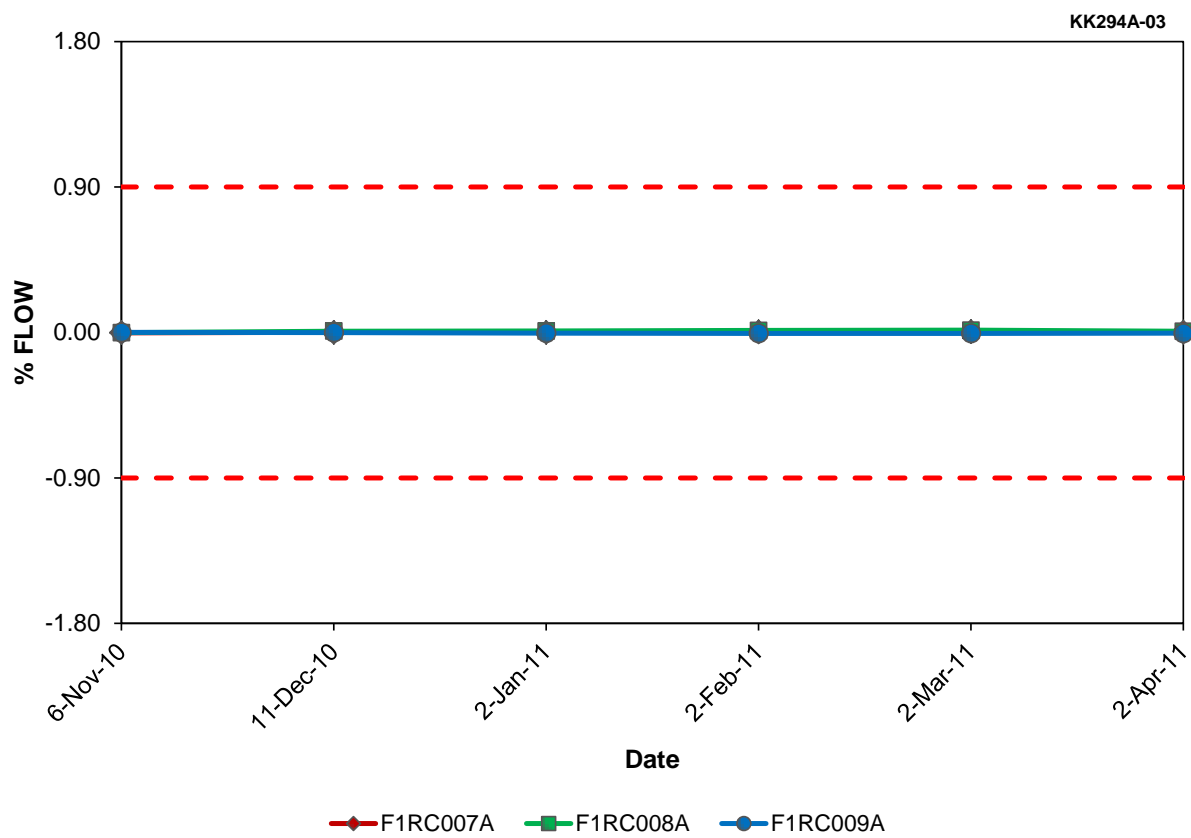


**Figure H.67 RCS LOOP C FLOW Steady-State Deviation at North Anna Unit 1 (Cycle 22)**

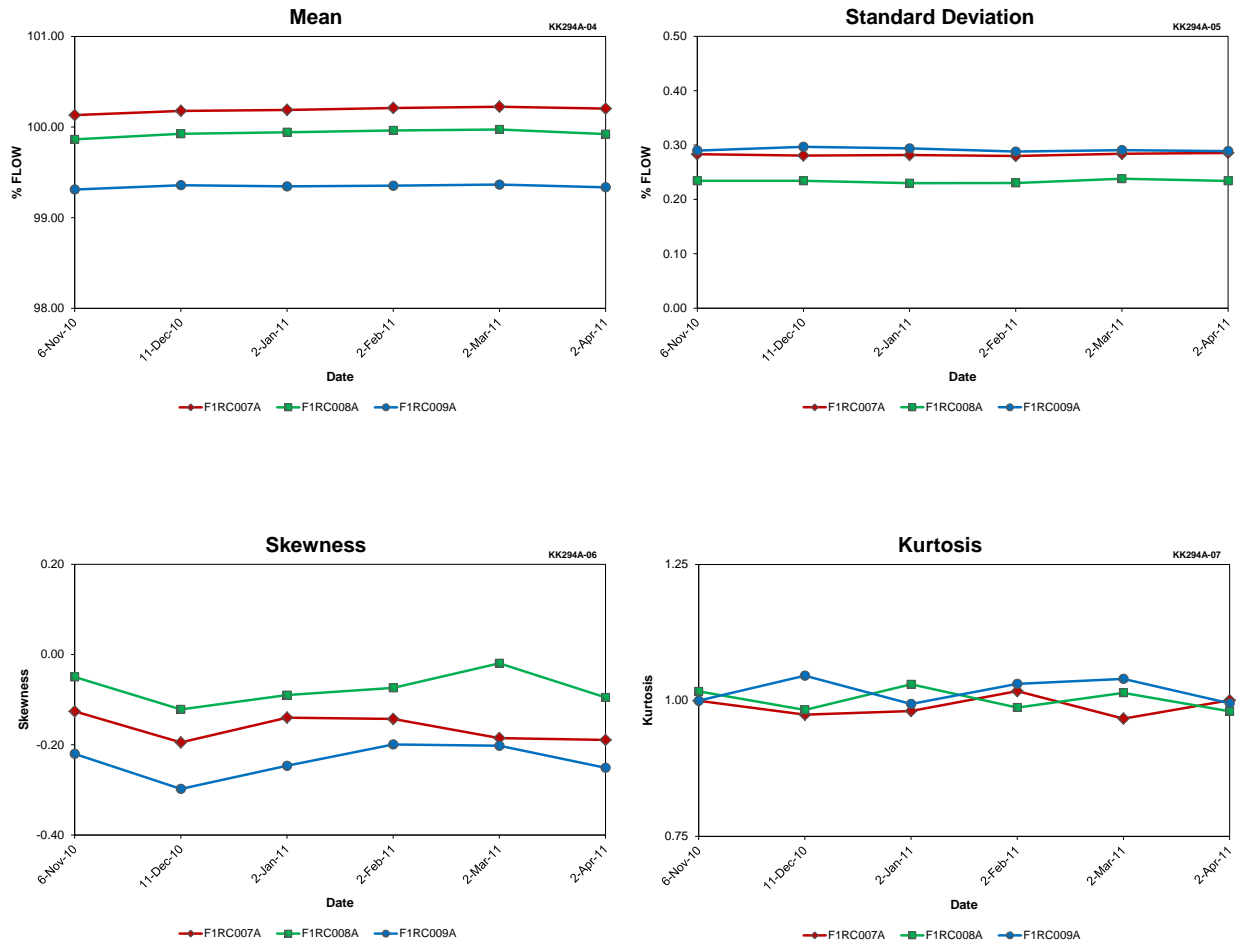


**Figure H.68 RCS LOOP C FLOW Steady-State Drift at North Anna Unit 1 (Cycle 22)**





**Figure H.69 RCS LOOP C FLOW Steady-State Residual AAKR at North Anna Unit 1 (Cycle 22)**



**Figure H.70 RCS LOOP C FLOW Data Quality Statistics at North Anna Unit 1 (Cycle 22)**

**Table H.19 RCS LOOP C FLOW Data Quality for North Anna Unit 1 (Cycle 22)**

Result Type	Tag Names		
	F1RC007A	F1RC008A	F1RC009A
Mean	100.19	99.93	99.34
Std. Dev.	0.28	0.23	0.29
Skewness	-0.16	-0.08	-0.24
Kurtosis	0.99	1.00	1.02



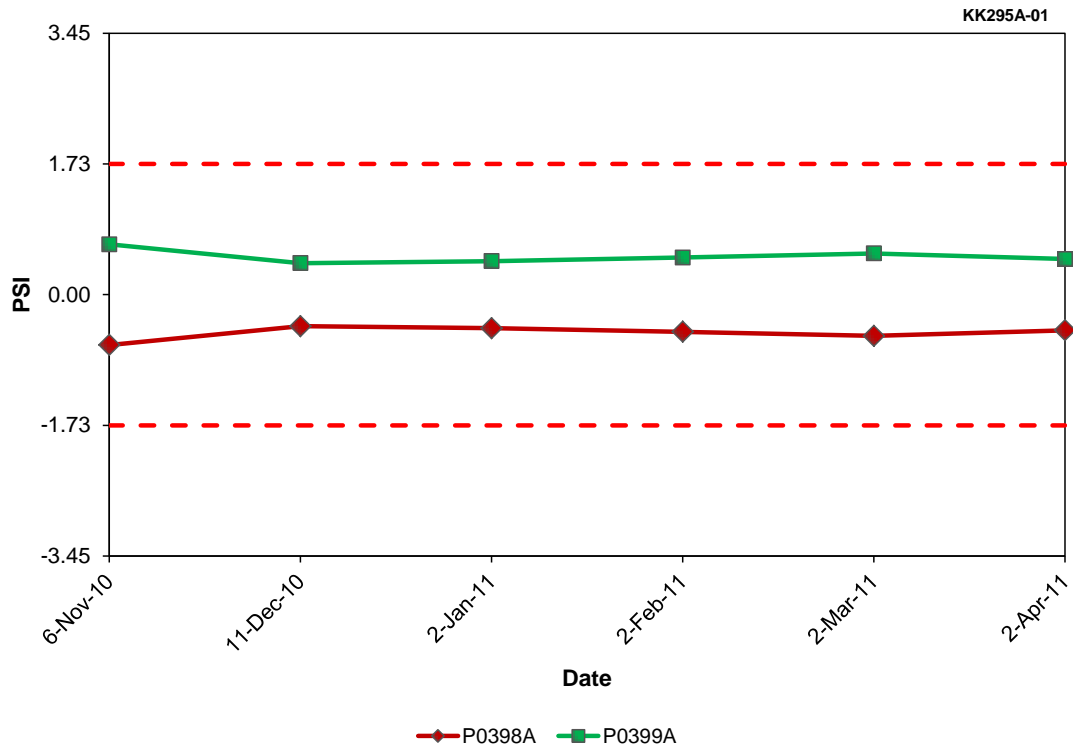


Figure H.71 TBIN FIRST STAGE PRESSURE Steady-State Deviation at North Anna Unit 1 (Cycle 22)

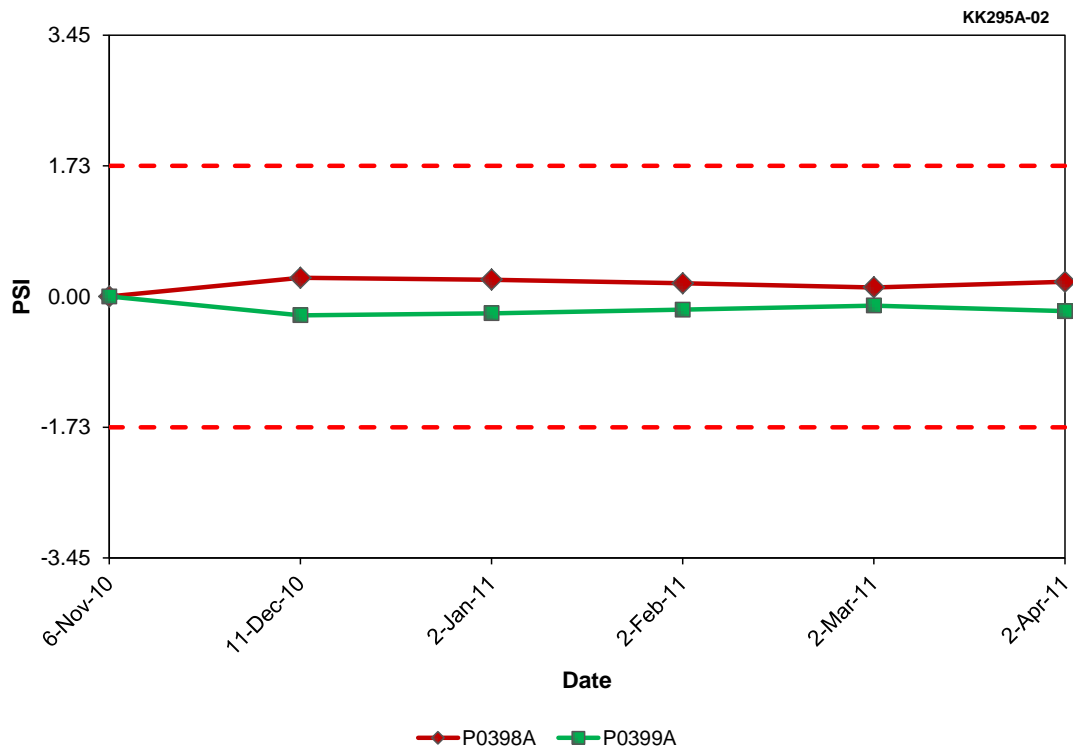
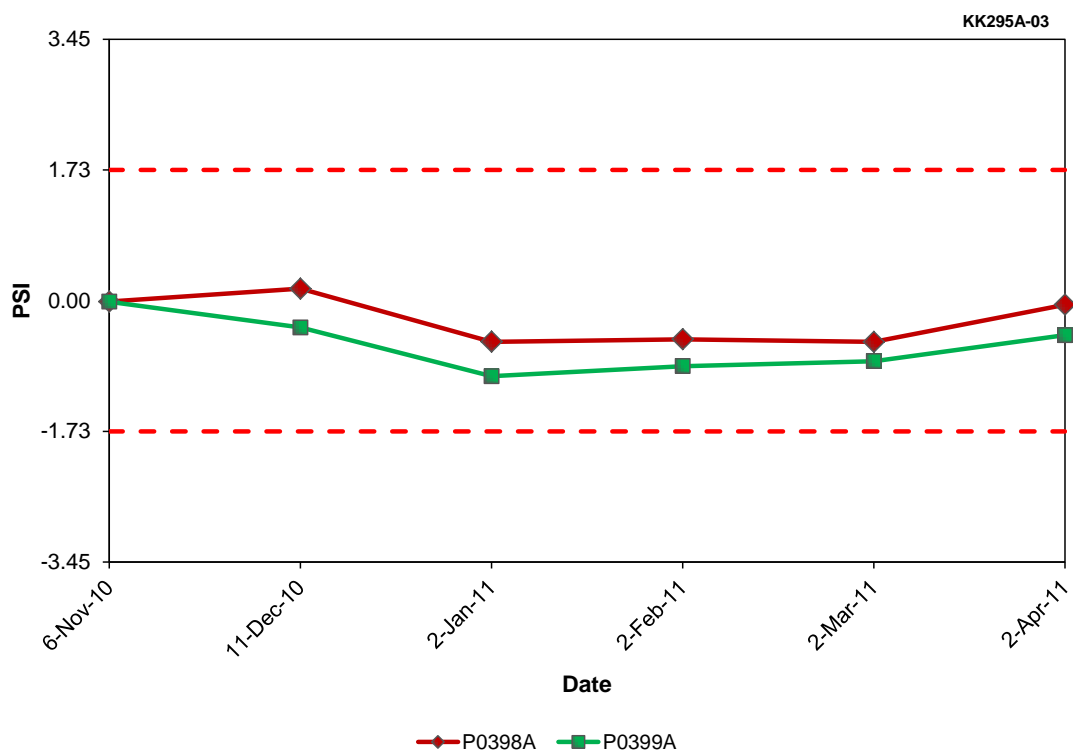
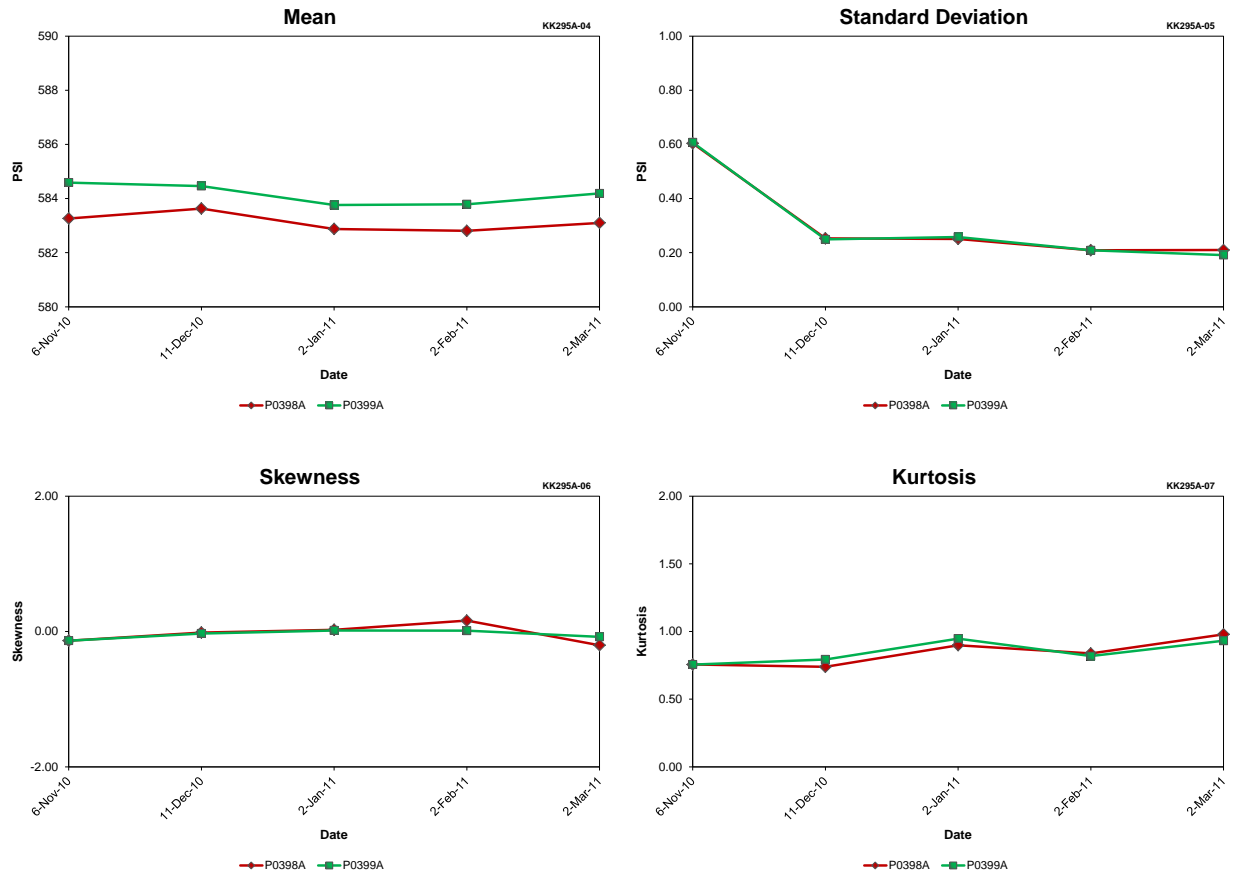


Figure H.72 TBIN FIRST STAGE PRESSURE Steady-State Drift at North Anna Unit 1 (Cycle 22)



**Figure H.73 TBIN FIRST STAGE PRESSURE Steady-State Residual AAKR at North Anna Unit 1 (Cycle 22)**



**Figure H.74 TBIN FIRST STAGE PRESSURE Data Quality Statistics at North Anna Unit 1 (Cycle 22)**

**Table H.20 TBIN FIRST STAGE PRESSURE Data Quality for North Anna Unit 1 (Cycle 22)**

Result Type	Tag Names	
	P0398A	P0399A
Mean	583.13	584.16
Std. Dev.	0.31	0.30
Skewness	-0.03	-0.04
Kurtosis	0.84	0.85



## **APPENDIX I**

### **North Anna Unit 2 OLM Results (Cycle 21)**





Item	Tagname	Service	27 Apr 2010	3 May 2010	2 Jul 2010	2 Aug 2010	11 Nov 2010	2 Dec 2010	2 Jan 2011	2 Feb 2011	2 Mar 2011	2 Apr 2011	Drift	Final	Comment
1	F2MS001A	SG A STEAM FLOW					M	M	M	M	M			PASS	Process change. Not transmitter.
2	F2MS002A	SG A STEAM FLOW						M	M	M	M	M		PASS	
3	F2FW004A	FW FLOW TO SG A												PASS	
4	F2FW005A	FW FLOW TO SG A												PASS	
5	L2FW001A	SG A NARROW RANGE LEVEL												PASS	
6	L2FW002A	SG A NARROW RANGE LEVEL												PASS	
7	L2FW003A	SG A NARROW RANGE LEVEL												PASS	
8	L2FW004A	SG A WIDE RANGE LEVEL												PASS	
9	P2MS001A	SG A OUTLET PRESSURE												PASS	
10	P2MS002A	SG A OUTLET PRESSURE												PASS	
11	P2MS003A	SG A OUTLET PRESSURE												PASS	
12	F2MS003A	SG B STEAM FLOW												PASS	
13	F2MS004A	SG B STEAM FLOW												PASS	
14	F2FW006A	FW FLOW TO SG B												PASS	
15	F2FW007A	FW FLOW TO SG B												PASS	
16	L2FW005A	SG B NARROW RANGE LEVEL			R									FAIL	Group is spread out
17	L2FW006A	SG B NARROW RANGE LEVEL												PASS	
18	L2FW007A	SG B NARROW RANGE LEVEL			R	R								FAIL	
19	L2FW008A	SG B WIDE RANGE LEVEL												PASS	
20	P2MS004A	SG B OUTLET PRESSURE												PASS	
21	P2MS005A	SG B OUTLET PRESSURE												PASS	
22	P2MS006A	SG B OUTLET PRESSURE												PASS	
23	F2MS005A	SG C STEAM FLOW	R	R	R	R	M	R,M	R,M	R,M	R,M	R,M		FAIL	
24	F2MS006A	SG C STEAM FLOW	R	R	R	R	M	R,M	R,M	R,M	R,M	R,M		FAIL	
25	F2FW008A	FW FLOW TO SG C										M		PASS	Process change. Not transmitter
26	F2FW009A	FW FLOW TO SG C					M	M				M		PASS	

*R = Exceeded Redundant Sensor Analysis Limits    M = Exceeded Model Analysis Limits    D = Exceeded Drift Limits*

**Table I.1 North Anna Unit 2 OLM Results Summary (Cycle 21)**



Item	Tagname	Service	27 Apr 2010	3 May 2010	2 Jul 2010	2 Aug 2010	11 Nov 2010	2 Dec 2010	2 Jan 2011	2 Feb 2011	2 Mar 2011	2 Apr 2011	Drift	Final	Comment
27	L2FW009A	SG C NARROW RANGE LEVEL												PASS	
28	L2FW010A	SG C NARROW RANGE LEVEL												PASS	
29	L2FW011A	SG C NARROW RANGE LEVEL												PASS	
30	L2FW012A	SG C WIDE RANGE LEVEL												PASS	
31	P2MS007A	SG C OUTLET PRESSURE												PASS	
32	P2MS008A	SG C OUTLET PRESSURE												PASS	
33	P2MS009A	SG C OUTLET PRESSURE												PASS	
34	L2RC001A	PRESSURIZER LEVEL												PASS	
35	L2RC002A	PRESSURIZER LEVEL												PASS	
36	L2RC003A	PRESSURIZER LEVEL												PASS	
37	P2RC001A	PRESSURIZER PRESSURE												PASS	
38	P2RC002A	PRESSURIZER PRESSURE												PASS	
39	P2RC003A	PRESSURIZER PRESSURE												PASS	
40	F2RC001A	RCS LOOP A FLOW												PASS	
41	F2RC002A	RCS LOOP A FLOW												PASS	
42	F2RC003A	RCS LOOP A FLOW												PASS	
43	F2RC004A	RCS LOOP B FLOW												PASS	
44	F2RC005A	RCS LOOP B FLOW												PASS	
45	F2RC006A	RCS LOOP B FLOW												PASS	
46	F2RC007A	RCS LOOP C FLOW												PASS	
47	F2RC008A	RCS LOOP C FLOW	R	R	R	R	R	R	R	R	R	R		PASS	High bias
48	F2RC009A	RCS LOOP C FLOW												PASS	
49	P2RC005A	RCS WIDE RANGE PRESSURE LOOP A												PASS	
50	P2RC006A	RCS WIDE RANGE PRESSURE LOOP C												PASS	
51	P0398A	TURBINE FIRST STAGE PRESSURE												PASS	
52	P0399A	TURBINE FIRST STAGE PRESSURE												PASS	

*R = Exceeded Redundant Sensor Analysis Limits    M = Exceeded Model Analysis Limits    D = Exceeded Drift Limits*

**Table I.1 (continued) North Anna Unit 2 OLM Results Summary (Cycle 21)**



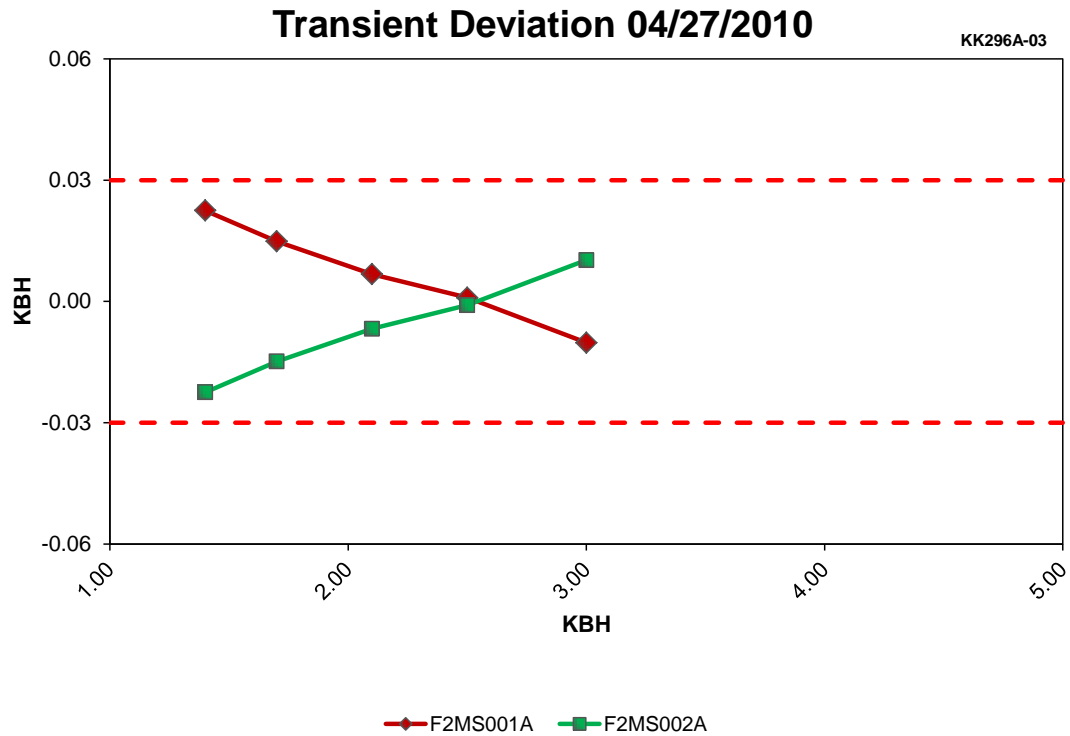


Figure I.1 SG A STEAM FLOW Transient Deviation at North Anna Unit 2 (Cycle 21)

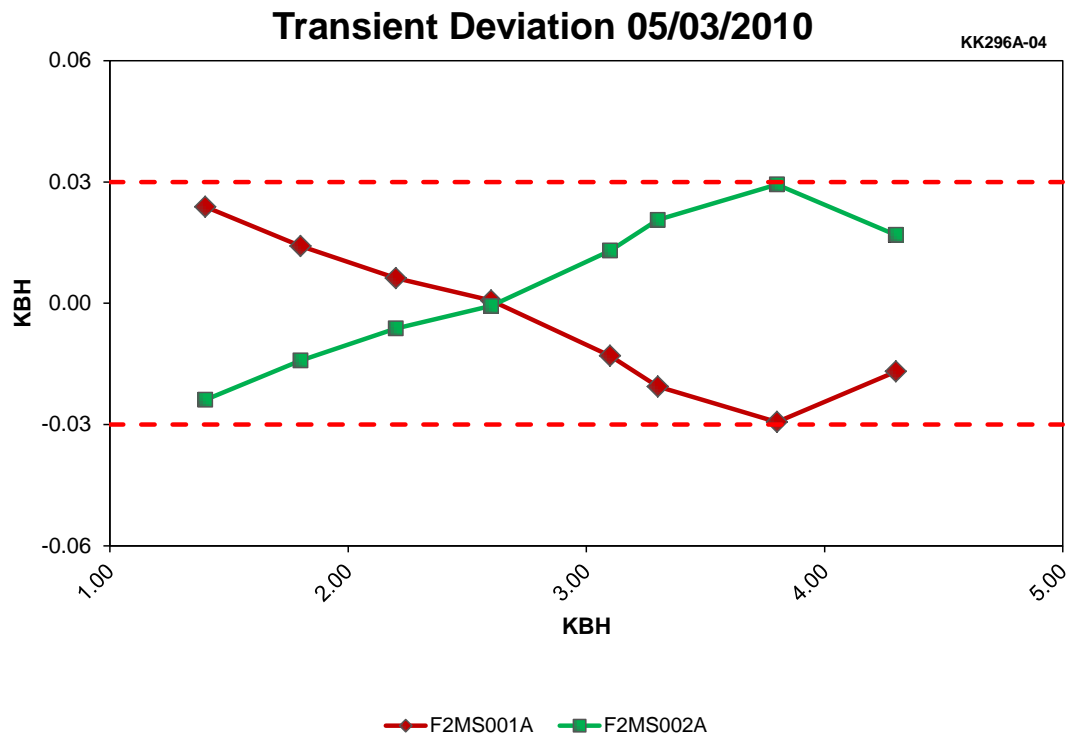
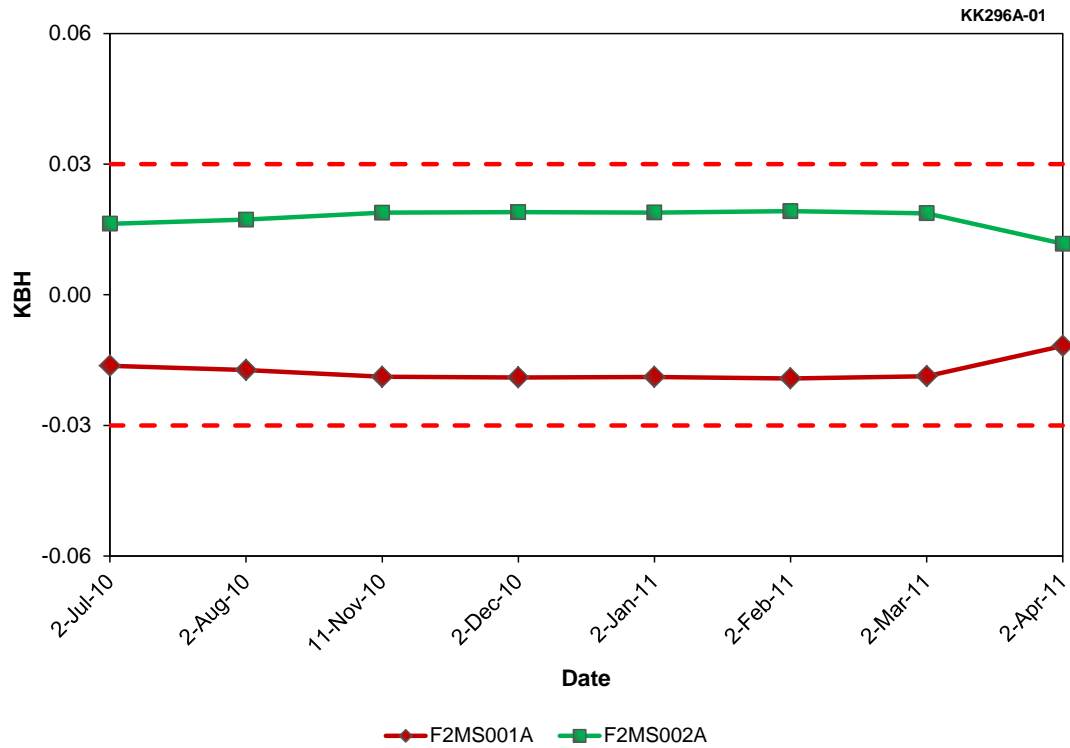
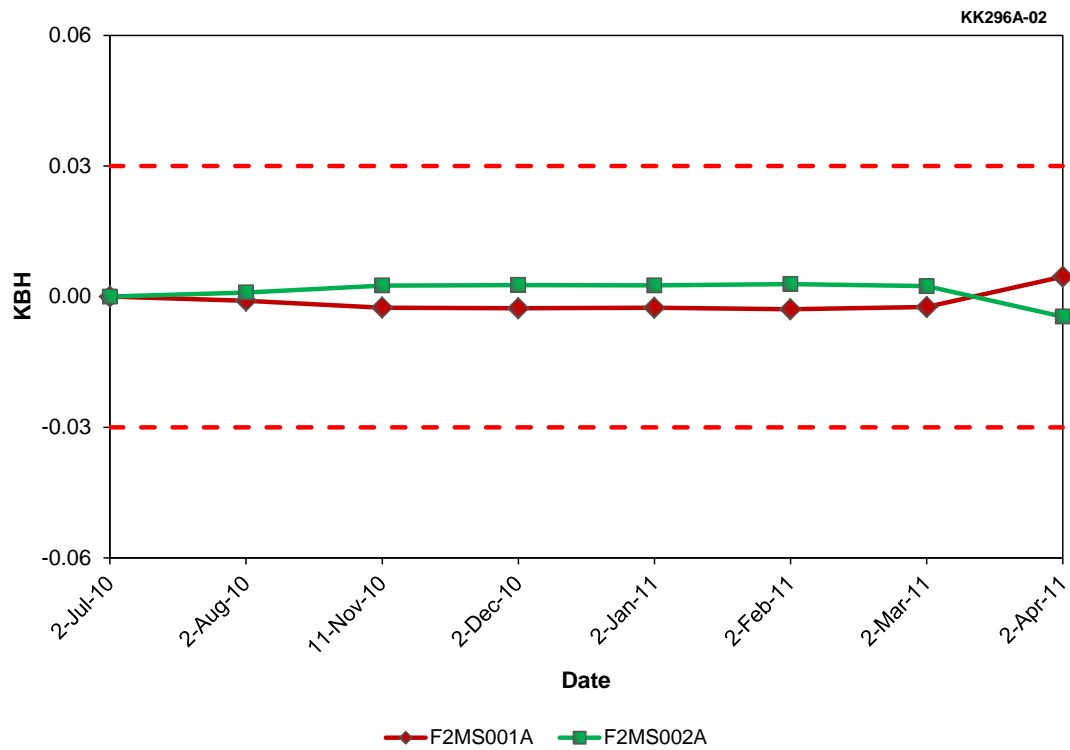


Figure I.2 SG A STEAM FLOW Transient Deviation at North Anna Unit 2 (Cycle 21)



**Figure I.3 SG A STEAM FLOW Steady-State Deviation at North Anna Unit 2 (Cycle 21)**



**Figure I.4 SG A STEAM FLOW Steady-State Drift at North Anna Unit 2 (Cycle 21)**

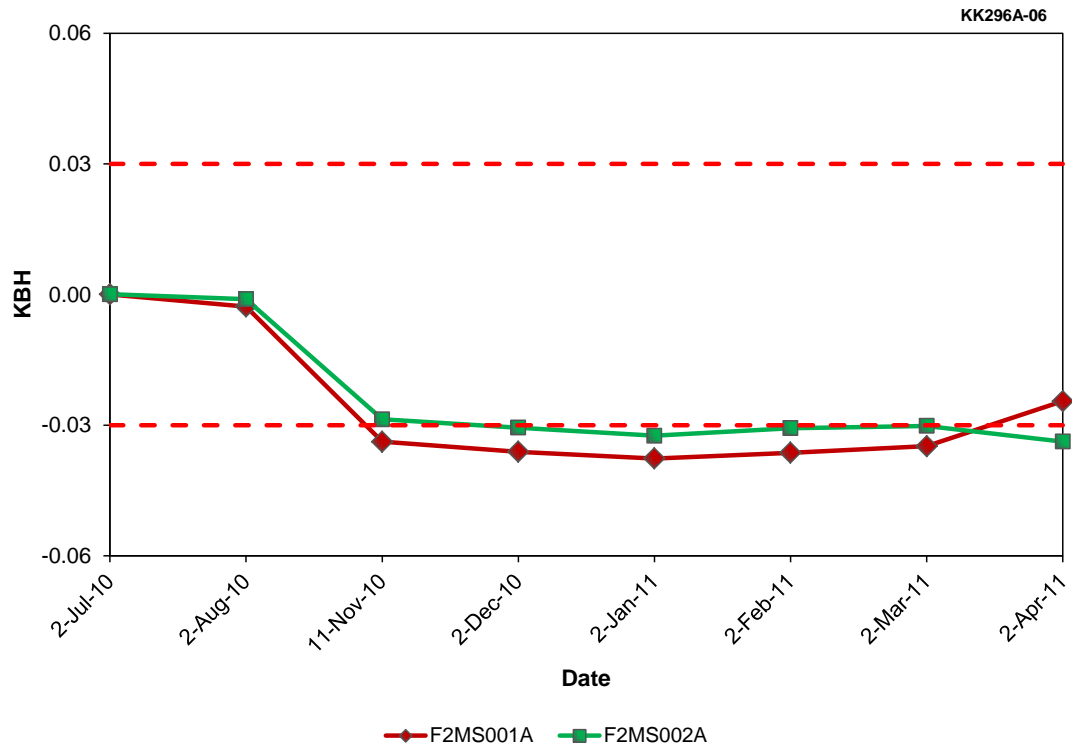


Figure I.5 SG A STEAM FLOW Steady-State Residual AAKR at North Anna Unit 2 (Cycle 21)

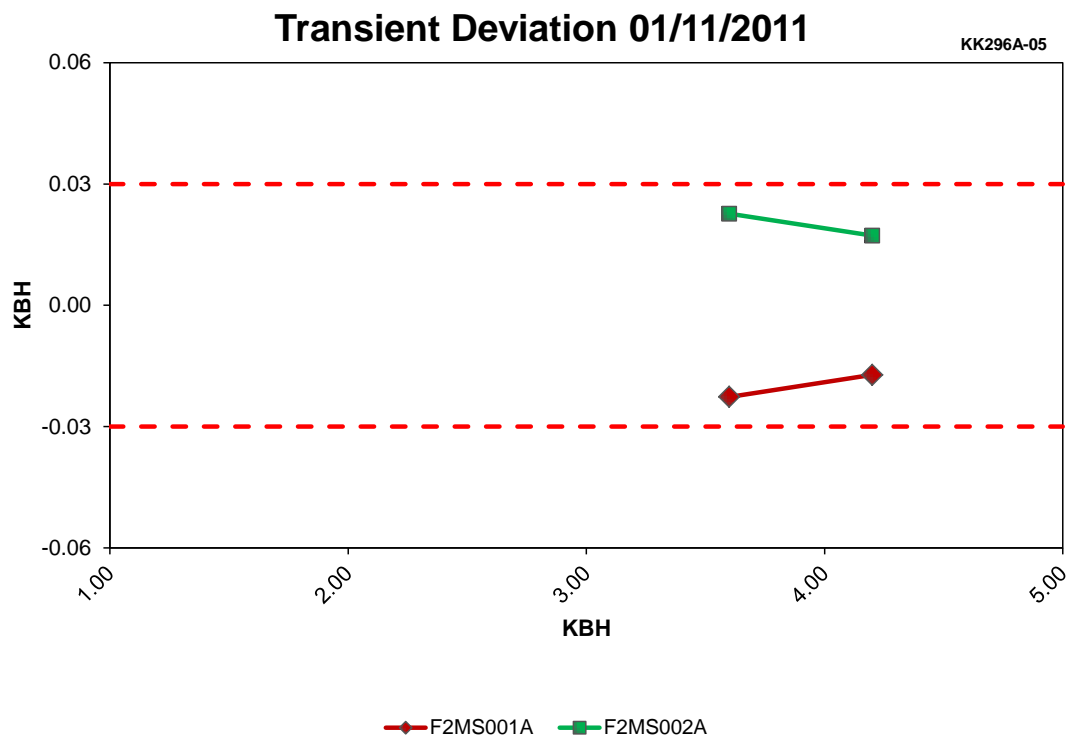
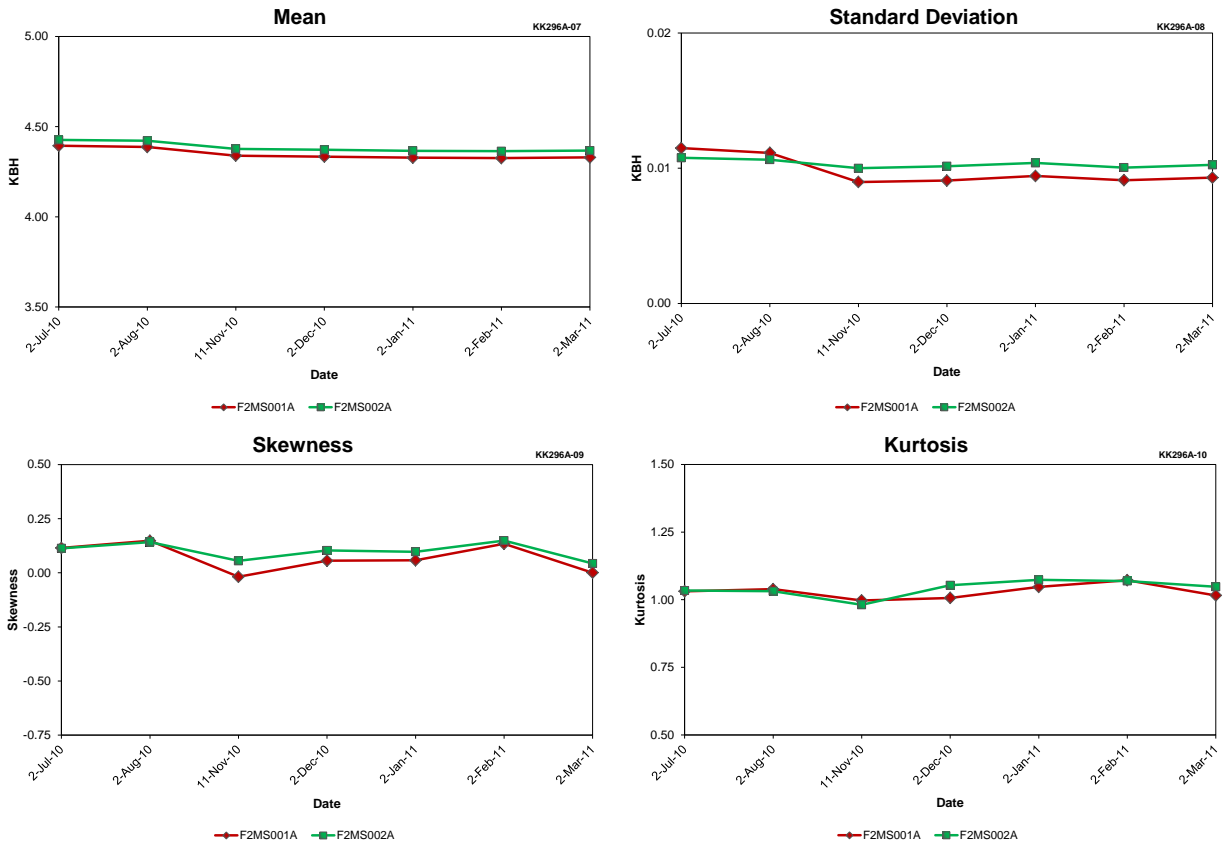


Figure I.6 SG A STEAM FLOW Transient Deviation at North Anna Unit 2 (Cycle 21)





**Figure I.7 SG A STEAM FLOW Data Quality Statistics at North Anna Unit 2 (Cycle 21)**

**Table I.1 SG A STEAM FLOW Data Quality for North Anna Unit 2 (Cycle 21)**

Result Type	Tag Names	
	F2MS001A	F2MS002A
Mean	4.35	4.38
Std. Dev.	0.01	0.01
Skewness	0.07	0.10
Kurtosis	1.03	1.04



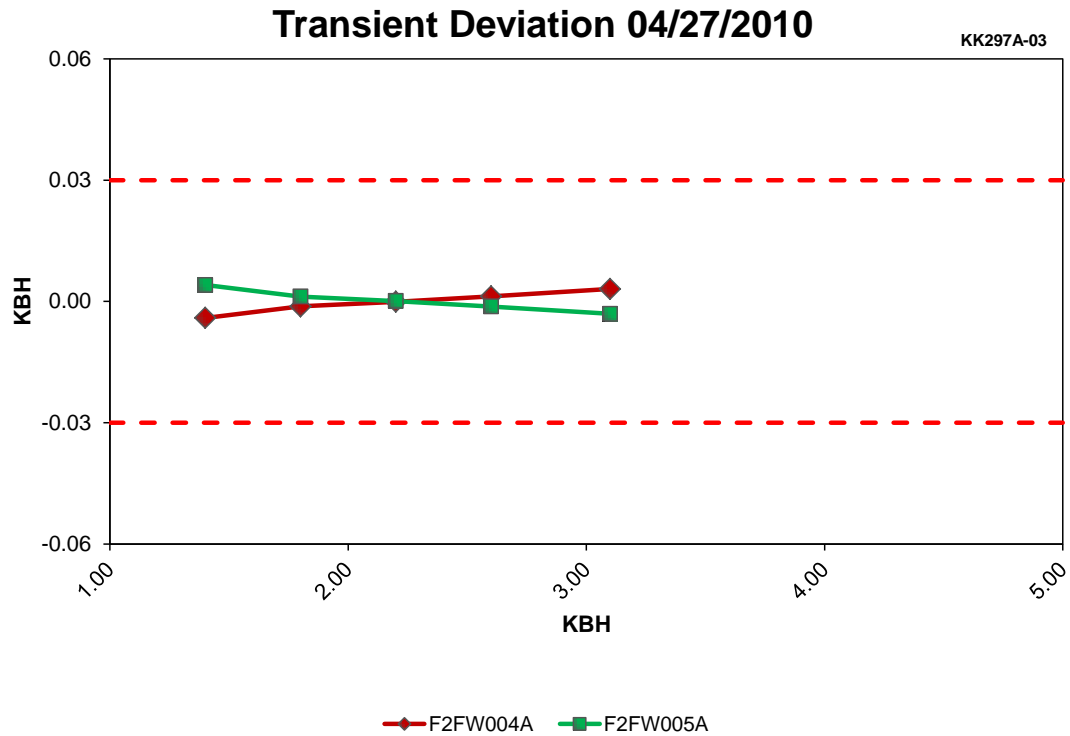


Figure I.8 FW FLOW TO SG A Transient Deviation at North Anna Unit 2 (Cycle 21)

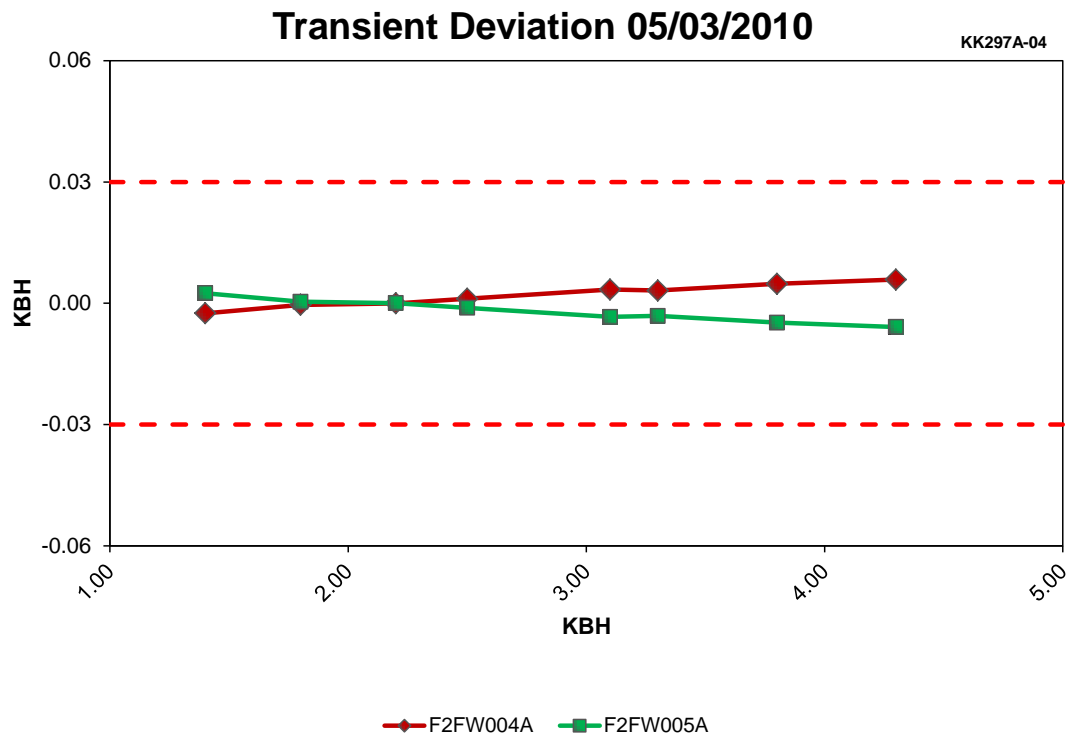


Figure I.9 FW FLOW TO SG A Transient Deviation at North Anna Unit 2 (Cycle 21)

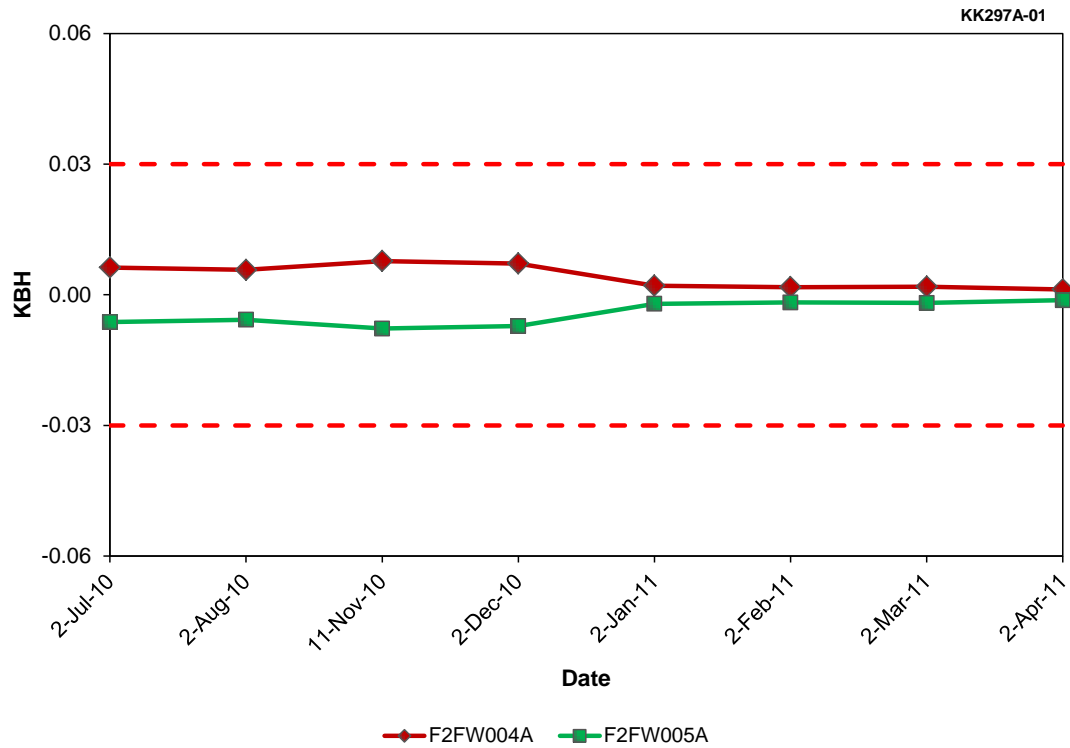


Figure I.10 FW FLOW TO SG A Steady-State Deviation at North Anna Unit 2 (Cycle 21)

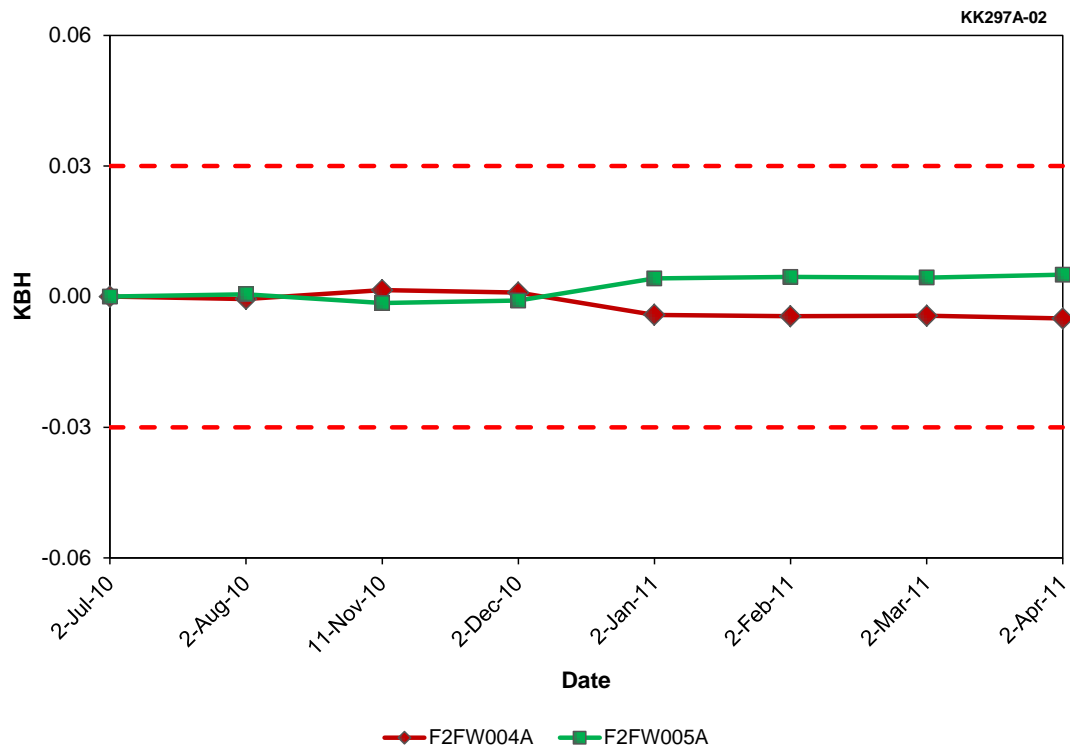


Figure I.11 FW FLOW TO SG A Steady-State Drift at North Anna Unit 2 (Cycle 21)

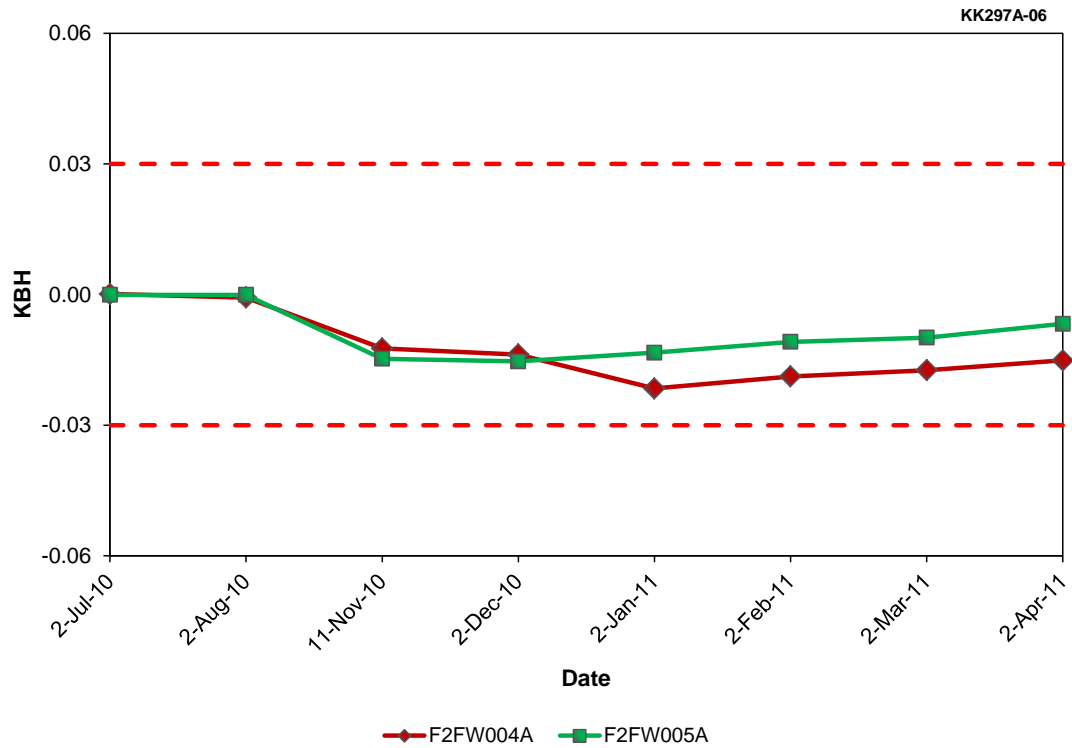


Figure I.12 FW FLOW TO SG A Steady-State Residual AAKR at North Anna Unit 2 (Cycle 21)

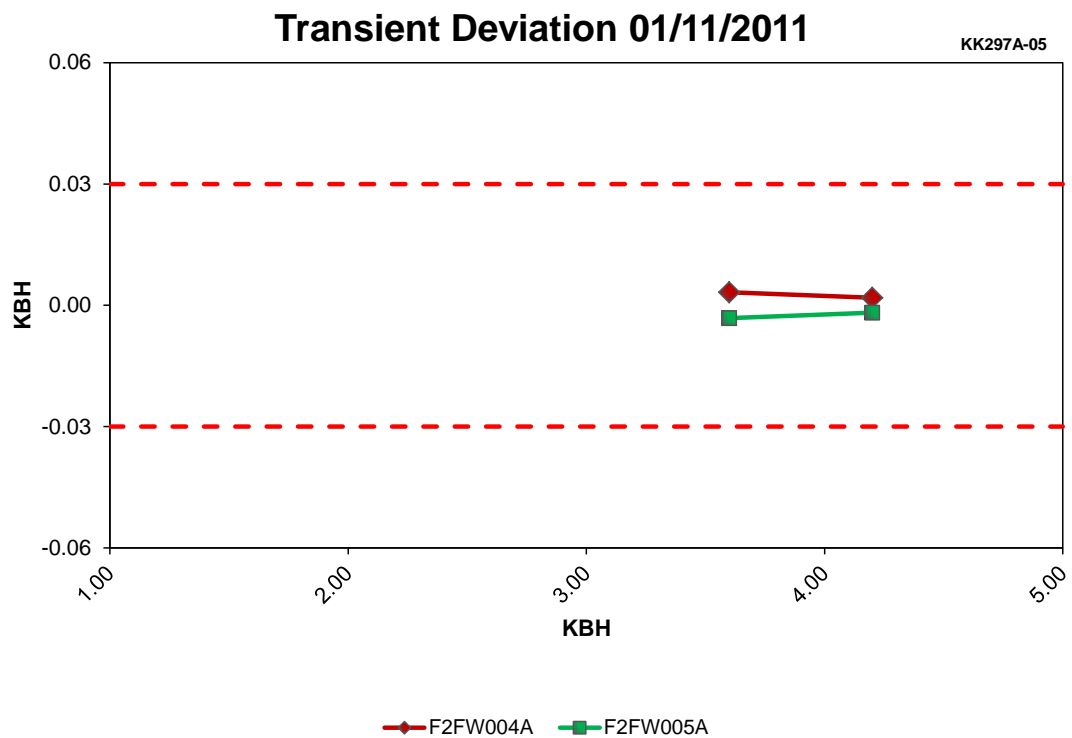
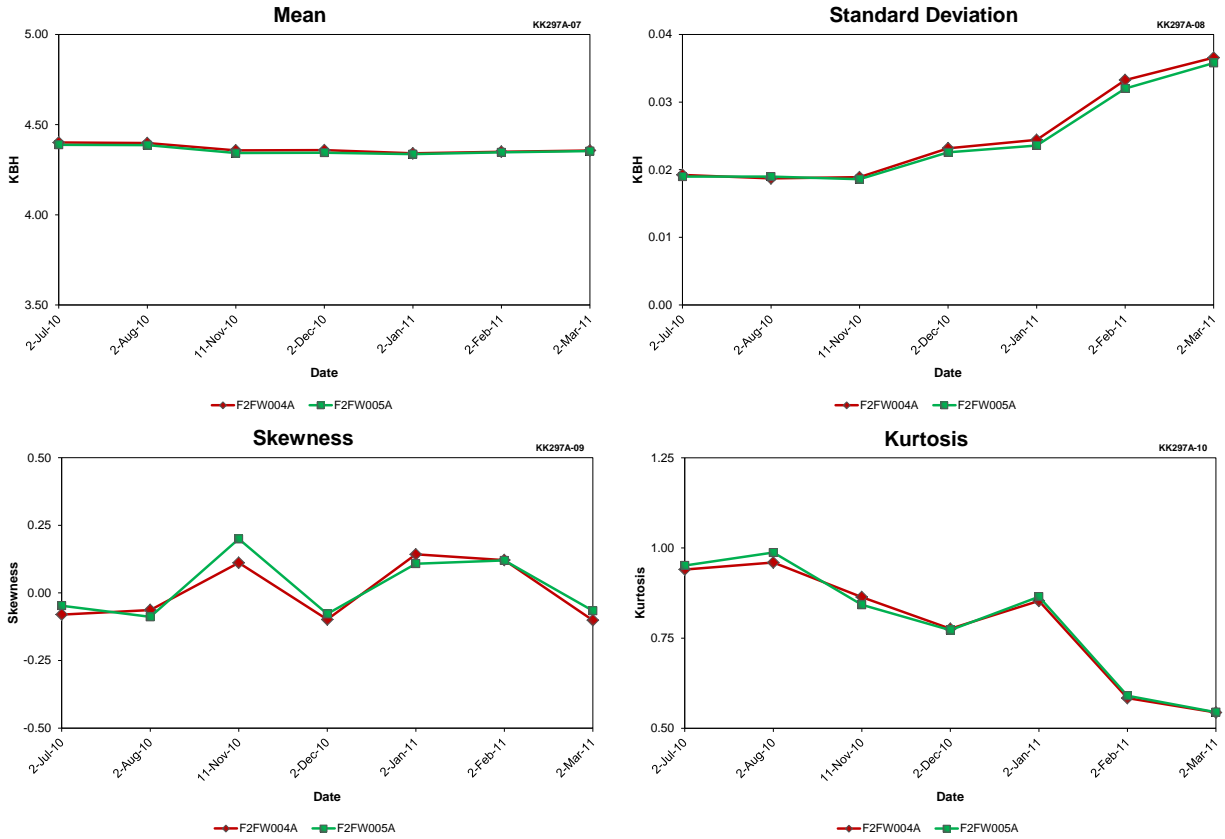


Figure I.13 FW FLOW TO SG A Transient Deviation at North Anna Unit 2 (Cycle 21)

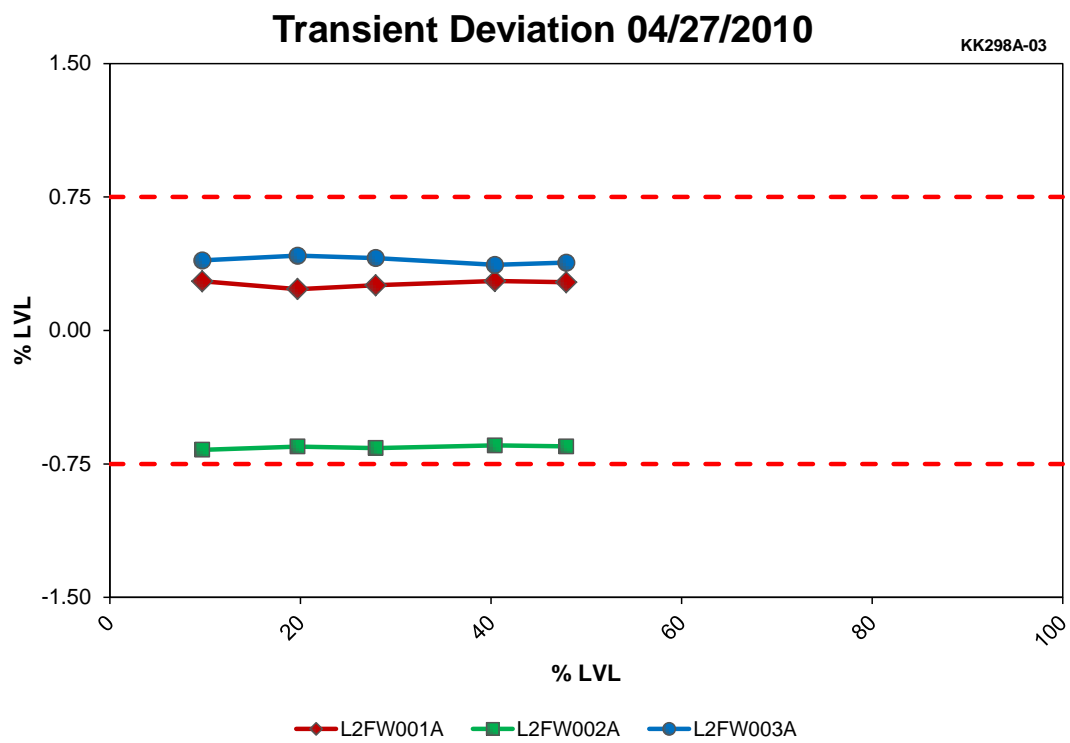


**Figure I.14 FW FLOW TO SG A Data Quality Statistics at North Anna Unit 2 (Cycle 21)**

**Table I.2 FW FLOW TO SG A Data Quality for North Anna Unit 2 (Cycle 21)**

Result Type	Tag Names	
	F2FW004A	F2FW005A
Mean	4.37	4.36
Std. Dev.	0.02	0.02
Skewness	0.00	0.02
Kurtosis	0.79	0.79

Figure I.15 SG A LEVEL Transient Deviation at North Anna Unit 2 (Cycle 21)



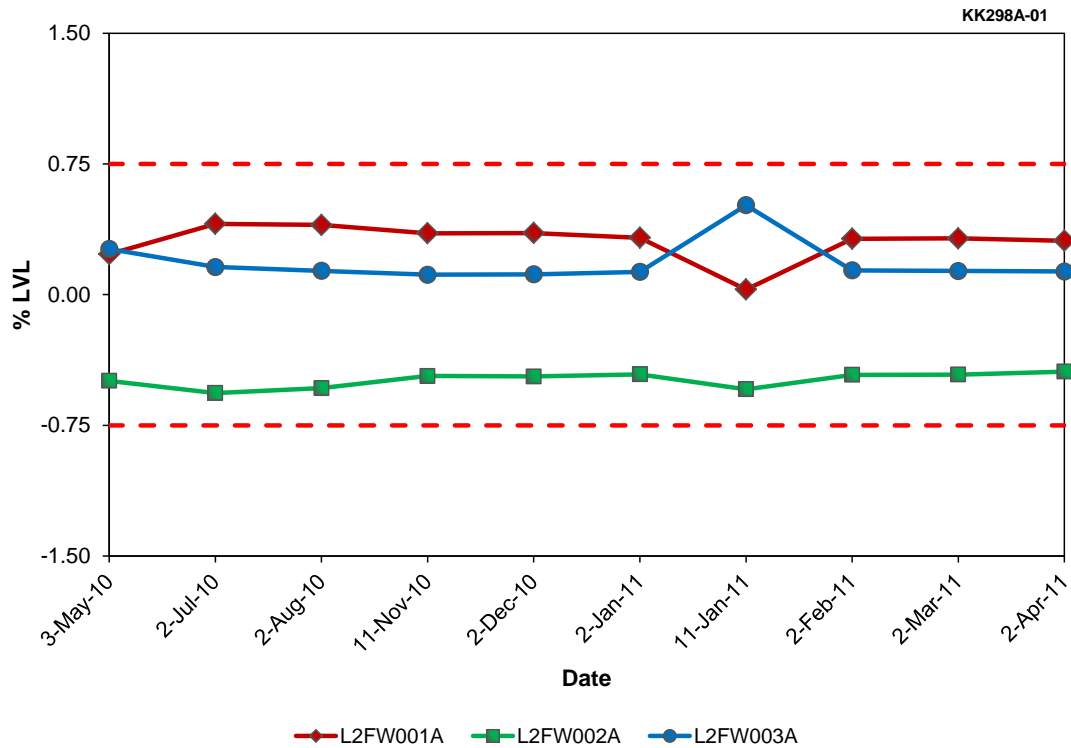


Figure I.16 SG A LEVEL Steady-State Deviation at North Anna Unit 2 (Cycle 21)

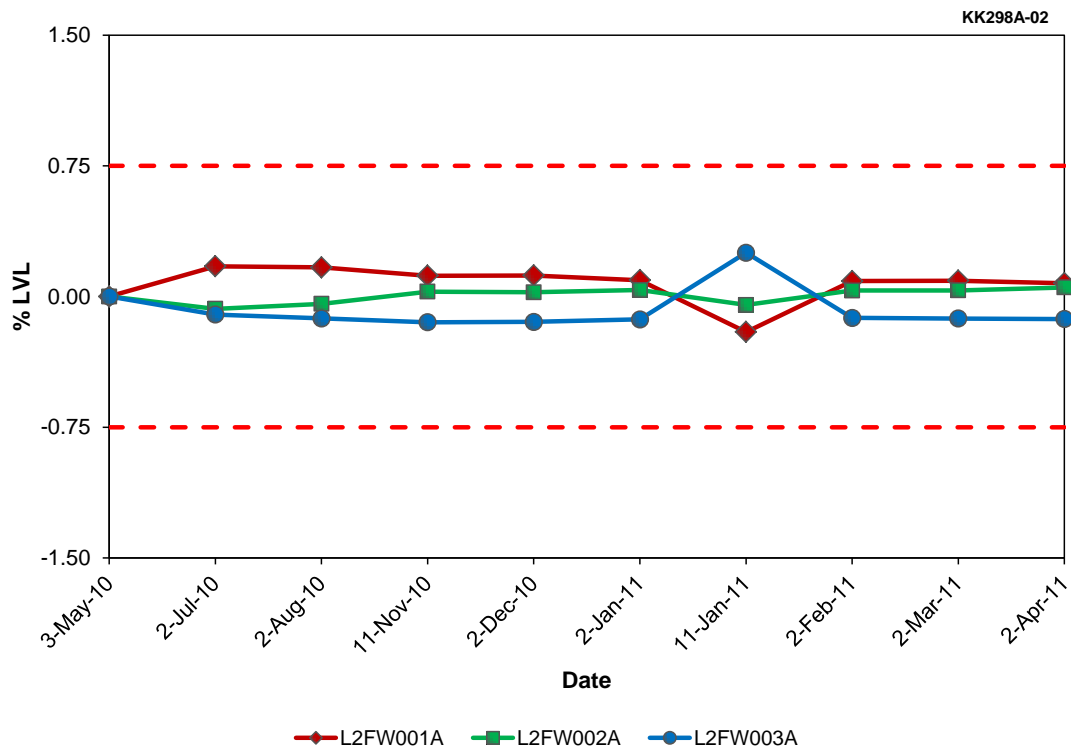
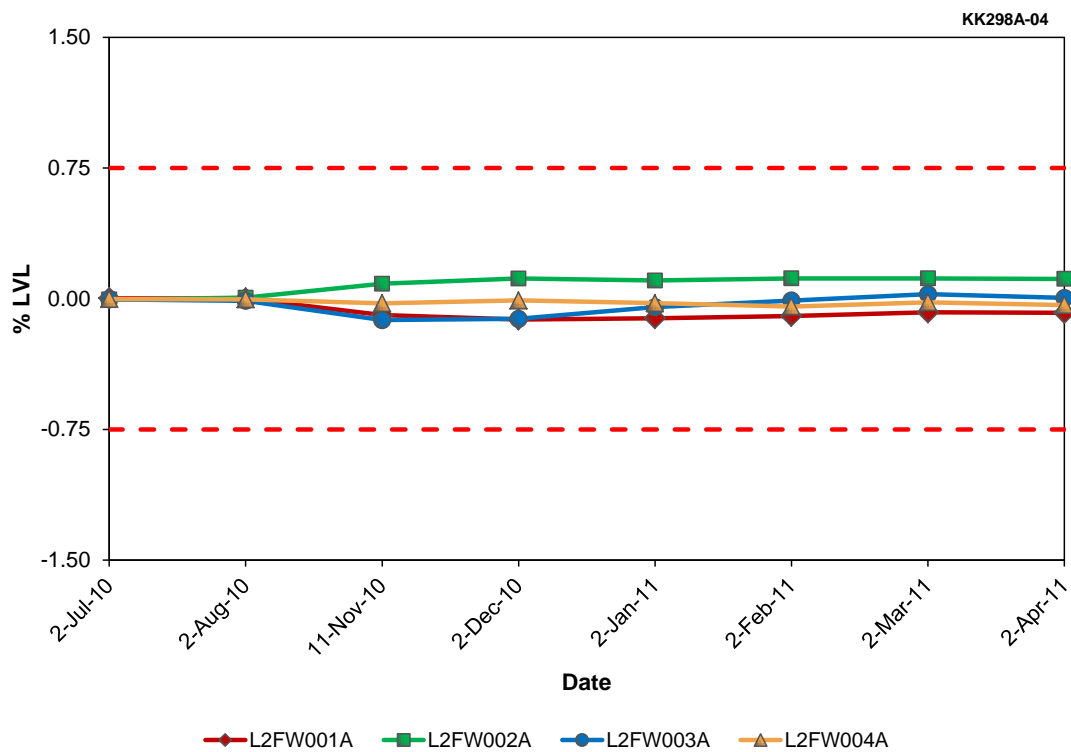


Figure I.17 SG A LEVEL Steady-State Drift at North Anna Unit 2 (Cycle 21)





**Figure I.18 SG A LEVEL Steady-State Residual AAKR at North Anna Unit 2 (Cycle 21)**

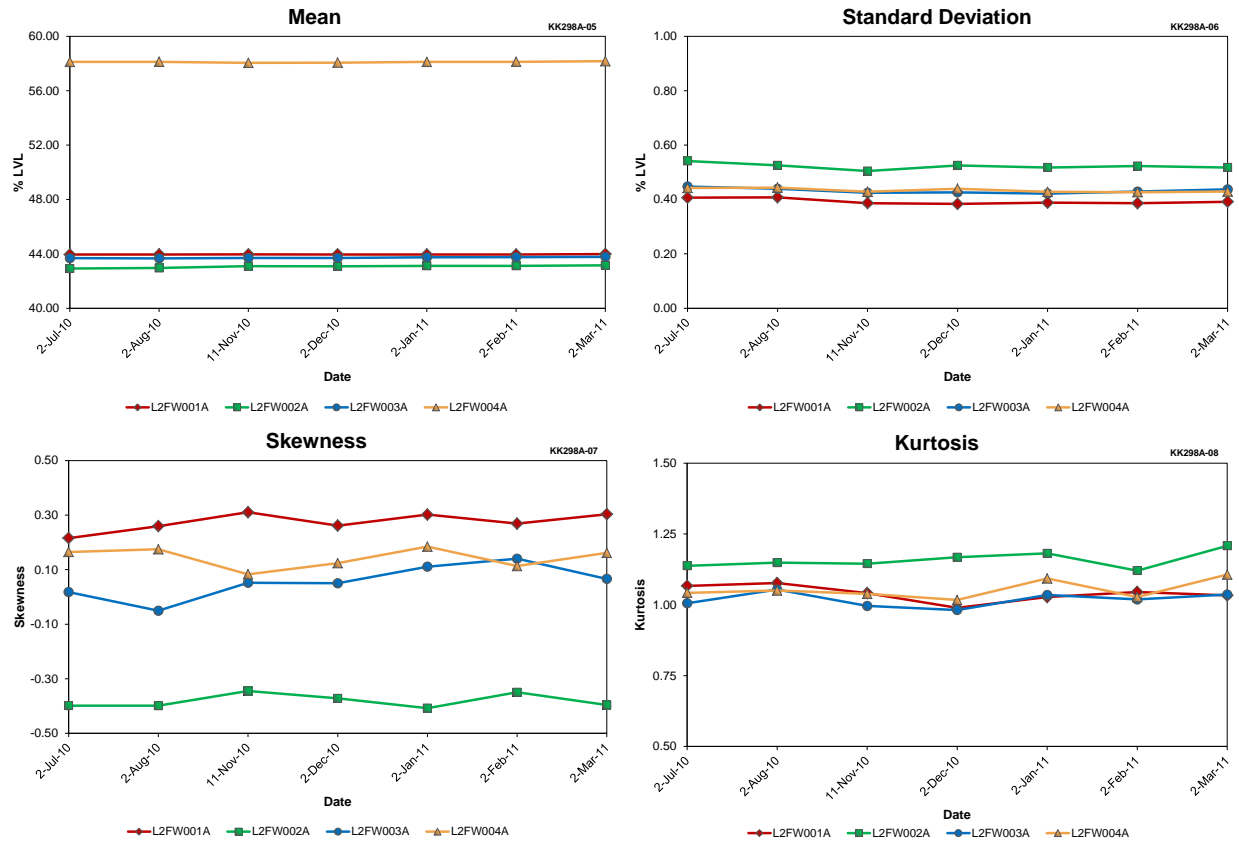
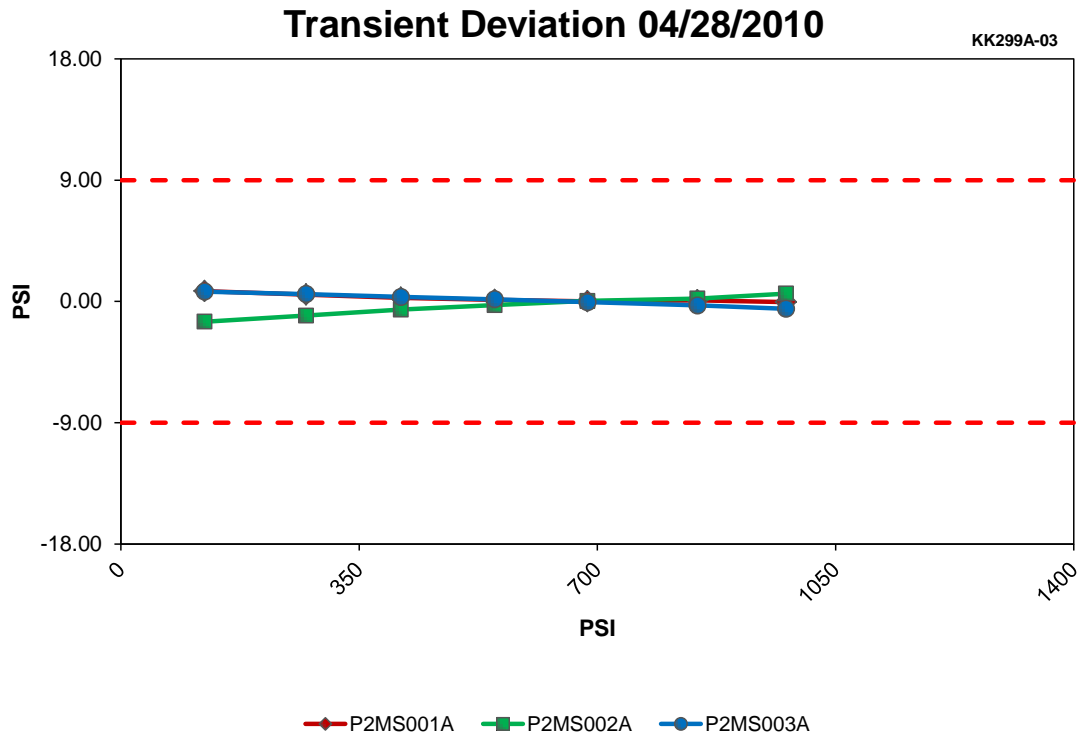


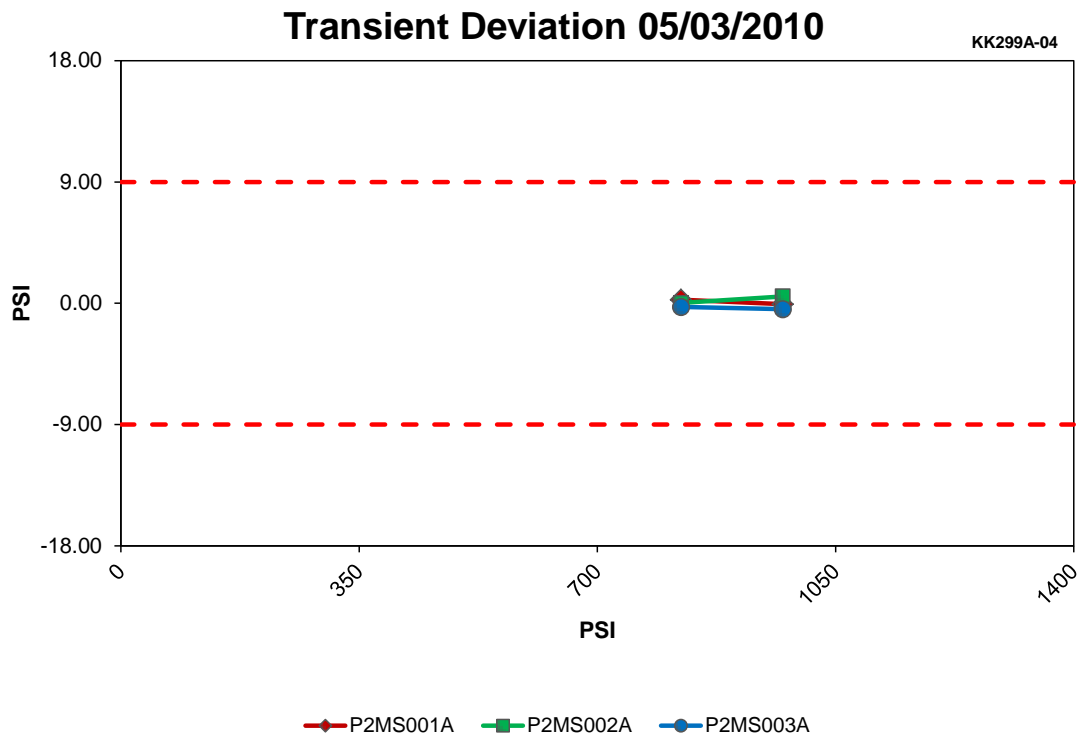
Figure I.19 SG A LEVEL Data Quality Statistics at North Anna Unit 2 (Cycle 21)

Table I.3 SG A LEVEL Data Quality for North Anna Unit 2 (Cycle 21)

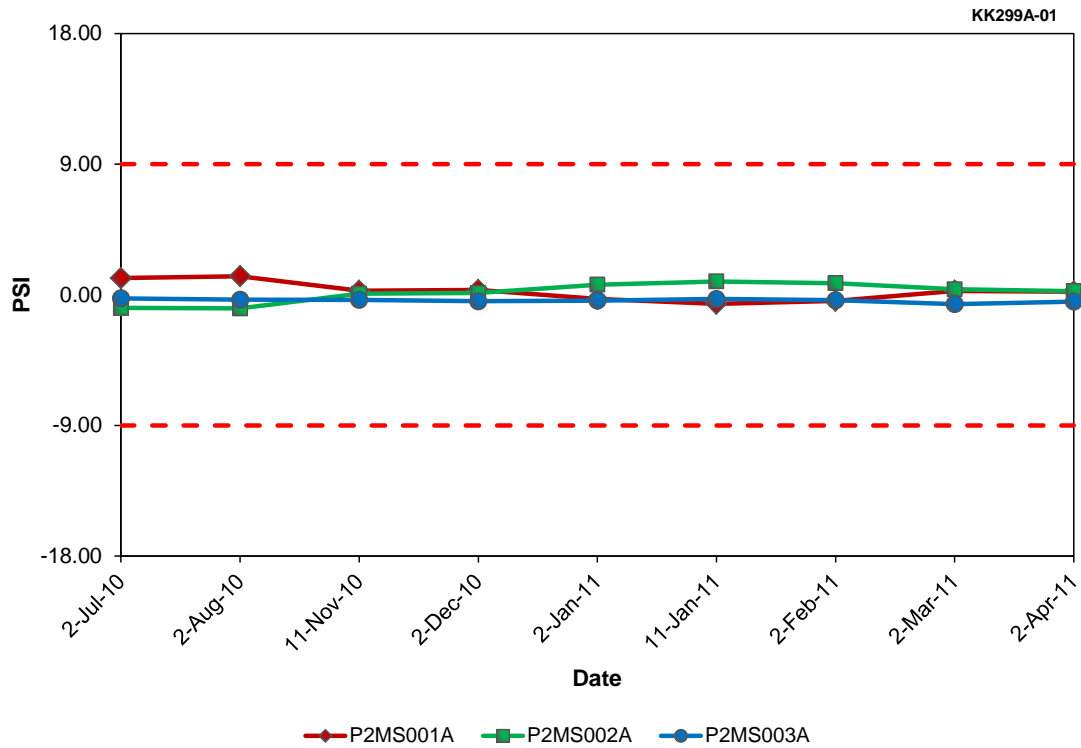
Result Type	Tag Names			
	L2FW001A	L2FW002A	L2FW003A	L2FW004A
Mean	43.96	43.07	43.72	58.11
Std. Dev.	0.39	0.52	0.43	0.43
Skewness	0.27	-0.38	0.06	0.14
Kurtosis	1.04	1.16	1.02	1.05



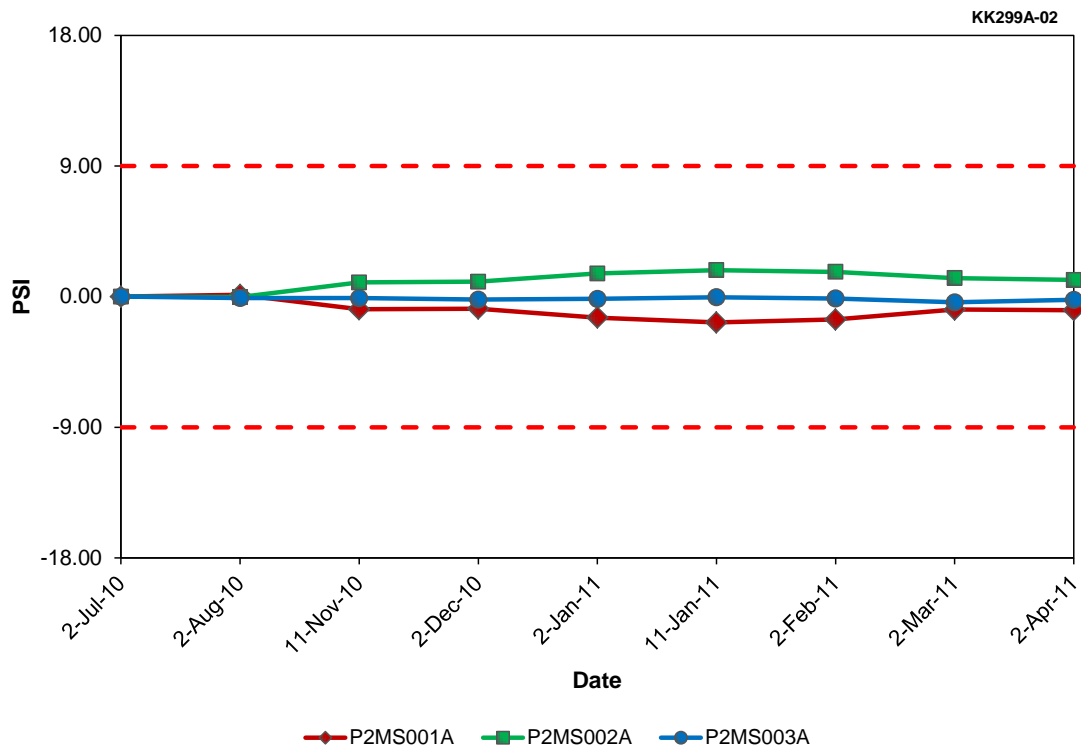
**Figure I.20 SG A OUTLET PRESSURE Transient Deviation at North Anna Unit 2 (Cycle 21)**



**Figure I.21 SG A OUTLET PRESSURE Transient Deviation at North Anna Unit 2 (Cycle 21)**



**Figure I.22 SG A OUTLET PRESSURE Steady-State Deviation at North Anna Unit 2 (Cycle 21)**



**Figure I.23 SG A OUTLET PRESSURE Steady-State Drift at North Anna Unit 2 (Cycle 21)**

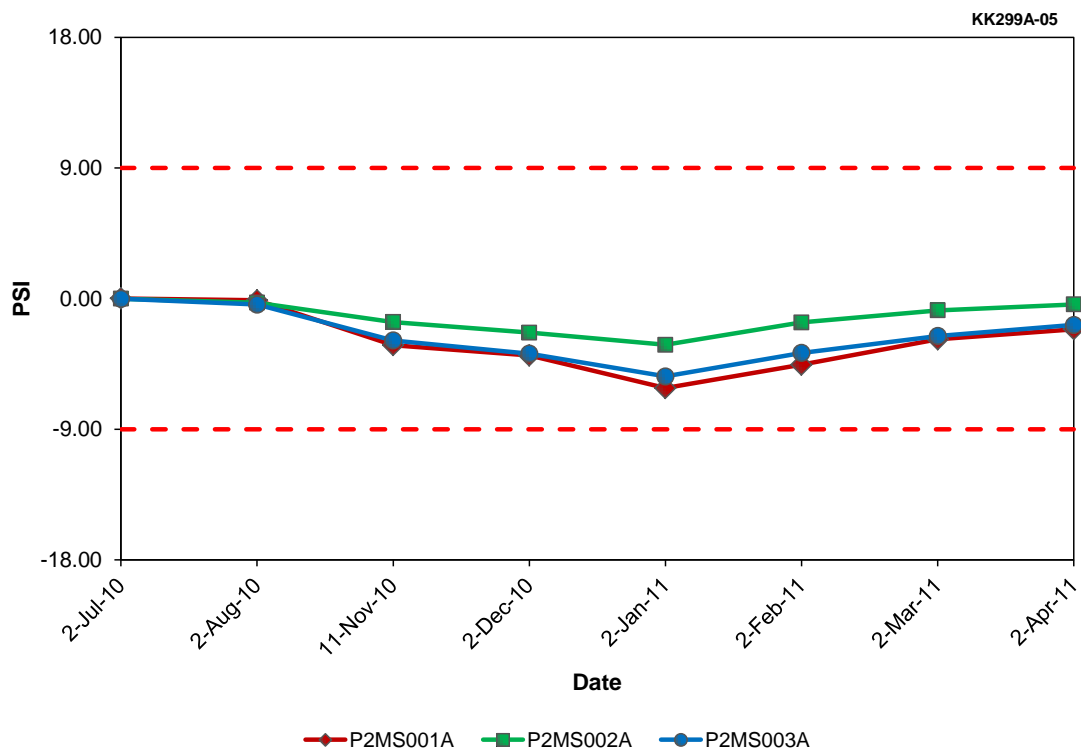


Figure I.24 SG A OUTLET PRESSURE Steady-State Residual AAKR at North Anna Unit 2 (Cycle 21)

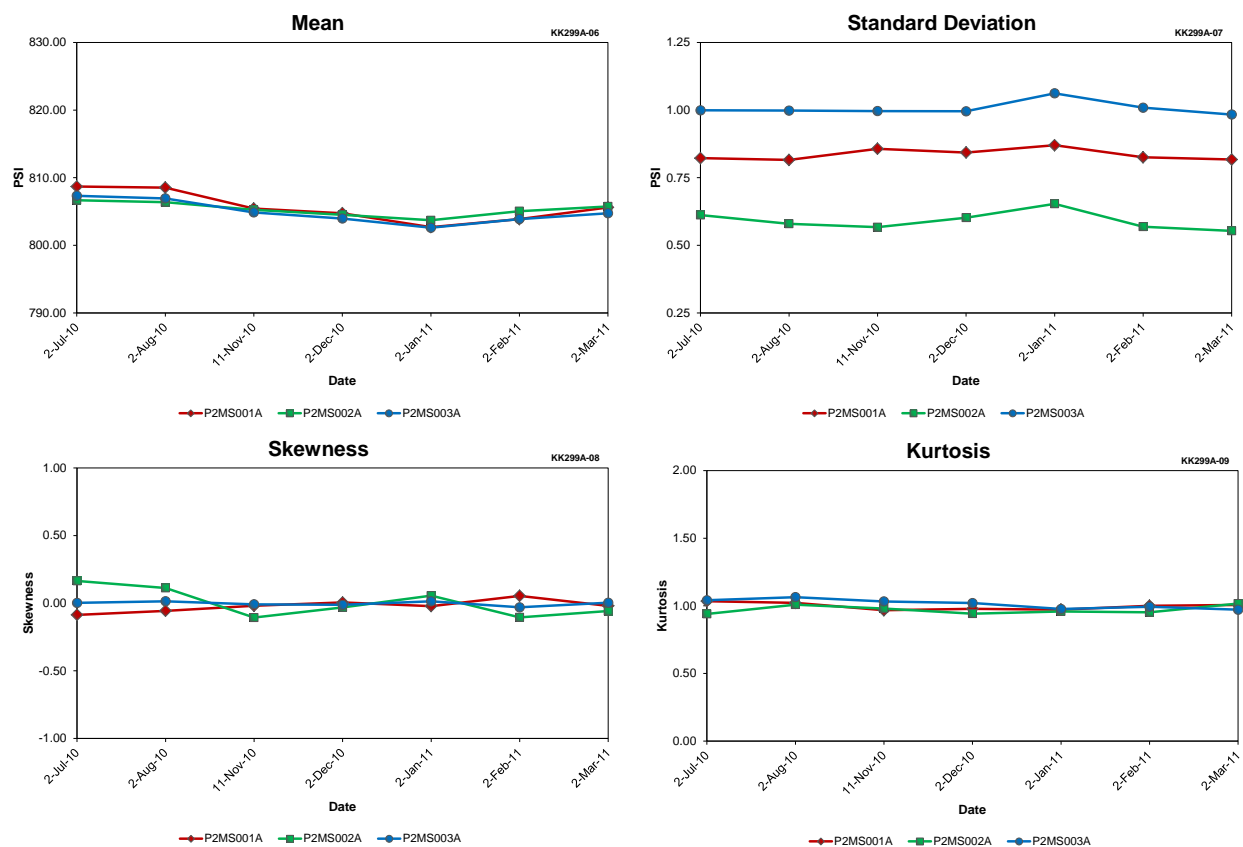


Figure I.25 SG A OUTLET PRESSURE Data Quality Statistics at North Anna Unit 2 (Cycle 21)

Table I.4 SG A OUTLET PRESSURE Data Quality for North Anna Unit 2 (Cycle 21)

Result Type	Tag Names		
	P2MS001A	P2MS002A	P2MS003A
Mean	805.66	805.33	804.90
Std. Dev.	0.84	0.59	1.01
Skewness	-0.02	0.00	0.00
Kurtosis	1.00	0.97	1.01

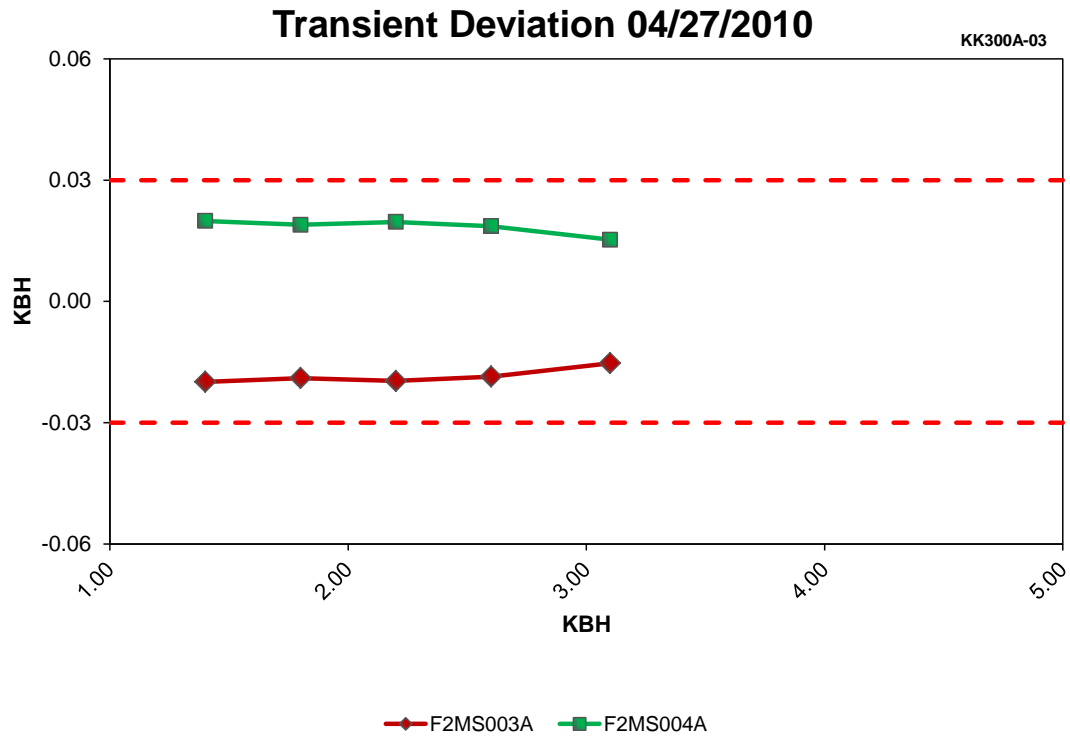


Figure I.26 SG B STEAM FLOW Transient Deviation at North Anna Unit 2 (Cycle 21)

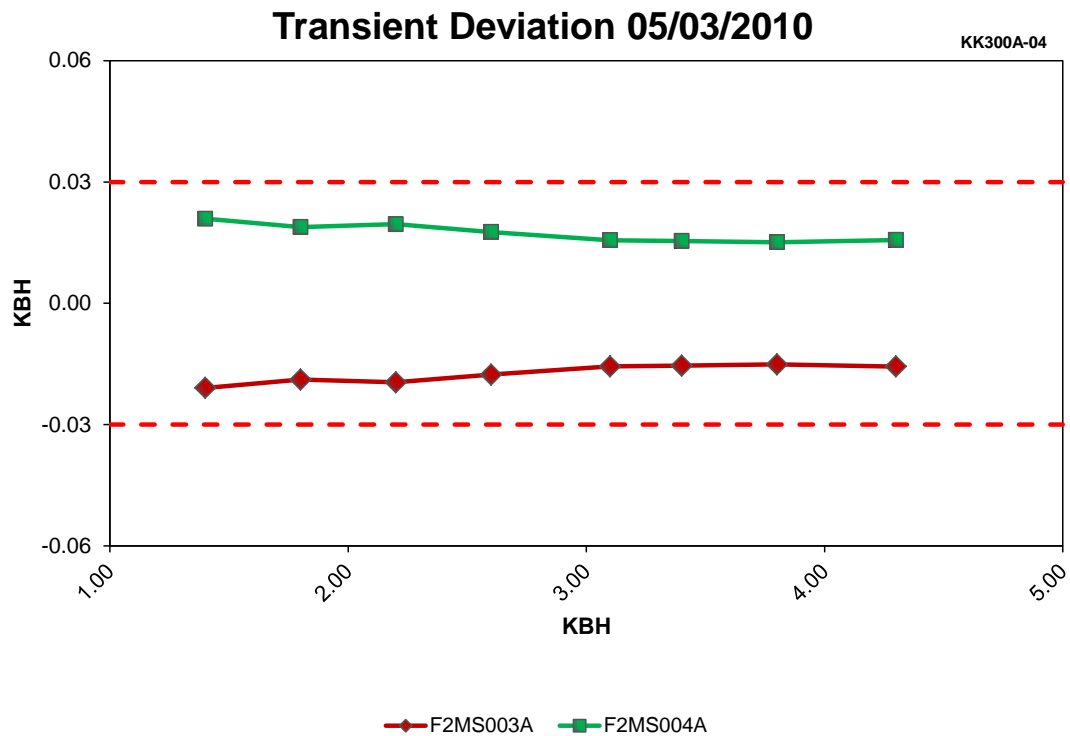


Figure I.27 SG B STEAM FLOW Transient Deviation at North Anna Unit 2 (Cycle 21)

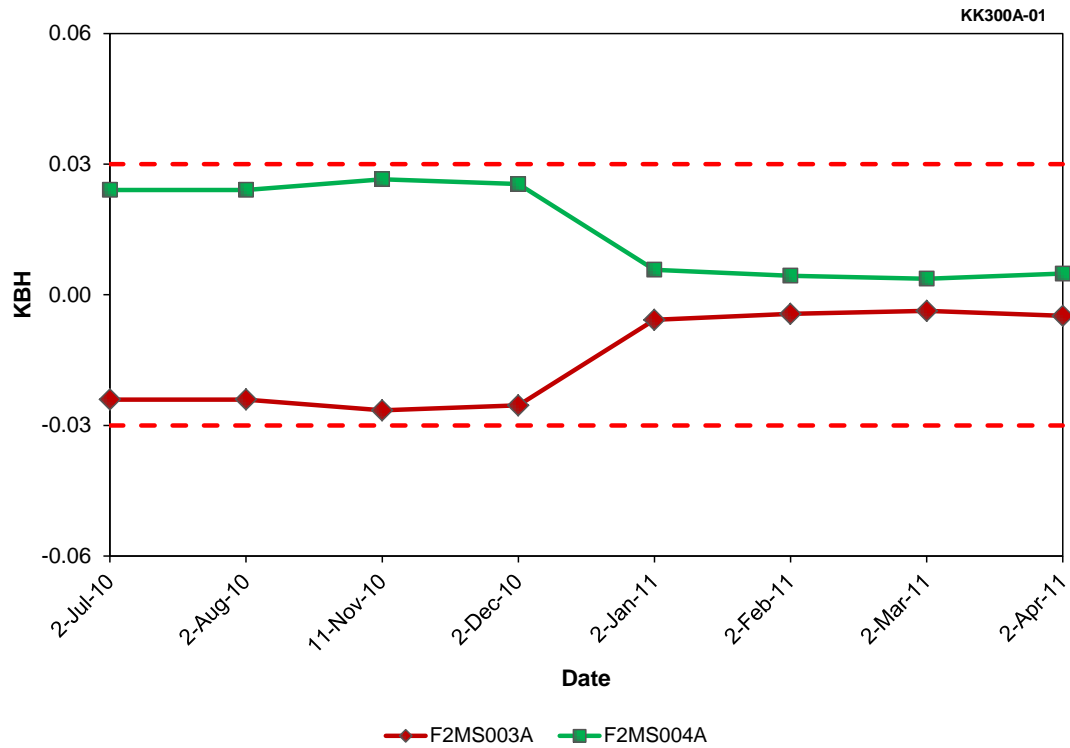


Figure I.28 SG B STEAM FLOW Steady-State Deviation at North Anna Unit 2 (Cycle 21)

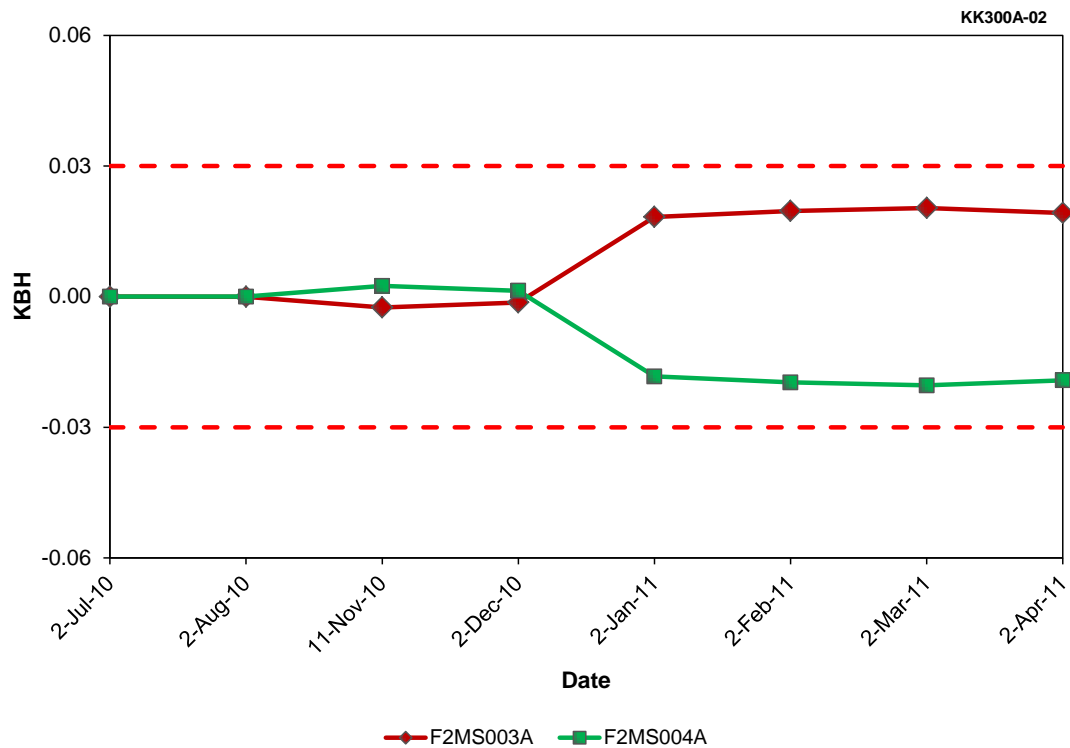


Figure I.29 SG B STEAM FLOW Steady-State Drift at North Anna Unit 2 (Cycle 21)



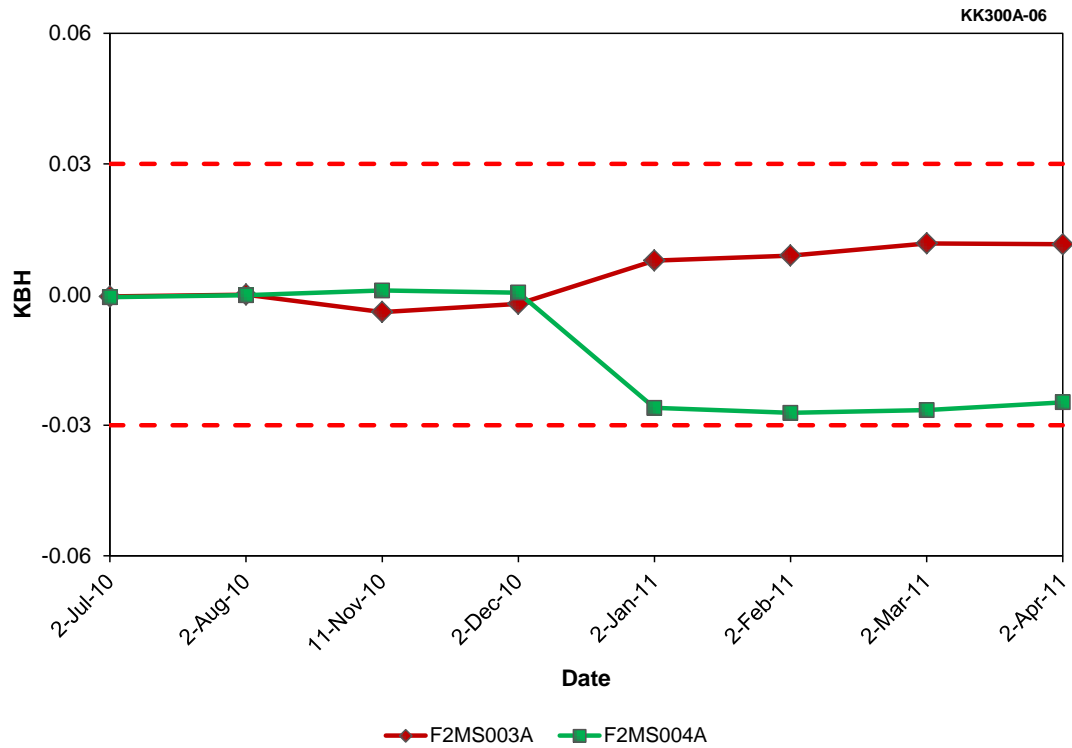


Figure I.30 SG B STEAM FLOW Steady-State Residual AAKR at North Anna Unit 2 (Cycle 21)

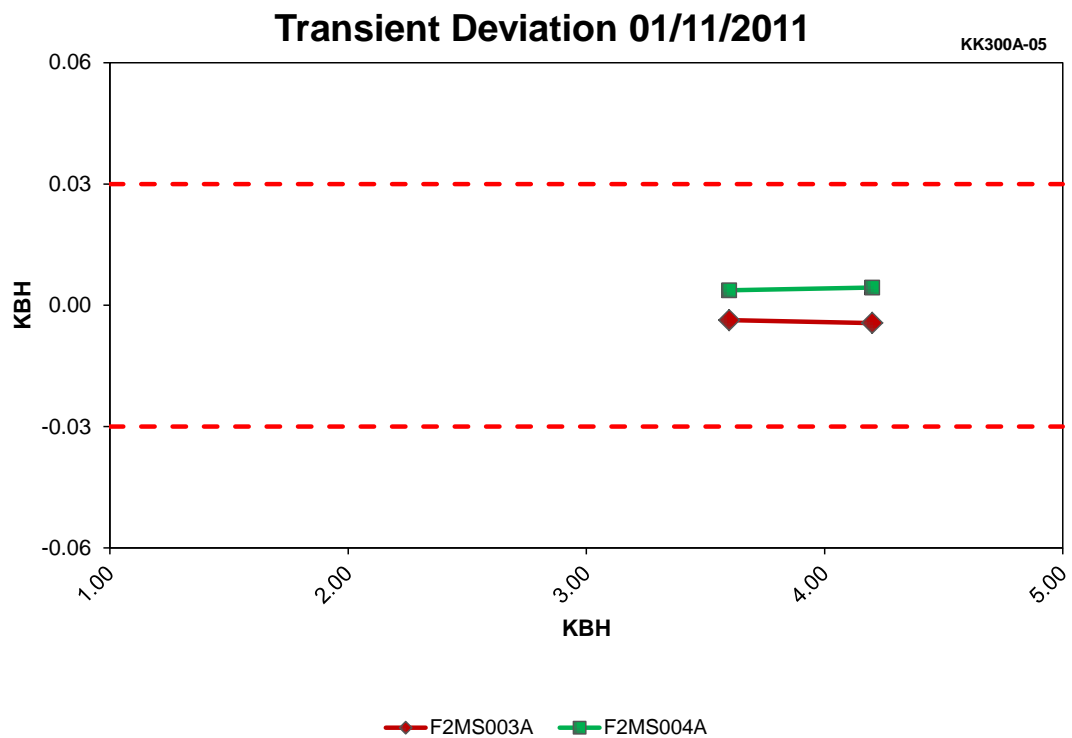


Figure I.31 SG B STEAM FLOW Transient Deviation at North Anna Unit 2 (Cycle 21)

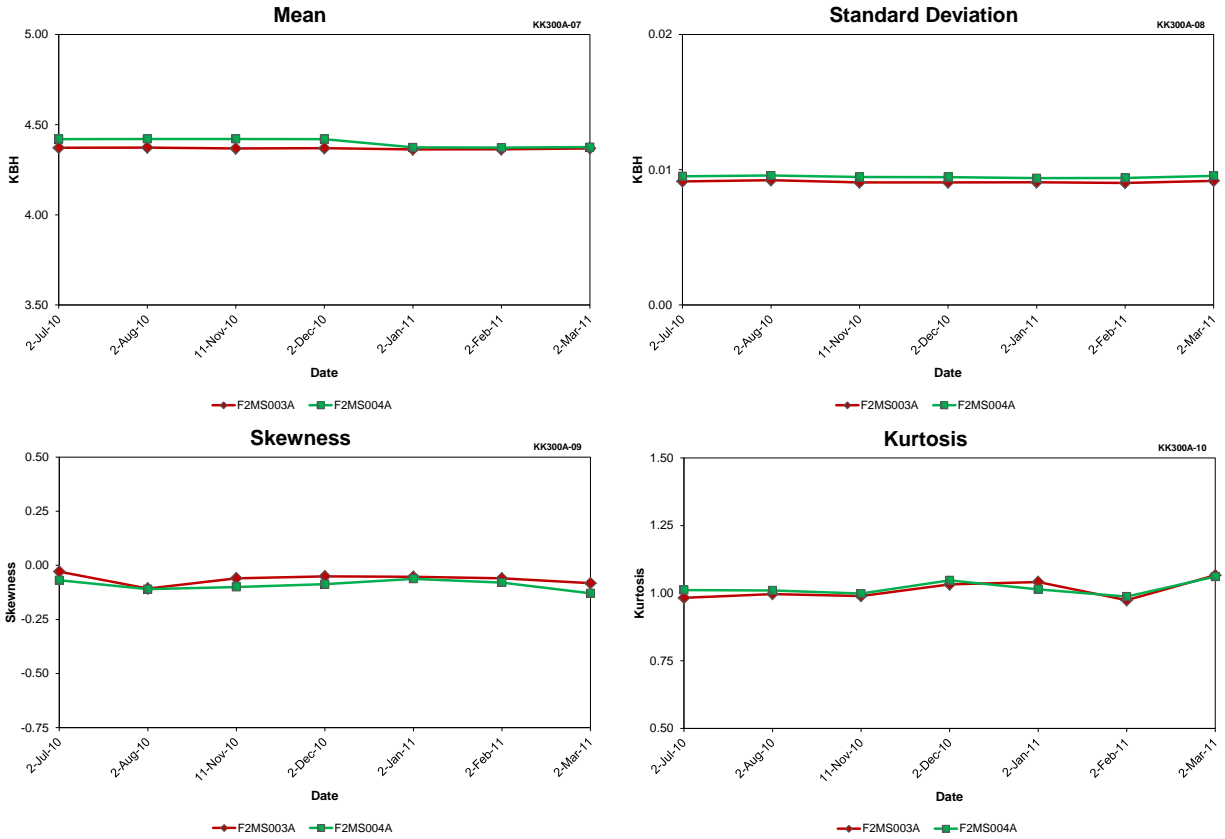


Figure I.32 SG B STEAM FLOW Data Quality Statistics at North Anna Unit 2 (Cycle 21)

Table I.5 SG B STEAM FLOW Data Quality for North Anna Unit 2 (Cycle 21)

Result Type	Tag Names	
	F2MS003A	F2MS004A
Mean	4.37	4.40
Std. Dev.	0.01	0.01
Skewness	-0.06	-0.09
Kurtosis	1.01	1.02

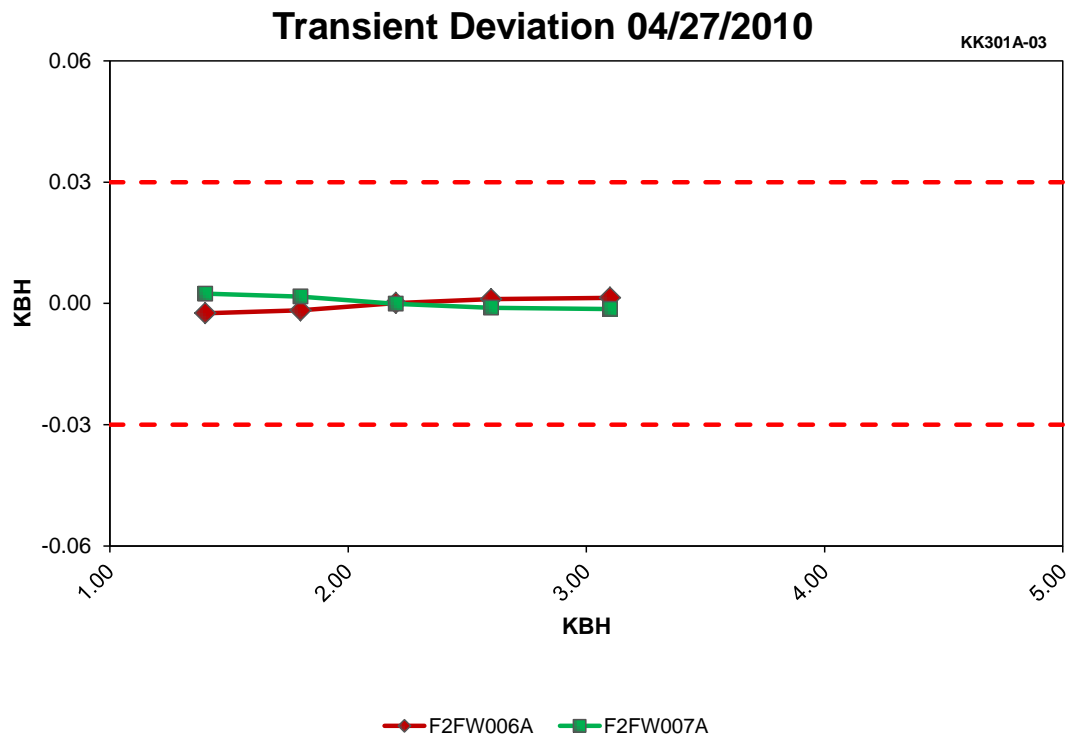


Figure I.33 FW FLOW TO SG B Transient Deviation at North Anna Unit 2 (Cycle 21)

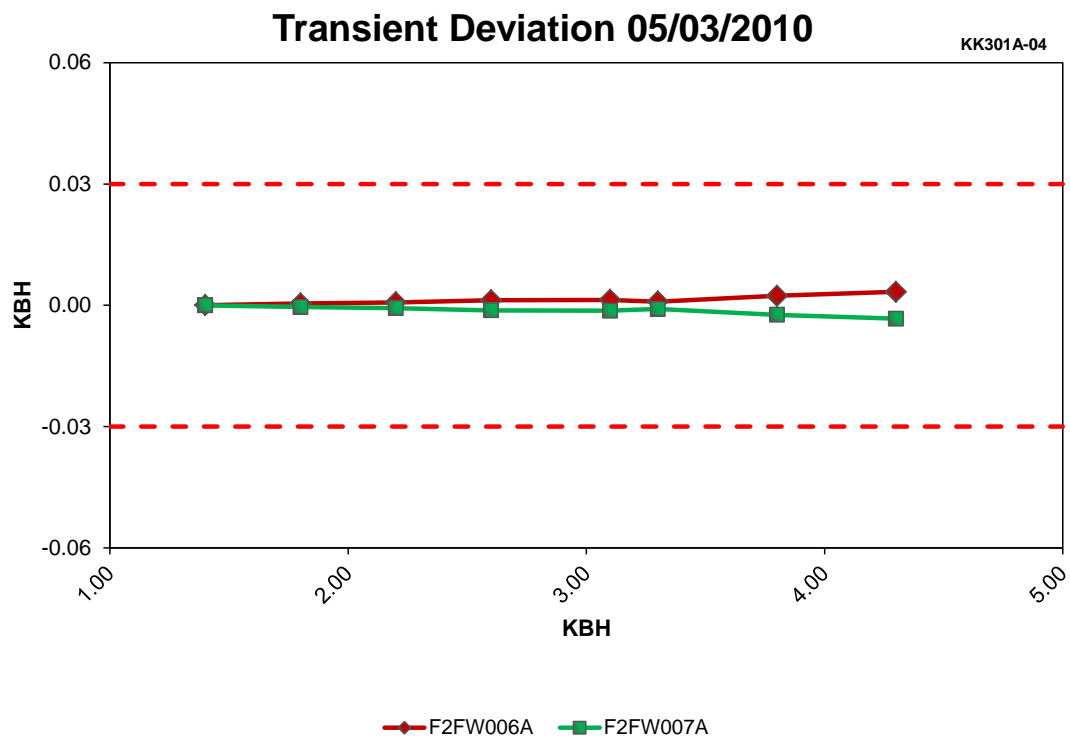
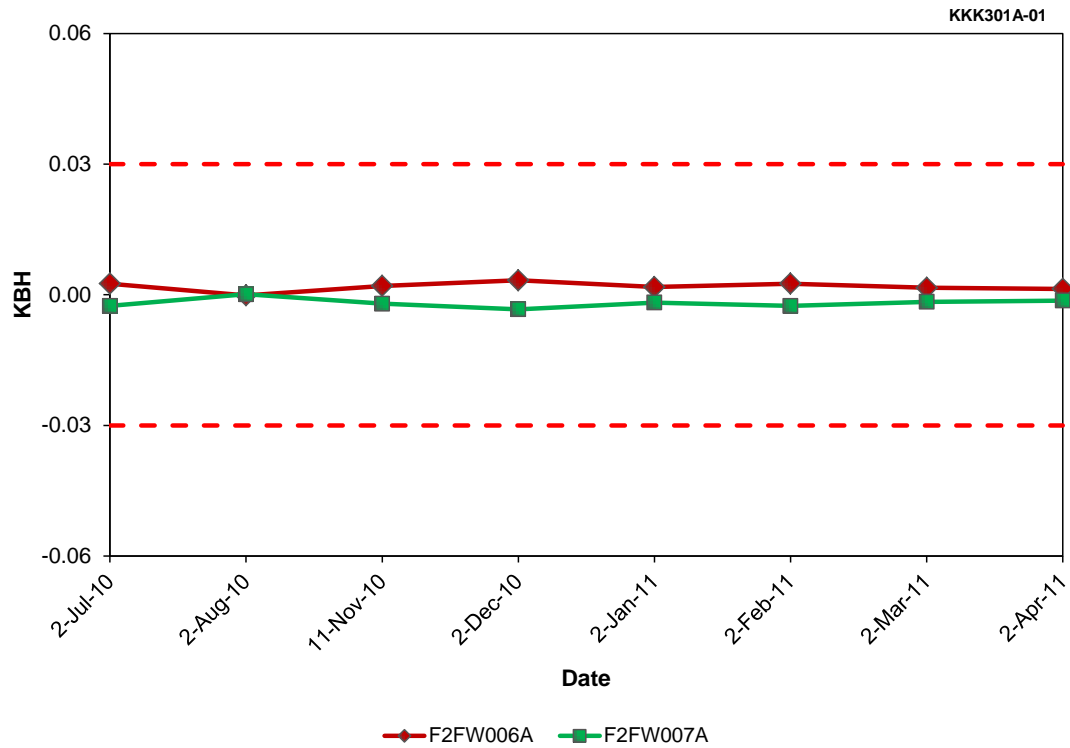
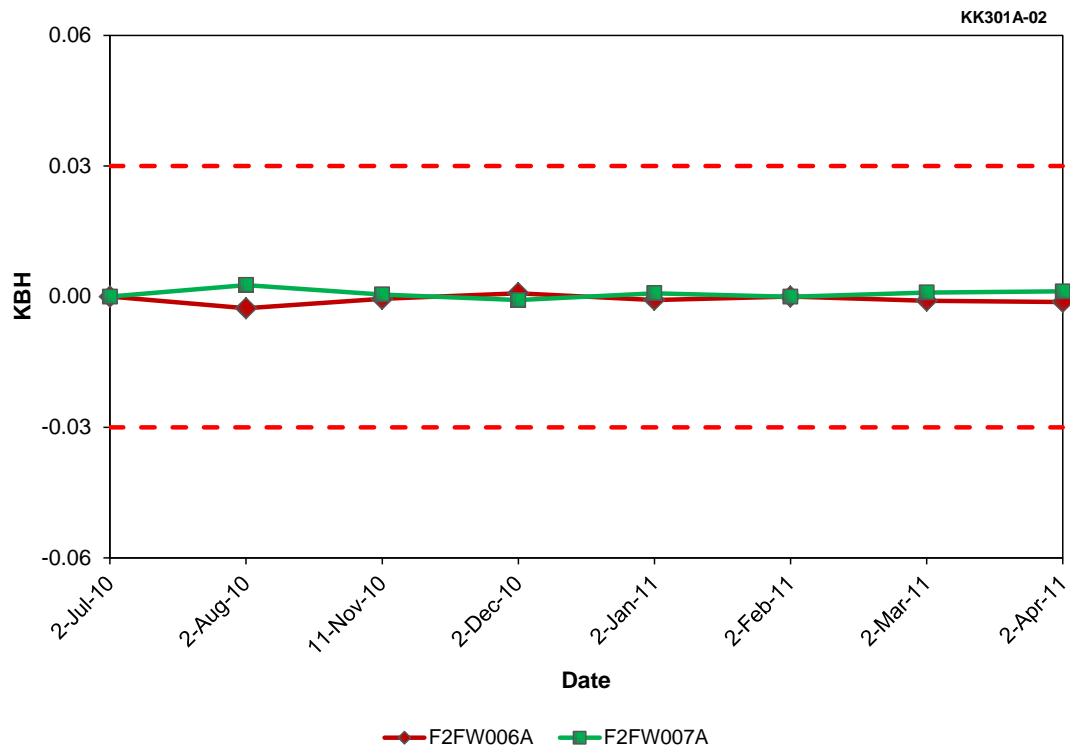


Figure I.34 FW FLOW TO SG B Transient Deviation at North Anna Unit 2 (Cycle 21)



**Figure I.35 FW FLOW TO SG B Steady-State Deviation at North Anna Unit 2 (Cycle 21)**



**Figure I.36 FW FLOW TO SG B Steady-State Drift at North Anna Unit 2 (Cycle 21)**

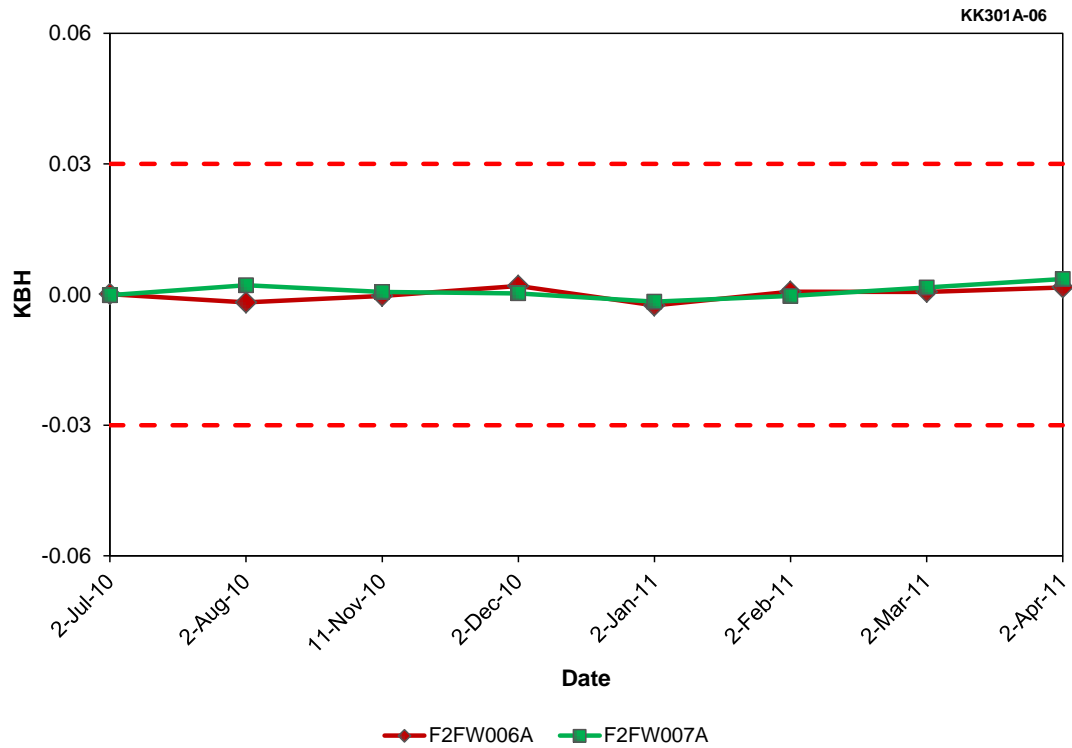


Figure I.37 FW FLOW TO SG B Steady-State Residual AAKR at North Anna Unit 2 (Cycle 21)

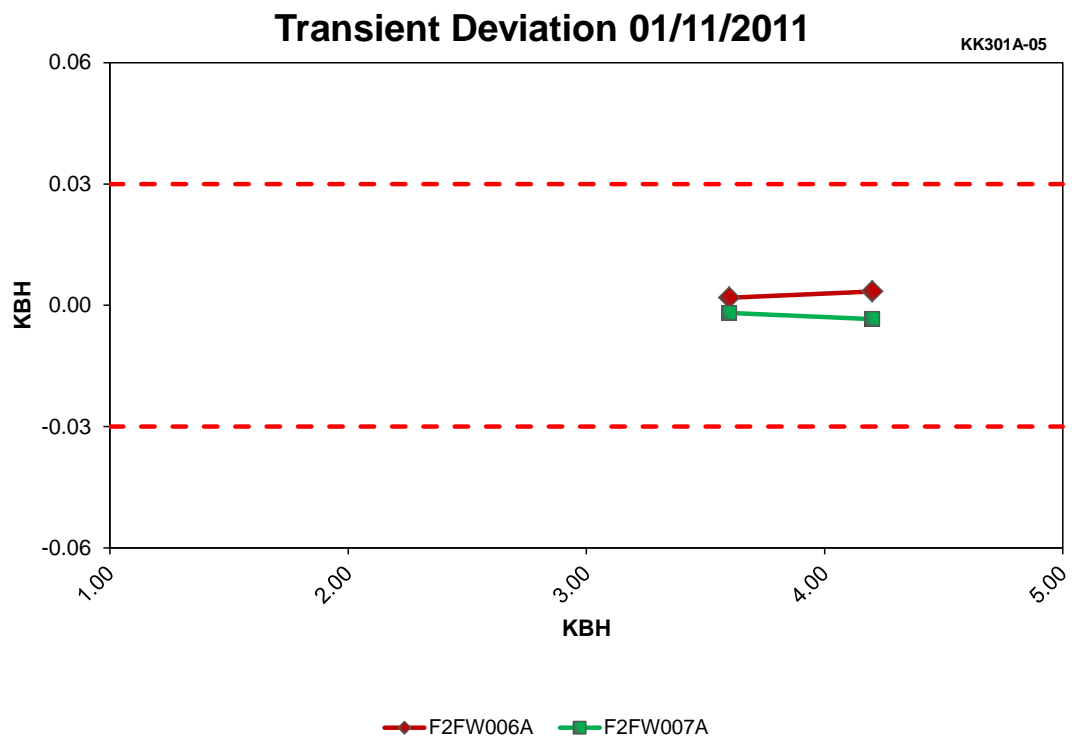
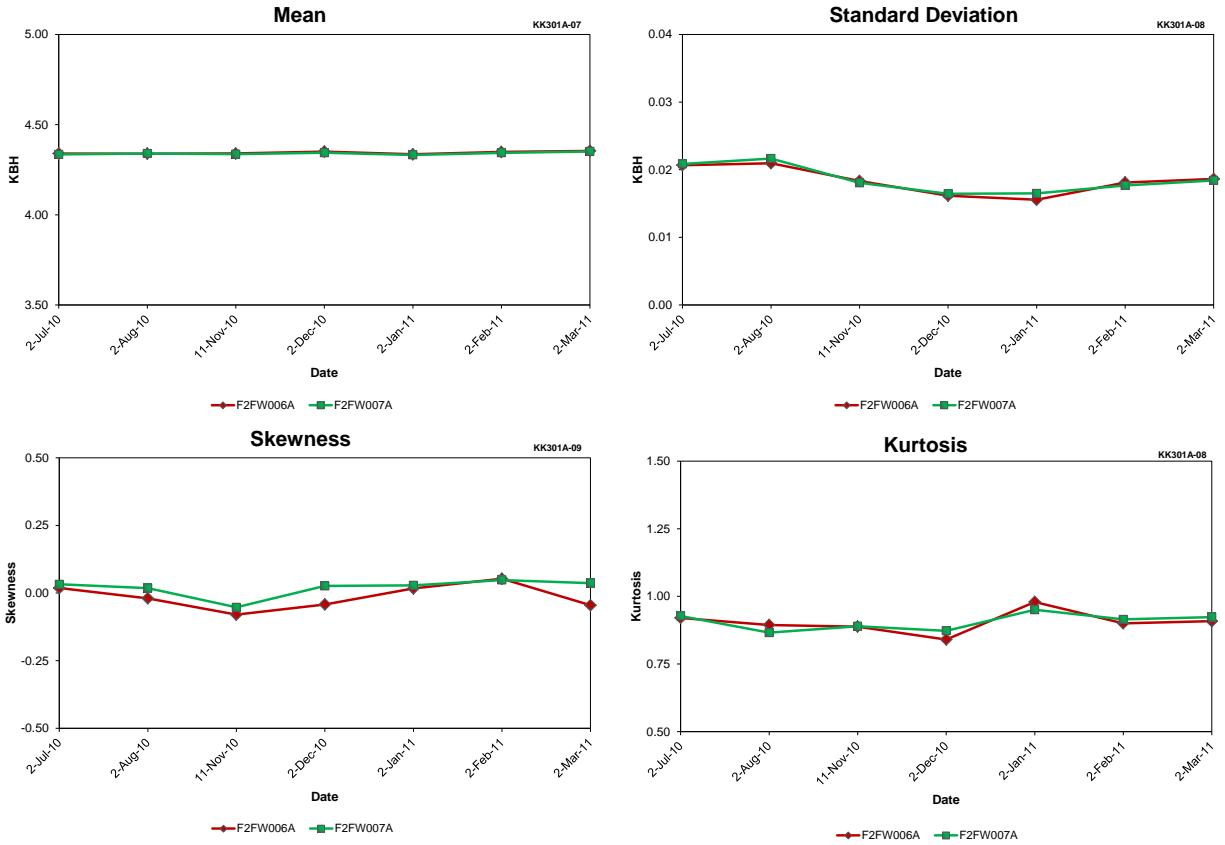


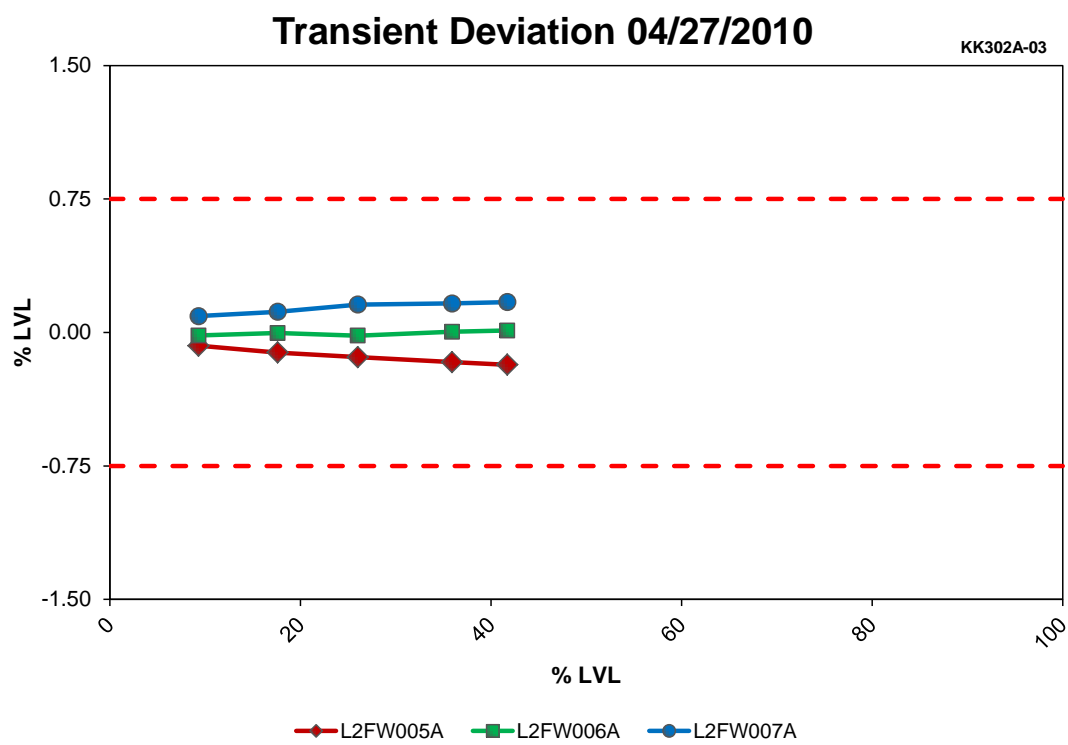
Figure I.38 FW FLOW TO SG B Transient Deviation at North Anna Unit 2 (Cycle 21)



**Figure I.39 FW FLOW TO SG B Data Quality Statistics at North Anna Unit 2 (Cycle 21)**

**Table I.6 FW FLOW TO SG B Data Quality for North Anna Unit 2 (Cycle 21)**

Result Type	Tag Names	
	F2FW006A	F2FW007A
Mean	4.34	4.34
Std. Dev.	0.02	0.02
Skewness	-0.01	0.02
Kurtosis	0.90	0.91



**Figure I.40 SG B LEVEL Transient Deviation at North Anna Unit 2 (Cycle 21)**

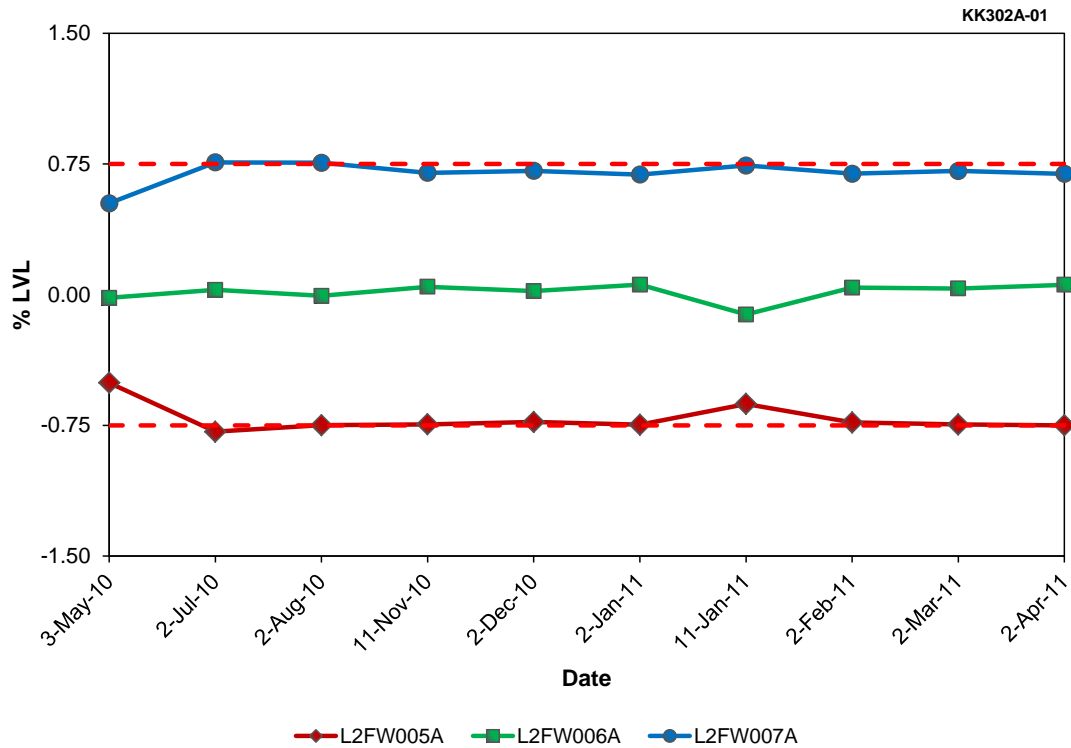


Figure I.41 SG B LEVEL Steady-State Deviation at North Anna Unit 2 (Cycle 21)

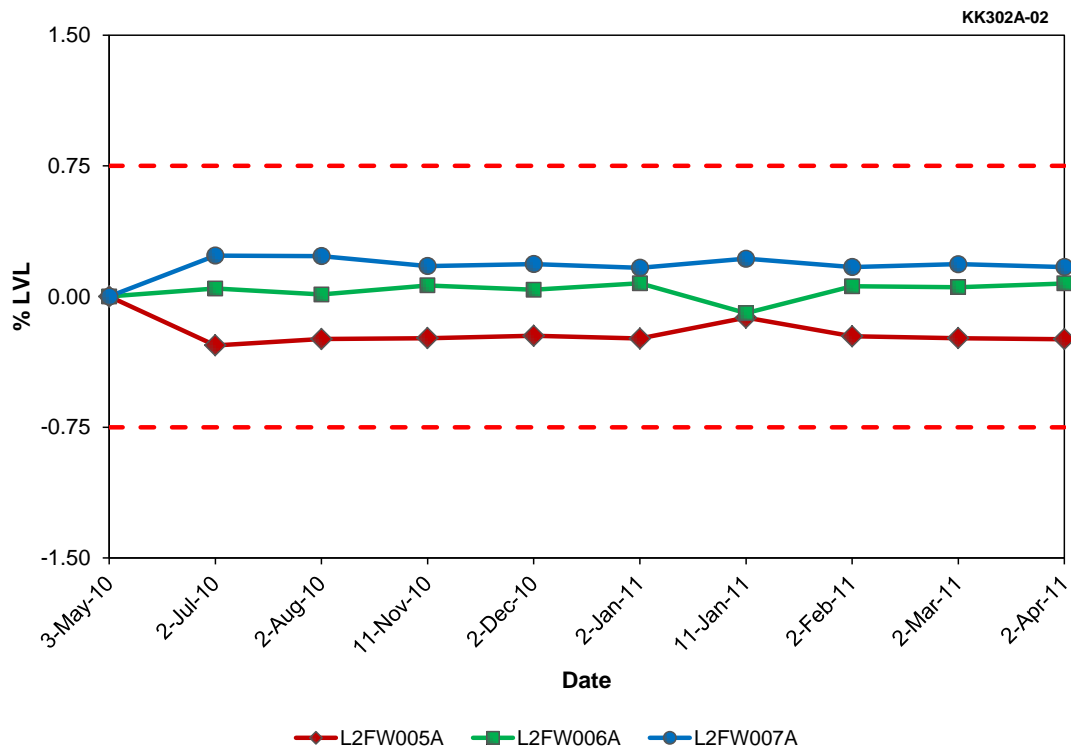
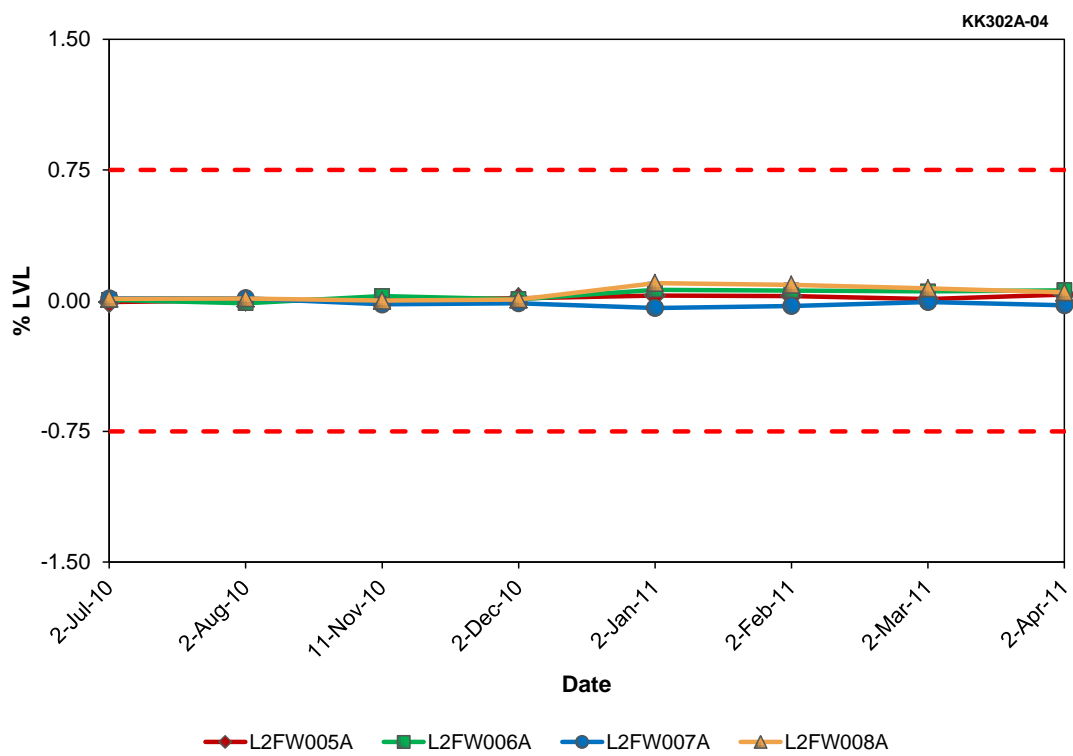


Figure I.42 SG B LEVEL Steady-State Drift at North Anna Unit 2 (Cycle 21)





**Figure I.43 SG B LEVEL Steady-State Residual AAKR at North Anna Unit 2 (Cycle 21)**

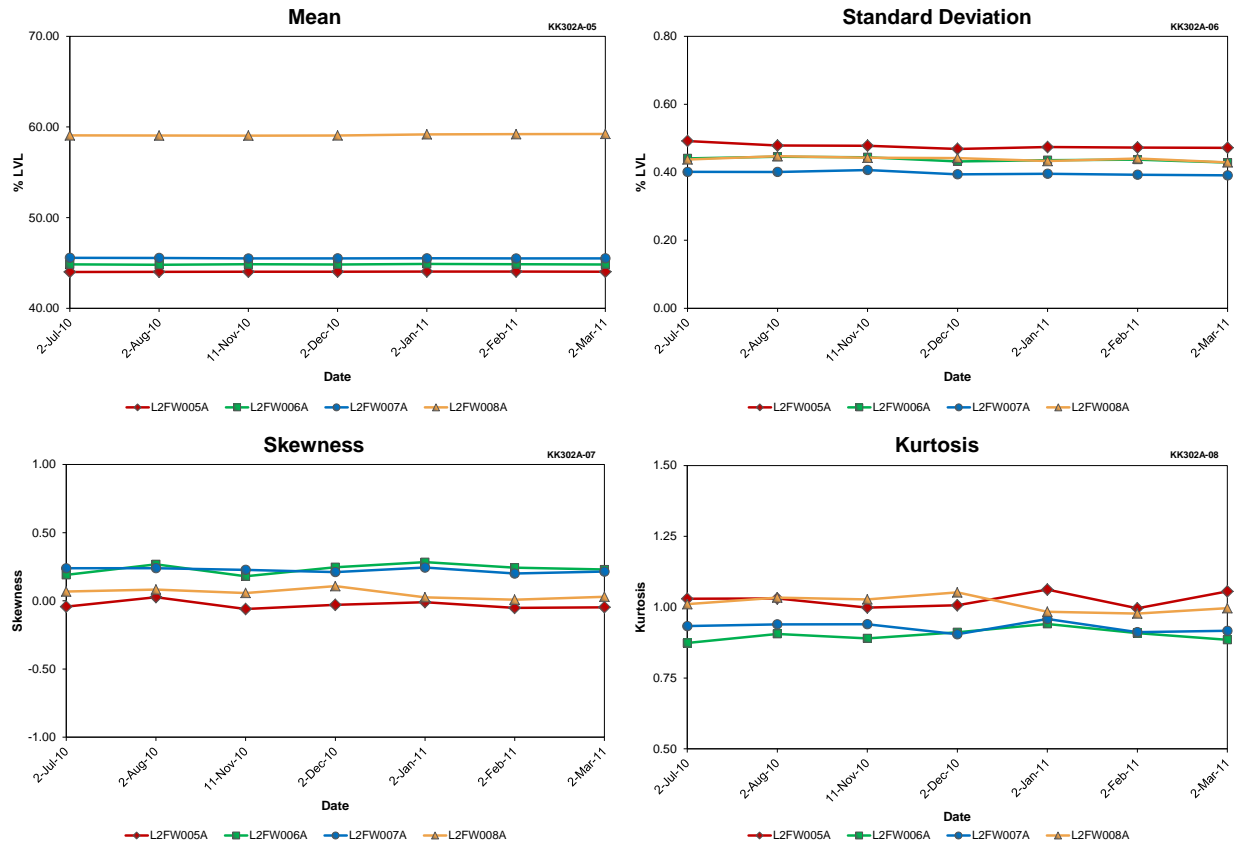


Figure I.44 SG B LEVEL Data Quality Statistics at North Anna Unit 2 (Cycle 21)

Table I.7 SG B LEVEL Data Quality for North Anna Unit 2 (Cycle 21)

Result Type	Tag Names			
	L2FW005A	L2FW006A	L2FW007A	L2FW008A
Mean	44.03	44.84	45.52	59.12
Std. Dev.	0.48	0.44	0.40	0.44
Skewness	-0.03	0.23	0.23	0.05
Kurtosis	1.03	0.90	0.93	1.01

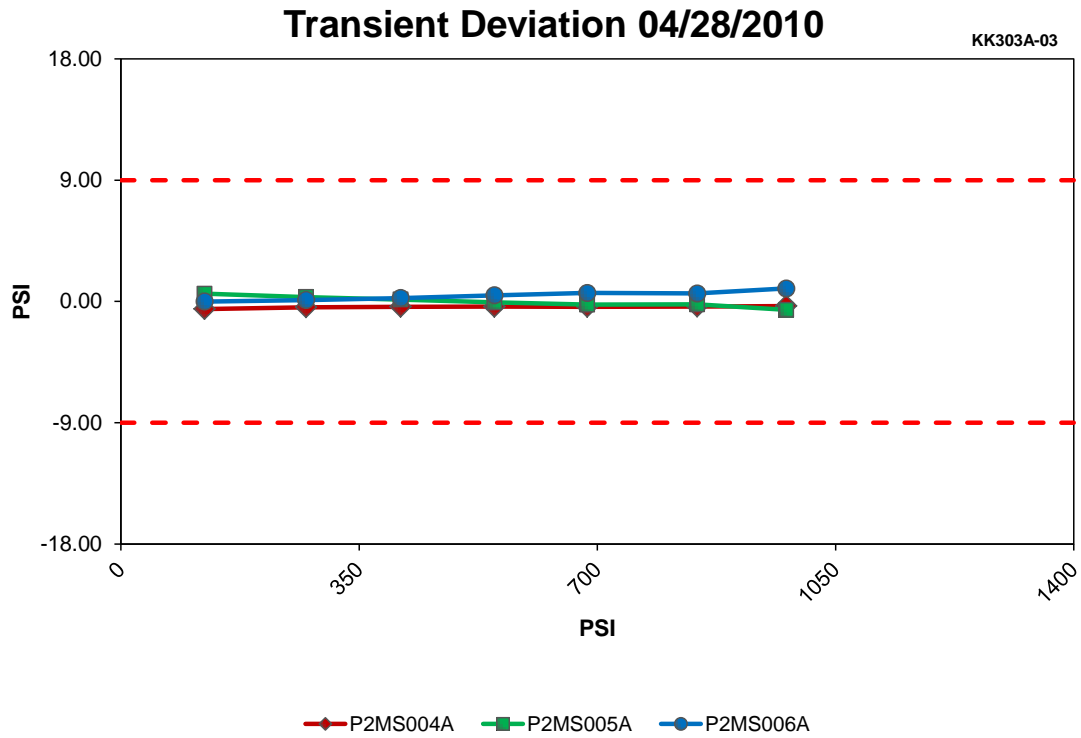


Figure I.45 SG B OUTLET PRESSURE Transient Deviation at North Anna Unit 2 (Cycle 21)

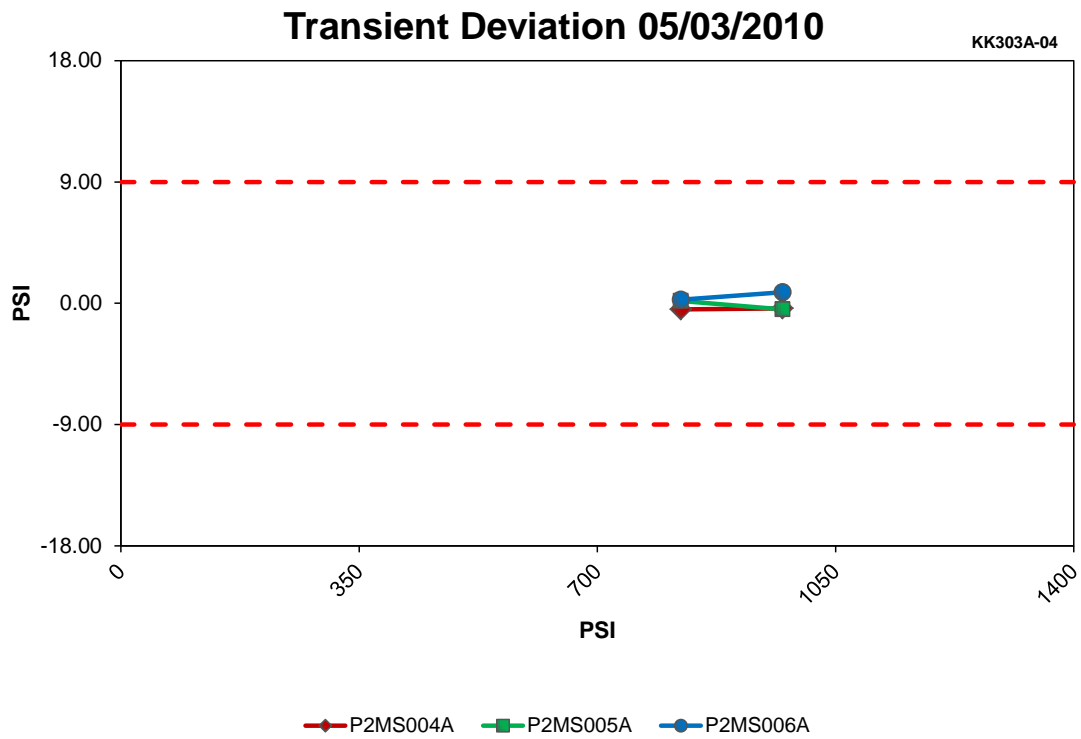
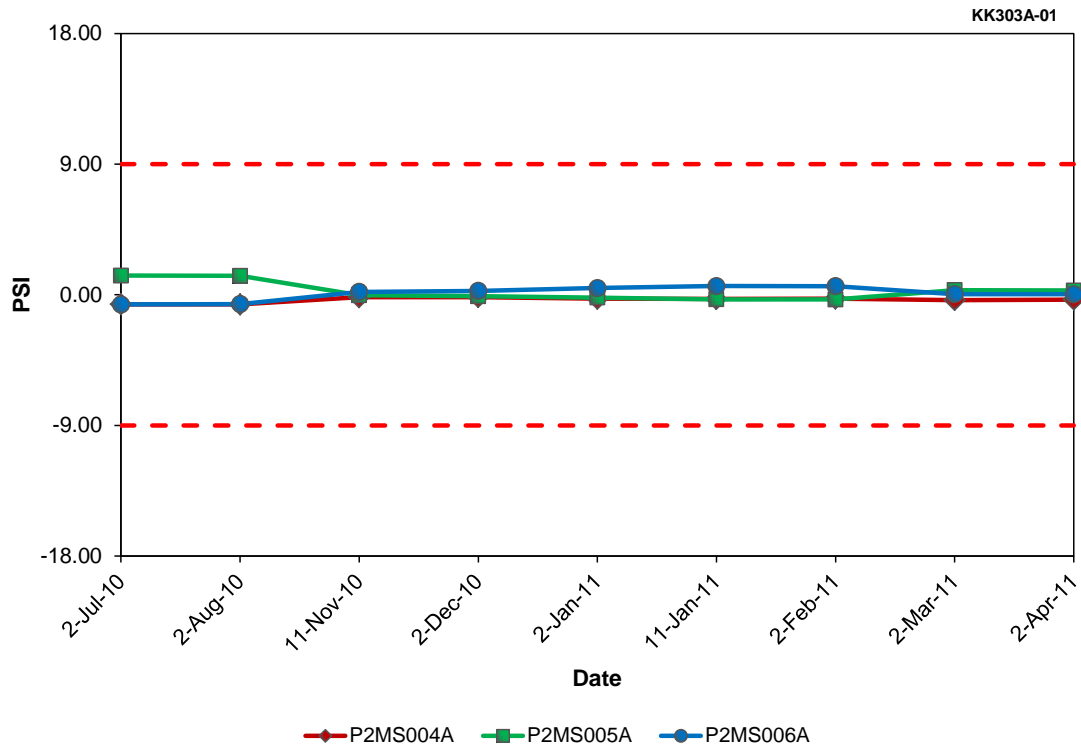
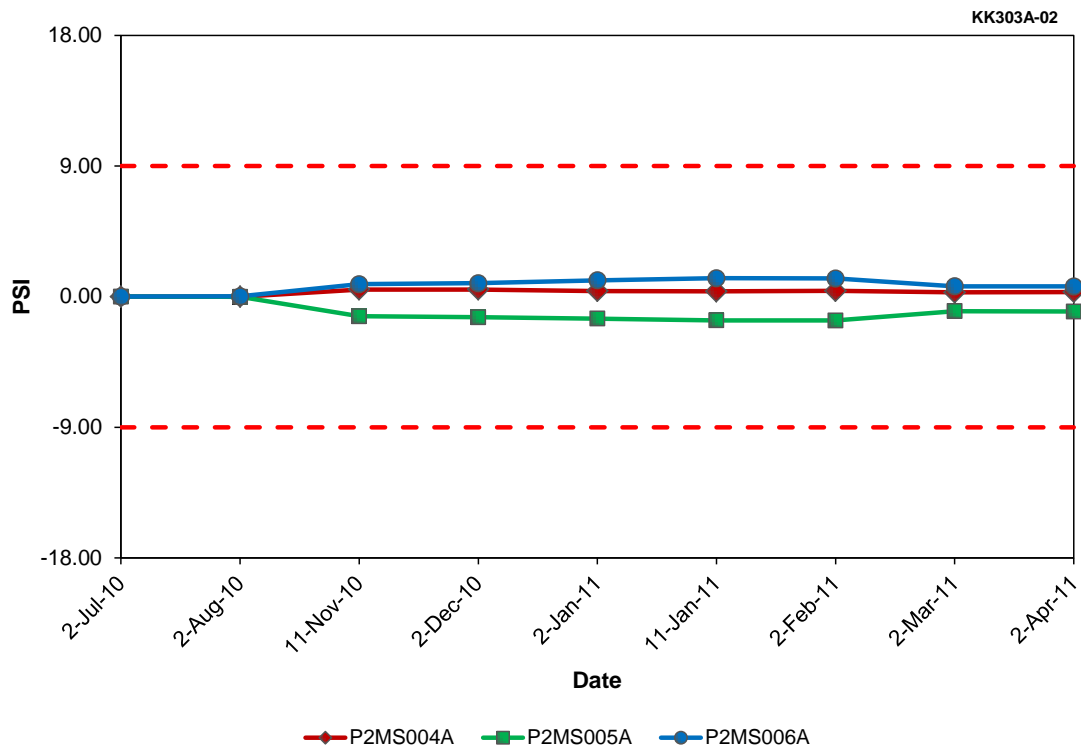


Figure I.46 SG B OUTLET PRESSURE Transient Deviation at North Anna Unit 2 (Cycle 21)



**Figure I.47 SG B OUTLET PRESSURE Steady-State Deviation at North Anna Unit 2 (Cycle 21)**



**Figure I.48 SG B OUTLET PRESSURE Steady-State Drift at North Anna Unit 2 (Cycle 21)**

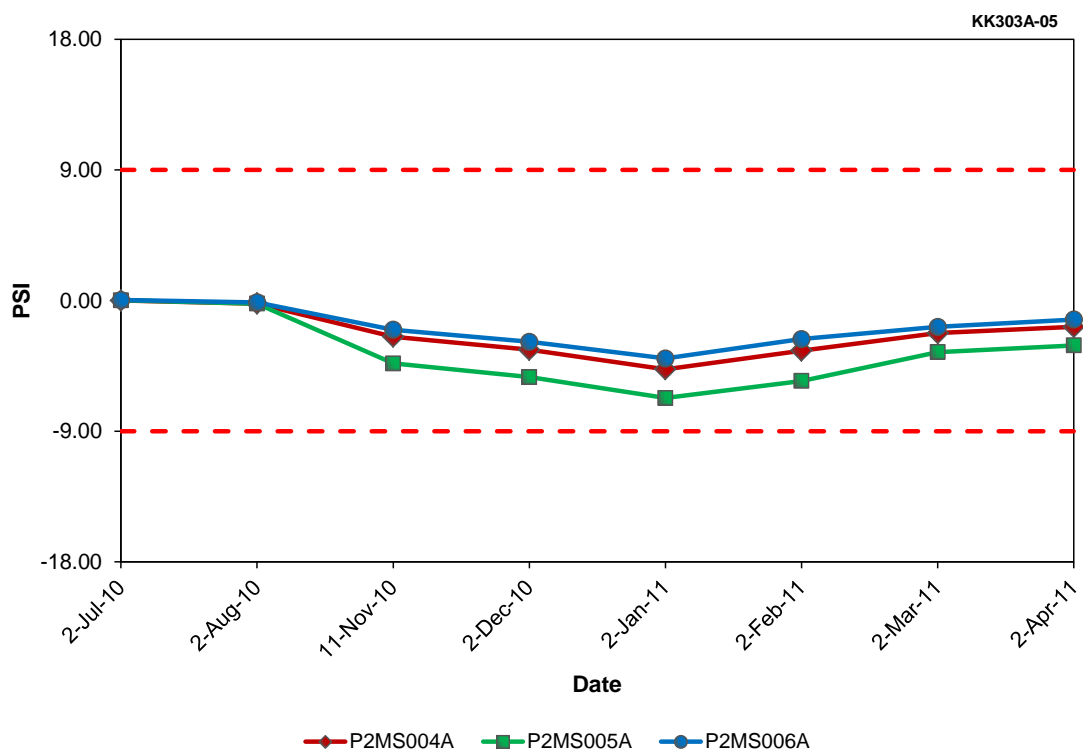
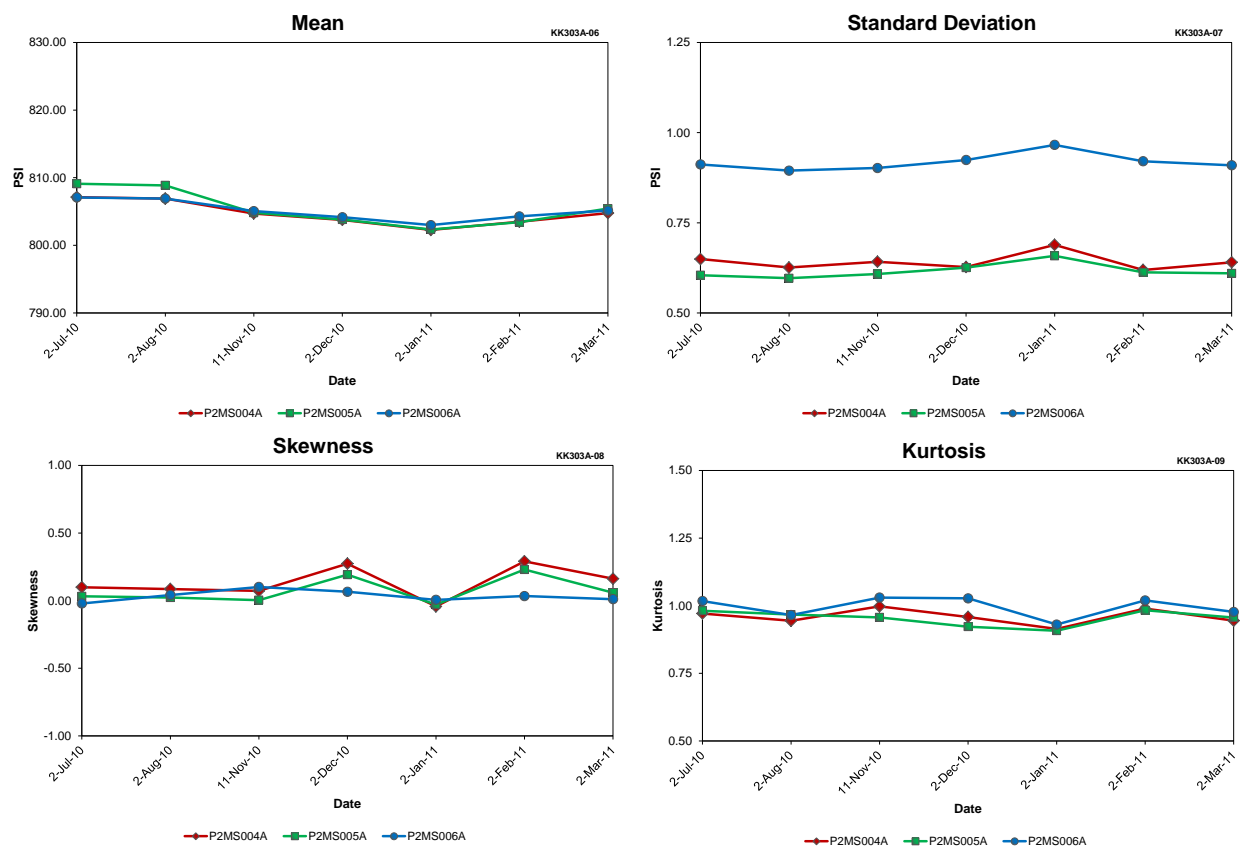


Figure I.49 SG B OUTLET PRESSURE Steady-State Residual AAKR at North Anna Unit 2 (Cycle 21)



**Figure I.50 SG B OUTLET PRESSURE Data Quality Statistics at North Anna Unit 2 (Cycle 21)**

**Table I.8 SG B OUTLET PRESSURE Data Quality for North Anna Unit 2 (Cycle 21)**

Result Type	Tag Names		
	P2MS004A	P2MS005A	P2MS006A
Mean	804.72	805.40	805.09
Std. Dev.	0.64	0.62	0.92
Skewness	0.13	0.07	0.03
Kurtosis	0.96	0.95	1.00

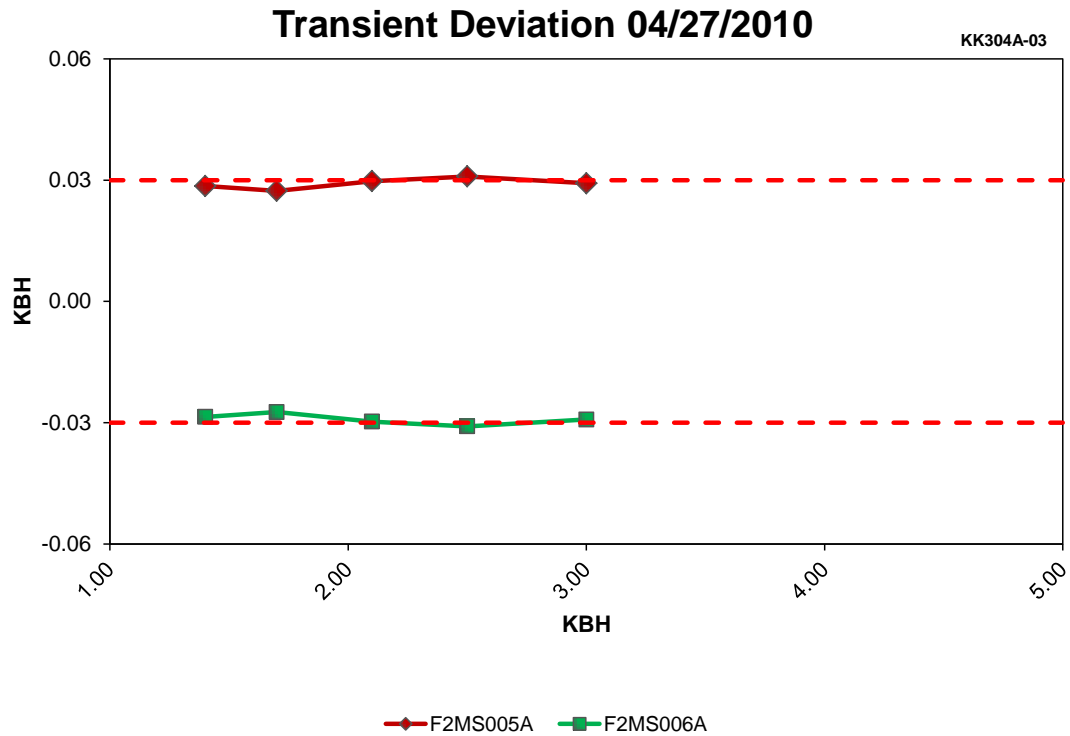


Figure I.51 SG C STEAM FLOW Transient Deviation at North Anna Unit 2 (Cycle 21)

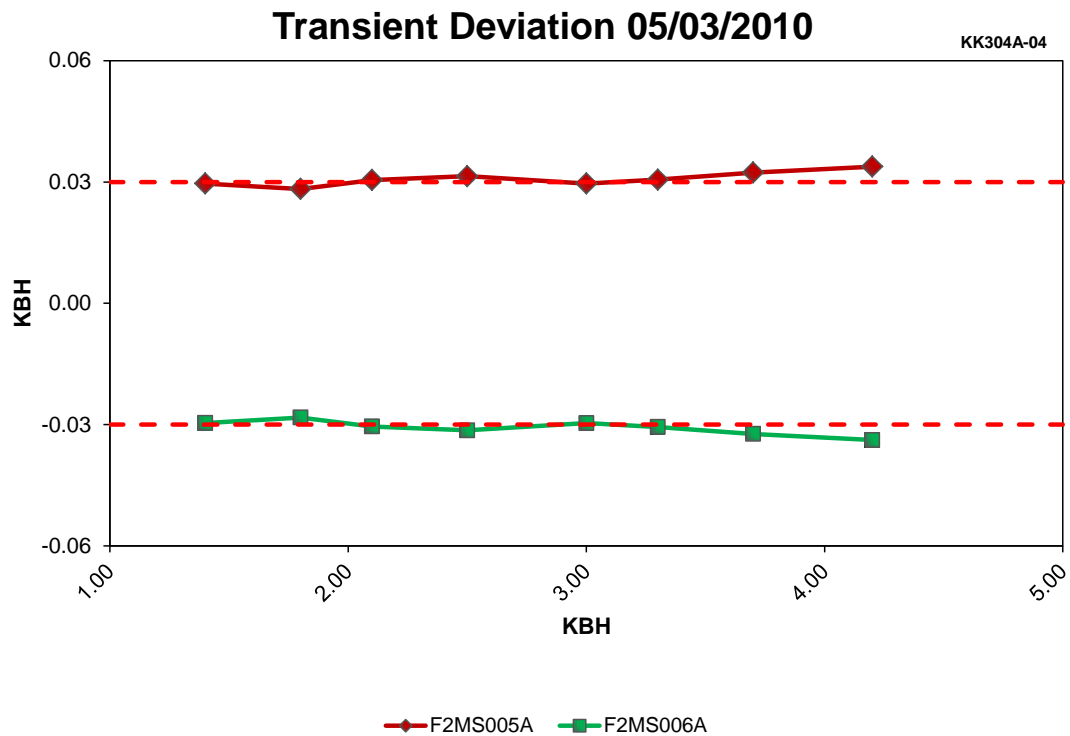
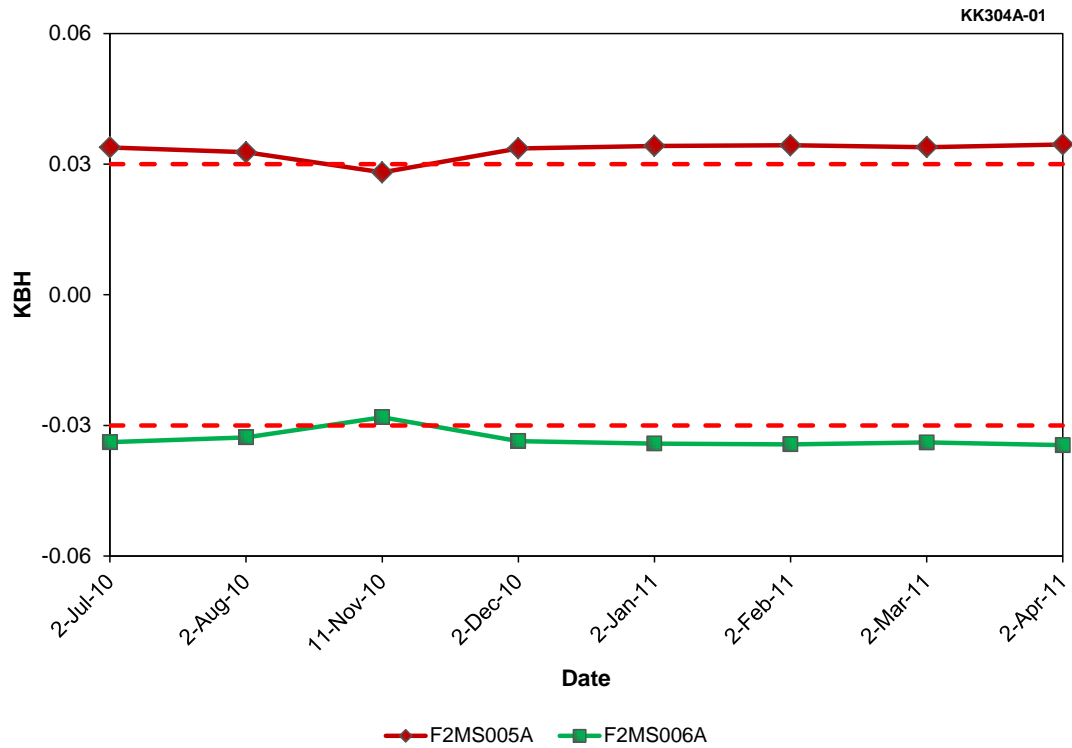
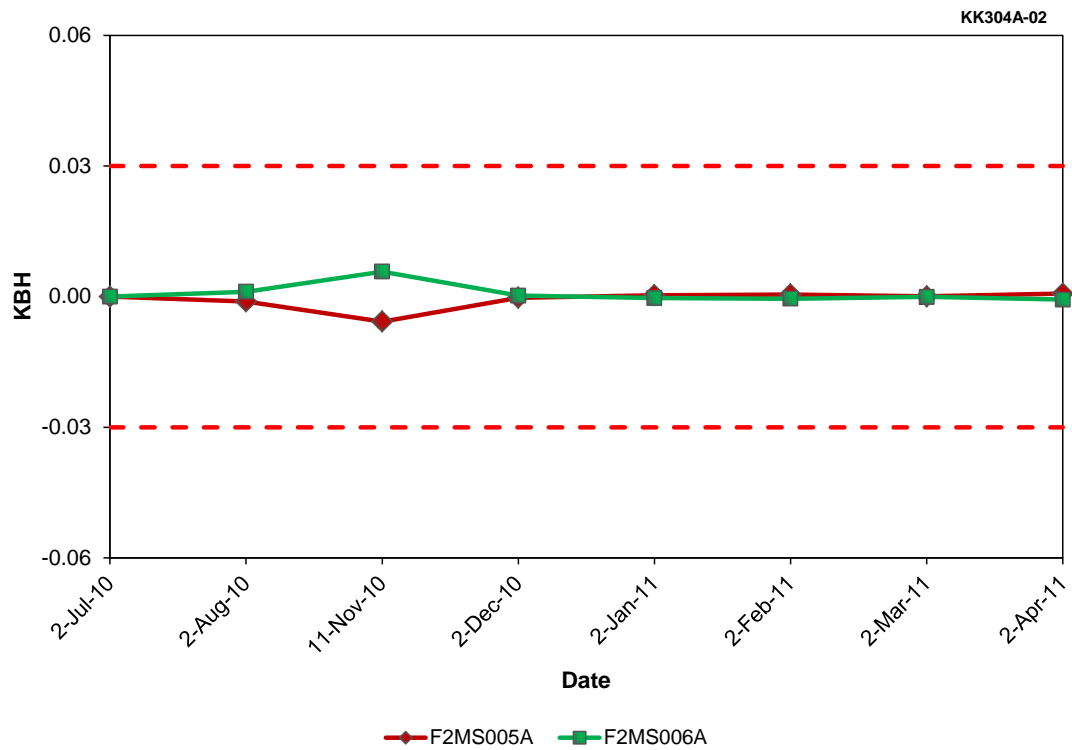


Figure I.52 SG C STEAM FLOW Transient Deviation at North Anna Unit 2 (Cycle 21)



**Figure I.53 SG C STEAM FLOW Steady-State Deviation at North Anna Unit 2 (Cycle 21)**



**Figure I.54 SG C STEAM FLOW Steady-State Drift at North Anna Unit 2 (Cycle 21)**



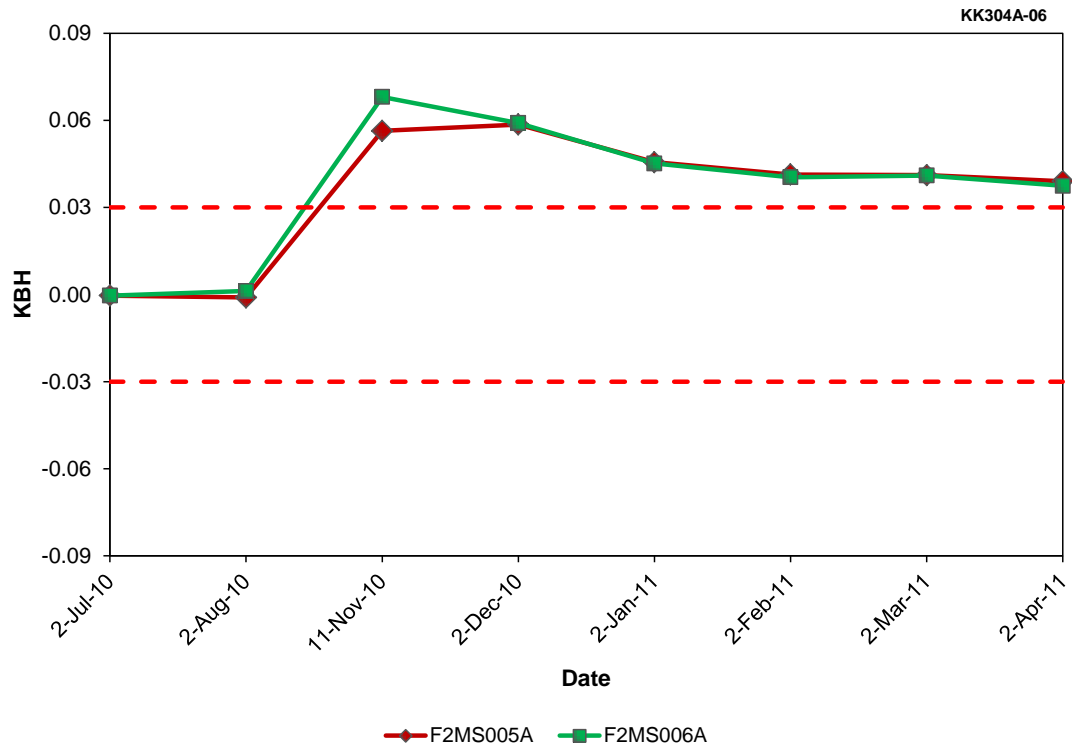


Figure I.55 SG C STEAM FLOW Steady-State Residual AAKR at North Anna Unit 2 (Cycle 21)

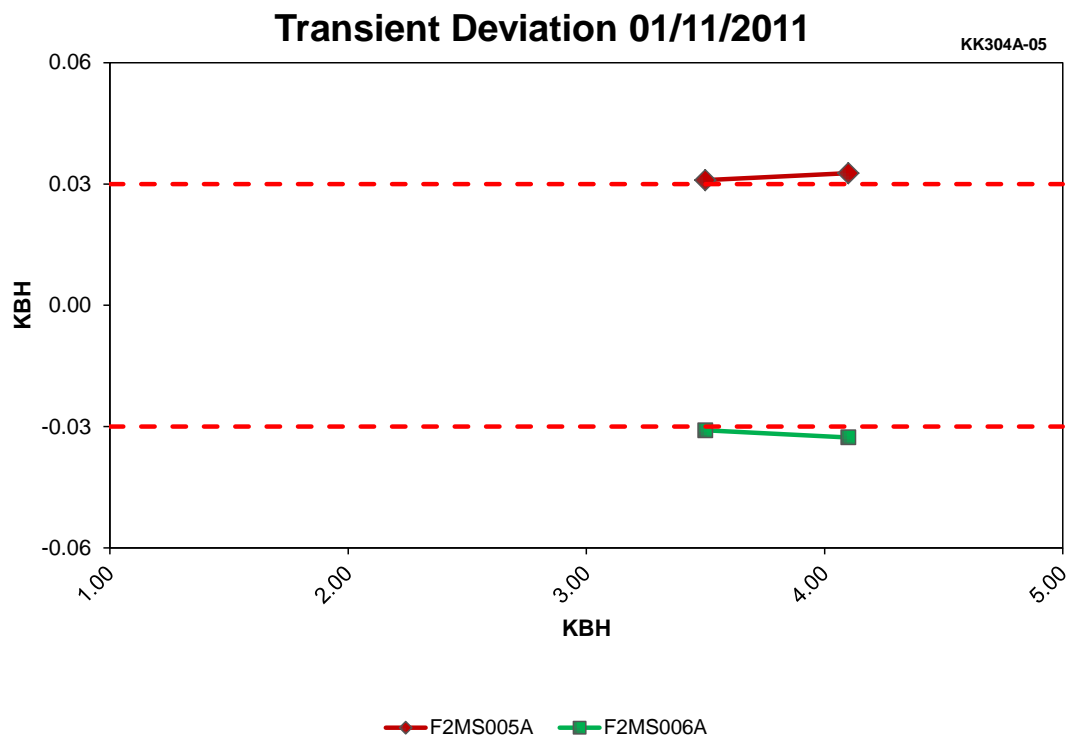
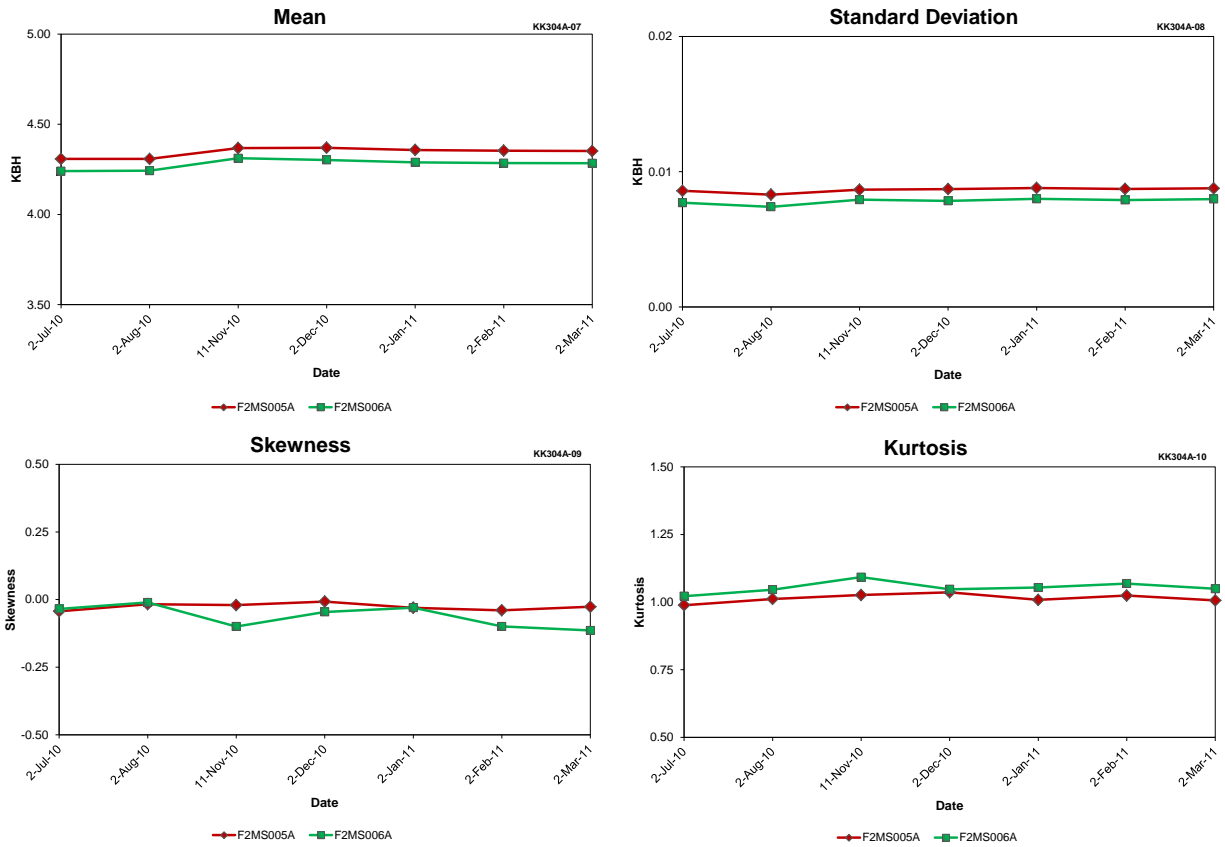


Figure I.56 SG C STEAM FLOW Transient Deviation at North Anna Unit 2 (Cycle 21)



**Figure I.57 SG C STEAM FLOW Data Quality Statistics at North Anna Unit 2 (Cycle 21)**

**Table I.9 SG C STEAM FLOW Data Quality for North Anna Unit 2 (Cycle 21)**

Result Type	Tag Names	
	F2MS005A	F2MS006A
Mean	4.35	4.28
Std. Dev.	0.01	0.01
Skewness	-0.03	-0.06
Kurtosis	1.01	1.05

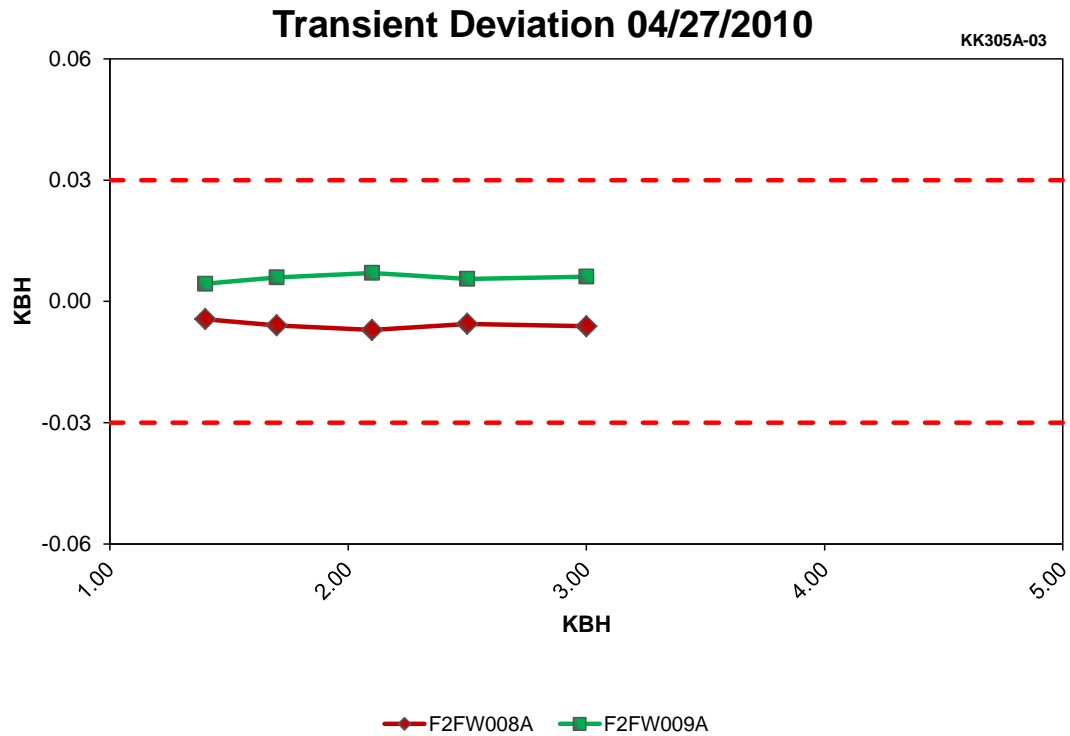


Figure I.58 FW FLOW TO SG C Transient Deviation at North Anna Unit 2 (Cycle 21)

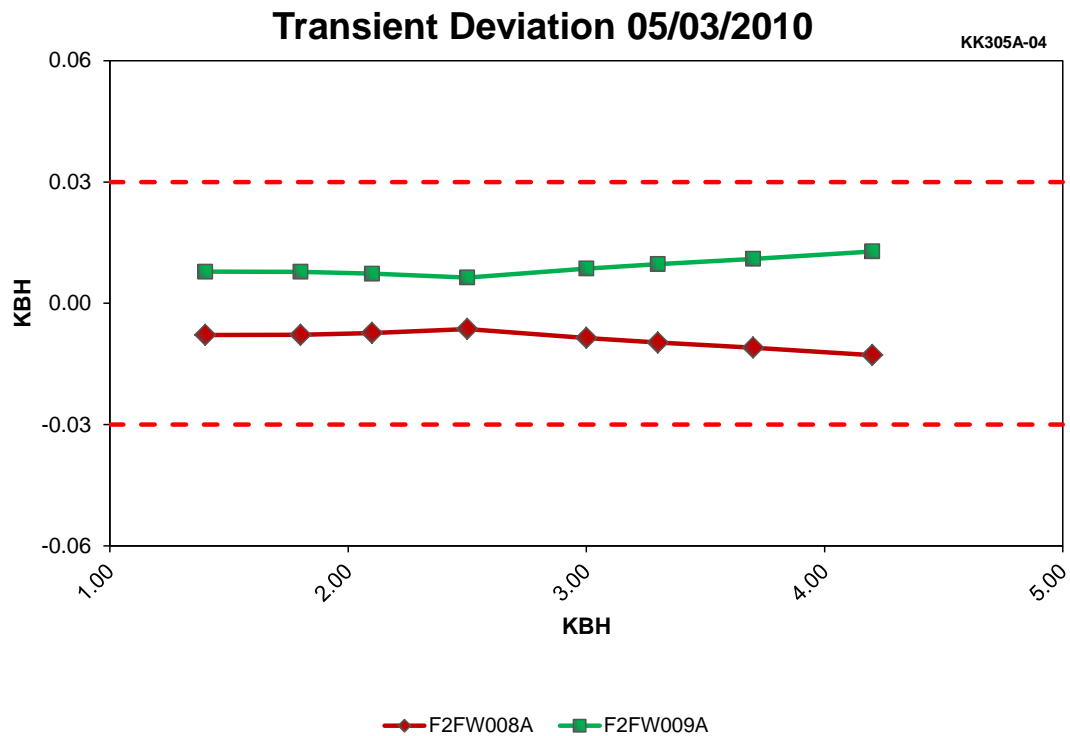


Figure I.59 FW FLOW TO SG C Transient Deviation at North Anna Unit 2 (Cycle 21)

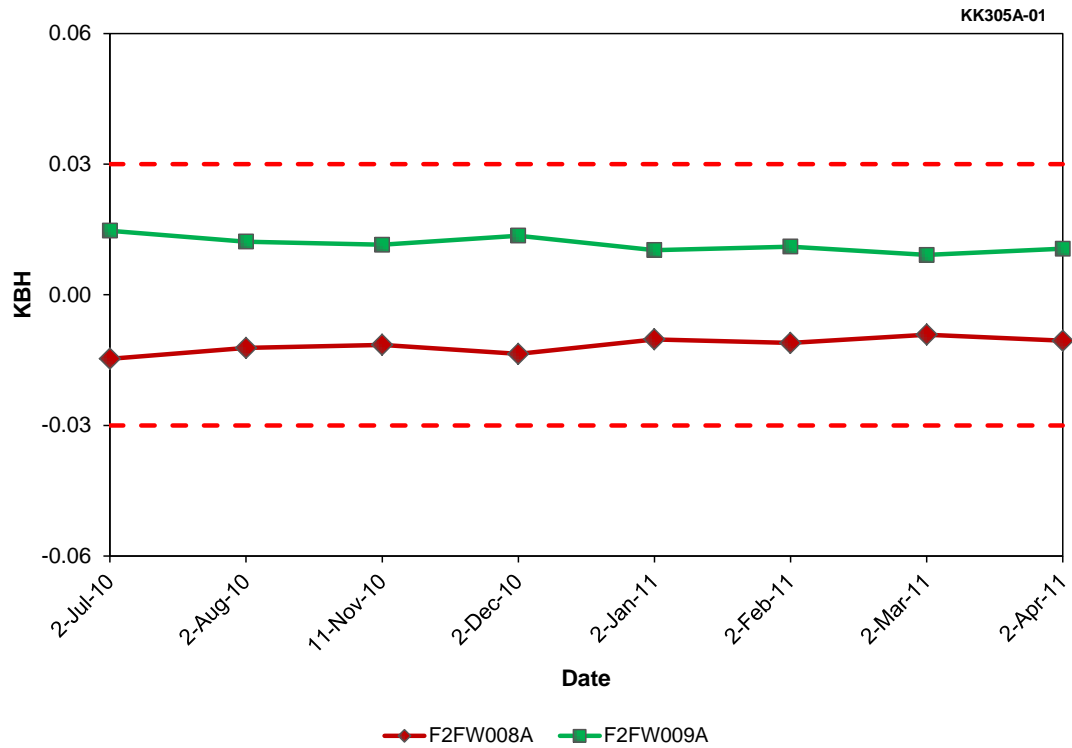


Figure I.60 FW FLOW TO SG C Steady-State Deviation at North Anna Unit 2 (Cycle 21)

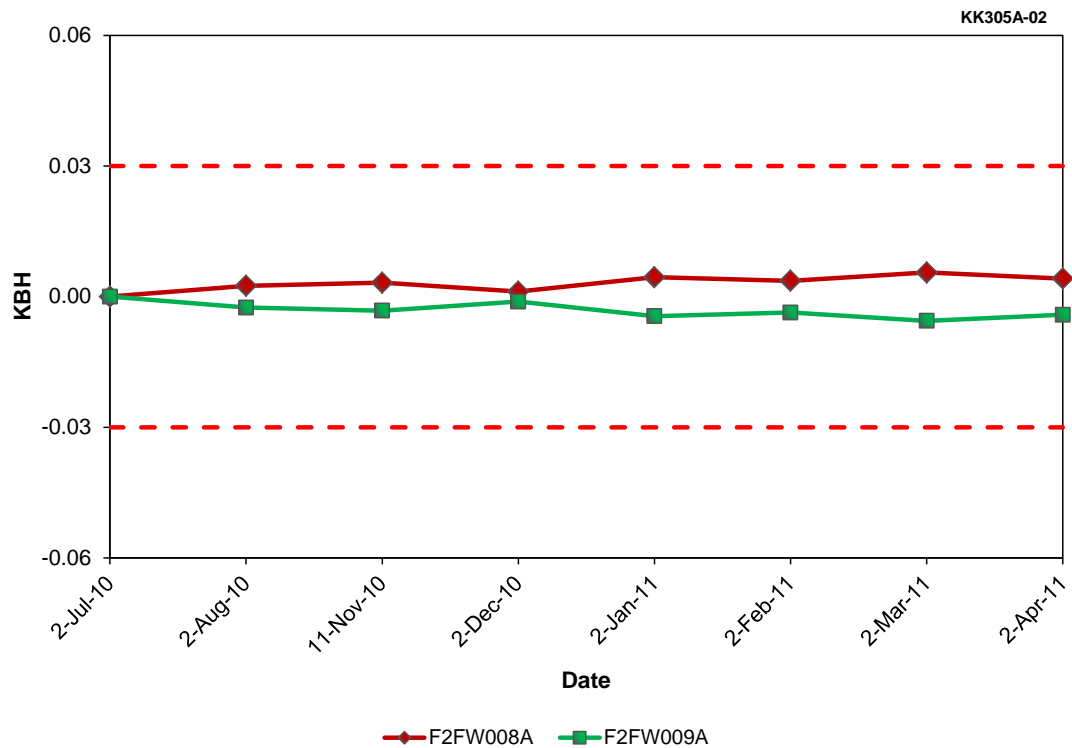


Figure I.61 FW FLOW TO SG C Steady-State Drift at North Anna Unit 2 (Cycle 21)

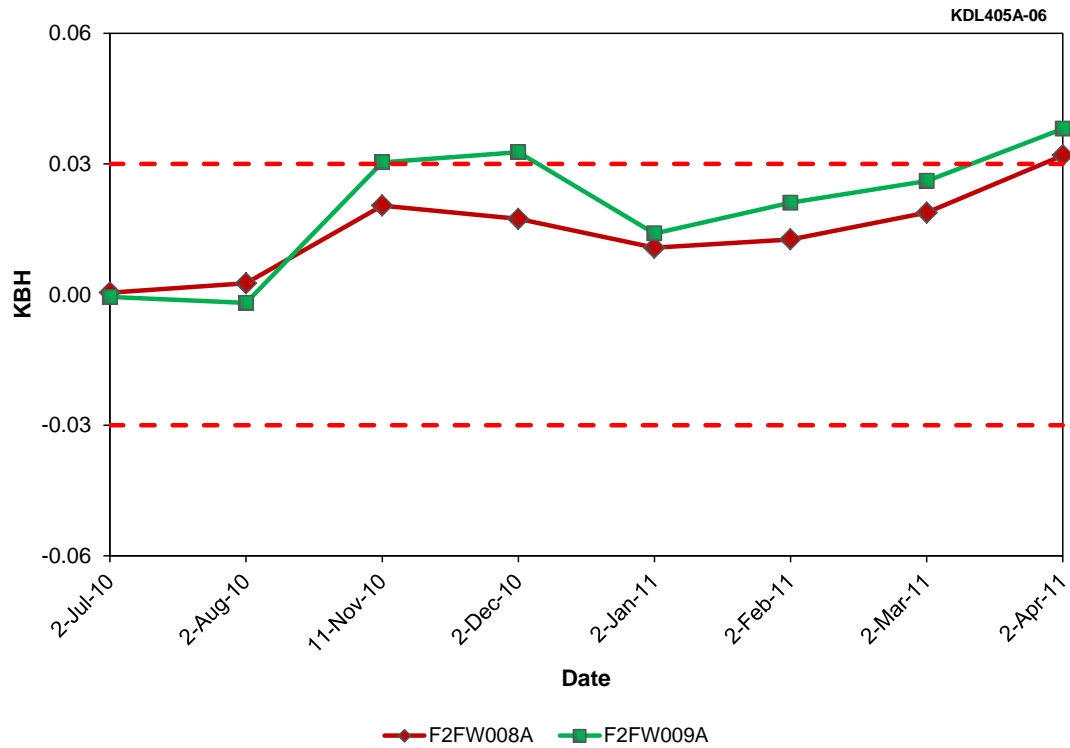


Figure I.62 FW FLOW TO SG C Steady-State Residual AAKR at North Anna Unit 2 (Cycle 21)

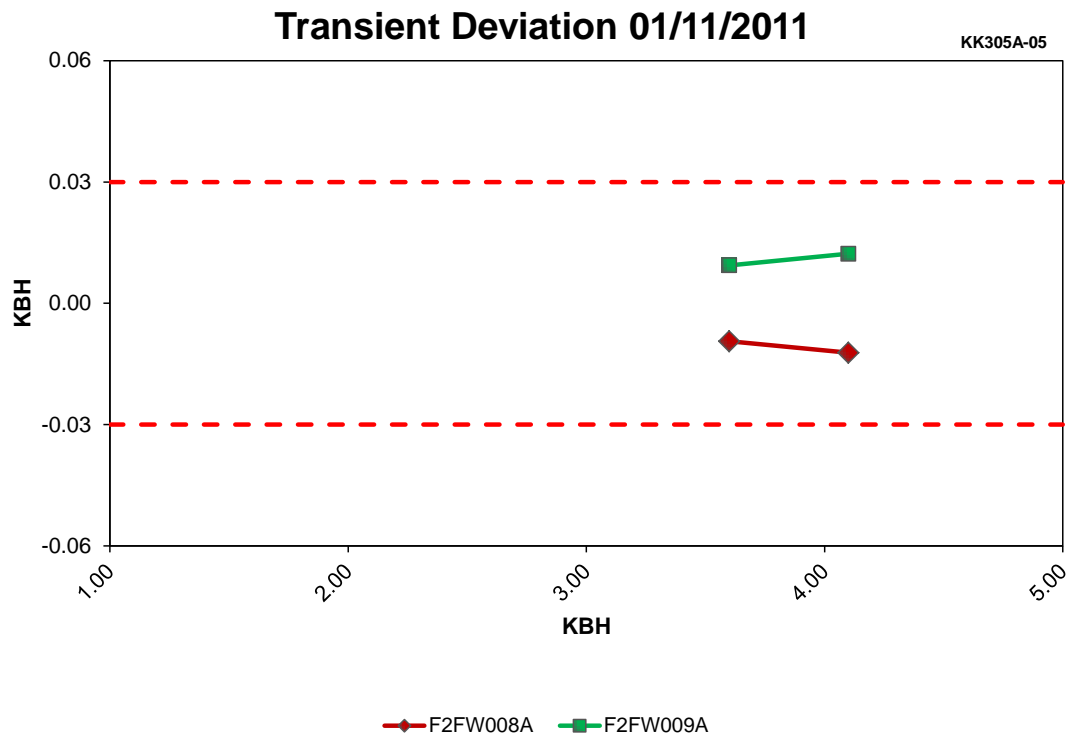
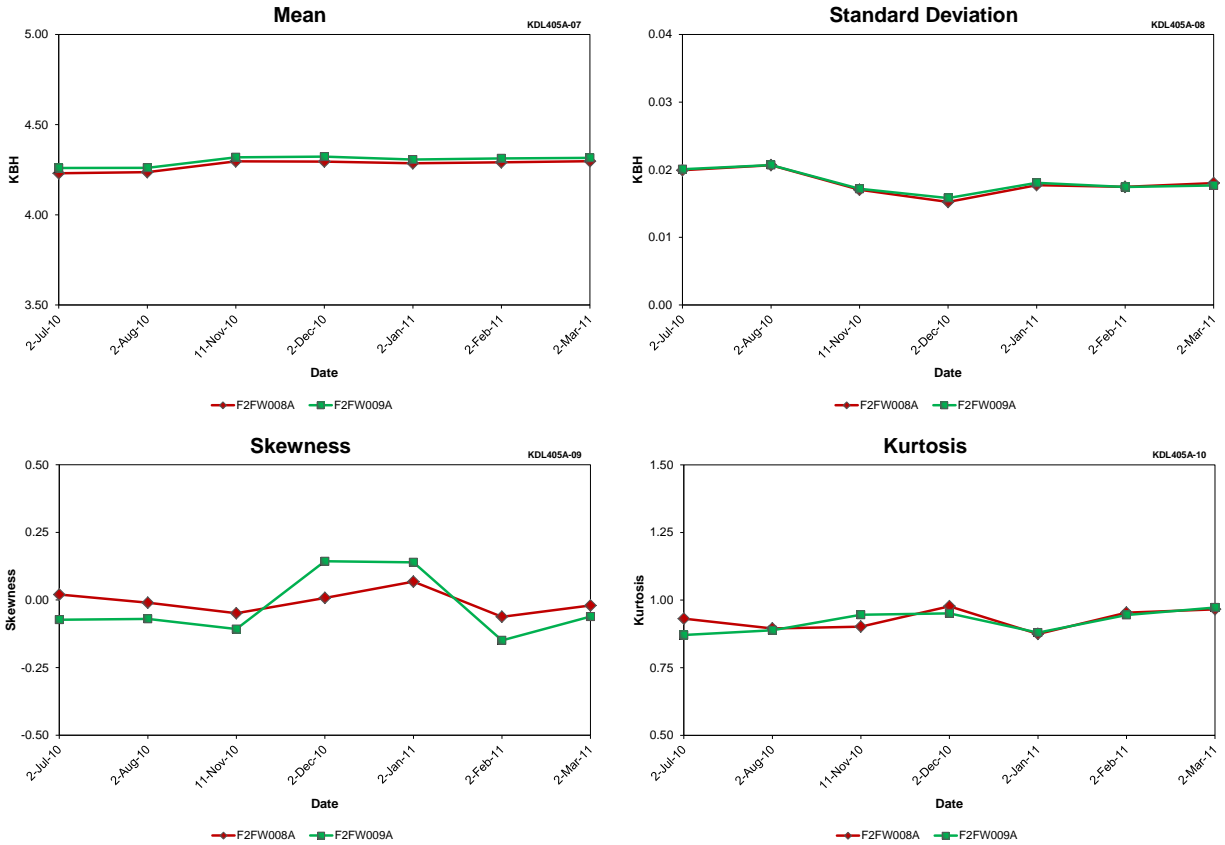


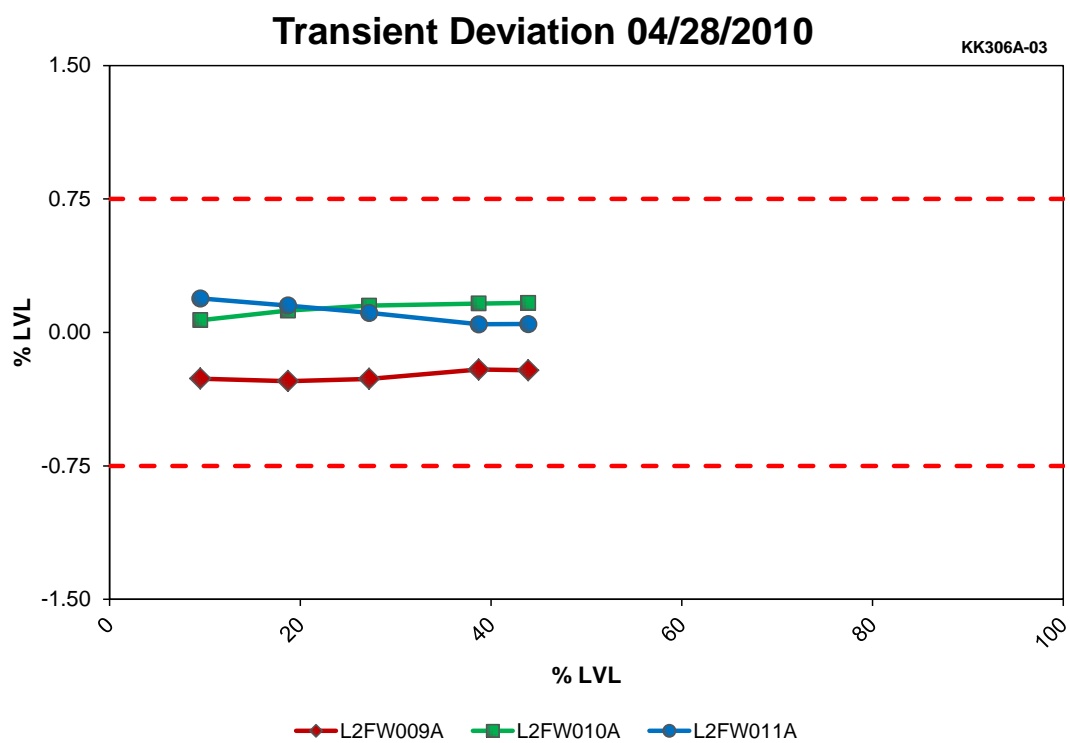
Figure I.63 FW FLOW TO SG C Transient Deviation at North Anna Unit 2 (Cycle 21)



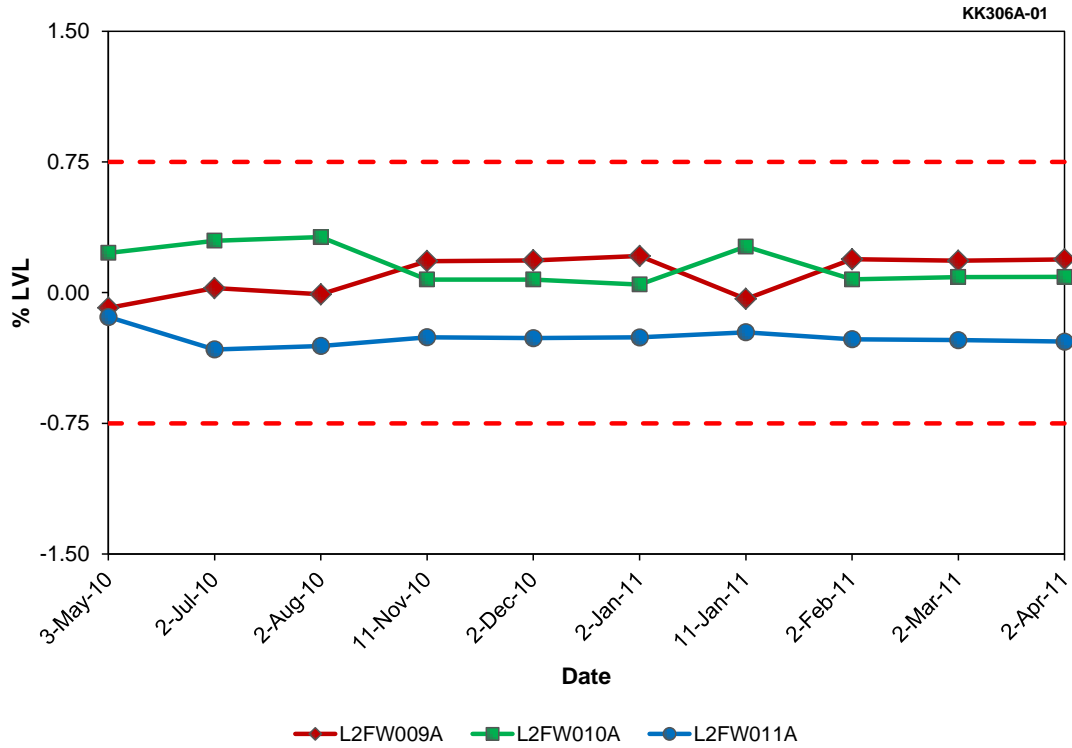
**Figure I.64 FW FLOW TO SG C Data Quality Statistics at North Anna Unit 2 (Cycle 21)**

**Table I.10 FW FLOW TO SG C Data Quality for North Anna Unit 2 (Cycle 21)**

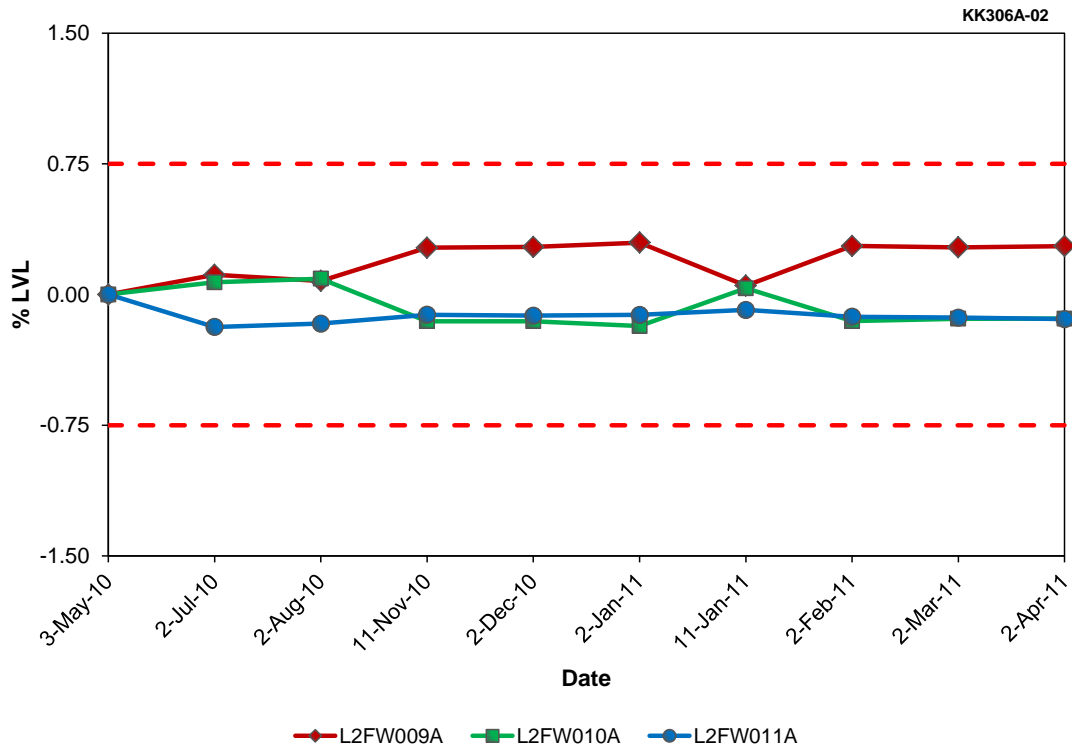
Result Type	Tag Names	
	F2FW008A	F2FW009A
Mean	4.28	4.30
Std. Dev.	0.02	0.02
Skewness	-0.01	-0.03
Kurtosis	0.93	0.92



**Figure F.65 SG C LEVEL Transient Deviation at North Anna Unit 2 (Cycle 21)**

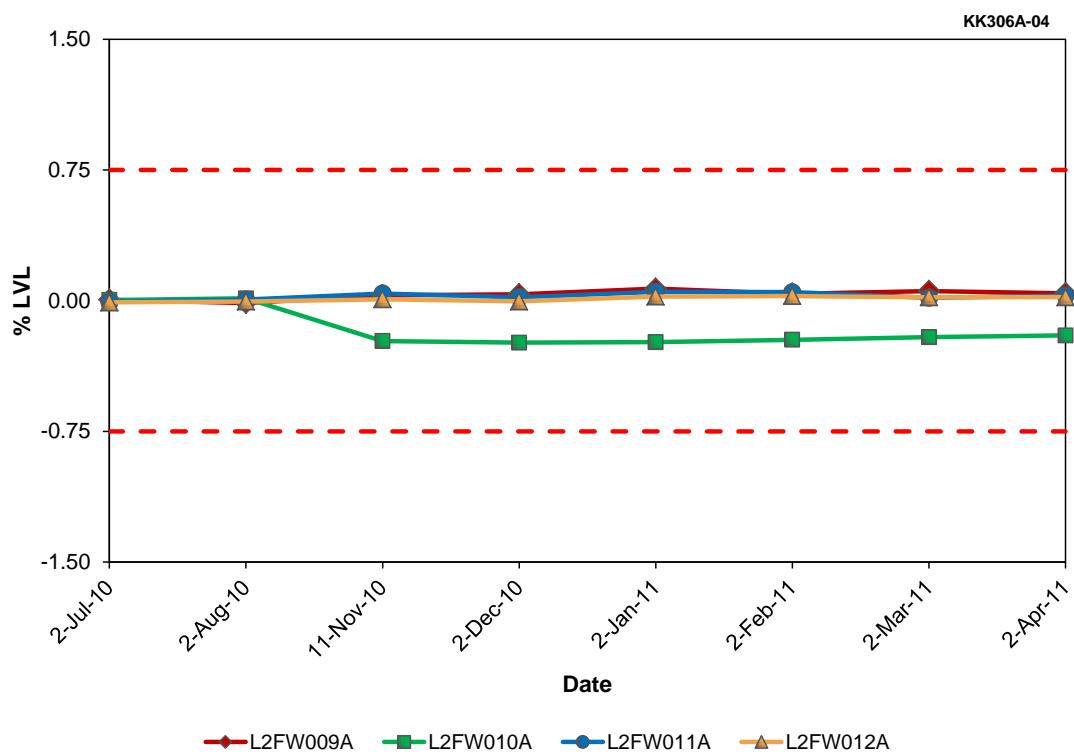


**Figure F.66 SG C LEVEL Steady-State Deviation at North Anna Unit 2 (Cycle 21)**

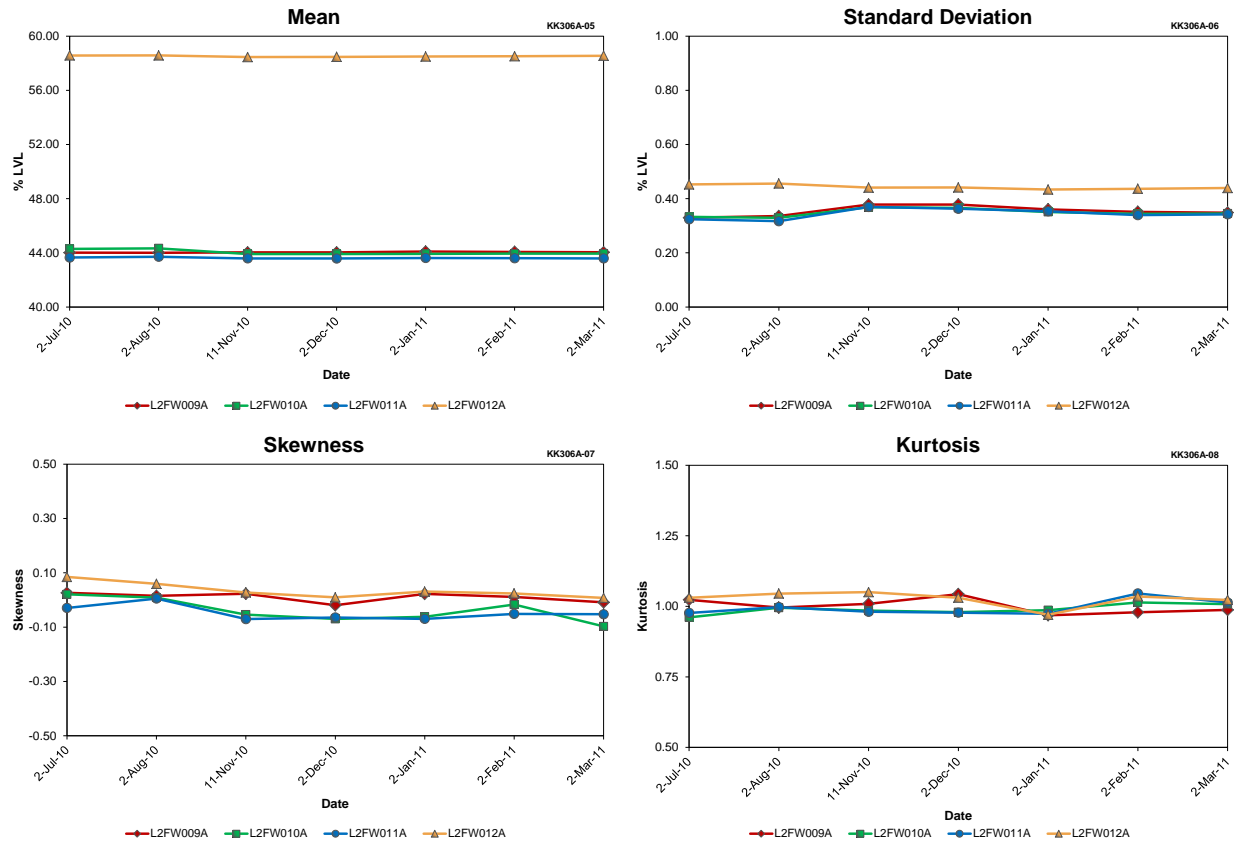


**Figure F.67 SG C LEVEL Steady-State Drift at North Anna Unit 2 (Cycle 21)**





**Figure F.68 SG C LEVEL Steady-State Residual AAKR at North Anna Unit 2 (Cycle 21)**



**Figure F.69 SG C LEVEL Data Quality Statistics at North Anna Unit 2 (Cycle 21)**

**Table F.12 SG C LEVEL Data Quality for North Anna Unit 2 (Cycle 21)**

Result Type	Tag Names			
	L2FW009A	L2FW010A	L2FW011A	L2FW012A
Mean	44.04	44.04	43.62	58.52
Std. Dev.	0.35	0.35	0.34	0.44
Skewness	0.01	-0.04	-0.05	0.03
Kurtosis	1.00	0.99	0.99	1.03

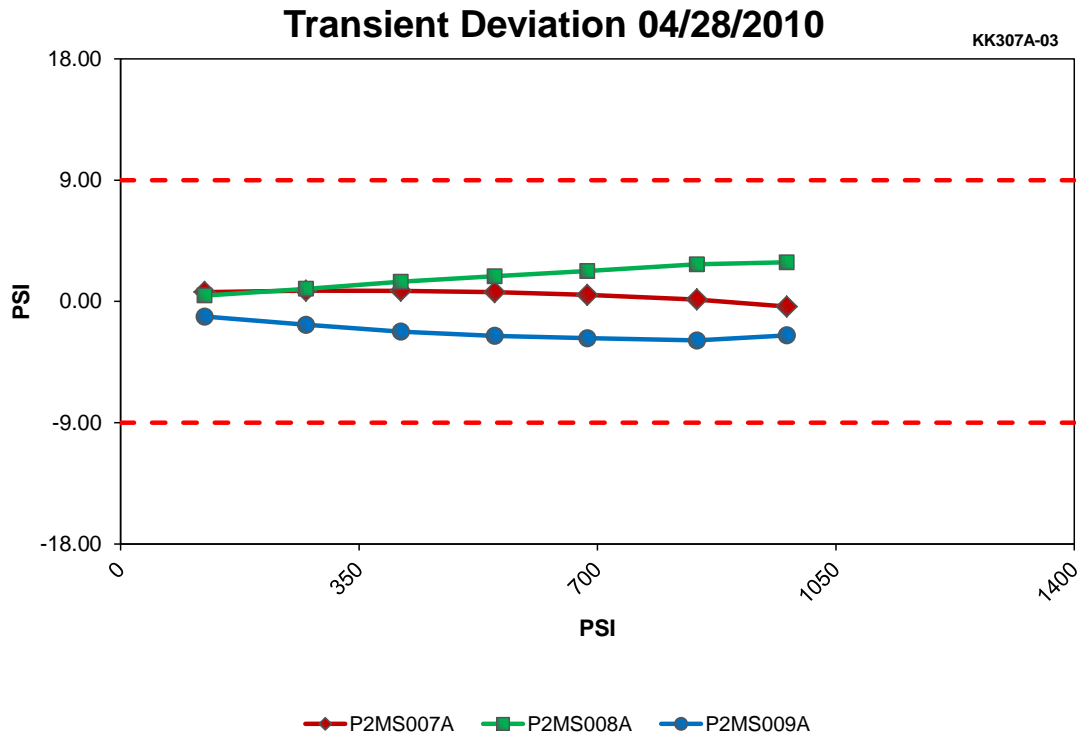


Figure F.70 SG C OUTLET PRESSURE Transient Deviation at North Anna Unit 2 (Cycle 21)

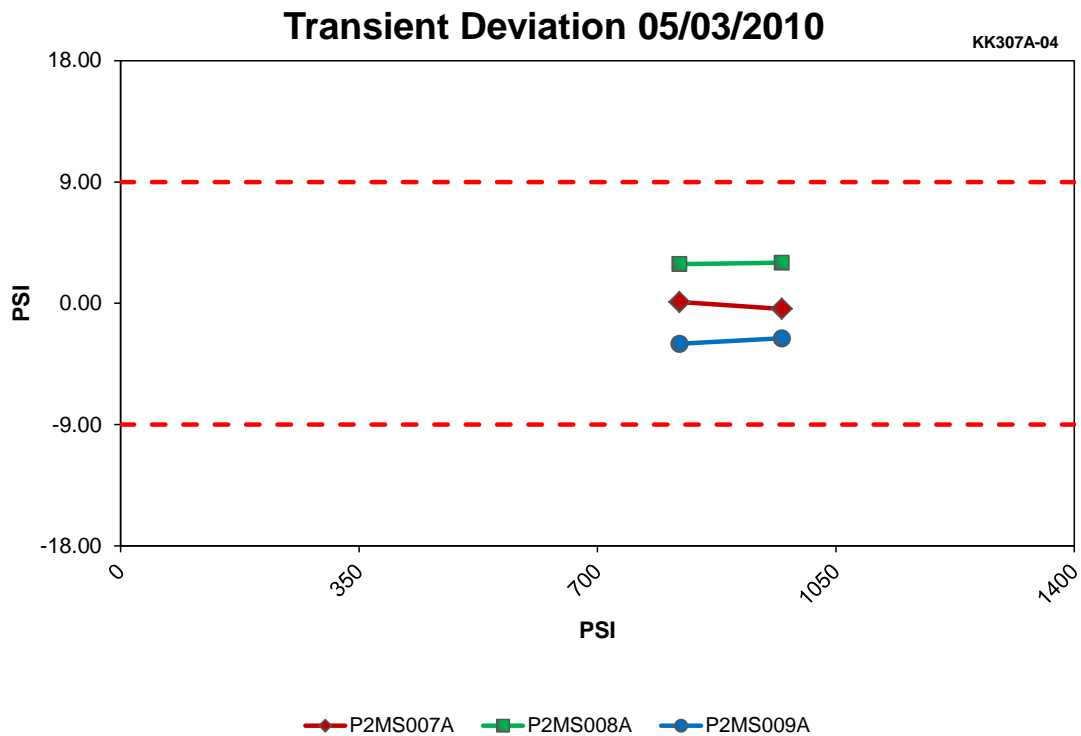
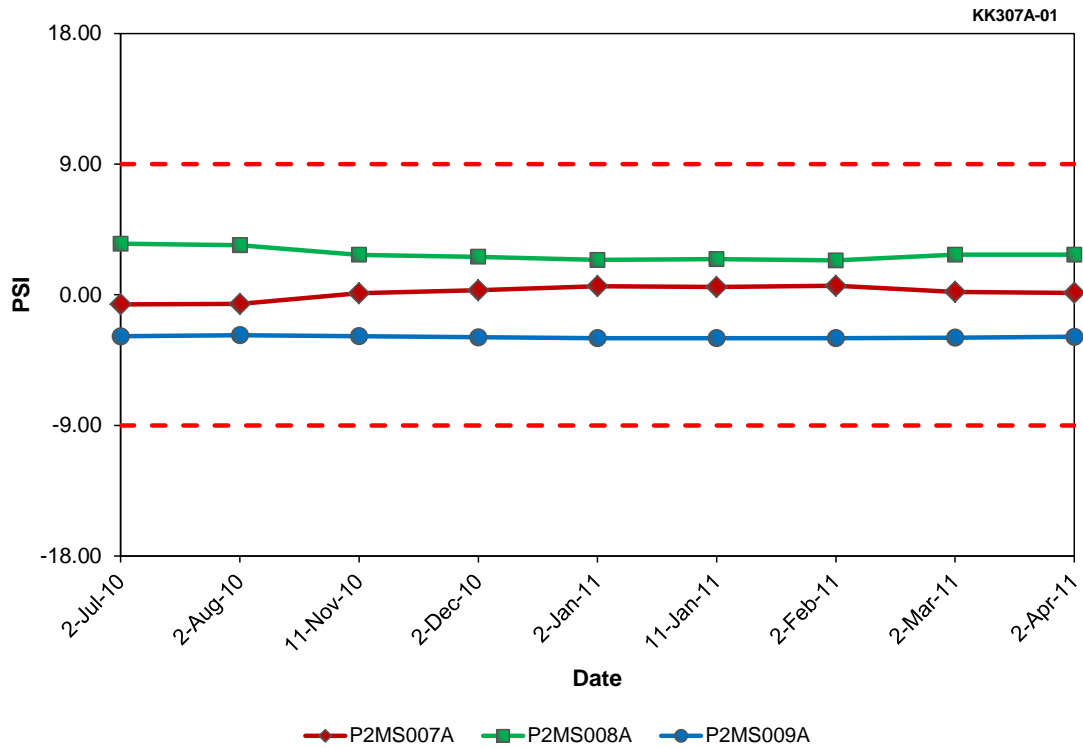
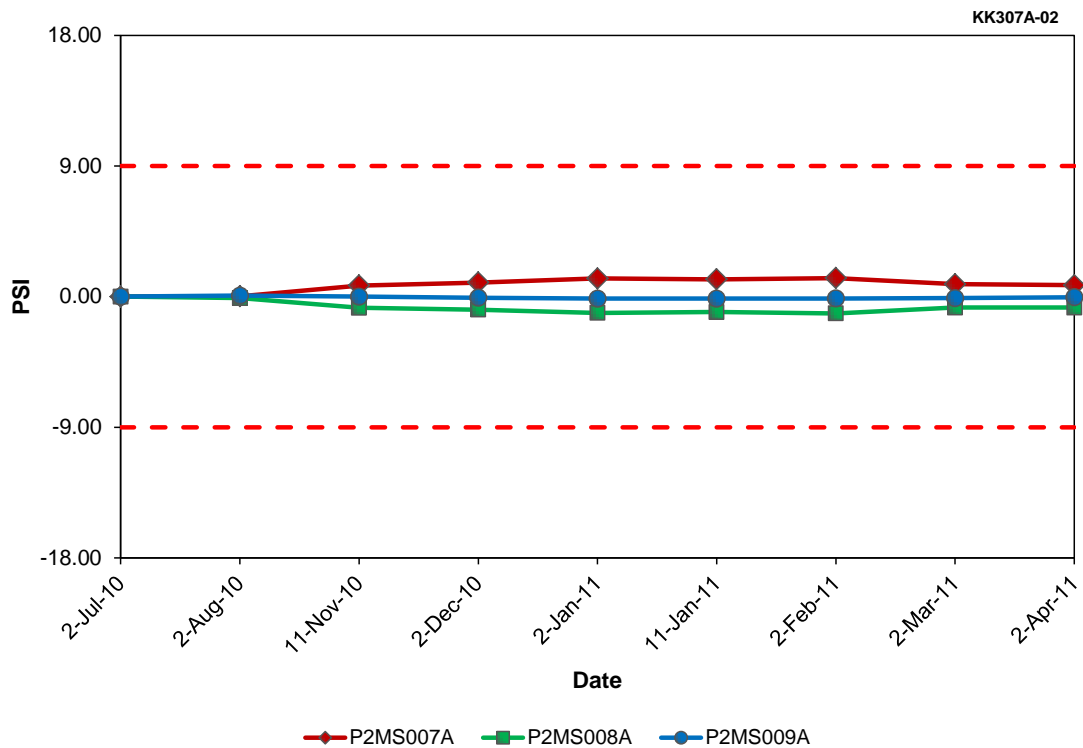


Figure F.71 SG C OUTLET PRESSURE Transient Deviation at North Anna Unit 2 (Cycle 21)



**Figure F.72 SG C OUTLET PRESSURE Steady-State Deviation at North Anna Unit 2 (Cycle 21)**



**Figure F.73 SG C OUTLET PRESSURE Steady-State Drift at North Anna Unit 2 (Cycle 21)**

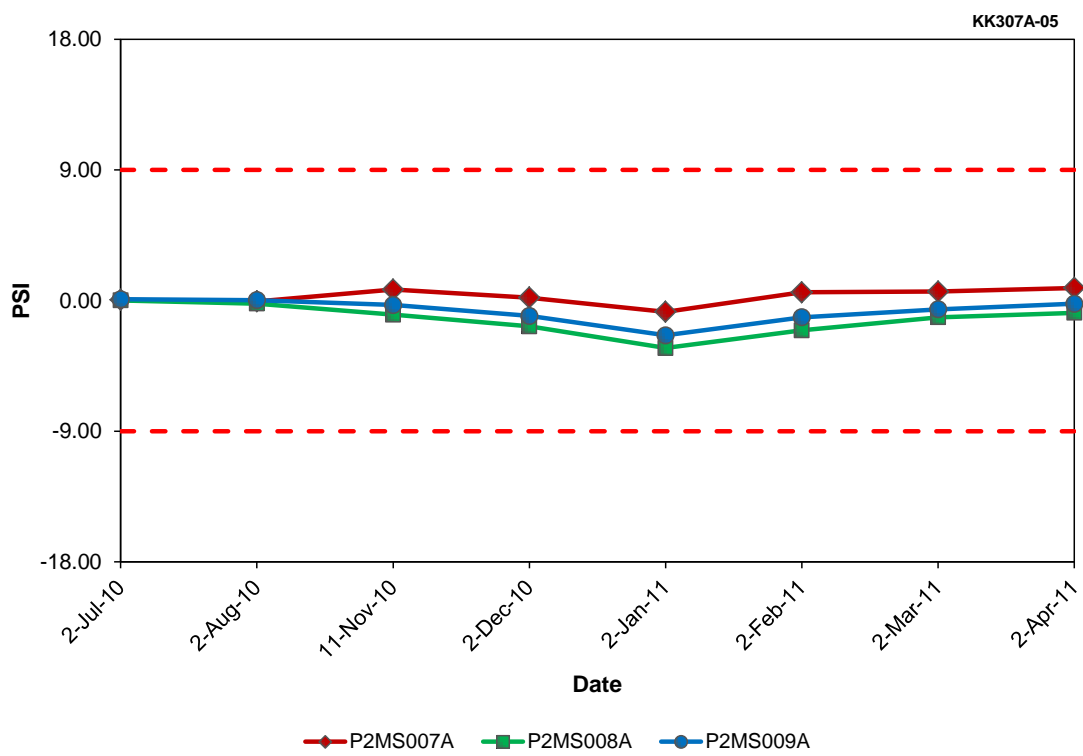


Figure F.74 SG C OUTLET PRESSURE Steady-State Residual AAKR at North Anna Unit 2 (Cycle 21)

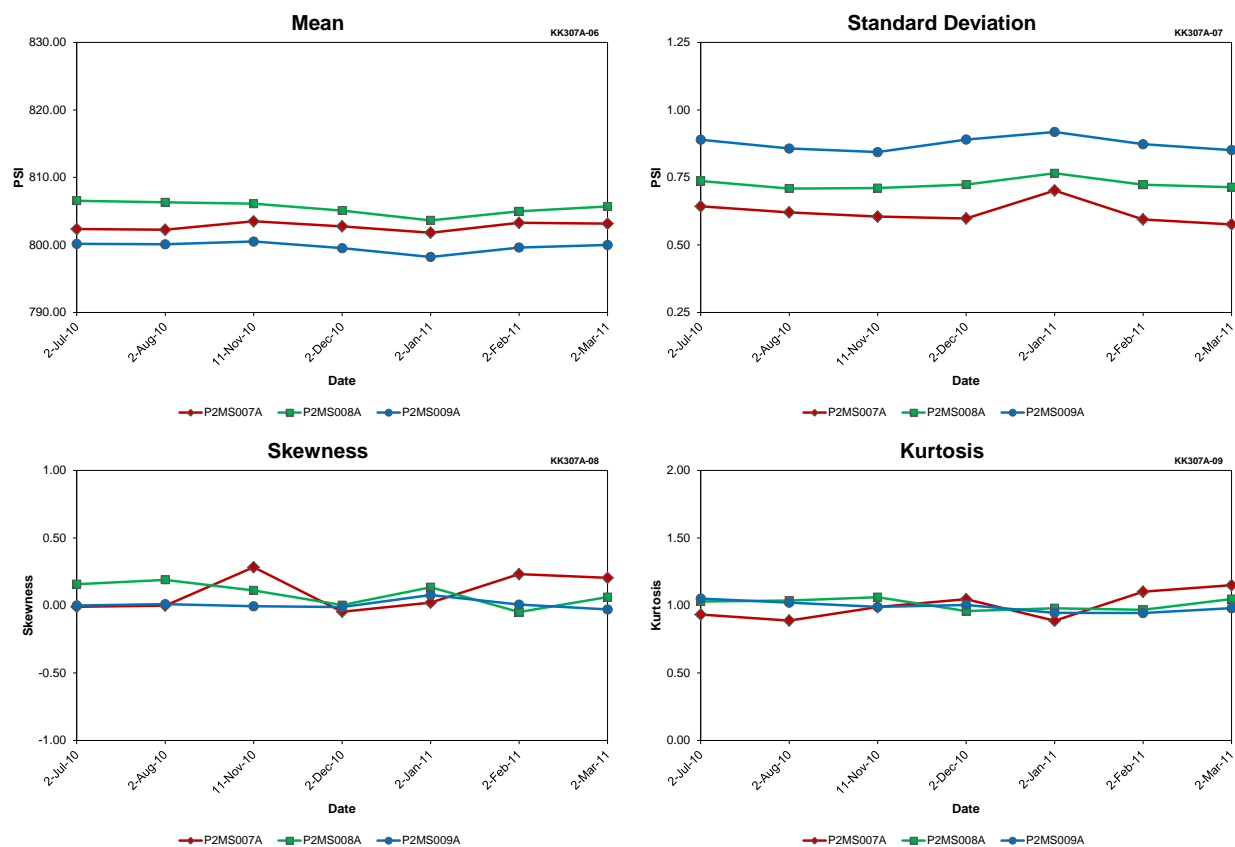
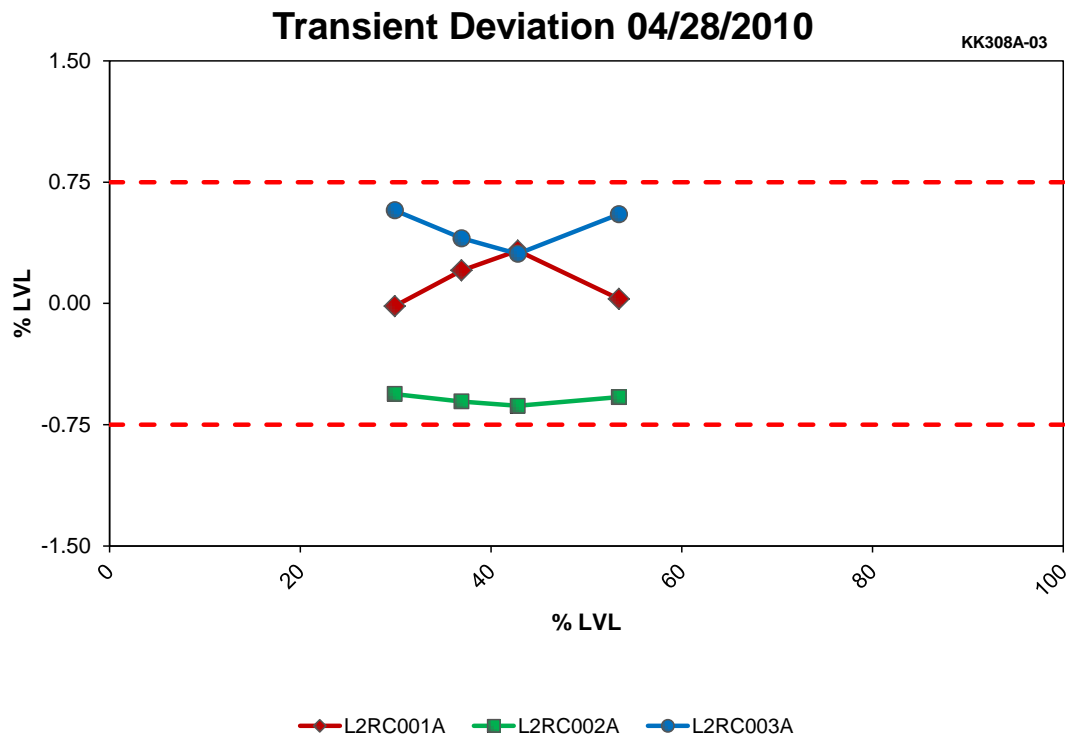


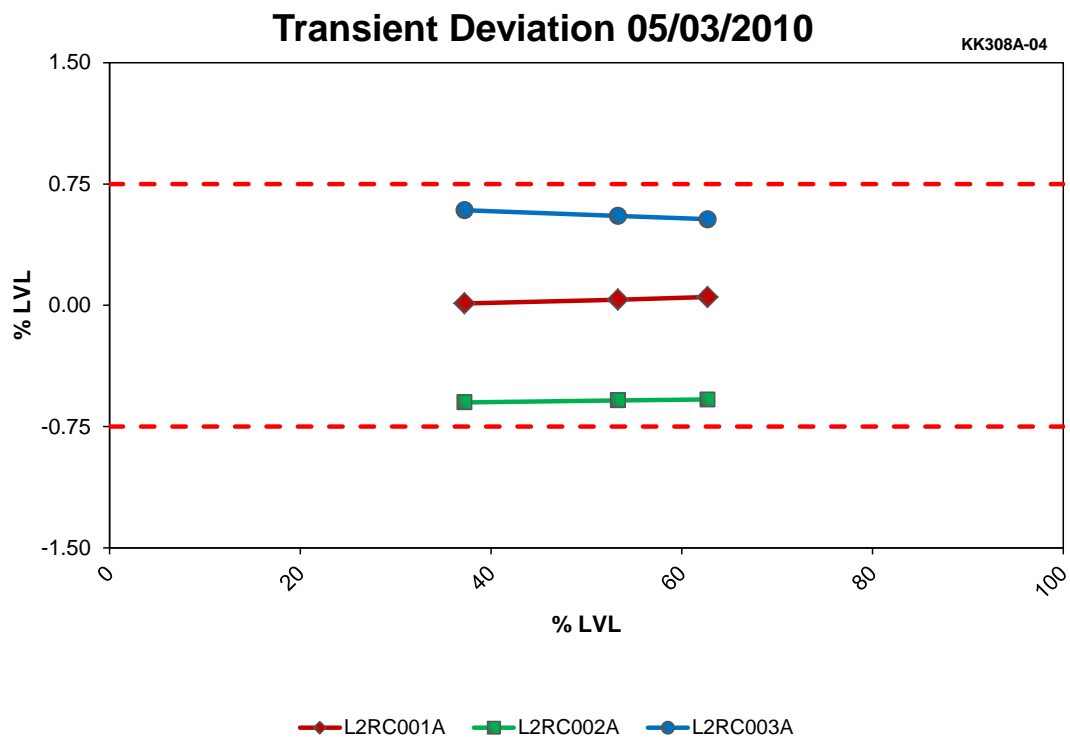
Figure F.76 SG C OUTLET PRESSURE Data Quality Statistics at North Anna Unit 2 (Cycle 21)

Table F.13 SG C OUTLET PRESSURE Data Quality for North Anna Unit 2 (Cycle 21)

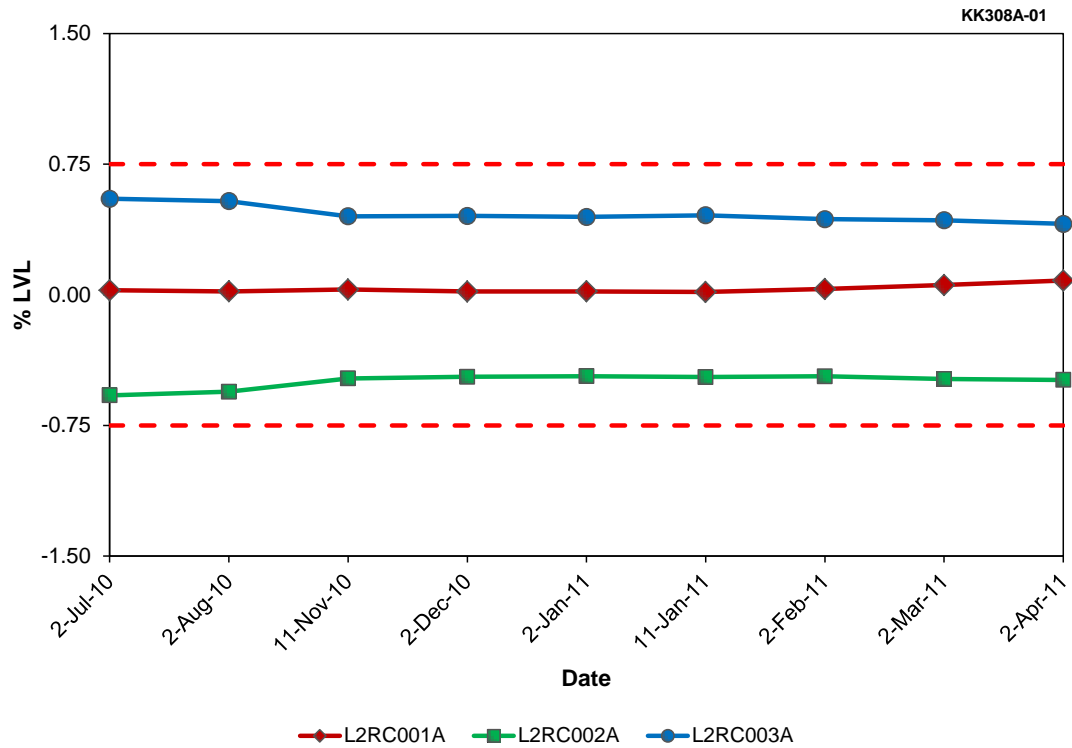
Result Type	Tag Names		
	P2MS007A	P2MS008A	P2MS009A
Mean	802.73	805.48	799.74
Std. Dev.	0.62	0.73	0.87
Skewness	0.10	0.09	0.01
Kurtosis	1.00	1.01	0.99



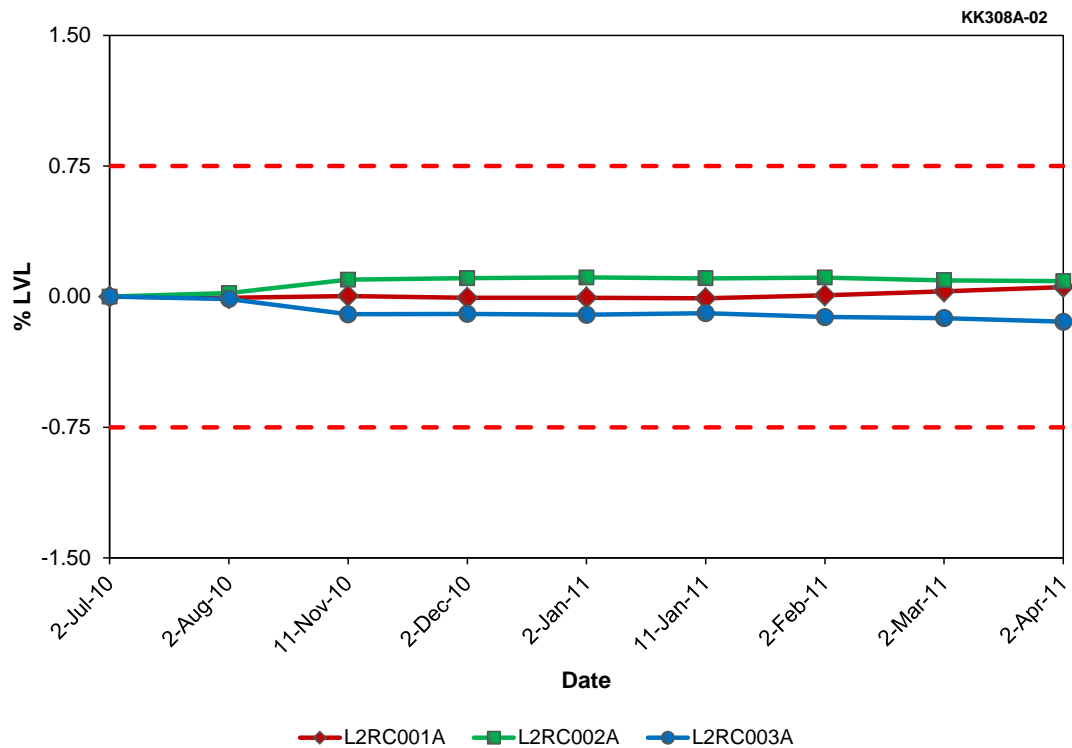
**Figure F.77 PRESSURIZER LEVEL Transient Deviation at North Anna Unit 2 (Cycle 21)**



**Figure F.78 PRESSURIZER LEVEL Transient Deviation at North Anna Unit 2 (Cycle 21)**

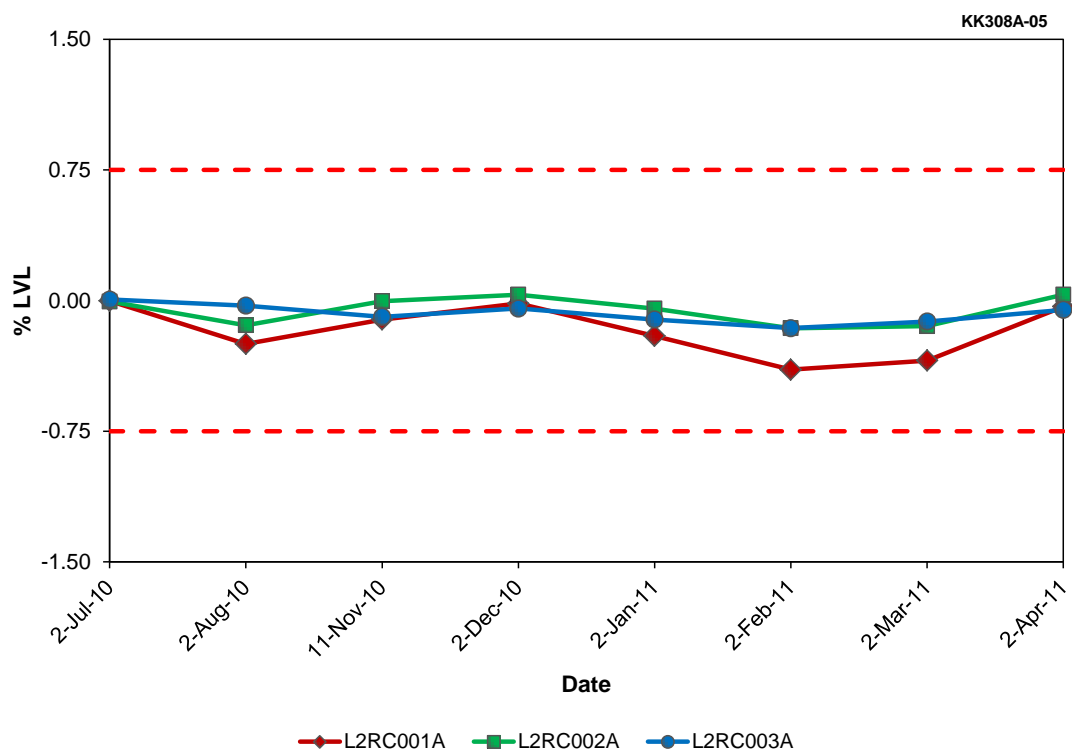


**Figure F.79 PRESSURIZER LEVEL Steady-State Deviation at North Anna Unit 2 (Cycle 21)**

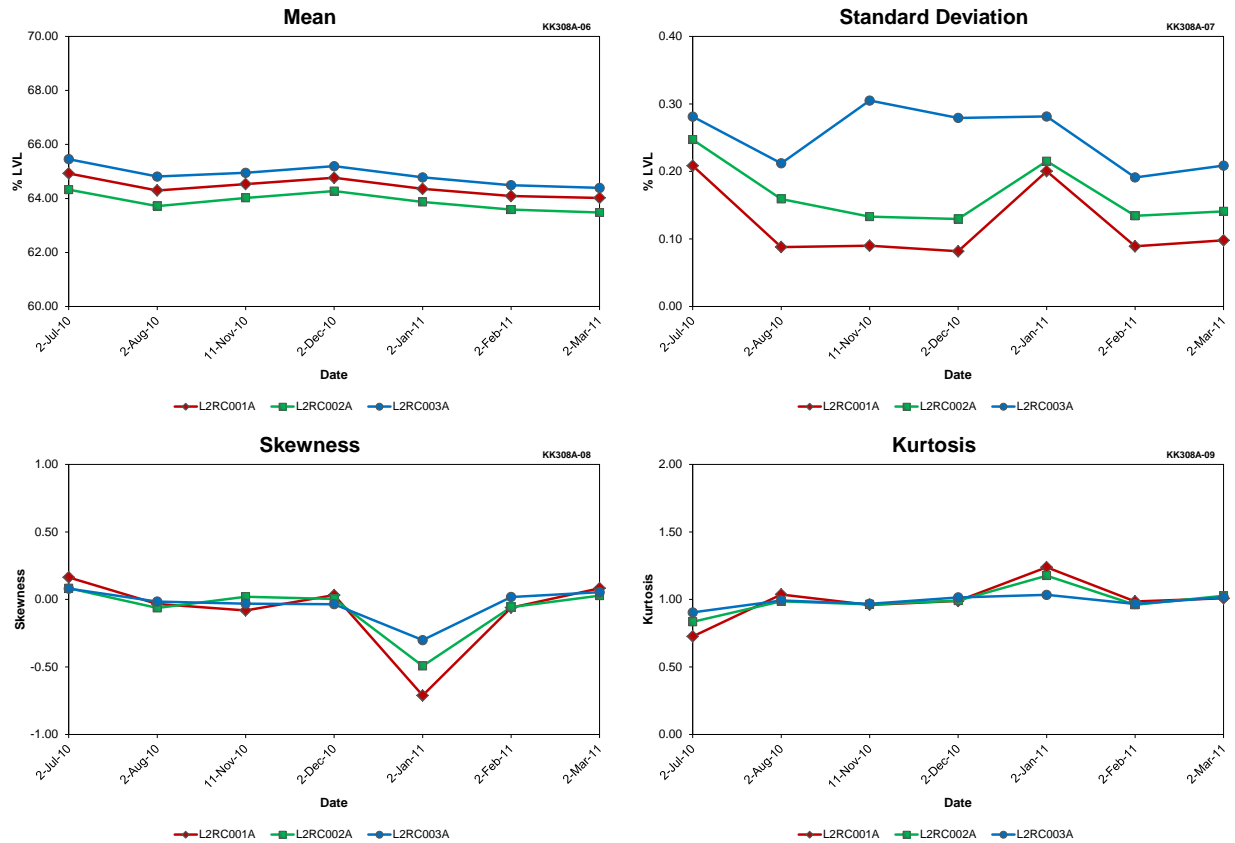


**Figure F.80 PRESSURIZER LEVEL Steady-State Drift at North Anna Unit 2 (Cycle 21)**





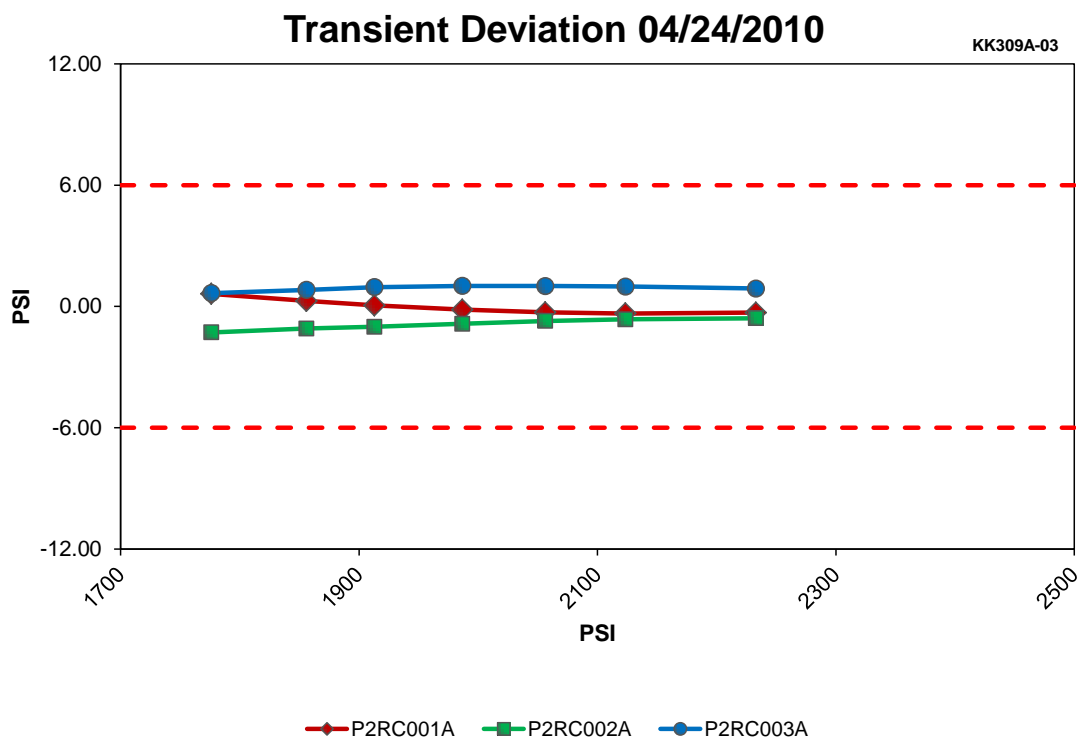
**Figure F.81 PRESSURIZER LEVEL Steady-State Residual AAKR at North Anna Unit 2 (Cycle 21)**



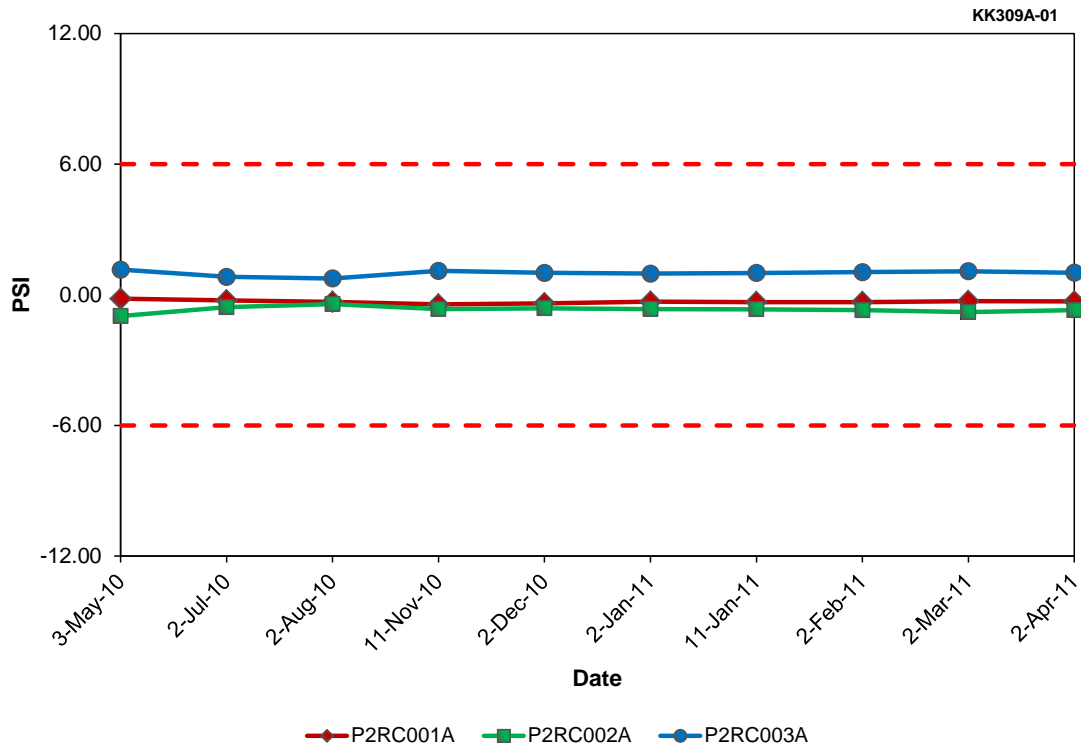
**Figure F.82 PRESSURIZER LEVEL Data Quality Statistics at North Anna Unit 2 (Cycle 21)**

**Table F.14 PRESSURIZER LEVEL Data Quality for North Anna Unit 2 (Cycle 21)**

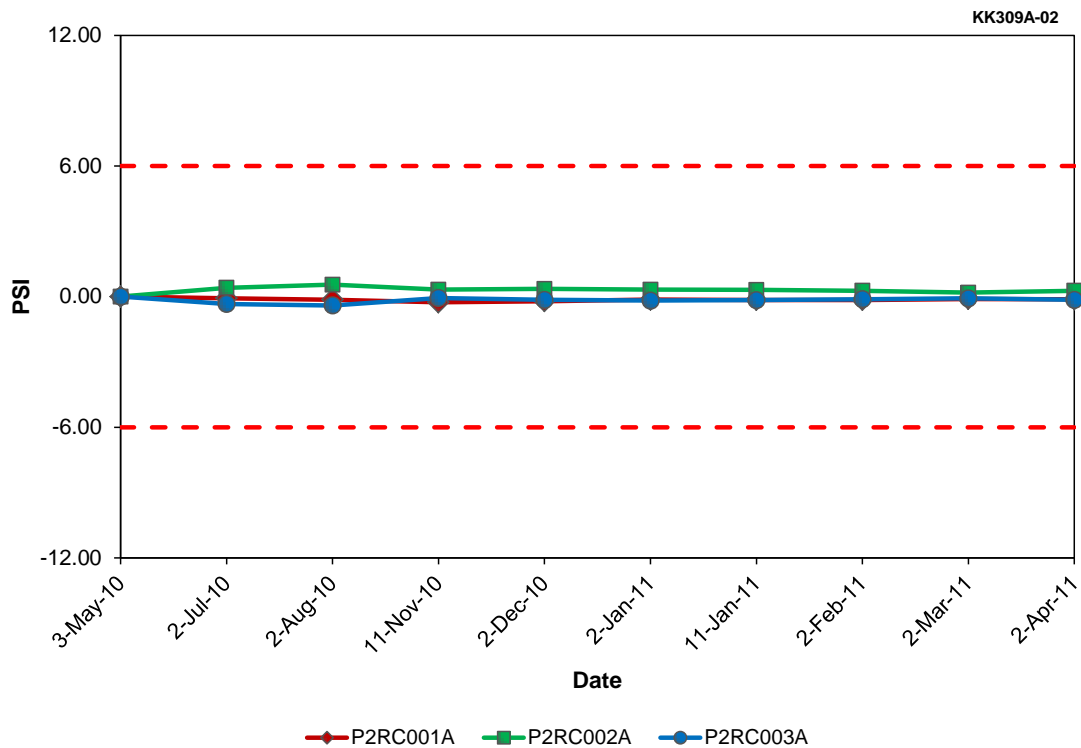
Result Type	Tag Names		
	L2RC001A	L2RC002A	L2RC003A
Mean	64.43	63.90	64.87
Std. Dev.	0.12	0.17	0.25
Skewness	-0.09	-0.07	-0.03
Kurtosis	0.99	0.99	0.99



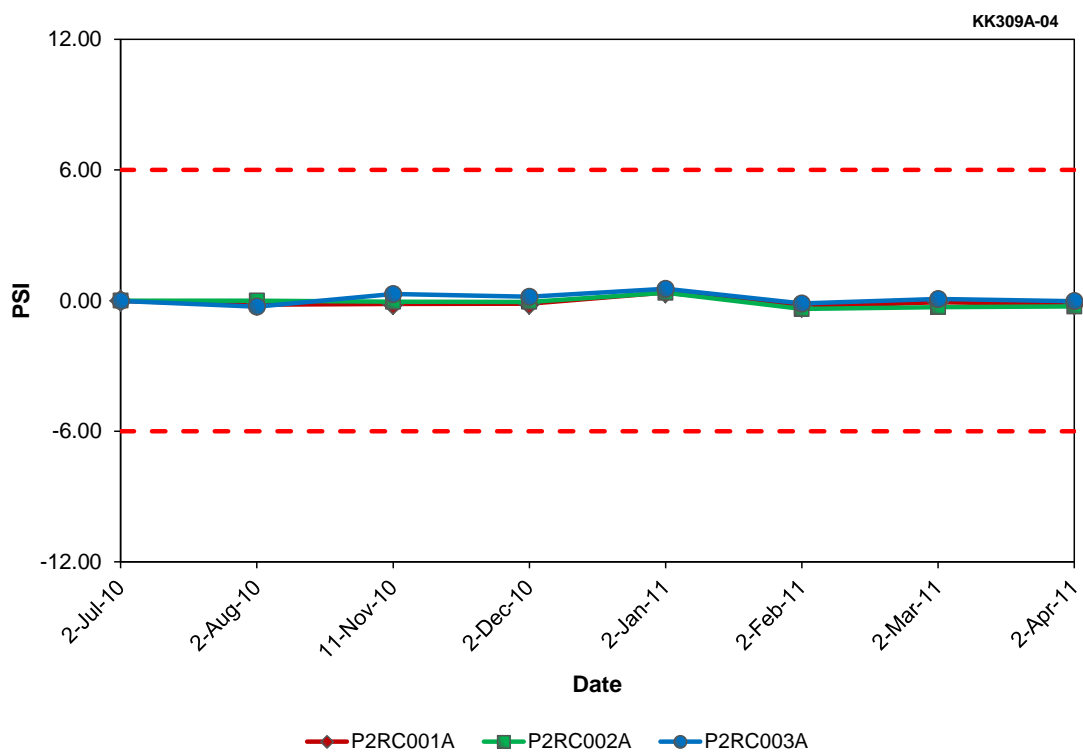
**Figure F.83 PRESSURIZER PRESSURE Transient Deviation at North Anna Unit 2 (Cycle 21)**



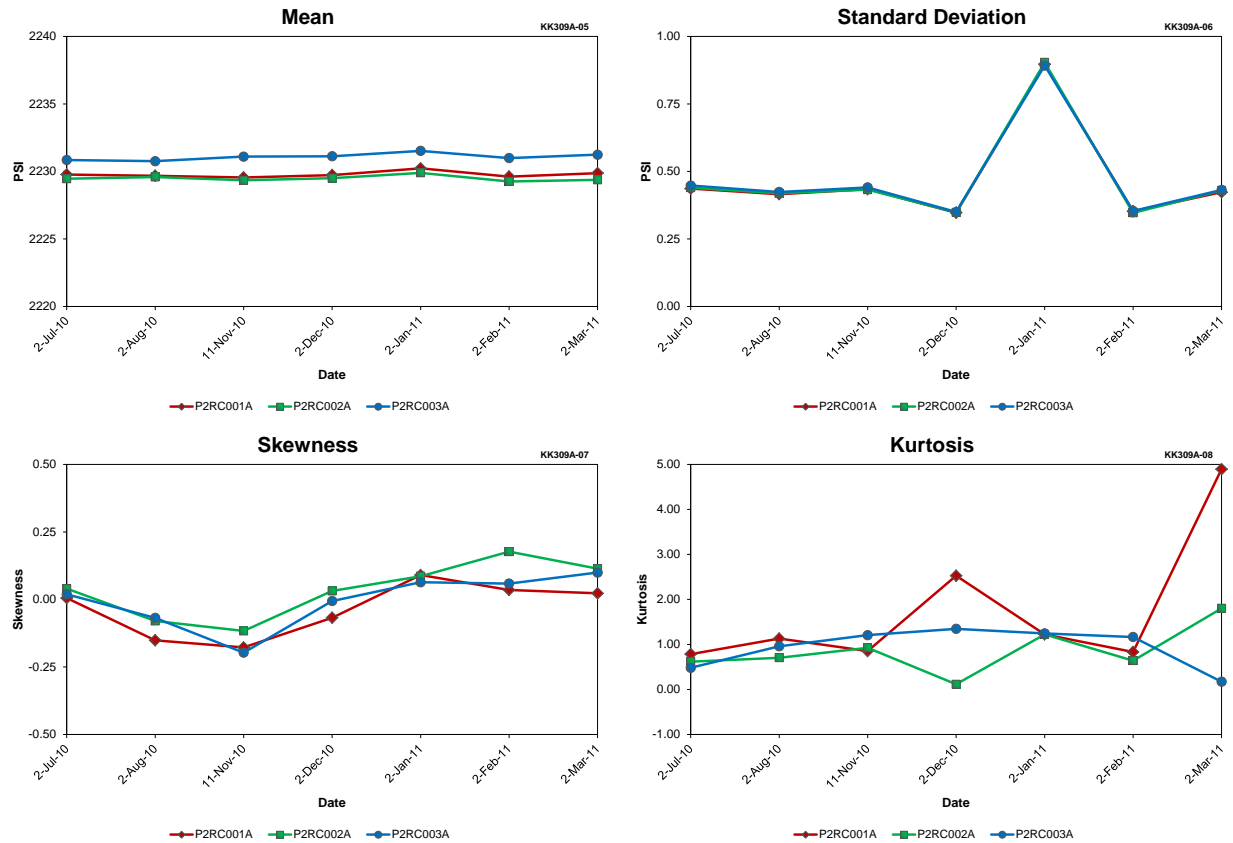
**Figure F.84 PRESSURIZER PRESSURE Steady-State Deviation at North Anna Unit 2 (Cycle 21)**



**Figure F.85 PRESSURIZER PRESSURE Steady-State Drift at North Anna Unit 2 (Cycle 21)**



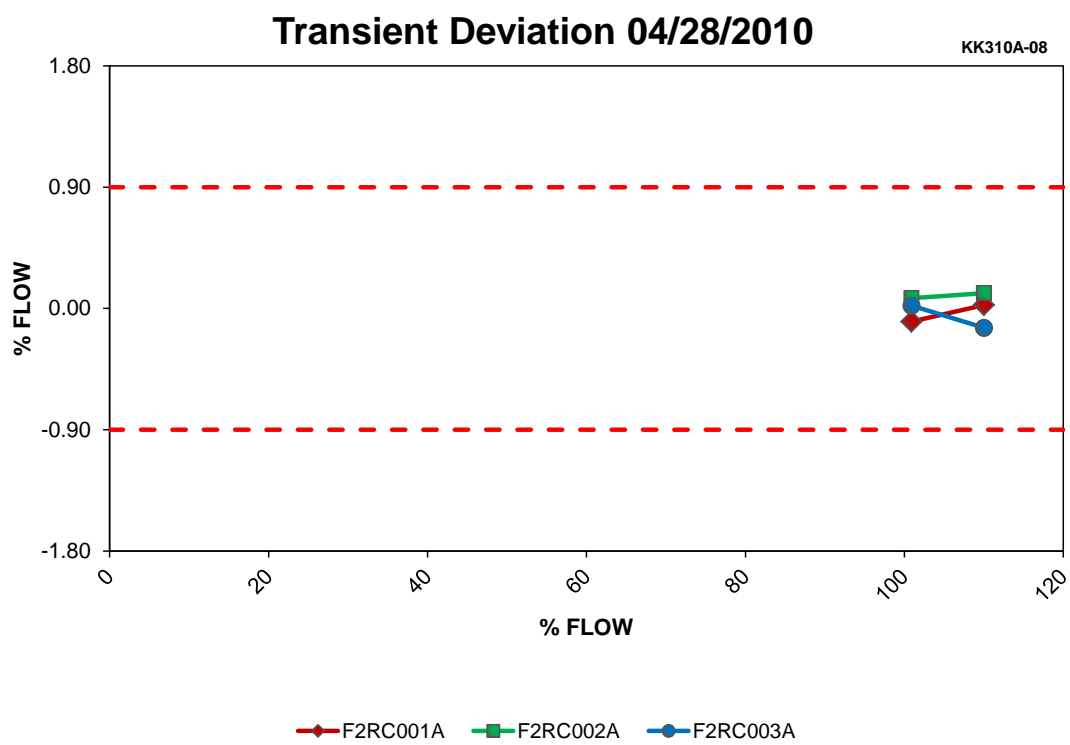
**Figure F.86 PRESSURIZER PRESSURE Steady-State Residual AAKR at North Anna Unit 2 (Cycle 21)**



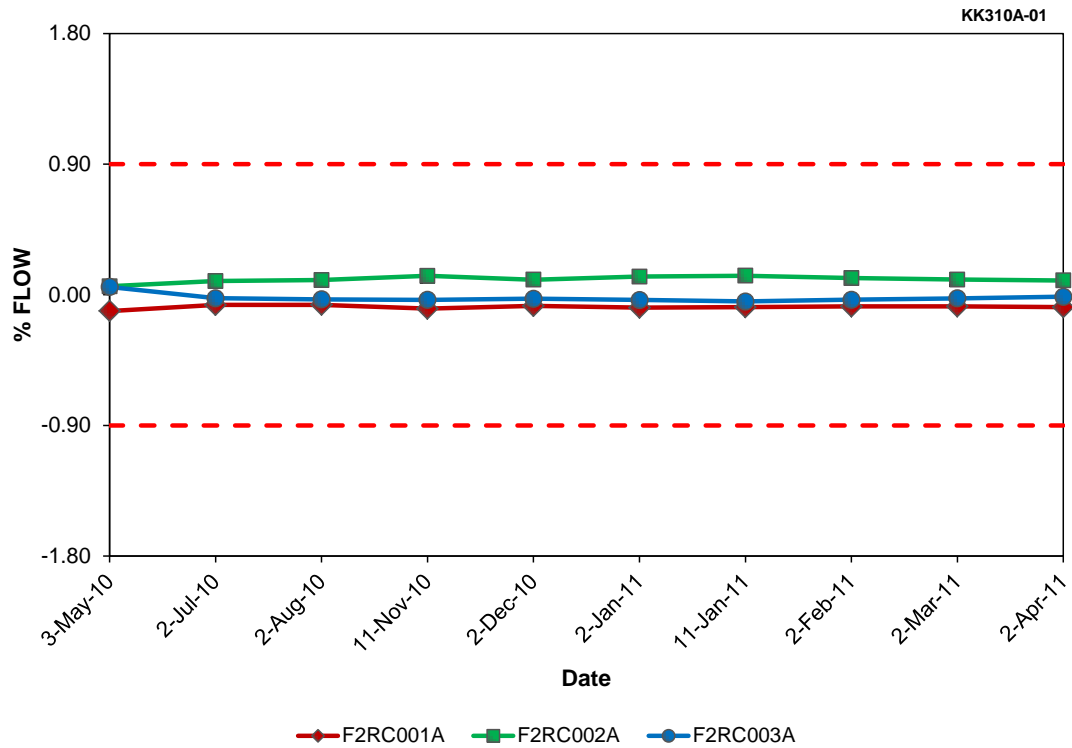
**Figure F.87 PRESSURIZER PRESSURE Data Quality Statistics at North Anna Unit 2 (Cycle 21)**

**Table F.15 PRESSURIZER PRESSURE Data Quality for North Anna Unit 2 (Cycle 21)**

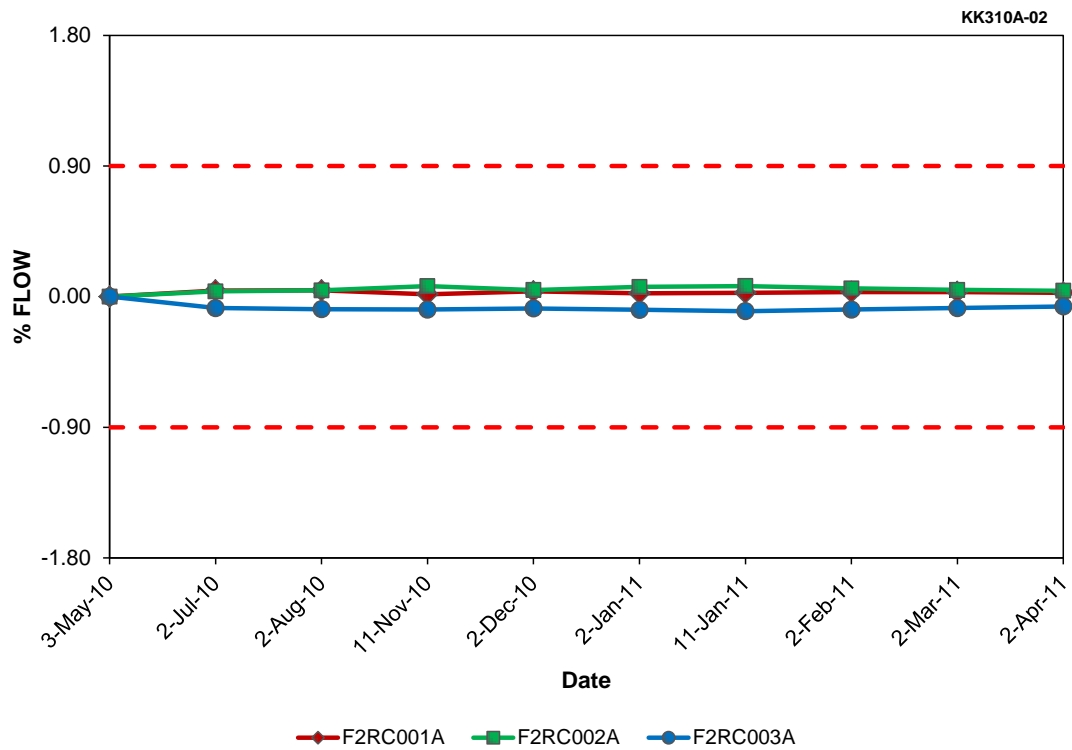
Result Type	Tag Names		
	P2RC001A	P2RC002A	P2RC003A
Mean	2229.78	2229.49	2231.08
Std. Dev.	0.47	0.47	0.48
Skewness	-0.03	0.04	0.00
Kurtosis	1.75	0.86	0.94



**Figure F.88 RCS LOOP A FLOW Transient Deviation at North Anna Unit 2 (Cycle 21)**

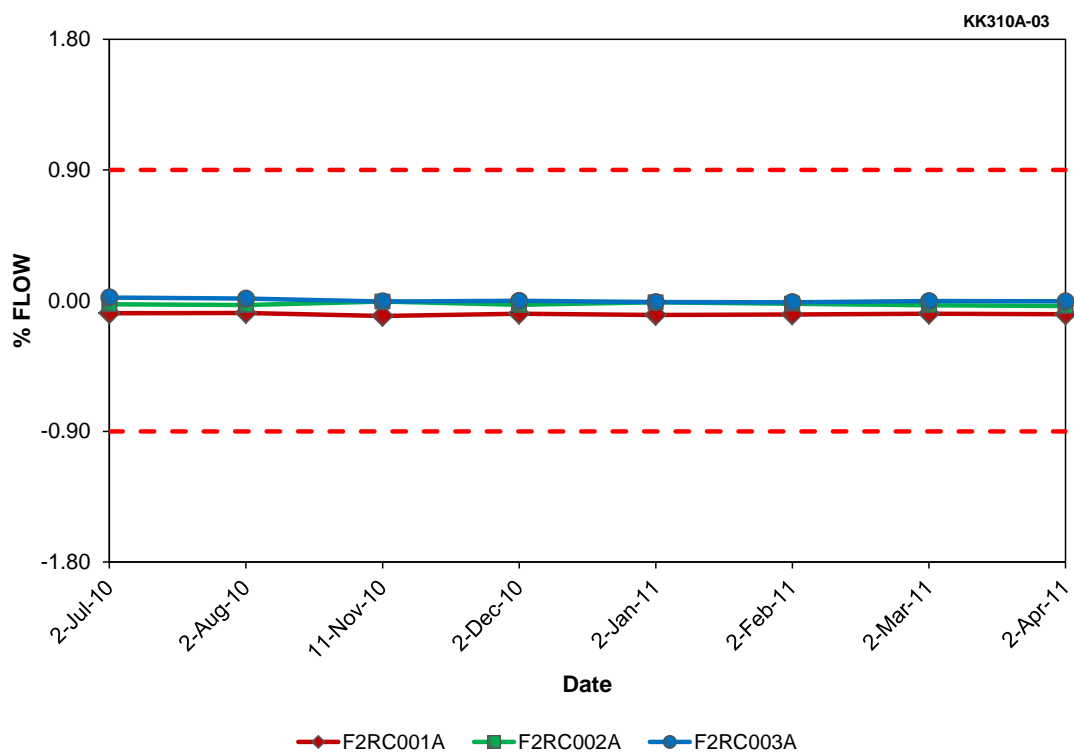


**Figure F.89 RCS LOOP A FLOW Steady-State Deviation at North Anna Unit 2 (Cycle 21)**



**Figure F.90 RCS LOOP A FLOW Steady-State Drift at North Anna Unit 2 (Cycle 21)**





**Figure F.91 RCS LOOP A FLOW Steady-State Residual AAKR at North Anna Unit 2 (Cycle 21)**

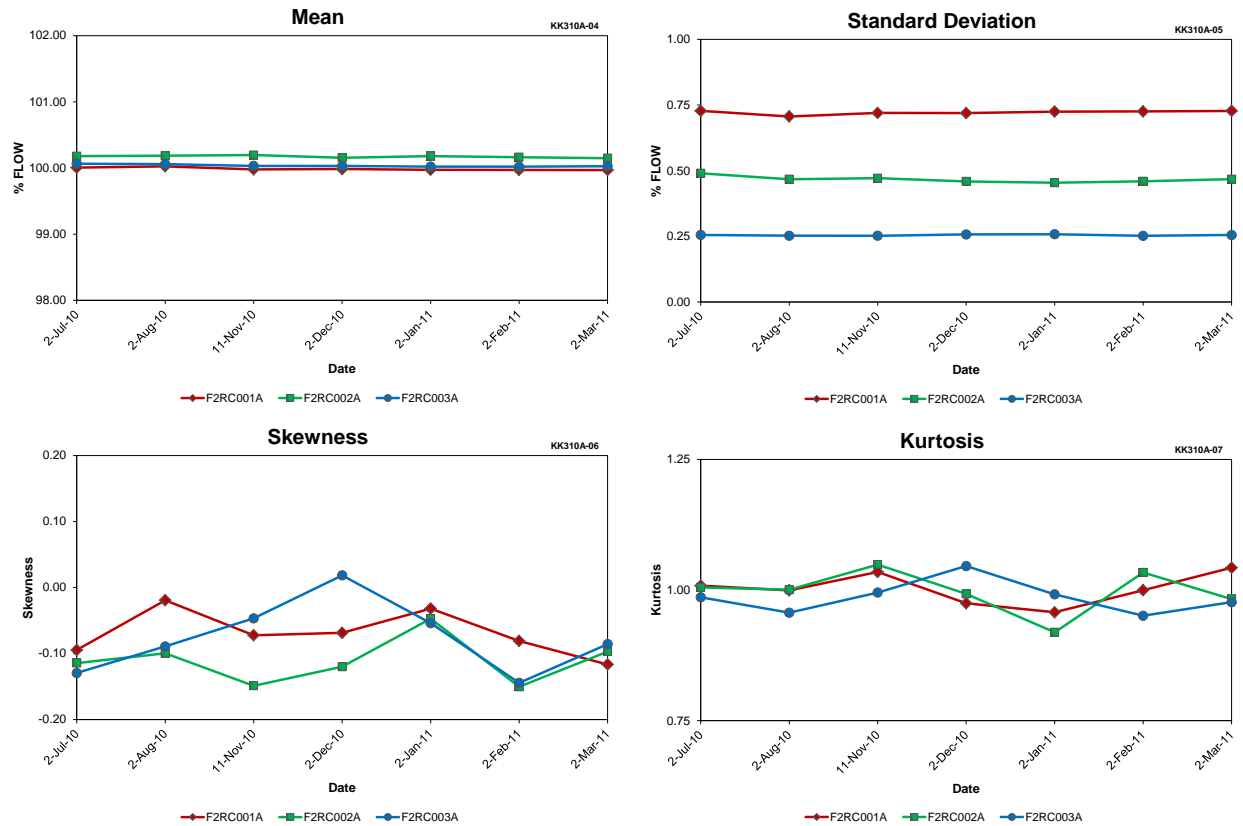
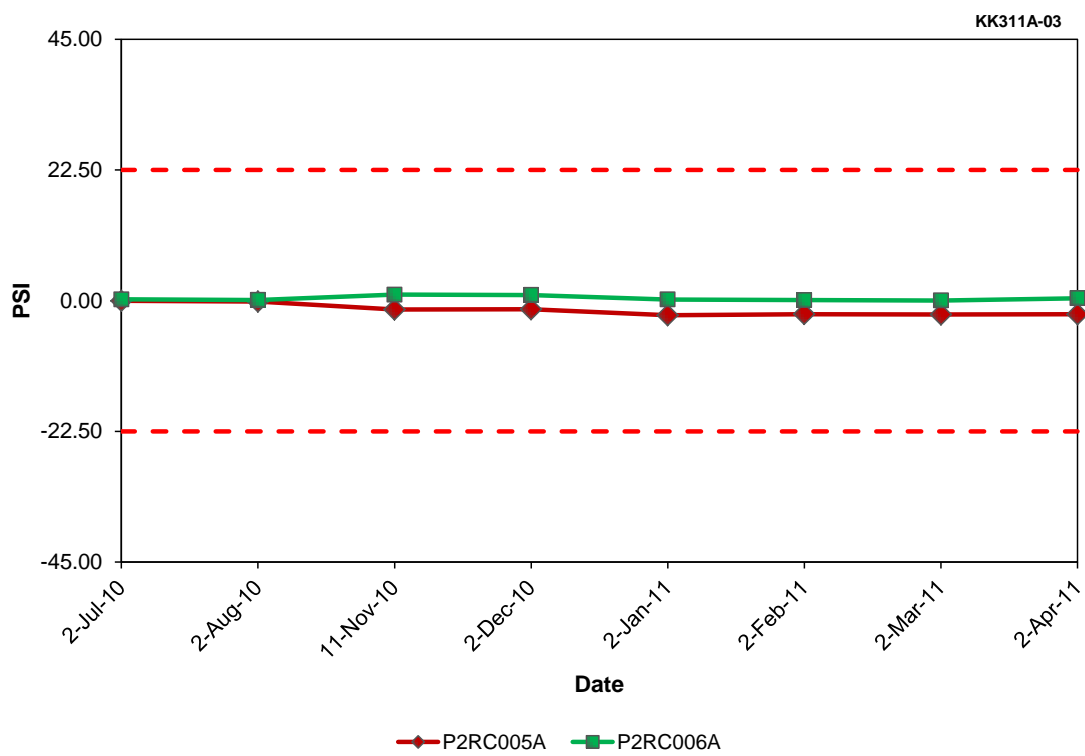


Figure F.92 RCS LOOP A FLOW Data Quality Statistics at North Anna Unit 2 (Cycle 21)

Table F.16 RCS LOOP A FLOW Data Quality for North Anna Unit 2 (Cycle 21)

Result Type	Tag Names		
	F2RC001A	F2RC002A	F2RC003A
Mean	99.99	100.17	100.04
Std. Dev.	0.72	0.47	0.25
Skewness	-0.07	-0.11	-0.08
Kurtosis	1.00	1.00	0.99



**Figure F.93 RCS WIDE RANGE PRESSURE Steady-State Residual AAKR at North Anna Unit 2 (Cycle 21)**

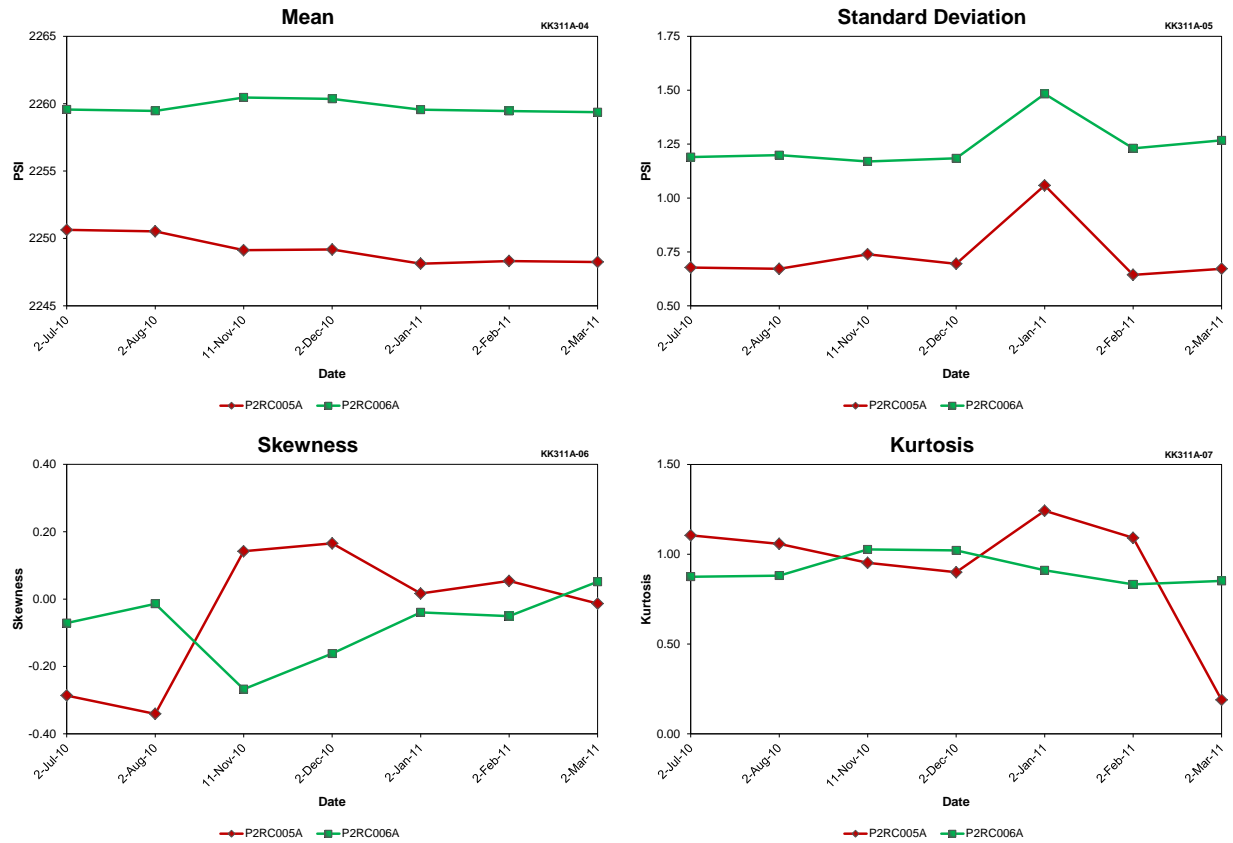
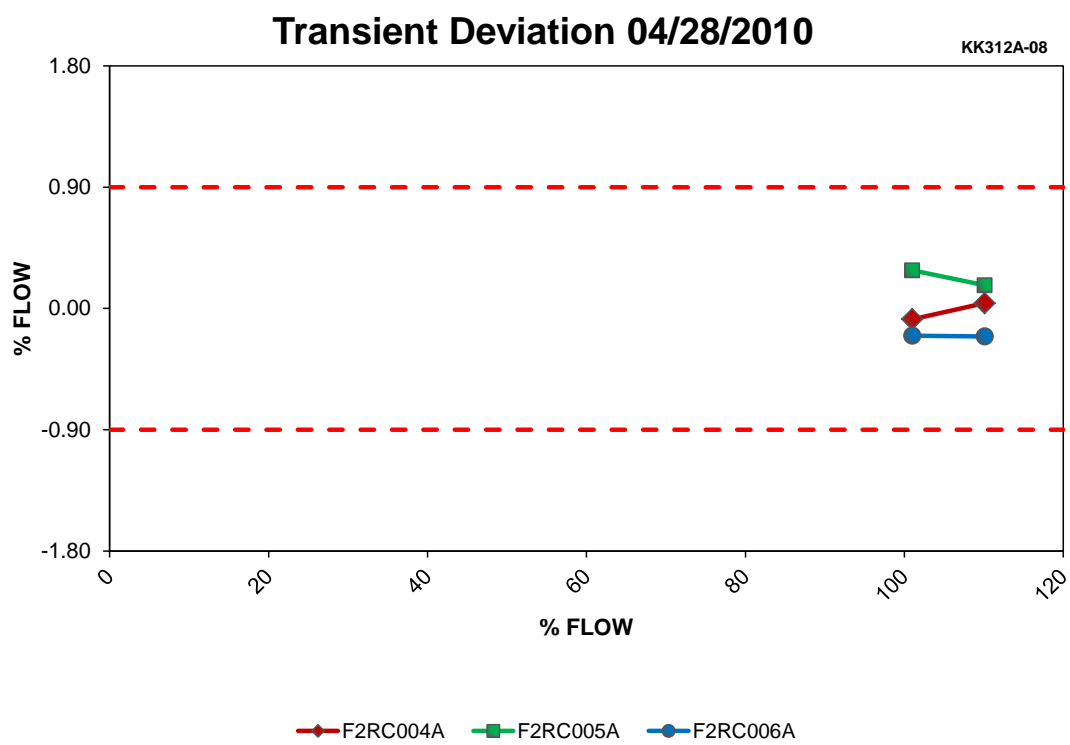


Figure F.94 RCS WIDE RANGE PRESSURE Data Quality Statistics at North Anna Unit 2 (Cycle 21)

Table F.17 RCS WIDE RANGE PRESSURE Data Quality for North Anna Unit 2 (Cycle 21)

Result Type	Tag Names	
	P2RC005A	P2RC006A
Mean	2249.17	2259.75
Std. Dev.	0.74	1.25
Skewness	-0.04	-0.08
Kurtosis	0.93	0.91



**Figure F.95 RCS LOOP B FLOW Transient Deviation at North Anna Unit 2 (Cycle 21)**

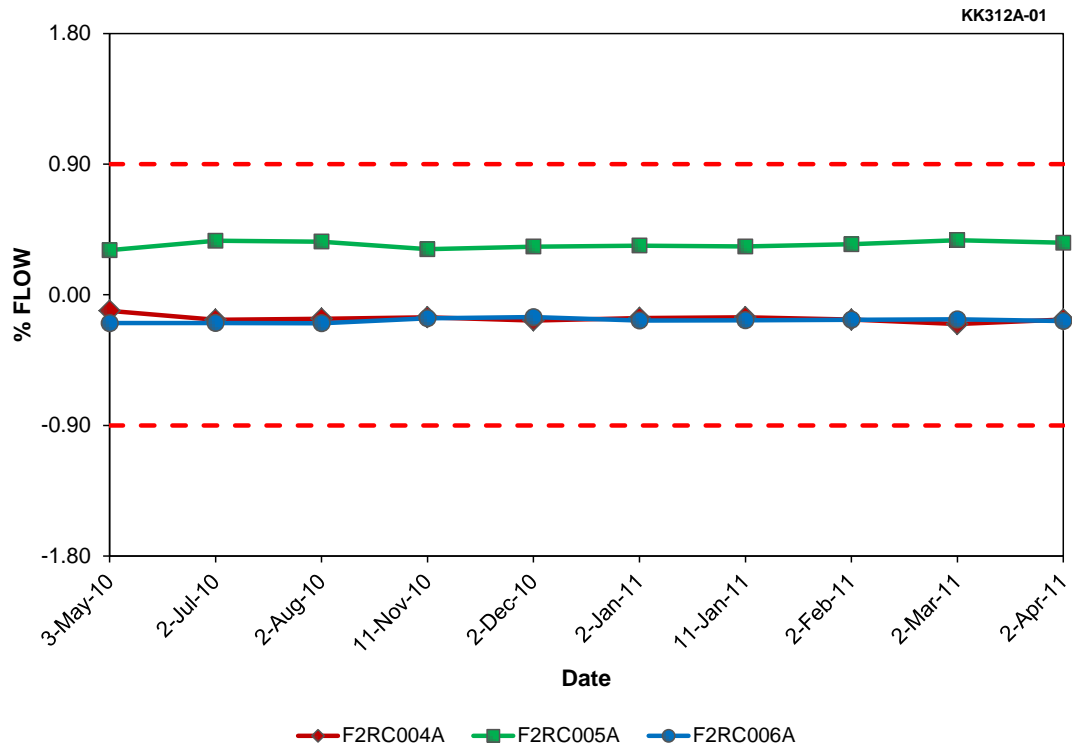


Figure F.96 RCS LOOP B FLOW Steady-State Deviation at North Anna Unit 2 (Cycle 21)

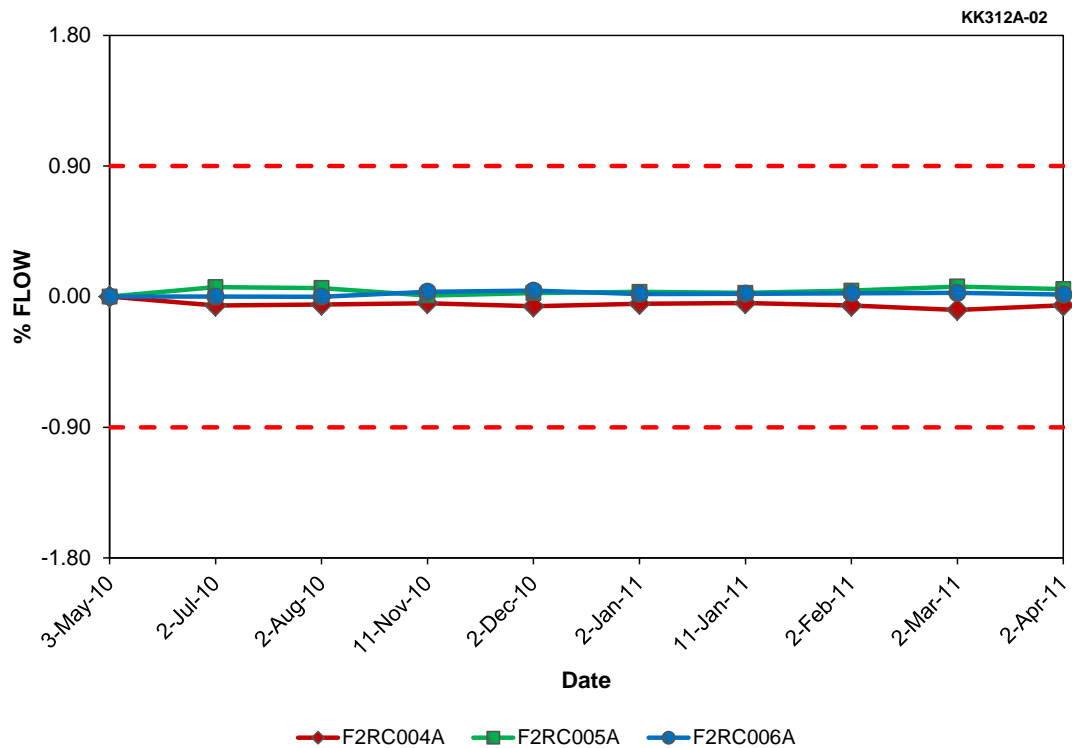


Figure F.97 RCS LOOP B FLOW Steady-State Drift at North Anna Unit 2 (Cycle 21)

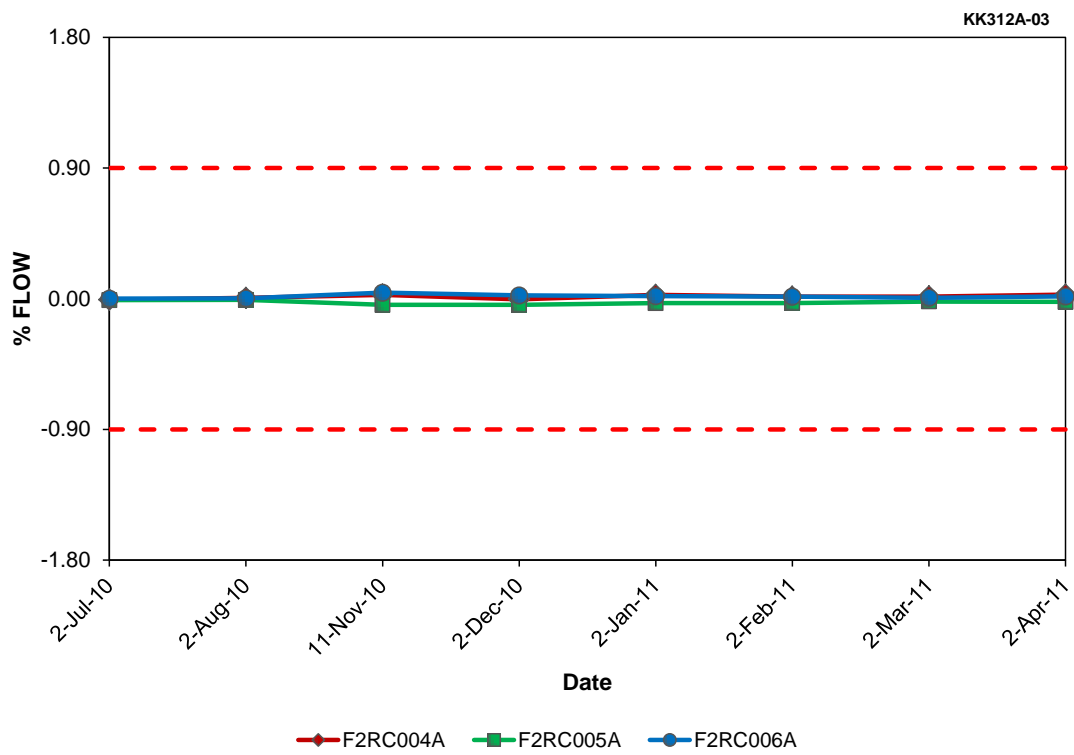


Figure F.98 RCS LOOP B FLOW Steady-State Residual AAKR at North Anna Unit 2 (Cycle 21)

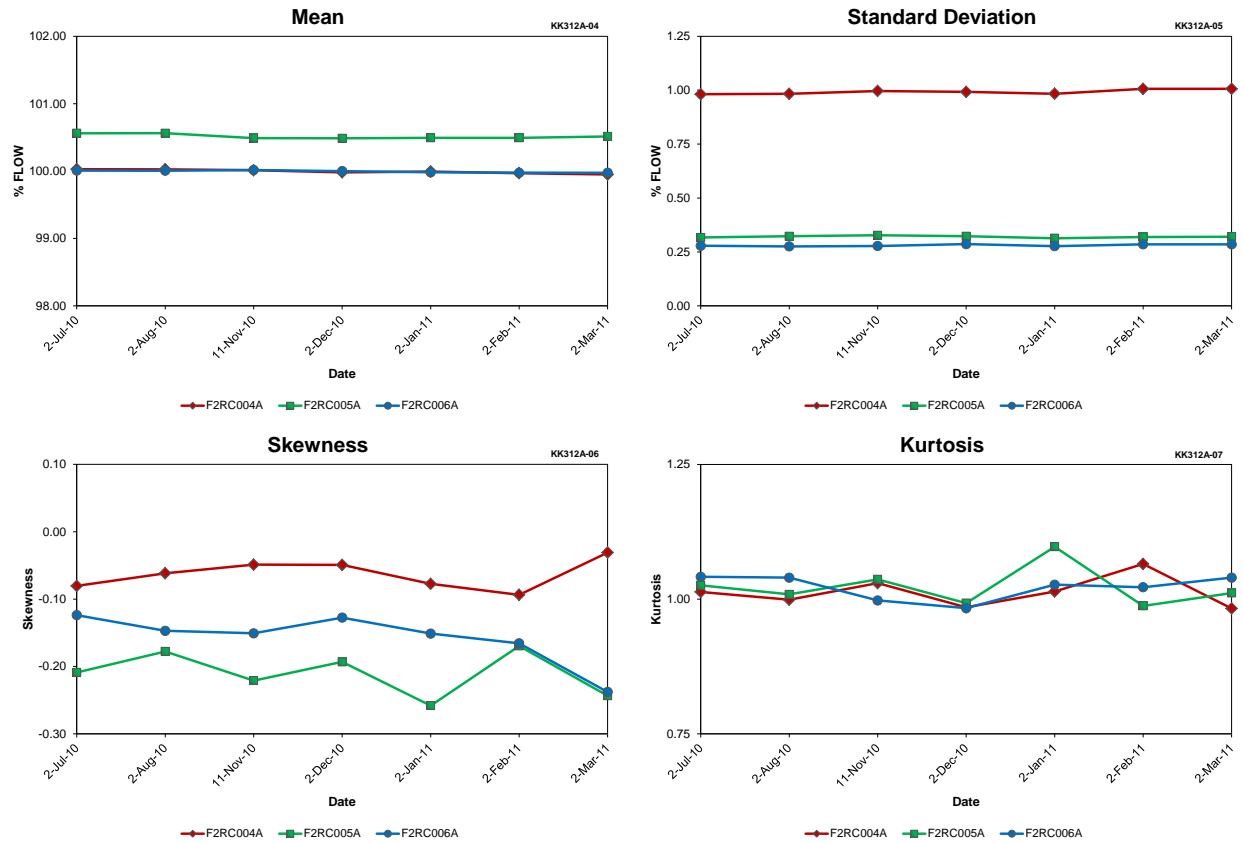


Figure F.99 RCS LOOP B FLOW Data Quality Statistics at North Anna Unit 2 (Cycle 21)

Table F.18 RCS LOOP B FLOW Data Quality for North Anna Unit 2 (Cycle 21)

Result Type	Tag Names		
	F2RC004A	F2RC005A	F2RC006A
Mean	99.99	100.51	99.99
Std. Dev.	0.99	0.32	0.28
Skewness	-0.06	-0.21	-0.16
Kurtosis	1.01	1.02	1.02



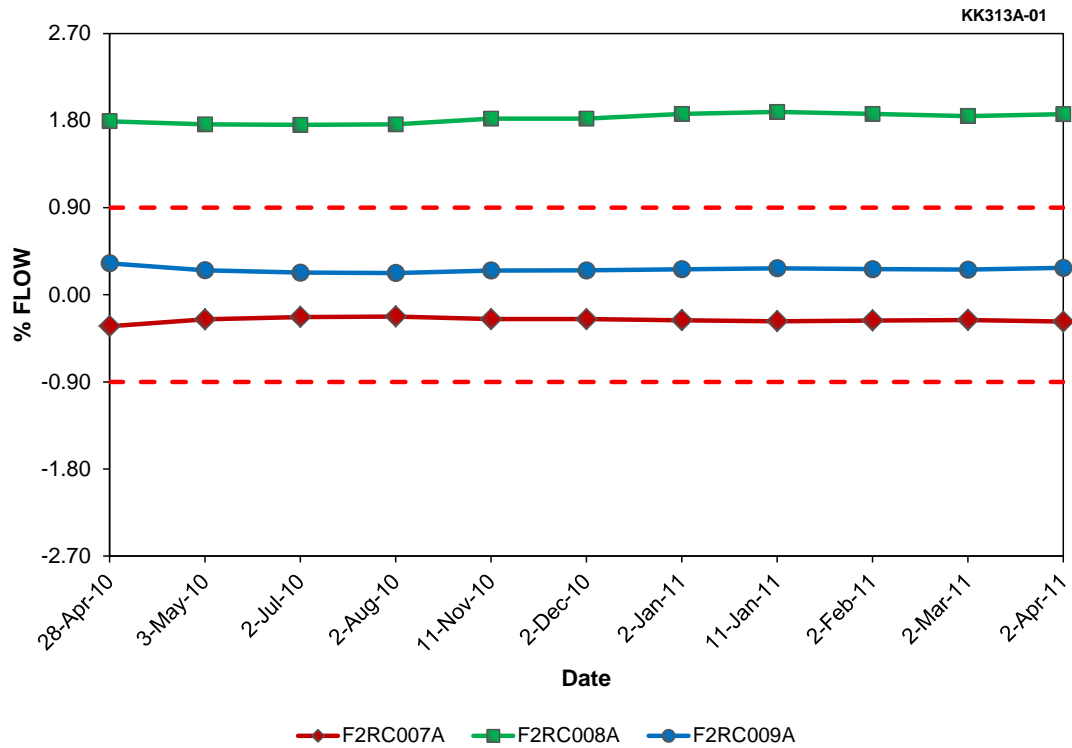


Figure F.100 RCS LOOP C FLOW Steady-State Deviation at North Anna Unit 2 (Cycle 21)

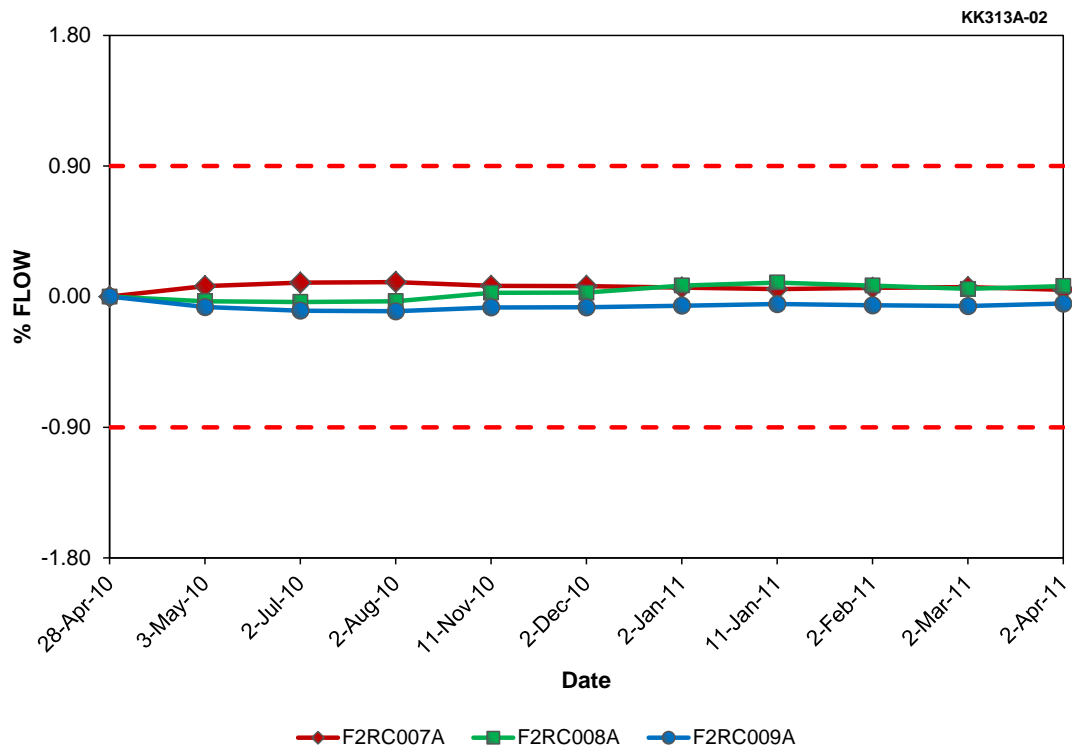
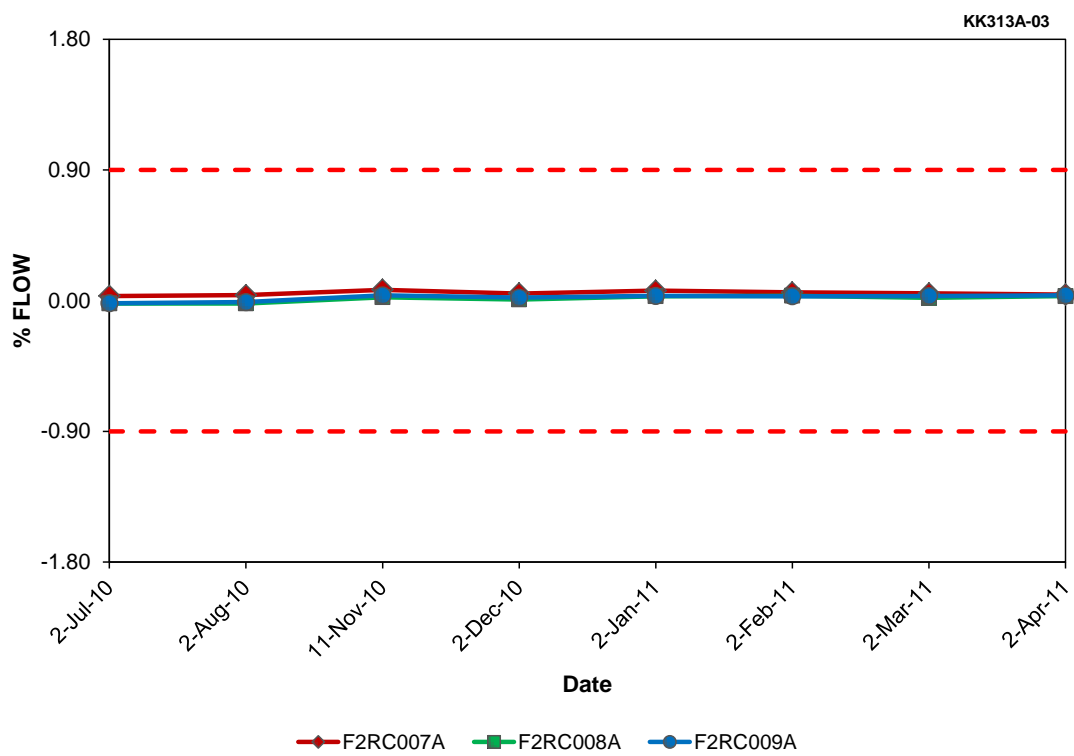
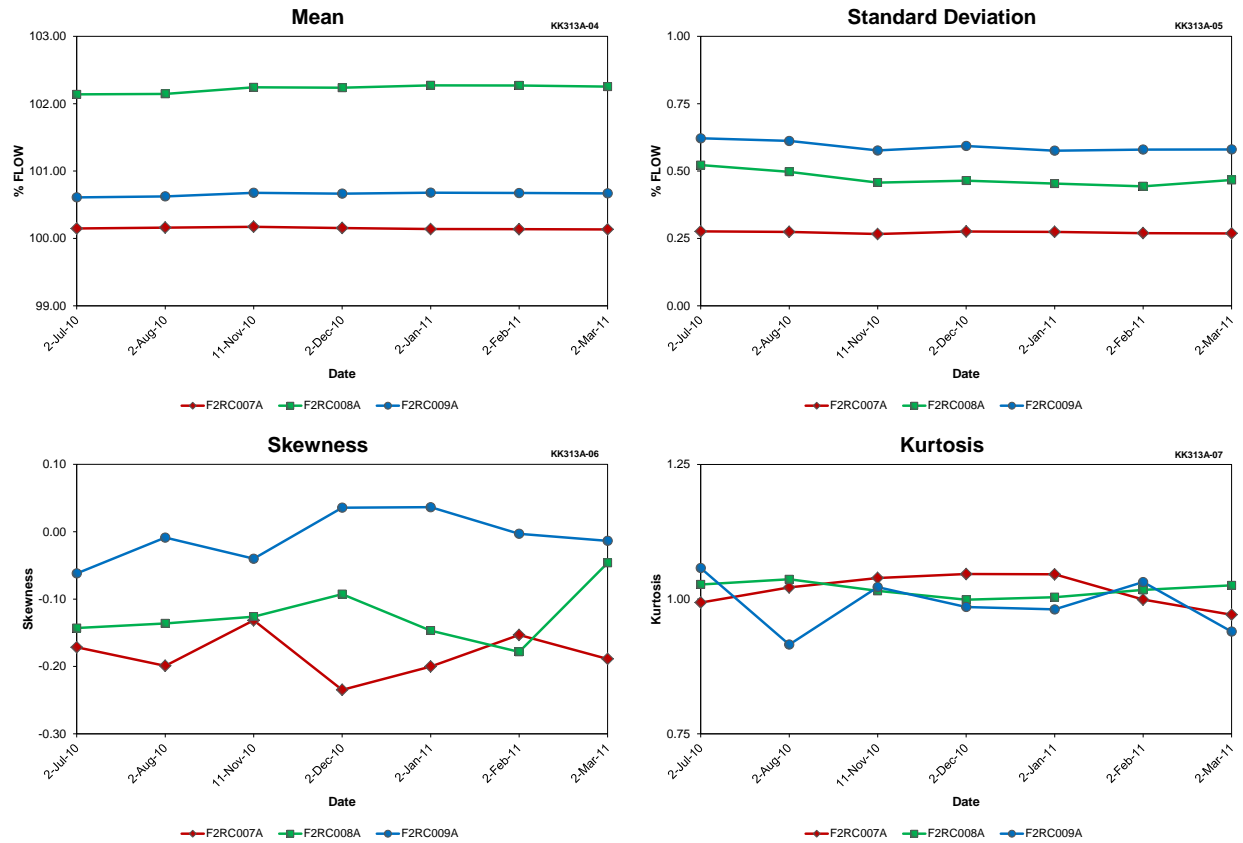


Figure F.101 RCS LOOP C FLOW Steady-State Drift at North Anna Unit 2 (Cycle 21)



**Figure F.102 RCS LOOP C FLOW Steady-State Residual AAKR at North Anna Unit 2 (Cycle 21)**



**Figure F.103 RCS LOOP C FLOW Data Quality Statistics at North Anna Unit 2 (Cycle 21)**

**Table F.19 RCS LOOP C FLOW Data Quality for North Anna Unit 2 (Cycle 21)**

Result Type	Tag Names		
	F2RC007A	F2RC008A	F2RC009A
Mean	100.15	102.22	100.66
Std. Dev.	0.27	0.47	0.59
Skewness	-0.18	-0.12	-0.01
Kurtosis	1.02	1.02	0.99



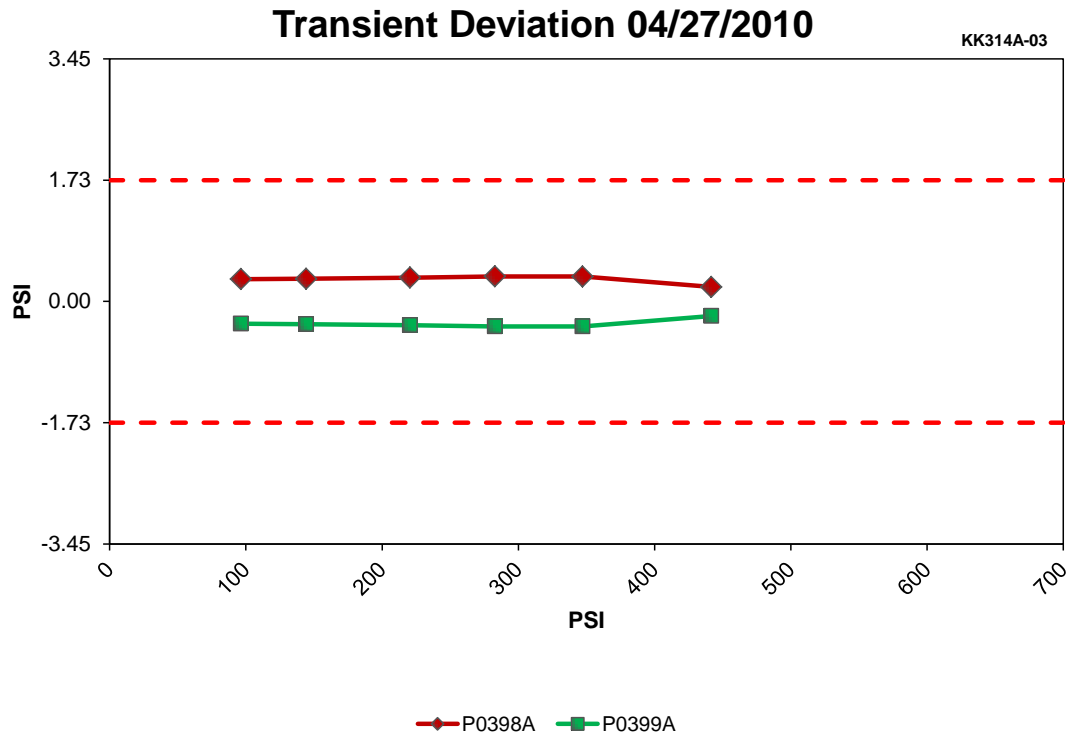


Figure F.104 TBIN FIRST STAGE PRESSURE Transient Deviation at North Anna Unit 2 (Cycle 21)

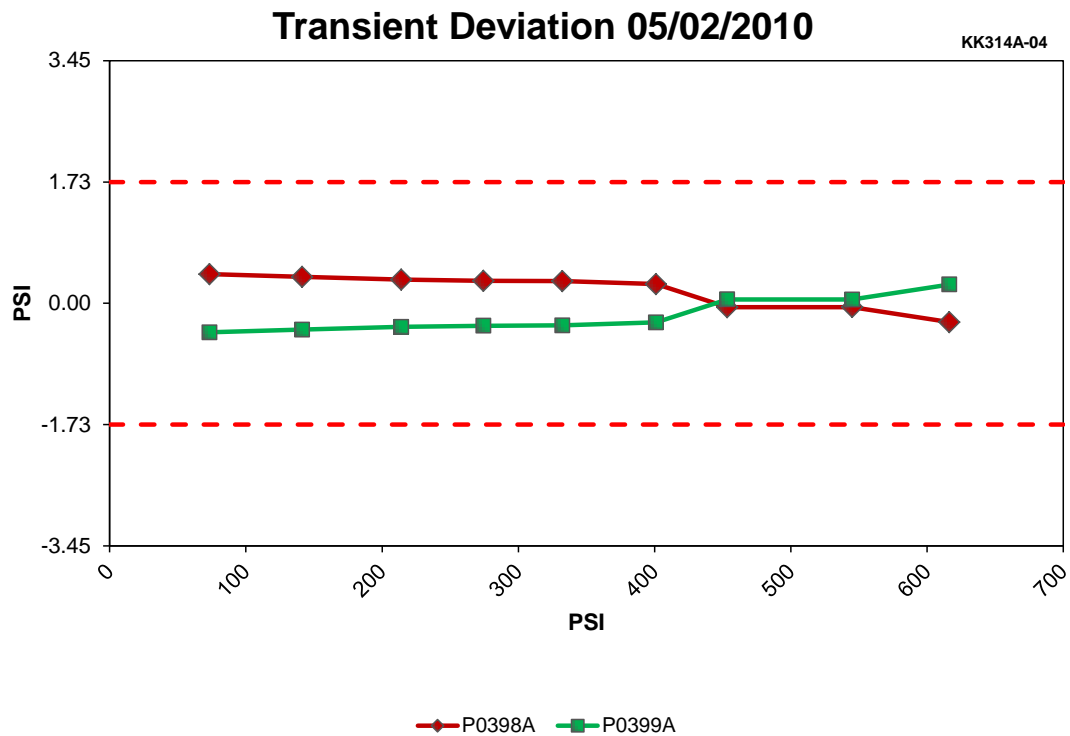


Figure F.105 TBIN FIRST STAGE PRESSURE Transient Deviation at North Anna Unit 2 (Cycle 21)

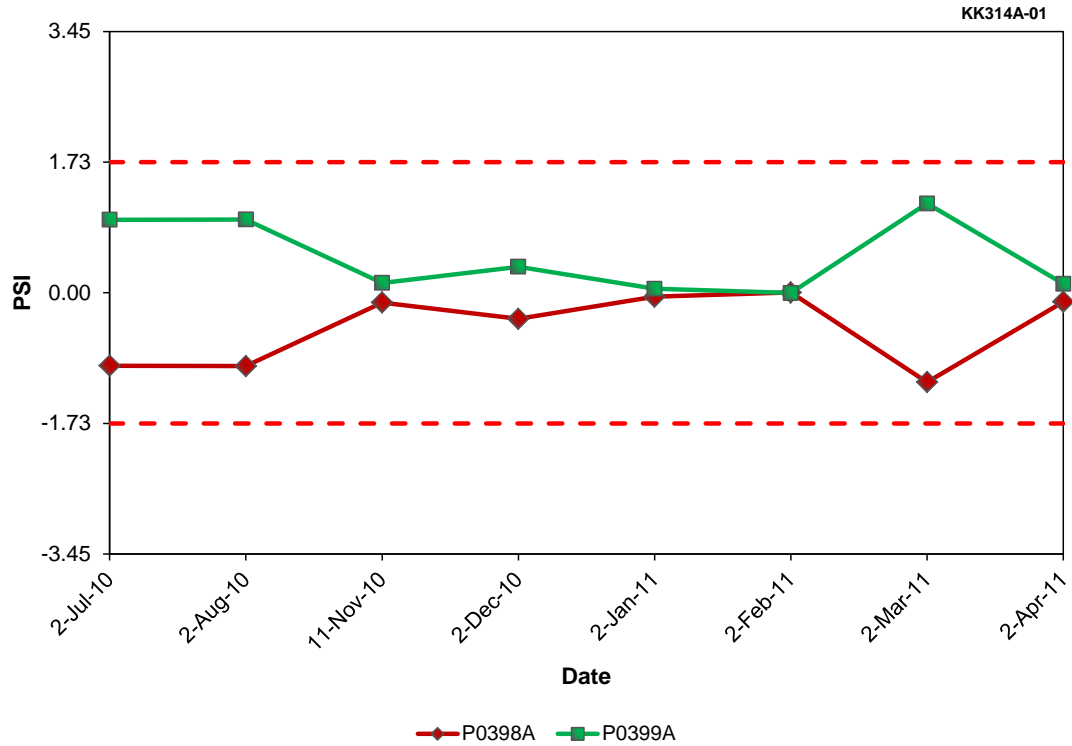


Figure F.106 TBIN FIRST STAGE PRESSURE Steady-State Deviation at North Anna Unit 2 (Cycle 21)

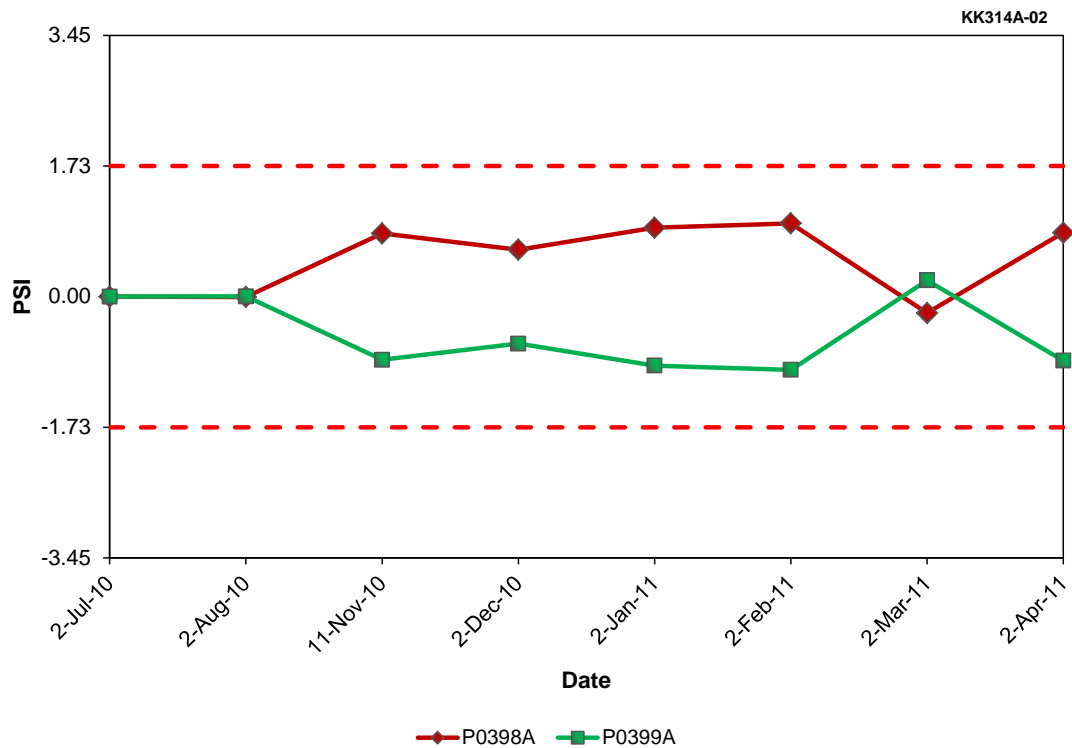


Figure F.107 TBIN FIRST STAGE PRESSURE Steady-State Drift at North Anna Unit 2 (Cycle 21)

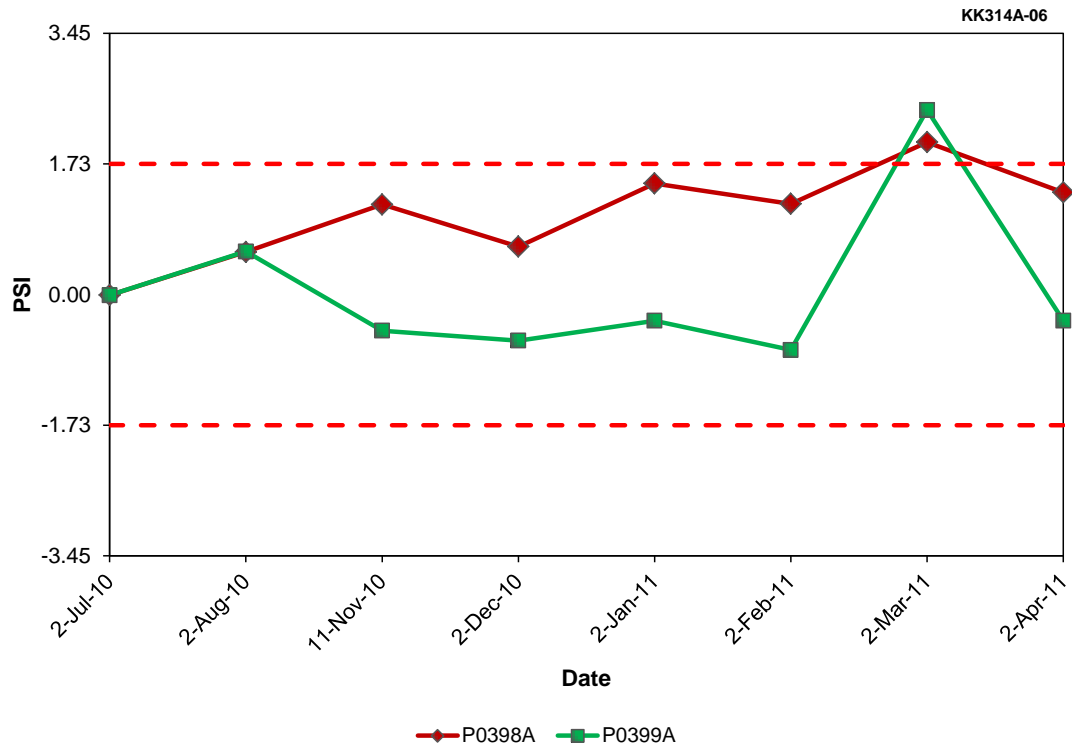


Figure F.108 TBIN FIRST STAGE PRESSURE Steady-State Residual AAKR at North Anna Unit 2 (Cycle 21)

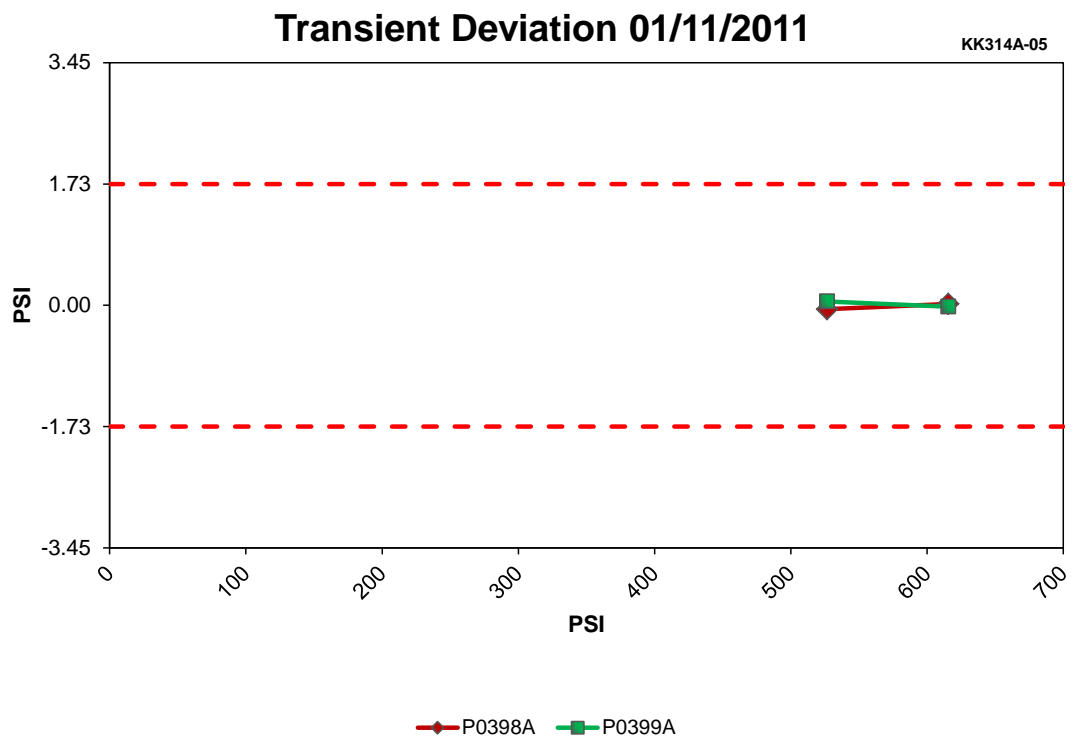
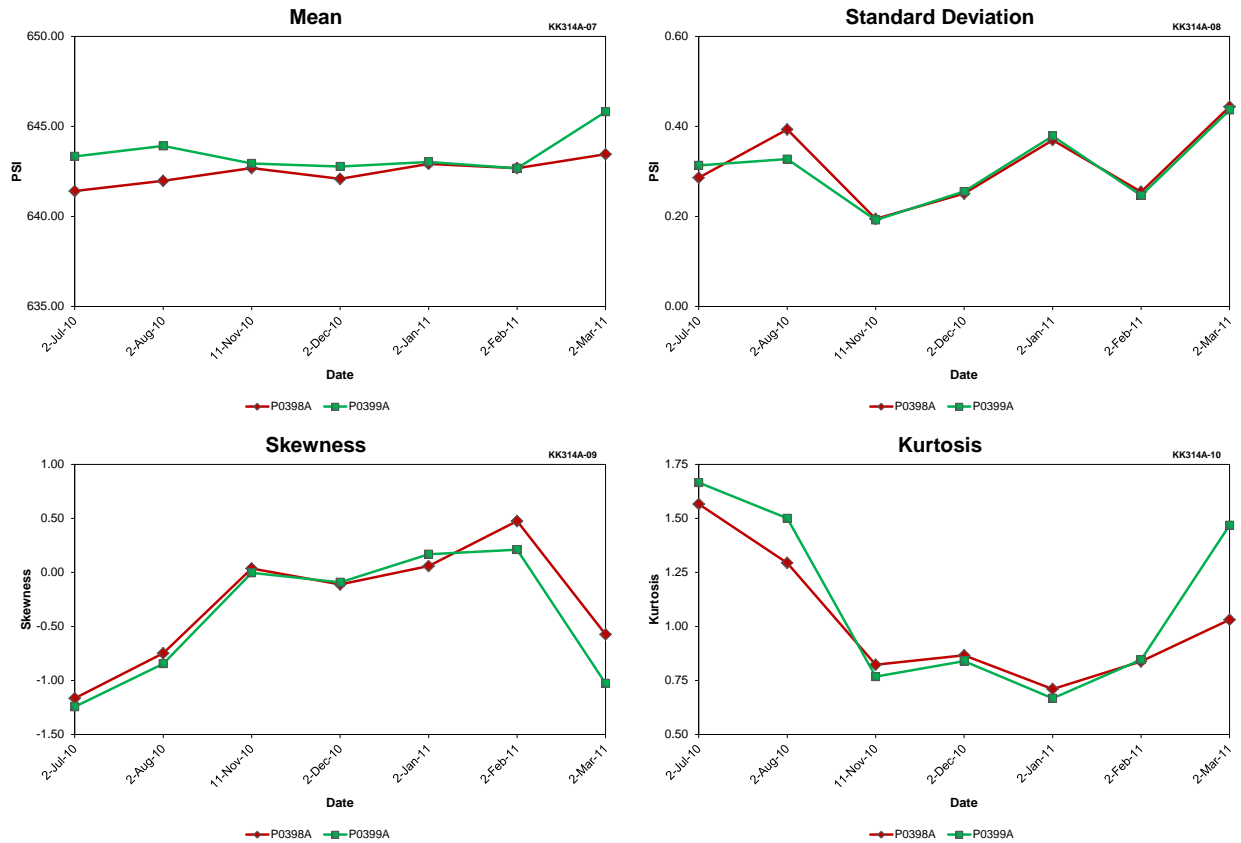


Figure F.109 TBIN FIRST STAGE PRESSURE Transient Deviation at North Anna Unit 2 (Cycle 21)



**Figure F.110 TBIN FIRST STAGE PRESSURE Data Quality Statistics at North Anna Unit 2 (Cycle 21)**

**Table F.20 TBIN FIRST STAGE PRESSURE Data Quality for North Anna Unit 2 (Cycle 21)**

Result Type	Tag Names	
	P0398A	P0399A
Mean	642.46	643.50
Std. Dev.	0.31	0.31
Skewness	-0.29	-0.40
Kurtosis	1.02	1.11





**(This end page is intentionally left blank)**

**Analysis and Measurement Services Corporation**  
**AMS Technology Center**  
**9119 Cross Park Drive**  
**Knoxville, TN 37923 USA**  
**Phone: (865) 691-1756**  
**Fax: (865) 691-9344**  
**Email: [info@ams-corp.com](mailto:info@ams-corp.com)**

