APPENDIX A CONNECTION ASSESSMENT

Engineering Connection Assessment

P1812 Suncor Forty Mile Wind Power Project 964L Connection

Forty Mile Granlea Wind GP Inc.

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Role	Name	Date	Signature
Prepared	Jian Shang, P.Eng.	Dec 1, 2018	Jian Shang
Reviewed	Jorge Villena, Ph.D	Dec 3, 2018	
Approved	Maz Mazadi, Ph.D, P.Eng.	Dec 3, 2018	Maz Mazadi

PROFESSIONAL ENGINEER ALBERTA
JIAN SHANG
Dec 3, 2018

APEGA
Permit-to-Practice P-8200

Alberta Electric System Operator, Calgary Place, 2500, 330 – 5th Avenue SW Calgary, AB T2P 0L4
Phone: 403-539-2450 Fax: 403-539-2949 www.aeso.ca @theaeso

NOTE:

The conclusions and recommendations in this report are based on the results presented in *Attachment A: Engineering Connection Assessment: Study Results*, which was prepared by a third party consultant in accordance with the AESO Connection Process.

The AESO has reviewed the *Engineering Connection Assessment: Study Results*, and finds it acceptable for the purpose of assessing the potential impacts of the proposed connection on the performance of the Alberta interconnected electric system.

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Attachment A: Engineering Connection Assessment Results

1 Introduction

This AESO Engineering Connection Assessment describes the engineering studies that were completed to assess the impact of the Project (as defined below) on the performance of the Alberta interconnected electric system (AIES). This report also provides the AESO's conclusions and recommendations based on the results of the engineering studies.

Attached to this Engineering Connection Assessment are the results of the engineering studies (see Attachment A) and the scope and methodology used to perform the studies (see Attachment A1 to Attachment A). These attachments provide details regarding the technical criteria, assumptions, and methods for performing these engineering studies, and the results of the engineering studies.

1.1 Project Overview

Forty Mile Granlea Wind GP Inc. (Market Participant), a wholly owned subsidiary of Suncor Energy Inc., has submitted a request for system access service to the Alberta Electric System Operator (AESO) to connect its proposed Suncor Forty Mile Wind Project (Facility) to the AIES. The Facility is a wind aggregated generating facility and includes a proposed collector station, to be designated the Granlea 1024S substation.

The Market Participant's request includes: a request for a new system access service in the area, with a Rate STS, *Supply Transmission Service*, contract capacity of 200 MW and a Rate DTS, *Demand Transmission Service*, contract capacity of 0.25 MW; and a request for transmission development (collectively, the Project).[1]

The scheduled in-service date (ISD) for the Project is June 1, 2020.

[1] The Market Participant submitted a second request for system access service to connect the Facility which will be addressed in the AESO's *Suncor Forty Mile Wind Power Project Whitla 251S Substation Connection Needs Identification Document*.

2 Assessment Scope

2.1 Objectives

The objectives of the AESO Engineering Connection Assessment are as follows:

- Assess the impact of the Project on the performance of the AIES.
- Evaluate Project connection alternatives and identify the AESO's preferred alternative.
- Recommend mitigation measures, if required, to reliably connect the Project to the AIES.
- Identify Project dependencies, including any Transmission Facility Owner (TFO) projects or AESO plans to expand or enhance the transmission system that must be completed prior to connection.

2.2 Existing System

Geographically, the Project is located in the AESO planning area Medicine Hat (Area 4), which is part of the AESO South Planning Region.

From a transmission system perspective, Medicine Hat (Area 4) consists primarily of a 138 kV and 240 kV transmission systems. Medicine Hat (Area 4) is connected to Brooks (Area 47) through the 240 kV transmission lines 1034L and 1035L, connected to Vauxhall (Area 52) through the 138 kV transmission line 879L and connected to Empress (Area 48) through the 138 kV transmission line 658L.

Existing constraints in the AESO's South Planning Region are managed in accordance with the procedures set out in Section 302.1 of the ISO rules, *Real Time Transmission Constraint Management* (TCM Rule).

2.3 Study Area

The Study Area for the Project consists of the AESO planning areas of Vauxhall (Area 52), Medicine Hat (Area 4), Empress (Area 48), and Brooks (Area 47), including the tie lines connecting these planning areas to the rest of the AIES. All transmission facilities within the Study Area were studied and monitored for violations of the Reliability Criteria (defined in Section 3.1 of Attachment A1).

3 Connection Alternatives

3.1 Overview

The AESO, in consultation with the TFO in the Study Area and the Market Participant, examined five transmission alternatives to meet the Market Participant's request for system access service, as detailed in Section 3.2.

3.2 Connection Alternatives Examined

Below is a description of the developments associated with the transmission alternatives that were examined for the Project.

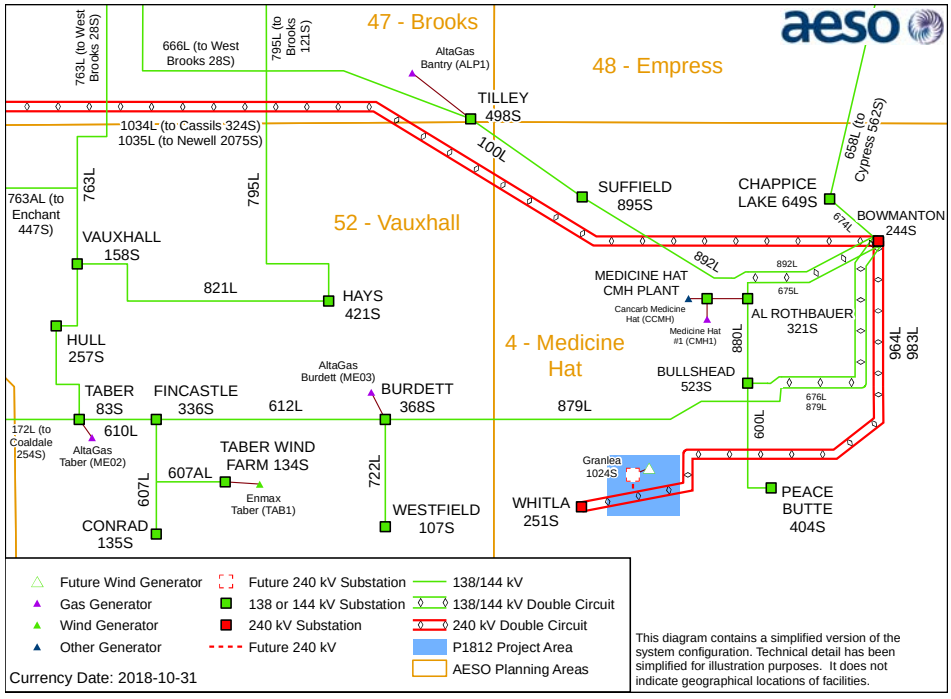
Alternative 1 – T-tap connection to the existing 240 kV transmission line 964L

This alternative includes the following developments:

- Add one 240 kV transmission circuit to connect the Facility to the existing 240 kV transmission line 964L between Bowmanton 244S and Whitla 251S substations using a T-tap configuration. The TFO has advised that Alternative 1 would require the addition of approximately 230 m of 240 kV circuit; and
- Add or modify associated equipment as required for the above transmission developments.

The proposed connection configuration is shown in Figure 3-1.

Figure 3-1: Connection Alternative 1



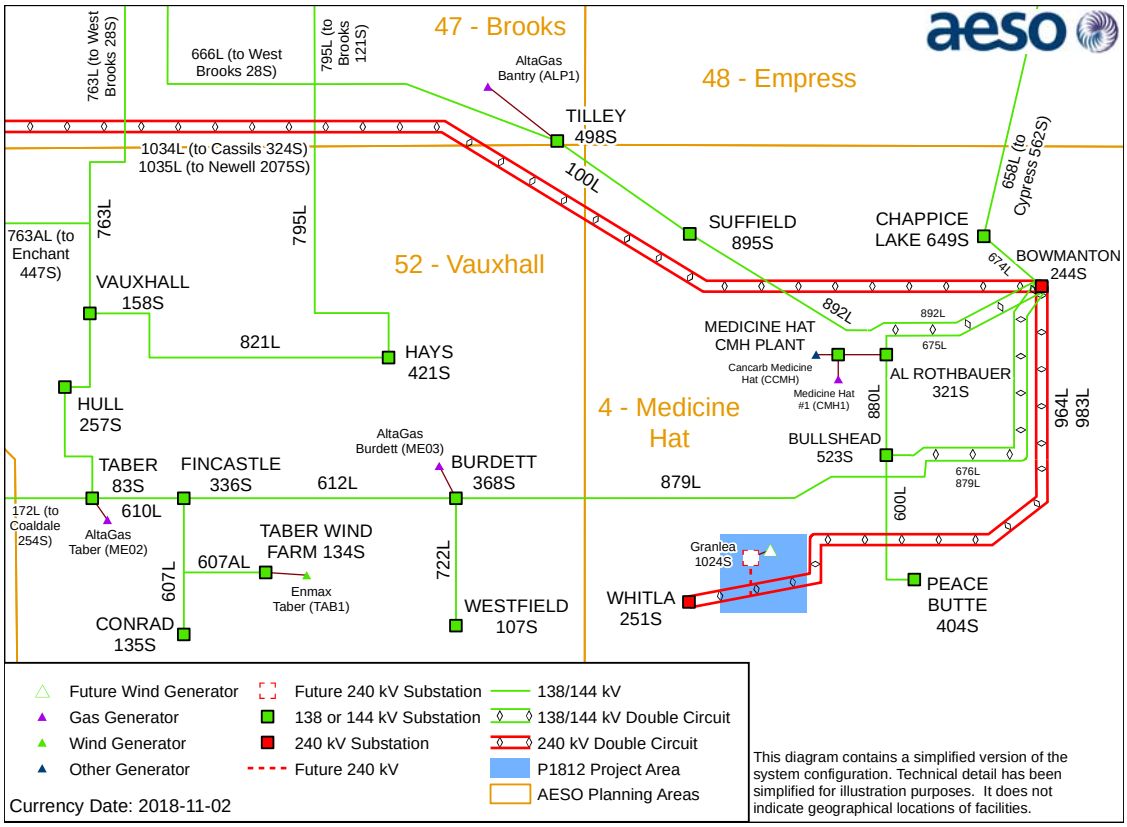
Alternative 2 – T-tap connection to the existing 240 kV transmission line 983L

This alternative includes the following developments:

- Add one 240 kV transmission circuit to connect the Facility to the existing 240 kV transmission line 983L between approved Elkwater 264S and Whitla 251S substations using a T-Tap configuration. The TFO has advised that Alternative 2 would require the addition of approximately 250 m of 240 kV circuit and a crossing of the existing 240 kV transmission line 964L; and
- Add or modify associated equipment as required for the above transmission developments.

The proposed connection configuration is shown in Figure 3-2.

Figure 3-2: Connection Alternative 2



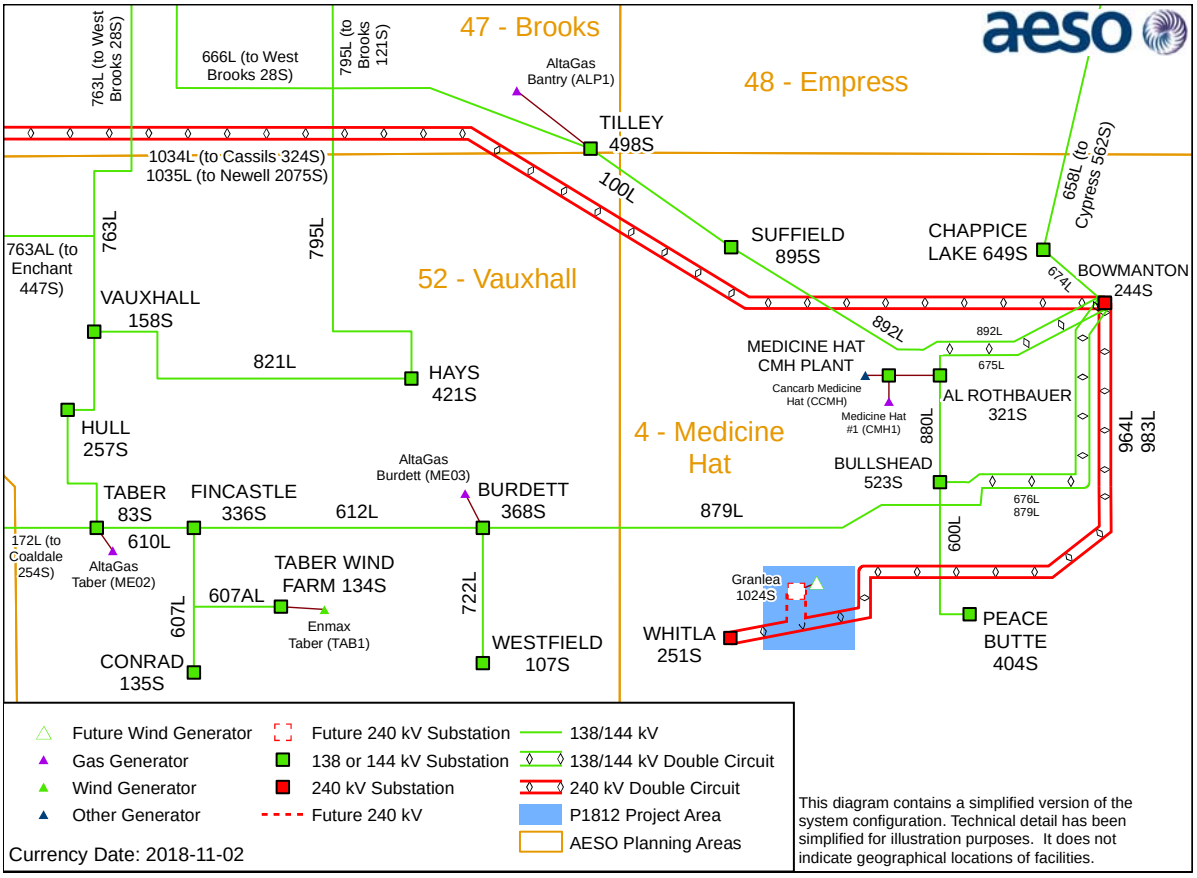
Alternative 3 – In-and-out connection to the existing 240 kV transmission line 964L

This alternative includes the following developments:

- Add a switching station with a minimum of three 240 kV circuit breakers;
- Add two 240 kV transmission circuits to connect the switching station to the existing 240 kV transmission line 964L between Bowmanton 244S and Whitla 251S substations using an in-and-out configuration. The TFO has advised that Alternative 3 would require the addition of two 240 kV circuits, each approximately 230 m in length;
- Connect the Facility to the switching station in a back-to-back configuration; and
- Add or modify associated equipment as required for the above transmission developments.

The proposed connection configuration is shown in Figure 3-3.

Figure 3-3: Connection Alternative 3



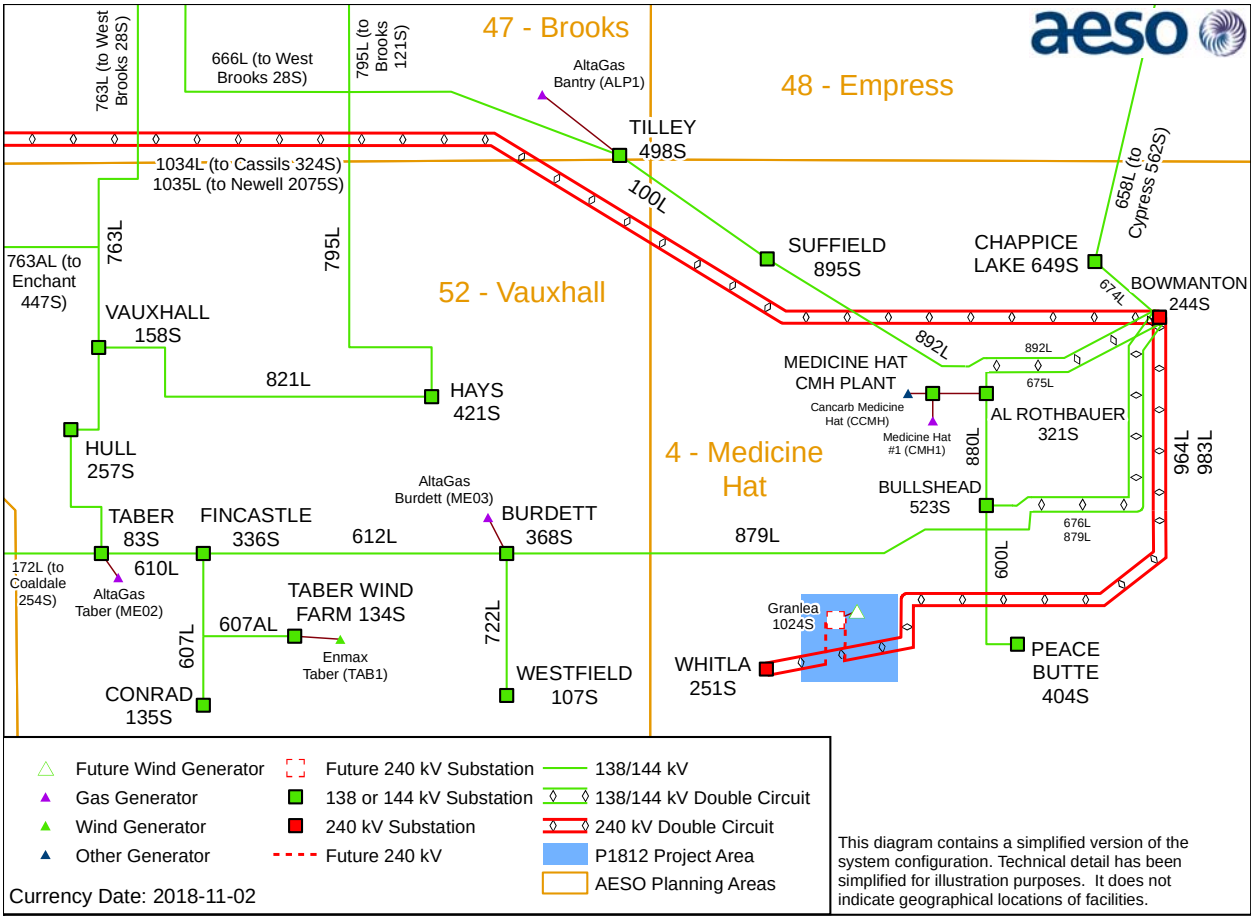
Alternative 4 – In-and-out connection to the existing 240 kV transmission line 983L

This alternative includes the following developments:

- Add a switching station with a minimum of three 240 kV circuit breakers;
- Add two 240 kV transmission circuits to connect the switching station to the existing 240 kV transmission line 983L between approved Elkwater 264S and Whitla 251S substations using an in-and-out configuration. The TFO has advised that Alternative 4 would require the addition of two 240 kV circuits, each approximately 250 m in length. In addition, this alternative would require crossing of the existing 240 kV transmission line 964L;
- Connect the Facility to the switching station in a back-to-back configuration; and
- Add or modify associated equipment as required for the above transmission developments.

The proposed connection configuration is shown in Figure 3-4.

Figure 3-4: Connection Alternative 4



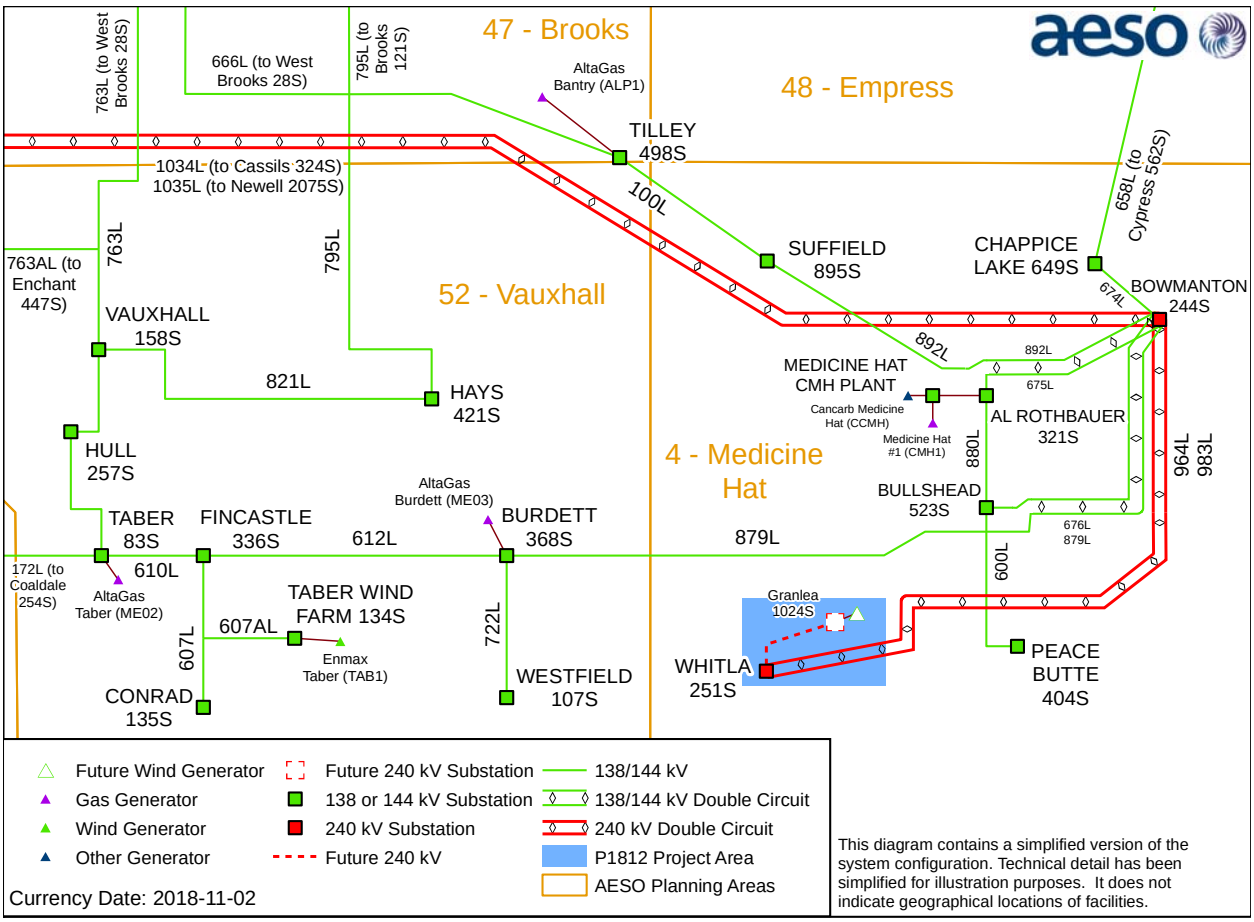
Alternative 5 – Radial connection to the existing Whitla 251S substation

This alternative includes the following developments:

- Add one 240 kV transmission circuit to connect the Facility to the existing 240 kV substation Whitla 251S using a radial configuration. The TFO has advised that Alternative 5 would require the addition of one 240 kV circuit, approximately 9.5 km in length;
- Modify the Whitla 251S substation by adding one 240 kV circuit breaker; and
- Add or modify associated equipment as required for the above transmission developments.

The proposed connection configuration is shown in Figure 3-5.

Figure 3-5: Connection Alternative 5



3.3 Connection Alternatives Selected for Further Study

Alternative 1 was selected for further study.

3.4 Connection Alternatives Not Selected for Further Study

Alternatives 2, 3, 4, and 5 would involve increased transmission development, and hence overall increased cost compared to Alternative 1. Therefore, Alternatives 2, 3, 4, and 5 were not selected for further study.

4 Assessment Approach

4.1 Standards, Criteria and Assumptions

A detailed description of the standards, criteria, and assumptions that were used for the connection assessment is provided in Attachment A (see Attachment A1).

4.2 Studies Performed

At the time of study, the scheduled ISD for the Project is June 1, 2020. Therefore, studies were performed using scenarios for 2020 Summer Peak (SP) and 2020 Summer Light (SL).

Short-circuit studies were performed using the 2027 SP scenario.

Table 4-1 lists the study scenarios. Post-Project scenarios reflect the requested Rate STS contract capacity of 200 MW at the Granlea 1024S substation.

Table 4-1: Connection Study Scenarios

Scenario No.	Year/Season	System Generation Dispatch Conditions	Scenario Name	Project Load (MW)	Project Generation (MW)
Pre-Project					
1	2020 Summer Peak (SP)	High Wind, Economic Coal High Import	2020 SP Pre-Project	0	0
2	2020 Summer Light (SL)	High Wind, Economic Coal Zero Import	2020 SL Pre-Project	0	0
Post-Project					
3	2020 SP	High Wind, Economic Coal High Import	2020 SP Post-Project	0	200
4	2020 SL	High Wind, Economic Coal Zero Import	2020 SL Post-Project	0	200
5	2027 SP	All generators in-service	2027 SP Post-Project	0	200

The AESO Planning Region load forecasts used for the connection studies were based on the *AESO 2017 Long Term Outlook* (2017 LTO).

4.2.1 Power Flow Studies

The purpose of the power flow studies is to identify and quantify any thermal and voltage criteria violations in the Study Area.

In addition, power flow studies are also used to identify point of delivery (POD) low voltage bus voltage deviations beyond the limits listed in Table 3-1 of Attachment A1.[2]

Power flow studies were performed for 2020 SP and 2020 SL pre-Project scenarios, and for 2020 SP and 2020 SL post-Project scenarios.

4.2.2 Transient Stability Studies

The purpose of the transient stability studies is to assess the post-Project stability of the transmission system after three-phase to ground faults are applied on selected transmission lines in the Study Area.

Transient stability studies were performed for 2020 SP and 2020 SL post-Project scenarios. As some transient stability issues were observed in post-project scenarios, transient stability analysis was also performed for the corresponding pre-Project scenarios.

4.2.3 Short-Circuit Current Level Studies

The purpose of short-circuit current level studies is to determine the expected system short-circuit current levels in the vicinity of the Project.

Short circuit studies were performed for the 2020 SP pre-Project scenario and for 2020 SP and 2027 SP post-Project scenarios.

4.3 Generation Assumption Adjustment

To alleviate observed low voltage criteria violations under Category A conditions under the original generation assumption described in Section 4.2.4 of Attachment A1 of Attachment A, the AESO adjusted the generation assumptions for planned renewable generation projects along the 240 kV transmission path between Cassils 324S, Bowmanton 244S and Whitla 251S, as described in Section 2.1 of Attachment A.

4.4 Mitigation Measure Development and Evaluation

As explained in Section 6 of Attachment A1, mitigation measures were developed to address system performance issues that were identified in the post-Project scenarios. Studies performed to assess the effectiveness of mitigation measures are briefly outlined below.

4.4.1 Post-Mitigation Studies

Power flow and transient stability studies were performed to assess the impact of the Project on the performance of the AIES following implementation of the AESO's proposed mitigation measures.

[2] The AESO's desired post-contingency voltage deviations for low voltage busses represent guidelines rather than criteria. A POD bus voltage deviation that exceeds the desired limits shown in Table 3-1 of Attachment A1 does not represent a Reliability Criteria violation. Mitigation measures would not be developed to specifically address POD bus voltage deviations that exceed the desired values in Table 3-1 of Attachment A1.

5 Results

5.1 Initial Post Project Study Results

During initial post-Project power flow studies, voltage criteria violations were observed at Bowmanton 244S substation and the approved Elkwater 264S substation under Category A conditions. The observed low voltages can be attributed to high levels of generation flow through the 240 kV transmission path between Cassils 324S, Bowmanton 244S and Whitla 251S.

At this time, no renewable generation projects are connected to the 240 kV transmission path between Cassils 324S, Bowmanton 244S and Whitla 251S. The actual impacts of the planned renewable generation projects connecting to this 240 kV transmission path, including the Facility, will depend on the energization timing of these planned generation facilities. The AESO will ensure plans are in place when impacts of the Suncor Forty Mile Wind Power Project and the other planned renewable generation connection projects in the area become certain.

To alleviate the observed low voltage criteria violations under Category A conditions, the AESO adjusted the generation assumptions for planned renewable generation projects along the 240 kV transmission path between Cassils 324S, Bowmanton 244S and Whitla 251S (see Section 4.3) to approximately 1,000 MW. All subsequent studies were completed based on these adjusted generation assumptions. The results of these studies are described in Sections 5.2 to 5.5 below.

5.2 Overview

The Reliability Criteria violations observed during the connection assessment studies, and the proposed mitigation measures are summarized in Table 5-1. Detailed study results are provided in Attachment A.

- Section 5.3 includes an overview of the pre-Project studies results.
- Section 5.4 includes an overview of the post-Project studies results.
- Section 5.5 includes a description of the proposed mitigation measures to address observed Reliability Criteria violations and an overview of the post-mitigation studies results.

Table 5-1: Summary of Reliability Criteria Violations, Project Impact and Mitigation Measures

Scenario	Type of Reliability Criteria Violation		Contingency (System Element Lost)	Details of Violation	Project Impact	Pre-Project Mitigation Measures	Post-Project Mitigation Measures
	Pre-Project	Post-Project					
2020 SP	Voltage stability and transient stability	Voltage stability and transient stability	1034L (Bowmanton 244S - Cassils 324S)	Area voltage collapse and area generators unstable	Materially increased violation	Planned RAS for 1034L Contingency[a]	Modify Planned RAS for 1034L Contingency[b]
			1035L (Bowmanton 244S - Newell 2075S)	Area voltage collapse and area generators unstable	Materially increased violation	Planned RAS for 1035L Contingency[a]	Modify Planned RAS for 1035L Contingency[b]
			1074L (Bowmanton 244S – approved Elkwater 264S)	Area voltage collapse and area generators unstable	Materially increased violation	Planned RAS for 1074L Contingency[a]	Modify Planned RAS for 1074L Contingency[b]
	None	Transient stability	983L (approved Elkwater 264S - Whitla 251S)	Area generators unstable	Materially increased violation	None	New RAS for 983L Contingency
	Thermal - above normal rating	Thermal - above normal rating	1088L (Cassils 324S - Newell 2075S)	1087L (Cassils 324S - Newell 2075S)	No impact	Existing RAS 149	Existing RAS 149
2020 SL	Transient stability	Voltage stability and transient stability	1034L (Bowmanton 244S - Cassils 324S)	Area voltage collapse and area generators unstable	Materially increased violation	Planned RAS for 1034L Contingency	Modify Planned RAS for 1034L Contingency[b]
	Transient stability		1035L (Bowmanton 244S - Newell 2075S)	Area voltage collapse and area generators unstable	Materially increased violation	Planned RAS for 1035L Contingency	Modify Planned RAS for 1035L Contingency[b]
	Voltage stability and transient stability		1074L (Bowmanton 244S – approved Elkwater 264S)	Area voltage collapse and area generators unstable	Materially increased violation	Planned RAS for 1074L Contingency	Modify Planned RAS for 1074L Contingency[b]
	None	Transient stability	983L (approved Elkwater 264S - Whitla 251S)	Area generators unstable	Materially increased violation	None	New RAS for 983L Contingency

Notes:

[a] Planned RASs for 1034L, 1035L and 1074L contingencies are RASs proposed for the planned Suncor Forty Mile Wind Power Project Whitla 251S Substation Connection.

[b] "Modify" refers to adding the Project to the logic of the respective RAS

5.3 Pre-Project Study Results

5.3.1 Category A Conditions

No Reliability Criteria violations were observed under the Category A conditions (i.e., all elements in service) for any of the pre-Project scenarios.

The short-circuit fault levels were found to be within the typical capabilities of the nearby facilities.

5.3.2 Category B Conditions

The pre-Project power flow studies identified thermal and voltage criteria violations under certain Category B conditions (i.e., loss of a single system element). No POD bus voltage deviations were observed.

Pre-Project transient stability studies also identified transient stability criteria violations under certain Category B conditions.

5.4 Post-Project Study Results

5.4.1 Category A Conditions

No Reliability Criteria violations were observed under Category A conditions for any post-Project scenarios. Post-Project short-circuit fault levels were not significantly higher than pre-Project levels. The long term short circuit levels were found to be within the designed capabilities of the nearby facilities.

5.4.2 Category B Conditions

Post-Project power flow studies identified thermal and voltage criteria violations under certain Category B conditions. No POD bus voltage deviations were observed.

Post-Project transient stability studies also identified transient stability criteria violations under certain Category B conditions.

5.5 Mitigation Measures

This section discusses the AESO's proposed mitigation measures to address the system performance issues that were identified in the pre-Project and post-Project scenarios.

5.5.1 Pre-Project

Prior to connection of the Project, the observed thermal criteria violation on 1087L can be mitigated by using existing RAS 149. The observed voltage stability and transient stability criteria violations can be mitigated by the RASs planned for Suncor Forty Mile Wind Power Project Whitla 251S Substation Connection (Planned RAS for 1034L Contingency, Planned RAS for 1035L Contingency, and Planned RAS for 1074L Contingency).

5.5.2 Post-Project

After connection of the Project, the observed thermal criteria violation on 1087L can continue to be mitigated by using existing RAS 149. The remaining Reliability Criteria violations can be mitigated by modification of three planned RASs and the addition of one new RAS:

- The voltage instability and transient instability violations following the loss of 1034L can be mitigated by modification of planned RAS for 1034L contingency by including the Project in the RAS logic.
- The voltage instability and transient instability violations following the loss of 1035L can be mitigated by modification of planned RAS for 1035L contingency by including the Project in the RAS logic.
- The voltage instability and transient instability violations following the loss of 1074L can be mitigated by modification of planned RAS for 1074L contingency by including the Project in the RAS logic.
- The transient instability violations following the loss of 983L can be mitigated by a new RAS, referred to as the “new RAS for 983L contingency”.

5.5.3 Post-Project Mitigation Study Results

Under Category B conditions, all of the observed Reliability Criteria violations requiring RAS were mitigated. Please refer to Section 6.3 of Attachment A for the detailed evaluation results.

6 Project Dependencies

The Project does not require the completion of any other AESO plans to expand or enhance the transmission system prior to connection.

7 Conclusions and Recommendations

The study results identified a capacity of approximately 1,000 MW on the 240 kV transmission path between Cassils 324S, Bowmanton 244S and Whita 251S before Reliability Criteria violations are observed under the Category A condition. At this time, no renewable generation projects are connected to the 240 kV transmission path between Cassils 324S, Bowmanton 244S and Whitla 251S. The actual impacts of the planned renewable generation projects, including the Facility, connecting to this 240 kV transmission path will depend on the energization timing of these planned generation facilities.

Based on the study results, Alternative 1 is technically viable. The connection assessment identified a number of pre-Project and post-Project system performance issues under certain Category B conditions.

These system performance issues can be mitigated through the modification of planned RASs for 1034L, 1035L and 1074L contingencies, the addition of a new RAS for 983L contingency, and existing RAS 149. With implementation of these mitigation measures, connecting the Project with the preferred alternative does not adversely affect the performance of the AIES.

It is recommended to proceed with the Project using Alternative 1 as the preferred option to respond to the Market Participant's request for system access service. It is also recommended to modify planned RASs for 1034L, 1035L and 1074L contingencies, add a new RAS for 983L contingency, and use the existing RAS 149 to mitigate the identified system performance issues under certain Category B conditions.

Alternative 1 involves one 240 kV transmission circuit to connect the Facility to the existing 240 kV transmission line 964L using a T-tap configuration. The conductor used for the 240 kV circuit should have a minimum thermal rating the same as the existing 240 kV transmission line 964L.

Attachment A:
Engineering Connection Assessment Results

Engineering Connection Assessment: Study Results

P1812 Suncor Forty Mile Wind Power Project 964L Connection

Forty Mile Granlea Wind GP Inc.

Date: November 29, 2018

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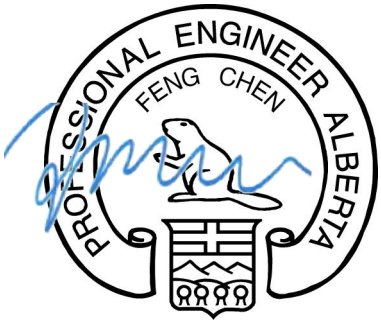
Role	Name	Date	Signature
Prepared	Bo Shi, E. I. T	Nov 29, 2018	
Reviewed	Feng Chen, P. Eng	Nov 29, 2018	
Approved	Feng Chen, P. Eng	Nov 29, 2018	



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1 Introduction

This report presents the results of the engineering studies that were completed by CF Power Ltd. (the Studies Consultant) to assess the impact of the Project (as defined in Attachment A1: AESO Engineering Connection Assessment Scope) on the performance of the Alberta interconnected electric system (AIES). The studies were performed in accordance with Attachment A1: AESO Engineering Connection Assessment: Study Scope, which was prepared by the AESO.

The power system network analysis tool that was used for the studies in this connection assessment was PSS/E version 33.

2 Initial Post-Project Study Results

During initial post-Project power flow studies, voltage criteria violations were observed at Bowmanton 244S substation and the approved Elkwater 264S substation under Category A condition, as shown in Table 2-1.

Table 2-1: Post-Project Key Buses Voltages under Category A condition

Scenario No. and Name		Substation Name and No.	Nominal Voltage (kV)	Normal Minimum Voltage (kV)	Post-Project Observed Voltage (kV)
3	2020 SP	Bowmanton 244S	138	135	131.1
		Bowmanton 244S	240	234	224.9
		Approved Elkwater 264S	240	234	232.7
4	2020 SL	Bowmanton 244S	138	135	132.0

2.1 Generation Assumption Adjustment

To alleviate the observed voltage criteria violations under Category A conditions, the AESO adjusted the generation assumptions for planned renewable generation projects in the Study Area. The total generation dispatch for planned renewable projects along the 240 kV transmission path between Cassils 324S, Bowmanton 244S and Whitla 251S was reduced by approximately 100 MW for both pre-Project and post-Project scenarios. For the purposes of this study, Capital Power Whitla Wind Phase 2 (originally dispatched to 97.2 MW output) was re-dispatched to 0. Meanwhile, an equivalent amount of generation (97.2 MW) was dispatched from the Riverview Wind Power Project in AESO planning area Fort Macleod (Area 53) to maintain a total renewable generation dispatch consistent with the 2017 LTO's renewable generation forecast of 2,535 MW for 2020.

The adjusted planned renewable generation assumptions are shown in Table 2-2.

Table 2-2: Adjusted Post-Project Dispatch Conditions for Planned Renewable Generation Projects along the 240 kV Transmission Path between Cassils 324S, Bowmanton 244S and Whitla 251S

AESO Project No.	Project Name	Planned ISD	AESO Planning Area	Pmax (MW)	Unit Net Generation Dispatch (MW) 2020 SP/SL	
					Original Assumption	Adjusted Assumption
479	Naturener Wild Rose 1 Wind Farm	15-Jul-19	4	210	210	210
693	Naturener Wild Rose 2 Wind Farm	15-Jul-19	4	189	189	189
1734	Suncor Forty Mile Wind Power Project Whitla 251S Substation Connection	01-Sep-20	4	200	200	200
1800	Capital Power Whitla Wind Phase 2	01-Sep-20	4	97.2	97.2	0
1800	Capital Power Whitla Wind	01-Sep-19	4	201.6	201.6	201.6
1812	Suncor Forty Mile Wind Power Project 964L Connection	01-Jun-20	4	200	200	200
Total					1097.8	1,000.6

2.2 Post Generation Assumption Adjustment Results

Post-Project power flow studies were repeated with the adjusted generation assumptions. Reliability Criteria violations were no longer observed at Bowmanton 244S substation and the approved Elkwater 264S substation under Category A conditions, as shown in Table 2-3. All subsequent analysis contained in this report was based on the above noted adjusted generation assumptions.

Table 2-3: Post-Project Key Buses Voltages under Category A conditions before and after Generation Assumptions were Adjusted

Scenario No. and Name		Substation Name and No.	Nominal Voltage (kV)	Normal Minimum Voltage (kV)	Normal Maximum Voltage (kV)	Post-Project Observed Voltage (kV)	
						Original Assumptions	Adjusted Assumptions
3	2020 SP	Bowmanton 244S	138	135	145	131.1	136.5
		Bowmanton 244S	240	234	252	224.9	234.6
		Approved Elkwater 264S	240	234	252	232.7	240.0
4	2020 SL	Bowmanton 244S	138	135	145	132.0	137.7

These results confirm that reducing the total generation flow through the 240 kV transmission path between Cassils 324S, Bowmanton 244S and Whitla 251S to approximately 1000 MW will maintain bus voltages at the Bowmanton 244S substation and the approved Elkwater 264S substation above the normal minimum voltage under Category A conditions.

3 Pre-Project Study Results

This section describes the results of the pre-Project power flow studies.

For all pre-Project study scenarios, the 138 kV bus-tie breaker and switch at the Bowmanton 244S substation were assumed to be open due to high renewable generation dispatch in the Study Area.

3.1 Power Flow Studies

Power flow diagrams illustrating the pre-Project power flow studies results for Category A and Category B conditions are provided in Attachment A2.

3.1.1 Scenario 1: 2020 Summer Peak Pre-Project

Category A Condition

No Reliability Criteria (as defined in Section 3.1 of Attachment A1) violations were observed under the Category A condition.

Category B Conditions

Thermal criteria violations were observed under certain Category B conditions as shown in Table 3-1.

Voltage collapse was observed following the loss of 240 kV transmission lines 1034L (Bowmanton 244S - Cassils 324S), 1035L (Bowmanton 244S - Newell 2075S), 1074L (Bowmanton 244S – approved Elkwater 264S).

No voltage range violations or voltage deviations beyond the limits listed in Table 3-1 of Attachment A1 (hereafter referred to as point of delivery (POD) bus voltage deviations) were observed under all the other studied Category B conditions.

Table 3-1: Thermal and Voltage Criteria Violations under Category B Conditions for Scenario 1

Contingency (System Element Lost)	Details of Violation (Violation Observed On)	Thermal Ratings (MVA)		Pre-Project Results	
		Normal Rating (MVA)	Emergency Rating (MVA)	Observed Power Flow[a] (MVA)	% Loading[b]
1088L (Cassils 324S - Newell 2075S)	1087L (Cassils 324S - Newell 2075S)	547	656	591.25	108.09

Notes:

[a] Power Flow (MVA) is current expressed as MVA (ie. $S = \sqrt{3} \times V_{base} \times I_{actual}$)

[b] % loading is reported as a percentage of the observed power flow (in MVA ie. S =√3 x Vbase x Iactual) relative to the transmission line's Normal Rating (also in MVA), as shown in Attachment A1.

3.1.2 Scenario 2: 2020 Summer Light Pre-Project

Category A Condition

No Reliability Criteria violations were observed under the Category A condition.

Category B Conditions

Voltage collapse was observed following the loss of 240 kV transmission line 1074L (Bowmanton 244S – approved Elkwater 264S).

No thermal criteria violations, voltage range violation or POD bus voltage deviations were observed under all the other studied Category B conditions.

3.2 Transient Stability Studies

As transient stability criteria violations were identified in the post-project scenarios shown in Section 4.2, transient stability studies for the corresponding contingencies which caused transient stability criteria violations were also completed for pre-project scenarios, Scenario 1 (2020 Summer Peak Pre-Project) and Scenario 2 (2020 Summer Light Pre-Project).

Transient stability criteria violations were observed in both Scenario 1 and 2 following the loss of 240 kV transmission lines 1074L (approved Elkwater 264S - Bowmanton 244S), 1034L (Bowmanton 244S - Cassils 324S), and 1035L (Bowmanton 244S - Newell 2075S), as shown in Table 3-2 and Table 3-3.

The system showed acceptable dynamic response following the loss of 983L (approved Elkwater 264S - Whitla 251S).

The pre-Project transient stability plots are provided in Attachment A4.

Table 3-2: Transient Stability Study Results under Category B Conditions for Scenario 1

Studied Contingency (System Element Lost)	Fault Description and Location	Results
1074L (approved Elkwater 264S - Bowmanton 244S)	3-phase fault at approved Elkwater 264S	Unstable
	3-phase fault at Bowmanton 244S	Unstable
1035L (Bowmanton 244S - Newell 2075S)	3-phase fault at Bowmanton 244S	Unstable
	3-phase fault at Newell 2075S	Unstable
1034L (Bowmanton 244S - Cassils 324S)	3-phase fault at Bowmanton 244S	Unstable
	3-phase fault at Cassils 324S	Unstable
983L (approved Elkwater 264S - Whitla 251S)	3-phase fault at approved Elkwater 264S	Stable
	3-phase fault at Whitla 251S	Stable

Table 3-3: Transient Stability Study Results under Category B Conditions for Scenario 2

Studied Contingency (System Element Lost)	Fault Description and Location	Results
1074L (approved Elkwater 264S - Bowmanton 244S)	3-phase fault at approved Elkwater 264S	Unstable
	3-phase fault at Bowmanton 244S	Unstable
1035L (Bowmanton 244S - Newell 2075S)	3-phase fault at Bowmanton 244S	Unstable
	3-phase fault at Newell 2075S	Unstable
1034L (Bowmanton 244S - Cassils 324S)	3-phase fault at Bowmanton 244S	Unstable
	3-phase fault at Cassils 324S	Unstable
983L (approved Elkwater 264S - Whitla 251S)	3-phase fault at approved Elkwater 264S	Stable
	3-phase fault at Whitla 251S	Stable

4 Post-Project Study Results

This section describes the results of the post-Project power flow studies and transient stability studies.

As described in Section 2 of Attachment A1, the post-Project studies were performed using Alternative 1.

For all post-Project study scenarios, the 138 kV bus-tie breaker and switch at the Bowmanton 244S substation were assumed to be open due to high renewable generation dispatch in the Study Area.

4.1 Power Flow Studies

Power flow diagrams illustrating the post-Project power flow studies results for Category A and Category B conditions are included in Attachment A3.

4.1.1 Scenario 3: 2020 Summer Peak Post-Project

Category A Condition

No Reliability Criteria violations were observed under the Category A condition.

Category B Conditions

Thermal criteria violations were observed under certain Category B conditions as shown in Table 4-1.

Voltage collapse was observed following the loss of 240 kV transmission lines 1034L (Bowmanton 244S - Cassils 324S), 1035L (Bowmanton 244S - Newell 2075S), 1074L (Bowmanton 244S - approved Elkwater 264S).

No voltage range violations or POD bus voltage deviations were observed under all the other studied Category B conditions.

Table 4-1: Thermal and Voltage Criteria Violations under Category B Conditions for Scenario 3

Contingency (System Element Lost)	Details of Violation (Violation Observed On)	Thermal Ratings (MVA)		Pre-Project Results		Post-Project Results		% Loading Difference (Post-Pre)
		Normal Rating (MVA)	Emergency Rating (MVA)	Observed Power Flow (MVA)	% Loading	Observed Power Flow (MVA)	% Loading	
1088L (Cassils 324S - Newell 2075S)	1087L (Cassils 324S - Newell 2075S)	547	656	591.25	108.09	586.27	107.18	-0.91

4.1.2 Scenario 4: 2020 Summer Light Post-Project

Category A Condition

No Reliability Criteria violations were observed under the Category A condition.

Category B Conditions

Voltage collapse was observed following the loss of 240 kV transmission lines 1034L (Bowmanton 244S - Cassils 324S), 1035L (Bowmanton 244S - Newell 2075S), 1074L (Bowmanton 244S – approved Elkwater 264S).

No thermal criteria violations, voltage range violations or POD bus voltage deviations were observed under all the other studied Category B conditions.

4.2 Transient Stability Studies

Transient stability studies were completed for Scenario 3 (2020 Summer Peak Post-Project) and Scenario 4 (2020 Summer Light Post-Project).

Transient stability criteria violations were observed in both Scenario 3 and 4 following the loss of 240 kV transmission lines 1074L (approved Elkwater 264S - Bowmanton 244S), 1034L (Bowmanton 244S - Cassils 324S), 1035L (Bowmanton 244S - Newell 2075S), and 983L (Whitla 251S – approved Elkwater 264S), as shown in Table 4-2 and Table 4-3.

The system showed acceptable dynamic response to all other Category B conditions studied.

The post-Project transient stability plots are provided in Attachment A4. The dynamic data and assumptions of all equipment proposed for the Facility are provided in Attachment A5.

Table 4-2: Transient Stability Study Results under Category B Conditions for Scenario 3

Studied Contingency (System Element Lost)	Fault Description and Location	Results
1074L (approved Elkwater 264S - Bowmanton 244S)	3-phase fault at approved Elkwater 264S	Unstable
	3-phase fault at Bowmanton 244S	Unstable
1035L (Bowmanton 244S - Newell 2075S)	3-phase fault at Bowmanton 244S	Unstable
	3-phase fault at Newell 2075S	Unstable
1034L (Bowmanton 244S - Cassils 324S)	3-phase fault at Bowmanton 244S	Unstable
	3-phase fault at Cassils 324S	Unstable
983L (approved Elkwater 264S - Whitla 251S)	3-phase fault at approved Elkwater 264S	Unstable
	3-phase fault at Whitla 251S	Unstable
964L (Bowmanton 244S - Whitla 251S)	3-phase fault at Whitla 251S	Stable
	3-phase fault at Bowmanton 244S	Stable
892L (Suffield 895S - Bowmanton 244S)	3-phase fault at Suffield 895S	Stable
	3-phase fault at Bowmanton 244S	Stable
879L (Bowmanton 244S - Burdett 368S)	3-phase fault at Bowmanton 244S	Stable
	3-phase fault at Burdett 368S	Stable
676L (Bowmanton 244S - Bullshead 523S)	3-phase fault at Bowmanton 244S	Stable

Studied Contingency (System Element Lost)	Fault Description and Location	Results
	3-phase fault at Bullshead 523S	Stable
675L (Bowmanton 244S - Al Rothbauer 321S)	3-phase fault at Bowmanton 244S	Stable
	3-phase fault at Al Rothbauer 321S	Stable
658L/674L (Bowmanton 244S - Chappice Lake 649S – Cypress 562S)	3-phase fault at Bowmanton 244S	Stable
	3-phase fault at Cypress 562S	Stable

Table 4-3: Transient Stability Study Results under Category B Conditions for Scenario 4

Studied Contingency (System Element Lost)	Fault Description and Location	Results
1074L (approved Elkwater 264S - Bowmanton 244S)	3-phase fault at approved Elkwater 264S	Unstable
	3-phase fault at Bowmanton 244S	Unstable
1035L (Bowmanton 244S - Newell 2075S)	3-phase fault at Bowmanton 244S	Unstable
	3-phase fault at Newell 2075S	Unstable
1034L (Bowmanton 244S - Cassils 324S)	3-phase fault at Bowmanton 244S	Unstable
	3-phase fault at Cassils 324S	Unstable
983L (approved Elkwater 264S - Whitla 251S)	3-phase fault at approved Elkwater 264S	Unstable
	3-phase fault at Whitla 251S	Unstable
964L (Bowmanton 244S - Whitla 251S)	3-phase fault at Whitla 251S	Stable
	3-phase fault at Bowmanton 244S	Stable
892L (Suffield 895S - Bowmanton 244S)	3-phase fault at Suffield 895S	Stable
	3-phase fault at Bowmanton 244S	Stable
879L (Bowmanton 244S - Burdett 368S)	3-phase fault at Bowmanton 244S	Stable
	3-phase fault at Burdett 368S	Stable
676L (Bowmanton 244S - Bullshead 523S)	3-phase fault at Bowmanton 244S	Stable
	3-phase fault at Bullshead 523S	Stable
675L (Bowmanton 244S - Al Rothbauer 321S)	3-phase fault at Bowmanton 244S	Stable
	3-phase fault at Al Rothbauer 321S	Stable
658L/674L (Bowmanton 244S - Chappice Lake 649S – Cypress 562S)	3-phase fault at Bowmanton 244S	Stable
	3-phase fault at Cypress 562S	Stable

5 Short Circuit Studies

5.1 Pre-Project Results

Pre-Project short-circuit current levels are provided in Table 5-1[1] for Scenario 1 (2020 SP Pre-Project).

Table 5-1: Pre-Project Short-Circuit Current Levels for Scenario 1

Substation Name and Number	Base Voltage (kV)	Pre-Fault Voltage (kV)	3-Φ Fault (kA)	Positive Sequence Thevenin Source Impedance (R1+jX1) (pu)[2]	1-Φ Fault (kA)	Zero Sequence Thevenin Source Impedance (R0+jX0) (pu)
Whitla 251S	240	244.59	4.115	0.0070396+0.0698519j	5.812	0.0020429+0.0204168j
Bowmanton 244S	240	240.78	6.109	0.0059678+0.0465976j	6.914	0.0085268+0.0381206j
Bowmanton 244S	138	138.83	8.001	0.0064449+0.0608832j	8.477	0.0093943+0.0563128j
Approved Elkwater 264S	240	244.27	4.378	0.0072762+0.0661204j	6.625	0.0024162+0.0166509j
Approved Wild Rose 547S	240	244.8	3.007	0.0109312+0.0967424j	4.734	0.0023259+0.0194212j
Approved Eagle Butte 274S	240	244.35	4.352	0.0073261+0.0665432j	6.611	0.0022543+0.0162611j

5.2 Post-Project Results

Post-Project short-circuit current levels are provided in Table 5-2 for Scenario 3 (2020 SP Post-Project).

Table 5-2: Post-Project Short-Circuit Current Levels for Scenario 3

Substation Name and Number	Base Voltage (kV)	Pre-Fault Voltage (kV)	3-Φ Fault (kA)	Positive Sequence Thevenin Source Impedance (R1+jX1) (pu)	1-Φ Fault (kA)	Zero Sequence Thevenin Source Impedance (R0+jX0) (pu)
Whitla 251S	240	244.54	4.579	0.0059256+0.0618882j	6.296	0.0020803+0.0205987j
Bowmanton 244S	240	235.15	6.367	0.0054127+0.0435484j	7.01	0.0085300+0.0381374j
Bowmanton 244S	138	136.16	8.123	0.0059730+0.0586375j	8.464	0.0093969+0.0563264j
Approved Elkwater 264S	240	241.56	4.632	0.0064985+0.0613007j	6.888	0.0024165+0.0166566j
Approved Wild Rose 547S	240	244.8	3.13	0.0101453+0.0918938j	4.867	0.0023259+0.0194214j

[1] Short-circuit current studies were based on modeling information provided to the AESO by third parties. The authenticity of the modeling information has not been validated. Fault levels could change as a result of system developments, new customer connections, or additional generation in the area. It is recommended that these changes be monitored and fault levels reviewed to ensure that the fault levels are within equipment operating limits. The information provided in this study should not be used as the sole source of information for electrical equipment specifications or for the design of safety-grounding systems.

[2] impedance p.u. is calculated based on base voltage and system base 100 MVA

Substation Name and Number	Base Voltage (kV)	Pre-Fault Voltage (kV)	3-Φ Fault (kA)	Positive Sequence Thevenin Source Impedance (R1+jX1) (pu)	1-Φ Fault (kA)	Zero Sequence Thevenin Source Impedance (R0+jX0) (pu)
Approved Eagle Butte 274S	240	241.64	4.601	0.0065483+0.0617232j	6.871	0.0022545+0.0162662j
Proposed Granlea 1024S	240	244.49	4.552	0.0059859+0.0622663j	5.679	0.0056123+0.0339712j

Post-Project short-circuit current levels are provided in Table 5-3 for Scenario 5 (2027 SP Post-Project).

Table 5-3: Post-Project Short-Circuit Current Levels for Scenario 5

Substation Name and Number	Base Voltage (kV)	Pre-Fault Voltage (kV)	3-Φ Fault (kA)	Positive Sequence Thevenin Source Impedance (R1+jX1) (pu)	1-Φ Fault (kA)	Zero Sequence Thevenin Source Impedance (R0+jX0) (pu)
Whitla 251S	240	245.47	5.197	0.0035694+0.0472565j	5.872	0.0032747+0.0309798j
Bowmanton 244S	240	247.02	8.747	0.0031256+0.0282222j	10.059	0.0022711+0.0172562j
Bowmanton 244S	138	141.86	11.609	0.0062972+0.0366224j	11.664	0.0047201+0.0364463j
Approved Elkwater 264S	240	247.53	5.333	0.0042069+0.0464373j	6.792	0.0024021+0.0165291j
Approved Wild Rose 547S	240	248.29	3.225	0.0078291+0.0769419j	4.313	0.002235+0.0187772j
Approved Eagle Butte 274S	240	247.54	5.285	0.0042565+0.0468589j	6.76	0.0022611+0.0162183j
Proposed Granlea 1024S	240	246.71	5.158	0.0036904+0.0478513j	5.339	0.0066225+0.0427842j

6 Mitigation Measure Development and Evaluation

The Studies Consultant, in consultation with the AESO, developed mitigation measures to address the system performance issues that were identified in the post-Project scenarios. Existing remedial action schemes (RASs) are described in Section 1.2.2 of Attachment A1.

6.1 Pre-Project

Pre-Project mitigation measures are summarized in Table 6-1.

Table 6-1: Pre-Project Mitigation Measures

Mitigation Measure	Details of Reliability Criteria Violation	Contingency (System Element Lost)
Planned RAS for 1034L Contingency [a]	Voltage criteria violation (Area voltage collapse) and transient stability criteria violations (area generators unstable)	1034L (Bowmanton 244S - Cassils 324S)
Planned RAS for 1035L Contingency [a]		1035L (Bowmanton 244S - Newell 2075S)
Planned RAS for 1074L Contingency [a]		1074L (Bowmanton 244S - approved Elkwater 264S)
Existing EATL RAS (RAS #149)	Thermal criteria violation above normal rating on 240 kV transmission line 1087L (Cassils 324S - Newell 2075S)	1088L (Cassils 324S - Newell 2075S)

Notes:

[a] Planned RASs for 1034L, 1035L and 1074L contingencies are RASs proposed for the planned Suncor Forty Mile Wind Power Project Whitla 251S Substation Connection.

6.2 Post-Project

Post-Project mitigation measures are summarized in Table 6-2.

Table 6-2: Post-Project Mitigation Measures

Mitigation Measure	Details of Violation (Violation Observed On)	Contingency (System Element Lost)
Modify Planned RAS for 1034L Contingency [a]	Voltage criteria violation (area voltage collapse) and transient stability criteria violations (area generators unstable)	1034L (Bowmanton 244S - Cassils 324S)
Modify Planned RAS for 1035L Contingency [a]		1035L (Bowmanton 244S - Newell 2075S)
Modify Planned RAS for 1074L Contingency [a]		1074L (Bowmanton 244S - approved Elkwater 264S)
New RAS for 983L Contingency [b]	Transient stability criteria violations (area generators unstable)	983L (approved Elkwater 264S - Whitla 251S)

Mitigation Measure	Details of Violation (Violation Observed On)	Contingency (System Element Lost)
Existing EATL RAS (RAS #149)	Thermal criteria violation above normal rating on 240 kV transmission line 1087L	1088L (Cassils 324S - Newell 2075S)

Notes:

[a] "Modify" refers to adding the Project to the logic of the corresponding planned RASs for 1034L, 1035L and 1074L contingencies.

[b] New RAS for 983L Contingency is a new RAS proposed for the Project.

6.3 Evaluation of Mitigation Measures

This section describes the results of the power flow and transient stability studies that were performed to assess the impact of the Project on the performance of the AIES following the implementation of the following proposed mitigation measures.

- Modify Planned RAS for 1034L Contingency
- Modify Planned RAS for 1035L Contingency
- Modify Planned RAS for 1074L Contingency
- New RAS for 983L Contingency

The post-mitigation power flow diagrams for selected Category B conditions are provided in Attachment A6. Post-mitigation power flow diagrams present only those post-Project contingencies that result in thermal criteria violations that require RAS mitigation.

The post-mitigation transient stability diagrams for selected Category B conditions are provided in Attachment A7. Post-mitigation transient stability diagrams present only those post-Project contingencies that result in transient stability criteria violations which require RAS mitigation.

6.3.1 Scenario 3: 2020 Summer Peak Post-Project

Category B Conditions

Following the implementation of mitigation measures, voltage collapse was no longer observed following the loss of 240 kV transmission lines 1034L (Bowmanton 244S - Cassils 324S), 1035L (Bowmanton 244S - Newell 2075S), 1074L (Bowmanton 244S - approved Elkwater 264S). Following the implementation of mitigation measures, no thermal criteria violations, voltage criteria violations or POD bus voltage deviations were observed under Category B conditions.

Following the implementation of mitigation measures, the system showed acceptable dynamic response to all Category B conditions studied, i.e., no transient stability criteria violations were observed.

6.3.2 Scenario 4: 2020 Summer Light Post-Project

Category B Conditions

Following the implementation of mitigation measures, voltage collapse was no longer observed following the loss of 240 kV transmission lines 1034L (Bowmanton 244S - Cassils 324S), 1035L (Bowmanton 244S - Newell 2075S), 1074L (Bowmanton 244S - approved Elkwater 264S). Following the implementation of

mitigation measures, no thermal criteria violations, voltage criteria violations or POD bus voltage deviations were observed under Category B conditions.

Following the implementation of mitigation measures, the system showed acceptable dynamic response to all Category B conditions studied, i.e., no transient stability criteria violations were observed.

6.4 Constraint Effective Factor Studies

Since there are no new thermal violations created by the project and no existing thermal criteria violations were exacerbated by the Project, constraint effective factor studies were not completed.

Attachment A1
Engineering Connection Assessment: Study Scope

Engineering Connection Assessment: Study Scope

P1812 Suncor Forty Mile Wind Power Project 964L Connection

Forty Mile Granlea Wind GP Inc.

Date: Nov 29 2018

Version: Final

Classification: Public

Company Name	Name and Credentials	Date	Signature
CF Power Ltd.	Feng Chen, P.Eng. Bo Shi	Nov 29 2018	
AESO	Jian Shang, P.Eng.	Nov 30 2018	
Suncor Energy Inc.	Ben Hui, P.Eng.	Nov 30, 2018	

Alberta Electric System Operator, Calgary Place, 2500, 330 – 5th Avenue SW Calgary, AB T2P 0L4
Phone: 403-539-2450 Fax: 403-539-2949 www.aeso.ca @theaeso

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Attachments

Attachment A: Transmission Planning Criteria – Basis and Assumptions

1 Introduction

This Study Scope provides an overview of the engineering studies to be completed by CF Power Ltd. (the Studies Consultant) to assess the impact of the Project (as defined in Section 1.1) on the performance of the Alberta interconnected electric system (AIES). Technical criteria, assumptions and methods for performing these engineering studies are provided in this document.

1.1 Project Overview

Forty Mile Granlea Wind GP Inc. (Market Participant) has submitted a request for system access service to the Alberta Electric System Operator (AESO) to connect its proposed Suncor Forty Mile Wind Power Project (Facility) to the AIES. The Facility includes a proposed collector station, to be designated the Granlea 1024S substation.

The Market Participant's request includes: a request for a new system access service in the area, with a Rate STS, *Supply Transmission Service*, contract capacity of 200 MW and a Rate DTS, *Demand Transmission Service*, contract capacity of 0.25 MW; and a request for transmission development (collectively, the Project).[1]

The scheduled in-service date (ISD) for the Project is June 1, 2020.

Load and generation components of the Project are listed in Table 1-1.

Table 1-1: Project Load and Generation Details

Project Component		Description
Load	Existing Rate DTS, *Demand Transmission Service,* contract capacity	No existing contract
	Requested Rate DTS	0.25 MW
	Type	Station Service
	Motors (number and size)	Not Applicable
	Power factor	Not Applicable
	Future load expansion plans	None
Generation	Generation type	Wind
	Existing Rate STS, *Supply Transmission Service,* contract capacity	No existing contract
	Requested Rate STS	200 MW
	Number and size of generating units	48 wind turbines at 4.2 MW each
	Maximum authorized real power (MARP)	200 MW

[1] The Market Participant submitted a second request for system access service to connect the Facility which will be addressed in the AESO's *Suncor Forty Mile Wind Power Project Whitla 251S Substation Connection Needs Identification Document*.

Project Component		Description
	Maximum capability (MC)	200 MW
	Reactive power capability	65.7 MVAr (0.95 pf absorbing)
		96.7 MVAr (0.9 pf producing)
	Future generation expansion plans	None

Note:

MARP and MC are defined in the AESO's *Consolidated Authoritative Document Glossary*, which can be found on the AESO's website.

1.2 Existing System Overview

1.2.1 Study Area

Geographically, the Project is located in the AESO planning area of Medicine Hat (Area 4).

The Study Area consists of the AESO planning areas of Vauxhall (Area 52), Medicine Hat (Area 4), Empress (Area 48), and Brooks (Area 47).

The existing transmission system in the Study Area is shown in Figure 1-1.

1.2.2 Existing Constraints

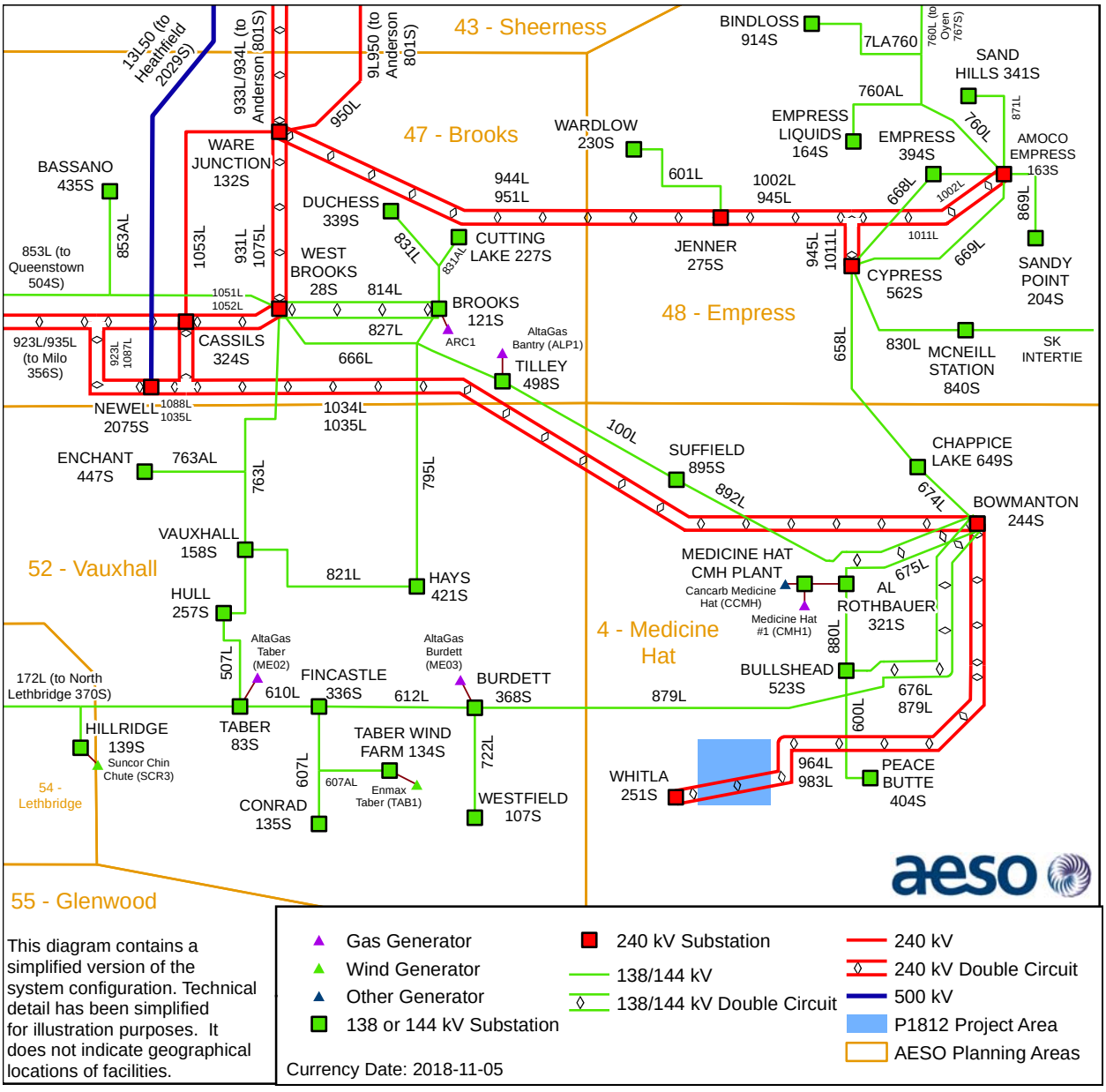
Existing constraints in the Study Area are managed in accordance with the procedures set out in Section 302.1 of the ISO rules, *Real Time Transmission Constraint Management* (TCM Rule).

There are a number of constraints in the Study Area that are mitigated by existing remedial action schemes (RASs).

The following existing RASs are used to manage constraints in the area:

- RAS 141: Tilley 498S voltage instability mitigation scheme under peak load conditions
- RAS 140: 895S_892L Suffield overload mitigation scheme
- RAS 149: EATL HVDC RAS

Figure 1-1: Existing Transmission System in the Study Area



2 Connection Alternative to be Studied

The following alternative will be studied:

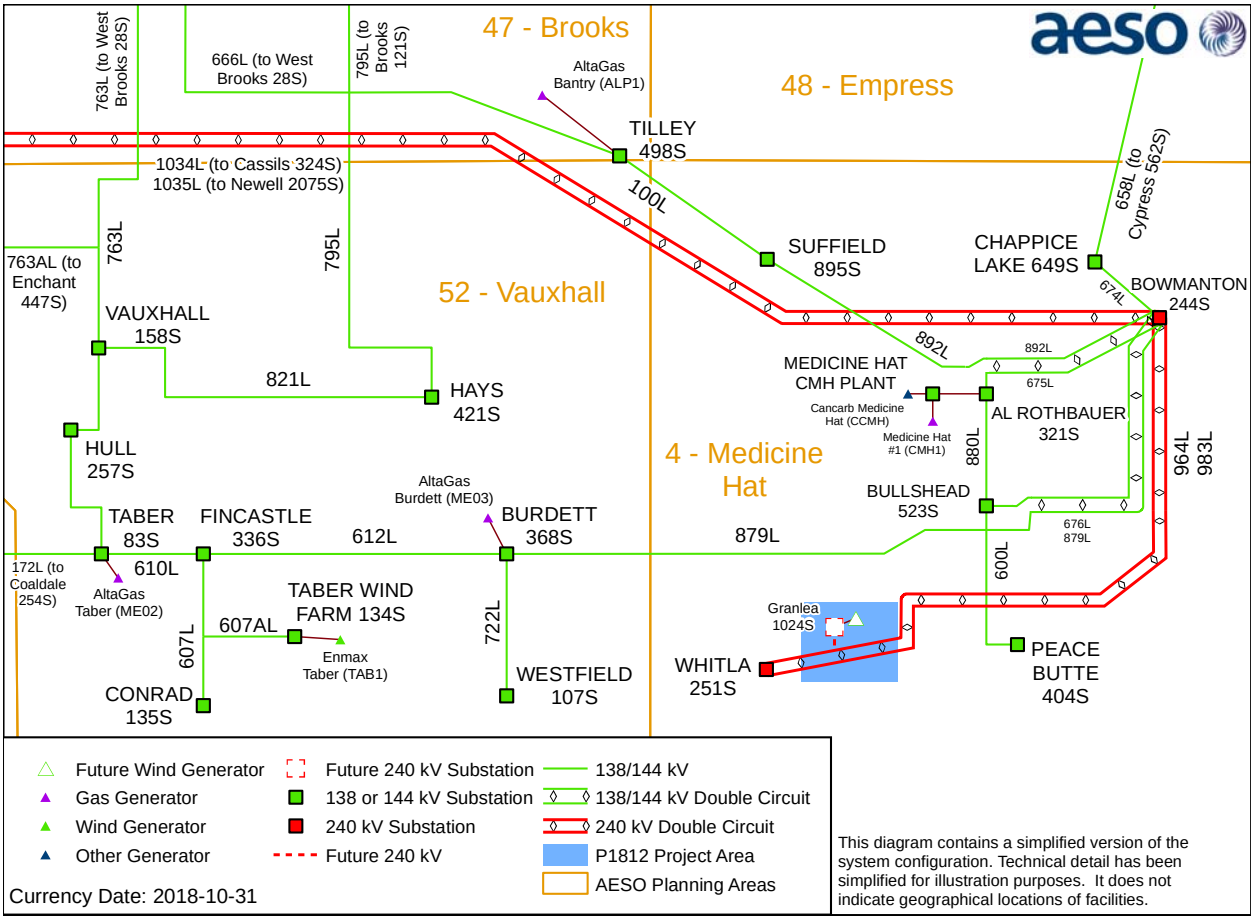
Alternative 1 – T-tap connection to the existing 240 kV transmission line 964L

This alternative included the following developments:

- Add one 240 kV transmission circuit to connect the Facility to the existing 240 kV transmission line 964L between Bowmanton 244S and Whitla 251S substations using a T-Tap configuration. This would require the addition of approximately 230 m of 240 kV circuit.
- Add or modify associated equipment as required for the above transmission developments

The proposed connection configuration is shown in Figure 2-1.

Figure 2-1: Connection Alternative 1



3 Criteria, Standards and Requirements

3.1 AESO Reliability Criteria

The Transmission Planning (TPL) Standards, which are included in the Alberta Reliability Standards, and *Transmission Planning Criteria – Basis and Assumptions (see Attachment A),* (collectively, the Reliability Criteria) will be applied to evaluate system performance under Category A system conditions (i.e., all elements in-service) and following Category B contingencies (i.e., single element outage), prior to and following the studied alternatives. Below is a summary of Category A and Category B system conditions.

Category A, often referred to as the N-0 condition, represents a normal system with no contingencies and all facilities in service. Under this condition, the system must be able to supply all firm load and firm transfers to other areas. All equipment must operate within its applicable rating, voltages must be within their applicable range, and the system must be stable with no cascading outages.

Category B events, often referred to as an N-1 or N-G-1 with the most critical generator out of service, result in the loss of any single specified system element under specified fault conditions with normal clearing. These elements are a generator, a transmission circuit, a transformer, or a single pole of a DC transmission line. The acceptable impact on the system is the same as Category A. Planned or controlled interruptions of electric supply to radial customers or some local network customers, connected to or supplied by the faulted element or by the affected area, may occur in certain areas without impacting the overall reliability of the interconnected transmission systems. To prepare for the next contingency, system adjustments are permitted, including curtailments of contracted firm (non-recallable reserved) transmission service electric power transfers.

The TPL standards, TPL-001-AB-0 and TPL-002-AB1-0, have referenced Applicable Ratings when specifying the required system performance under Category A and Category B events. For the purpose of applying the TPL standards to the studies documented in this report, Applicable Ratings are defined as follows:

- Normal thermal rating of the line's loading limits for each season.
- The highest specified loading limits for transformers
- For Category A conditions: Voltage range under normal operating condition per AESO Information Document #2010-007RS, *General Operating Practices – Voltage Control* (ID #2010-007RS). For the busses not listed in ID #2010-007RS, Table 2-1 in the *Transmission Planning Criteria – Basis and Assumptions* applies
- For Category B conditions: The extreme voltage range values per Table 2-1 in the *Transmission Planning Criteria – Basis and Assumptions*
- Desired post-contingency voltage deviation limits for three defined post-event timeframes as provided in Table 3-1

Table 3-1: Post-Contingency Voltage Deviation Guidelines for Low Voltage Busses

Parameter and reference point	Time Period		
	Post Transient (up to 30 sec)	Post Auto Control (30 sec to 5 min)	Post Manual Control (Steady State)
Voltage deviation from steady state at point-of-delivery (POD) low voltage bus.	±10%	±7%	±5%

3.2 ISO Rules and Information Documents

ID #2010-007RS will be used to establish system normal (i.e., pre-contingency) voltage profiles for the Study Area.

The TCM Rule will be followed to set up the study scenarios and assess the impact of the Project. In addition, due regard will be given to the AESO's *Connection Study Requirements*, the AESO's *Generation and Load Interconnection Standard*, and Sections 502.5 and 502.6 of the ISO rules as they relate to Generating Unit Technical and Operating requirements.

3.3 Aggregated Generation Facility Requirements

The Facility should meet the technical requirements presented in Section 502.1 of the ISO rules, *Aggregated Generating Facilities Technical Requirements*.

4 Scenarios and Assumptions

4.1 Scenarios

The following section describes the scenarios to be studied and the assumptions to be used in the studies.

Connection scenarios must be studied as outlined in Table 4-1.

Table 4-1: Connection Study Scenarios

Scenario No.	Year/Season	System Generation Dispatch Conditions[a]	Scenario Name	Project Load (MW)	Project Generation (MW)
1	2020 Summer Peak (SP)	High Wind, Economic Coal High Import	2020 SP Pre-Project	0	0
2	2020 Summer Light (SL)	High Wind, Economic Coal, Zero Import	2020 SL Pre-Project	0	0
3	2020 SP	High Wind, Economic Coal, High Import	2020 SP Post-Project	0	200
4	2020 SL	High Wind, Economic Coal, Zero Import	2020 SL Post-Project	0	200
5	2027 SP	All generators in service	2027 SP Post-Project	0	200

[a]. All the generators in the Study Area must be turned on for the short-circuit analysis.

Note: The 138 kV bus-tie breaker and switch at the Bowmanton 244S substation are assumed to be open for all of the above scenarios.

4.2 Assumptions

4.2.1 System Project Assumptions

The pre-Project and post-Project connection assessment will not include any system transmission projects because there are no planned system transmission developments in the Study Area that are expected to be in service before the scheduled Project ISD.

4.2.2 Connection Project Assumptions

The pre-Project and post-Project connection assessment will not include any other connection projects, other than the ones listed in Table 4-5.

4.2.3 Load Assumptions

The load forecast to be used for the studies is shown in Table 4-2 and is based on the AESO's *2017 Long-term Outlook* (2017 LTO)[2] at the AESO South Planning Region peak. For the studies, when loads for the Alberta Internal Load (AIL) are modified to align with the load forecast in the 2017 LTO, the active power to reactive power ratio in the base case scenarios will be maintained.

Table 4-2: Forecast Area Peak Load (2017 LTO at AESO South Planning Region Peak)

AESO Planning Area or Region Name	Forecast Peak Load by Year/Season (MW)	
	2020 SP	2020 SL
South Planning Region[a]	1397	839

Note:
[a] The South Region comprises the following AESO planning areas: 4, 43 ,44 ,45 ,46 ,47, 48, 49, 52,53 ,54, and 55

4.2.4 Generation Assumptions

The generation forecast to be used for the studies is based on the 2017 LTO. The generation assumptions for the studies will assume high wind dispatch conditions. Additional studies may be required in the event of changes to the AESO's corporate forecast.

The non-renewable generation dispatch conditions for the study scenarios are described in Table 4-3.

Table 4-3: Non-Renewable Generation Dispatch Conditions

Facility Name	Unit No.	Bus No.	Pmax (MW)	AESO Planning Area No.	Unit Net Generation[a] (MW) per Scenario	
					2020 SP	2020 SL
Irrican Hydro	1	450	7	55	4.2	3.8
Lethbridge Taber	2	3272	8	52	6.3	0
Lethbridge Burdett	3	4269	7	52	6.1	0
Altagas Bantry	1	4275	7	47	3.6	0

Notes:
[a] "Unit Net Generation" refers to gross generating unit output (MW) less unit service load.

Per the 2017 LTO, the total forecast renewable electricity generation in 2020 is 2,535 MW. This includes existing, under construction and planned renewable electricity generation facilities.

Using the 2017 LTO's 2020 renewable generation forecast of 2,535 MW, the generation assumptions will dispatch the renewable electricity generation facilities in order to yield the credible worst-case power flow conditions for the Study Area. Pre-Project dispatch levels for the existing and under-construction renewable electricity generation facilities are shown in Table 4-4.

[2] The 2017 LTO is available on the AESO website.

Table 4-4: Dispatch Conditions for Existing and Under Construction Renewable Generation Facilities

Facility Name and Code	AESO Planning Area No.	Bus Number	MC (MW)	Unit Net Generation[a] (MW) per Scenario
				2020 SP/SL
AESO South Planning Region				
Ardenville Wind (ARD1)	53	4735, 4740	68	68
Blue Trail Wind (BTR1)	53	66328, 67328	66	66
Castle River #1 (CR1)	53	2234, 3234	39	39
Castle Rock Wind Farm (CRR1)	53	67221	77	77
Cowley Ridge (CRWD)	53	4264	20	20
Enmax Taber (TAB1)	52	15343, 16343	81	81
Kettles Hill (KHW1)	53	2402, 3402	63	63
McBride Lake Windfarm (AKE1)	53	2901, 3901, 4901	73	75
Soderglen Wind (GWW1)	53	12358, 13358	71	68
Summerview 1 (IEW1)	53	2338, 3338	66	66
Summerview 2 (IEW2)	53	4339, 5337	66	66
Suncor Chin Chute (SCR3)	54	2389	30	30
Suncor Magrath (SCR2)	53	11002	30	30
Suncor Wintering Hills (SCR4)	43	60789, 60791, 60793, 60846, 60848, 60850	88	88
Old Man River (OWF1)	53	61543	46	46
Blackspring Ridge (BSR1)	49	61736, 61737	300	300
Brooks Solar (BSC1)	47	553257	15	15
AESO South Planning Region Subtotal			**1,198**	**1198.0**
AESO Central Planning Region				
Ghost Pine (NEP1)	42	2621 to 2625	82	82
Halkirk (HAL1)	42	66435, 67435	150	150
Fortis Bull Creek Phases 1 and 2 (BUL1 & BUL2)	37	4222	29.5	29.5
AESO Central Planning Region Subtotal			**261.5**	**261.5**
Total			**1,459.5**	**1,459.5**

Note:
[a] "Unit Net Generation" refers to gross generating unit output (MW) less unit service load.

Table 4-5 lists the pre-Project dispatch levels for the planned renewable generation projects in the AESO South and Central planning regions that are included in the study scenarios. Planned renewable generation projects not listed in Table 4-5 are not included in the study and will not be dispatched.

Table 4-5: Dispatch Conditions for Planned Renewable Generation Projects

AESO Project Number	Project Name	Project Type	Planned ISD	Planning Area	Pmax (MW)	Unit Net Generation Dispatch[a] (MW)
						2020 SP/SL
South Planning Region						
479	Naturener Wild Rose 1 Wind Farm[b]	Wind	15-Jul-19	4	210	210
693	Naturener Wild Rose 2 Wind Farm[b]	Wind	15-Jul-19	4	189	189
1800	Capital Power Whitla Wind Phase 2	Wind	01-Sep-20	4	97.2	97.2
1734	Suncor Forty Mile Wind Power Project Whitla 251S Substation Connection	Wind	01-Sep-20	4	200	200
1800	Capital Power Whitla Wind Phase 1[c]	Wind	01-Sep-19	4	201.6	201.6
Subtotal (Southern Alberta)						**897.8**
Central Planning Region						
1567	Sharp Hills Wind Farm[d]	Wind	01-Aug-19	42	300	177.7
Subtotal (Central Alberta)						**177.7**
Total Planned						**1,075.5**
Total Planned, Existing and Under Construction						**2,535.0**

Note:

[a] "Unit Net Generation" refers to gross generating unit output (MW) less unit service load.

[b] The *Wild Rose 1 and Wild Rose 2 Wind Energy Connections Needs Identification Document (NID),* as originally approved by AUC Decision 211-352 and Approval U2011-266.

[c] The *Whitla Wind Facility Connection NID*, as originally approved by AUC Decision 23564-D01-2018 and Approval 23564-D02-2018.

[d] The *Sharp Hills Wind Farm Connection NID*, as originally approved by AUC Decision 23066-D01-2018 and 23066-D02-2018.

The post-Project scenario renewable generation dispatch levels were identical to the pre-Project scenario dispatch levels shown in Table 4-4 and Table 4-5, except that the existing facilities Castle River #1 (CR1), Cowley Ridge (CRWD), Summerview 1-2 (IEW1-2) were switched off and Old Man River was re-dispatched to 37 MW. The Facility was dispatched to 200 MW in all post-Project scenarios. This will result in a total renewable dispatch consistent with the 2017 LTO's renewable generation forecast of 2,535 MW for 2020.

4.2.5 Intertie Flow Assumptions

The intertie flow assumptions for the Alberta-British Columbia (AB-BC), Alberta-Saskatchewan (AB-SK), and Alberta-Montana (MATL) interties are shown in Table 4-6.

For the 2027 SP Post-Project scenario, the intertie flows should be as per the published AESO base cases.

Table 4-6: Intertie Flows by Scenario

Scenario Number	Scenario Name	Import (-) / Export (+) by Intertie		
		AB-BC	AB-SK	MATL
1	2020 SP Pre-Project	-580	-150	0
2	2020 SL Pre-Project	0	0	0
3	2020 SP Post-Project	-580	-150	0
4	2020 SL Post-Project	0	0	0

4.2.6 HVDC Power Order Assumptions

The Western Alberta Transmission Line (WATL) and the Eastern Alberta Transmission Line (EATL) are high-voltage direct current (HVDC) transmission lines. The HVDC power order assumptions for the studies will be set to minimize losses for the pre-Project and post-Project study scenarios.

For the 2027 SP Post-Project scenario, the HVDC flows should be as per the published AESO base cases.

Table 4-7: HVDC Power Order by Scenario

Scenario Number	Scenario Name	WATL (MW)	EATL (MW)
1	2020 SP Pre-Project	350 S → N	1000 S → N
2	2020 SL Pre-Project	225 S → N	750 S → N
3	2020 SP Post-Project	350 S → N	1000 S → N
4	2020 SL Post-Project	225 S → N	750 S → N

Notes:
N → S: HVDC flow direction is North to South
S → N: HVDC flow direction is South to North

The reactive power limits of the MVAr exchanges between the HVDC terminals (WATL and EATL) and the connected alternating current (AC) transmission systems are shown in Table 4-8. These limits must be maintained when performing the studies.

Table 4-8: HVDC to Adjacent AC System MVAr Exchange Limits

HVDC Facility	North Terminal Reactive Power Limit (MVAr)	South Terminal Reactive Power Limit (MVAr)
EATL	-85 to 75	-35 to 35
WATL	-75 to 75	-35 to 35

4.2.7 Transmission Facility Ratings

The legal owner of transmission facilities (TFO) provided the thermal ratings assumptions for the existing transmission lines in the Study Area. Table 4-9 shows the normal ratings and emergency ratings for the key transmission lines in the Study Area, which will be used to perform the engineering studies.

Table 4-9: Thermal Rating Assumptions for Key Transmission Lines in the Study Area

Line ID	Line Description	Voltage Class (kV)	Normal Rating (MVA)	Emergency Rating (MVA)
			Summer	Summer
964L	Bowmanton 244S - Whitla 251S	240	952	1047
983L	Whitla 251S - Elkwater 264S	240	952	1047
1074L	Bowmanton 244S - Elkwater 264S	240	952	1047
1034L	Bowmanton 244S - Cassils 324S	240	931	1024
1035L	Bowmanton 244S - Newell 2075S	240	952	1047
1087L	Cassils 324S - Newell 2075S	240	547	656
676L	Bowmanton 244S - Bullshead 523S	138	369	406
675L	AI Rothbauer 321S - Bowmanton 244S	138	96	133
880L	Bullshead 523S - AI Rothbauer 321S	138	123	135
892L	Bowmanton 244S - Suffield 895S	138	67	74
666L	West Brooks 28S - Tilley 498S	138	98	108
100L	Tilley 498S - Suffield 895S	138	69	76
612L	Fincastle 336S - Burdett 368S	138	85	94
610L	Taber 83S - Fincastle 336S	138	85	94
879L	Bowmanton 244S - Burdett 368S	138	85	94
658L	Chappice Lake 649S - Cypress 562S	138	81	89
668L	Cypress 562S - Empress 394S	138	121	133
669L	Cypress 562S - Amoco Empress 163S	138	177	195
674L	Bowmanton 244S - Chappice Lake 649S	138	121	133

The TFO provided the details of the substation transformers in the Study Area. The key transformers in the Study Area are shown in Table 4-10.

Table 4-10: Summary of Key Transformer Ratings in the Study Area

Substation Name and Number	Transformer ID	Transformer Voltages (kV)	Transformer Rating (MVA)
North Lethbridge 370S	T3	240/138 kV	193.6
	T5	240/138 kV	200
	T6	240/138 kV	200
Westbrooks 28S	T1	240/138 kV	400
	T2	240/138 kV	400
Bowmanton 244S	T1	240/138 kV	200
	T2	240/138 kV	200

The TFOs provided the details of the shunt elements in the Study Area. The key shunt elements in the Study Area are shown in Table 4-11.

Table 4-11: Summary of Key Shunt Elements in the Study Area

Substation Name and Number	Voltage Class (kV)	Capacitors		Reactors	
		Number of Switched Shunt Blocks	Total at Nominal Voltage (MVAr)	Number of Switched Shunt Blocks	Total at Nominal Voltage (MVAr)
Taber 83S	138	1	24.46	-	-
		1	24.5		
Hays 421S	138	1	24.46	-	-
Picture Butte 120S	240	2	50	-	-
Burdett 368S	138	1	24.46	-	-
		1	24.5		
Tilley 498S	138	1	27.17	-	-
West Brooks 28S	240	-	-	1	50
Whitla 251S	240	-	-	2	75
McNeil 840S	138	2	24.8	-	-
Bullshead 523S	138	1	18.3	-	-

4.2.8 Protection Fault Clearing Times

The transient stability studies will be performed using the actual fault clearing times for the selected contingencies, as provided by the TFO and as shown in Table 4-12. Only those contingencies shown in Table 4-12 will be studied for transient stability studies.

Table 4-12: Protection Fault Clearing Times

Contingency (System Element Lost)	Fault Location	Clearing Times (Cycles)	
		Near End	Far End
1074L (Elkwater 264S – Bowmanton 244S)	Elkwater 264S	5	6
1074L (Elkwater 264S – Bowmanton 244S)	Bowmanton 244S	5	6
983L (Elkwater 264S – Whitla 251S)	Elkwater 264S	5	6
983L (Elkwater 264S – Whitla 251S)	Whitla 251S	5	6
964L (Whitla 251S – Bowmanton 244S)	Whitla 251S	4	5
964L (Whitla 251S – Bowmanton 244S)	Bowmanton 244S	4	5
1034L (Cassils 324S – Bowmanton 244S)	Cassils 324S	4	5
1034L (Cassils 324S – Bowmanton 244S)	Bowmanton 244S	4	5
1035L (Newell A2075S – Bowmanton 244S)	Newell A2075S	4	5
1035L (Newell A2075S – Bowmanton 244S)	Bowmanton 244S	4	5
892L (Suffield 895S – Bowmanton 244S)	Suffield 895S	6	27
892L (Suffield 895S – Bowmanton 244S)	Bowmanton 244S	6	27
676L (Bullshead 523S – Bowmanton 244S)	Bullshead 523S	6	27
676L (Bullshead 523S – Bowmanton 244S)	Bowmanton 244S	6	27
675L (AI Rothbauer 321S – Bowmanton 244S)	AI Rothbauer 321S	6	8
675L (AI Rothbauer 321S – Bowmanton 244S)	Bowmanton 244S	6	8
879L (Burdett 368S – Bowmanton 244S)	Burdett 368S	6	27
879L (Burdett 368S – Bowmanton 244S)	Bowmanton 244S	6	27
658L/674L (Cypress 562S – Bowmanton 244S)	Cypress 562S	6	27
658L/674L (Cypress 562S – Bowmanton 244S)	Bowmanton 244S	6	27

4.2.9 Voltage Profile Assumption

ID #2010-007RS will be used to establish system normal (i.e., pre-contingency) voltage profiles for key area busses prior to commencing any studies. Table 2-1 of the *Transmission Planning Criteria – Basis and Assumptions* applies for the busses not included in ID #2010-007RS. These voltages will be used to set the voltage profile for the study base cases prior to the power flow studies.

5 Study Methodology

The engineering studies to be performed for this connection assessment are identified in Table 5-1.

Table 5-1: Summary of Engineering Studies to be Performed

Scenario No. and Name		Power Flow		Voltage Stability		Transient Stability		Motor Starting		Short Circuit
		Category		Category		Category		Category		Category A
		A	B	A	B	A	B	A	B	
Pre-Project										
1	2020 SP	X	X			X	X			X
2	2020 SL	X	X			X	X			
Post-Project										
3	2020 SP	X	X			X	X			X
4	2020 SL	X	X			X	X			
5	2027 SP									X

For the engineering studies, all transmission facilities 69 kV and above within the Study Area and the transmission lines connecting these planning areas to neighbouring planning areas will be studied and monitored to assess the impact of the Project on the performance of the AIES, including any violations of the Reliability Criteria as defined in Section 3.1.

5.1 Power Flow Studies

Power flow studies will be performed to identify thermal and voltage criteria violations as per the Reliability Criteria, and any deviations from the limits listed in Table 3-1.

For the Category B power flow studies, the transformer taps and switched shunt reactive compensating devices such as shunt capacitors and reactors will be locked and continuous shunt devices will be enabled.

Voltage deviations at point-of-delivery (POD) low voltage busses will also be assessed for both the pre-Project and post-Project networks by first locking all tap changers and area shunt reactive compensating devices to identify any post-transient voltage deviations above 10%. Second, tap changers will be allowed to move while shunt reactive compensating devices remained locked to determine if any voltage deviations above 7% would occur in the area. Third, all the taps and shunt reactive compensating devices will be allowed to adjust, and voltage deviations above 5% will be reported.

The scenarios to be studied are shown in Table 5-1.

5.1.1 Contingencies to be Studied

Power flow studies will be performed for the Category A and all Category B conditions in the Study Area.

5.2 Transient Stability Studies

The Genesee generating unit 3 in Wabamun (Area 40) will be used as the reference for the studies.

Response plots for angle, active and reactive power output, and terminal voltage for the proposed generation facility and generators listed below should be provided:

- One generator from City of Medicine Hat system
- One generator from Shepard Power Plant
- Naturener Wild Rose 1 & 2 Wind Farm
- Capital Power Whitla Wind Power Facility
- Suncor Forty Mile Wind Power Project

The transient response voltages shall be monitored at the following key 240 kV and 138 kV buses:

- Bowmanton 244S substation 240 kV bus
- Approved Elkwater 264S substation 240 kV bus
- Whitla 251S substation 240 kV bus
- Proposed Granlea 1024S substation 240 kV bus

Other busses will be monitored and will be reported as determined by the results. The results report must also provide the key branch active and reactive power flow surrounding the Facility.

Transient stability studies will be performed for both the pre-Project and post-Project scenarios as shown in Table 5-1. If any transient stability issues are observed, transient stability analysis will be performed for the corresponding pre-Project scenarios.

5.2.1 Contingencies to be Studied

Transient stability studies will be performed for the selected contingencies shown in Table 4-12.

5.3 Short-Circuit Current Level Studies

A maximum fault level must be provided for the substations in the vicinity of the Project assuming normal system operation with all transmission elements in service and generation dispatched. Three-phase faults and single line-to-ground faults will be simulated. Polar coordinates and per-unit values will be used for reporting the results.

Summer peak scenarios will be used for the short-circuit studies.

Estimated maximum three-phase faults and single line-to-ground short-circuit current levels will be reported for the following substations:

- Whitla 255S substation 240 kV bus
- Bowmanton 244S substation 240 kV and 138 kV busses
- Approved Elkwater 264S substation 240 kV bus
- Approved Wild Rose 547S substation 240 kV bus

- Approved Eagle Butte 274S substation 240 kV bus
- Proposed Granlea 1024S substation 240 kV bus

Further sensitivity studies, in consultation with the TFO, may be required if the primary short-circuit analysis indicates a potential to exceed or approach the existing fault rating of the transmission facilities.

The scenarios to be studied are as shown in Table 5-1.

6 Mitigation Measures

6.1 Development

Mitigation measures may be required if the post-Project study results identify system performance issues. Mitigation measures for the Project may involve modifying or adding real-time operational practices and/or remedial action schemes (RASs).

The Studies Consultant must notify the AESO of any system performance issues in a timely manner, following which the AESO Studies Engineer may instruct the Studies Consultant as follows:

- Develop tables showing the constraint effective factors[3] for generation or load based on thermal criteria violations that are observed.
- Collaborate with the AESO to propose changes, if any, to the connection alternatives that could remove the requirement for a RAS.
- Collaborate with the AESO to study modifications to existing and/or planned RASs, proposed by the AESO, to ensure the coordination of existing protection schemes with the addition of any proposed protection schemes.
- Collaborate with the AESO to identify and study new RASs, if any, that may be required to ensure system reliability is maintained after connecting the Project to the AIES.

The AESO Studies Engineer will work closely with the Studies Consultant and guide the development and/or modifications of the proposed mitigation measures to ensure system reliability, security and compliance with AESO ID #2018-018T, *Provision of System Access Service and the Connection Process*.

6.2 Evaluation

6.2.1 Post-Mitigation Studies

Studies to evaluate the effectiveness of mitigation measures, if required, will be performed in accordance with the technical criteria, assumptions, and methods provided in this Study Scope and in accordance with further instructions from the AESO.

6.2.2 Constraint Effective Factor Studies

Constraint effective factor analysis are used to determine the generator- and load- constraint effective factors and to identify the most effective generators or loads to manage the thermal criteria violations, if any, that are observed under Category B conditions.

[3] Constraint effective factor studies are performed to determine the generator- and load- constraint effective factors. Constraint effective factors are used to estimate the ability of generators and loads to manage transmission constraints. A generator's or load's constraint effective factor is defined as the change in power flow over a specific transmission line following a change in the generator's energy production or in the load's energy consumption. The greater the constraint effective factor, the more effective a generator or load can be in managing a thermal criteria violation on the specific transmission line.

Attachment A: Transmission Planning Criteria – Basis and Assumptions

Transmission Planning Criteria – Basis and Assumptions

Version 1.1

Alberta Electric System Operator, Calgary Place, 2500, 330 – 5th Avenue SW Calgary, AB T2P 0L4
Phone: 403-539-2450 Fax: 403-539-2949 www.aeso.ca @theaeso

1. Introduction

This document presents the reliability standards, criteria, and assumptions to be used as the basis for planning the Alberta Transmission System. The criteria, standards and assumptions identified in this document supersede those previously established.

2. Transmission Reliability Standards and Criteria[1]

The AESO applies the following Alberta Reliability Standards to ensure that the transmission system is planned to meet applicable performance requirements under a defined set of system conditions and contingencies. A brief description of each of these standards is given below:

1. **TPL-001-AB-0: System Performance Under Normal Conditions**

   Category A represents a normal system condition with all elements in service (N-0). All equipment must be within its applicable rating, voltages must be within their applicable ratings and the system must be stable with no cascading outages. Under Category A, electric supply to load cannot be interrupted and generating units cannot be removed from service.

2. **TPL-002-AB1-0: System Performance Following Loss of a Single BES Element**

   Category B events result in the loss of any single element (N-1) under specified fault conditions with normal clearing. The specified elements are a generating unit, a transmission circuit, a transformer or a single pole of a direct current transmission line. The acceptable impact on the system is the same as Category A with the exception that radial customers or some local network customers, including loads or generating units, are allowed to be disconnected from the system if they are connected through the faulted element. The loss of opportunity load or opportunity interchanges is allowed. No cascading can occur.

3. **TPL-003-AB-0: System Performance Following Loss of Two or More BES Elements**

   Category C events result in the loss of two or more bulk electric system elements (sequential, N-1-1 or concurrent, N-2) under specified fault conditions and include both normal and delayed fault clearing. All of the system limits for Category A and B events apply with the exception that planned and controlled loss of firm load, firm transfers and/or generation is acceptable provided there is no cascading.

4. **TPL-004-AB-0: System Performance Following Extreme BES Events**

   Category D represents a wide variety of extreme, rare and unpredictable events, which may result in the loss of load and generation in widespread areas. The system may not be able to reach a new stable steady state, which means a blackout is a possible outcome. The AESO needs to evaluate these events, at its discretion, for risks and consequences prior to creating mitigation plans.

5. **FAC-014-AB1-2: Establishing and Communicating System Operating Limits**

   The AESO is required to establish system operating limits where a contingency is not mitigated through construction of transmission facilities

[1] A complete description of these standards is given in: AESO. *Alberta Reliability Standards*. Available at: https://www.aeso.ca/rules-standards-and-tariff/alberta-reliability-standards/

2.1 Thermal Loading Criteria

The AESO Thermal Loading Criteria require that the continuous thermal rating of any transmission element is not exceeded under normal and post-contingency operating conditions. Thermal limits are assumed to be 100% of the respective normal summer and winter ratings. Emergency limits are not considered in the planning evaluations.

2.2 Voltage Range and Voltage Stability Criteria

The normal minimum and maximum voltage limits as specified in the following table are used to identify Category A system voltage violations, while the extreme minimum and maximum limits are used to identify Category B and C system violations. Table 2-1 presents the acceptable steady state and contingency state voltage ranges for the AIES. Table 2-2 provides voltage stability criteria used to test the system performance.

Table 2-1: Acceptable Range of Steady State Voltage (kV)

Nominal Voltage	Extreme Minimum	Normal Minimum	Normal Maximum	Extreme Maximum
500	475	500	525	550
240	216	234	252	264
260 (Northeast & Northwest)*	234	247	266	275
144	130	137	151	155
138	124	135	145	152
72	65	68.5	75.5	79
69	62	65.5	72.5	76

Table 2-2: Voltage Stability Criteria

Performance Level	Disturbance (1)(2)(3)(4) Initiated by: Fault of No Fault DC Disturbance	MW Margin (P-V method) (5)(6)(7)	MVAr Margin (V-Q method) (6)(7)
A	Any element such as: One Generator One Circuit One Transformer One Reactive Power Source One DC Monopole	≥5%	Worst Case Scenario(8)
B	Bus Section	≥5%	50% of Margin Requirement in Level A
C	Any combination of two elements such as: A Line and a Generator A Line and a Reactive Power Source Two Generators Two Circuits Two Transformers Two Reactive Power Sources DC Bipole	≥2.5%	50% of Margin Requirement in Level A
D	Any combination of three or more elements such as: Three or More Circuits on ROW Entire Substation Entire Plant Including Switchyard	> 0	> 0

2.3 Transient Stability Analysis Assumptions

Standard fault clearing times as shown in Table 2-3 are used for the new facilities or when the actual clearing times are not available for the existing facilities. Double line-to-ground faults are applied for the Category C5 events with normal clearing times. Single line-to-ground faults are applied for Category C6 to C9 events with delayed clearing times as depicted in Table 2-4 and Table 2-5.

Table 2-3: Fault Clearing Times

Nominal (kV)	Near End (Cycles)	Far End (Cycles)
500	4	5
240	5	6
144/138 with telecommunications	6	8
144/138 without telecommunications	6	30

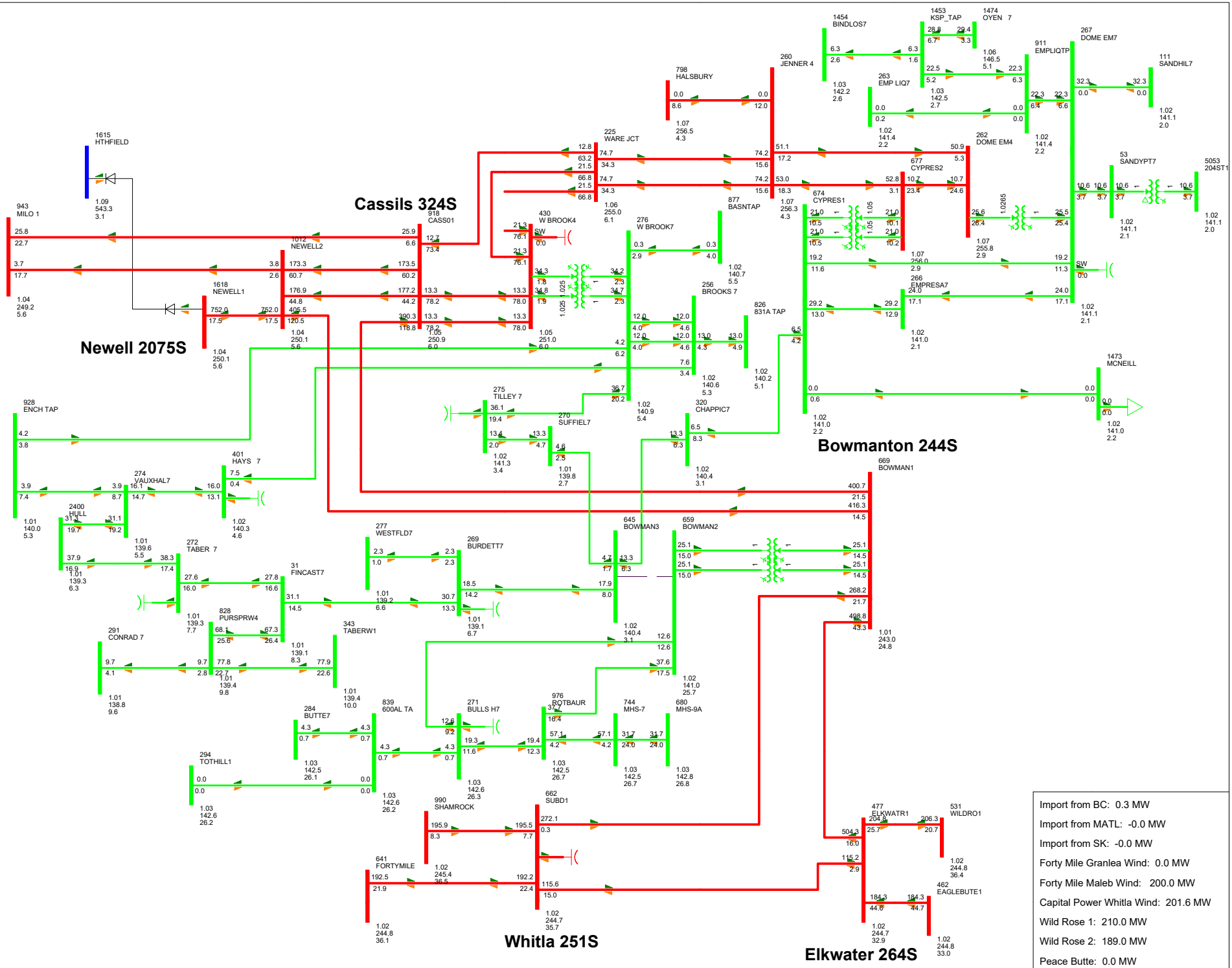
Table 2-4: Stuck Breaker Clearing Times for Lines

Voltage (kV)	Fault Clearing Times (Cycles)		
	Near End	Far End	2nd Ckt (C5 and C7 only)
138/144	15	24	24
240	12	6	14
500	9	5	11

Table 2-5: Stuck Breaker Clearing Times for Transformers

Voltage (kV)	Fault Location	Fault Clearing Times (Cycles)		
		High Side	Low Side	2nd Ckt (breaker fail)
240/138	240 kV side	12	6	14
	138 kV side	5	15	24
500/240	500 kV side	9	5	11
	240 kV side	4	12	14

Attachment A2
Pre-Project Power Flow Diagrams

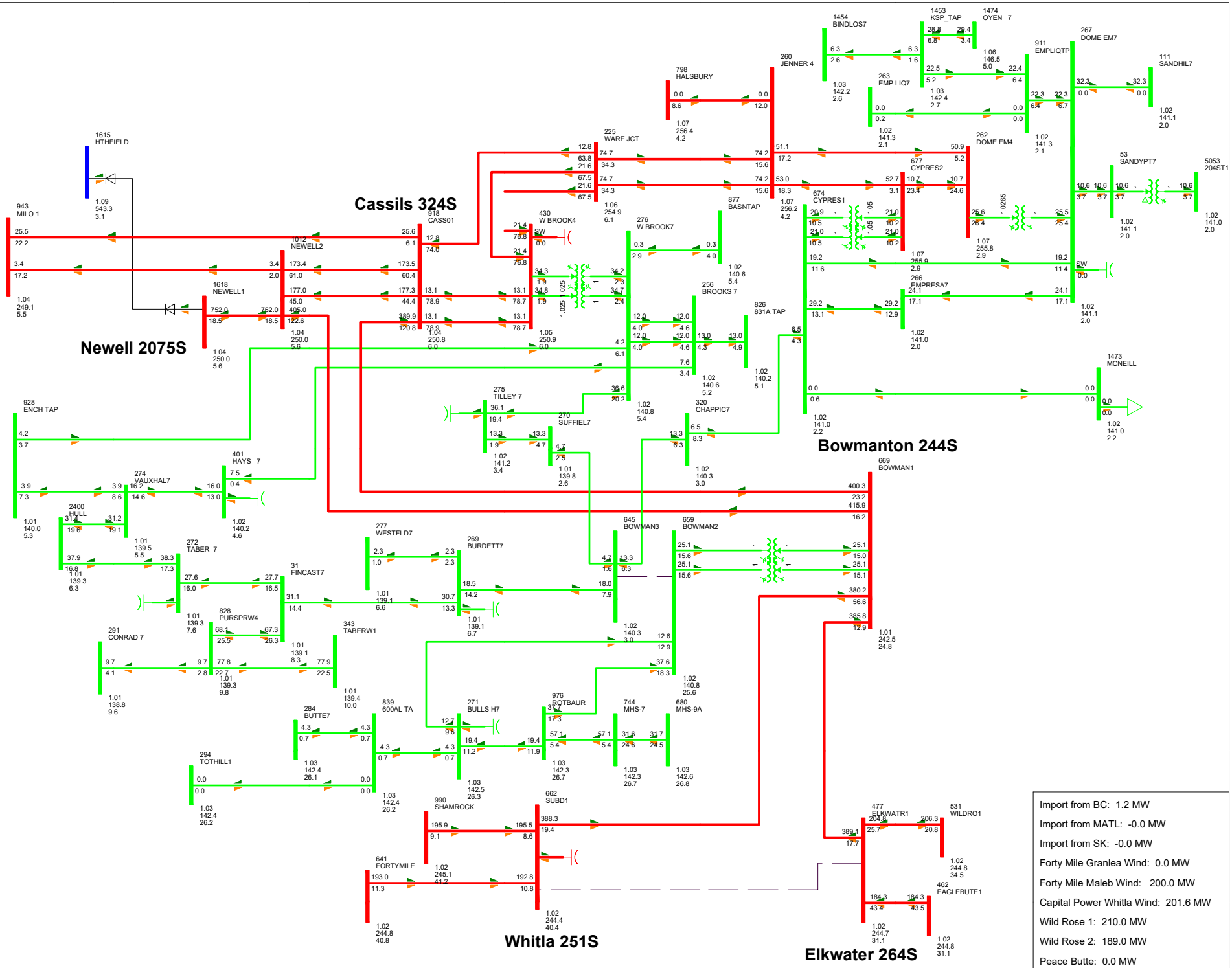


Forty Mile Granlea WAGF

AESO Project Number: P1812

FIGURE B-1: P1812_2020SL_PRE.SAV
CATEGORY A - NO CONTINGENCY
FRI, OCT 05 2018 10:27

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000OV 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000

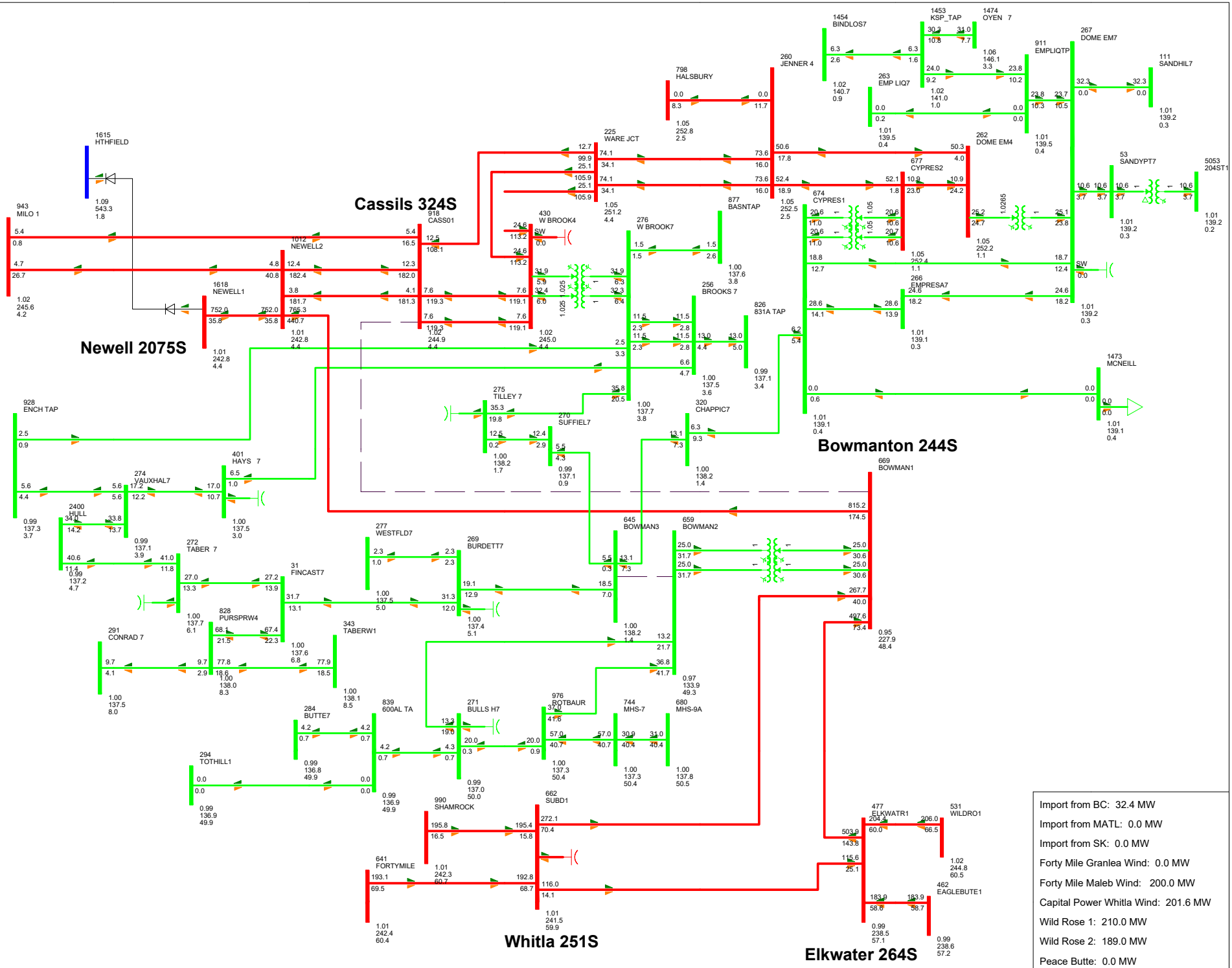


Import from BC: 1.2 MW
Import from MATL: -0.0 MW
Import from SK: -0.0 MW
Forty Mile Granlea Wind: 0.0 MW
Forty Mile Maleb Wind: 200.0 MW
Capital Power Whitla Wind: 201.6 MW
Wild Rose 1: 210.0 MW
Wild Rose 2: 189.0 MW
Peace Butte: 0.0 MW
City of MH Export to AIES: 57.1 MW

Forty Mile Granlea WAGF
AESO Project Number: P1812

FIGURE B-2: P1812_2020SL_PRE.SAV
CATEGORY B - 983L (WHITLA 251S TO ELKWATER 264S)
FRI, OCT 05 2018 10:29

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000OV 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000

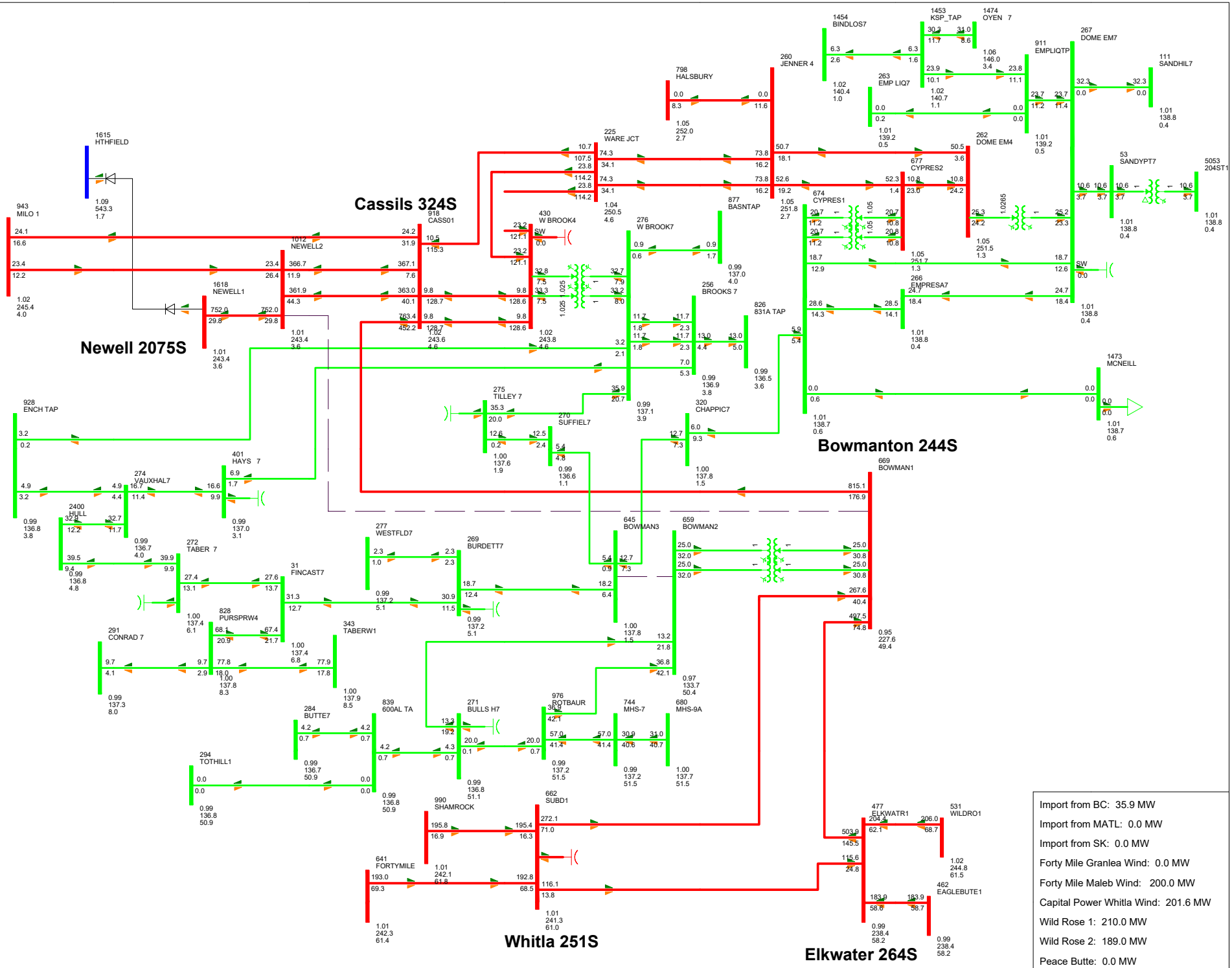


Import from BC: 32.4 MW
Import from MATL: 0.0 MW
Import from SK: 0.0 MW
Forty Mile Granlea Wind: 0.0 MW
Forty Mile Maleb Wind: 200.0 MW
Capital Power Whitla Wind: 201.6 MW
Wild Rose 1: 210.0 MW
Wild Rose 2: 189.0 MW
Peace Butte: 0.0 MW
City of MH Export to AIES: 57.0 MW

Forty Mile Granlea WAGF
AESO Project Number: P1812

FIGURE B-3: P1812_2020SL_PRE.SAV
CATEGORY B - 1034L (CASSILS 324S TO BOWMANTON 244S)
FRI, OCT 05 2018 10:30

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000OV 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000

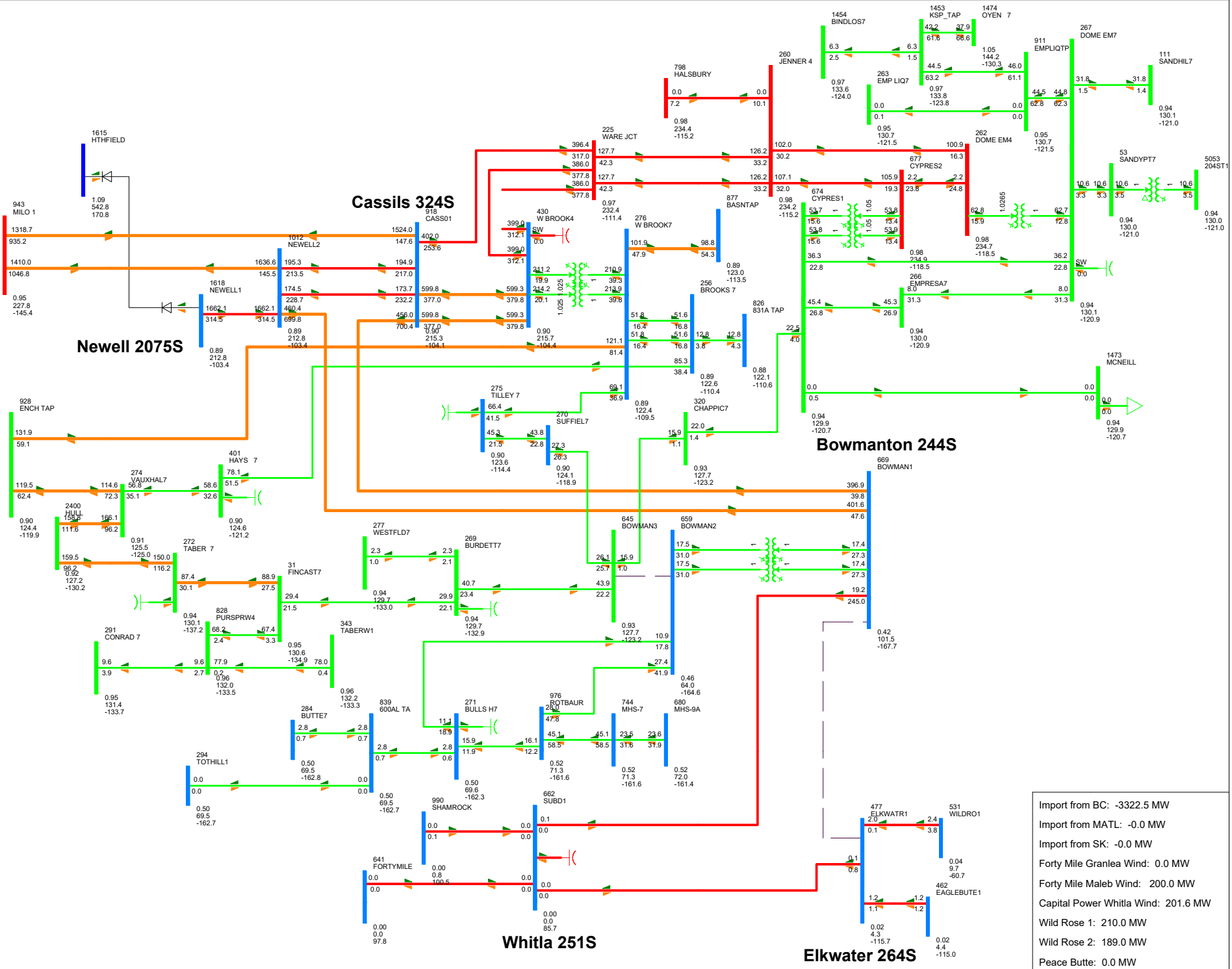


Forty Mile Granlea WAGF

AESO Project Number: P1812

FIGURE B-4: P1812_2020SL_PRE.SAV
CATEGORY B - 1035L (NEWELL 2075S TO BOWMANTON 244S)
FRI, OCT 05 2018 10:31

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000OV 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000

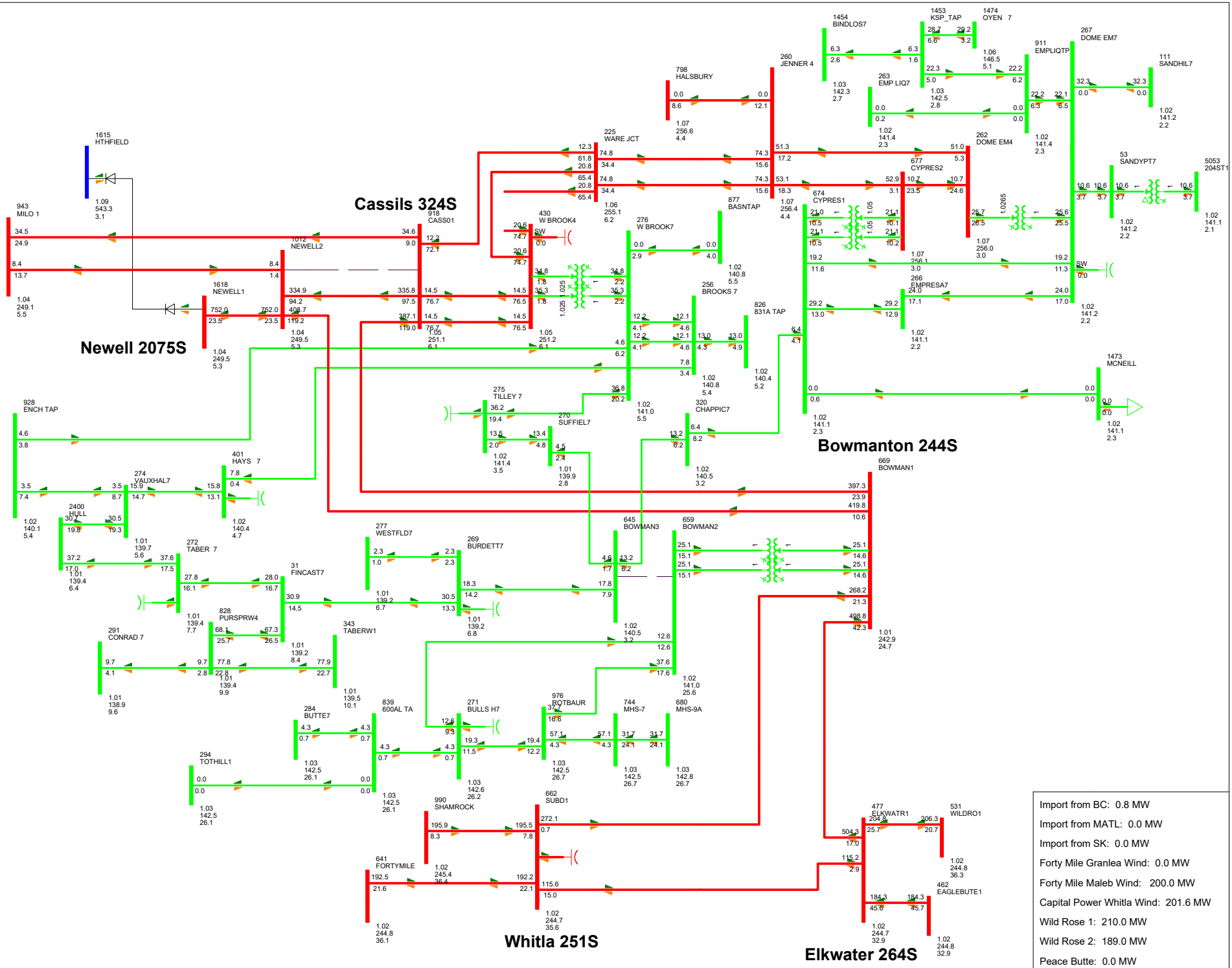


Import from BC: -3322.5 MW
Import from MATL: -0.0 MW
Import from SK: -0.0 MW
Forty Mile Granlea Wind: 0.0 MW
Forty Mile Maleb Wind: 200.0 MW
Capital Power Whitla Wind: 201.6 MW
Wild Rose 1: 210.0 MW
Wild Rose 2: 189.0 MW
Peace Butte: 0.0 MW
City of MH Export to AIES: 45.1 MW

Forty Mile Granlea WAGF
AESO Project Number: P1812

FIGURE B-5: P1812_2020SL_PRE.SAV
CATEGORY B - 1074L (BOWMANTON 244S TO ELKWATER 264S)
FRI, OCT 05 2018 10:31

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000OV 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000

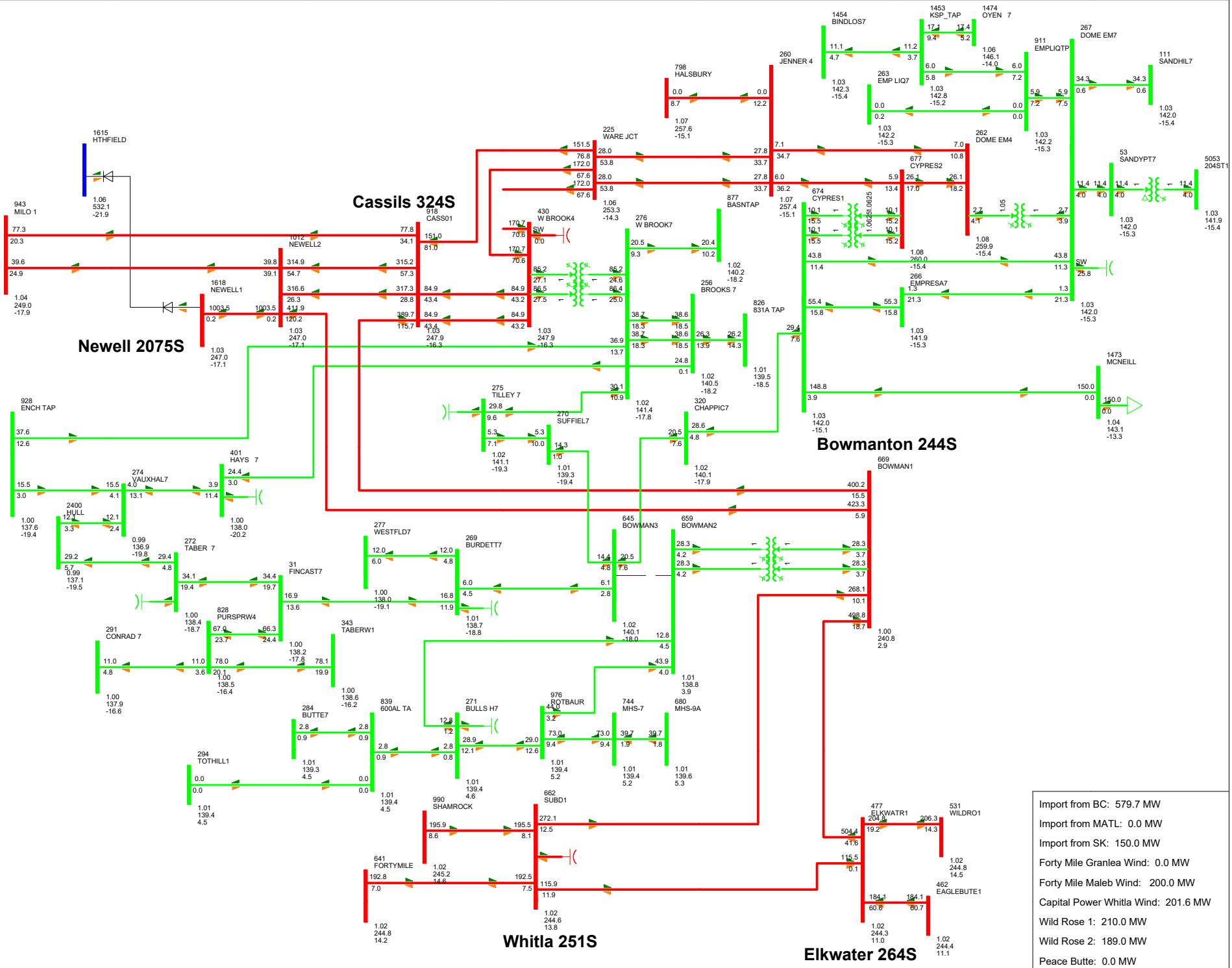


Forty Mile Granlea WAGF

AESO Project Number: P1812

FIGURE B-6: P1812_2020SL_PRE.SAV
CATEGORY B - 1088L (NEWELL 2075S TO CASSILS 324S)
FRI, OCT 05 2018 10:31

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000OV 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000

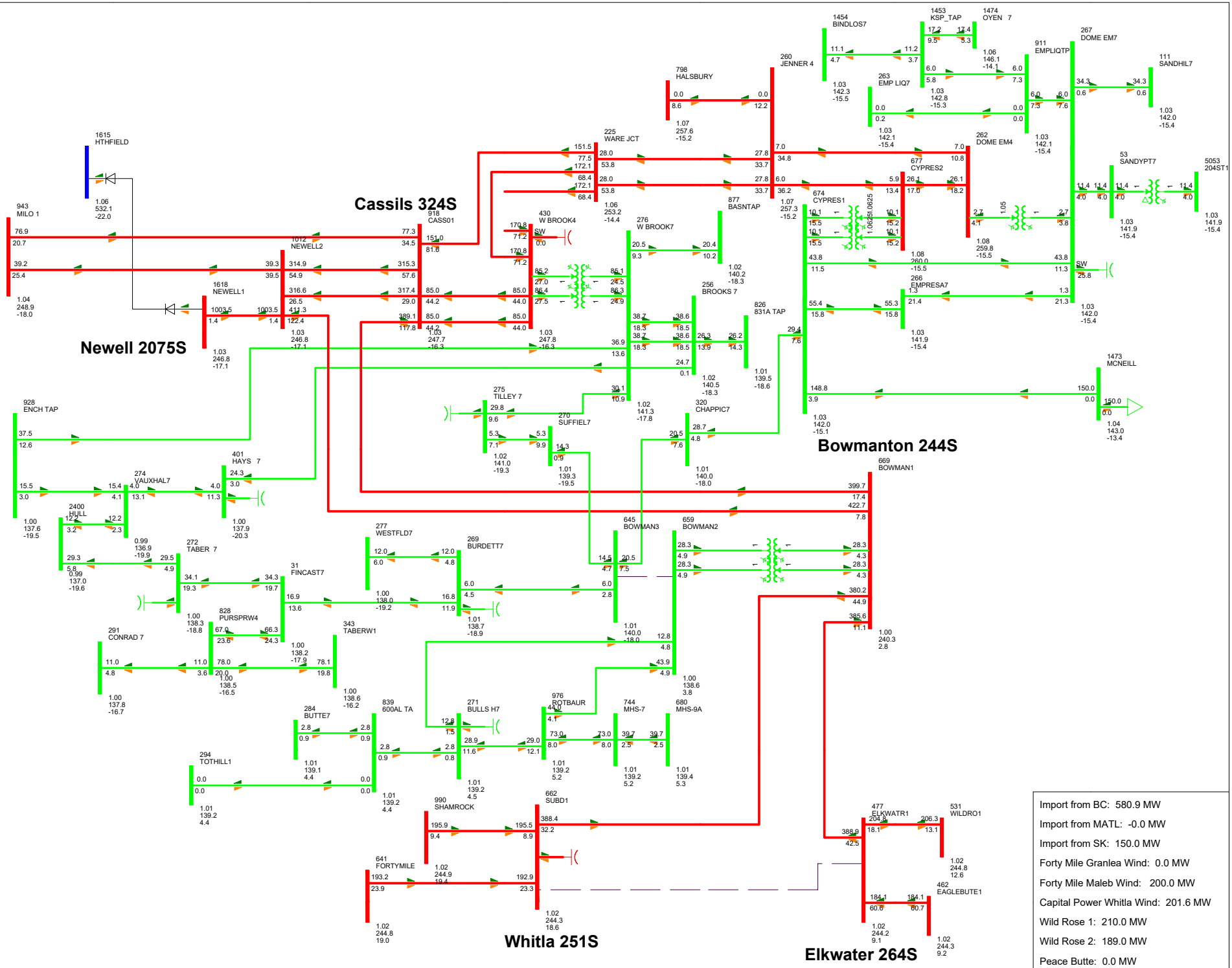


Import from BC: 579.7 MW
Import from MATL: 0.0 MW
Import from SK: 150.0 MW
Forty Mile Granlea Wind: 0.0 MW
Forty Mile Maleb Wind: 200.0 MW
Capital Power Whitla Wind: 201.6 MW
Wild Rose 1: 210.0 MW
Wild Rose 2: 189.0 MW
Peace Butte: 0.0 MW
City of MH Export to AIES: 73.0 MW

Forty Mile Granlea WAGF
AESO Project Number: P1812

FIGURE B-7: P1812_2020SP_PRE.SAV
CATEGORY A - NO CONTINGENCY
FRI, OCT 05 2018 10:32

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000OV 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000

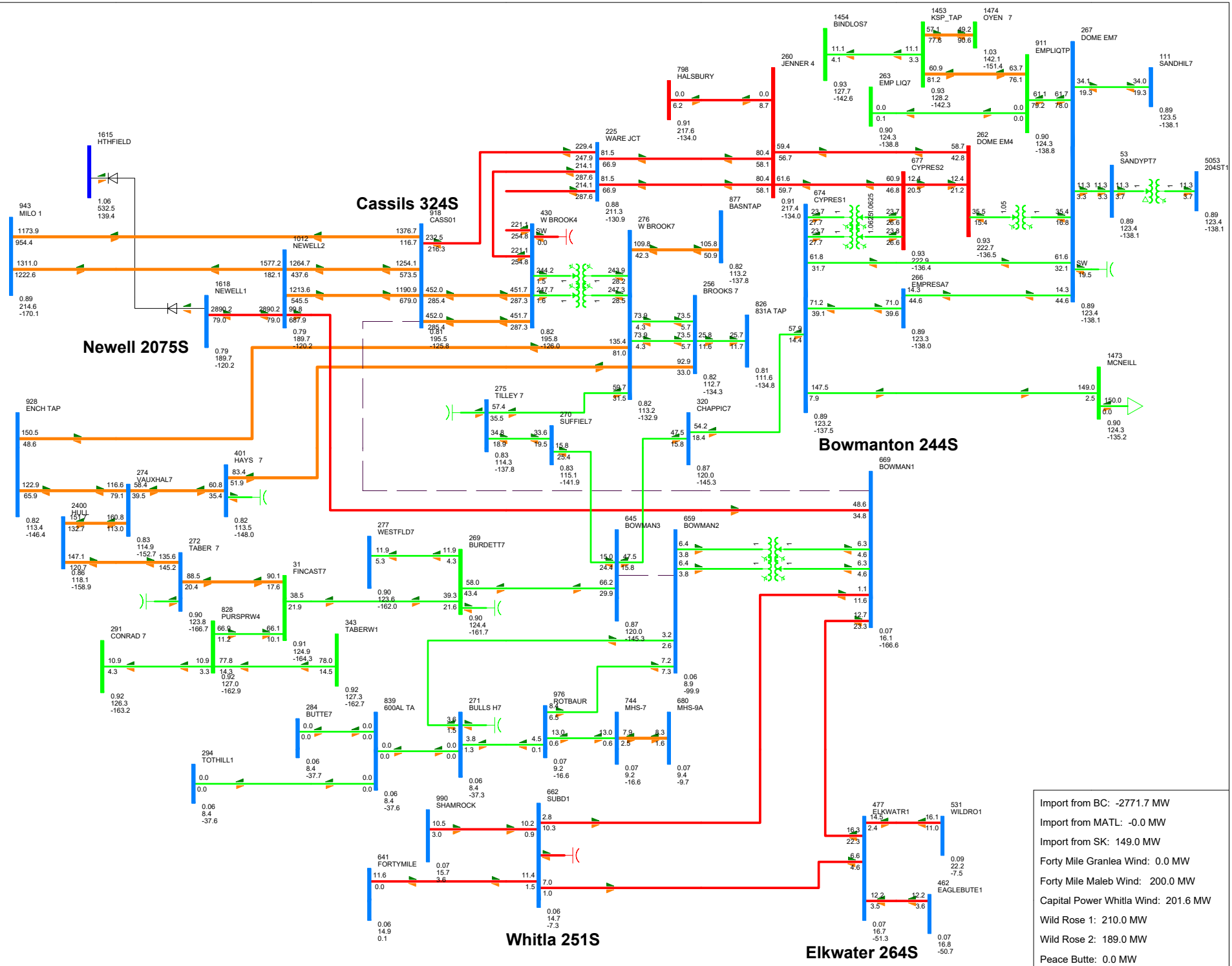


Import from BC: 580.9 MW
Import from MATL: -0.0 MW
Import from SK: 150.0 MW
Forty Mile Granlea Wind: 0.0 MW
Forty Mile Maleb Wind: 200.0 MW
Capital Power Whitla Wind: 201.6 MW
Wild Rose 1: 210.0 MW
Wild Rose 2: 189.0 MW
Peace Butte: 0.0 MW
City of MH Export to AIES: 73.0 MW

Forty Mile Granlea WAGF
AESO Project Number: P1812

FIGURE B-8: P1812_2020SP_PRE.SAV
CATEGORY B - 983L (WHITLA 251S TO ELKWATER 264S)
FRI, OCT 05 2018 10:32

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000V 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000

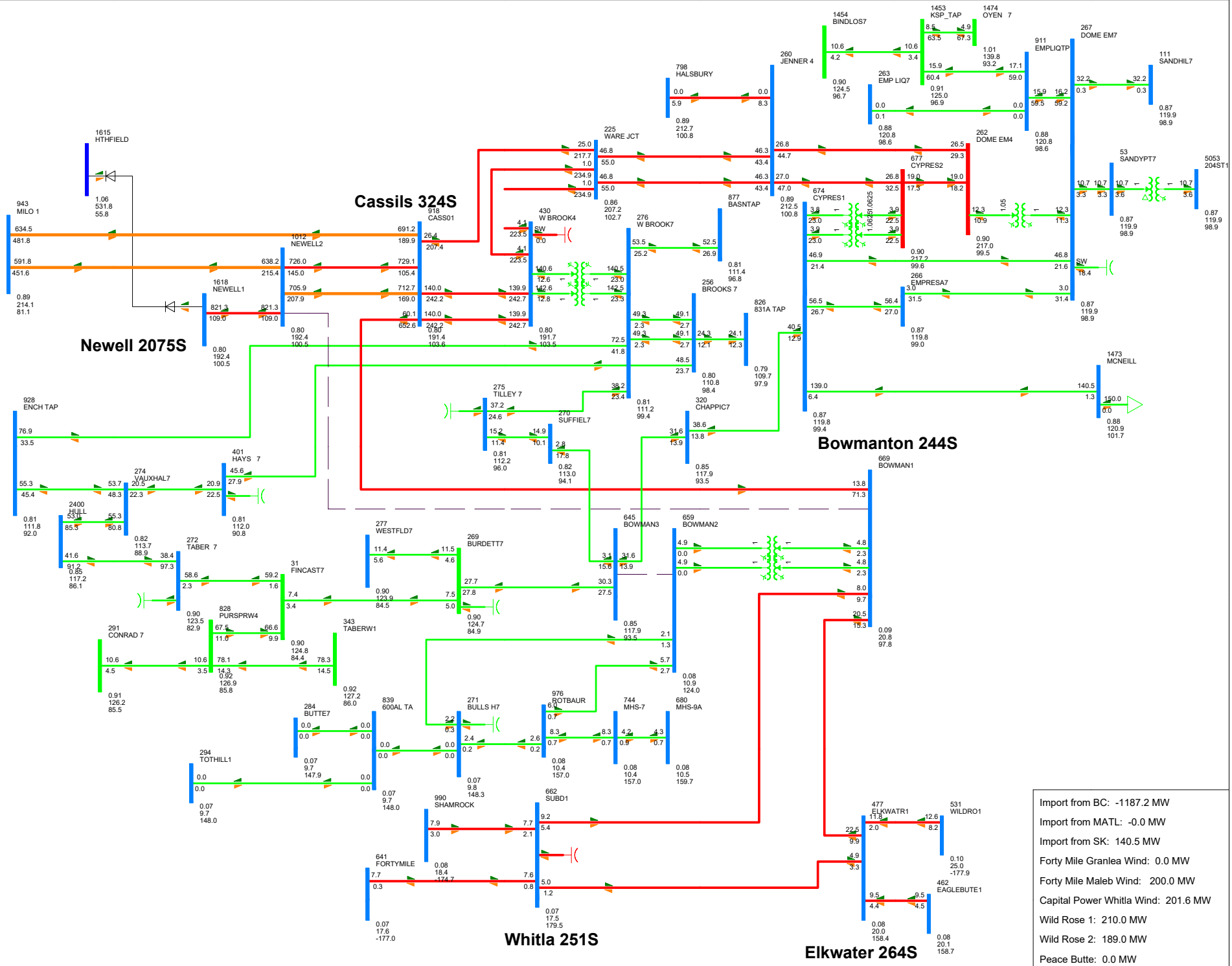


Import from BC: -2771.7 MW
Import from MATL: -0.0 MW
Import from SK: 149.0 MW
Forty Mile Granlea Wind: 0.0 MW
Forty Mile Maleb Wind: 200.0 MW
Capital Power Whitla Wind: 201.6 MW
Wild Rose 1: 210.0 MW
Wild Rose 2: 189.0 MW
Peace Butte: 0.0 MW
City of MH Export to AIES: 13.0 MW

Forty Mile Granlea WAGF
AESO Project Number: P1812

FIGURE B-9: P1812_2020SP_PRE.SAV
CATEGORY B - 1034L (CASSILS 324S TO BOWMANTON 244S)
FRI, OCT 05 2018 10:33

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1:1000V 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000

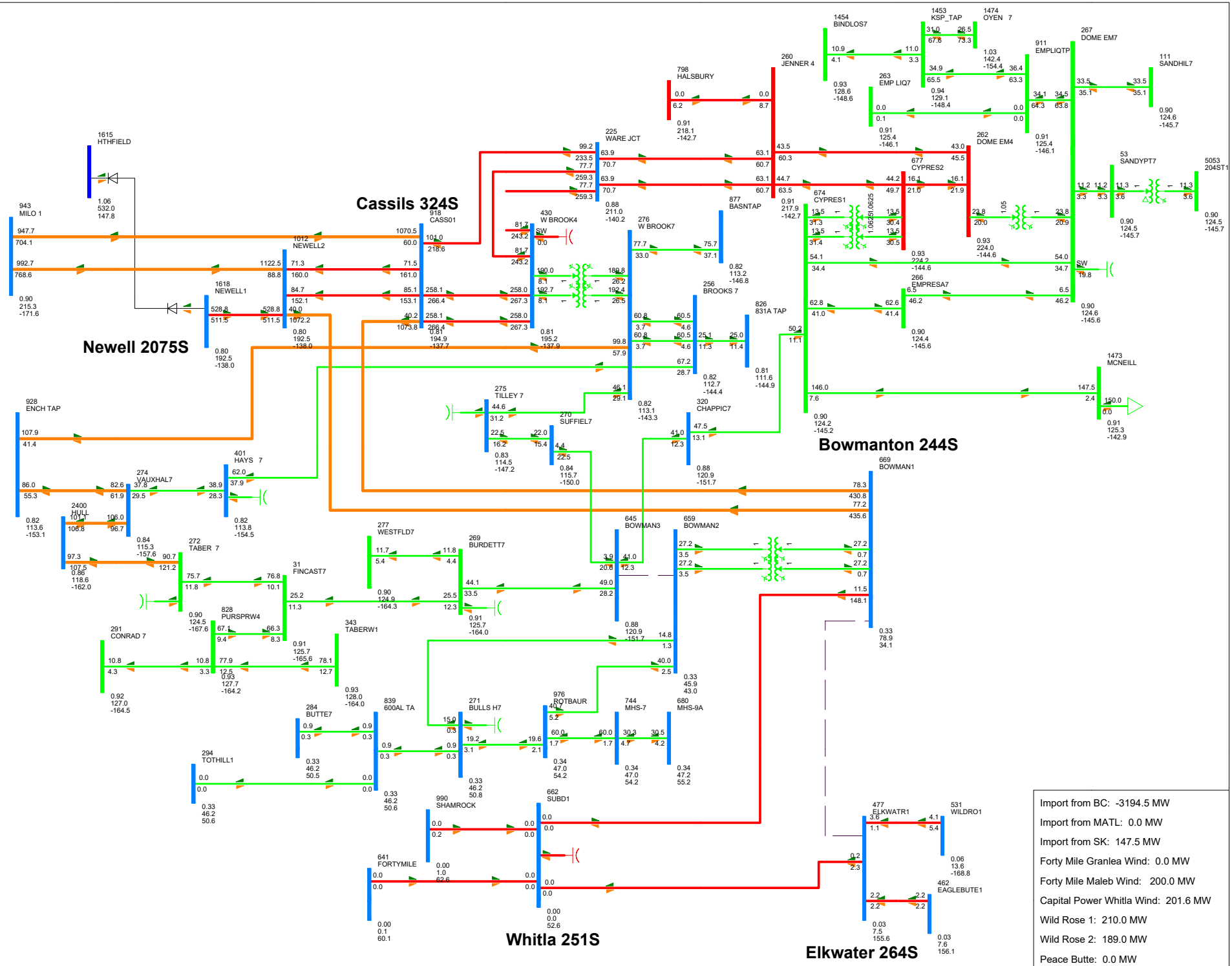


Import from BC: -1187.2 MW
Import from MATL: -0.0 MW
Import from SK: 140.5 MW
Forty Mile Granlea Wind: 0.0 MW
Forty Mile Maleb Wind: 200.0 MW
Capital Power Whitla Wind: 201.6 MW
Wild Rose 1: 210.0 MW
Wild Rose 2: 189.0 MW
Peace Butte: 0.0 MW
City of MH Export to AIES: 8.3 MW

Forty Mile Granlea WAGF
AESO Project Number: P1812

FIGURE B-10: P1812_2020SP_PRE.SAV
CATEGORY B - 1035L (NEWELL 2075S TO BOWMANTON 244S)
FRI, OCT 05 2018 10:33

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000OV 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000

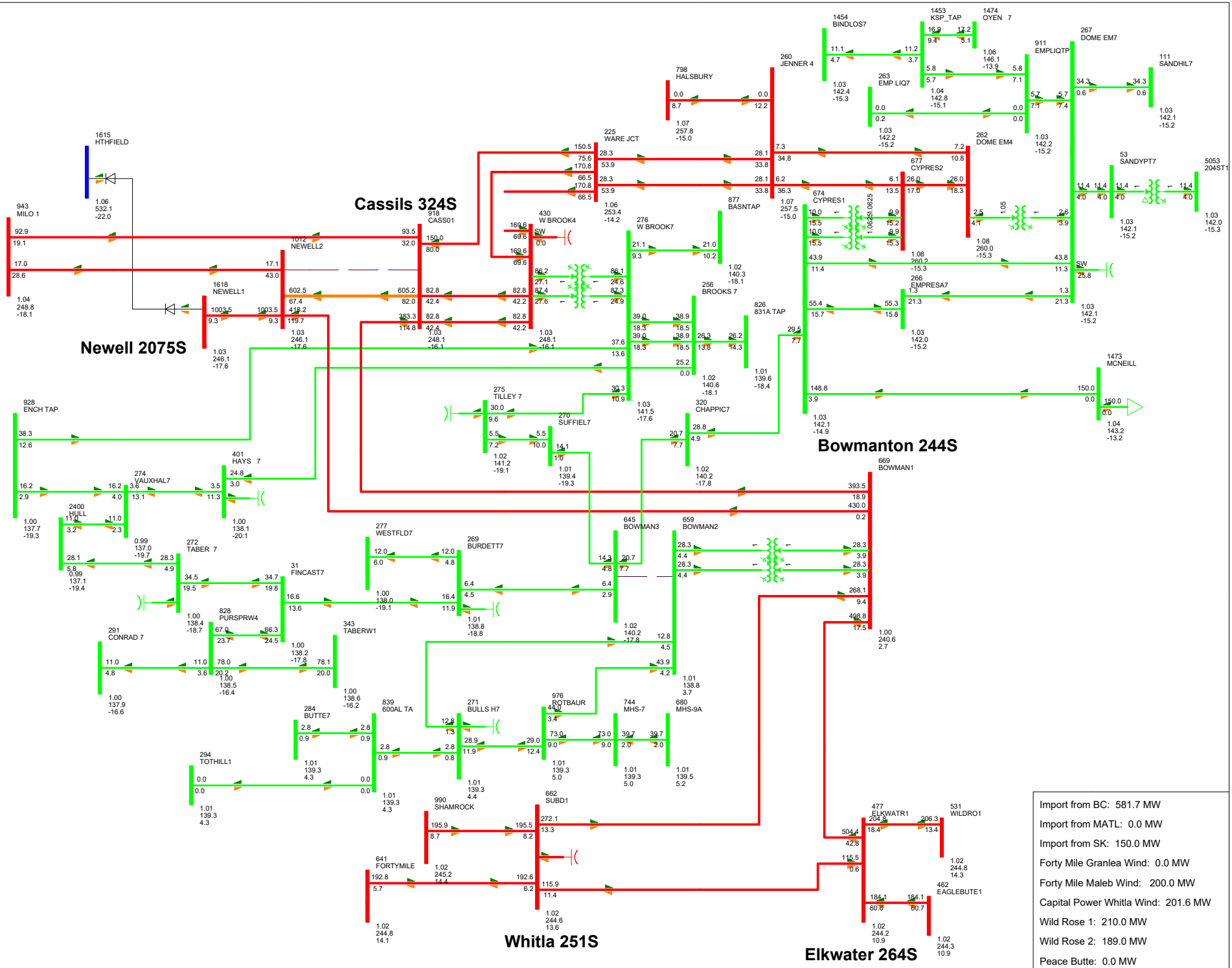


Forty Mile Granlea WAGF

AESO Project Number: P1812

FIGURE B-11: P1812_2020SP_PRE.SAV
CATEGORY B - 1074L (BOWMANTON 244S TO ELKWATER 264S)
FRI, OCT 05 2018 10:33

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000OV 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000



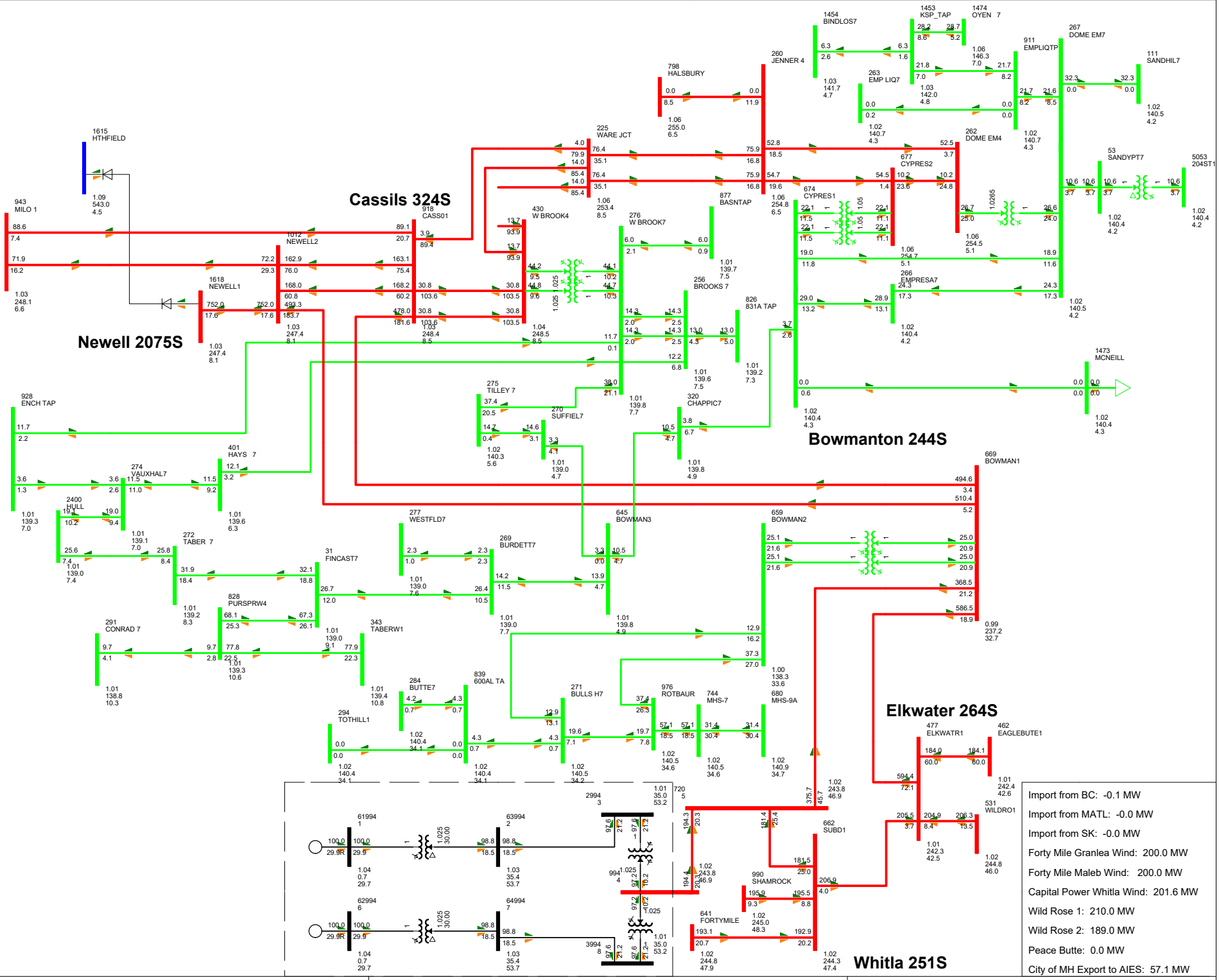
Forty Mile Granlea WAGF

AESO Project Number: P1812

FIGURE B-12: P1812_2020SP_PRE.SAV
CATEGORY B - 1088L (NEWELL 2075S TO CASSILS 324S)
FRI, OCT 05 2018 10:34

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000OV 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000

Attachment A3
Post-Project Power Flow Diagrams

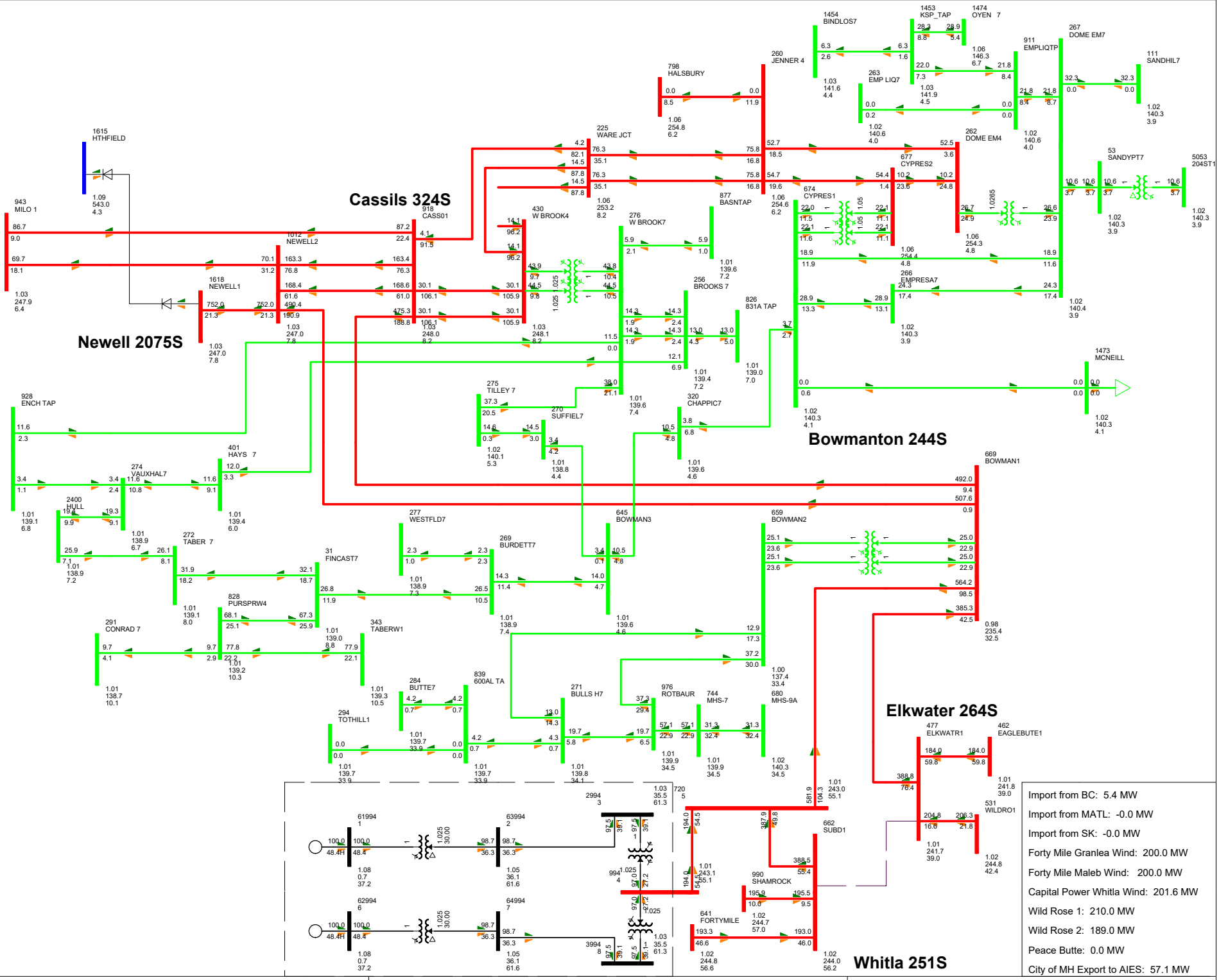


Forty Mile Granlea WAGF

AESO Project Number: P1812

FIGURE C-1: P1812_2020SL_POST.SAV
CATEGORY A - NO CONTINGENCY
FRI, OCT 05 2018 10:36

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000V 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000

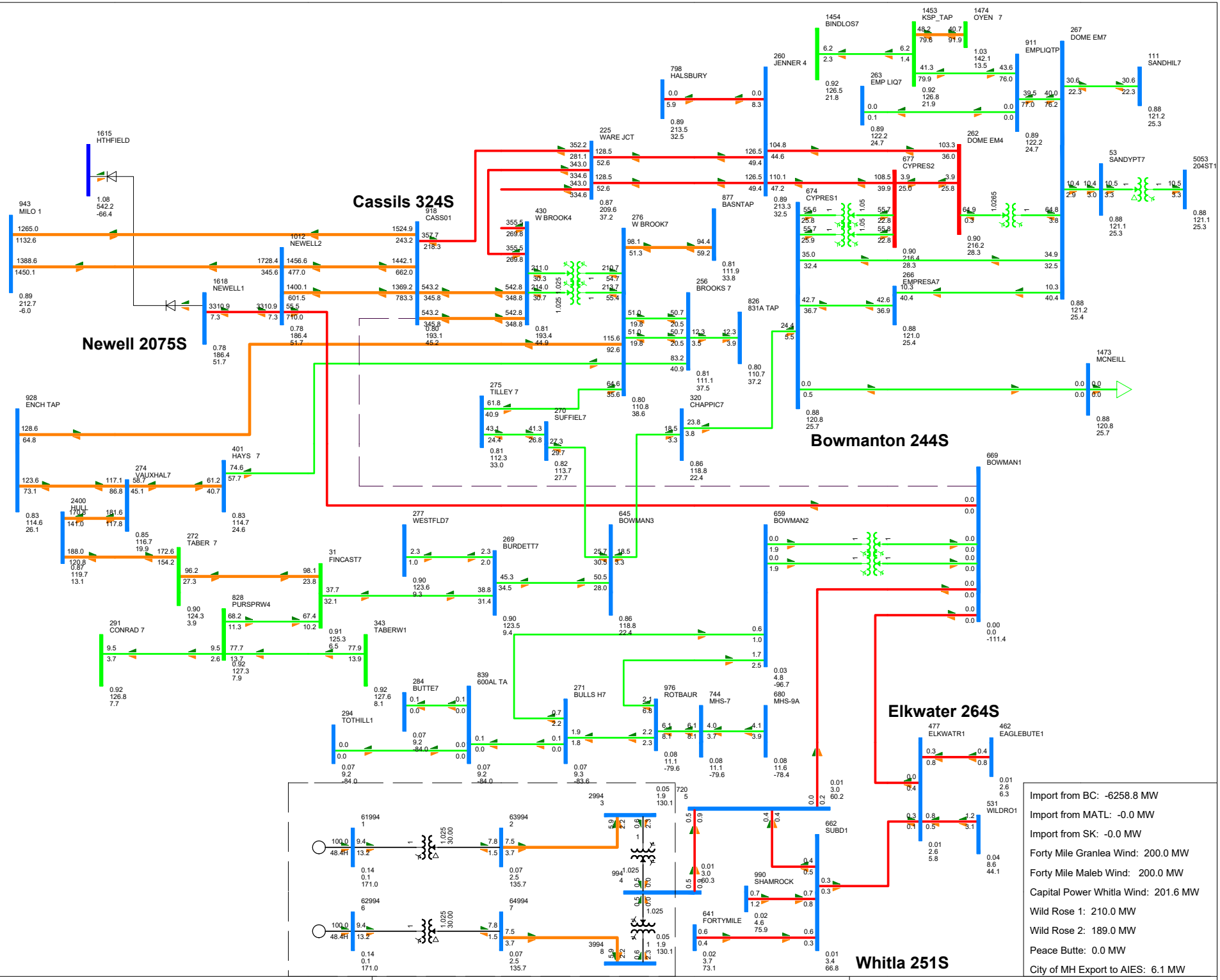


Forty Mile Granlea WAGF

AESO Project Number: P1812

FIGURE C-2: P1812_2020SL_POST.SAV
CATEGORY B - 983L (WHITLA 251S TO ELKWATER 264S)
FRI, OCT 05 2018 10:37

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000V 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000

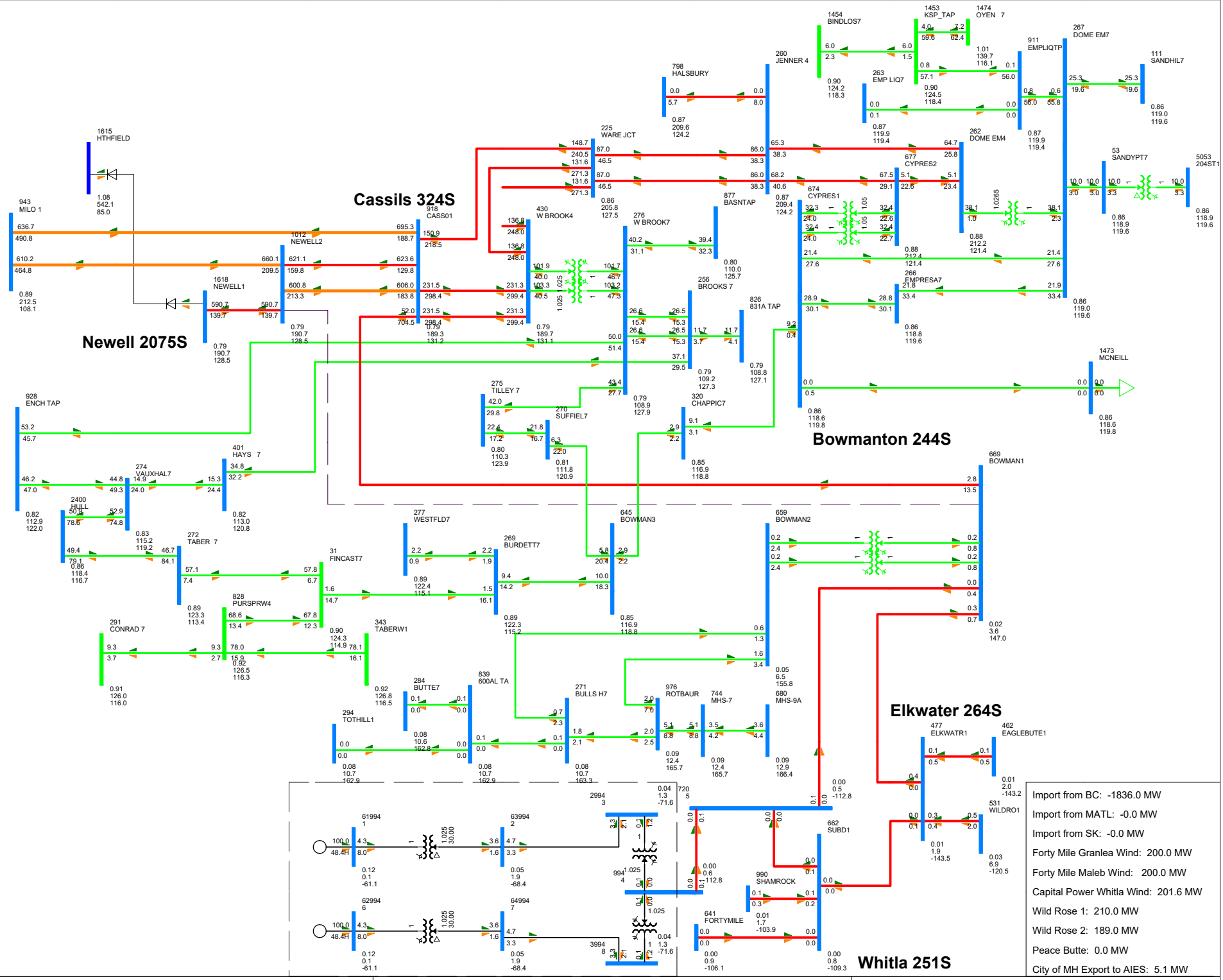


Forty Mile Granlea WAGF

AESO Project Number: P1812

FIGURE C-3: P1812_2020SL_POST.SAV
CATEGORY B - 1034L (CASSILS 324S TO BOWMANTON 244S)
FRI, OCT 05 2018 10:37

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000V 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000

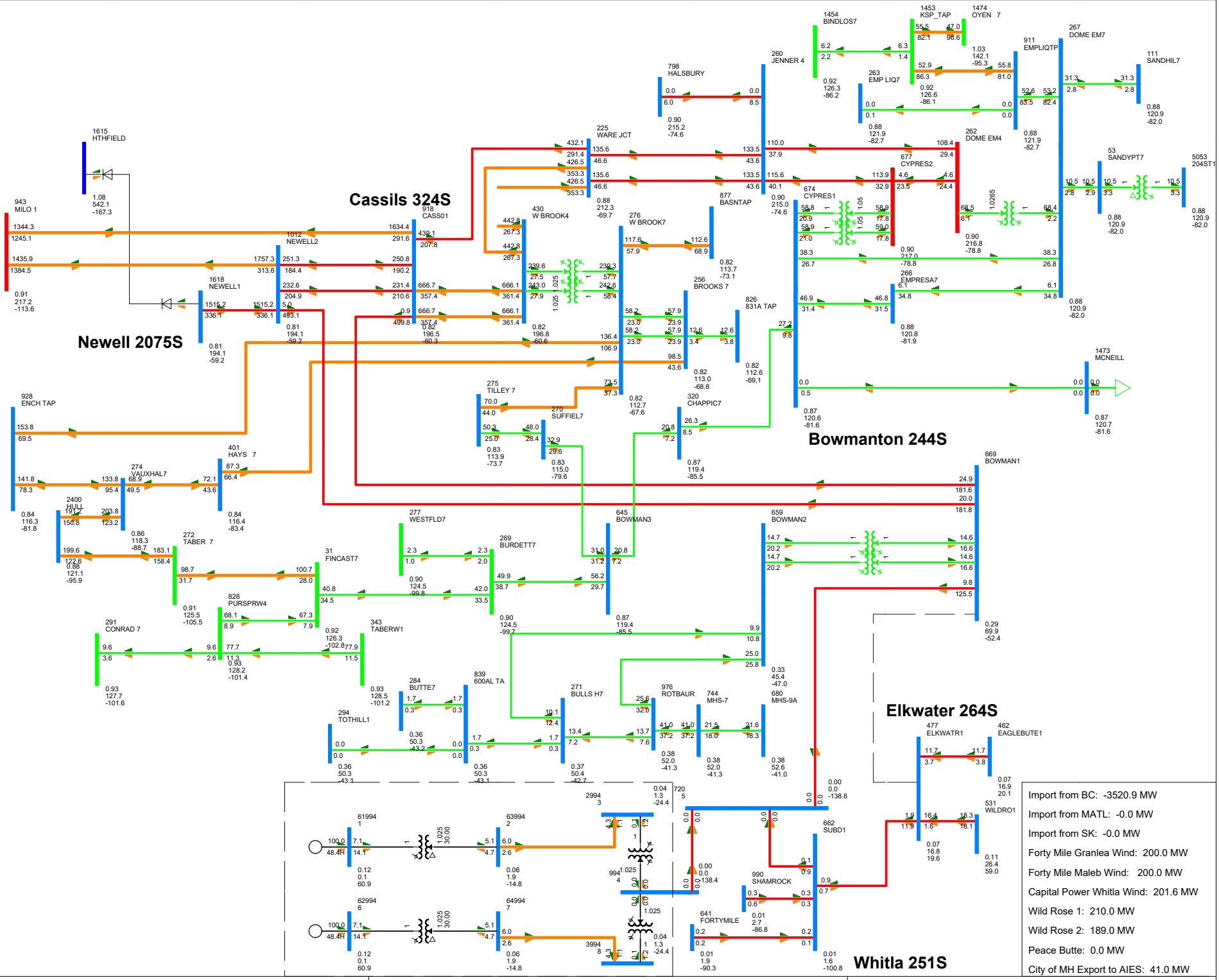


Forty Mile Granlea WAGF

AESO Project Number: P1812

FIGURE C-4: P1812_2020SL_POST.SAV
CATEGORY B - 1035L (NEWELL 2075S TO BOWMANTON 244S)
FRI, OCT 05 2018 10:38

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000V 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000

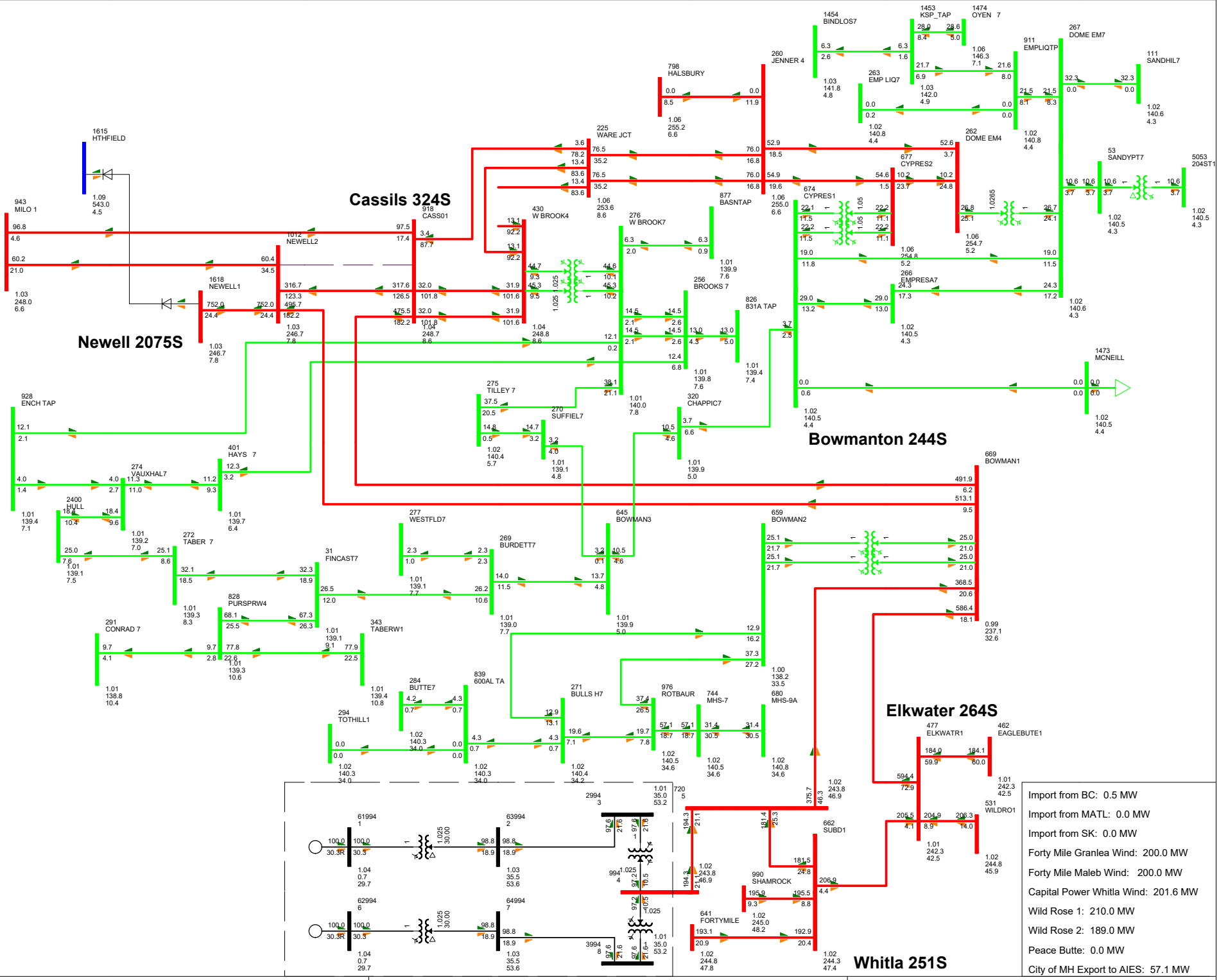


Forty Mile Granlea WAGF

AESO Project Number: P1812

FIGURE C-5: P1812_2020SL_POST.SAV
CATEGORY B - 1074L (BOWMANTON 244S TO ELKWATER 264S)
FRI, OCT 05 2018 10:38

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000OV 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000

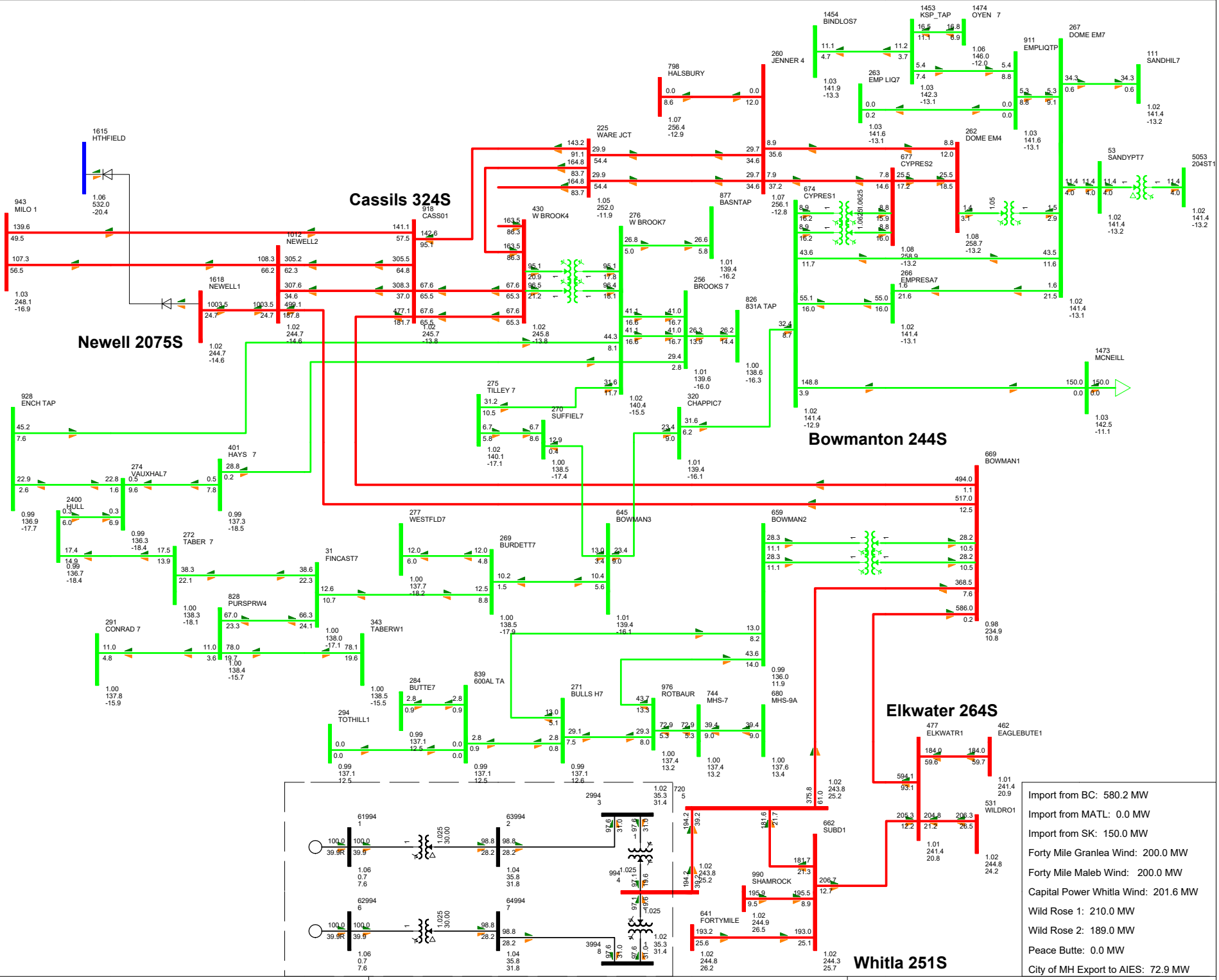


Forty Mile Granlea WAGF

AESO Project Number: P1812

FIGURE C-6: P1812_2020SL_POST.SAV
CATEGORY B - 1088L (NEWELL 2075S TO CASSILS 324S)
FRI, OCT 05 2018 10:38

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000V 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000

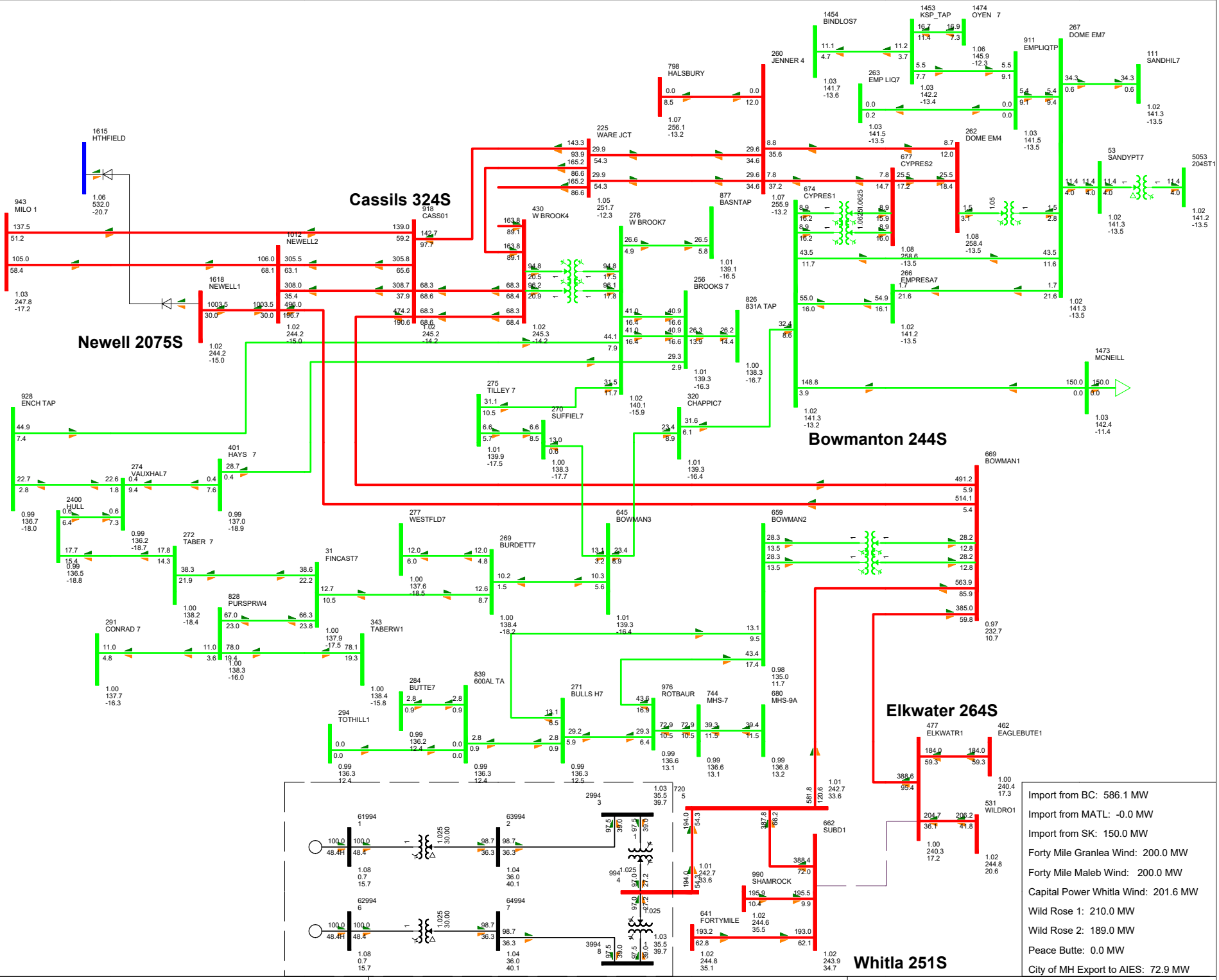


Forty Mile Granlea WAGF

AESO Project Number: P1812

FIGURE C-7: P1812_2020SP_POST.SAV
CATEGORY A - NO CONTINGENCY
FRI, OCT 05 2018 10:39

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000V 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000

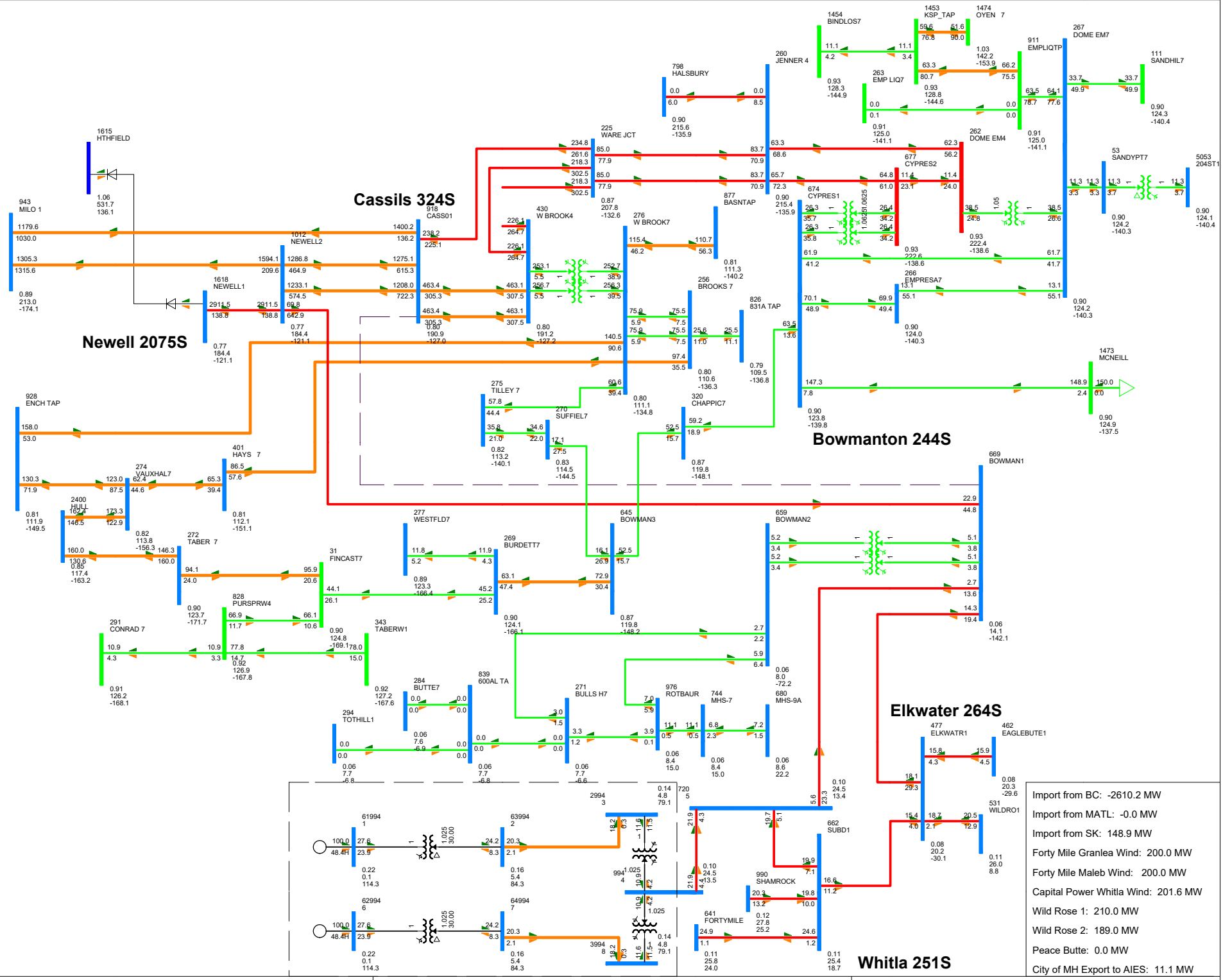


Forty Mile Granlea WAGF

AESO Project Number: P1812

FIGURE C-8: P1812_2020SP_POST.SAV
CATEGORY B - 983L (WHITLA 251S TO ELKWATER 264S)
FRI, OCT 05 2018 10:39

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000V 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000

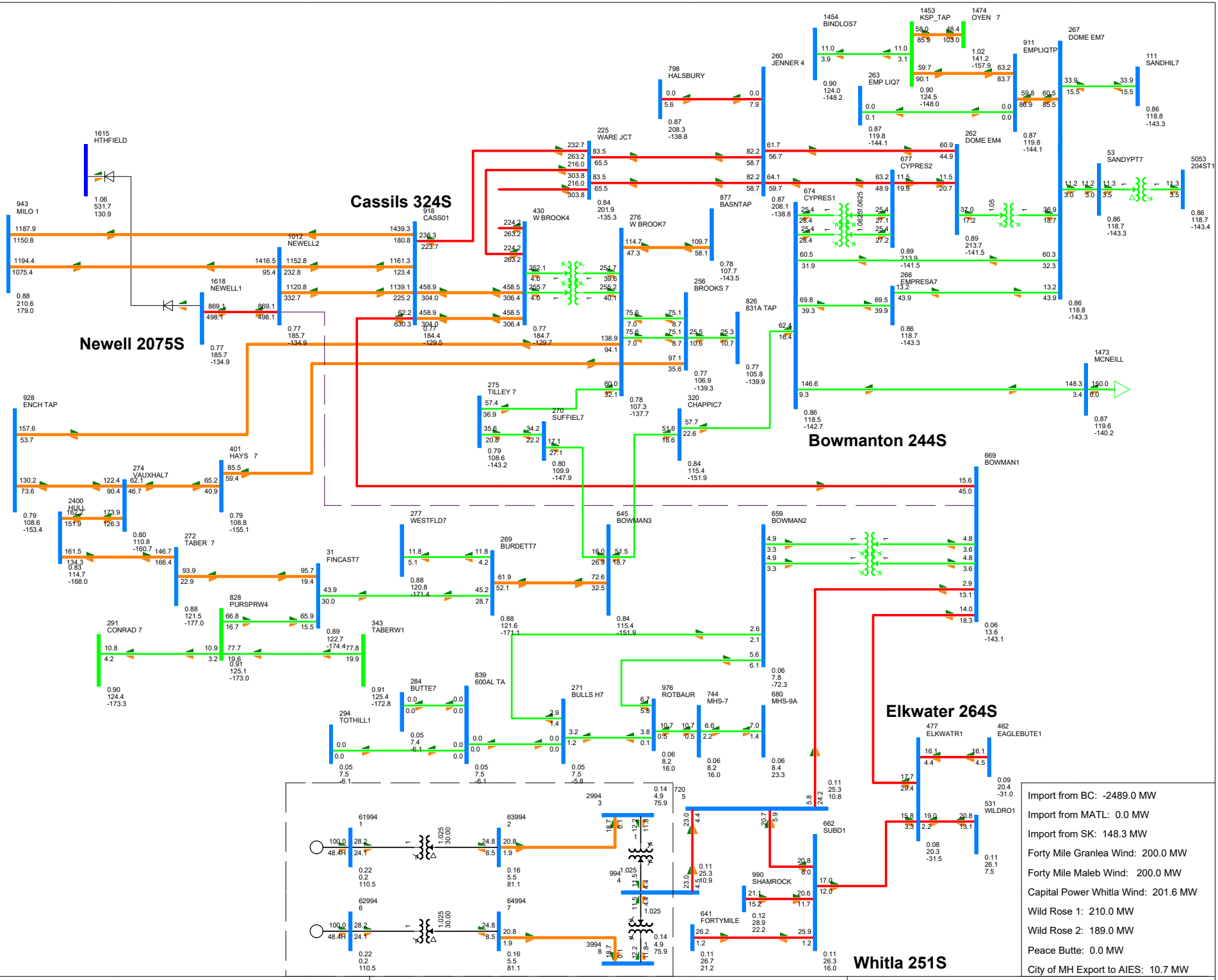


Forty Mile Granlea WAGF

AESO Project Number: P1812

FIGURE C-9: P1812_2020SP_POST.SAV
CATEGORY B - 1034L (CASSILS 324S TO BOWMANTON 244S)
FRI, OCT 05 2018 10:39

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000V 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000

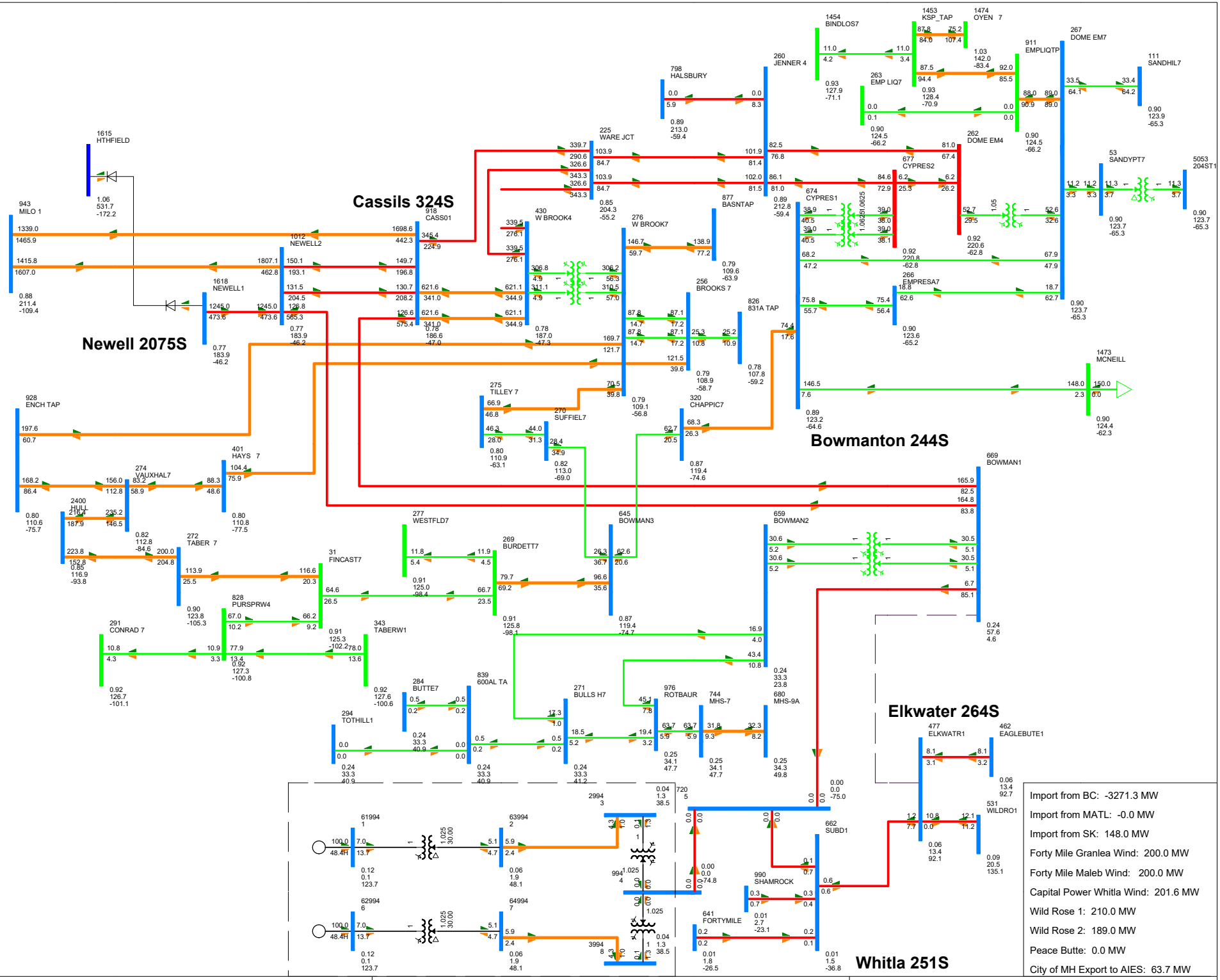


Forty Mile Granlea WAGF

AESO Project Number: P1812

FIGURE C-10: P1812_2020SP_POST.SAV
CATEGORY B - 1035L (NEWELL 2075S TO BOWMANTON 244S)
FRI, OCT 05 2018 10:40

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000V 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000

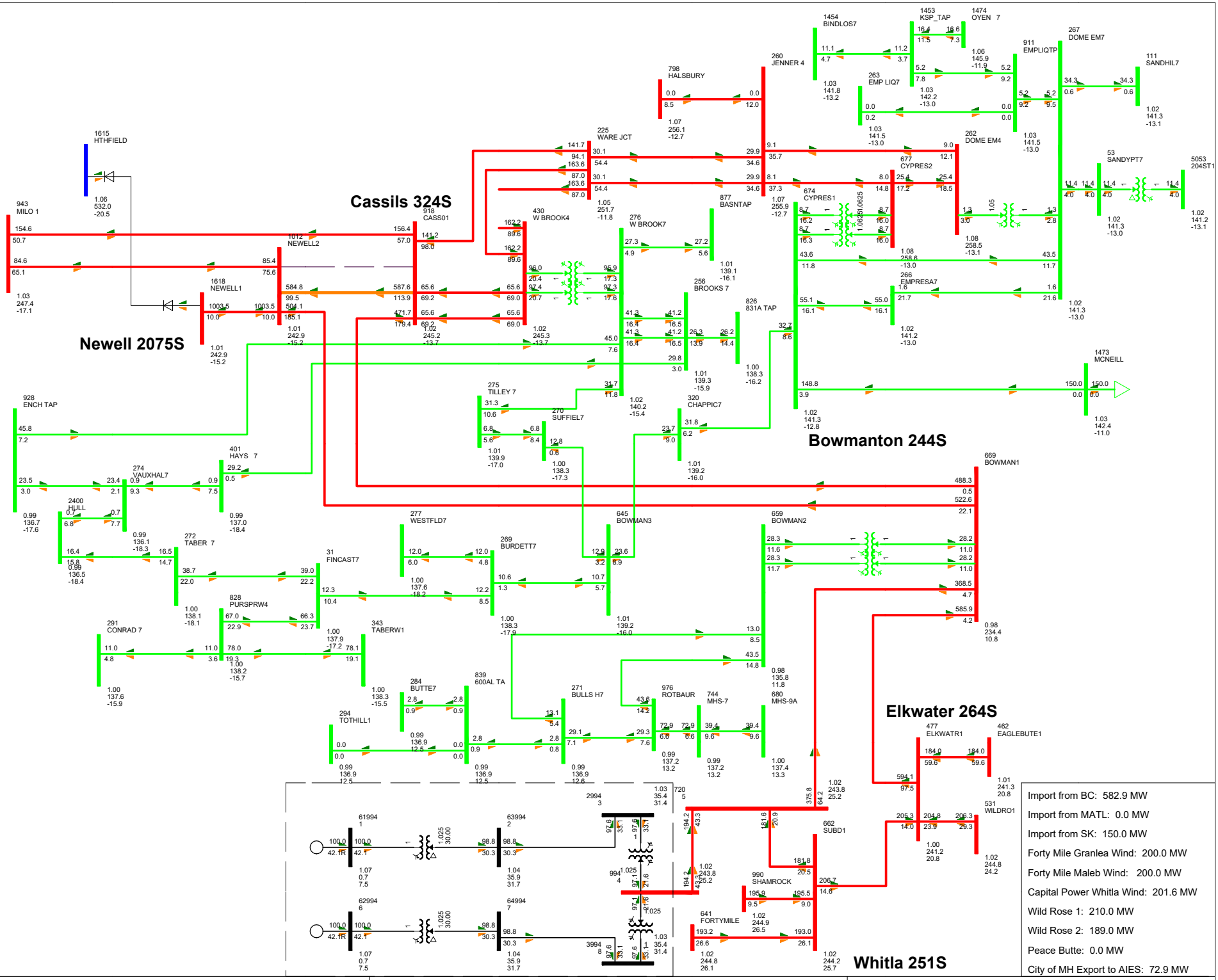


Forty Mile Granlea WAGF

AESO Project Number: P1812

FIGURE C-11: P1812_2020SP_POST.SAV
CATEGORY B - 1074L (BOWMANTON 244S TO ELKWATER 264S)
FRI, OCT 05 2018 10:40

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000V 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000



Forty Mile Granlea WAGF

AESO Project Number: P1812

FIGURE C-12: P1812_2020SP_POST.SAV
CATEGORY B - 1088L (NEWELL 2075S TO CASSILS 324S)
FRI, OCT 05 2018 10:40

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000V 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000

Attachment A4
Pre-Project and Post-Project Transient Stability Diagrams

Pre-Project Transient Stability Diagrams

P1812_2020SP_PRE
CATB -1074L_FAULT_AT_ELKWATER

FILE: P1812_2020SP_PRE/1074L_Fault_at_Elkwater.out

TUE, NOV 20 2018 12:14

MACHINE POWER

CHNL# 16: [POWR 60641[FORTYMILE1 0.6900]G1]*100 300.00 -100.0
CHNL# 15: [POWR 60990[SHAMROC5 0.6500]G1]*100 300.00 -100.0
CHNL# 14: [POWR 5632[WR1LV16 0.6900]1]*100 300.00 -100.0
CHNL# 13: [POWR 3462[WR2WF4 0.6900]1]*100 300.00 -100.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SP_PRE
CATB -1074L_FAULT_AT_ELKWATER

FILE: P1812_2020SP_PRE/1074L_Fault_at_Elkwater.out

TUE, NOV 20 2018 12:14

MACHINE VOLTAGE

CHNL# 28: [VOLT 60641 [FORTYMILE1 0.6900]] 1.6000 0.10000
CHNL# 27: [VOLT 60990 [SHAMROC5 0.6500]] 1.6000 0.10000
CHNL# 26: [VOLT 5632 [WR1LV16 0.6900]] 1.6000 0.10000
CHNL# 25: [VOLT 3462 [WR2WF4 0.6900]] 1.6000 0.10000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SP_PRE
CATB -1074L_FAULT_AT_ELKWATER

FILE: P1812_2020SP_PRE/1074L_Fault_at_Elkwater.out

TUE, NOV 20 2018 12:14

MACHINE ANGEL

CHNL# 4: [ANGL 1482[SHEER 1 19.000]1] 100.00 -100.0
CHNL# 3: [ANGL 773[SECST 20.000]1] 100.00 -100.0
CHNL# 2: [ANGL 713[CMH 14 13.800]14] 100.00 -100.0
CHNL# 1: [ANGL 667[CANCARB9 13.800]1] 100.00 -100.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SP_PRE
CATB -1074L_FAULT_AT_ELKWATER

FILE: P1812_2020SP_PRE/1074L_Fault_at_Elkwater.out

TUE, NOV 20 2018 12:14

MACHINE VAR

CHNL# 24: [VARS 60641[FORTYMILE1 0.6900]G1]*100 300.00 -100.0
CHNL# 23: [VARS 60990[SHAMROC5 0.6500]G1]*100 300.00 -100.0
CHNL# 22: [VARS 5632[WR1LV16 0.6900]1]*100 300.00 -100.0
CHNL# 21: [VARS 3462[WR2WF4 0.6900]1]*100 300.00 -100.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SP_PRE
CATB -1074L_FAULT_AT_ELKWATER

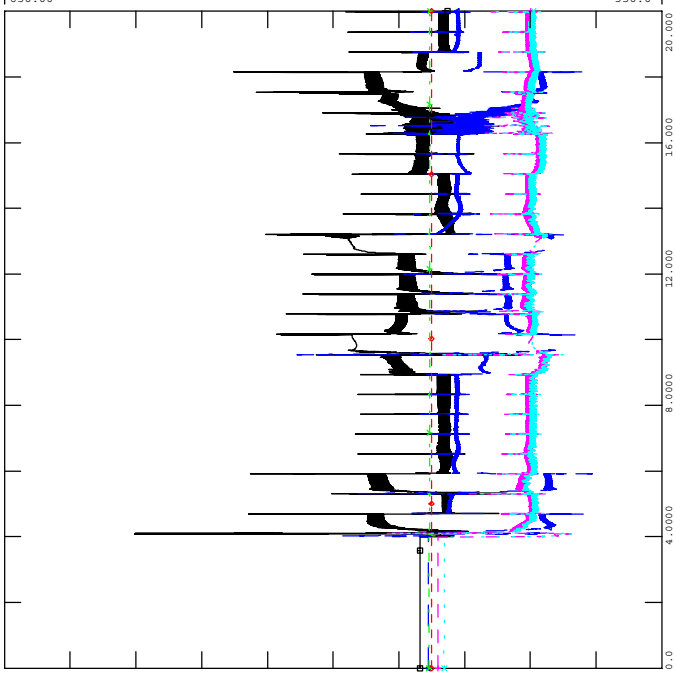
FILE: P1812_2020SP_PRE/1074L_Fault_at_Elkwater.out

TUE, NOV 20 2018 12:14

LINE VAR

CHNL# 50: [VARS 320 TO 674 CKT '58'] 650.00 -350.0
CHNL# 48: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 46: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 44: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 42: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 40: [VARS 662 TO 669 CKT '64'] 650.00 -350.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SP_PRE
CATB -1074L_FAULT_AT_ELKWATER

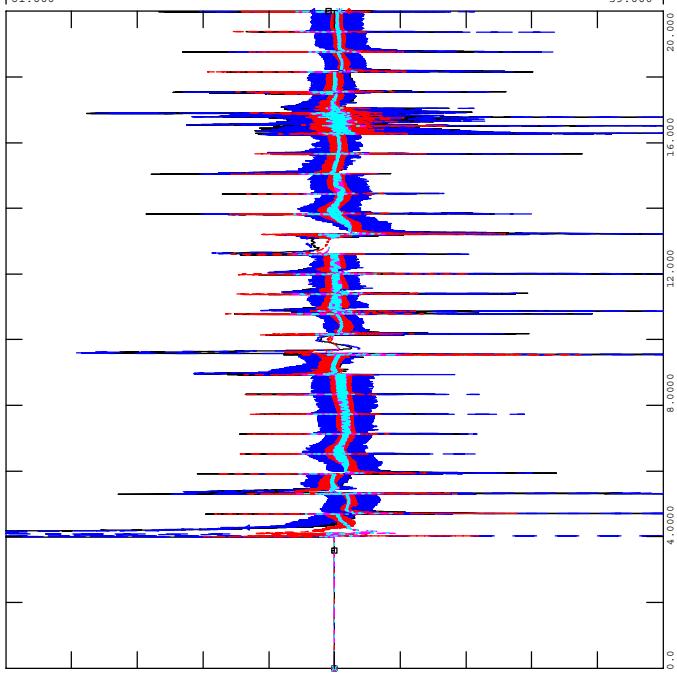
FILE: P1812_2020SP_PRE/1074L_Fault_at_Elkwater.out

TUE, NOV 20 2018 12:14

FREQUENCY

CHNL# 38: (1+[FREQ 918 [CASS01 240.00])*60 61.000 59.000
CHNL# 37: (1+[FREQ 1012 [NEWELL2 240.00])*60 61.000 59.000
CHNL# 36: (1+[FREQ 669 [BOWMAN1 240.00])*60 61.000 59.000
CHNL# 35: (1+[FREQ 477 [ELKWATR1 240.00])*60 61.000 59.000
CHNL# 34: (1+[FREQ 662 [SUBD1 240.00])*60 61.000 59.000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SP_PRE
CATB -1074L_FAULT_AT_ELKWATER

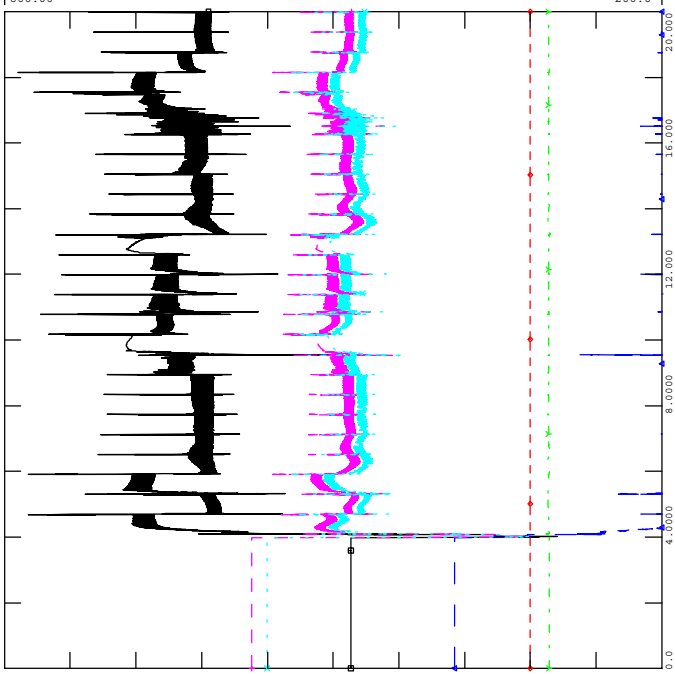
FILE: P1812_2020SP_PRE/1074L_Fault_at_Elkwater.out

TUE, NOV 20 2018 12:14

LINE POWER

CHNL# 49: [POWR 320 TO 674 CKT '58'] 800.00 -200.0
CHNL# 47: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 45: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 43: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 41: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 39: [POWR 662 TO 669 CKT '64'] 800.00 -200.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SP_PRE
CATB -1074L_FAULT_AT_ELKWATER

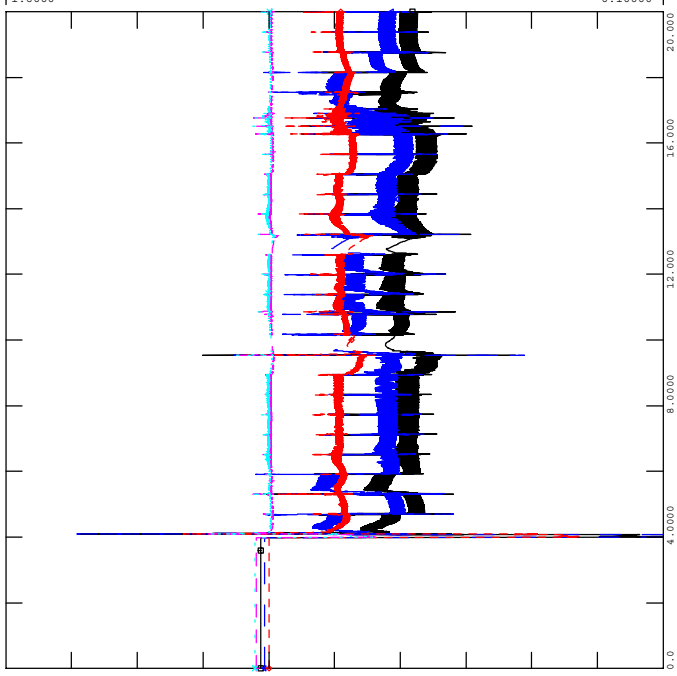
FILE: P1812_2020SP_PRE/1074L_Fault_at_Elkwater.out

TUE, NOV 20 2018 12:14

BUS VOLTAGE

CHNL# 33: [VOLT 918 [CASS01 240.00] 1.6000 0.10000
CHNL# 32: [VOLT 1012 [NEWELL2 240.00] 1.6000 0.10000
CHNL# 31: [VOLT 669 [BOWMAN1 240.00] 1.6000 0.10000
CHNL# 30: [VOLT 477 [ELKWATR1 240.00] 1.6000 0.10000
CHNL# 29: [VOLT 662 [SUBD1 240.00] 1.6000 0.10000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

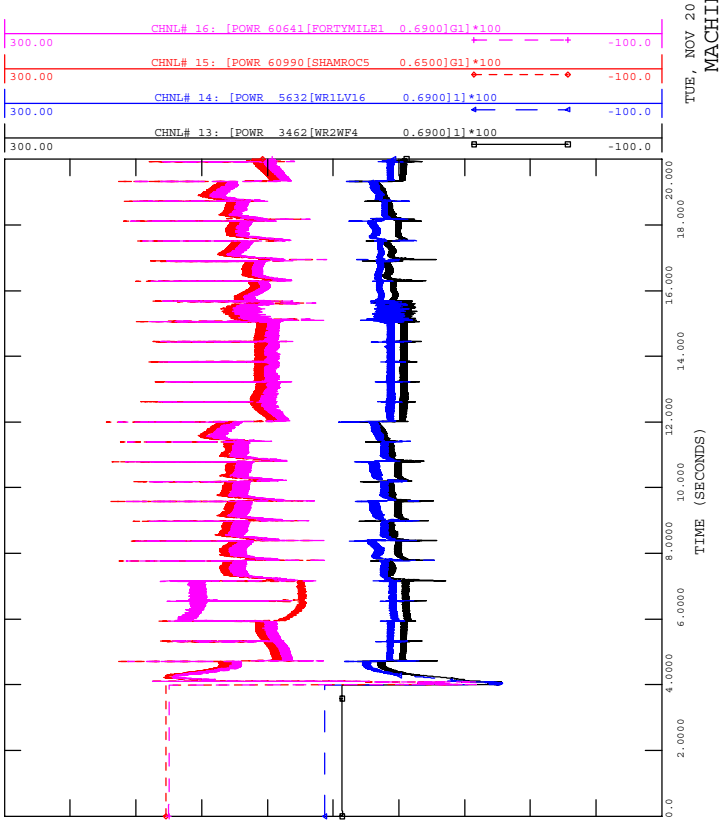


P1812_2020SP_PRE
CATB -1074L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_PRE/1074L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14

MACHINE POWER

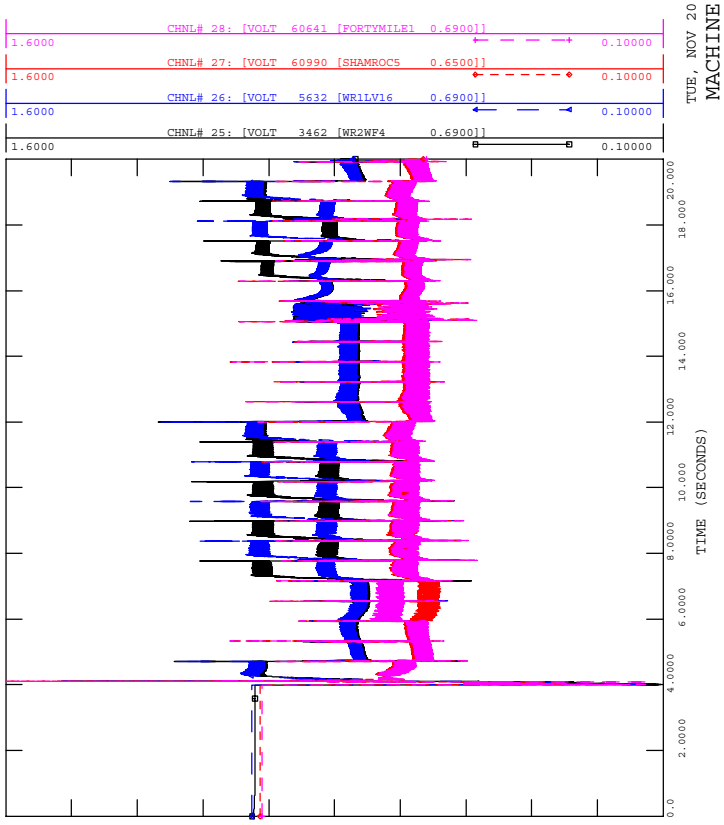


P1812_2020SP_PRE
CATB -1074L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_PRE/1074L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14

MACHINE VOLTAGE

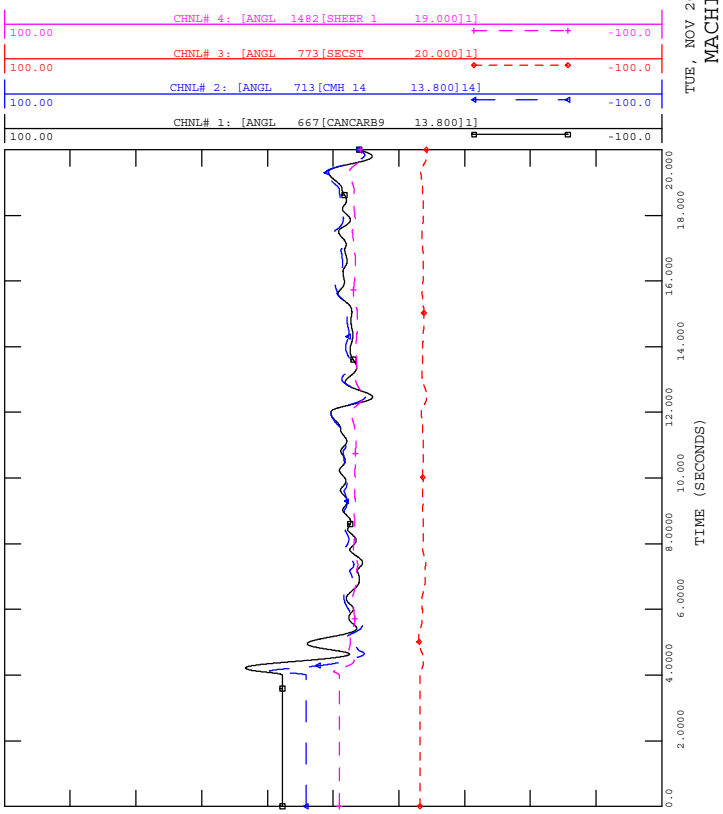


P1812_2020SP_PRE
CATB -1074L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_PRE/1074L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14

MACHINE ANGEL

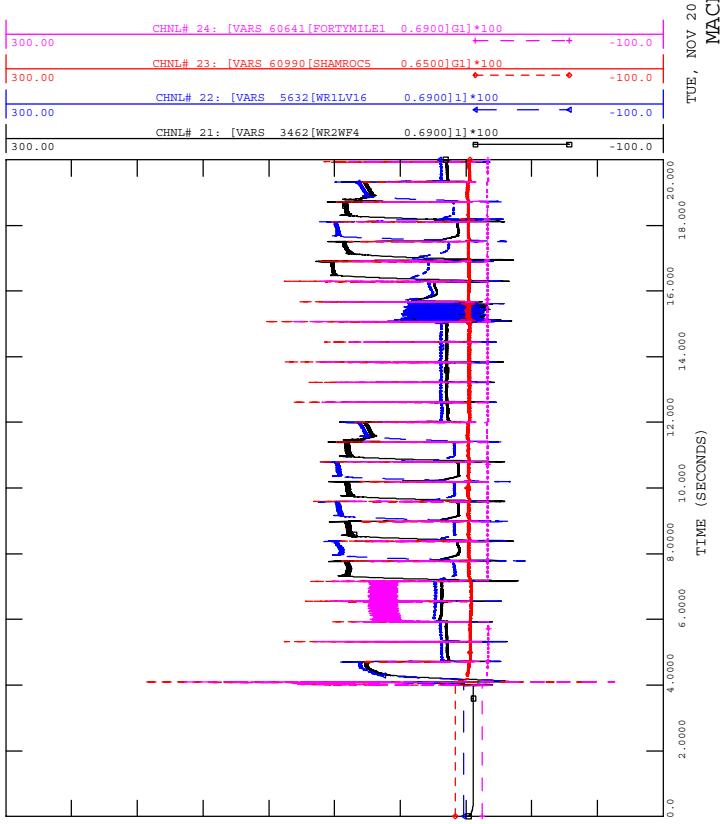


P1812_2020SP_PRE
CATB -1074L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_PRE/1074L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14

MACHINE VAR



P1812_2020SP_PRE
CATB -1074L_FAULT_AT_BOWMANTON

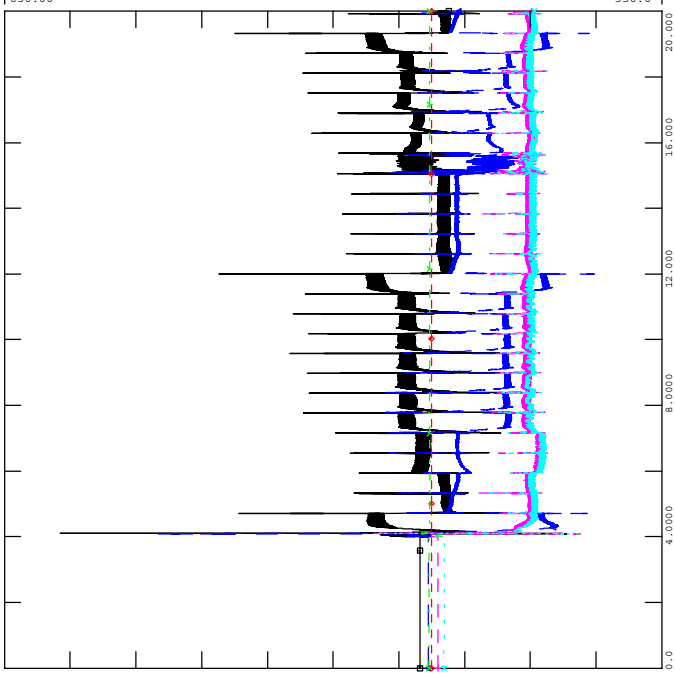
FILE: P1812_2020SP_PRE/1074L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14

LINE VAR

CHNL# 50: [VARS 320 TO 674 CKT '58'] 650.00 -350.0
CHNL# 48: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 46: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 44: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 42: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 40: [VARS 662 TO 669 CKT '64'] 650.00 -350.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SP_PRE
CATB -1074L_FAULT_AT_BOWMANTON

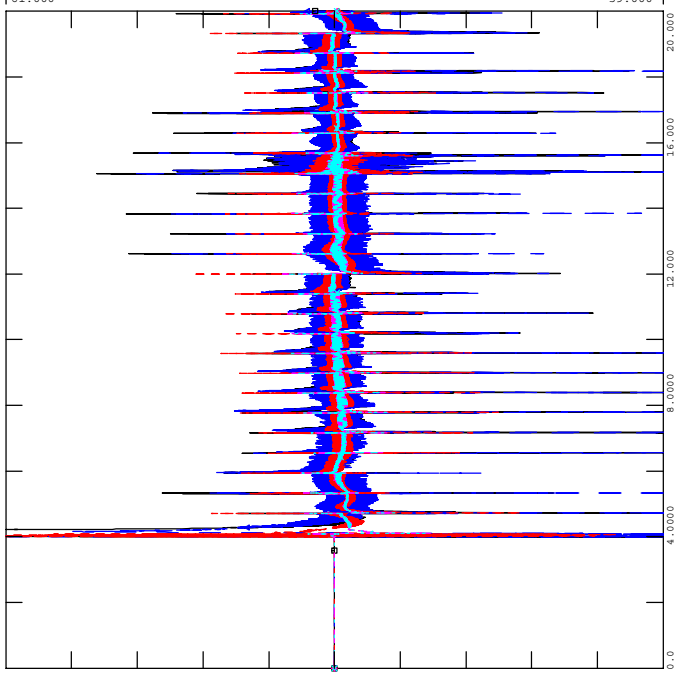
FILE: P1812_2020SP_PRE/1074L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14

FREQUENCY

CHNL# 38: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 37: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 36: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 35: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 34: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SP_PRE
CATB -1074L_FAULT_AT_BOWMANTON

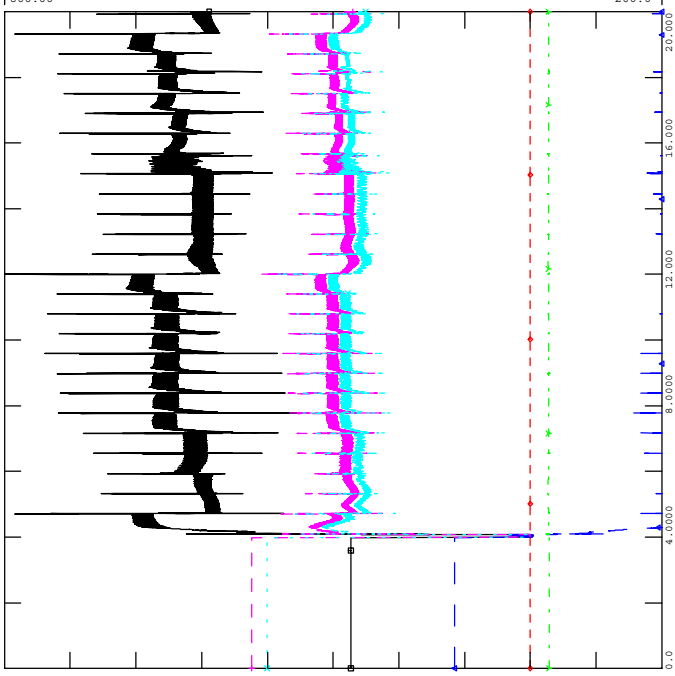
FILE: P1812_2020SP_PRE/1074L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14

LINE POWER

CHNL# 49: [POWR 320 TO 674 CKT '58'] 800.00 -200.0
CHNL# 47: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 45: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 43: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 41: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 39: [POWR 662 TO 669 CKT '64'] 800.00 -200.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SP_PRE
CATB -1074L_FAULT_AT_BOWMANTON

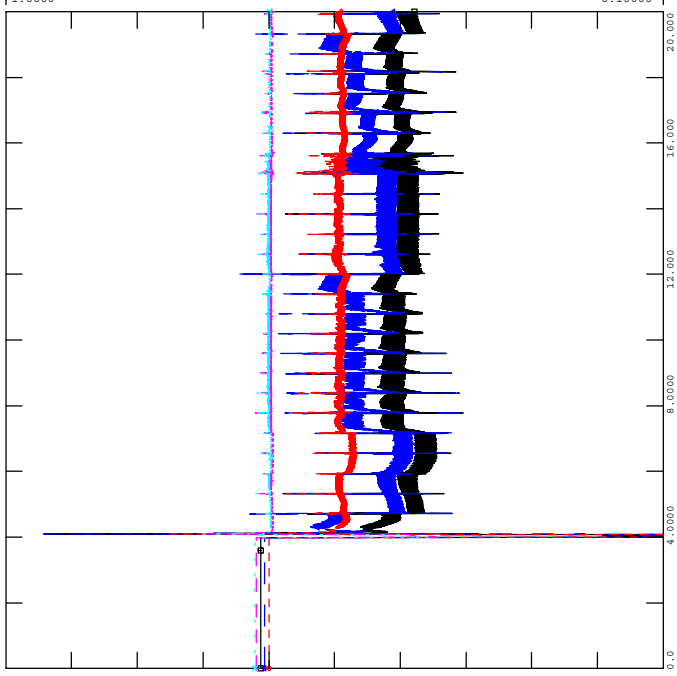
FILE: P1812_2020SP_PRE/1074L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14

BUS VOLTAGE

CHNL# 33: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 32: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 31: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 30: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 29: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

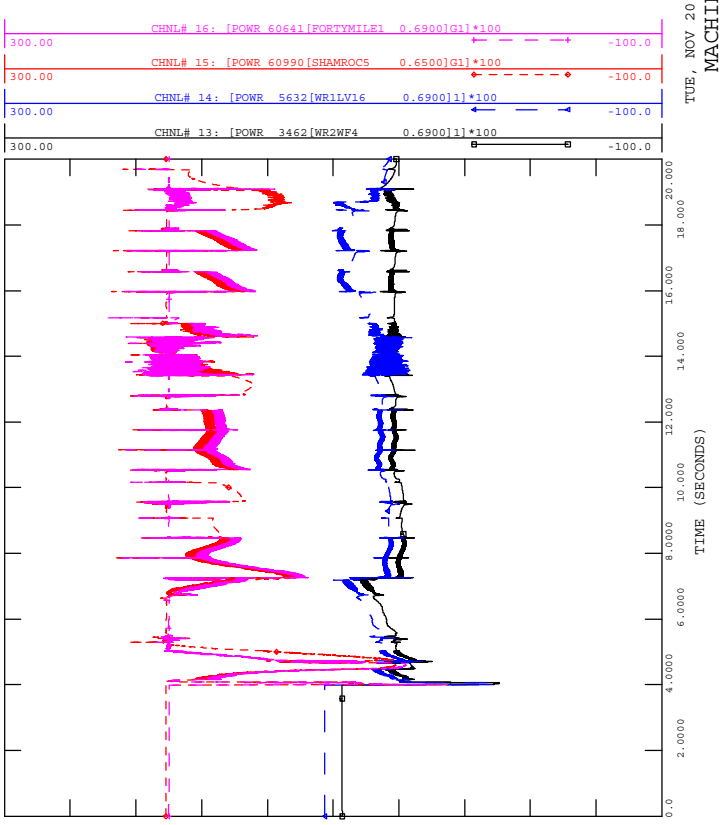


P1812_2020SP_PRE
CATB -1035L_FAULT_AT_NEWELL

FILE: P1812_2020SP_PRE/1035L_Fault_at_Newell.out

TUE, NOV 20 2018 12:14

MACHINE POWER

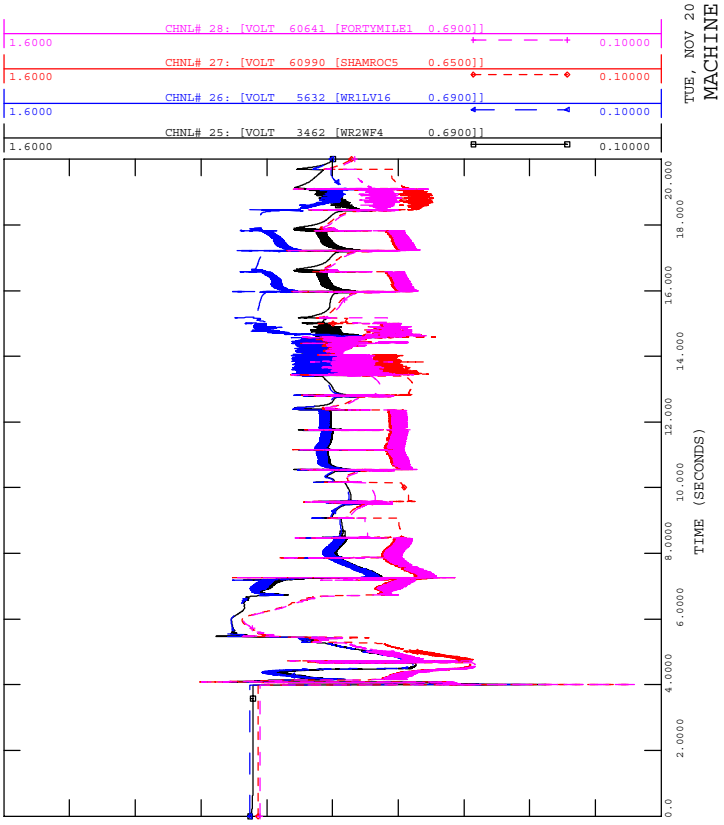


P1812_2020SP_PRE
CATB -1035L_FAULT_AT_NEWELL

FILE: P1812_2020SP_PRE/1035L_Fault_at_Newell.out

TUE, NOV 20 2018 12:14

MACHINE VOLTAGE

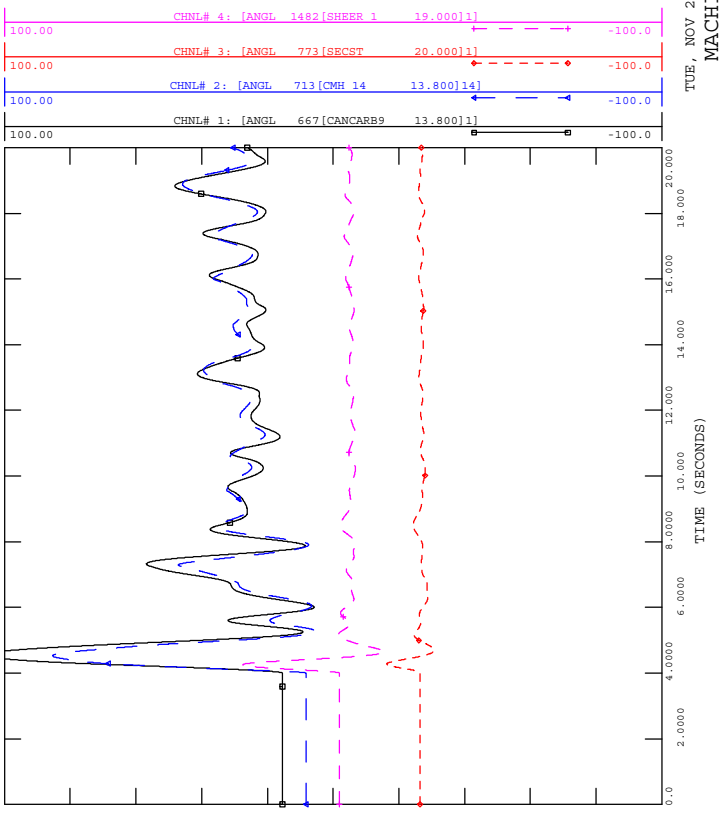


P1812_2020SP_PRE
CATB -1035L_FAULT_AT_NEWELL

FILE: P1812_2020SP_PRE/1035L_Fault_at_Newell.out

TUE, NOV 20 2018 12:14

MACHINE ANGEL

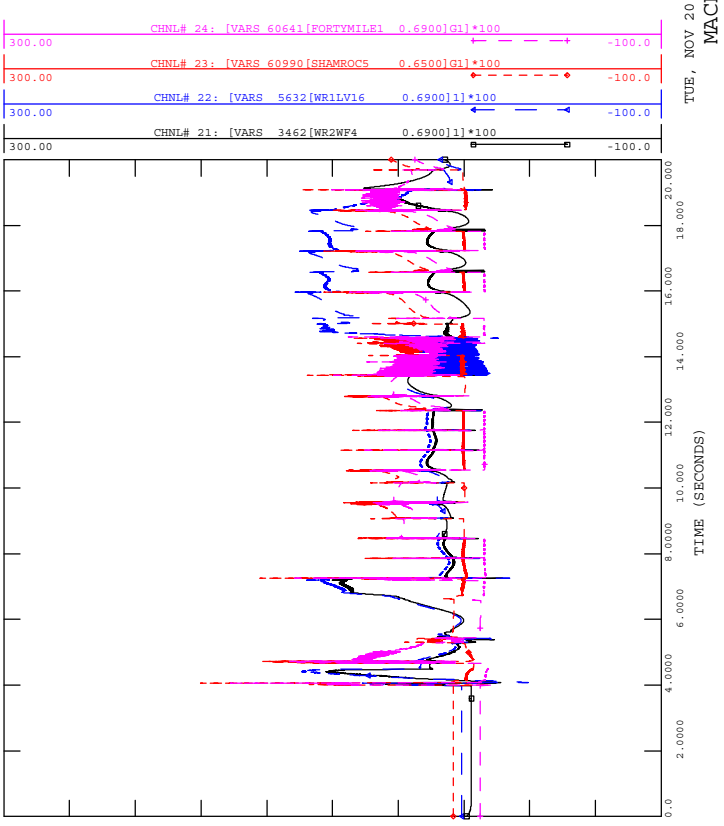


P1812_2020SP_PRE
CATB -1035L_FAULT_AT_NEWELL

FILE: P1812_2020SP_PRE/1035L_Fault_at_Newell.out

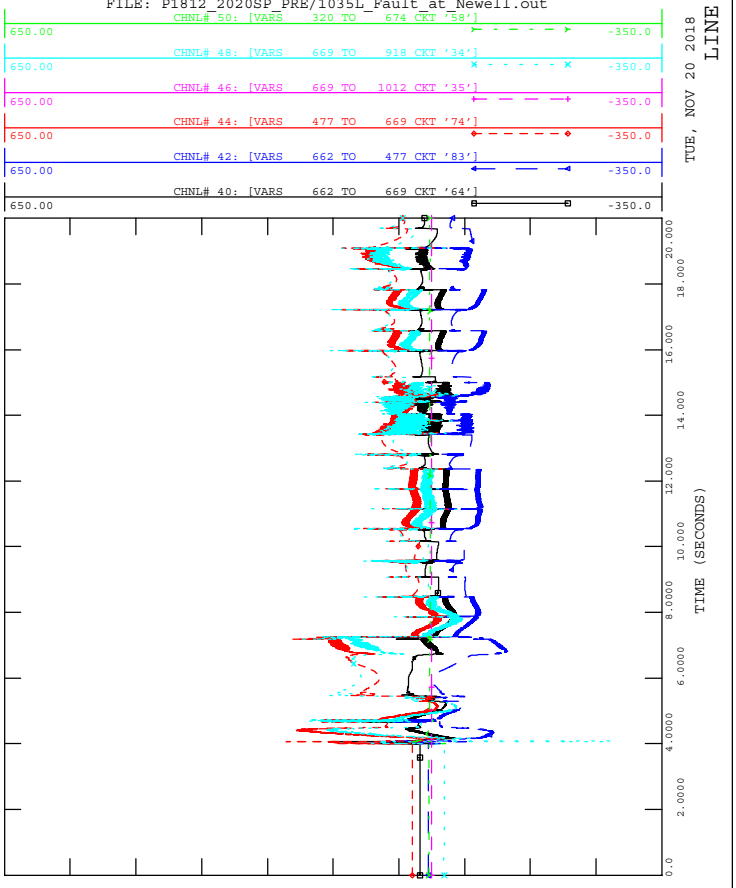
TUE, NOV 20 2018 12:14

MACHINE VAR



P1812_2020SP_PRE
CATB -1035L_FAULT_AT_NEWELL

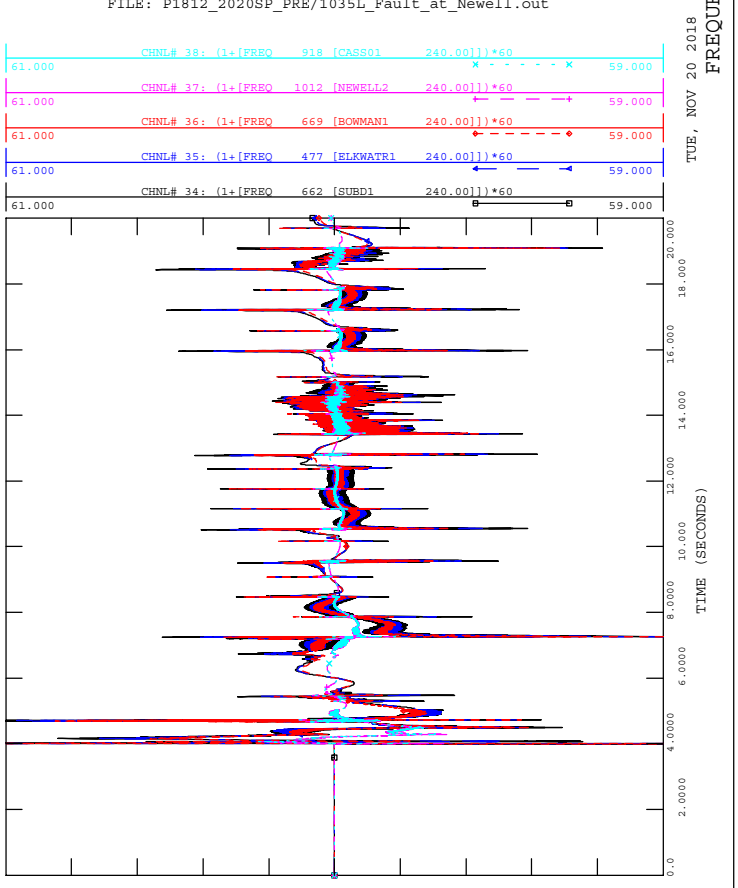
FILE: P1812_2020SP_PRE/1035L_Fault_at_Newell.out



TUE, NOV 20 2018 12:14
LINE VAR

P1812_2020SP_PRE
CATB -1035L_FAULT_AT_NEWELL

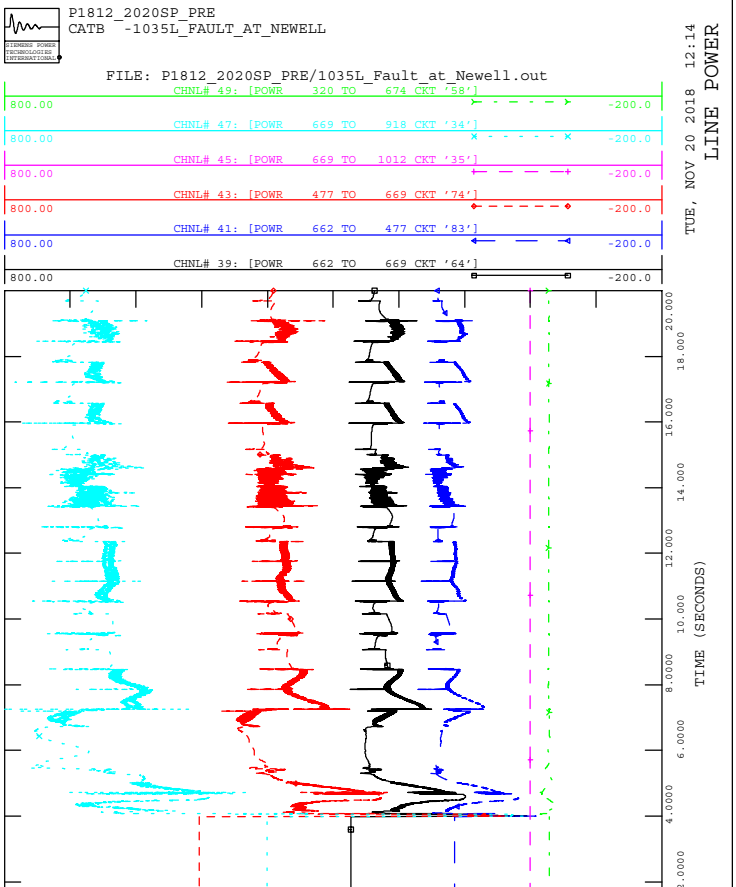
FILE: P1812_2020SP_PRE/1035L_Fault_at_Newell.out



TUE, NOV 20 2018 12:14
FREQUENCY

P1812_2020SP_PRE
CATB -1035L_FAULT_AT_NEWELL

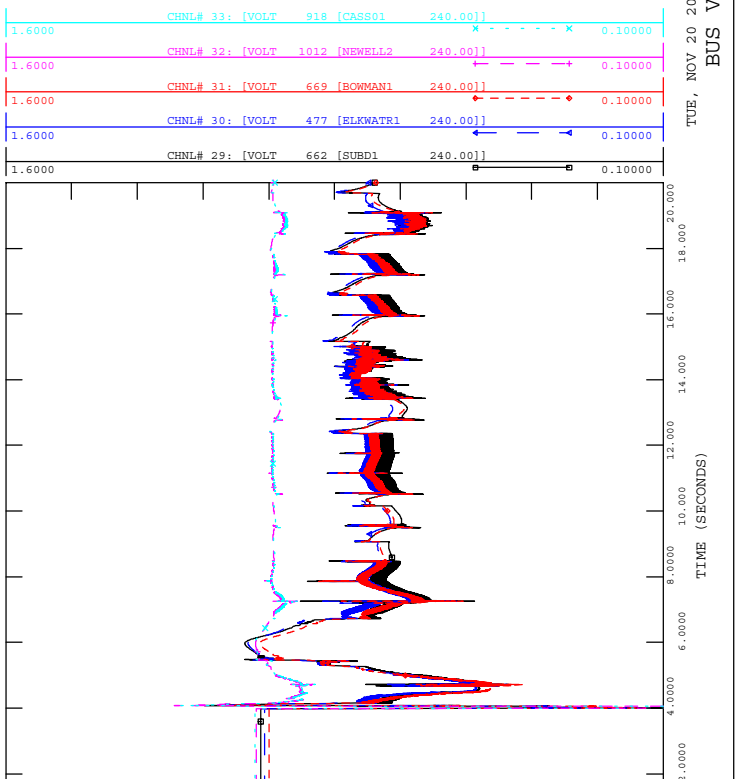
FILE: P1812_2020SP_PRE/1035L_Fault_at_Newell.out



TUE, NOV 20 2018 12:14
LINE POWER

P1812_2020SP_PRE
CATB -1035L_FAULT_AT_NEWELL

FILE: P1812_2020SP_PRE/1035L_Fault_at_Newell.out



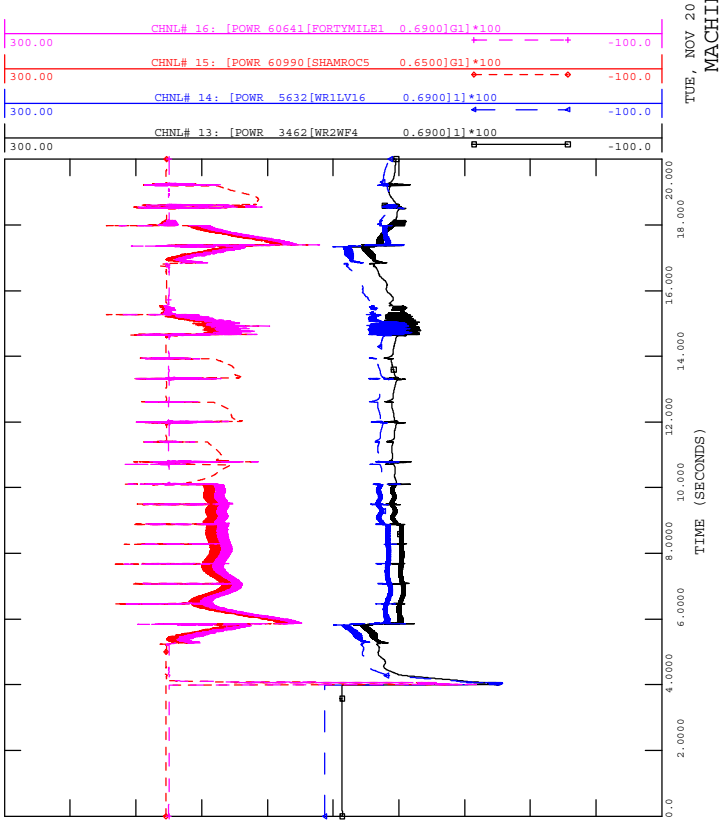
TUE, NOV 20 2018 12:14
BUS VOLTAGE

P1812_2020SP_PRE
CATB -1035L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_PRE/1035L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14

MACHINE POWER

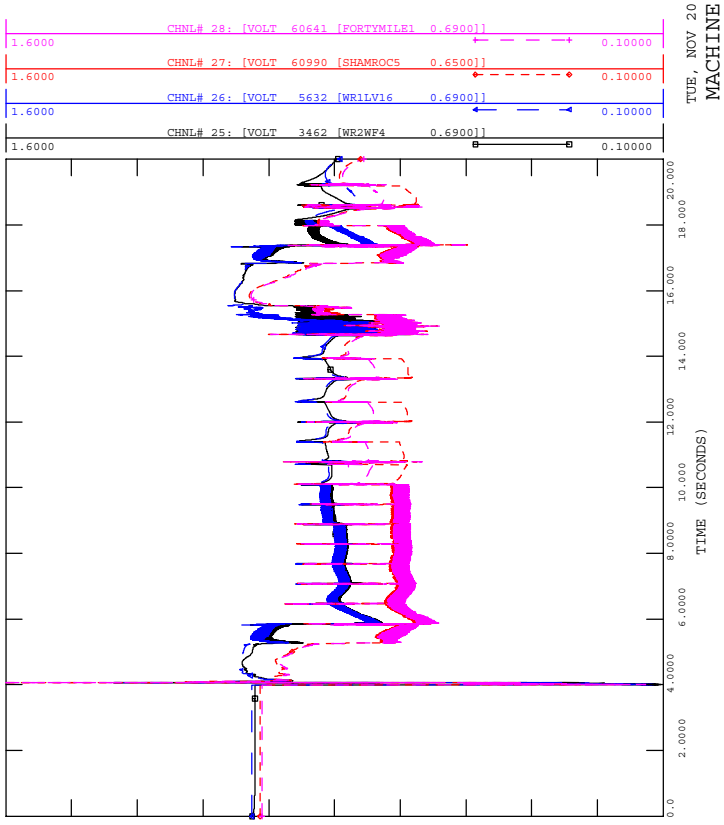


P1812_2020SP_PRE
CATB -1035L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_PRE/1035L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14

MACHINE VOLTAGE

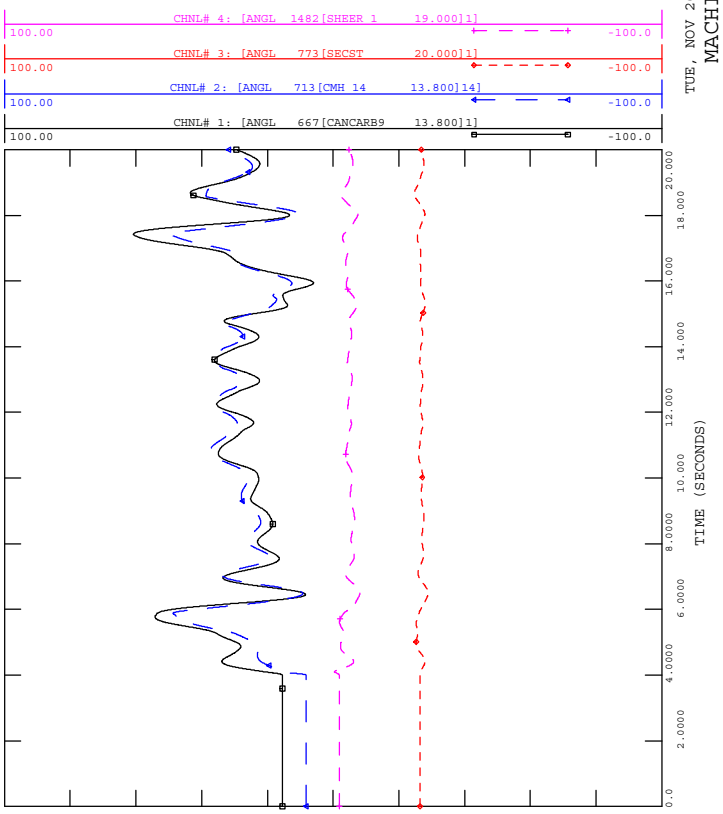


P1812_2020SP_PRE
CATB -1035L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_PRE/1035L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14

MACHINE ANGEL

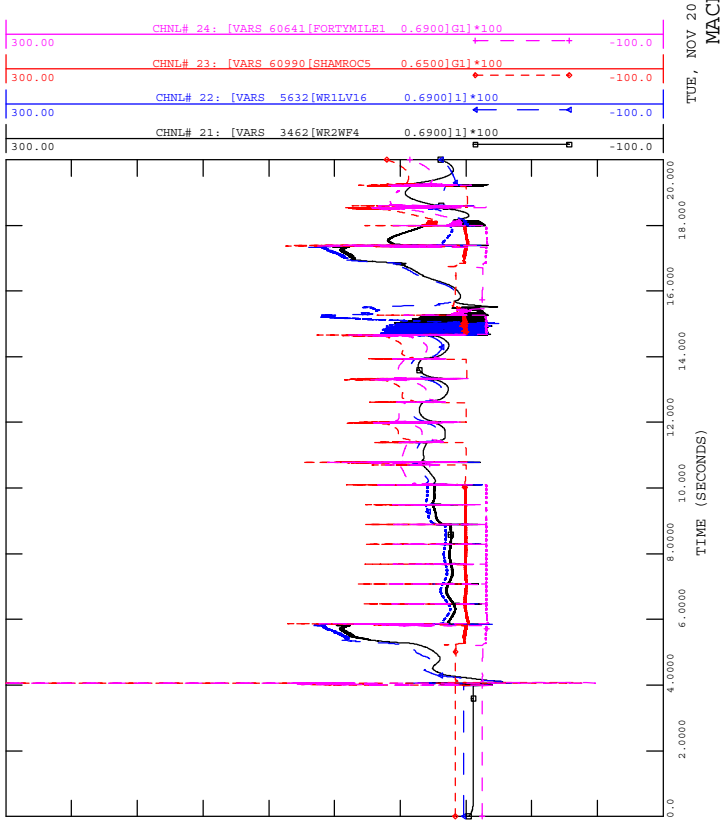


P1812_2020SP_PRE
CATB -1035L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_PRE/1035L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14

MACHINE VAR

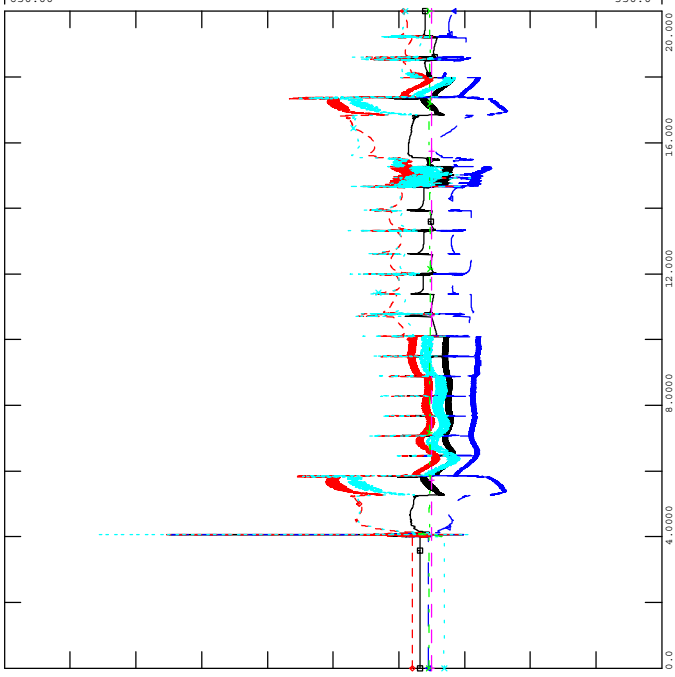


P1812_2020SP_PRE
CATB -1035L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_PRE/1035L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14 LINE VAR

CHNL# 50: [VARS 320 TO 674 CKT '58'] 650.00 -350.0
CHNL# 48: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 46: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 44: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 42: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 40: [VARS 662 TO 669 CKT '64'] 650.00 -350.0

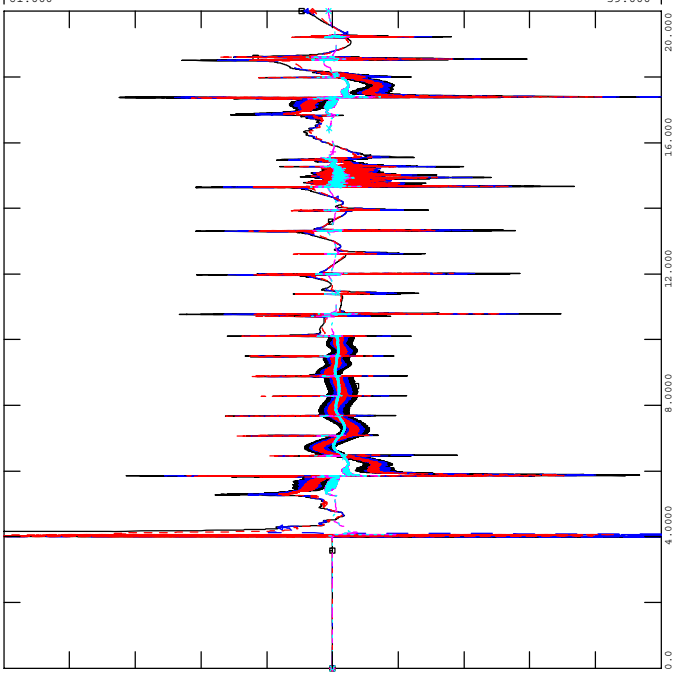


P1812_2020SP_PRE
CATB -1035L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_PRE/1035L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14 FREQUENCY

CHNL# 38: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 37: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 36: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 35: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 34: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000

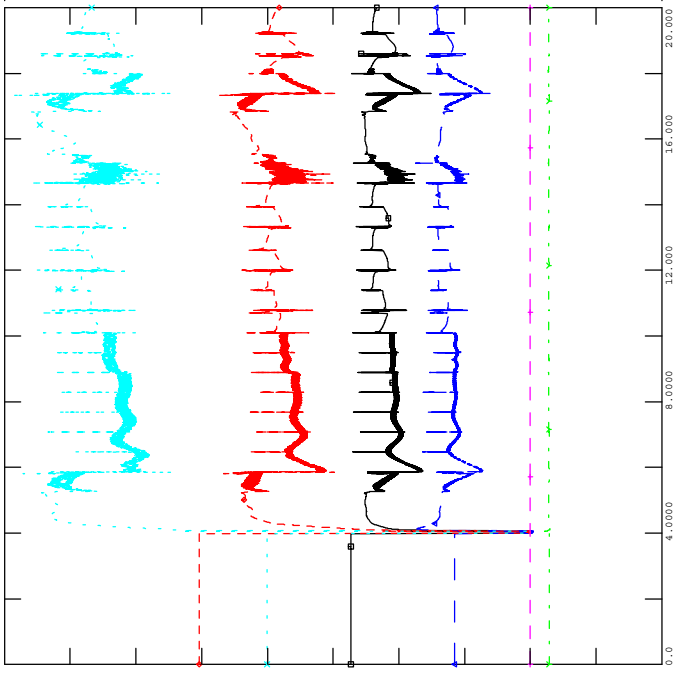


P1812_2020SP_PRE
CATB -1035L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_PRE/1035L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14 LINE POWER

CHNL# 49: [POWR 320 TO 674 CKT '58'] 800.00 -200.0
CHNL# 47: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 45: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 43: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 41: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 39: [POWR 662 TO 669 CKT '64'] 800.00 -200.0

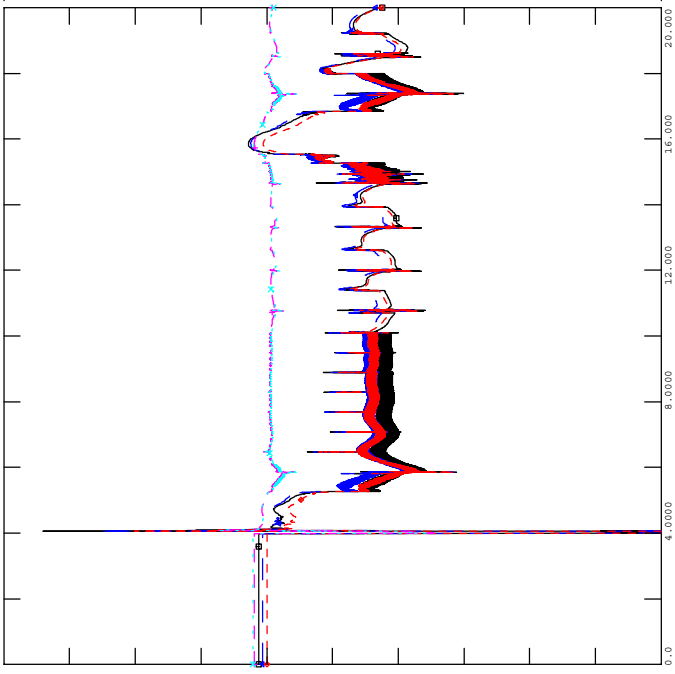


P1812_2020SP_PRE
CATB -1035L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_PRE/1035L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14 BUS VOLTAGE

CHNL# 33: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 32: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 31: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 30: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 29: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000



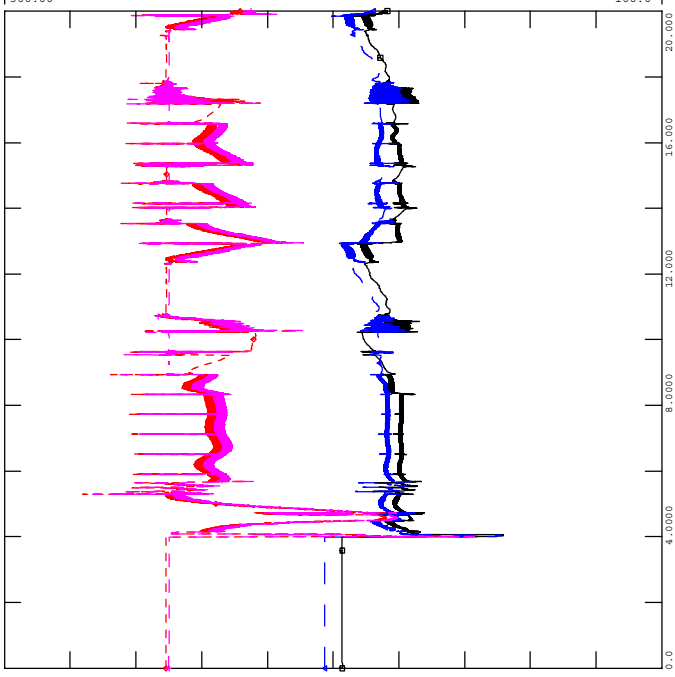
P1812_2020SP_PRE
CATB -1034L_FAULT_AT_CASSILS

FILE: P1812_2020SP_PRE/1034L_Fault_at_Cassils.out

TUE, NOV 20 2018 12:14

MACHINE POWER

CHNL# 16: [POWR 60641[FORTYMILE1 0.6900]G1]*100 300.00 -100.0
CHNL# 15: [POWR 60990[SHAMROC5 0.6500]G1]*100 300.00 -100.0
CHNL# 14: [POWR 5632[WR1LV16 0.6900]1]*100 300.00 -100.0
CHNL# 13: [POWR 3462[WR2WF4 0.6900]1]*100 300.00 -100.0



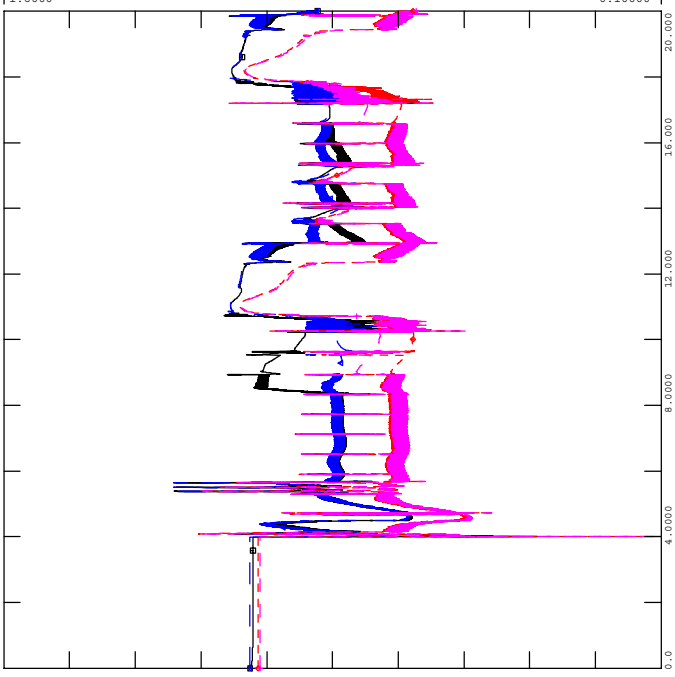
P1812_2020SP_PRE
CATB -1034L_FAULT_AT_CASSILS

FILE: P1812_2020SP_PRE/1034L_Fault_at_Cassils.out

TUE, NOV 20 2018 12:14

MACHINE VOLTAGE

CHNL# 28: [VOLT 60641 [FORTYMILE1 0.6900]] 1.6000 0.10000
CHNL# 27: [VOLT 60990 [SHAMROC5 0.6500]] 1.6000 0.10000
CHNL# 26: [VOLT 5632 [WR1LV16 0.6900]] 1.6000 0.10000
CHNL# 25: [VOLT 3462 [WR2WF4 0.6900]] 1.6000 0.10000



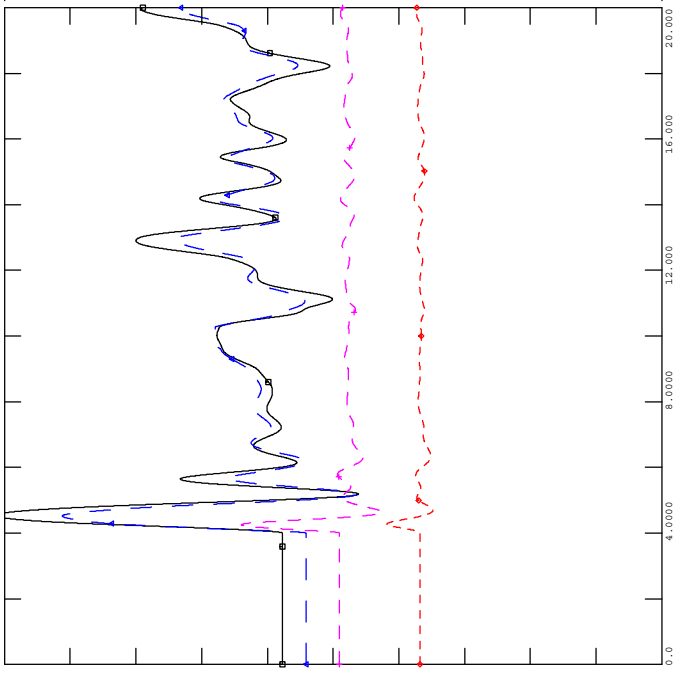
P1812_2020SP_PRE
CATB -1034L_FAULT_AT_CASSILS

FILE: P1812_2020SP_PRE/1034L_Fault_at_Cassils.out

TUE, NOV 20 2018 12:14

MACHINE ANGEL

CHNL# 4: [ANGL 1482[SHEER 1 19.000]1] 100.00 -100.0
CHNL# 3: [ANGL 773[SECST 20.000]1] 100.00 -100.0
CHNL# 2: [ANGL 713[CMH 14 13.800]14] 100.00 -100.0
CHNL# 1: [ANGL 667[CANCARB9 13.800]1] 100.00 -100.0



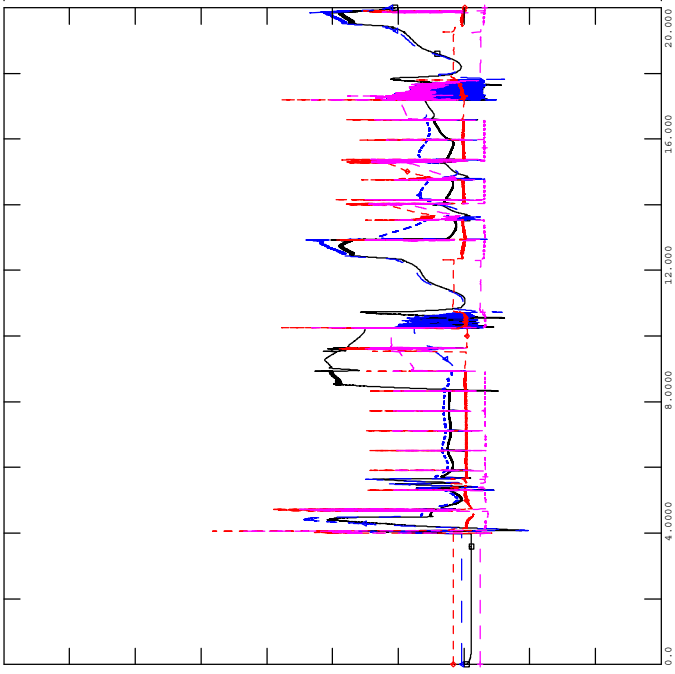
P1812_2020SP_PRE
CATB -1034L_FAULT_AT_CASSILS

FILE: P1812_2020SP_PRE/1034L_Fault_at_Cassils.out

TUE, NOV 20 2018 12:14

MACHINE VAR

CHNL# 24: [VARS 60641[FORTYMILE1 0.6900]G1]*100 300.00 -100.0
CHNL# 23: [VARS 60990[SHAMROC5 0.6500]G1]*100 300.00 -100.0
CHNL# 22: [VARS 5632[WR1LV16 0.6900]1]*100 300.00 -100.0
CHNL# 21: [VARS 3462[WR2WF4 0.6900]1]*100 300.00 -100.0



P1812_2020SP_PRE
CATB -1034L_FAULT_AT_CASSILS

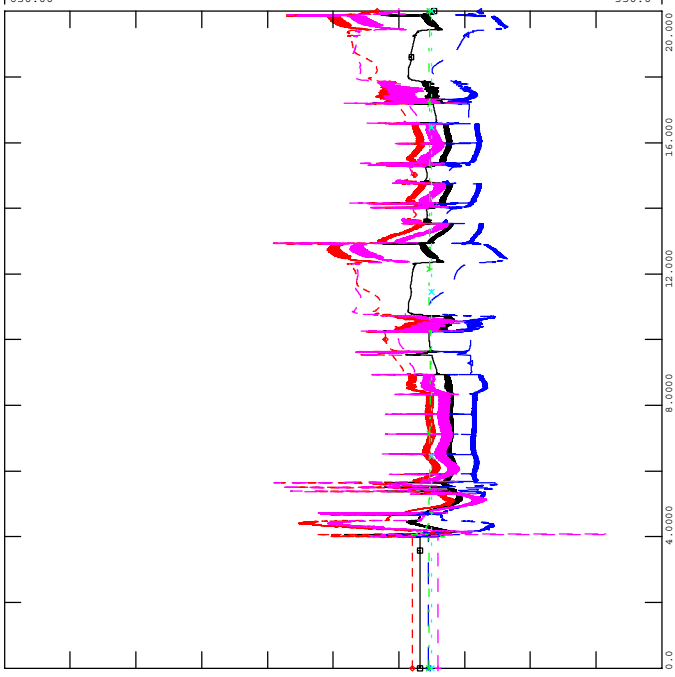
FILE: P1812_2020SP_PRE/1034L_Fault_at_Cassils.out

TUE, NOV 20 2018 12:14

LINE VAR

CHNL# 50: [VARS 320 TO 674 CKT '58'] 650.00 -350.0
CHNL# 48: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 46: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 44: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 42: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 40: [VARS 662 TO 669 CKT '64'] 650.00 -350.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SP_PRE
CATB -1034L_FAULT_AT_CASSILS

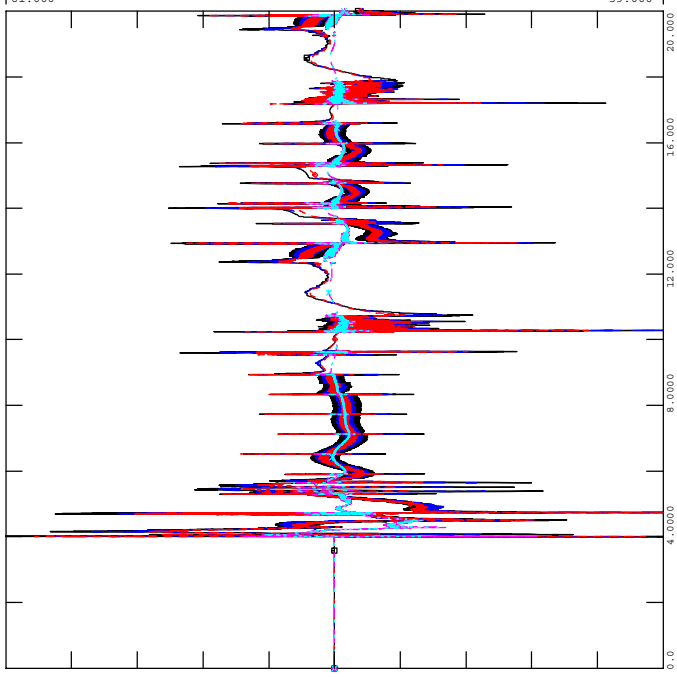
FILE: P1812_2020SP_PRE/1034L_Fault_at_Cassils.out

TUE, NOV 20 2018 12:14

FREQUENCY

CHNL# 38: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 37: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 36: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 35: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 34: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SP_PRE
CATB -1034L_FAULT_AT_CASSILS

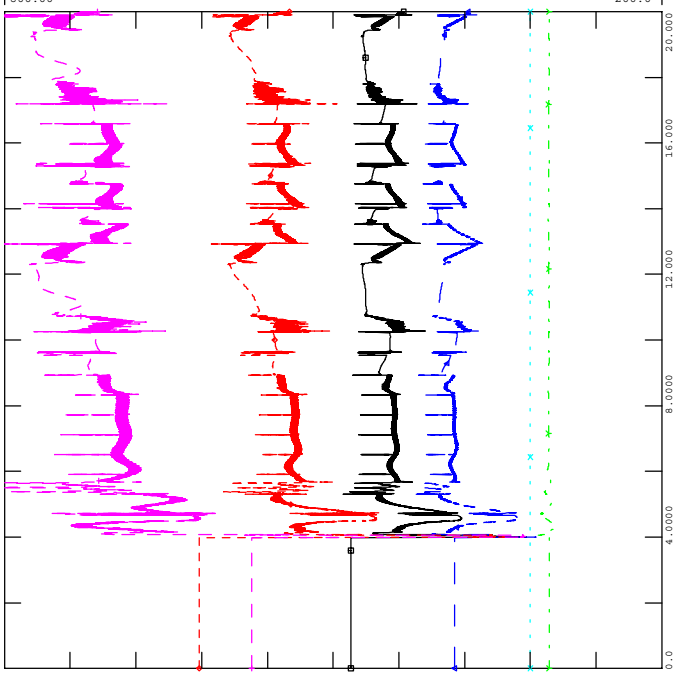
FILE: P1812_2020SP_PRE/1034L_Fault_at_Cassils.out

TUE, NOV 20 2018 12:14

LINE POWER

CHNL# 49: [POWR 320 TO 674 CKT '58'] 800.00 -200.0
CHNL# 47: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 45: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 43: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 41: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 39: [POWR 662 TO 669 CKT '64'] 800.00 -200.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SP_PRE
CATB -1034L_FAULT_AT_CASSILS

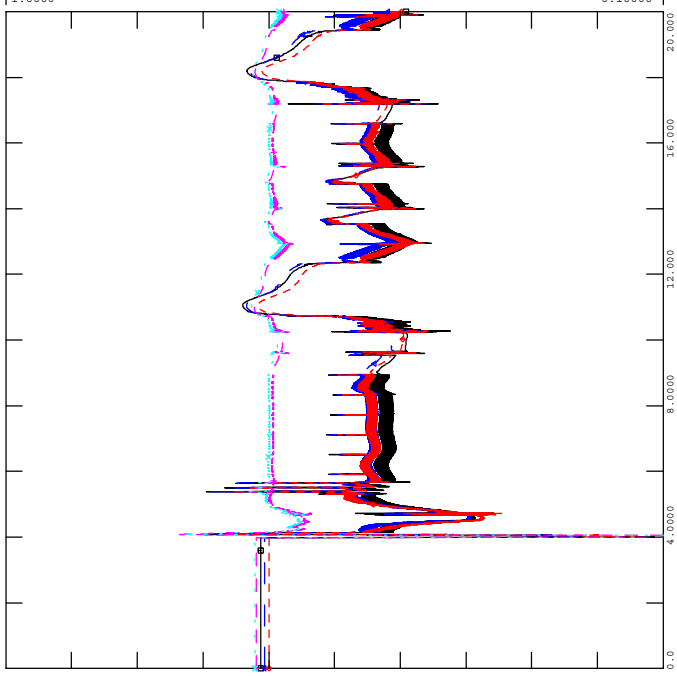
FILE: P1812_2020SP_PRE/1034L_Fault_at_Cassils.out

TUE, NOV 20 2018 12:14

BUS VOLTAGE

CHNL# 33: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 32: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 31: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 30: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 29: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SP_PRE
CATB -1034L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_PRE/1034L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14

MACHINE POWER

CHNL# 16: [POWR 60641[FORTYMILE1 0.6900]G1]*100 300.00 -100.0
CHNL# 15: [POWR 60990[SHAMROC5 0.6500]G1]*100 300.00 -100.0
CHNL# 14: [POWR 5632[WR1LV16 0.6900]1]*100 300.00 -100.0
CHNL# 13: [POWR 3462[WR2WF4 0.6900]1]*100 300.00 -100.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SP_PRE
CATB -1034L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_PRE/1034L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14

MACHINE VOLTAGE

CHNL# 28: [VOLT 60641 [FORTYMILE1 0.6900]] 1.6000 0.10000
CHNL# 27: [VOLT 60990 [SHAMROC5 0.6500]] 1.6000 0.10000
CHNL# 26: [VOLT 5632 [WR1LV16 0.6900]] 1.6000 0.10000
CHNL# 25: [VOLT 3462 [WR2WF4 0.6900]] 1.6000 0.10000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SP_PRE
CATB -1034L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_PRE/1034L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14

MACHINE ANGEL

CHNL# 4: [ANGL 1482[SHEER 1 19.000]1] 100.00 -100.0
CHNL# 3: [ANGL 773[SECST 20.000]1] 100.00 -100.0
CHNL# 2: [ANGL 713[CMH 14 13.800]14] 100.00 -100.0
CHNL# 1: [ANGL 667[CANCARB9 13.800]1] 100.00 -100.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SP_PRE
CATB -1034L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_PRE/1034L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14

MACHINE VAR

CHNL# 24: [VARS 60641[FORTYMILE1 0.6900]G1]*100 300.00 -100.0
CHNL# 23: [VARS 60990[SHAMROC5 0.6500]G1]*100 300.00 -100.0
CHNL# 22: [VARS 5632[WR1LV16 0.6900]1]*100 300.00 -100.0
CHNL# 21: [VARS 3462[WR2WF4 0.6900]1]*100 300.00 -100.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SP_PRE
CATB -1034L_FAULT_AT_BOWMANTON

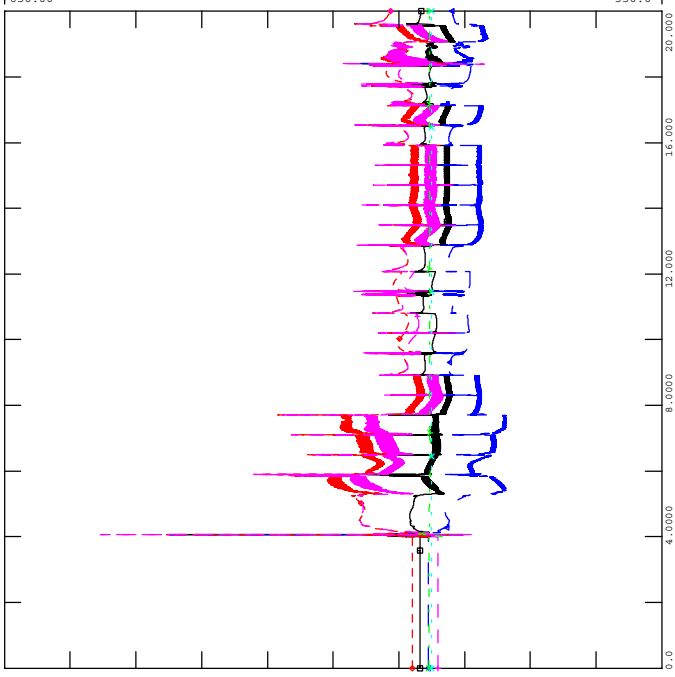
FILE: P1812_2020SP_PRE/1034L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14

LINE VAR

CHNL# 50: [VARS 320 TO 674 CKT '58'] 650.00 -350.0
CHNL# 48: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 46: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 44: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 42: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 40: [VARS 662 TO 669 CKT '64'] 650.00 -350.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SP_PRE
CATB -1034L_FAULT_AT_BOWMANTON

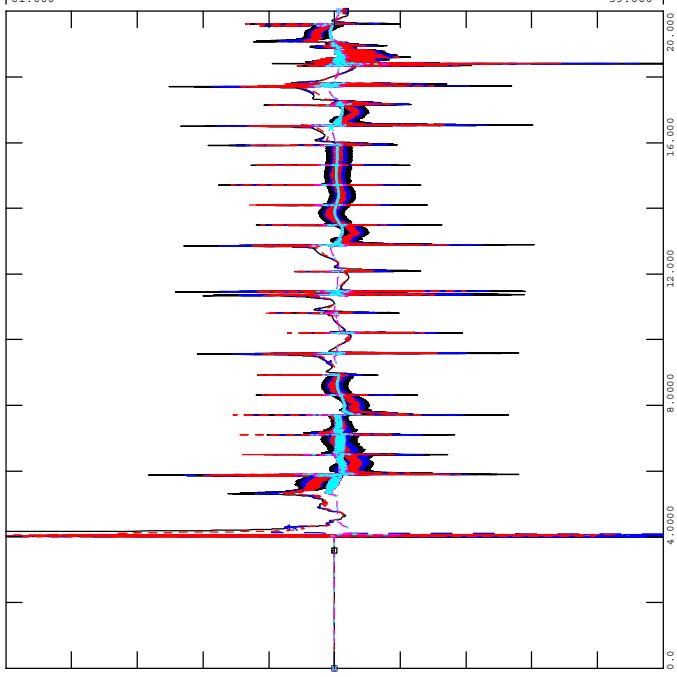
FILE: P1812_2020SP_PRE/1034L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14

FREQUENCY

CHNL# 38: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 37: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 36: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 35: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 34: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SP_PRE
CATB -1034L_FAULT_AT_BOWMANTON

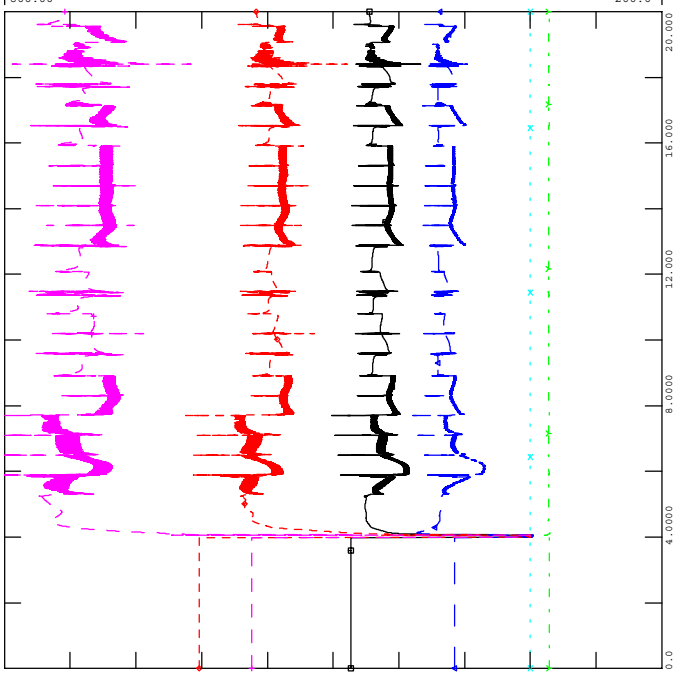
FILE: P1812_2020SP_PRE/1034L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14

LINE POWER

CHNL# 49: [POWR 320 TO 674 CKT '58'] 800.00 -200.0
CHNL# 47: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 45: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 43: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 41: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 39: [POWR 662 TO 669 CKT '64'] 800.00 -200.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SP_PRE
CATB -1034L_FAULT_AT_BOWMANTON

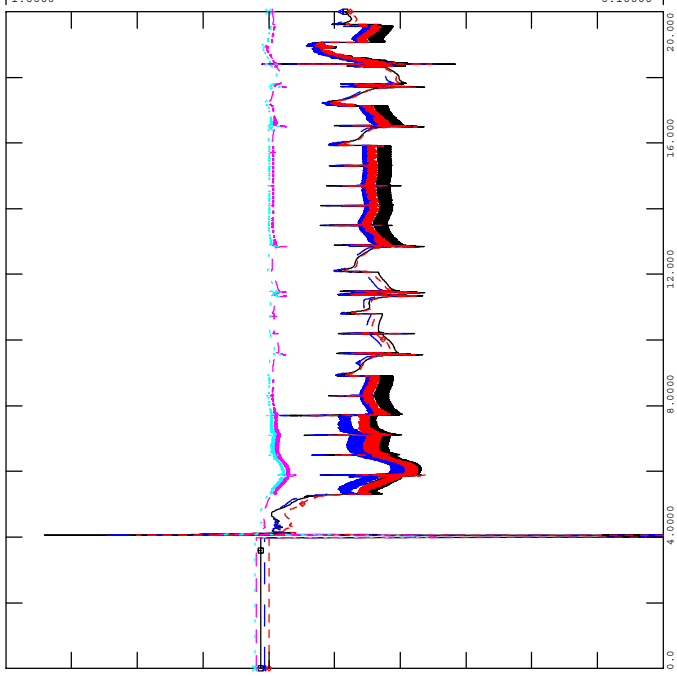
FILE: P1812_2020SP_PRE/1034L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14

BUS VOLTAGE

CHNL# 33: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 32: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 31: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 30: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 29: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

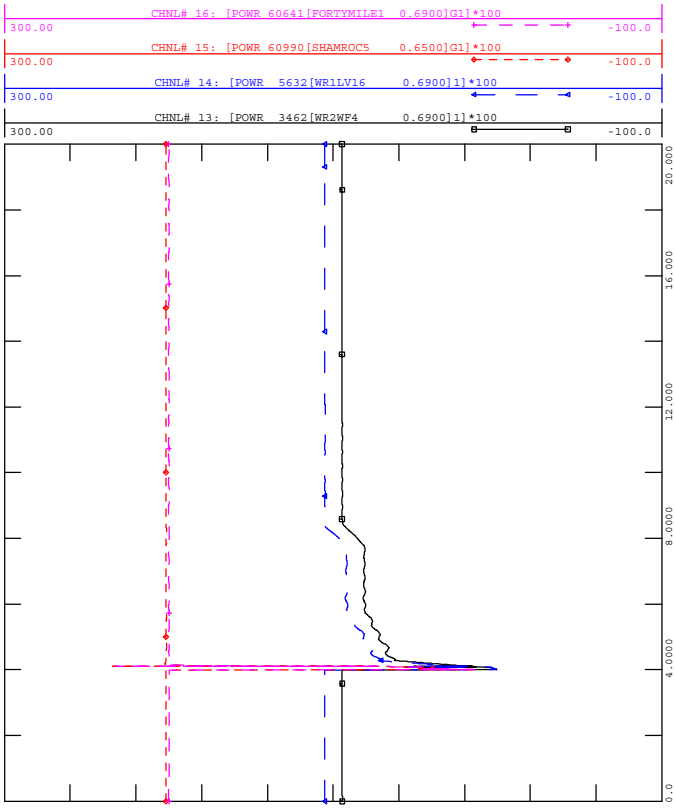


P1812_2020SP_PRE
CATB -983L_FAULT_AT_ELKWATER

FILE: P1812_2020SP_PRE/983L_Fault_at_Elkwater.out

TUE, NOV 20 2018 12:14

MACHINE POWER

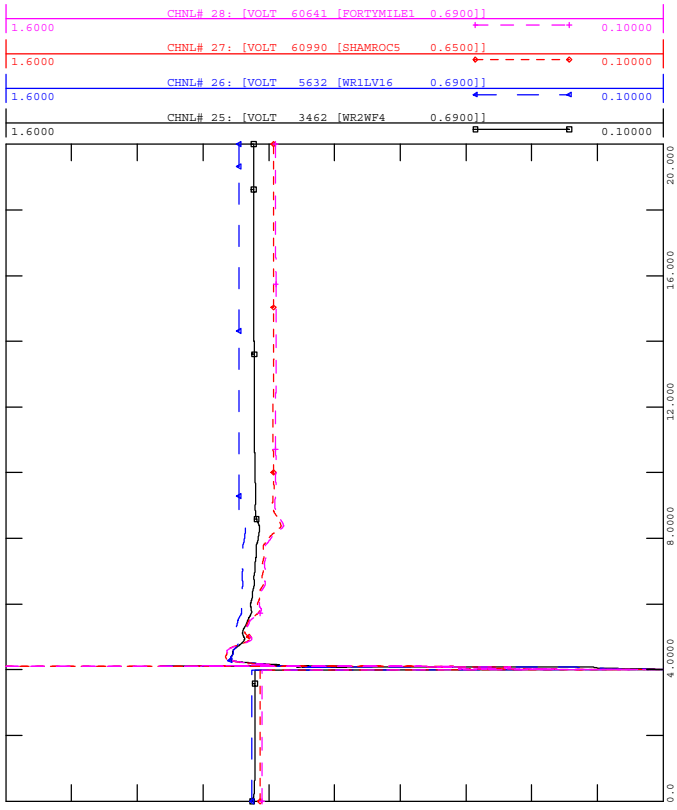


P1812_2020SP_PRE
CATB -983L_FAULT_AT_ELKWATER

FILE: P1812_2020SP_PRE/983L_Fault_at_Elkwater.out

TUE, NOV 20 2018 12:14

MACHINE VOLTAGE

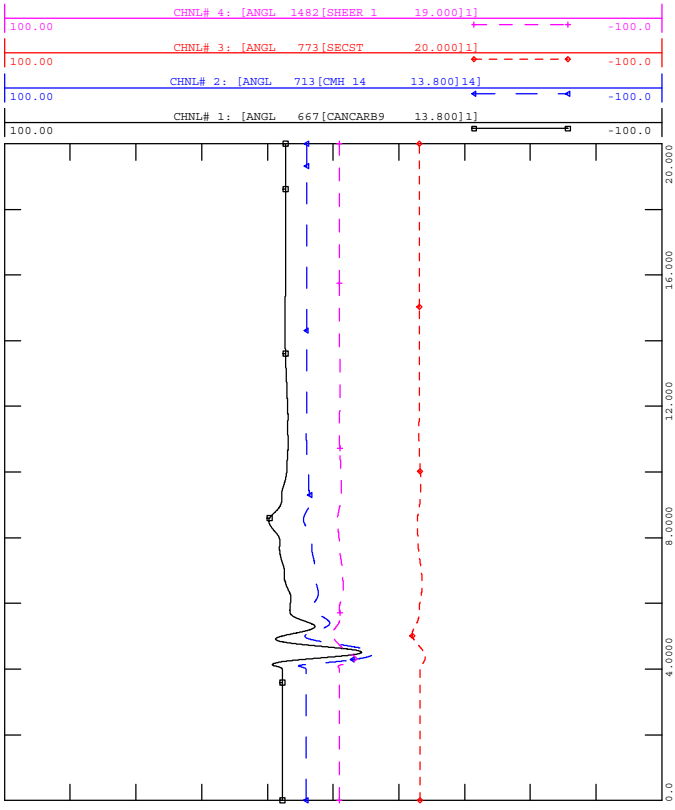


P1812_2020SP_PRE
CATB -983L_FAULT_AT_ELKWATER

FILE: P1812_2020SP_PRE/983L_Fault_at_Elkwater.out

TUE, NOV 20 2018 12:14

MACHINE ANGEL

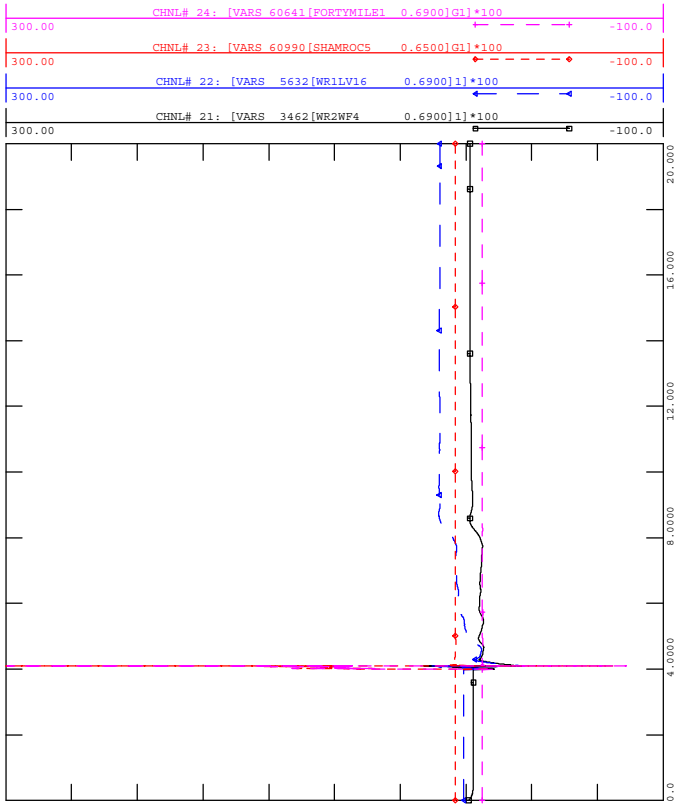


P1812_2020SP_PRE
CATB -983L_FAULT_AT_ELKWATER

FILE: P1812_2020SP_PRE/983L_Fault_at_Elkwater.out

TUE, NOV 20 2018 12:14

MACHINE VAR

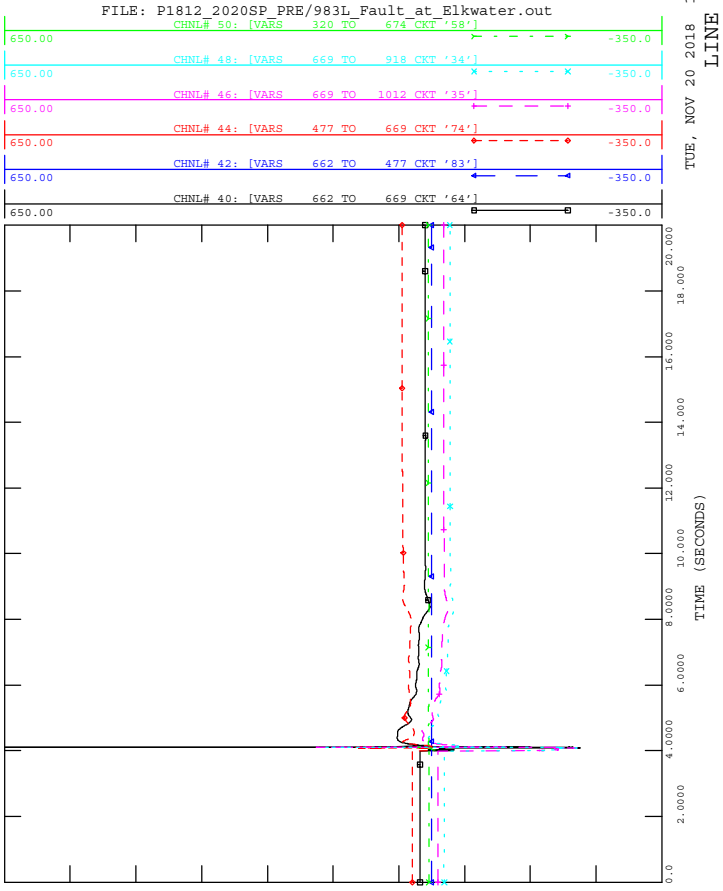


P1812_2020SP_PRE
CATB -983L_FAULT_AT_ELKWATER

FILE: P1812_2020SP_PRE/983L_Fault_at_Elkwater.out

TUE, NOV 20 2018 12:14

LINE VAR

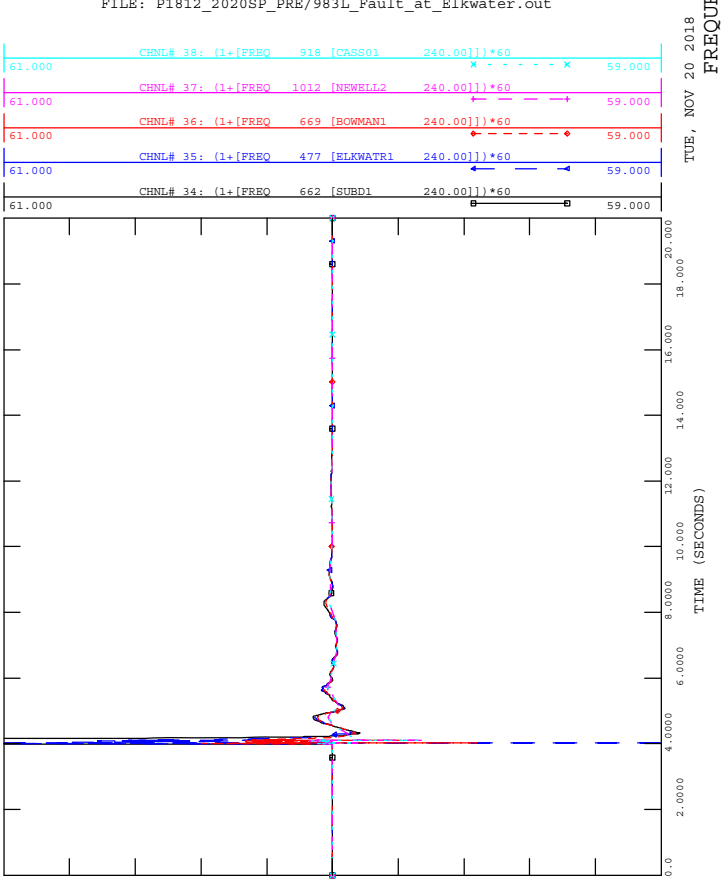


P1812_2020SP_PRE
CATB -983L_FAULT_AT_ELKWATER

FILE: P1812_2020SP_PRE/983L_Fault_at_Elkwater.out

TUE, NOV 20 2018 12:14

FREQUENCY

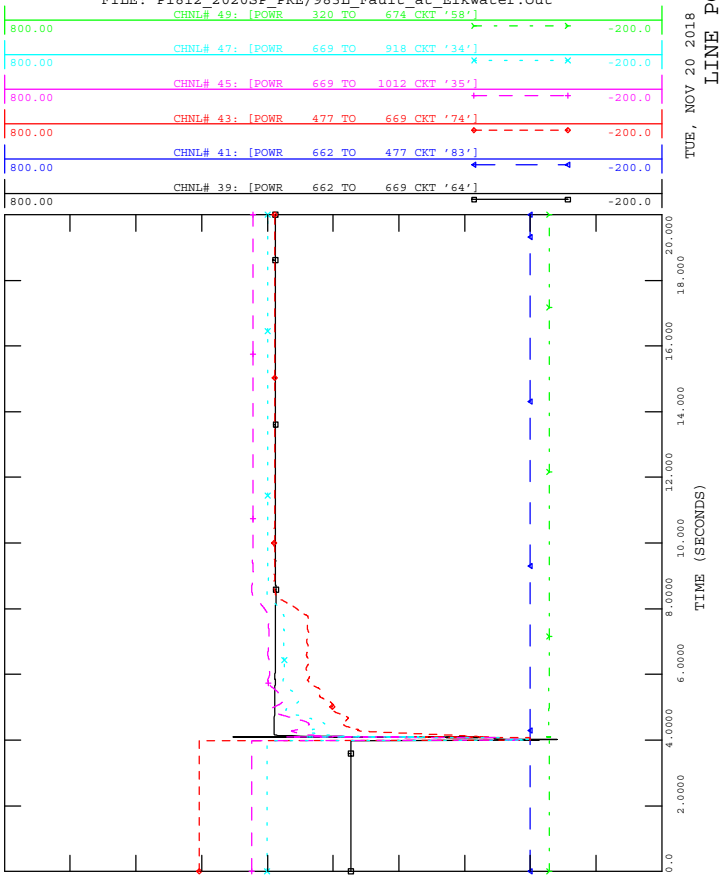


P1812_2020SP_PRE
CATB -983L_FAULT_AT_ELKWATER

FILE: P1812_2020SP_PRE/983L_Fault_at_Elkwater.out

TUE, NOV 20 2018 12:14

LINE POWER

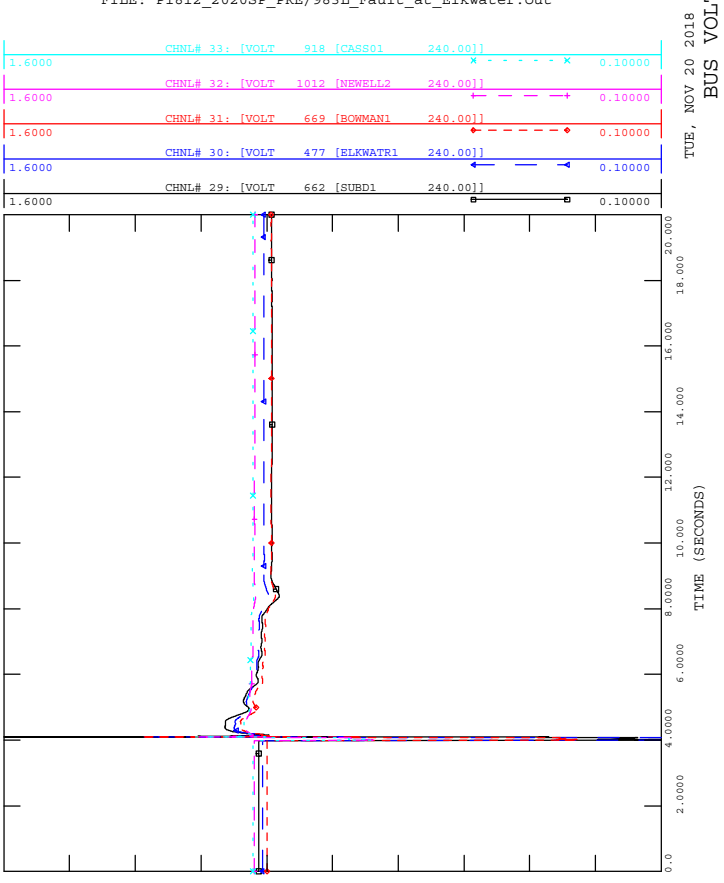


P1812_2020SP_PRE
CATB -983L_FAULT_AT_ELKWATER

FILE: P1812_2020SP_PRE/983L_Fault_at_Elkwater.out

TUE, NOV 20 2018 12:14

BUS VOLTAGE

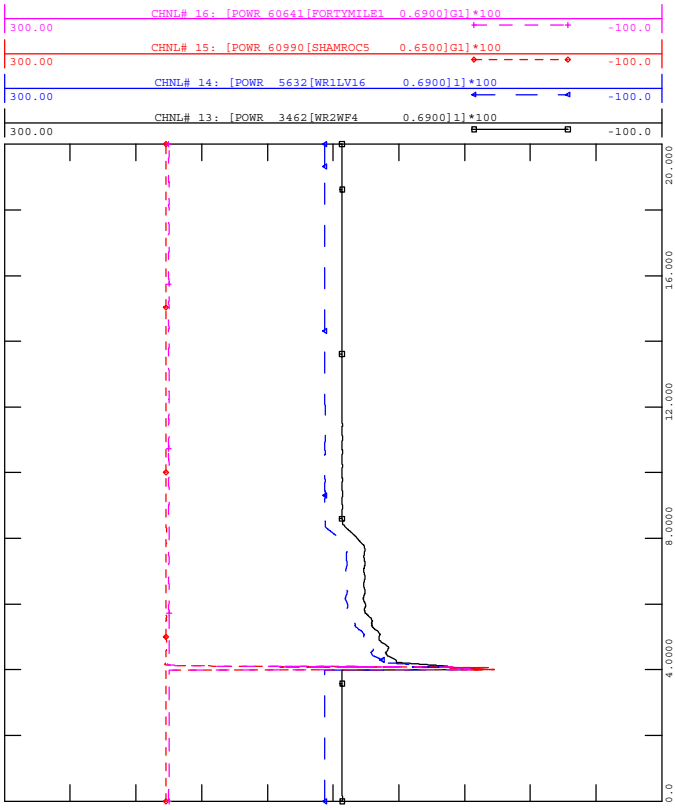


P1812_2020SP_PRE
CATB -983L_FAULT_AT_WHITLA

FILE: P1812_2020SP_PRE/983L_Fault_at_Whitla.out

TUE, NOV 20 2018 12:14

MACHINE POWER

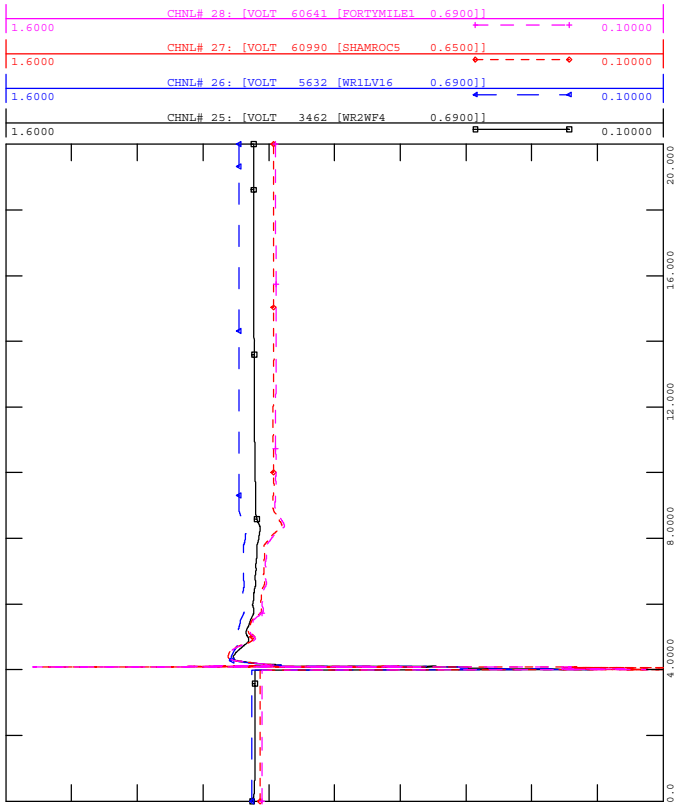


P1812_2020SP_PRE
CATB -983L_FAULT_AT_WHITLA

FILE: P1812_2020SP_PRE/983L_Fault_at_Whitla.out

TUE, NOV 20 2018 12:14

MACHINE VOLTAGE

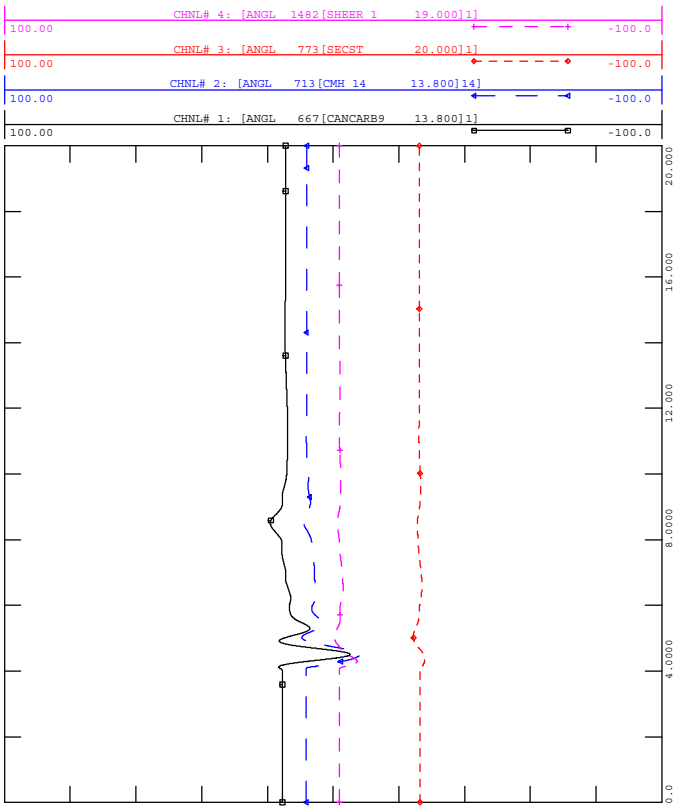


P1812_2020SP_PRE
CATB -983L_FAULT_AT_WHITLA

FILE: P1812_2020SP_PRE/983L_Fault_at_Whitla.out

TUE, NOV 20 2018 12:14

MACHINE ANGEL

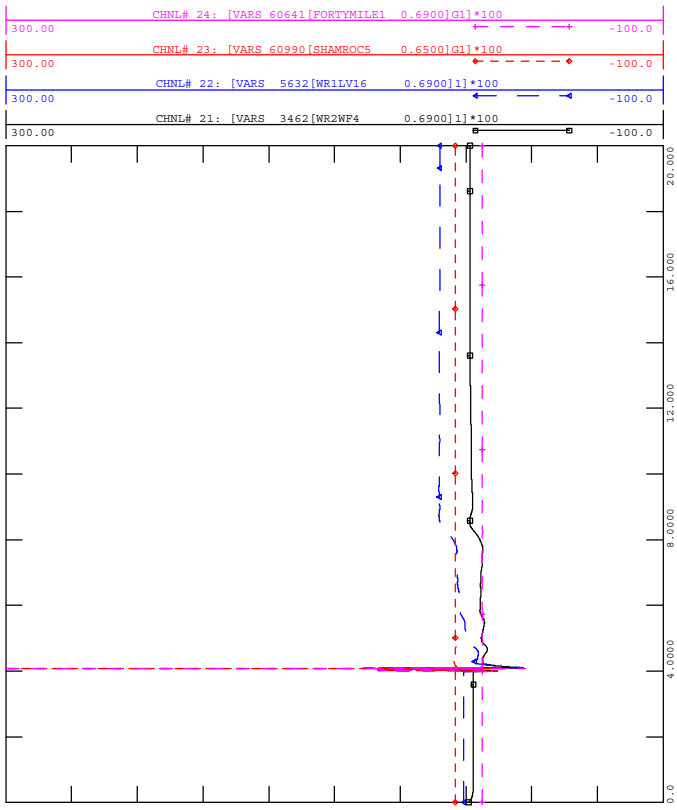


P1812_2020SP_PRE
CATB -983L_FAULT_AT_WHITLA

FILE: P1812_2020SP_PRE/983L_Fault_at_Whitla.out

TUE, NOV 20 2018 12:14

MACHINE VAR



P1812_2020SP_PRE
CATB -983L_FAULT_AT_WHITLA

FILE: P1812_2020SP_PRE/983L_Fault_at_Whitla.out

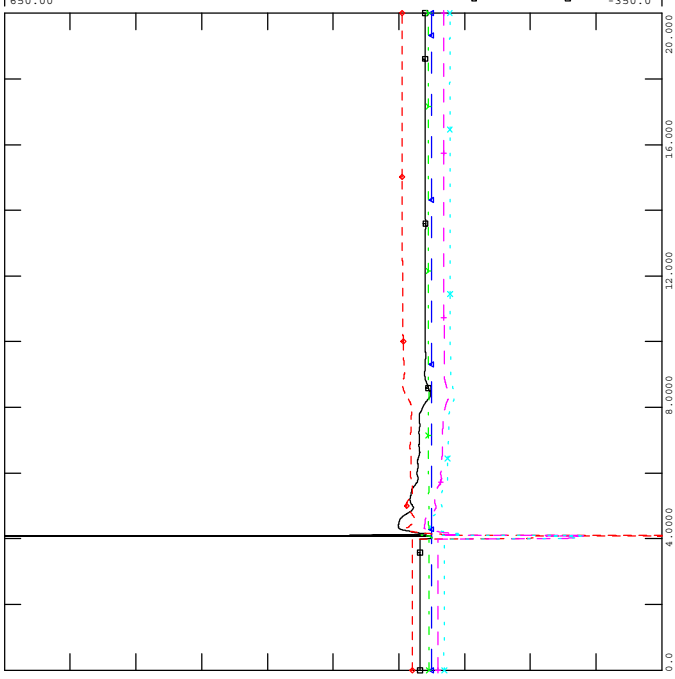
TUE, NOV 20 2018 12:14

LINE VAR

CHNL# 50: [VARS 320 TO 674 CKT '58'] 650.00 -350.0
CHNL# 48: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 46: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 44: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 42: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 40: [VARS 662 TO 669 CKT '64'] 650.00 -350.0

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

TIME (SECONDS)



P1812_2020SP_PRE
CATB -983L_FAULT_AT_WHITLA

FILE: P1812_2020SP_PRE/983L_Fault_at_Whitla.out

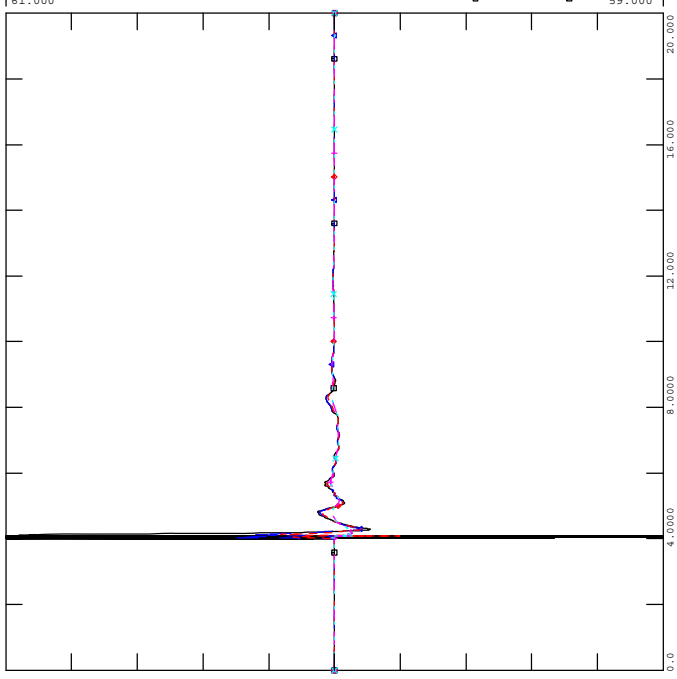
TUE, NOV 20 2018 12:14

FREQUENCY

CHNL# 38: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 37: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 36: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 35: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 34: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

TIME (SECONDS)



P1812_2020SP_PRE
CATB -983L_FAULT_AT_WHITLA

FILE: P1812_2020SP_PRE/983L_Fault_at_Whitla.out

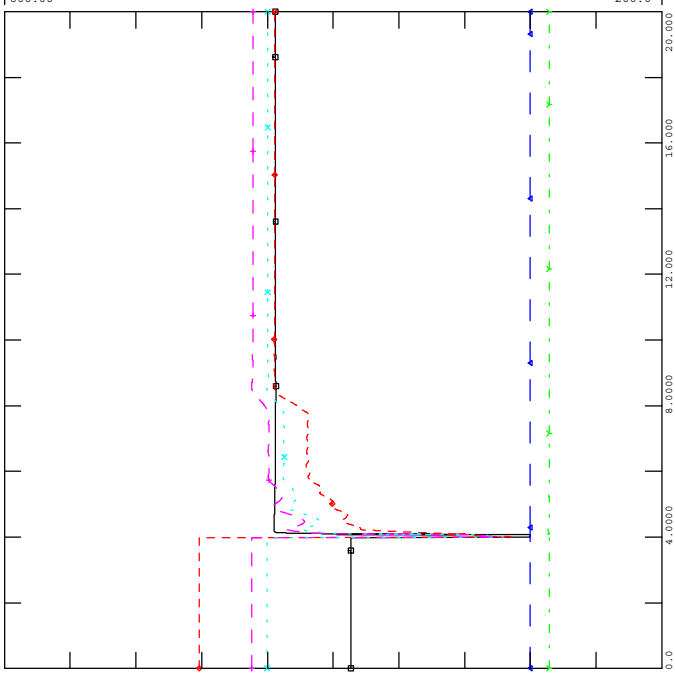
TUE, NOV 20 2018 12:14

LINE POWER

CHNL# 49: [POWR 320 TO 674 CKT '58'] 800.00 -200.0
CHNL# 47: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 45: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 43: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 41: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 39: [POWR 662 TO 669 CKT '64'] 800.00 -200.0

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

TIME (SECONDS)



P1812_2020SP_PRE
CATB -983L_FAULT_AT_WHITLA

FILE: P1812_2020SP_PRE/983L_Fault_at_Whitla.out

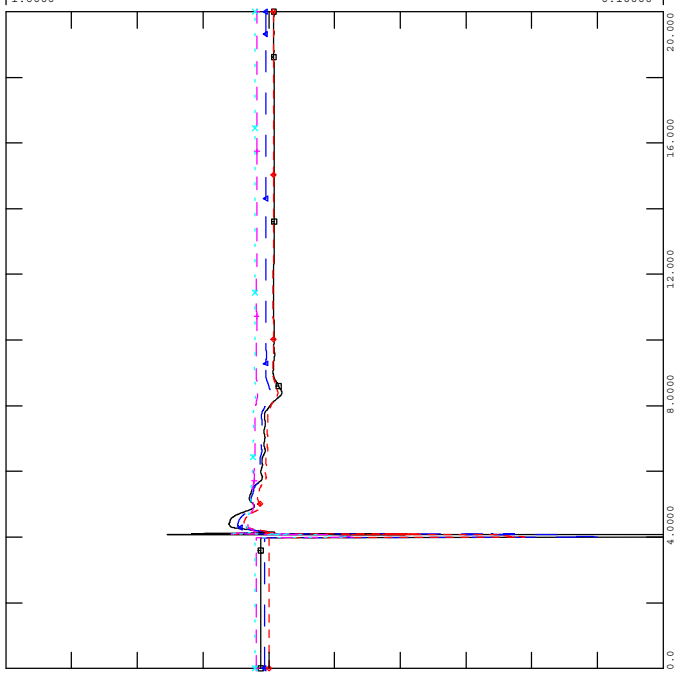
TUE, NOV 20 2018 12:14

BUS VOLTAGE

CHNL# 33: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 32: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 31: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 30: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 29: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

TIME (SECONDS)



P1812_2020SL_PRE
CATB -1074L_FAULT_AT_ELKWATER

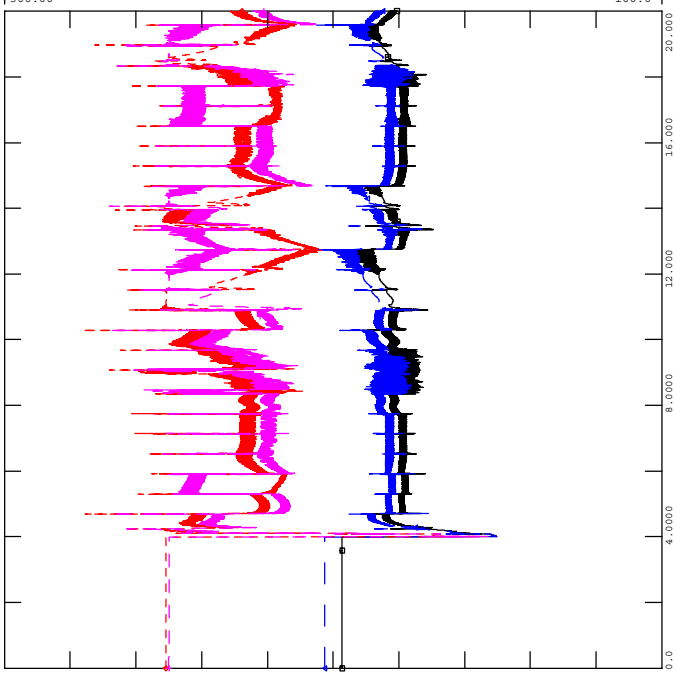
FILE: P1812_2020SL_PRE/1074L_Fault_at_Elkwater.out

TUE, NOV 20 2018 12:14

MACHINE POWER

CHNL# 16: [POWR 60641[FORTYMILE1 0.6900]G1]*100 300.00 -100.0
CHNL# 15: [POWR 60990[SHAMROC5 0.6500]G1]*100 300.00 -100.0
CHNL# 14: [POWR 5632[WR1LV16 0.6900]1]*100 300.00 -100.0
CHNL# 13: [POWR 3462[WR2WF4 0.6900]1]*100 300.00 -100.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SL_PRE
CATB -1074L_FAULT_AT_ELKWATER

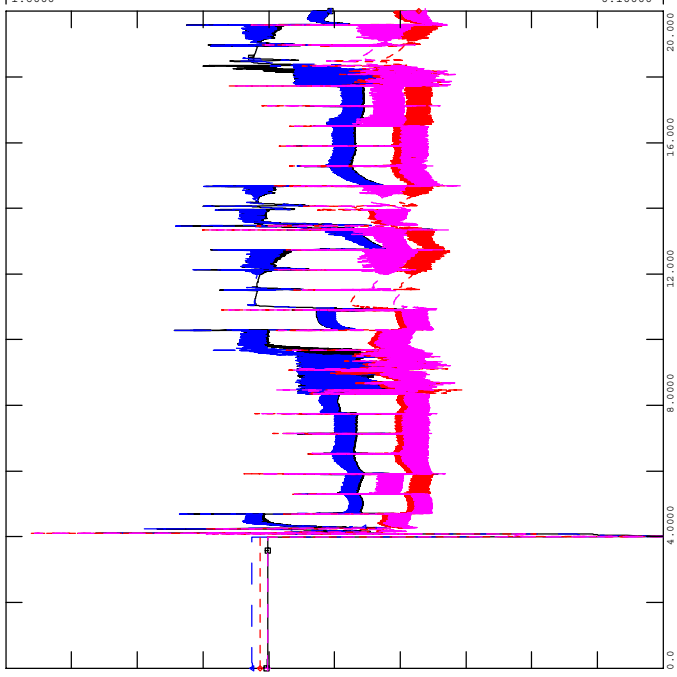
FILE: P1812_2020SL_PRE/1074L_Fault_at_Elkwater.out

TUE, NOV 20 2018 12:14

MACHINE VOLTAGE

CHNL# 28: [VOLT 60641 [FORTYMILE1 0.6900]] 1.6000 0.10000
CHNL# 27: [VOLT 60990 [SHAMROC5 0.6500]] 1.6000 0.10000
CHNL# 26: [VOLT 5632 [WR1LV16 0.6900]] 1.6000 0.10000
CHNL# 25: [VOLT 3462 [WR2WF4 0.6900]] 1.6000 0.10000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SL_PRE
CATB -1074L_FAULT_AT_ELKWATER

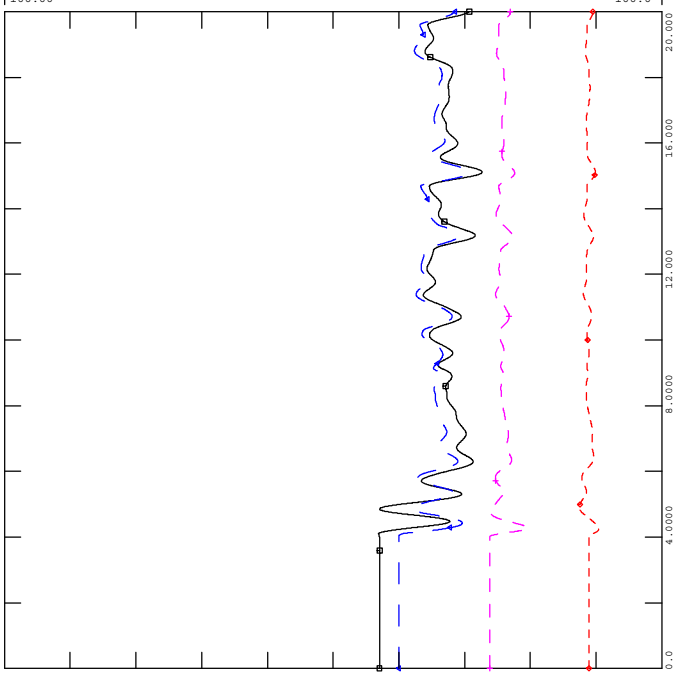
FILE: P1812_2020SL_PRE/1074L_Fault_at_Elkwater.out

TUE, NOV 20 2018 12:14

MACHINE ANGEL

CHNL# 4: [ANGL 1482[SHEER 1 19.000]1] 100.00 -100.0
CHNL# 3: [ANGL 773[SECST 20.000]1] 100.00 -100.0
CHNL# 2: [ANGL 713[CMH 14 13.800]14] 100.00 -100.0
CHNL# 1: [ANGL 667[CANCARB9 13.800]1] 100.00 -100.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SL_PRE
CATB -1074L_FAULT_AT_ELKWATER

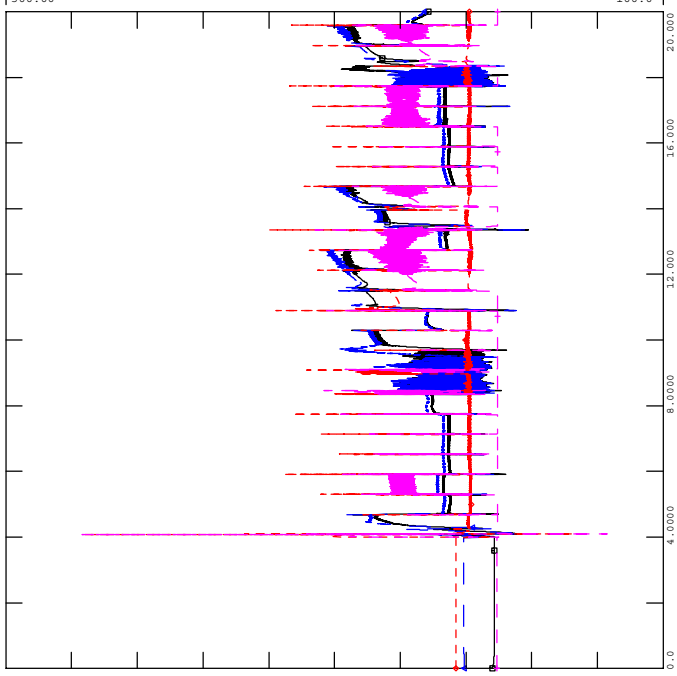
FILE: P1812_2020SL_PRE/1074L_Fault_at_Elkwater.out

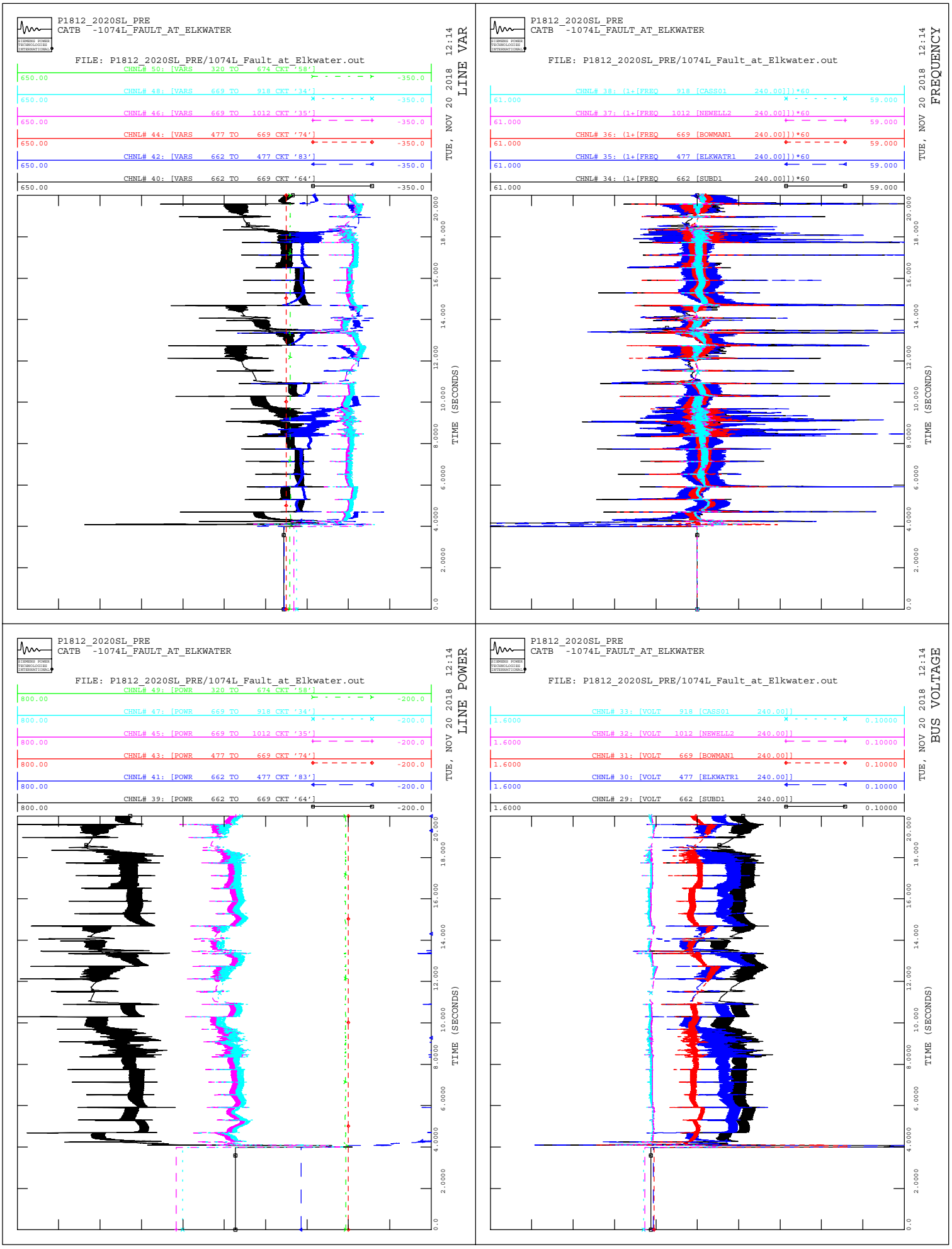
TUE, NOV 20 2018 12:14

MACHINE VAR

CHNL# 24: [VARS 60641[FORTYMILE1 0.6900]G1]*100 300.00 -100.0
CHNL# 23: [VARS 60990[SHAMROC5 0.6500]G1]*100 300.00 -100.0
CHNL# 22: [VARS 5632[WR1LV16 0.6900]1]*100 300.00 -100.0
CHNL# 21: [VARS 3462[WR2WF4 0.6900]1]*100 300.00 -100.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



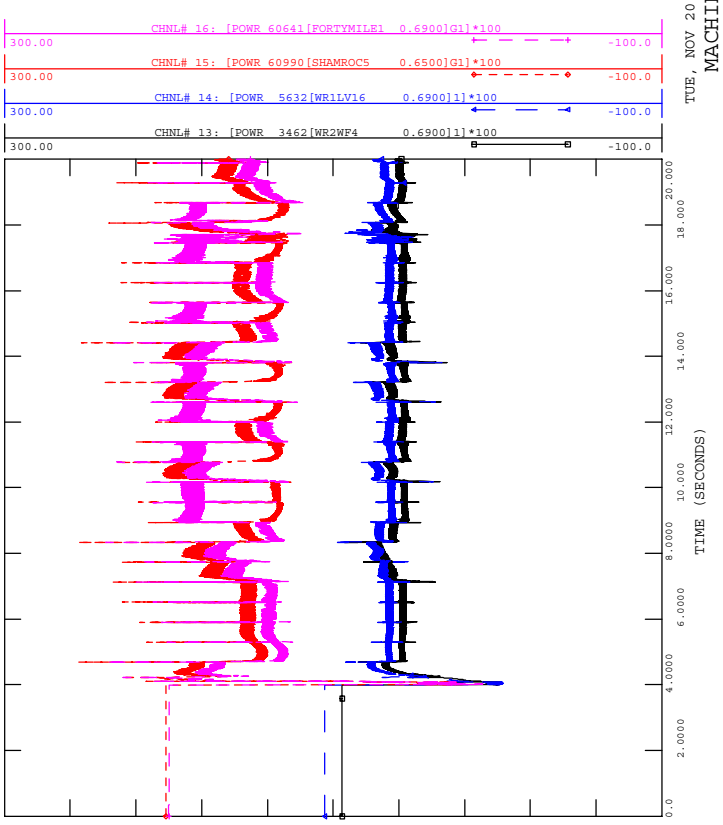

P1812_2020SL_PRE
CATB -1074L_FAULT_AT_ELKWATER
FILE: P1812_2020SL_PRE/1074L_Fault_at_Elkwater.out
TUE, NOV 20 2018 12:14
LINE VAR
CHNL# 50: [VARS 320 TO 674 CKT '58']
CHNL# 48: [VARS 669 TO 918 CKT '34']
CHNL# 46: [VARS 669 TO 1012 CKT '35']
CHNL# 44: [VARS 477 TO 669 CKT '74']
CHNL# 42: [VARS 662 TO 477 CKT '83']
CHNL# 40: [VARS 662 TO 669 CKT '64']
650.00
-350.0
TIME (SECONDS)
P1812_2020SL_PRE
CATB -1074L_FAULT_AT_ELKWATER
FILE: P1812_2020SL_PRE/1074L_Fault_at_Elkwater.out
TUE, NOV 20 2018 12:14
FREQUENCY
CHNL# 38: (1+[FREQ 918 [CASS01 240.00]])*60
CHNL# 37: (1+[FREQ 1012 [NEWELL2 240.00]])*60
CHNL# 36: (1+[FREQ 669 [BOWMAN1 240.00]])*60
CHNL# 35: (1+[FREQ 477 [ELKWATR1 240.00]])*60
CHNL# 34: (1+[FREQ 662 [SUBD1 240.00]])*60
61.000
59.000
TIME (SECONDS)
P1812_2020SL_PRE
CATB -1074L_FAULT_AT_ELKWATER
FILE: P1812_2020SL_PRE/1074L_Fault_at_Elkwater.out
TUE, NOV 20 2018 12:14
LINE POWER
CHNL# 49: [POWR 320 TO 674 CKT '58']
CHNL# 47: [POWR 669 TO 918 CKT '34']
CHNL# 45: [POWR 669 TO 1012 CKT '35']
CHNL# 43: [POWR 477 TO 669 CKT '74']
CHNL# 41: [POWR 662 TO 477 CKT '83']
CHNL# 39: [POWR 662 TO 669 CKT '64']
800.00
-200.0
TIME (SECONDS)
P1812_2020SL_PRE
CATB -1074L_FAULT_AT_ELKWATER
FILE: P1812_2020SL_PRE/1074L_Fault_at_Elkwater.out
TUE, NOV 20 2018 12:14
BUS VOLTAGE
CHNL# 33: [VOLT 918 [CASS01 240.00]]
CHNL# 32: [VOLT 1012 [NEWELL2 240.00]]
CHNL# 31: [VOLT 669 [BOWMAN1 240.00]]
CHNL# 30: [VOLT 477 [ELKWATR1 240.00]]
CHNL# 29: [VOLT 662 [SUBD1 240.00]]
1.6000
0.10000
TIME (SECONDS)

P1812_2020SL_PRE
CATB -1074L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_PRE/1074L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14

MACHINE POWER

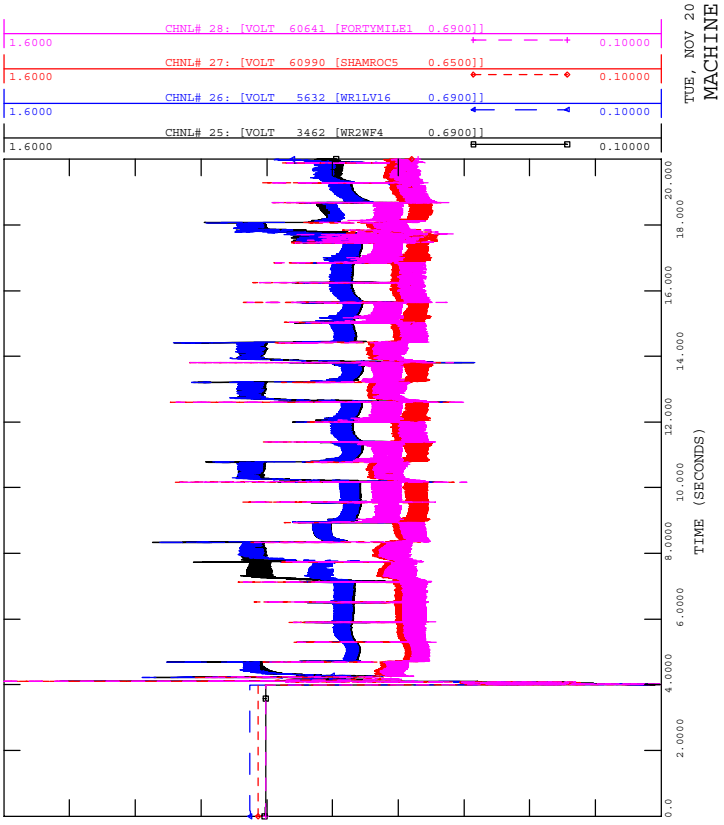


P1812_2020SL_PRE
CATB -1074L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_PRE/1074L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14

MACHINE VOLTAGE

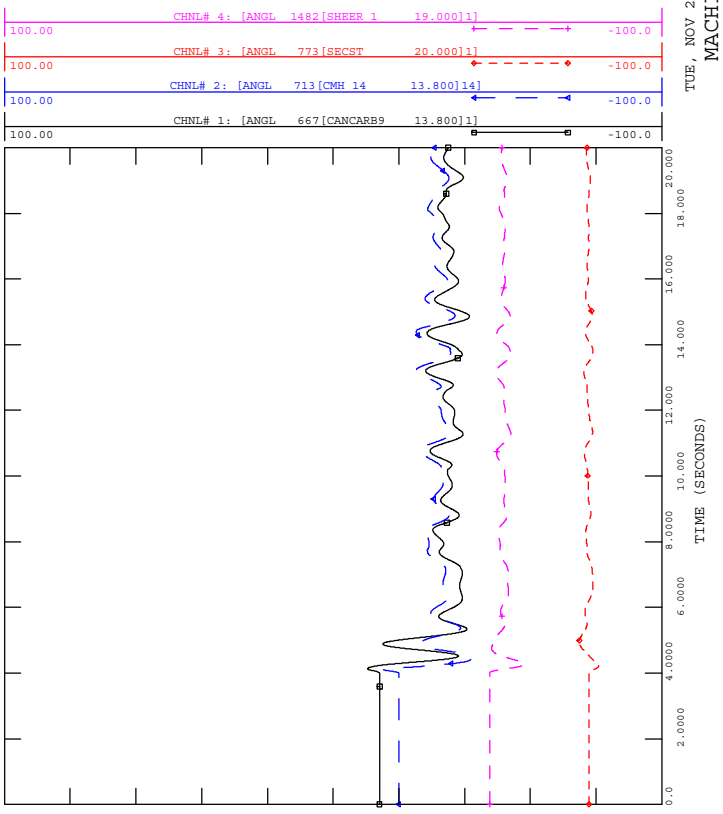


P1812_2020SL_PRE
CATB -1074L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_PRE/1074L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14

MACHINE ANGEL

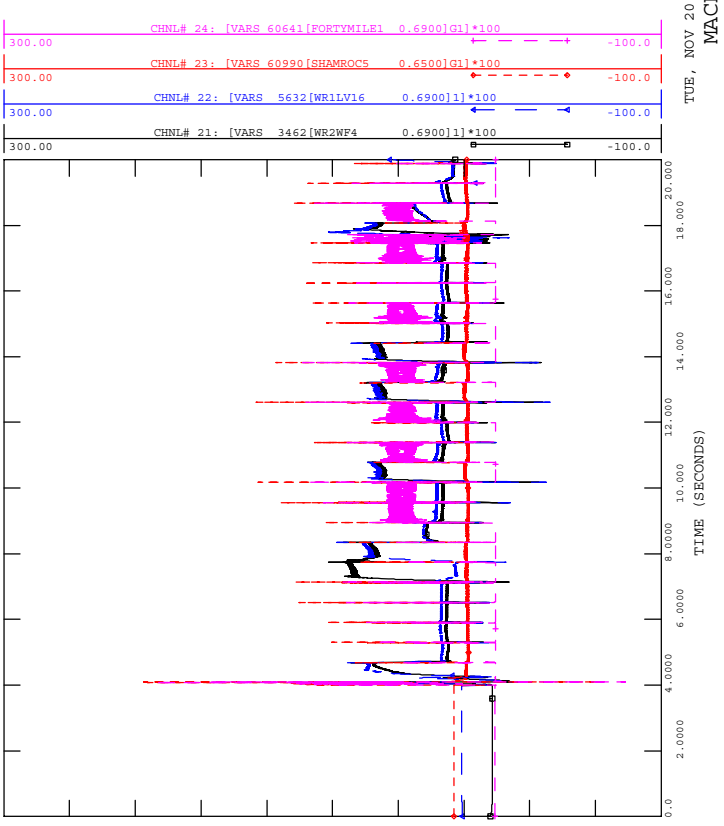


P1812_2020SL_PRE
CATB -1074L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_PRE/1074L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14

MACHINE VAR



P1812_2020SL_PRE
CATB -1074L_FAULT_AT_BOWMANTON

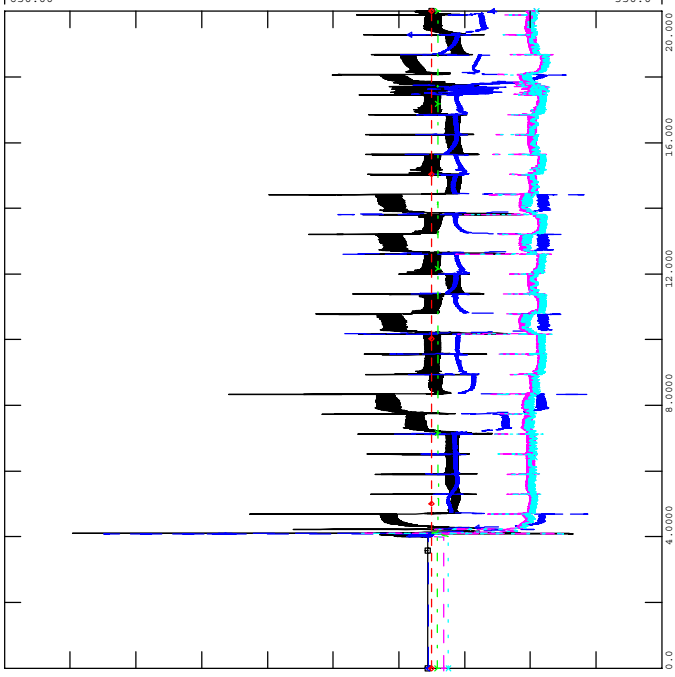
FILE: P1812_2020SL_PRE/1074L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14

LINE VAR

CHNL# 50: [VARS 320 TO 674 CKT '58'] 650.00 -350.0
CHNL# 48: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 46: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 44: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 42: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 40: [VARS 662 TO 669 CKT '64'] 650.00 -350.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SL_PRE
CATB -1074L_FAULT_AT_BOWMANTON

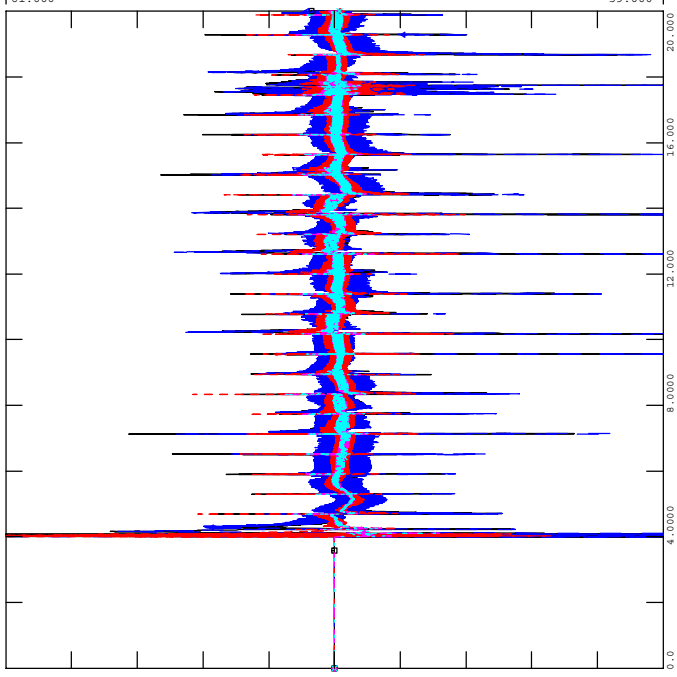
FILE: P1812_2020SL_PRE/1074L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14

FREQUENCY

CHNL# 38: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 37: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 36: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 35: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 34: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SL_PRE
CATB -1074L_FAULT_AT_BOWMANTON

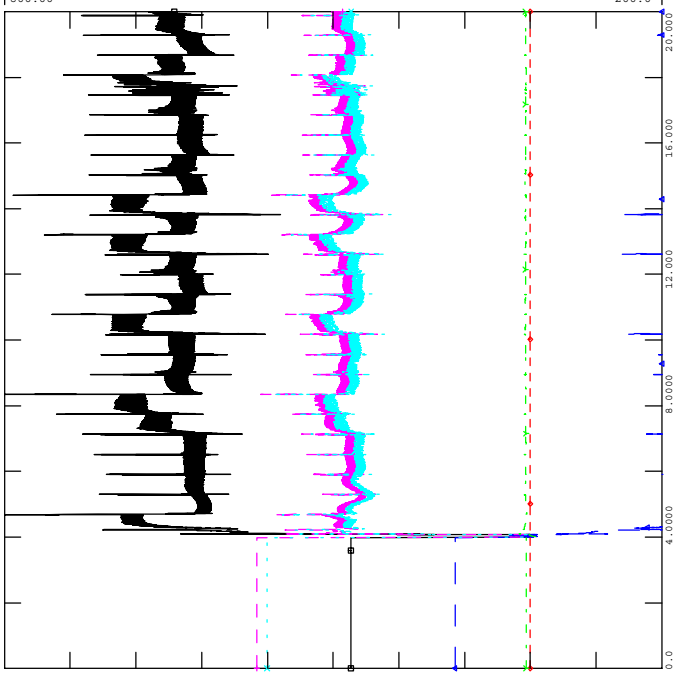
FILE: P1812_2020SL_PRE/1074L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14

LINE POWER

CHNL# 49: [POWR 320 TO 674 CKT '58'] 800.00 -200.0
CHNL# 47: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 45: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 43: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 41: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 39: [POWR 662 TO 669 CKT '64'] 800.00 -200.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SL_PRE
CATB -1074L_FAULT_AT_BOWMANTON

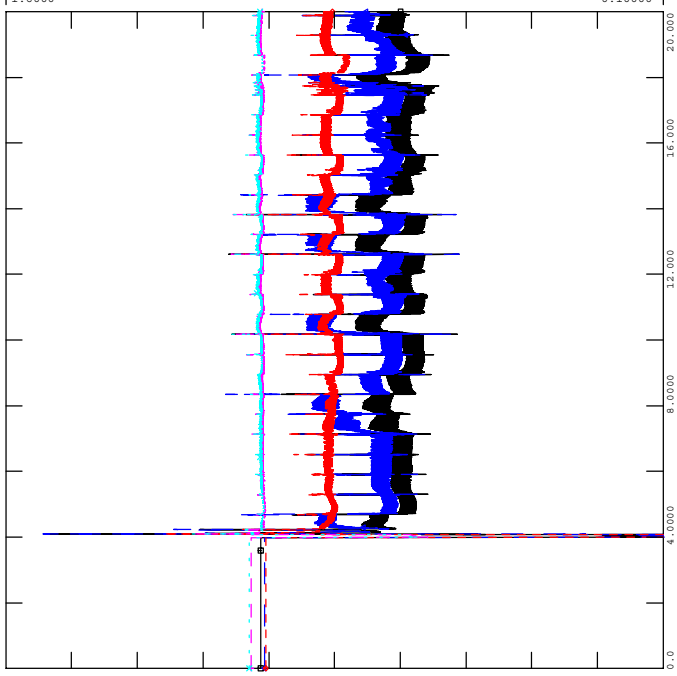
FILE: P1812_2020SL_PRE/1074L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:14

BUS VOLTAGE

CHNL# 33: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 32: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 31: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 30: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 29: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

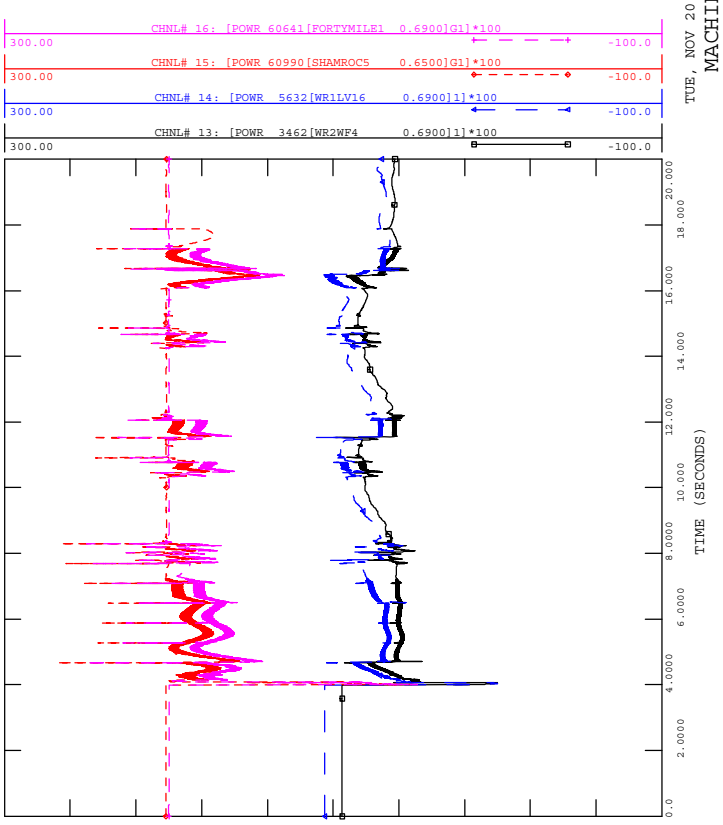


P1812_2020SL_PRE
CATB -1035L_FAULT_AT_NEWELL

FILE: P1812_2020SL_PRE/1035L_Fault_at_Newell.out

TUE, NOV 20 2018 12:15

MACHINE POWER

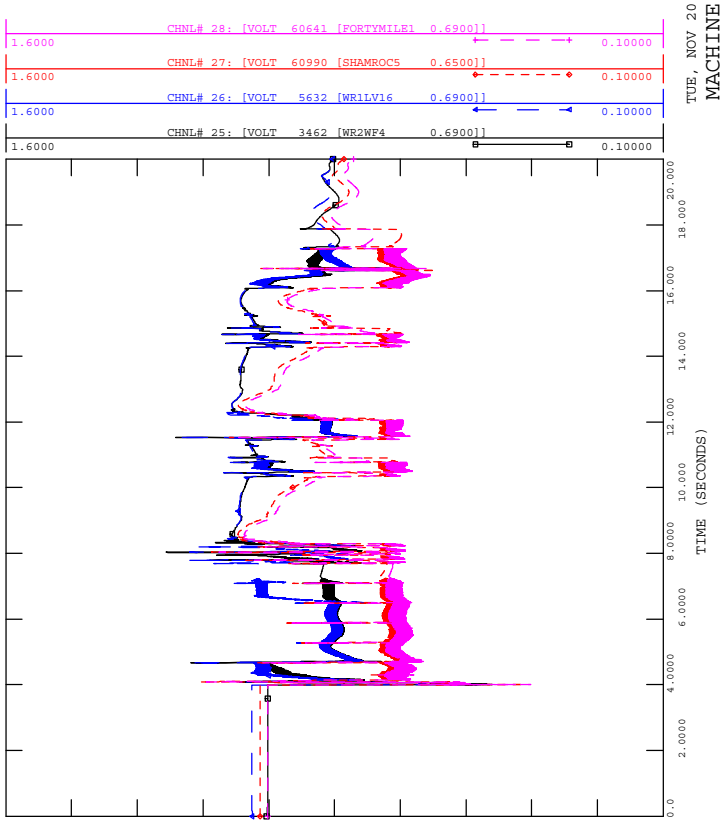


P1812_2020SL_PRE
CATB -1035L_FAULT_AT_NEWELL

FILE: P1812_2020SL_PRE/1035L_Fault_at_Newell.out

TUE, NOV 20 2018 12:15

MACHINE VOLTAGE

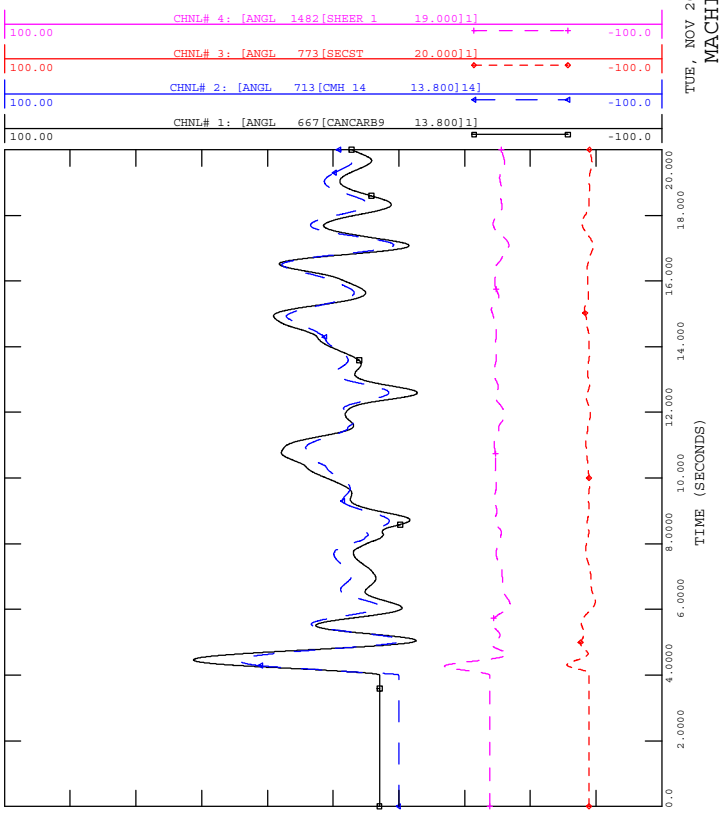


P1812_2020SL_PRE
CATB -1035L_FAULT_AT_NEWELL

FILE: P1812_2020SL_PRE/1035L_Fault_at_Newell.out

TUE, NOV 20 2018 12:15

MACHINE ANGEL

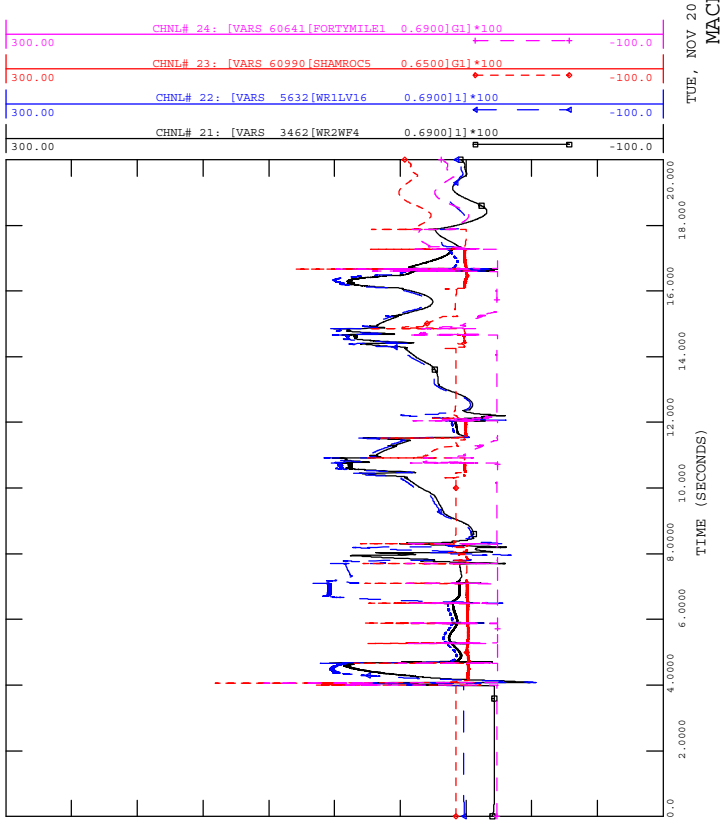


P1812_2020SL_PRE
CATB -1035L_FAULT_AT_NEWELL

FILE: P1812_2020SL_PRE/1035L_Fault_at_Newell.out

TUE, NOV 20 2018 12:15

MACHINE VAR

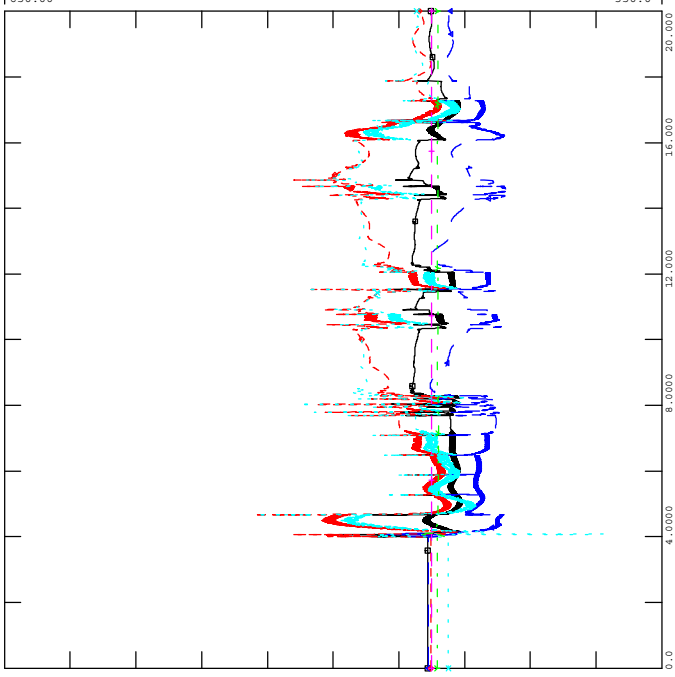


P1812_2020SL_PRE
CATB -1035L_FAULT_AT_NEWELL

FILE: P1812_2020SL_PRE/1035L_Fault_at_Newell.out

TUE, NOV 20 2018 12:15 LINE VAR

CHNL# 50: [VARS 320 TO 674 CKT '58'] 650.00 -350.0
CHNL# 48: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 46: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 44: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 42: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 40: [VARS 662 TO 669 CKT '64'] 650.00 -350.0

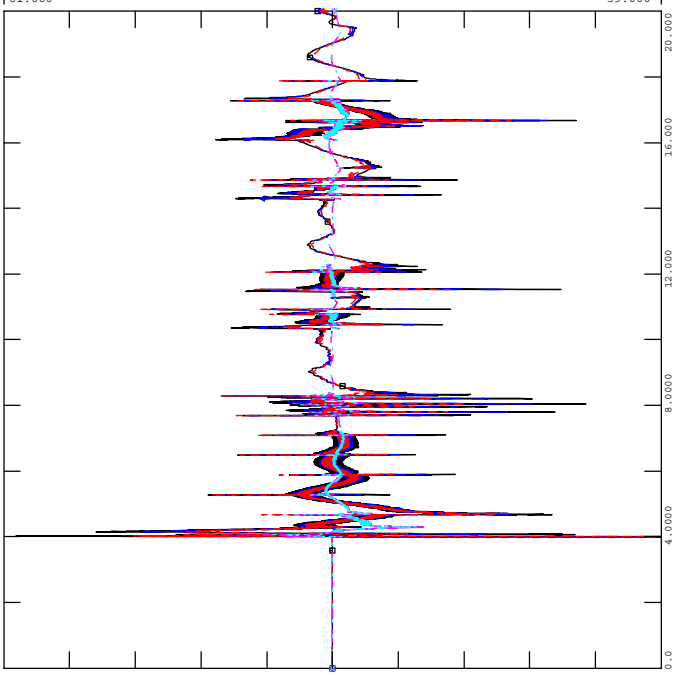


P1812_2020SL_PRE
CATB -1035L_FAULT_AT_NEWELL

FILE: P1812_2020SL_PRE/1035L_Fault_at_Newell.out

TUE, NOV 20 2018 12:15 FREQUENCY

CHNL# 38: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 37: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 36: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 35: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 34: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000

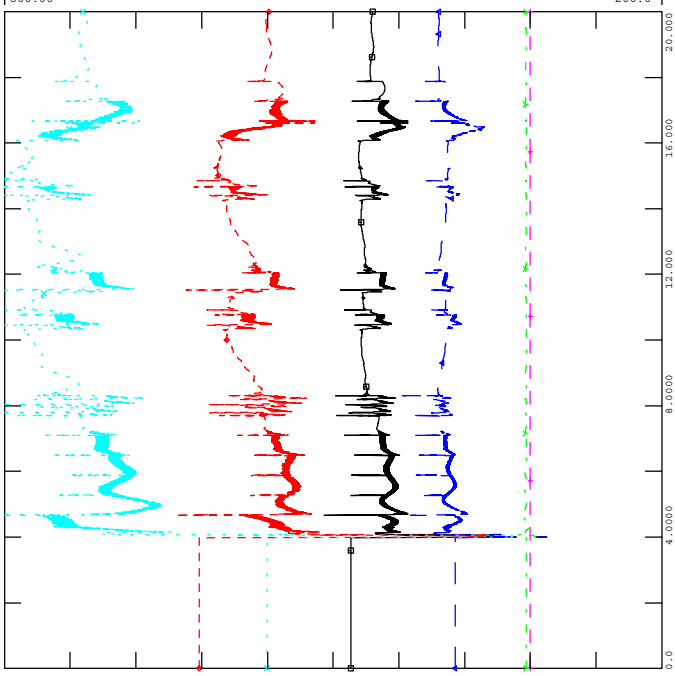


P1812_2020SL_PRE
CATB -1035L_FAULT_AT_NEWELL

FILE: P1812_2020SL_PRE/1035L_Fault_at_Newell.out

TUE, NOV 20 2018 12:15 LINE POWER

CHNL# 49: [POWR 320 TO 674 CKT '58'] 800.00 -200.0
CHNL# 47: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 45: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 43: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 41: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 39: [POWR 662 TO 669 CKT '64'] 800.00 -200.0

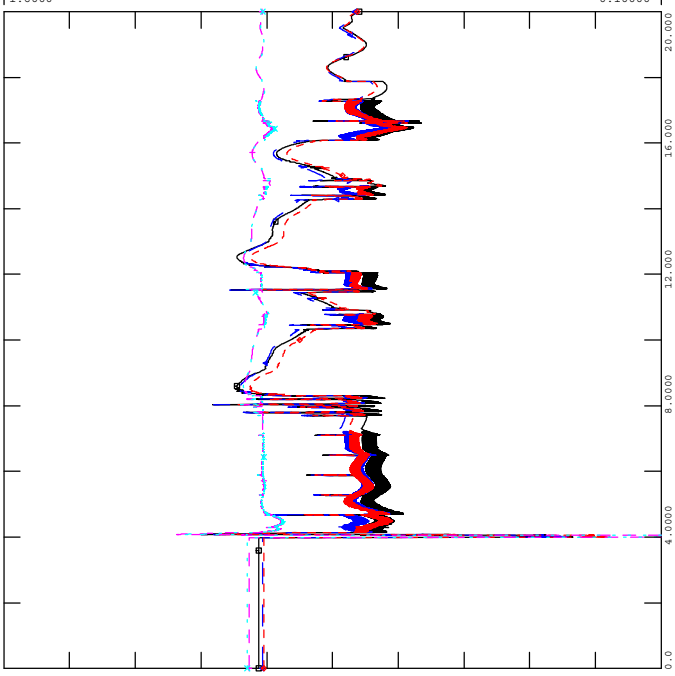


P1812_2020SL_PRE
CATB -1035L_FAULT_AT_NEWELL

FILE: P1812_2020SL_PRE/1035L_Fault_at_Newell.out

TUE, NOV 20 2018 12:15 BUS VOLTAGE

CHNL# 33: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 32: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 31: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 30: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 29: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000

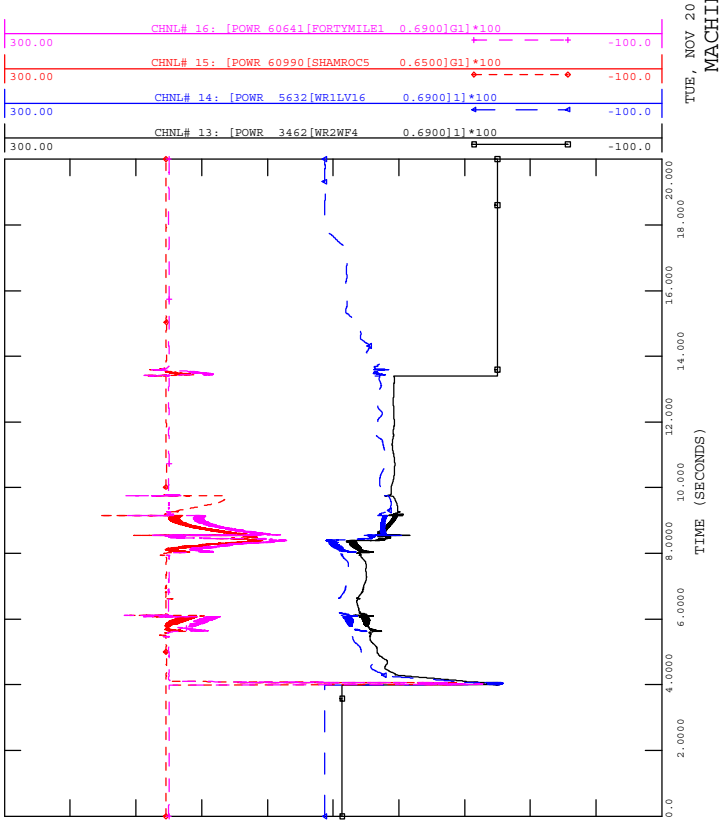


P1812_2020SL_PRE
CATB -1035L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_PRE/1035L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:15

MACHINE POWER

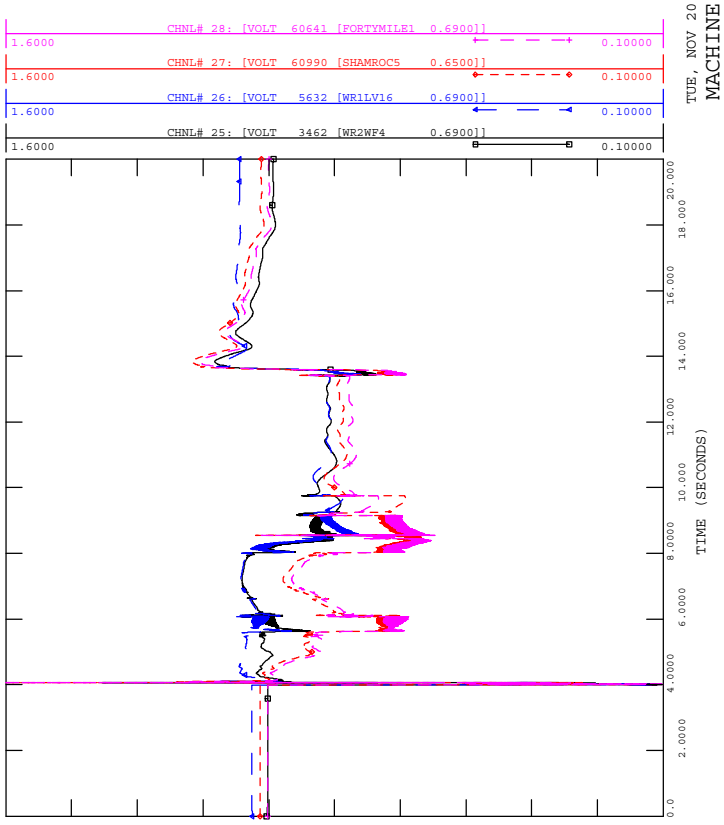


P1812_2020SL_PRE
CATB -1035L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_PRE/1035L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:15

MACHINE VOLTAGE

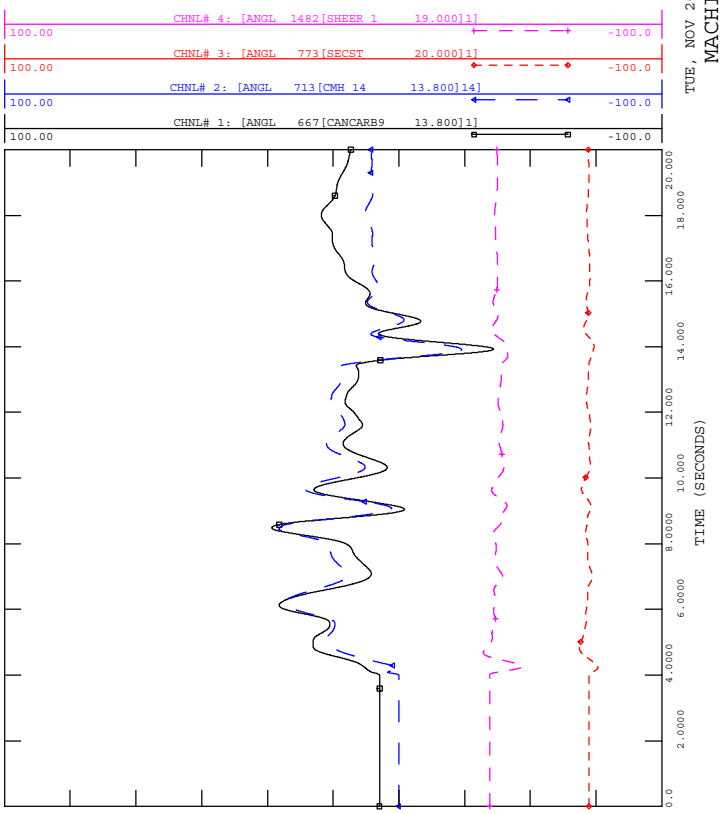


P1812_2020SL_PRE
CATB -1035L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_PRE/1035L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:15

MACHINE ANGEL

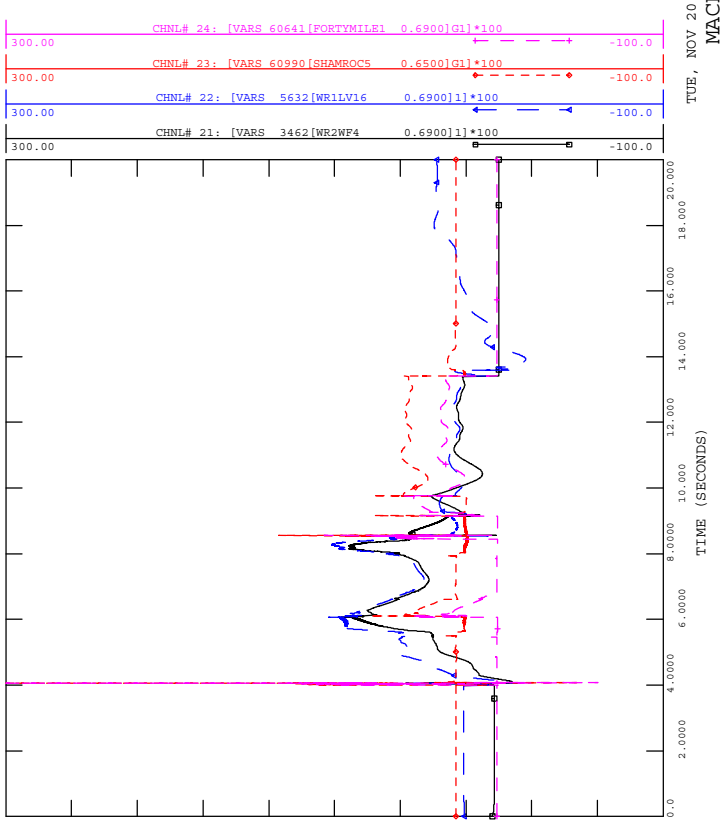


P1812_2020SL_PRE
CATB -1035L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_PRE/1035L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:15

MACHINE VAR



P1812_2020SL_PRE
CATB -1035L_FAULT_AT_BOWMANTON

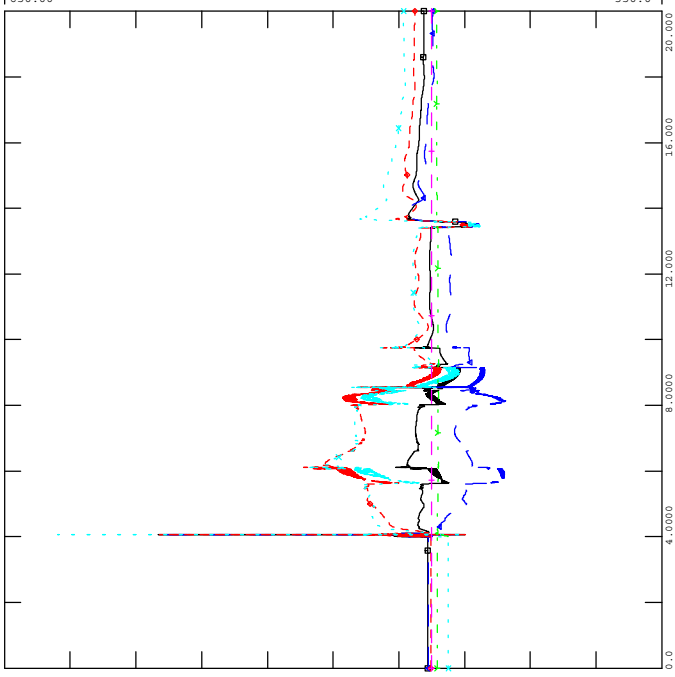
FILE: P1812_2020SL_PRE/1035L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:15

LINE VAR

CHNL# 50: [VARS 320 TO 674 CKT '58'] 650.00 -350.0
CHNL# 48: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 46: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 44: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 42: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 40: [VARS 662 TO 669 CKT '64'] 650.00 -350.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SL_PRE
CATB -1035L_FAULT_AT_BOWMANTON

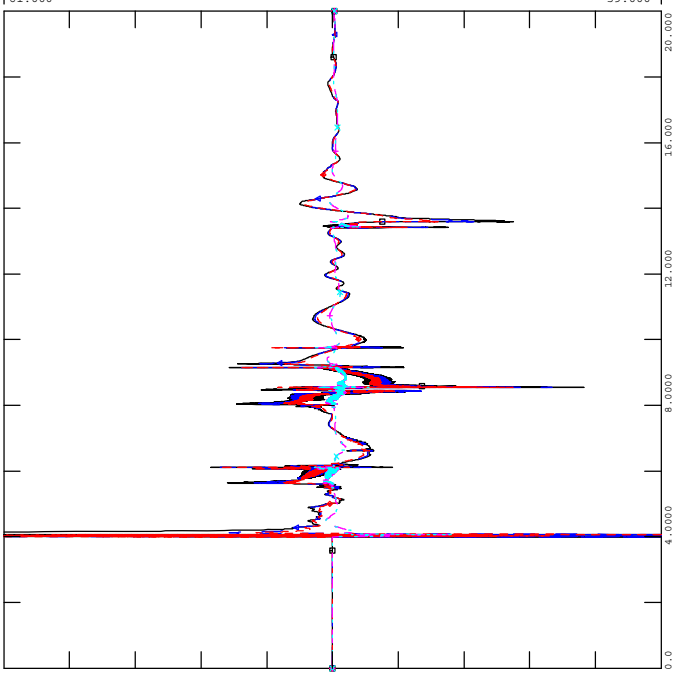
FILE: P1812_2020SL_PRE/1035L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:15

FREQUENCY

CHNL# 38: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 37: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 36: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 35: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 34: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SL_PRE
CATB -1035L_FAULT_AT_BOWMANTON

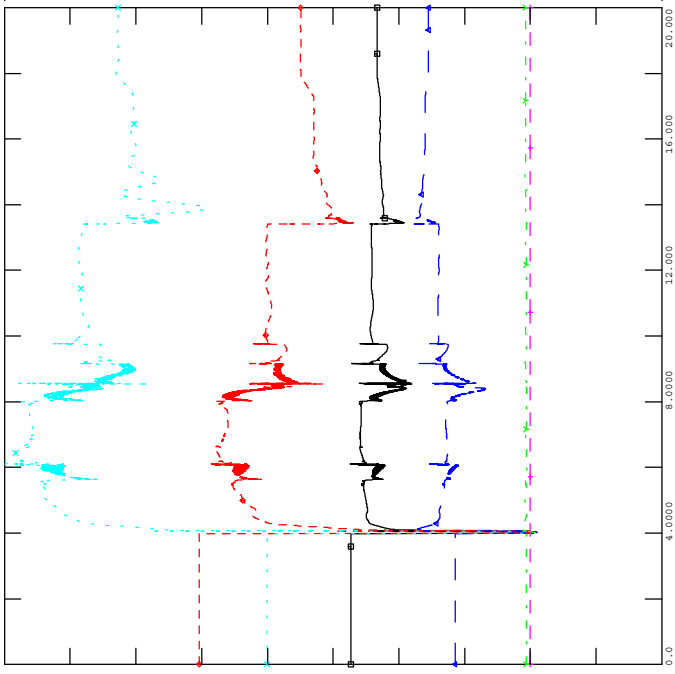
FILE: P1812_2020SL_PRE/1035L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:15

LINE POWER

CHNL# 49: [POWR 320 TO 674 CKT '58'] 800.00 -200.0
CHNL# 47: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 45: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 43: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 41: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 39: [POWR 662 TO 669 CKT '64'] 800.00 -200.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SL_PRE
CATB -1035L_FAULT_AT_BOWMANTON

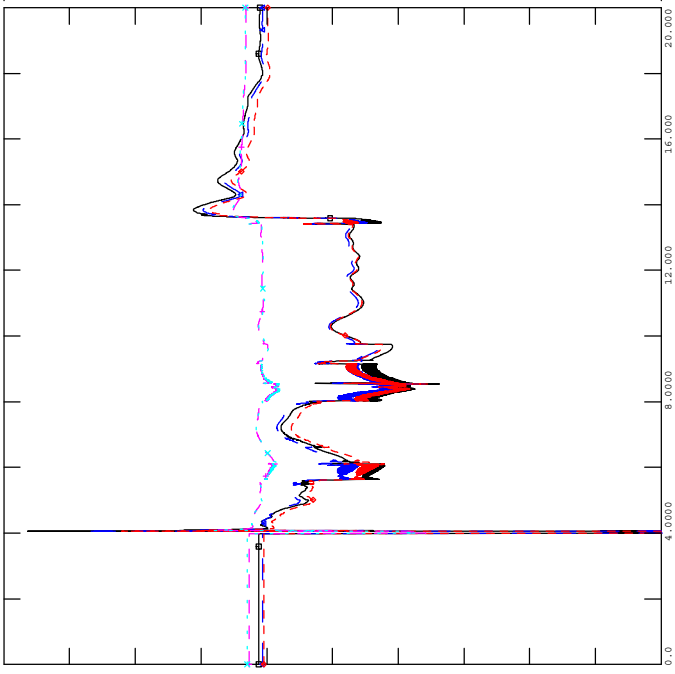
FILE: P1812_2020SL_PRE/1035L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:15

BUS VOLTAGE

CHNL# 33: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 32: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 31: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 30: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 29: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000

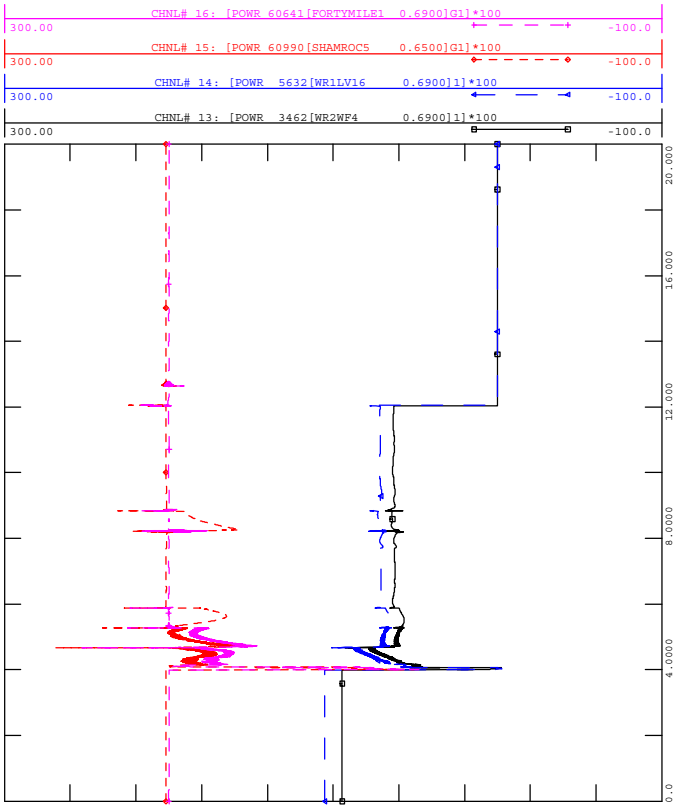
TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SL_PRE
CATB -1034L_FAULT_AT_CASSILS

FILE: P1812_2020SL_PRE/1034L_Fault_at_Cassils.out

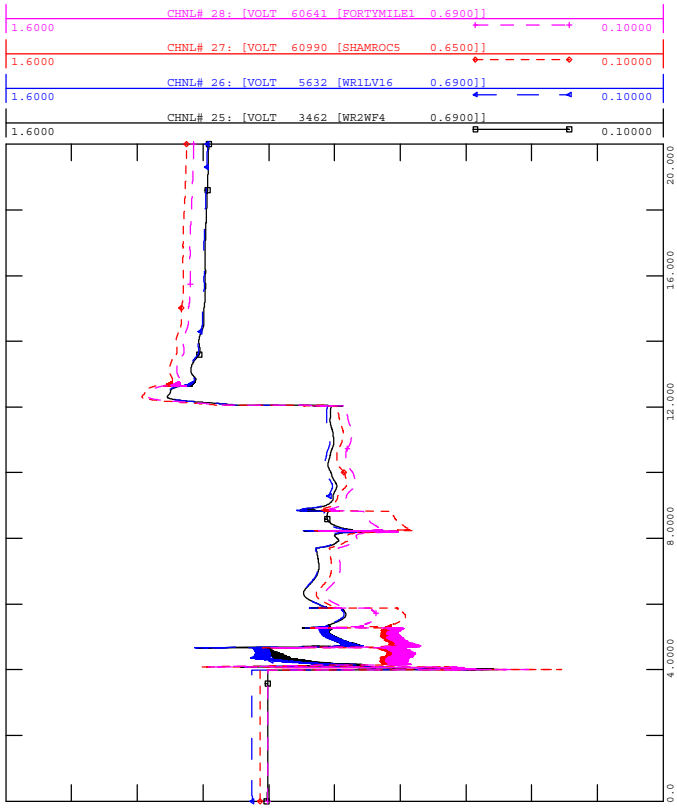
TUE, NOV 20 2018 12:15
MACHINE POWER



P1812_2020SL_PRE
CATB -1034L_FAULT_AT_CASSILS

FILE: P1812_2020SL_PRE/1034L_Fault_at_Cassils.out

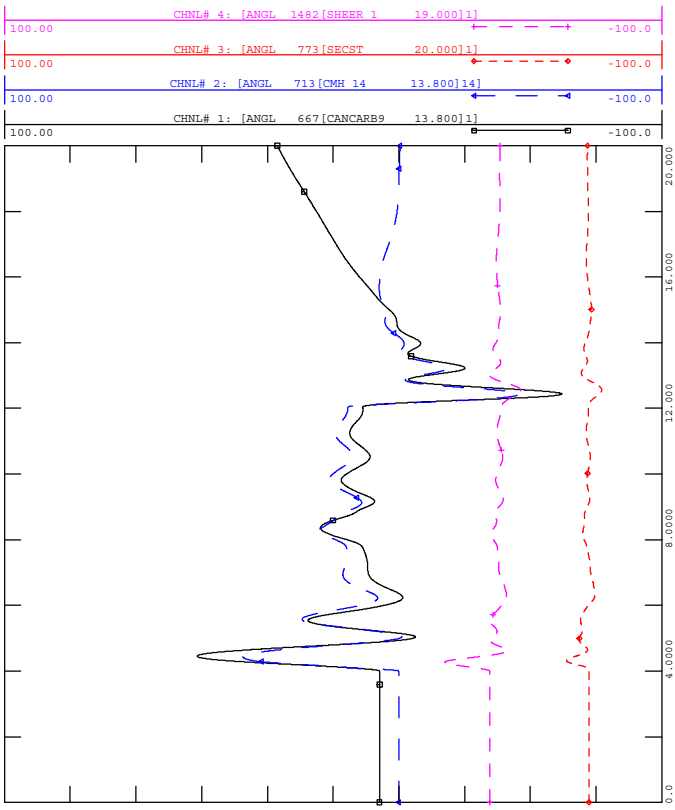
TUE, NOV 20 2018 12:15
MACHINE VOLTAGE



P1812_2020SL_PRE
CATB -1034L_FAULT_AT_CASSILS

FILE: P1812_2020SL_PRE/1034L_Fault_at_Cassils.out

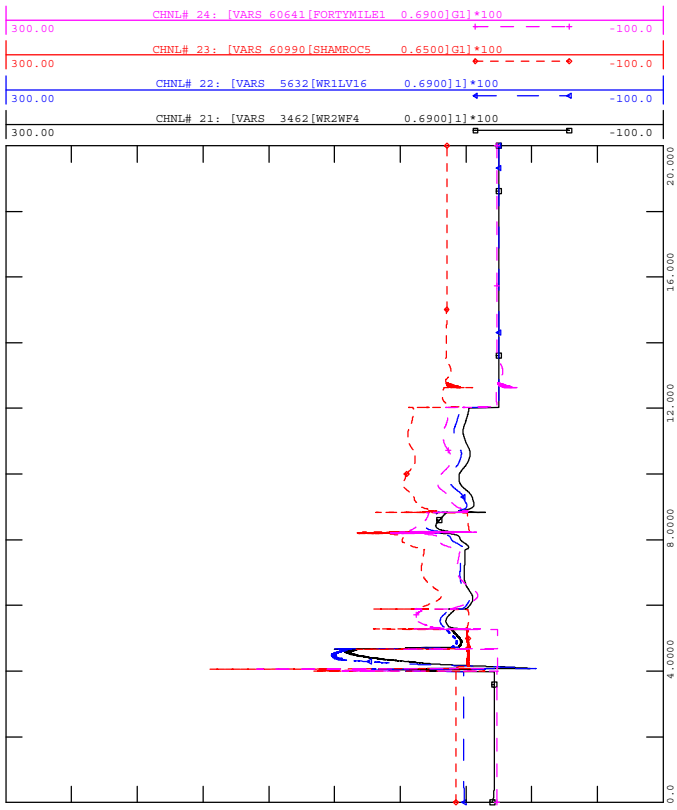
TUE, NOV 20 2018 12:15
MACHINE ANGEL

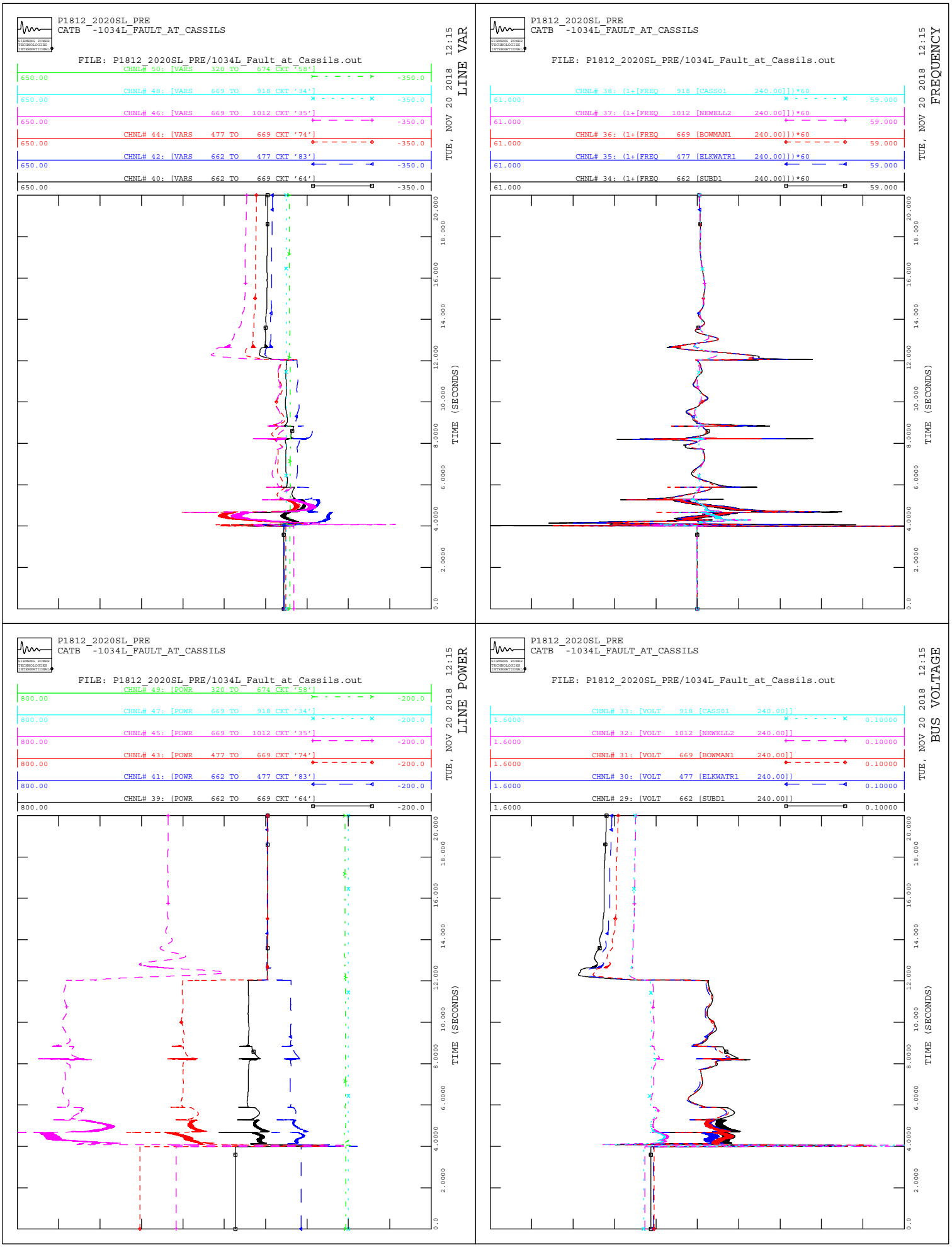


P1812_2020SL_PRE
CATB -1034L_FAULT_AT_CASSILS

FILE: P1812_2020SL_PRE/1034L_Fault_at_Cassils.out

TUE, NOV 20 2018 12:15
MACHINE VAR



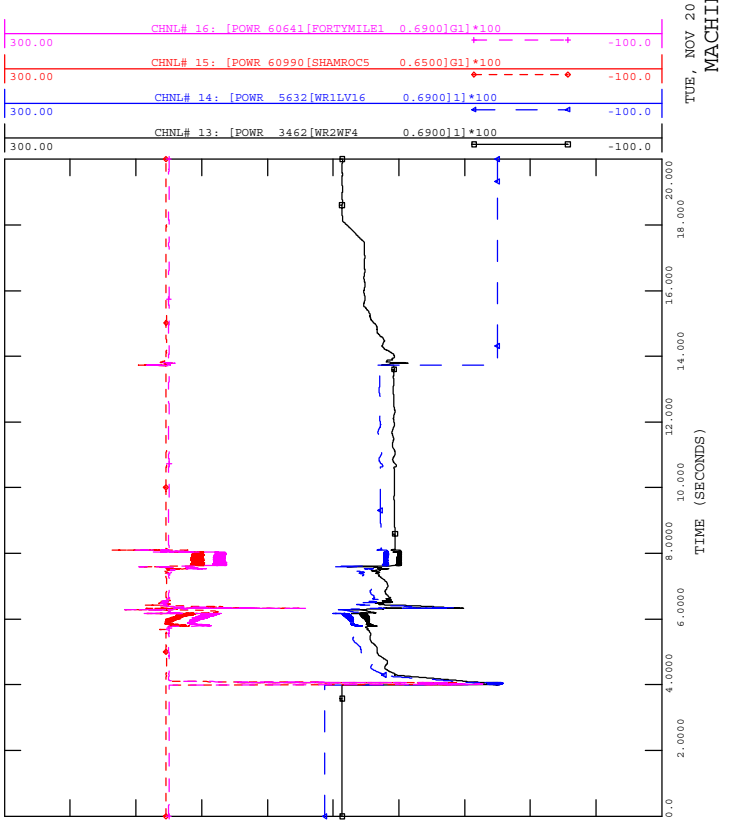

P1812_2020SL_PRE
CATB -1034L_FAULT_AT_CASSILS
FILE: P1812_2020SL_PRE/1034L_Fault_at_Cassils.out
CHNL# 50: [VARS 320 TO 674 CKT '58']
CHNL# 48: [VARS 669 TO 918 CKT '34']
CHNL# 46: [VARS 669 TO 1012 CKT '35']
CHNL# 44: [VARS 477 TO 669 CKT '74']
CHNL# 42: [VARS 662 TO 477 CKT '83']
CHNL# 40: [VARS 662 TO 669 CKT '64']
650.00
-350.0
TUE, NOV 20 2018 12:15
LINE VAR
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000
P1812_2020SL_PRE
CATB -1034L_FAULT_AT_CASSILS
FILE: P1812_2020SL_PRE/1034L_Fault_at_Cassils.out
CHNL# 38: (1+[FREQ 918 [CASS01 240.00]])*60
CHNL# 37: (1+[FREQ 1012 [NEWELL2 240.00]])*60
CHNL# 36: (1+[FREQ 669 [BOWMAN1 240.00]])*60
CHNL# 35: (1+[FREQ 477 [ELKWATR1 240.00]])*60
CHNL# 34: (1+[FREQ 662 [SUBD1 240.00]])*60
61.000
59.000
TUE, NOV 20 2018 12:15
FREQUENCY
TIME (SECONDS)
P1812_2020SL_PRE
CATB -1034L_FAULT_AT_CASSILS
FILE: P1812_2020SL_PRE/1034L_Fault_at_Cassils.out
CHNL# 49: [POWR 320 TO 674 CKT '58']
CHNL# 47: [POWR 669 TO 918 CKT '34']
CHNL# 45: [POWR 669 TO 1012 CKT '35']
CHNL# 43: [POWR 477 TO 669 CKT '74']
CHNL# 41: [POWR 662 TO 477 CKT '83']
CHNL# 39: [POWR 662 TO 669 CKT '64']
800.00
-200.0
TUE, NOV 20 2018 12:15
LINE POWER
TIME (SECONDS)
P1812_2020SL_PRE
CATB -1034L_FAULT_AT_CASSILS
FILE: P1812_2020SL_PRE/1034L_Fault_at_Cassils.out
CHNL# 33: [VOLT 918 [CASS01 240.00]]
CHNL# 32: [VOLT 1012 [NEWELL2 240.00]]
CHNL# 31: [VOLT 669 [BOWMAN1 240.00]]
CHNL# 30: [VOLT 477 [ELKWATR1 240.00]]
CHNL# 29: [VOLT 662 [SUBD1 240.00]]
1.6000
0.10000
TUE, NOV 20 2018 12:15
BUS VOLTAGE
TIME (SECONDS)

P1812_2020SL_PRE
CATB -1034L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_PRE/1034L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:15

MACHINE POWER

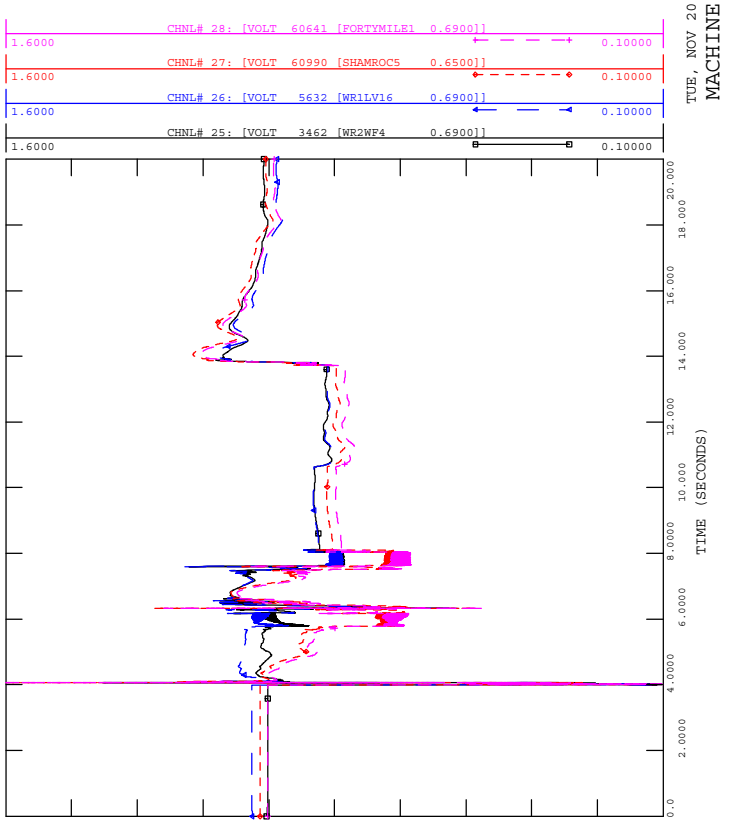


P1812_2020SL_PRE
CATB -1034L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_PRE/1034L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:15

MACHINE VOLTAGE

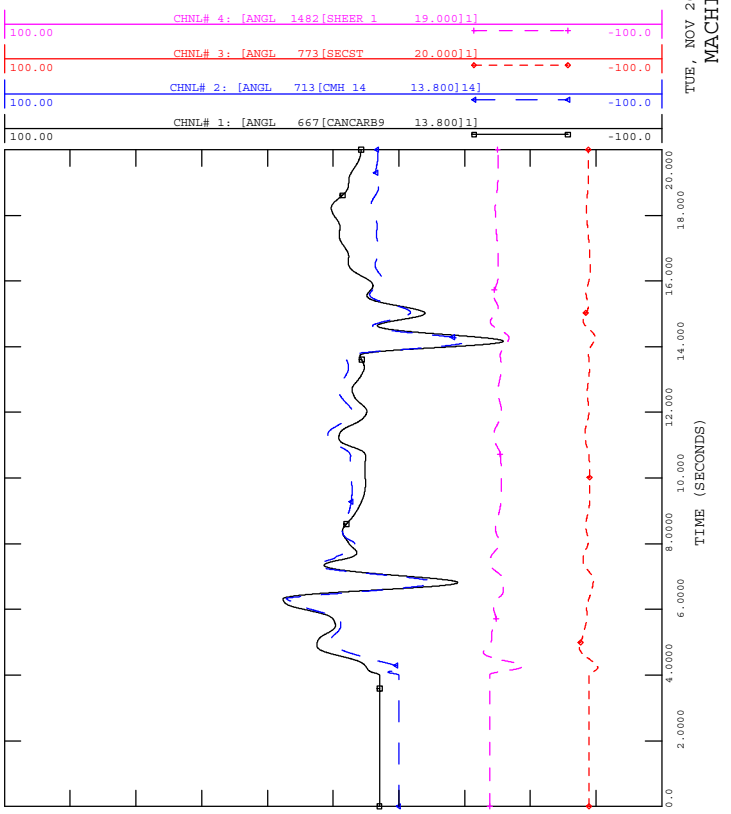


P1812_2020SL_PRE
CATB -1034L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_PRE/1034L_Fault_at_Bowmanton.out

TUE, NOV 20 2018 12:15

MACHINE ANGEL

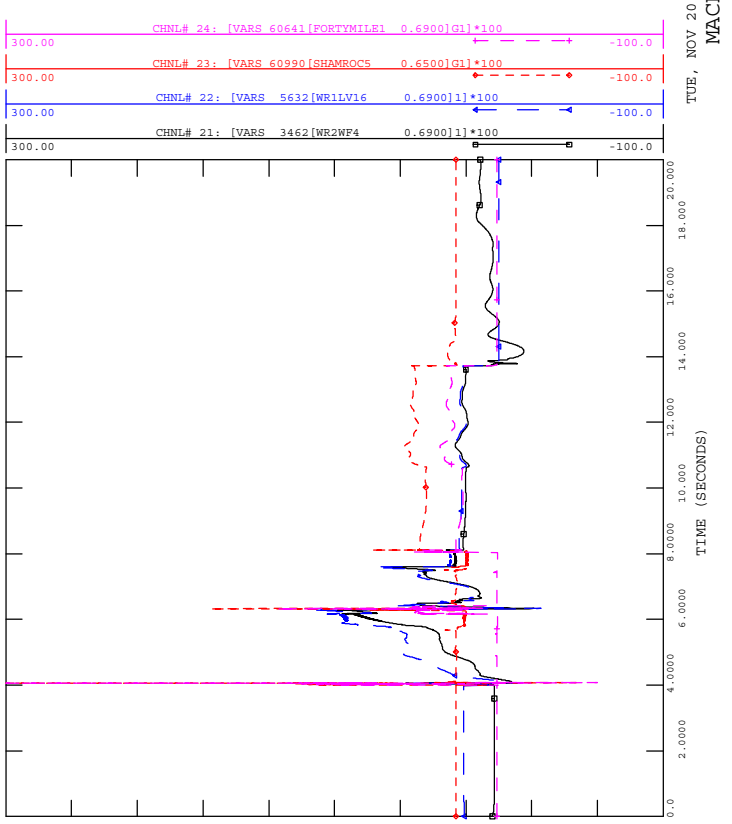


P1812_2020SL_PRE
CATB -1034L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_PRE/1034L_Fault_at_Bowmanton.out

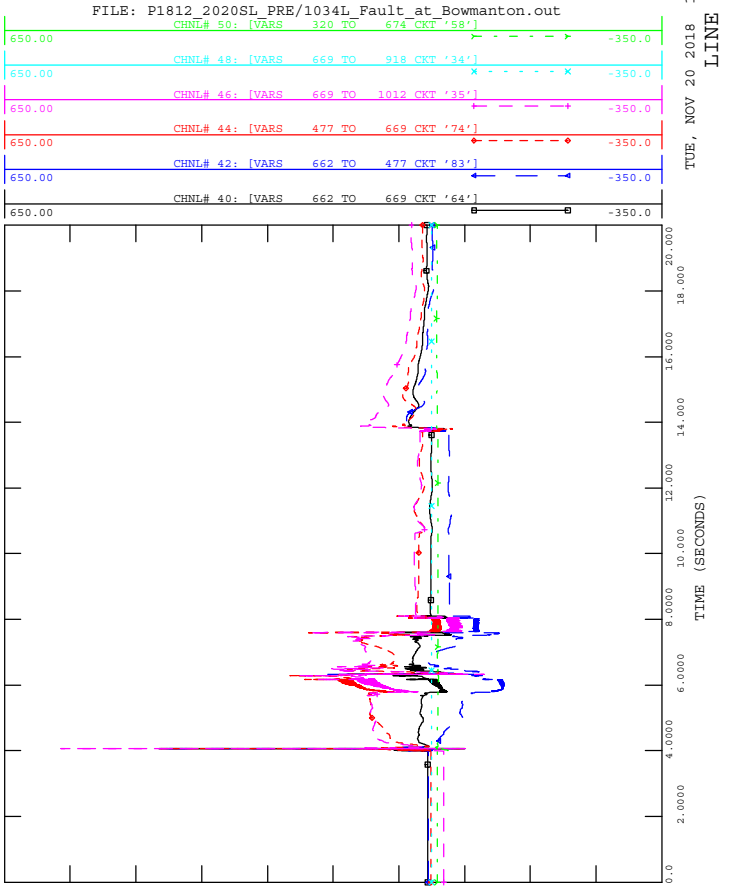
TUE, NOV 20 2018 12:15

MACHINE VAR



P1812_2020SL_PRE
CATB -1034L_FAULT_AT_BOWMANTON

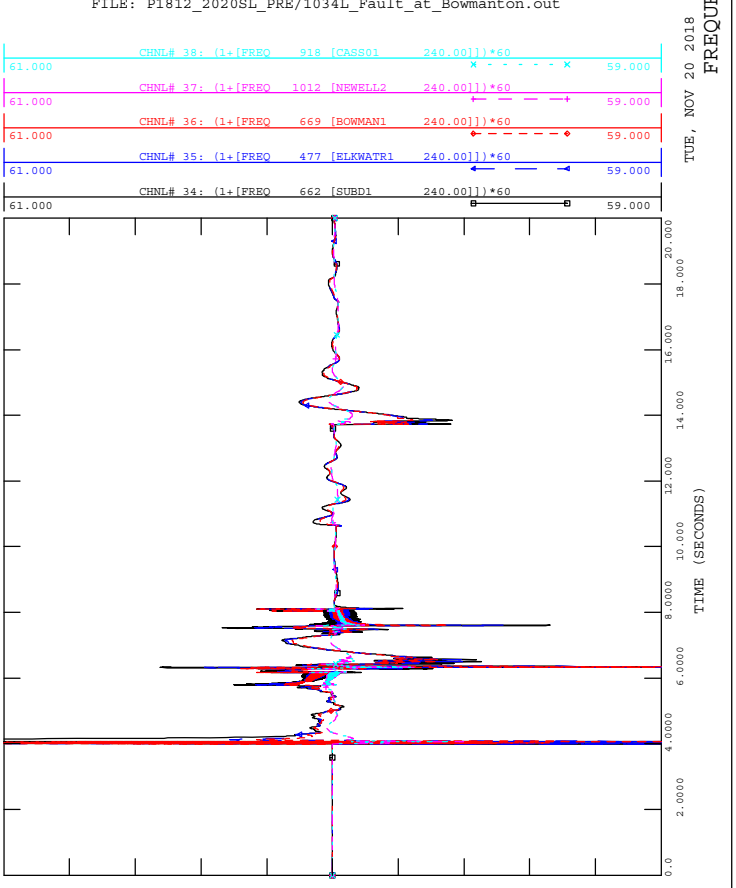
FILE: P1812_2020SL_PRE/1034L_Fault_at_Bowmanton.out



TUE, NOV 20 2018 12:15 LINE VAR

P1812_2020SL_PRE
CATB -1034L_FAULT_AT_BOWMANTON

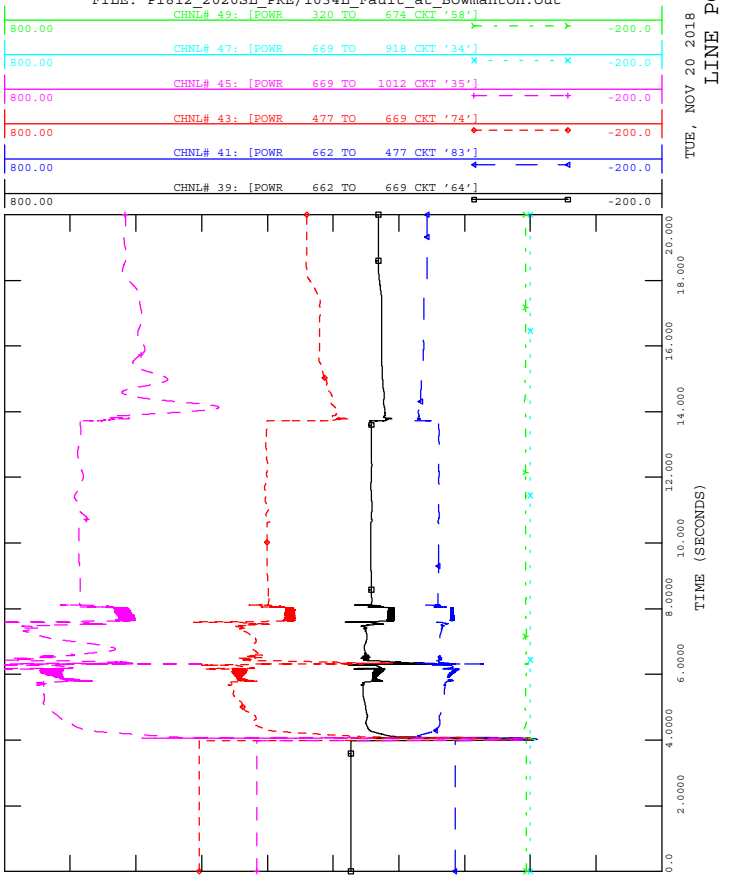
FILE: P1812_2020SL_PRE/1034L_Fault_at_Bowmanton.out



TUE, NOV 20 2018 12:15 FREQUENCY

P1812_2020SL_PRE
CATB -1034L_FAULT_AT_BOWMANTON

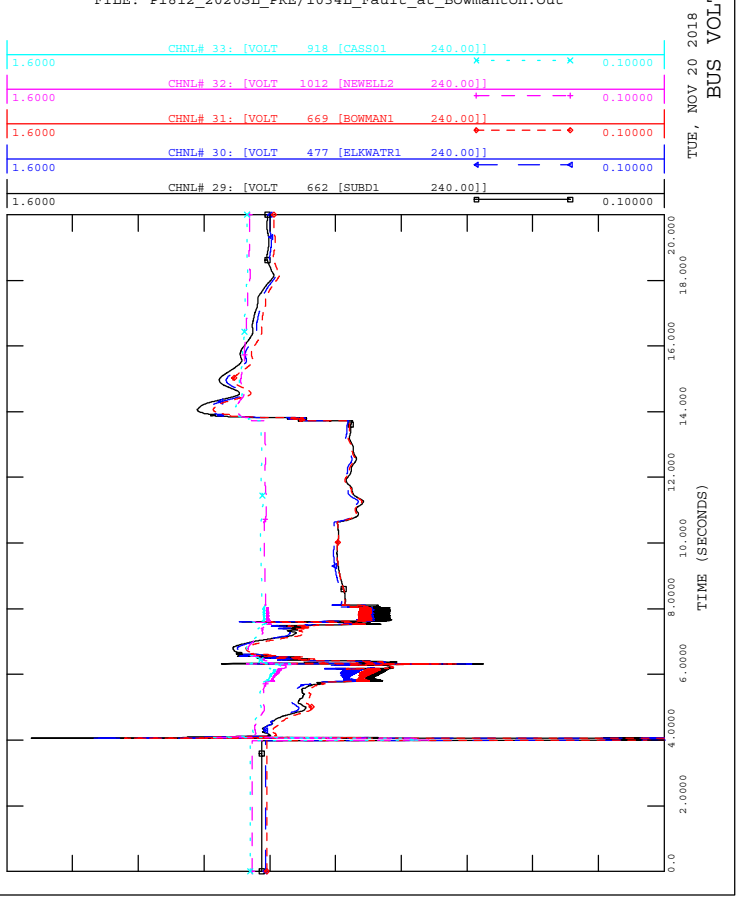
FILE: P1812_2020SL_PRE/1034L_Fault_at_Bowmanton.out



TUE, NOV 20 2018 12:15 LINE POWER

P1812_2020SL_PRE
CATB -1034L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_PRE/1034L_Fault_at_Bowmanton.out

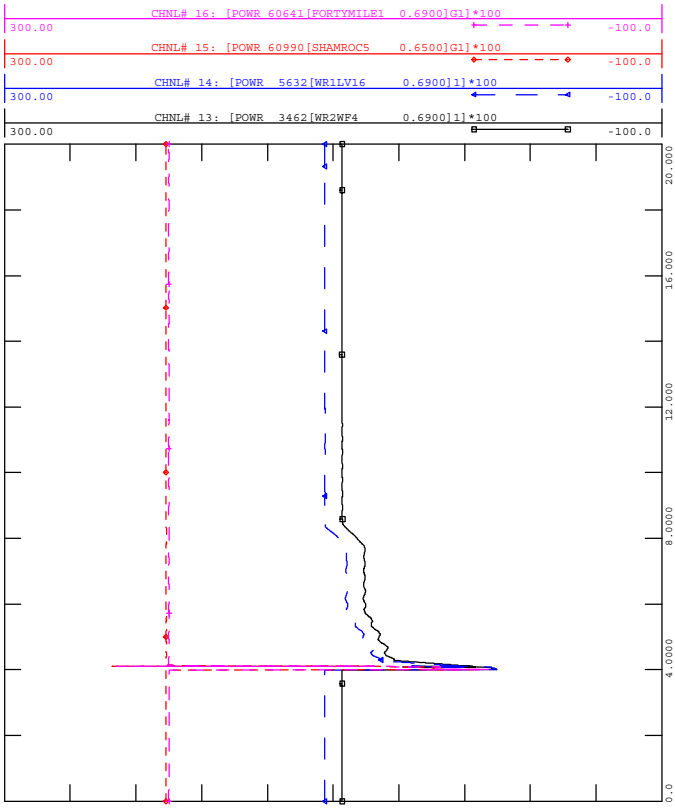


TUE, NOV 20 2018 12:15 BUS VOLTAGE

P1812_2020SL_PRE
CATB -983L_FAULT_AT_ELKWATER

FILE: P1812_2020SL_PRE/983L_Fault_at_Elkwater.out

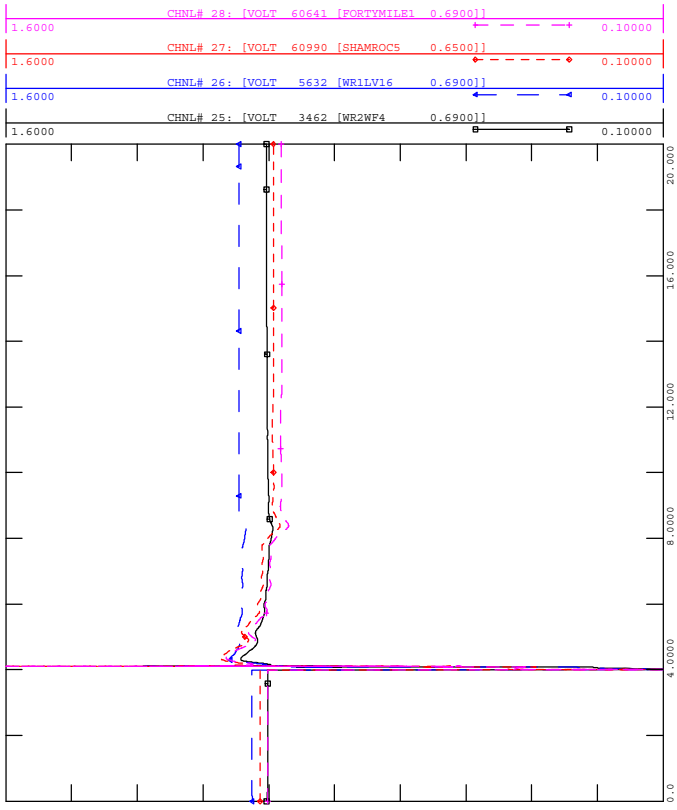
TUE, NOV 20 2018 12:15
MACHINE POWER



P1812_2020SL_PRE
CATB -983L_FAULT_AT_ELKWATER

FILE: P1812_2020SL_PRE/983L_Fault_at_Elkwater.out

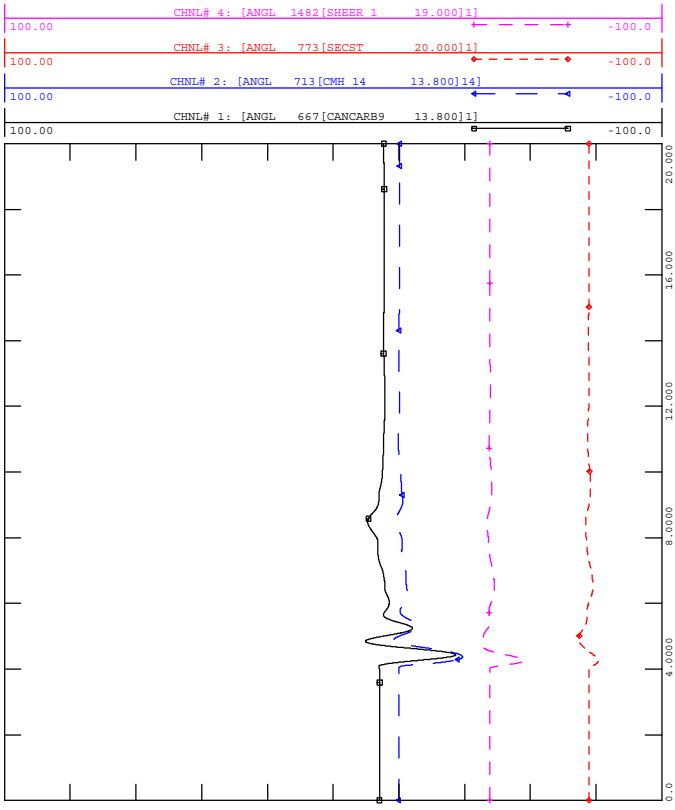
TUE, NOV 20 2018 12:15
MACHINE VOLTAGE



P1812_2020SL_PRE
CATB -983L_FAULT_AT_ELKWATER

FILE: P1812_2020SL_PRE/983L_Fault_at_Elkwater.out

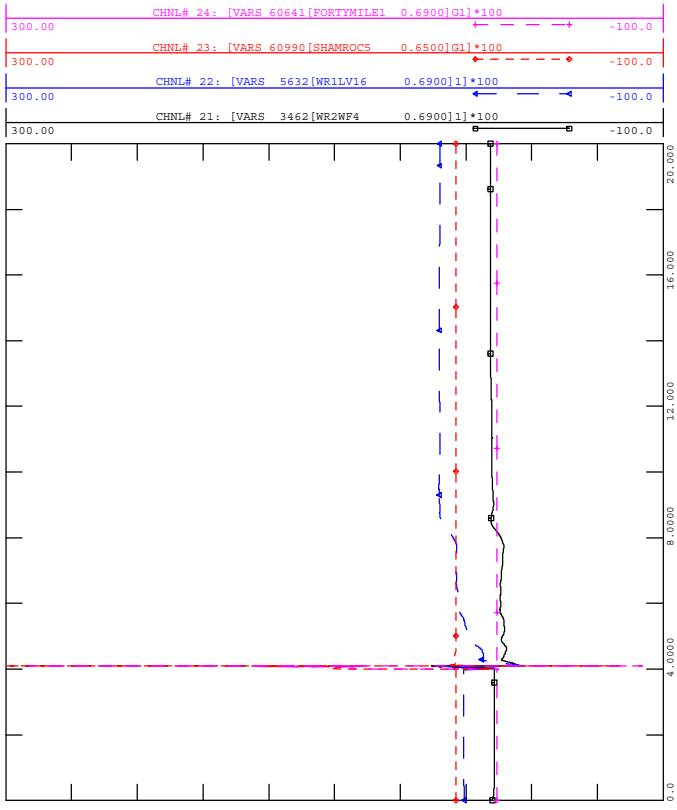
TUE, NOV 20 2018 12:15
MACHINE ANGEL

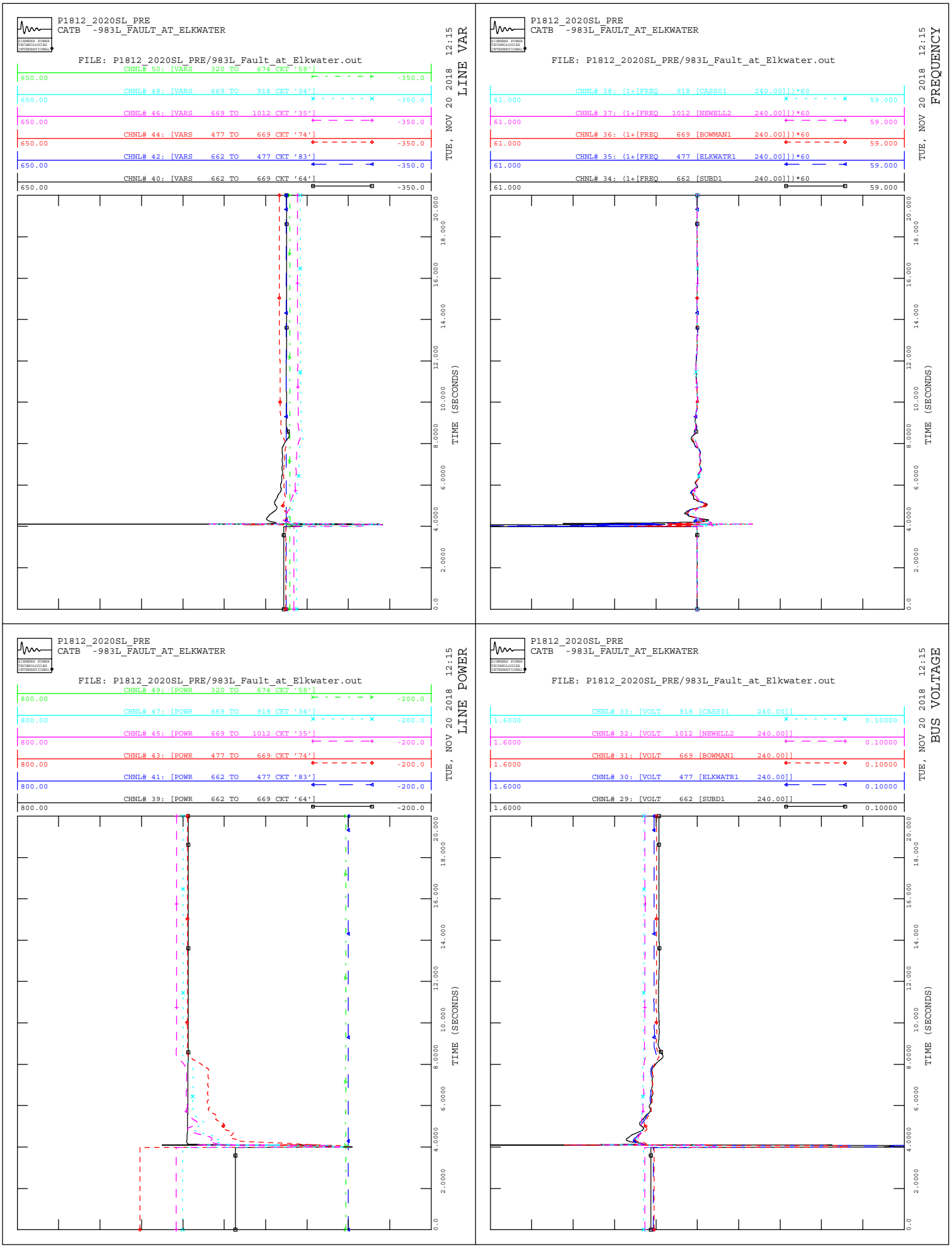


P1812_2020SL_PRE
CATB -983L_FAULT_AT_ELKWATER

FILE: P1812_2020SL_PRE/983L_Fault_at_Elkwater.out

TUE, NOV 20 2018 12:15
MACHINE VAR



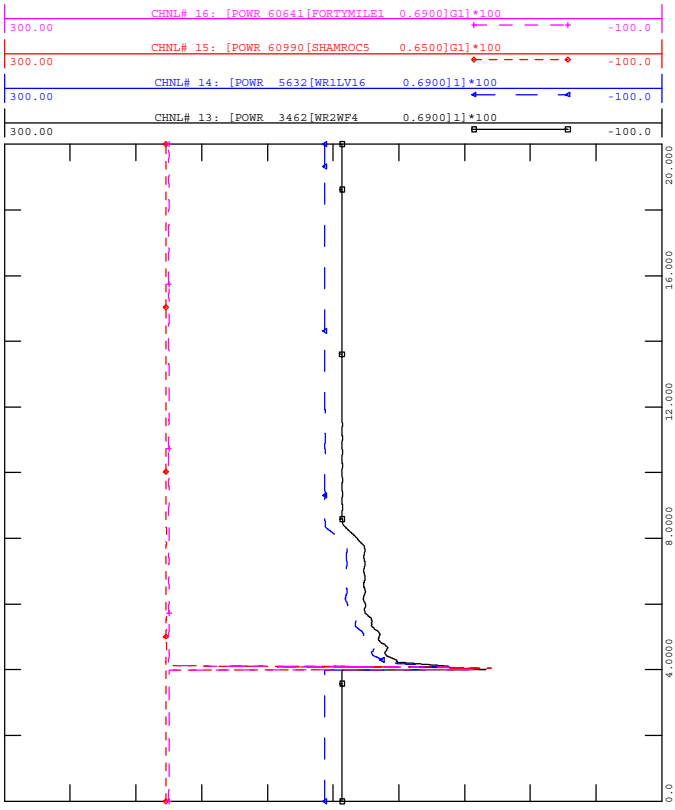

P1812_2020SL_PRE
CATB -983L_FAULT_AT_ELKWATER
FILE: P1812_2020SL_PRE/983L_Fault_at_Elkwater.out
CHNL# 50: [VARS 320 TO 674 CKT '58']
CHNL# 48: [VARS 669 TO 918 CKT '34']
CHNL# 46: [VARS 669 TO 1012 CKT '35']
CHNL# 44: [VARS 477 TO 669 CKT '74']
CHNL# 42: [VARS 662 TO 477 CKT '83']
CHNL# 40: [VARS 662 TO 669 CKT '64']
650.00
-350.0
TUE, NOV 20 2018 12:15
LINE VAR
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000
P1812_2020SL_PRE
CATB -983L_FAULT_AT_ELKWATER
FILE: P1812_2020SL_PRE/983L_Fault_at_Elkwater.out
CHNL# 38: (1+[FREQ 918 [CASS01 240.00]])*60
CHNL# 37: (1+[FREQ 1012 [NEWELL2 240.00]])*60
CHNL# 36: (1+[FREQ 669 [BOWMAN1 240.00]])*60
CHNL# 35: (1+[FREQ 477 [ELKWATR1 240.00]])*60
CHNL# 34: (1+[FREQ 662 [SUBD1 240.00]])*60
61.000
59.000
TUE, NOV 20 2018 12:15
FREQUENCY
TIME (SECONDS)
P1812_2020SL_PRE
CATB -983L_FAULT_AT_ELKWATER
FILE: P1812_2020SL_PRE/983L_Fault_at_Elkwater.out
CHNL# 49: [POWR 320 TO 674 CKT '58']
CHNL# 47: [POWR 669 TO 918 CKT '34']
CHNL# 45: [POWR 669 TO 1012 CKT '35']
CHNL# 43: [POWR 477 TO 669 CKT '74']
CHNL# 41: [POWR 662 TO 477 CKT '83']
CHNL# 39: [POWR 662 TO 669 CKT '64']
800.00
-200.0
TUE, NOV 20 2018 12:15
LINE POWER
TIME (SECONDS)
P1812_2020SL_PRE
CATB -983L_FAULT_AT_ELKWATER
FILE: P1812_2020SL_PRE/983L_Fault_at_Elkwater.out
CHNL# 33: [VOLT 918 [CASS01 240.00]]
CHNL# 32: [VOLT 1012 [NEWELL2 240.00]]
CHNL# 31: [VOLT 669 [BOWMAN1 240.00]]
CHNL# 30: [VOLT 477 [ELKWATR1 240.00]]
CHNL# 29: [VOLT 662 [SUBD1 240.00]]
1.6000
0.10000
TUE, NOV 20 2018 12:15
BUS VOLTAGE
TIME (SECONDS)

P1812_2020SL_PRE
CATB -983L_FAULT_AT_WHITLA

FILE: P1812_2020SL_PRE/983L_Fault_at_Whitla.out

TUE, NOV 20 2018 12:15

MACHINE POWER

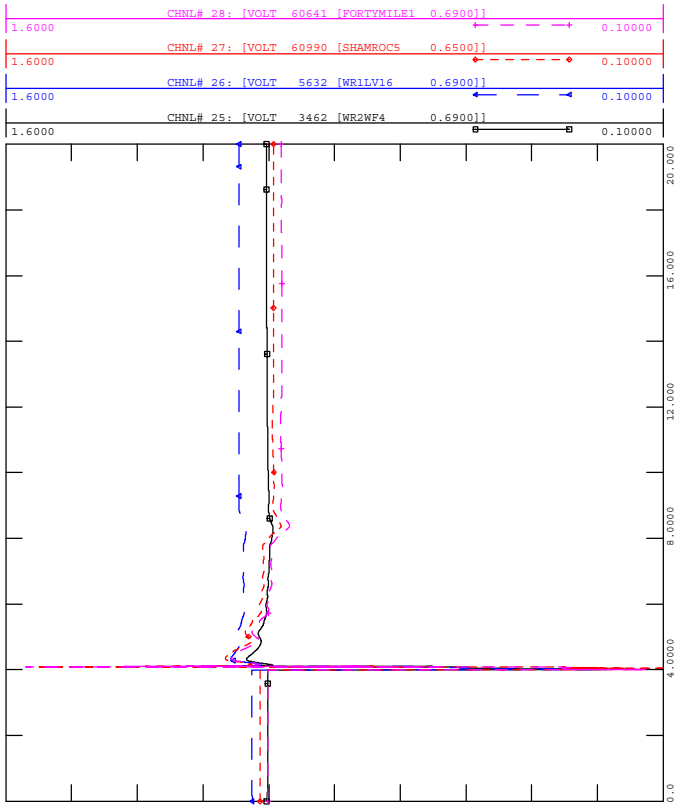


P1812_2020SL_PRE
CATB -983L_FAULT_AT_WHITLA

FILE: P1812_2020SL_PRE/983L_Fault_at_Whitla.out

TUE, NOV 20 2018 12:15

MACHINE VOLTAGE

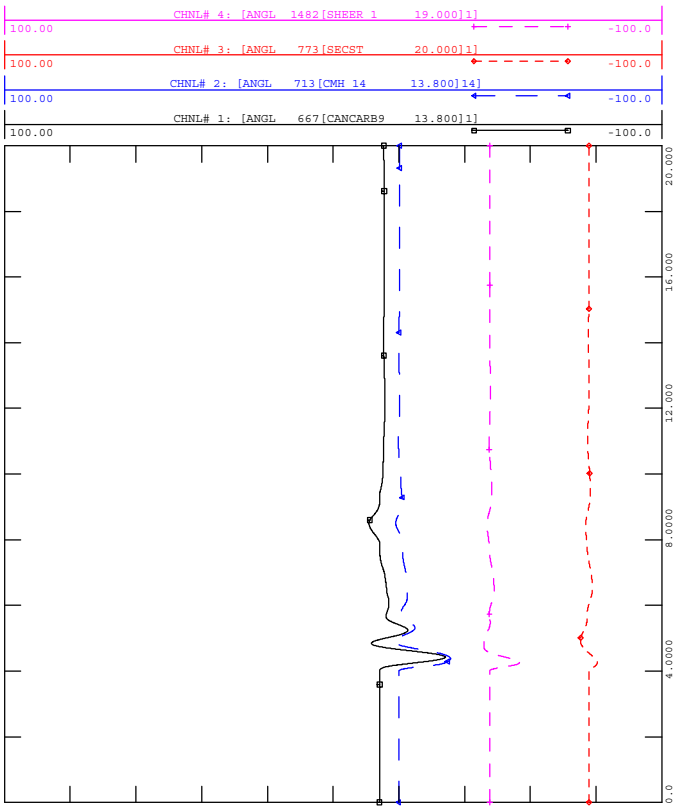


P1812_2020SL_PRE
CATB -983L_FAULT_AT_WHITLA

FILE: P1812_2020SL_PRE/983L_Fault_at_Whitla.out

TUE, NOV 20 2018 12:15

MACHINE ANGEL

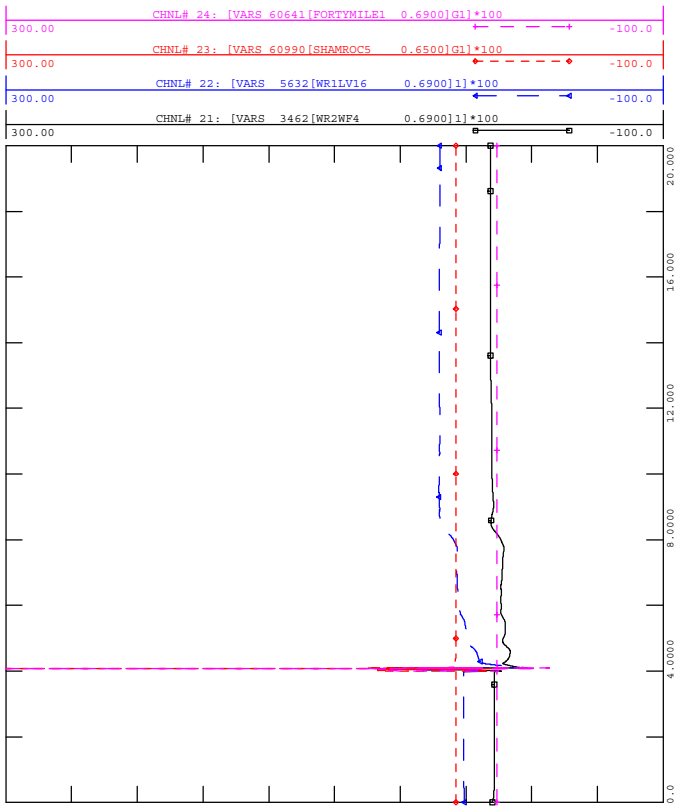


P1812_2020SL_PRE
CATB -983L_FAULT_AT_WHITLA

FILE: P1812_2020SL_PRE/983L_Fault_at_Whitla.out

TUE, NOV 20 2018 12:15

MACHINE VAR

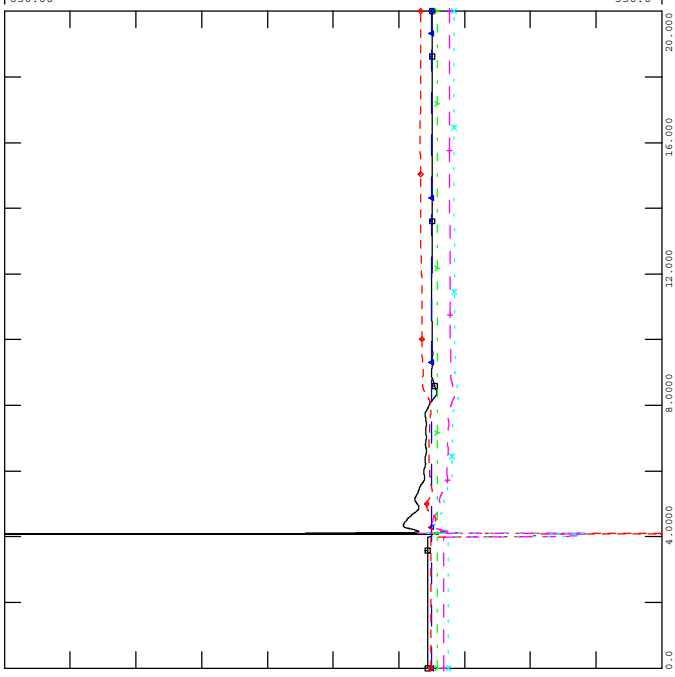


P1812_2020SL_PRE
CATB -983L_FAULT_AT_WHITLA

FILE: P1812_2020SL_PRE/983L_Fault_at_Whitla.out

TUE, NOV 20 2018 12:15 LINE VAR

CHNL# 50: [VARS 320 TO 674 CKT '58'] 650.00 -350.0
CHNL# 48: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 46: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 44: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 42: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 40: [VARS 662 TO 669 CKT '64'] 650.00 -350.0

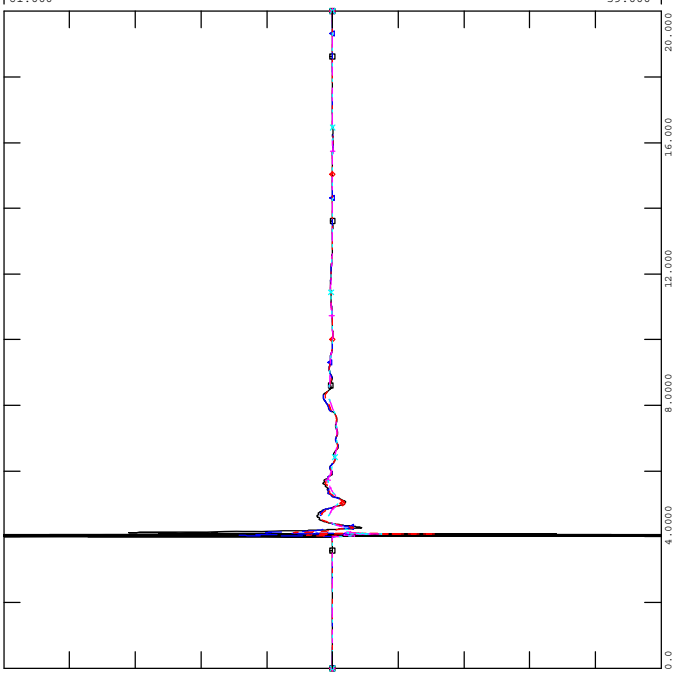


P1812_2020SL_PRE
CATB -983L_FAULT_AT_WHITLA

FILE: P1812_2020SL_PRE/983L_Fault_at_Whitla.out

TUE, NOV 20 2018 12:15 FREQUENCY

CHNL# 38: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 37: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 36: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 35: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 34: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000

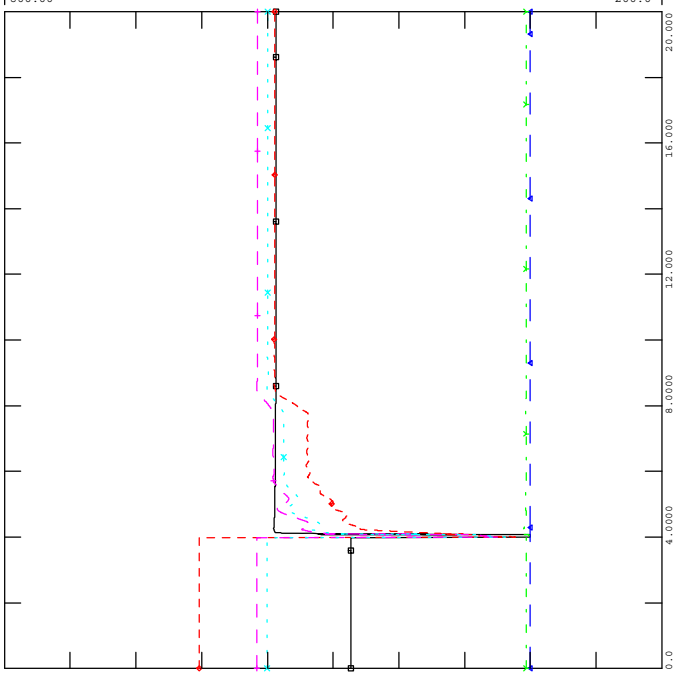


P1812_2020SL_PRE
CATB -983L_FAULT_AT_WHITLA

FILE: P1812_2020SL_PRE/983L_Fault_at_Whitla.out

TUE, NOV 20 2018 12:15 LINE POWER

CHNL# 49: [POWR 320 TO 674 CKT '58'] 800.00 -200.0
CHNL# 47: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 45: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 43: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 41: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 39: [POWR 662 TO 669 CKT '64'] 800.00 -200.0

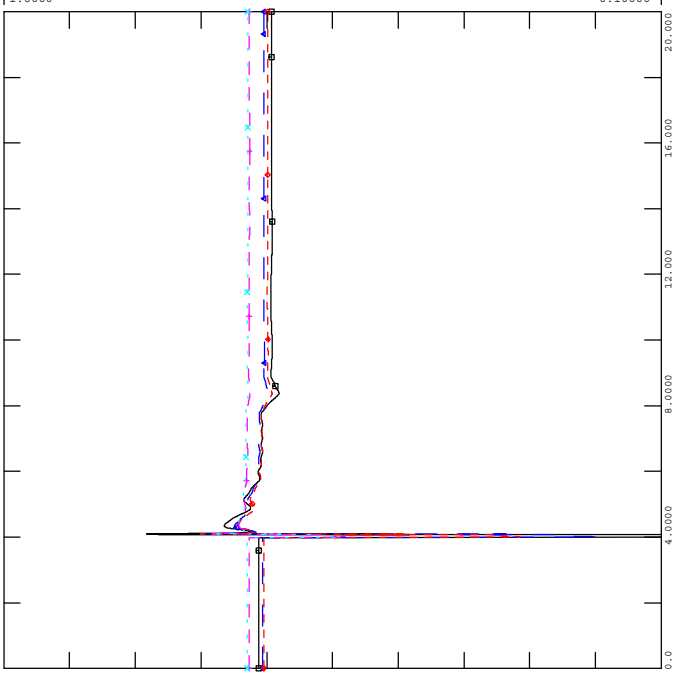


P1812_2020SL_PRE
CATB -983L_FAULT_AT_WHITLA

FILE: P1812_2020SL_PRE/983L_Fault_at_Whitla.out

TUE, NOV 20 2018 12:15 BUS VOLTAGE

CHNL# 33: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 32: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 31: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 30: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 29: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000



Post-Project Transient Stability Diagrams

P1812_2020SP_POST
CATB -1074L_FAULT_AT_ELKWATER

FILE: P1812_2020SP_POST/1074L_Fault_at_Elkwater.out

TUE, OCT 16 2018 10:14

MACHINE POWER

CHNL# 20: [POWR 62994[GRANLEA7 0.6900]G2]*100
CHNL# 19: [POWR 61994[GRANLEA6 0.6900]G1]*100
CHNL# 18: [POWR 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 17: [POWR 60990[SHAMROC5 0.6500]G1]*100
CHNL# 16: [POWR 5632[WR1LV16 0.6900]1]*100
CHNL# 15: [POWR 3462[WR2WF4 0.6900]1]*100

300.00 / -100.0

TIME (SECONDS)

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SP_POST
CATB -1074L_FAULT_AT_ELKWATER

FILE: P1812_2020SP_POST/1074L_Fault_at_Elkwater.out

TUE, OCT 16 2018 10:14

MACHINE VOLTAGE

CHNL# 36: [VOLT 62994 [GRANLEA7 0.6900]]
CHNL# 35: [VOLT 61994 [GRANLEA6 0.6900]]
CHNL# 34: [VOLT 60641 [FORTYMILE1 0.6900]]
CHNL# 33: [VOLT 60990 [SHAMROC5 0.6500]]
CHNL# 32: [VOLT 5632 [WR1LV16 0.6900]]
CHNL# 31: [VOLT 3462 [WR2WF4 0.6900]]

1.6000 / 0.10000

TIME (SECONDS)

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SP_POST
CATB -1074L_FAULT_AT_ELKWATER

FILE: P1812_2020SP_POST/1074L_Fault_at_Elkwater.out

TUE, OCT 16 2018 10:14

MACHINE ANGEL

CHNL# 4: [ANGL 1482[SHEER 1 19.000]1]
CHNL# 3: [ANGL 773[SECST 20.000]1]
CHNL# 2: [ANGL 713[CMH 14 13.800]14]
CHNL# 1: [ANGL 667[CANCARB9 13.800]1]

100.00 / -100.0

TIME (SECONDS)

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SP_POST
CATB -1074L_FAULT_AT_ELKWATER

FILE: P1812_2020SP_POST/1074L_Fault_at_Elkwater.out

TUE, OCT 16 2018 10:14

MACHINE VAR

CHNL# 30: [VARS 62994[GRANLEA7 0.6900]G2]*100
CHNL# 29: [VARS 61994[GRANLEA6 0.6900]G1]*100
CHNL# 28: [VARS 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 27: [VARS 60990[SHAMROC5 0.6500]G1]*100
CHNL# 26: [VARS 5632[WR1LV16 0.6900]1]*100
CHNL# 25: [VARS 3462[WR2WF4 0.6900]1]*100

300.00 / -100.0

TIME (SECONDS)

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SP_POST
CATB -1074L_FAULT_AT_ELKWATER

FILE: P1812_2020SP_POST/1074L_Fault_at_Elkwater.out

TUE, OCT 16 2018 10:14

LINE VAR

CHNL# 59: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 57: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 55: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 53: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 51: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 49: [VARS 662 TO 720 CKT '64'] 650.00 -350.0

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

TIME (SECONDS)

P1812_2020SP_POST
CATB -1074L_FAULT_AT_ELKWATER

FILE: P1812_2020SP_POST/1074L_Fault_at_Elkwater.out

TUE, OCT 16 2018 10:14

FREQUENCY

CHNL# 47: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

TIME (SECONDS)

P1812_2020SP_POST
CATB -1074L_FAULT_AT_ELKWATER

FILE: P1812_2020SP_POST/1074L_Fault_at_Elkwater.out

TUE, OCT 16 2018 10:14

LINE POWER

CHNL# 58: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 56: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 54: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 52: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 50: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 48: [POWR 662 TO 720 CKT '64'] 800.00 -200.0

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

TIME (SECONDS)

P1812_2020SP_POST
CATB -1074L_FAULT_AT_ELKWATER

FILE: P1812_2020SP_POST/1074L_Fault_at_Elkwater.out

TUE, OCT 16 2018 10:14

BUS VOLTAGE

CHNL# 42: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 41: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 40: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 39: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 38: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 37: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

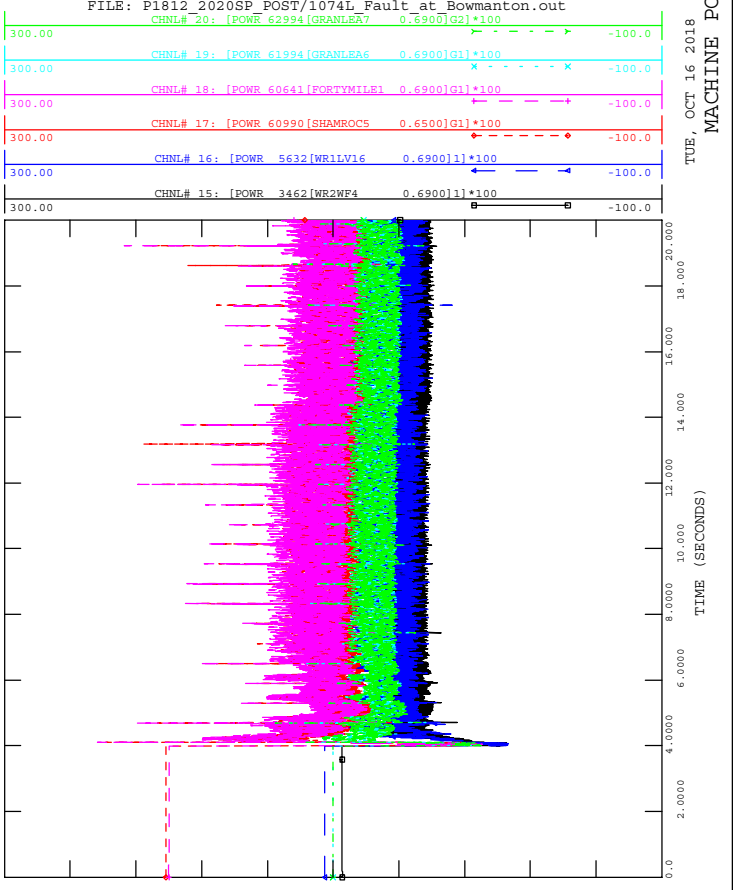
TIME (SECONDS)

P1812_2020SP_POST
CATB -1074L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/1074L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:14

MACHINE POWER

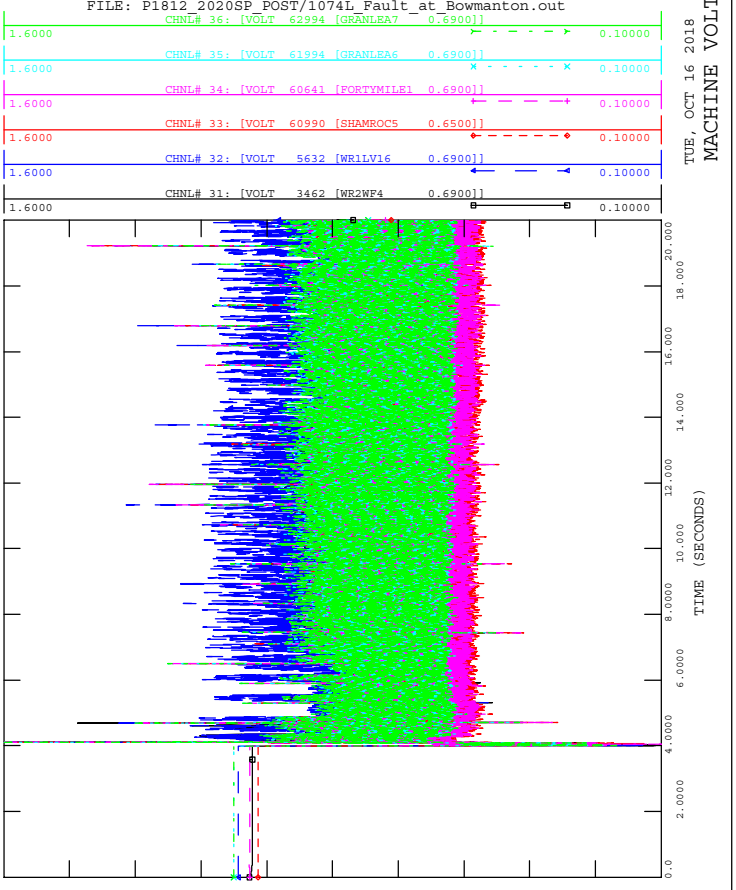


P1812_2020SP_POST
CATB -1074L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/1074L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:14

MACHINE VOLTAGE

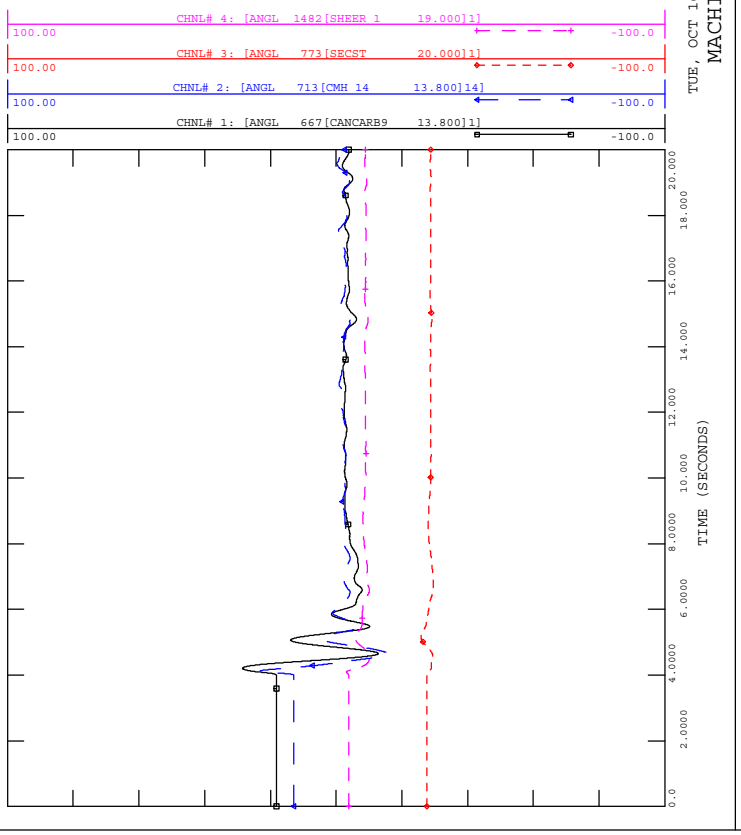


P1812_2020SP_POST
CATB -1074L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/1074L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:14

MACHINE ANGEL

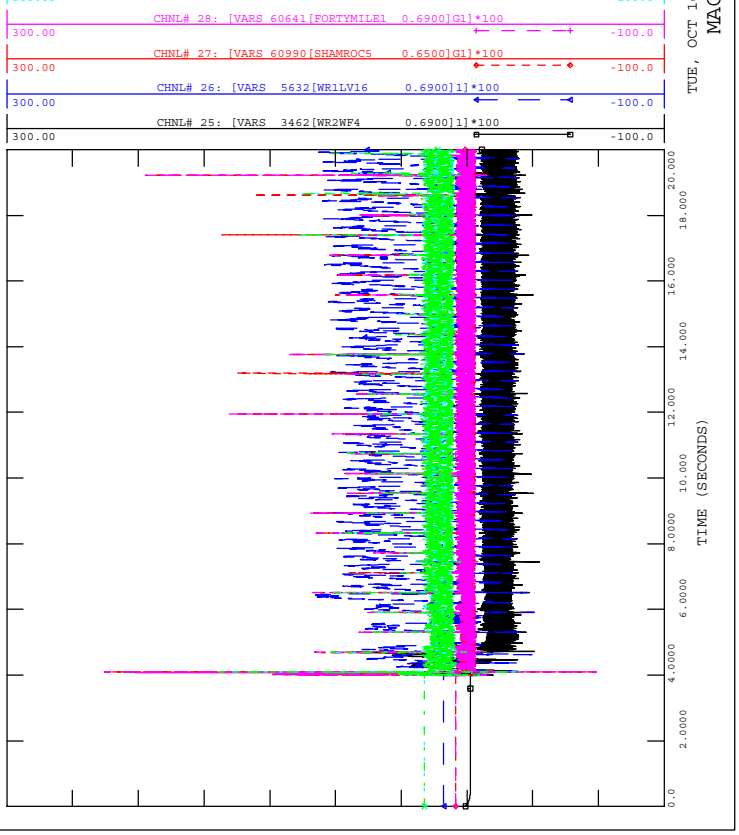


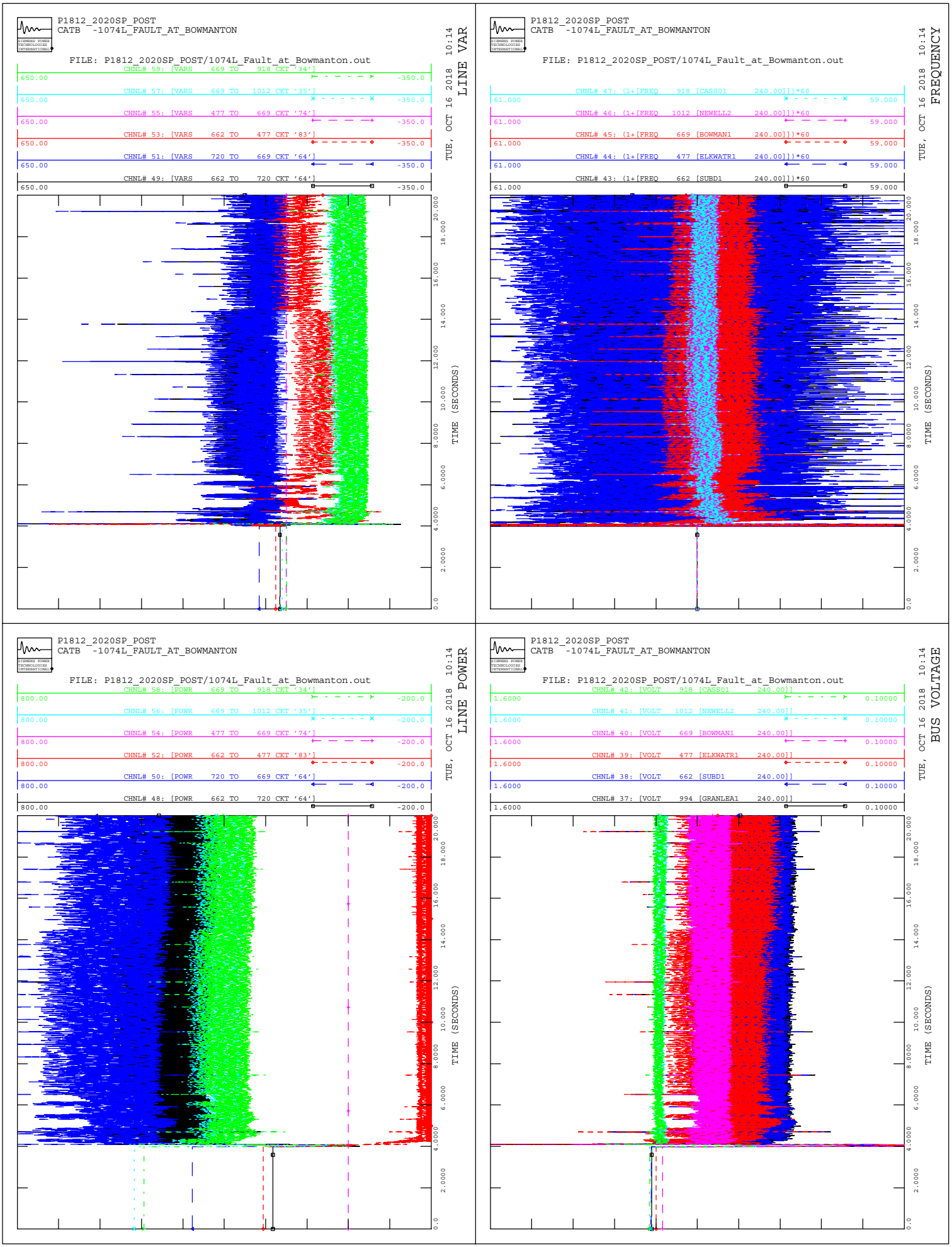
P1812_2020SP_POST
CATB -1074L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/1074L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:14

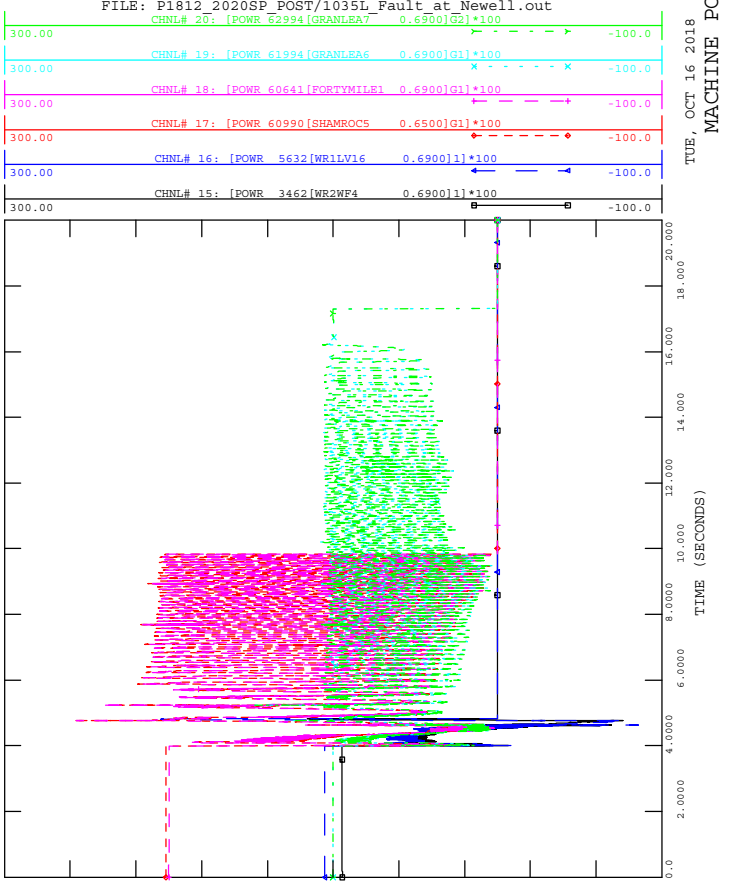
MACHINE VAR




P1812_2020SP_POST
CATB -1074L_FAULT_AT_BOWMANTON
FILE: P1812_2020SP_POST/1074L_Fault_at_Bowmanton.out
TUE, OCT 16 2018 10:14
LINE VAR
CHNL# 59: [VARS 669 TO 918 CKT '34']
CHNL# 57: [VARS 669 TO 1012 CKT '35']
CHNL# 55: [VARS 477 TO 669 CKT '74']
CHNL# 53: [VARS 662 TO 477 CKT '83']
CHNL# 51: [VARS 720 TO 669 CKT '64']
CHNL# 49: [VARS 662 TO 720 CKT '64']
650.00
-350.0
TIME (SECONDS)
P1812_2020SP_POST
CATB -1074L_FAULT_AT_BOWMANTON
FILE: P1812_2020SP_POST/1074L_Fault_at_Bowmanton.out
TUE, OCT 16 2018 10:14
FREQUENCY
CHNL# 47: (1+[FREQ 918 [CASS01 240.00])*60
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00])*60
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00])*60
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00])*60
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00])*60
61.000
59.000
TIME (SECONDS)
P1812_2020SP_POST
CATB -1074L_FAULT_AT_BOWMANTON
FILE: P1812_2020SP_POST/1074L_Fault_at_Bowmanton.out
TUE, OCT 16 2018 10:14
LINE POWER
CHNL# 58: [POWR 669 TO 918 CKT '34']
CHNL# 56: [POWR 669 TO 1012 CKT '35']
CHNL# 54: [POWR 477 TO 669 CKT '74']
CHNL# 52: [POWR 662 TO 477 CKT '83']
CHNL# 50: [POWR 720 TO 669 CKT '64']
CHNL# 48: [POWR 662 TO 720 CKT '64']
800.00
-200.0
TIME (SECONDS)
P1812_2020SP_POST
CATB -1074L_FAULT_AT_BOWMANTON
FILE: P1812_2020SP_POST/1074L_Fault_at_Bowmanton.out
TUE, OCT 16 2018 10:14
BUS VOLTAGE
CHNL# 42: [VOLT 918 [CASS01 240.00]]
CHNL# 41: [VOLT 1012 [NEWELL2 240.00]]
CHNL# 40: [VOLT 669 [BOWMAN1 240.00]]
CHNL# 39: [VOLT 477 [ELKWATR1 240.00]]
CHNL# 38: [VOLT 662 [SUBD1 240.00]]
CHNL# 37: [VOLT 994 [GRANLEA1 240.00]]
1.6000
0.10000
TIME (SECONDS)

P1812_2020SP_POST
CATB -1035L_FAULT_AT_NEWELL

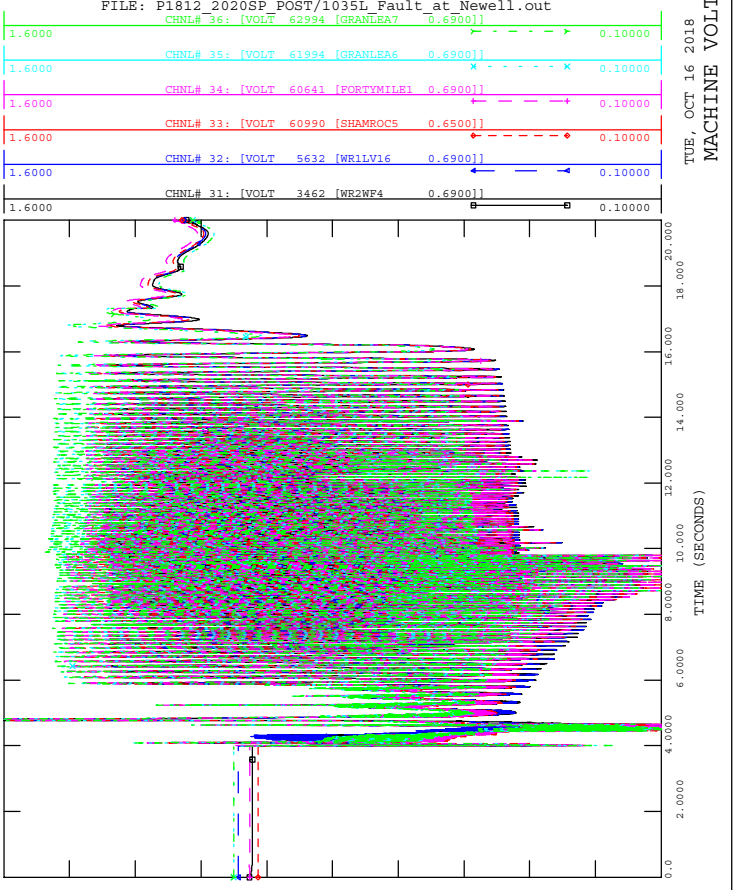
FILE: P1812_2020SP_POST/1035L_Fault_at_Newell.out



TUE, OCT 16 2018 10:14
MACHINE POWER

P1812_2020SP_POST
CATB -1035L_FAULT_AT_NEWELL

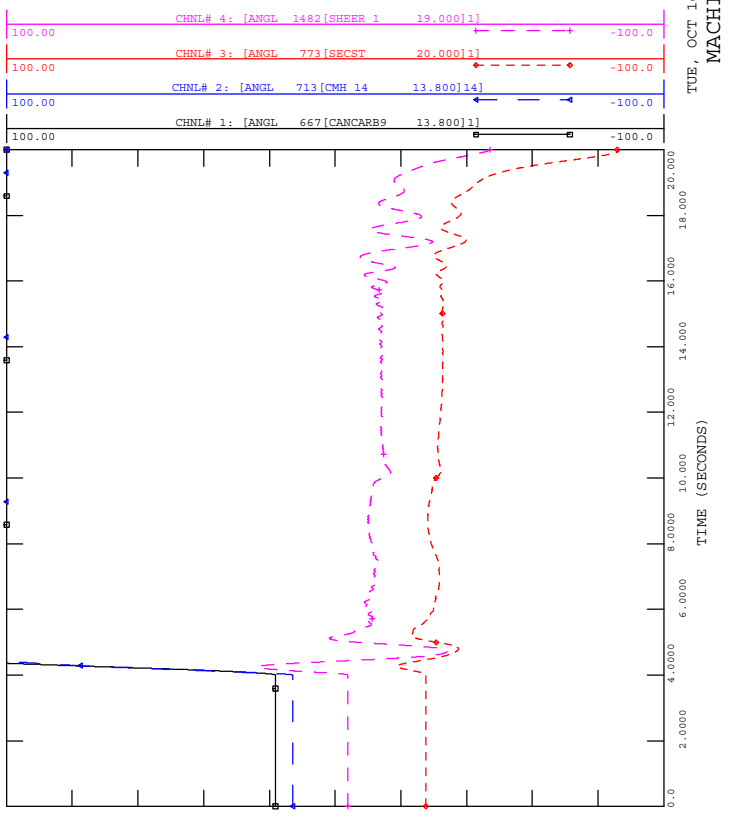
FILE: P1812_2020SP_POST/1035L_Fault_at_Newell.out



TUE, OCT 16 2018 10:14
MACHINE VOLTAGE

P1812_2020SP_POST
CATB -1035L_FAULT_AT_NEWELL

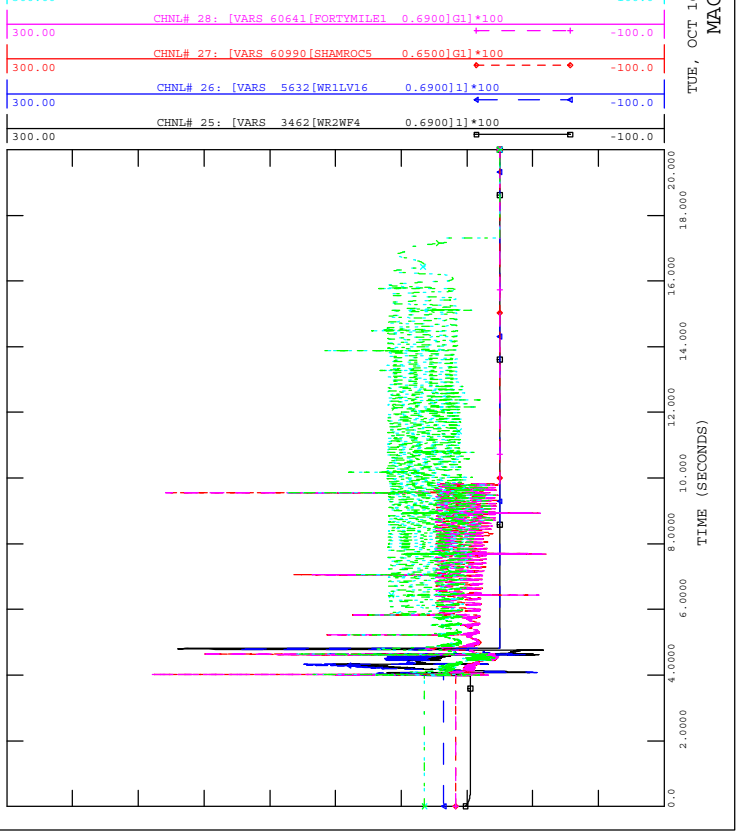
FILE: P1812_2020SP_POST/1035L_Fault_at_Newell.out



TUE, OCT 16 2018 10:14
MACHINE ANGEL

P1812_2020SP_POST
CATB -1035L_FAULT_AT_NEWELL

FILE: P1812_2020SP_POST/1035L_Fault_at_Newell.out

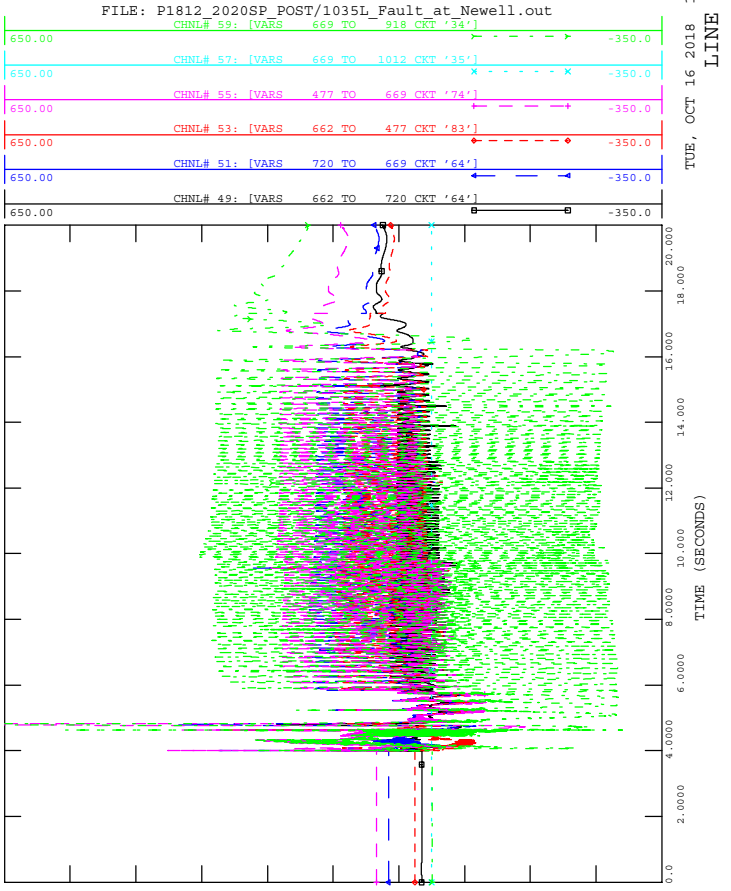


TUE, OCT 16 2018 10:14
MACHINE VAR

P1812_2020SP_POST
CATB -1035L_FAULT_AT_NEWELL

FILE: P1812_2020SP_POST/1035L_Fault_at_Newell.out

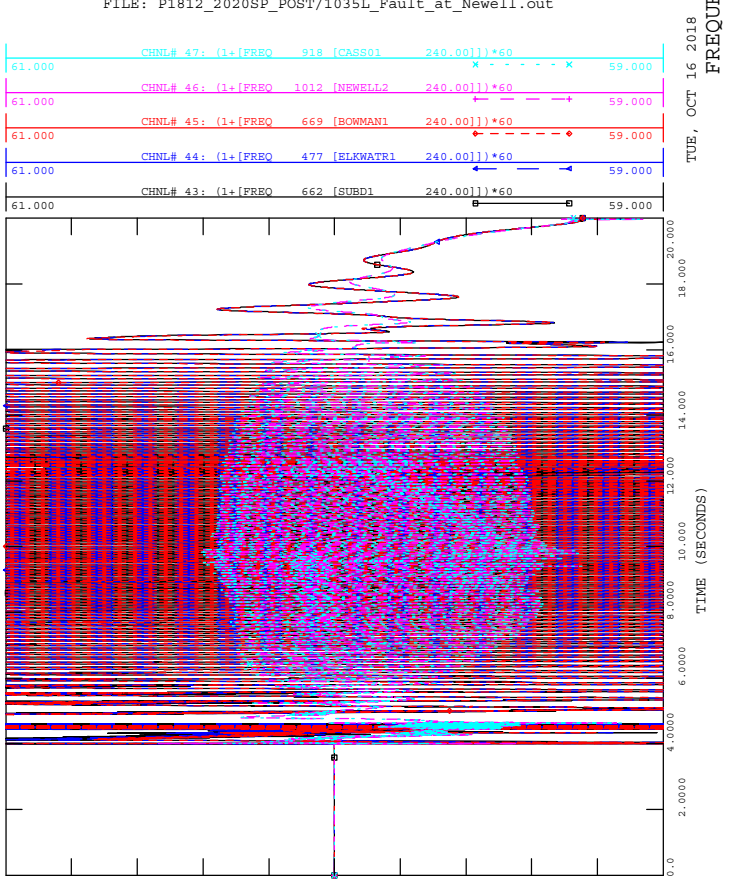
TUE, OCT 16 2018 10:14 LINE VAR



P1812_2020SP_POST
CATB -1035L_FAULT_AT_NEWELL

FILE: P1812_2020SP_POST/1035L_Fault_at_Newell.out

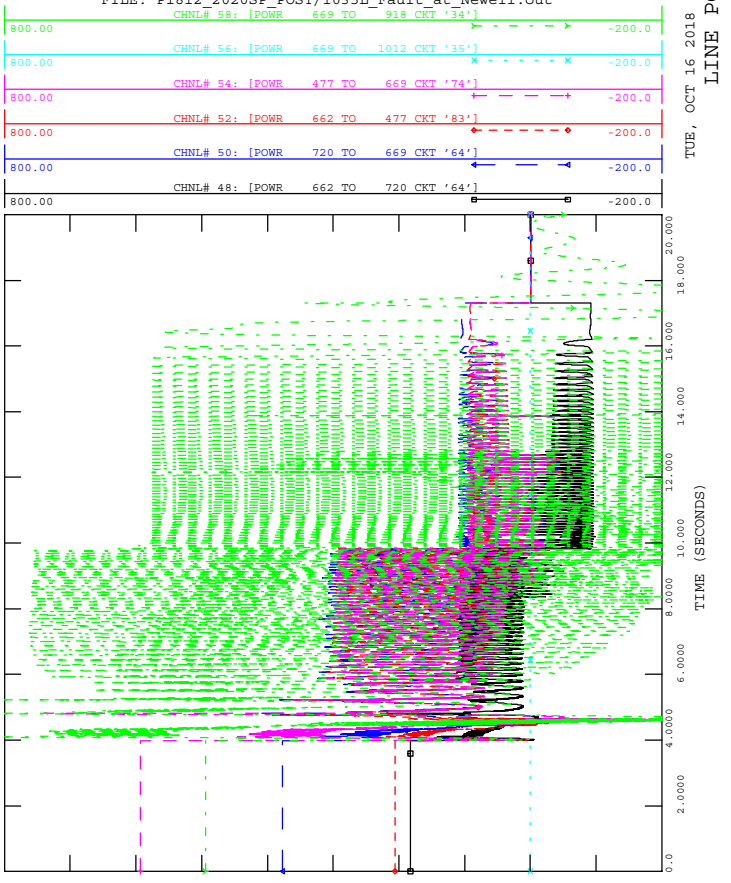
TUE, OCT 16 2018 10:14 FREQUENCY



P1812_2020SP_POST
CATB -1035L_FAULT_AT_NEWELL

FILE: P1812_2020SP_POST/1035L_Fault_at_Newell.out

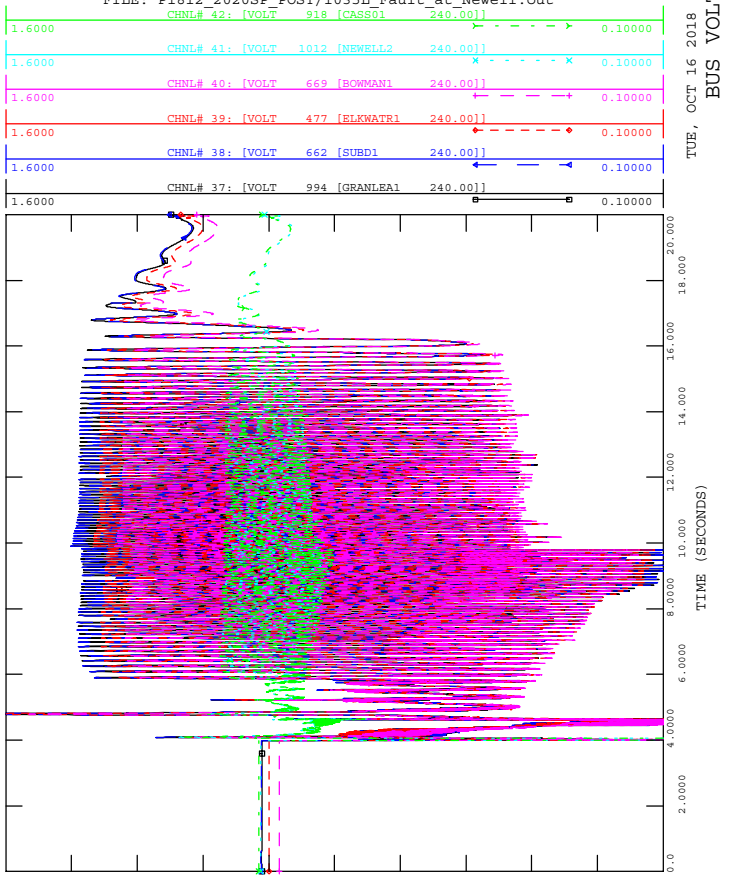
TUE, OCT 16 2018 10:14 LINE POWER



P1812_2020SP_POST
CATB -1035L_FAULT_AT_NEWELL

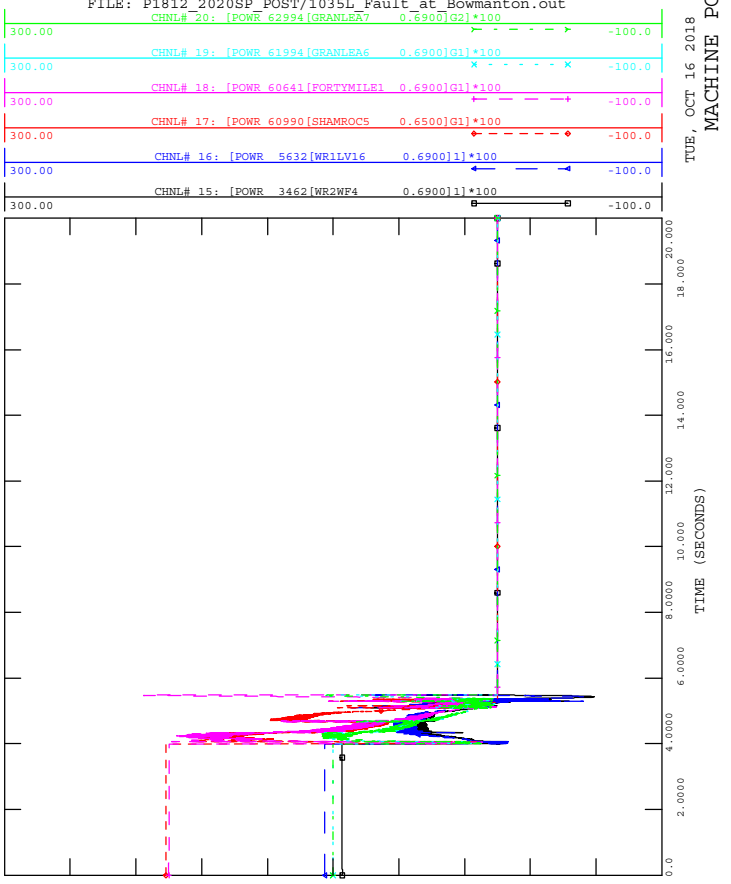
FILE: P1812_2020SP_POST/1035L_Fault_at_Newell.out

TUE, OCT 16 2018 10:14 BUS VOLTAGE



P1812_2020SP_POST
CATB -1035L_FAULT_AT_BOWMANTON

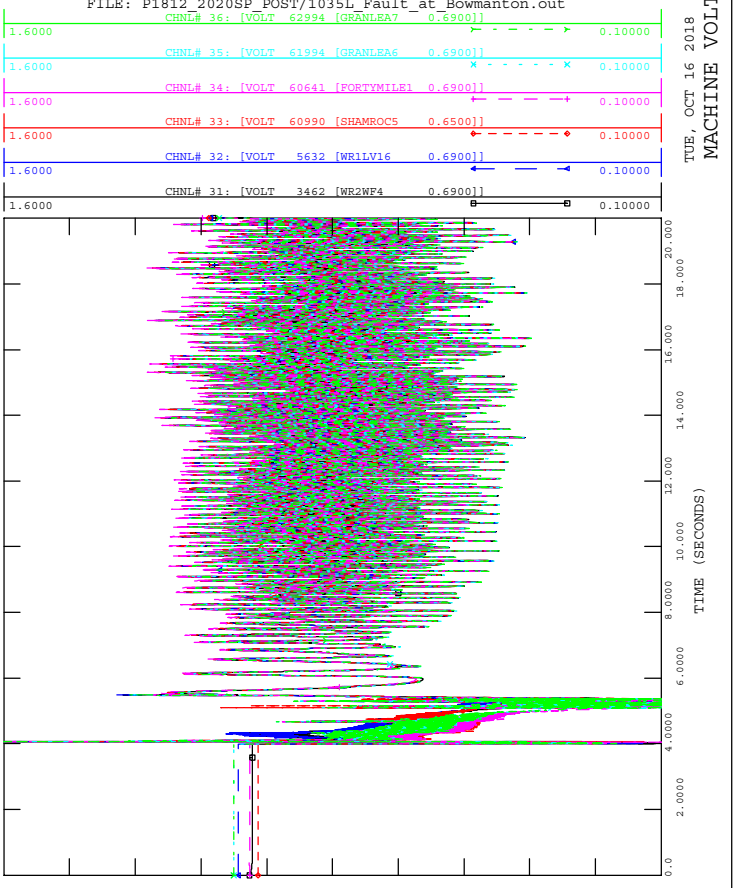
FILE: P1812_2020SP_POST/1035L_Fault_at_Bowmanton.out



TUE, OCT 16 2018 10:14
MACHINE POWER

P1812_2020SP_POST
CATB -1035L_FAULT_AT_BOWMANTON

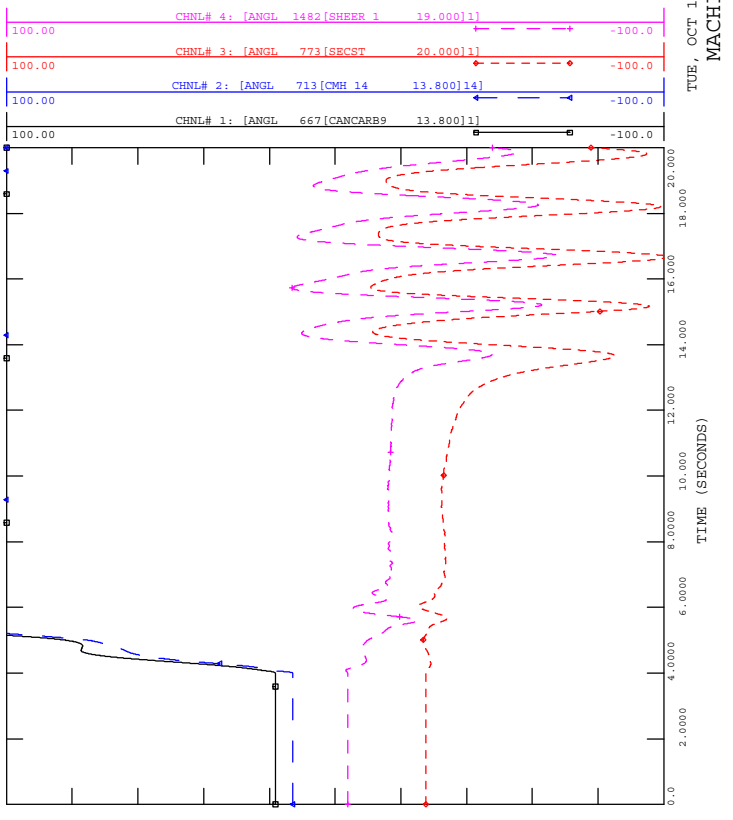
FILE: P1812_2020SP_POST/1035L_Fault_at_Bowmanton.out



TUE, OCT 16 2018 10:14
MACHINE VOLTAGE

P1812_2020SP_POST
CATB -1035L_FAULT_AT_BOWMANTON

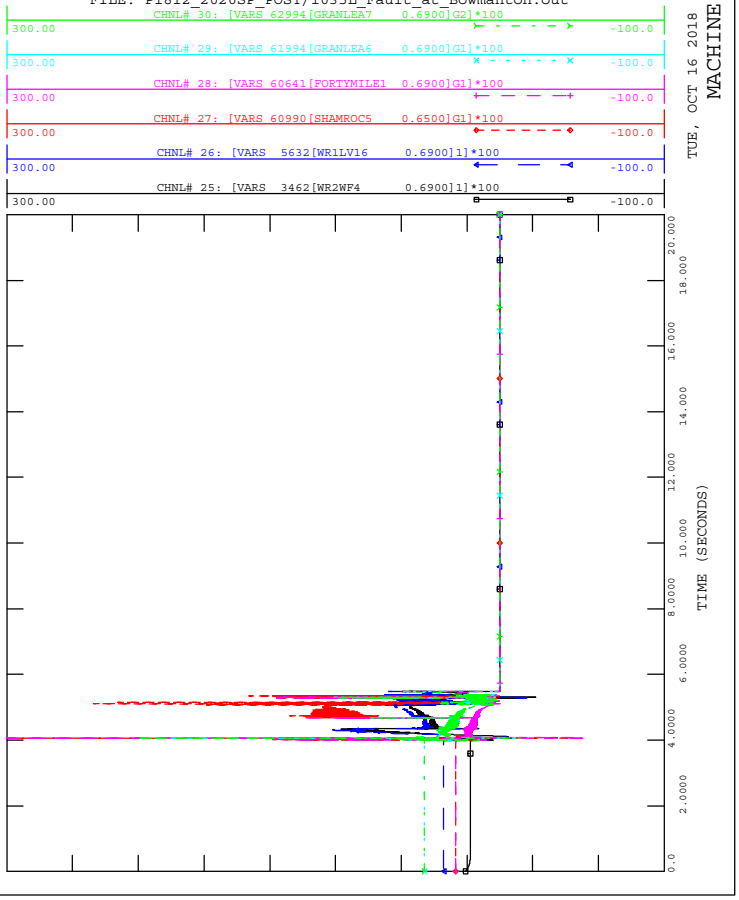
FILE: P1812_2020SP_POST/1035L_Fault_at_Bowmanton.out



TUE, OCT 16 2018 10:14
MACHINE ANGEL

P1812_2020SP_POST
CATB -1035L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/1035L_Fault_at_Bowmanton.out



TUE, OCT 16 2018 10:14
MACHINE VAR

P1812_2020SP_POST
CATB -1035L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/1035L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:14

LINE VAR

CHNL# 59: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 57: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 55: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 53: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 51: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 49: [VARS 662 TO 720 CKT '64'] 650.00 -350.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SP_POST
CATB -1035L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/1035L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:14

FREQUENCY

CHNL# 47: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SP_POST
CATB -1035L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/1035L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:14

LINE POWER

CHNL# 58: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 56: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 54: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 52: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 50: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 48: [POWR 662 TO 720 CKT '64'] 800.00 -200.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SP_POST
CATB -1035L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/1035L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:14

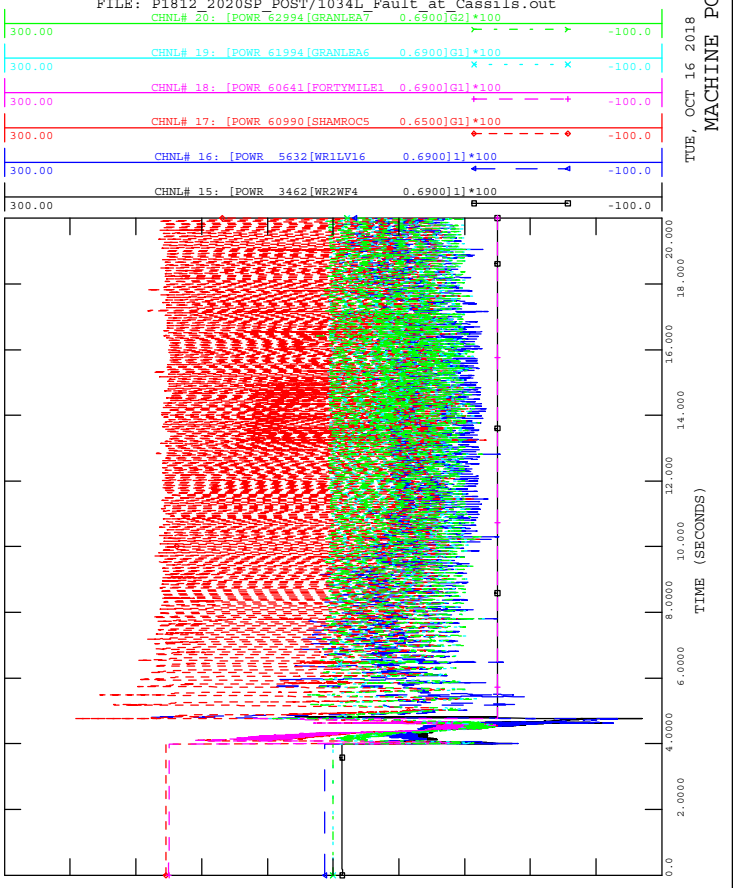
BUS VOLTAGE

CHNL# 42: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 41: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 40: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 39: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 38: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 37: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SP_POST
CATB -1034L_FAULT_AT_CASSILS

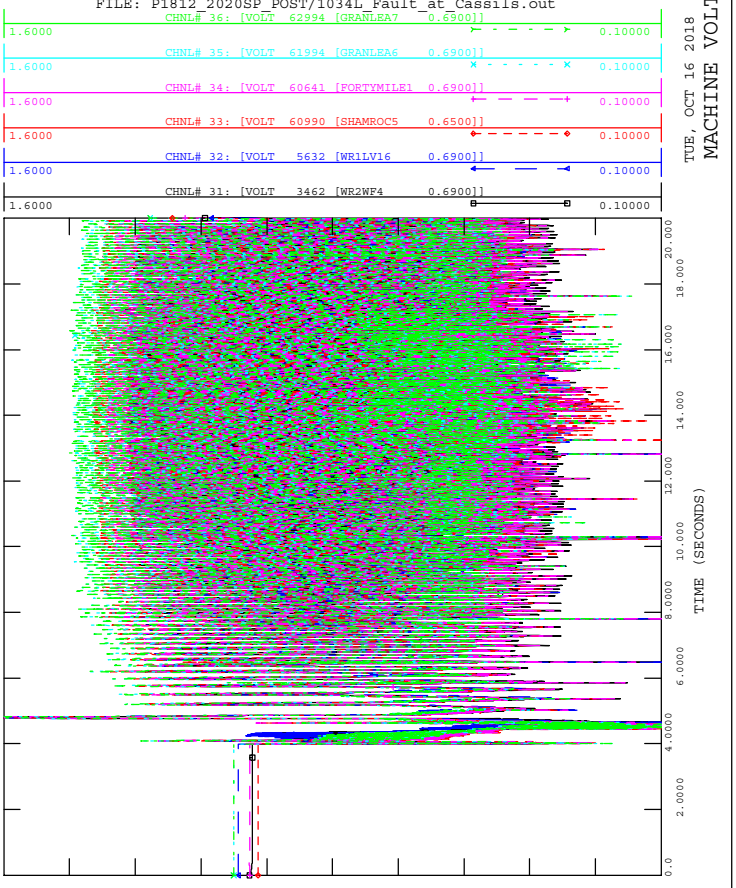
FILE: P1812_2020SP_POST/1034L_Fault_at_Cassils.out



TUE, OCT 16 2018 10:14
MACHINE POWER

P1812_2020SP_POST
CATB -1034L_FAULT_AT_CASSILS

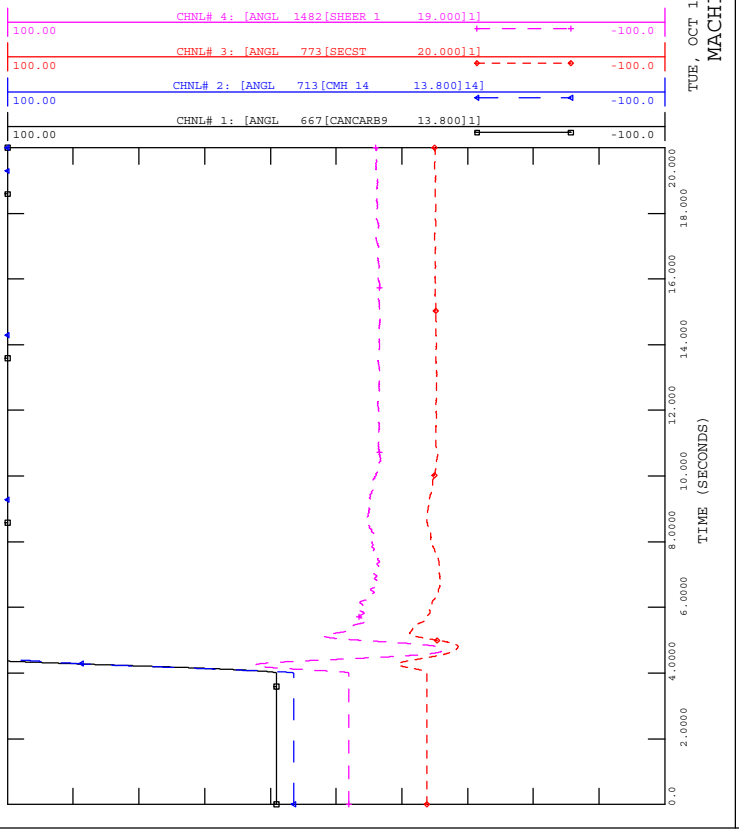
FILE: P1812_2020SP_POST/1034L_Fault_at_Cassils.out



TUE, OCT 16 2018 10:14
MACHINE VOLTAGE

P1812_2020SP_POST
CATB -1034L_FAULT_AT_CASSILS

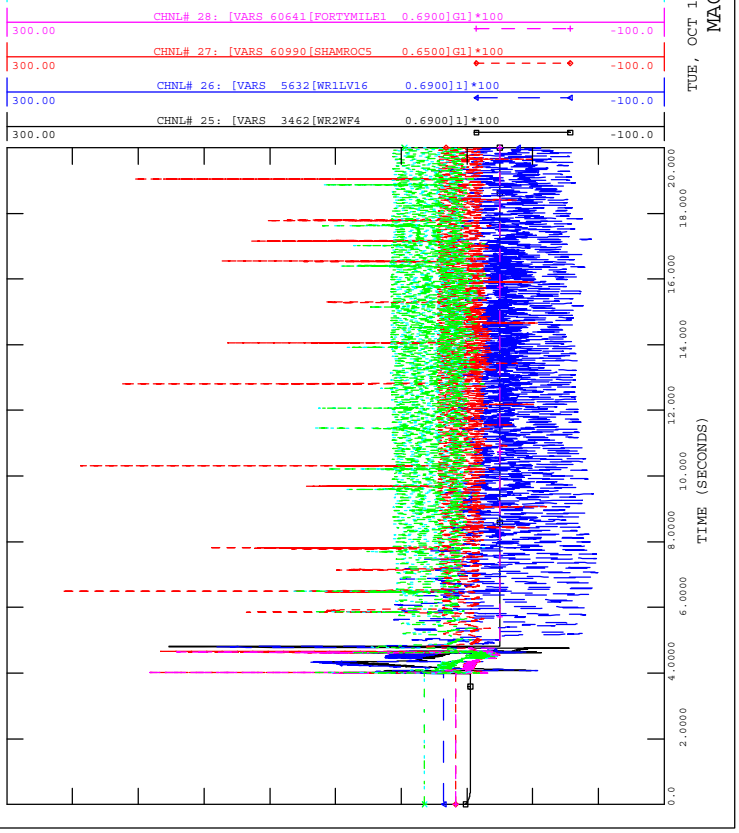
FILE: P1812_2020SP_POST/1034L_Fault_at_Cassils.out



TUE, OCT 16 2018 10:14
MACHINE ANGEL

P1812_2020SP_POST
CATB -1034L_FAULT_AT_CASSILS

FILE: P1812_2020SP_POST/1034L_Fault_at_Cassils.out



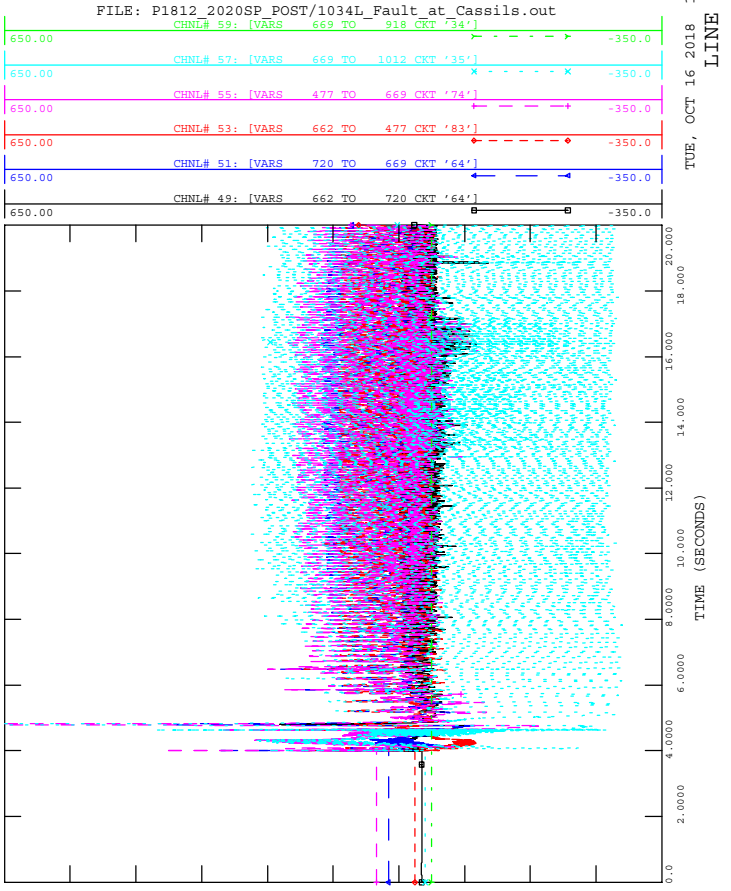
TUE, OCT 16 2018 10:14
MACHINE VAR

P1812_2020SP_POST
CATB -1034L_FAULT_AT_CASSILS

FILE: P1812_2020SP_POST/1034L_Fault_at_Cassils.out

TUE, OCT 16 2018 10:14

LINE VAR

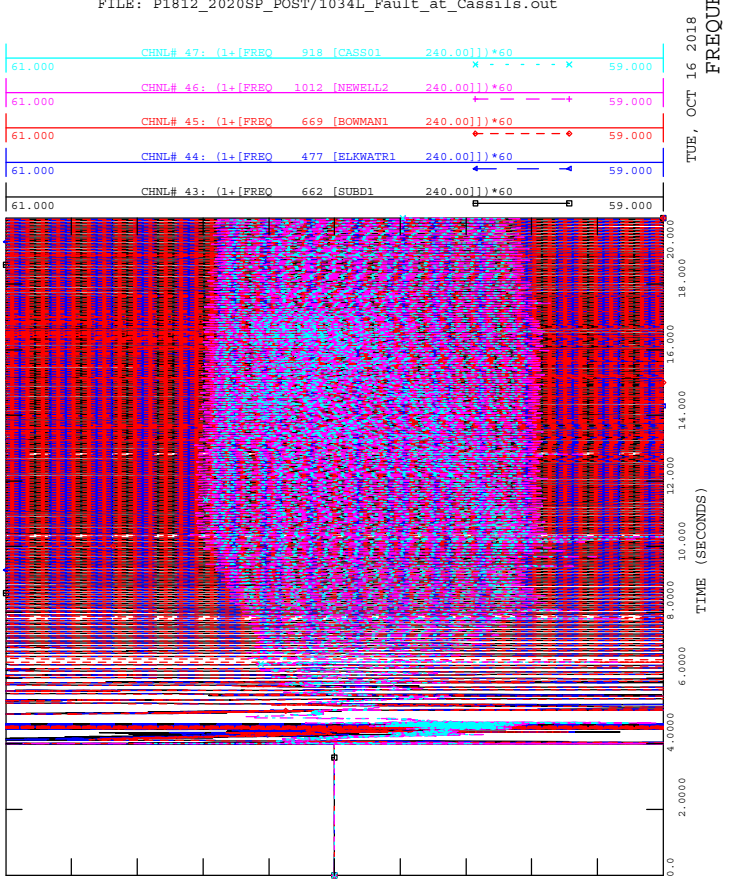


P1812_2020SP_POST
CATB -1034L_FAULT_AT_CASSILS

FILE: P1812_2020SP_POST/1034L_Fault_at_Cassils.out

TUE, OCT 16 2018 10:14

FREQUENCY

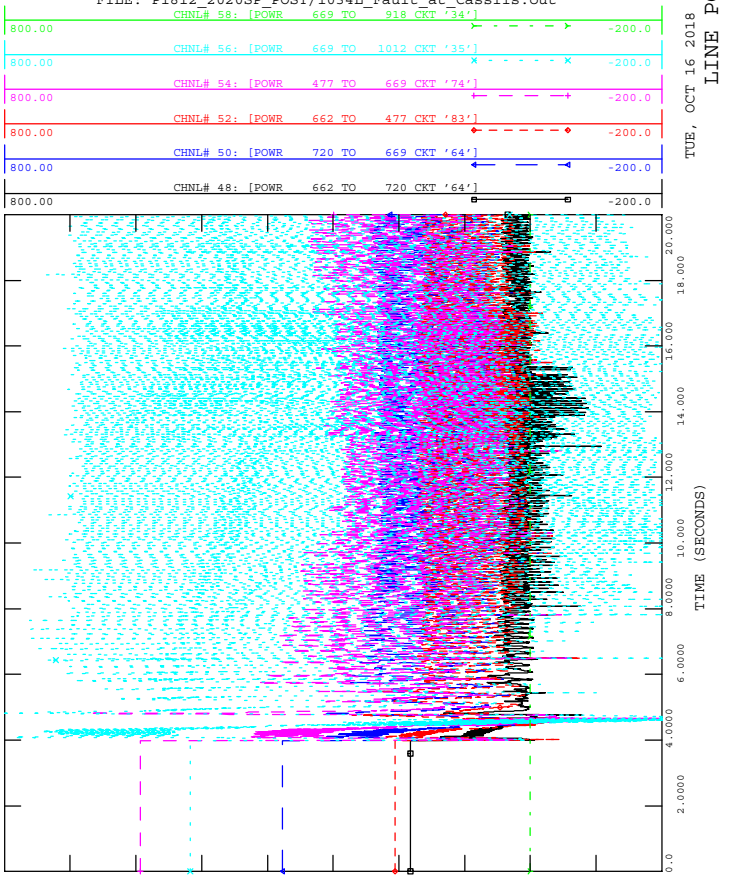


P1812_2020SP_POST
CATB -1034L_FAULT_AT_CASSILS

FILE: P1812_2020SP_POST/1034L_Fault_at_Cassils.out

TUE, OCT 16 2018 10:14

LINE POWER

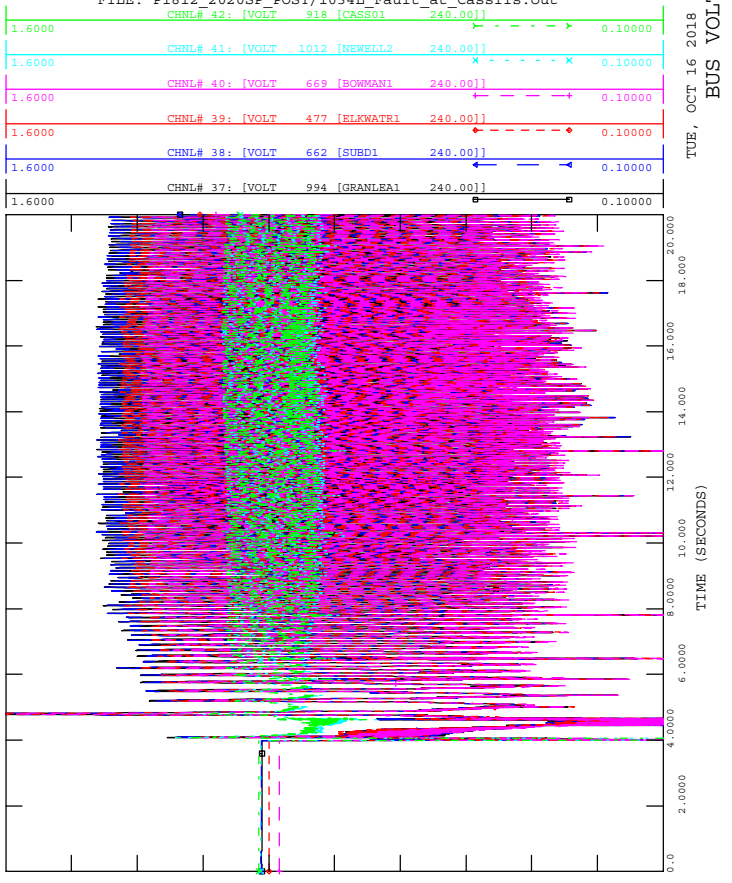


P1812_2020SP_POST
CATB -1034L_FAULT_AT_CASSILS

FILE: P1812_2020SP_POST/1034L_Fault_at_Cassils.out

TUE, OCT 16 2018 10:14

BUS VOLTAGE



P1812_2020SP_POST
CATB -1034L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/1034L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:14

MACHINE POWER

CHNL# 20: [POWR 62994[GRANLEA7 0.6900]G2]*100
CHNL# 19: [POWR 61994[GRANLEA6 0.6900]G1]*100
CHNL# 18: [POWR 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 17: [POWR 60990[SHAMROC5 0.6500]G1]*100
CHNL# 16: [POWR 5632[WR1LV16 0.6900]1]*100
CHNL# 15: [POWR 3462[WR2WF4 0.6900]1]*100

300.00 / -100.0

TIME (SECONDS)

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SP_POST
CATB -1034L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/1034L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:14

MACHINE VOLTAGE

CHNL# 36: [VOLT 62994 [GRANLEA7 0.6900]]
CHNL# 35: [VOLT 61994 [GRANLEA6 0.6900]]
CHNL# 34: [VOLT 60641 [FORTYMILE1 0.6900]]
CHNL# 33: [VOLT 60990 [SHAMROC5 0.6500]]
CHNL# 32: [VOLT 5632 [WR1LV16 0.6900]]
CHNL# 31: [VOLT 3462 [WR2WF4 0.6900]]

1.6000 / 0.10000

TIME (SECONDS)

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SP_POST
CATB -1034L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/1034L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:14

MACHINE ANGEL

CHNL# 4: [ANGL 1482[SHEER 1 19.000]1]
CHNL# 3: [ANGL 773[SECST 20.000]1]
CHNL# 2: [ANGL 713[CMH 14 13.800]14]
CHNL# 1: [ANGL 667[CANCARB9 13.800]1]

100.00 / -100.0

TIME (SECONDS)

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SP_POST
CATB -1034L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/1034L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:14

MACHINE VAR

CHNL# 30: [VARS 62994[GRANLEA7 0.6900]G2]*100
CHNL# 29: [VARS 61994[GRANLEA6 0.6900]G1]*100
CHNL# 28: [VARS 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 27: [VARS 60990[SHAMROC5 0.6500]G1]*100
CHNL# 26: [VARS 5632[WR1LV16 0.6900]1]*100
CHNL# 25: [VARS 3462[WR2WF4 0.6900]1]*100

300.00 / -100.0

TIME (SECONDS)

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

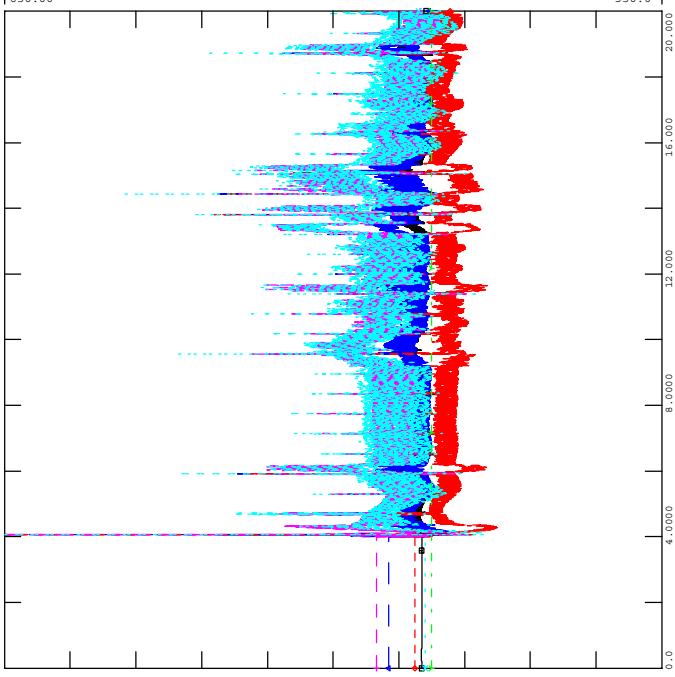
P1812_2020SP_POST
CATB -1034L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/1034L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:14

LINE VAR

CHNL# 59: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 57: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 55: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 53: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 51: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 49: [VARS 662 TO 720 CKT '64'] 650.00 -350.0



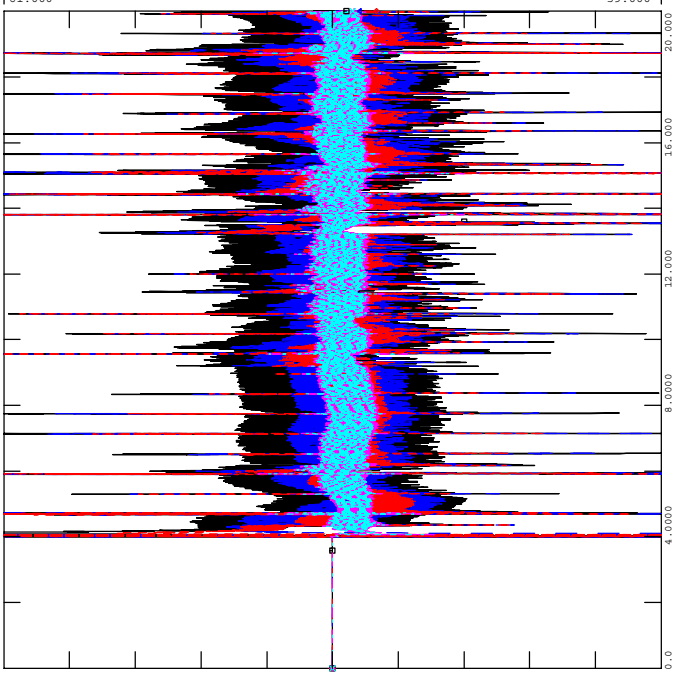
P1812_2020SP_POST
CATB -1034L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/1034L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:14

FREQUENCY

CHNL# 47: (1+[FREQ 918 [CASS01 240.00])*60 61.000 59.000
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00])*60 61.000 59.000
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00])*60 61.000 59.000
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00])*60 61.000 59.000
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00])*60 61.000 59.000



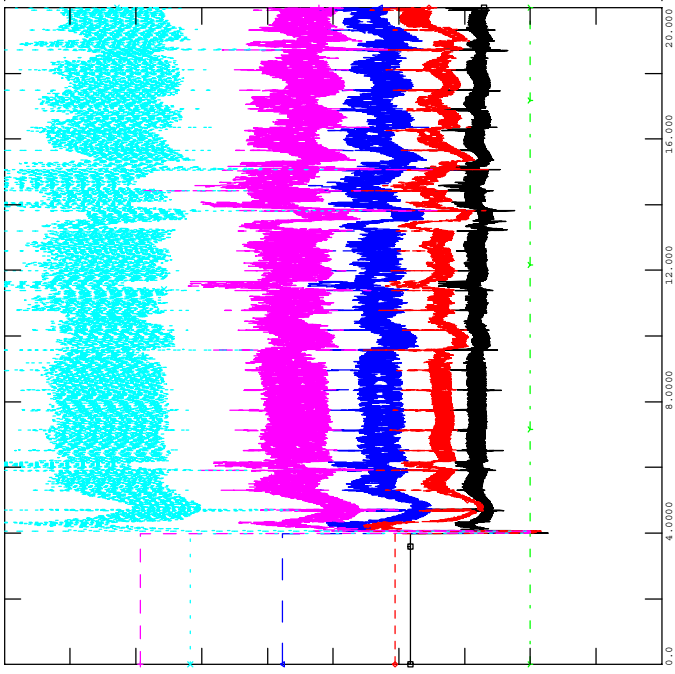
P1812_2020SP_POST
CATB -1034L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/1034L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:14

LINE POWER

CHNL# 58: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 56: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 54: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 52: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 50: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 48: [POWR 662 TO 720 CKT '64'] 800.00 -200.0



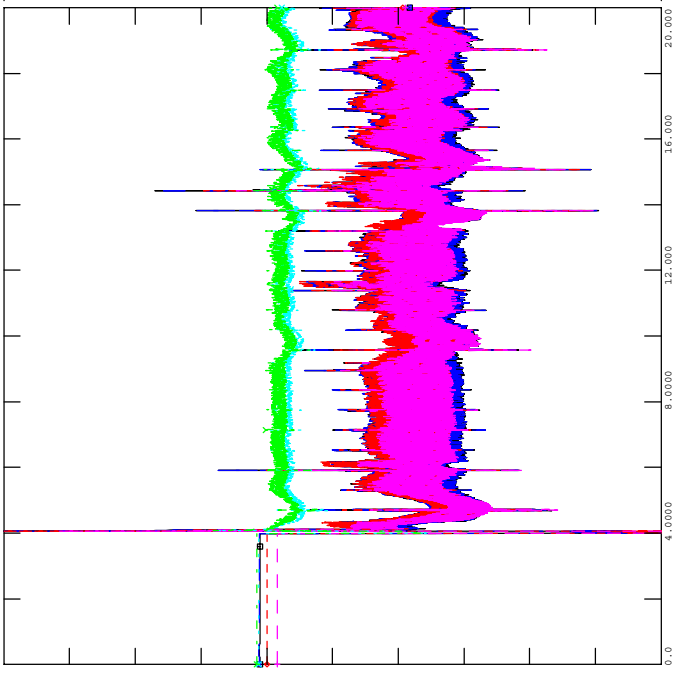
P1812_2020SP_POST
CATB -1034L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/1034L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:14

BUS VOLTAGE

CHNL# 42: [VOLT 918 [CASS01 240.00] 1.6000 0.10000
CHNL# 41: [VOLT 1012 [NEWELL2 240.00] 1.6000 0.10000
CHNL# 40: [VOLT 669 [BOWMAN1 240.00] 1.6000 0.10000
CHNL# 39: [VOLT 477 [ELKWATR1 240.00] 1.6000 0.10000
CHNL# 38: [VOLT 662 [SUBD1 240.00] 1.6000 0.10000
CHNL# 37: [VOLT 994 [GRANLEA1 240.00] 1.6000 0.10000



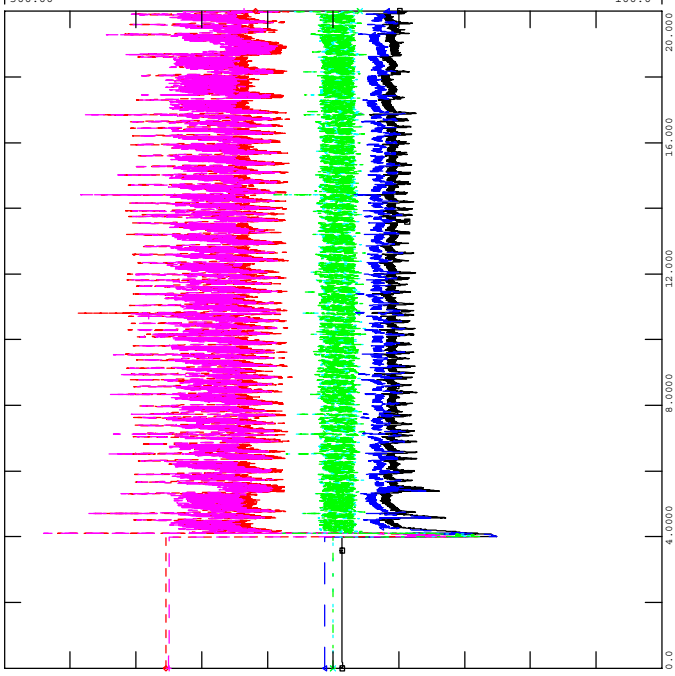
P1812_2020SP_POST
CATB -983L_FAULT_AT_ELKWATER

FILE: P1812_2020SP_POST/983L_Fault_at_Elkwater.out

TUE, OCT 16 2018 10:14

MACHINE POWER

CHNL# 20: [POWR 62994[GRANLEA7 0.6900]G2]*100
CHNL# 19: [POWR 61994[GRANLEA6 0.6900]G1]*100
CHNL# 18: [POWR 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 17: [POWR 60990[SHAMROC5 0.6500]G1]*100
CHNL# 16: [POWR 5632[WR1LV16 0.6900]1]*100
CHNL# 15: [POWR 3462[WR2WF4 0.6900]1]*100



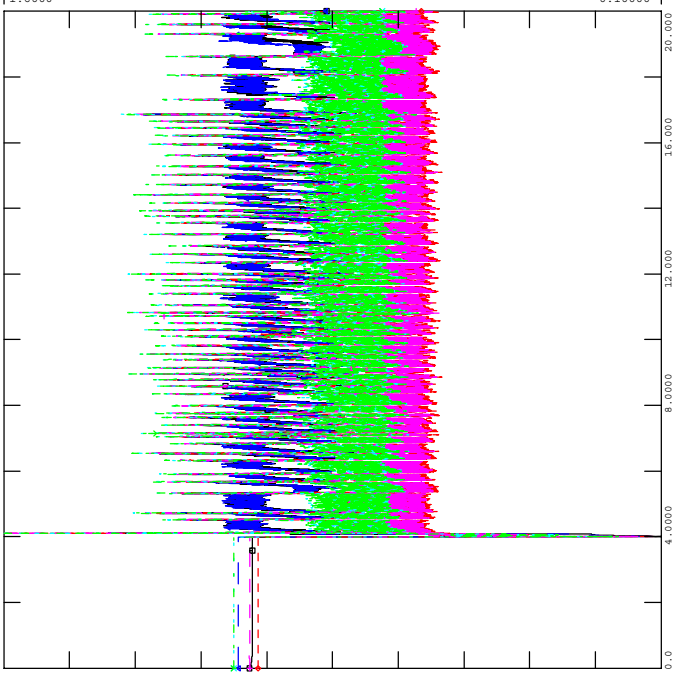
P1812_2020SP_POST
CATB -983L_FAULT_AT_ELKWATER

FILE: P1812_2020SP_POST/983L_Fault_at_Elkwater.out

TUE, OCT 16 2018 10:14

MACHINE VOLTAGE

CHNL# 36: [VOLT 62994 [GRANLEA7 0.6900]]
CHNL# 35: [VOLT 61994 [GRANLEA6 0.6900]]
CHNL# 34: [VOLT 60641 [FORTYMILE1 0.6900]]
CHNL# 33: [VOLT 60990 [SHAMROC5 0.6500]]
CHNL# 32: [VOLT 5632 [WR1LV16 0.6900]]
CHNL# 31: [VOLT 3462 [WR2WF4 0.6900]]



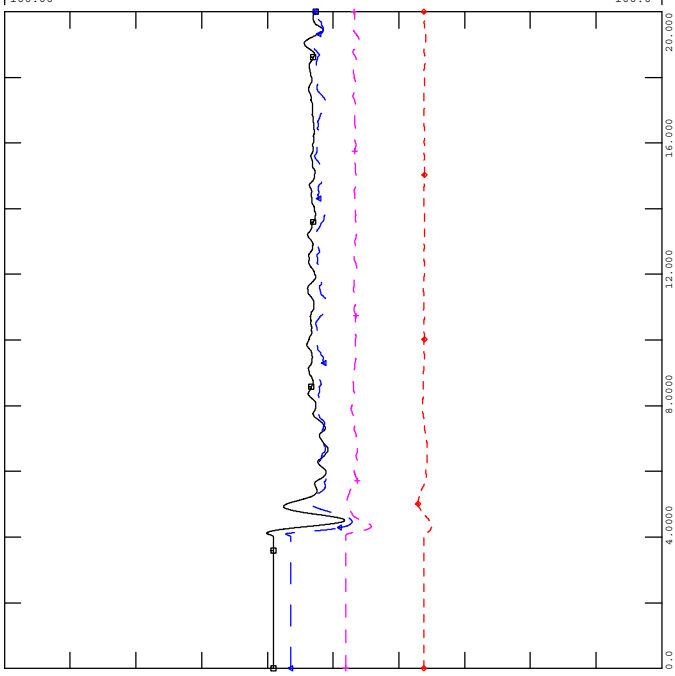
P1812_2020SP_POST
CATB -983L_FAULT_AT_ELKWATER

FILE: P1812_2020SP_POST/983L_Fault_at_Elkwater.out

TUE, OCT 16 2018 10:14

MACHINE ANGEL

CHNL# 4: [ANGL 1482[SHEER 1 19.000]1]
CHNL# 3: [ANGL 773[SECST 20.000]1]
CHNL# 2: [ANGL 713[CMH 14 13.800]14]
CHNL# 1: [ANGL 667[CANCARB9 13.800]1]



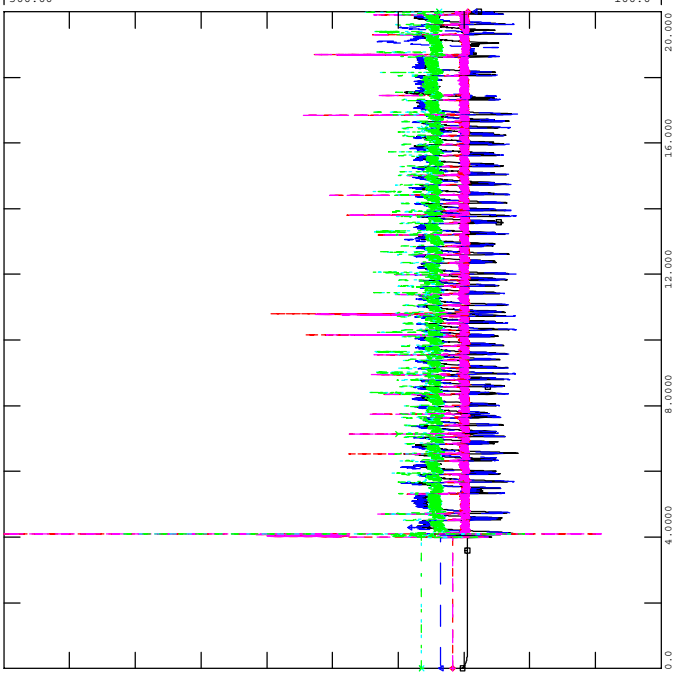
P1812_2020SP_POST
CATB -983L_FAULT_AT_ELKWATER

FILE: P1812_2020SP_POST/983L_Fault_at_Elkwater.out

TUE, OCT 16 2018 10:14

MACHINE VAR

CHNL# 30: [VARS 62994[GRANLEA7 0.6900]G2]*100
CHNL# 29: [VARS 61994[GRANLEA6 0.6900]G1]*100
CHNL# 28: [VARS 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 27: [VARS 60990[SHAMROC5 0.6500]G1]*100
CHNL# 26: [VARS 5632[WR1LV16 0.6900]1]*100
CHNL# 25: [VARS 3462[WR2WF4 0.6900]1]*100



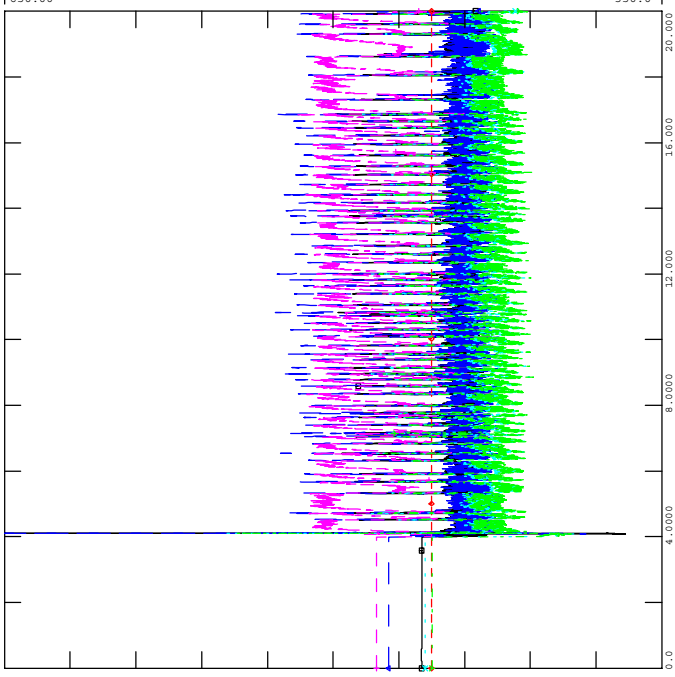
P1812_2020SP_POST
CATB -983L_FAULT_AT_ELKWATER

FILE: P1812_2020SP_POST/983L_Fault_at_Elkwater.out

TUE, OCT 16 2018 10:14 LINE VAR

CHNL# 59: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 57: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 55: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 53: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 51: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 49: [VARS 662 TO 720 CKT '64'] 650.00 -350.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



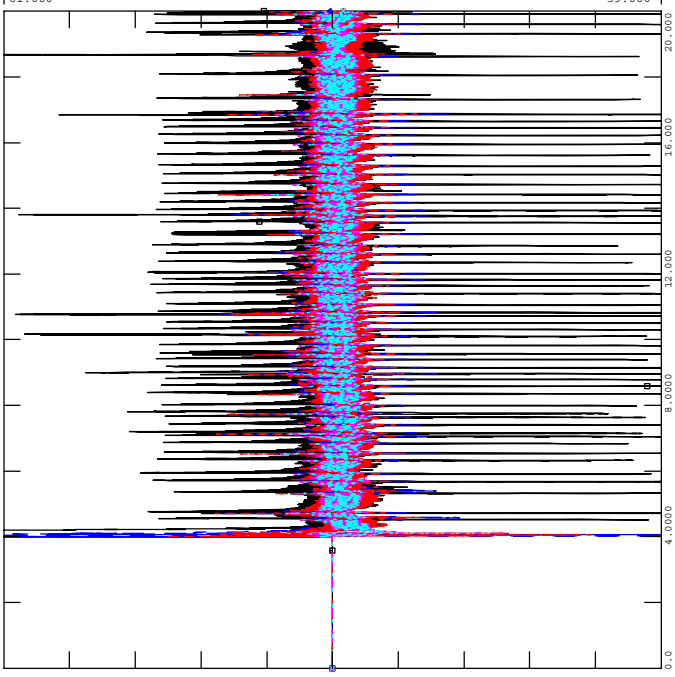
P1812_2020SP_POST
CATB -983L_FAULT_AT_ELKWATER

FILE: P1812_2020SP_POST/983L_Fault_at_Elkwater.out

TUE, OCT 16 2018 10:14 FREQUENCY

CHNL# 47: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



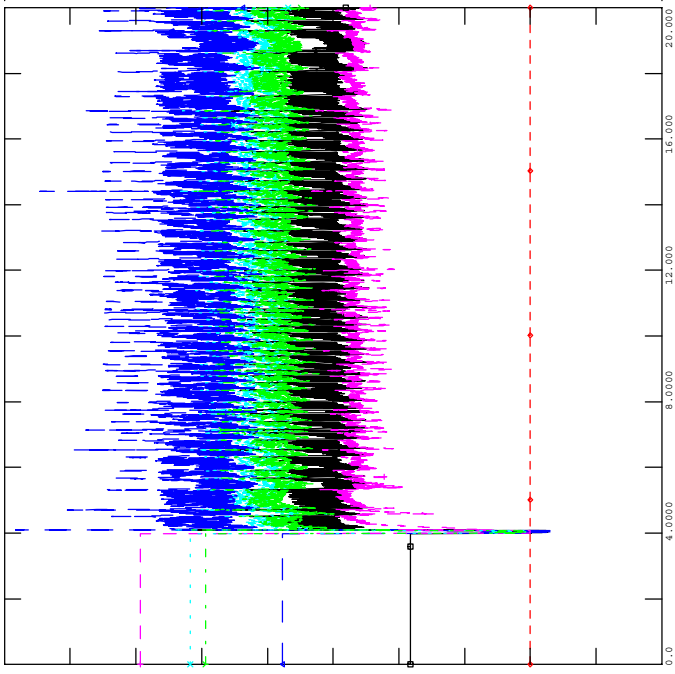
P1812_2020SP_POST
CATB -983L_FAULT_AT_ELKWATER

FILE: P1812_2020SP_POST/983L_Fault_at_Elkwater.out

TUE, OCT 16 2018 10:14 LINE POWER

CHNL# 58: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 56: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 54: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 52: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 50: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 48: [POWR 662 TO 720 CKT '64'] 800.00 -200.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



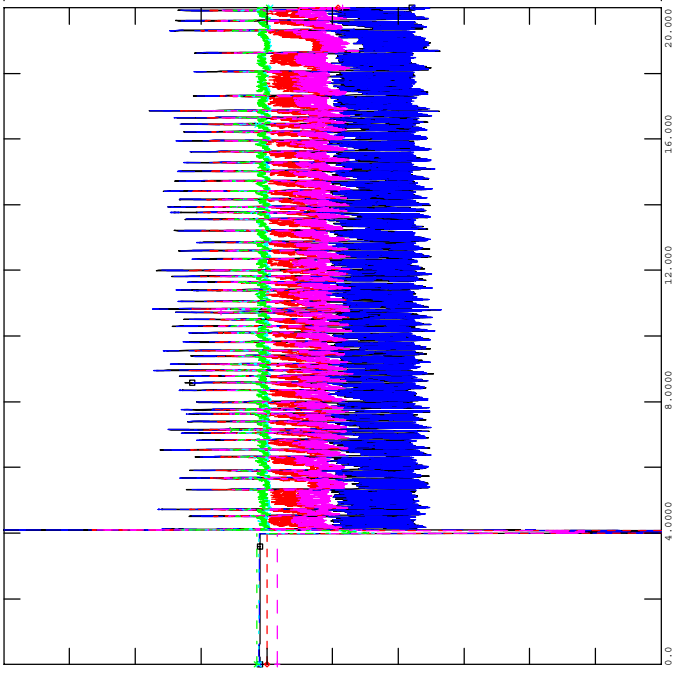
P1812_2020SP_POST
CATB -983L_FAULT_AT_ELKWATER

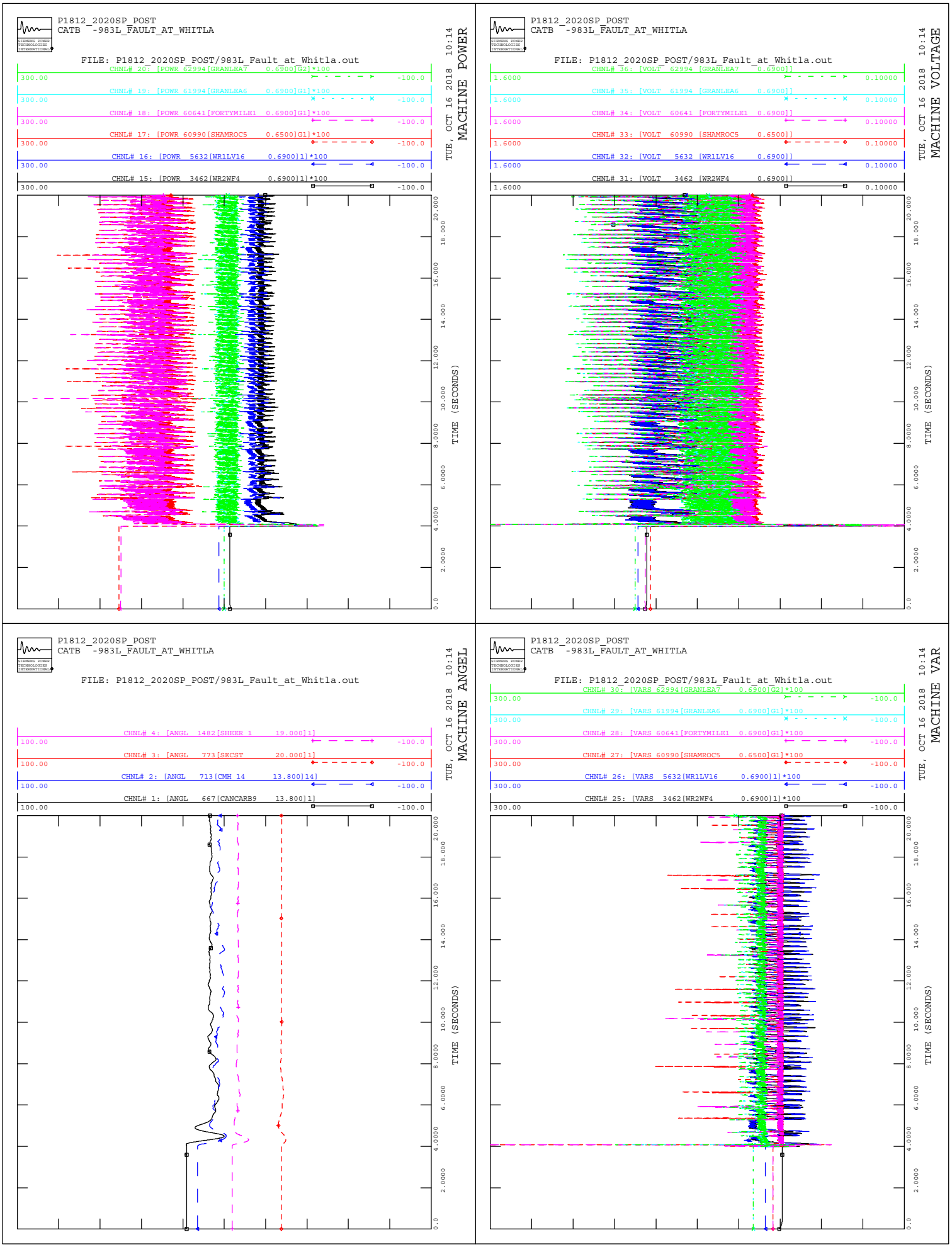
FILE: P1812_2020SP_POST/983L_Fault_at_Elkwater.out

TUE, OCT 16 2018 10:14 BUS VOLTAGE

CHNL# 42: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 41: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 40: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 39: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 38: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 37: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000




P1812_2020SP_POST
CATB -983L_FAULT_AT_WHITLA
FILE: P1812_2020SP_POST/983L_Fault_at_Whitla.out
CHNL# 20: [POWR 62994[GRANLEA7 0.6900]G2]*100
CHNL# 19: [POWR 61994[GRANLEA6 0.6900]G1]*100
CHNL# 18: [POWR 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 17: [POWR 60990[SHAMROC5 0.6500]G1]*100
CHNL# 16: [POWR 5632[WR1LV16 0.6900]1]*100
CHNL# 15: [POWR 3462[WR2WF4 0.6900]1]*100
300.00
-100.0
TUE, OCT 16 2018 10:14
MACHINE POWER
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000
P1812_2020SP_POST
CATB -983L_FAULT_AT_WHITLA
FILE: P1812_2020SP_POST/983L_Fault_at_Whitla.out
CHNL# 36: [VOLT 62994 [GRANLEA7 0.6900]]
CHNL# 35: [VOLT 61994 [GRANLEA6 0.6900]]
CHNL# 34: [VOLT 60641 [FORTYMILE1 0.6900]]
CHNL# 33: [VOLT 60990 [SHAMROC5 0.6500]]
CHNL# 32: [VOLT 5632 [WR1LV16 0.6900]]
CHNL# 31: [VOLT 3462 [WR2WF4 0.6900]]
1.6000
0.10000
TUE, OCT 16 2018 10:14
MACHINE VOLTAGE
TIME (SECONDS)
P1812_2020SP_POST
CATB -983L_FAULT_AT_WHITLA
FILE: P1812_2020SP_POST/983L_Fault_at_Whitla.out
CHNL# 4: [ANGL 1482[SHEER 1 19.000]1]
CHNL# 3: [ANGL 773[SECST 20.000]1]
CHNL# 2: [ANGL 713[CMH 14 13.800]14]
CHNL# 1: [ANGL 667[CANCARB9 13.800]1]
100.00
-100.0
TUE, OCT 16 2018 10:14
MACHINE ANGEL
TIME (SECONDS)
P1812_2020SP_POST
CATB -983L_FAULT_AT_WHITLA
FILE: P1812_2020SP_POST/983L_Fault_at_Whitla.out
CHNL# 30: [VARS 62994[GRANLEA7 0.6900]G2]*100
CHNL# 29: [VARS 61994[GRANLEA6 0.6900]G1]*100
CHNL# 28: [VARS 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 27: [VARS 60990[SHAMROC5 0.6500]G1]*100
CHNL# 26: [VARS 5632[WR1LV16 0.6900]1]*100
CHNL# 25: [VARS 3462[WR2WF4 0.6900]1]*100
300.00
-100.0
TUE, OCT 16 2018 10:14
MACHINE VAR
TIME (SECONDS)

P1812_2020SP_POST
CATB -983L_FAULT_AT_WHITLA

FILE: P1812_2020SP_POST/983L_Fault_at_Whitla.out

TUE, OCT 16 2018 10:14 LINE VAR

CHNL# 59: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 57: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 55: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 53: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 51: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 49: [VARS 662 TO 720 CKT '64'] 650.00 -350.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SP_POST
CATB -983L_FAULT_AT_WHITLA

FILE: P1812_2020SP_POST/983L_Fault_at_Whitla.out

TUE, OCT 16 2018 10:14 FREQUENCY

CHNL# 47: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SP_POST
CATB -983L_FAULT_AT_WHITLA

FILE: P1812_2020SP_POST/983L_Fault_at_Whitla.out

TUE, OCT 16 2018 10:14 LINE POWER

CHNL# 58: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 56: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 54: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 52: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 50: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 48: [POWR 662 TO 720 CKT '64'] 800.00 -200.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SP_POST
CATB -983L_FAULT_AT_WHITLA

FILE: P1812_2020SP_POST/983L_Fault_at_Whitla.out

TUE, OCT 16 2018 10:14 BUS VOLTAGE

CHNL# 42: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 41: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 40: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 39: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 38: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 37: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000

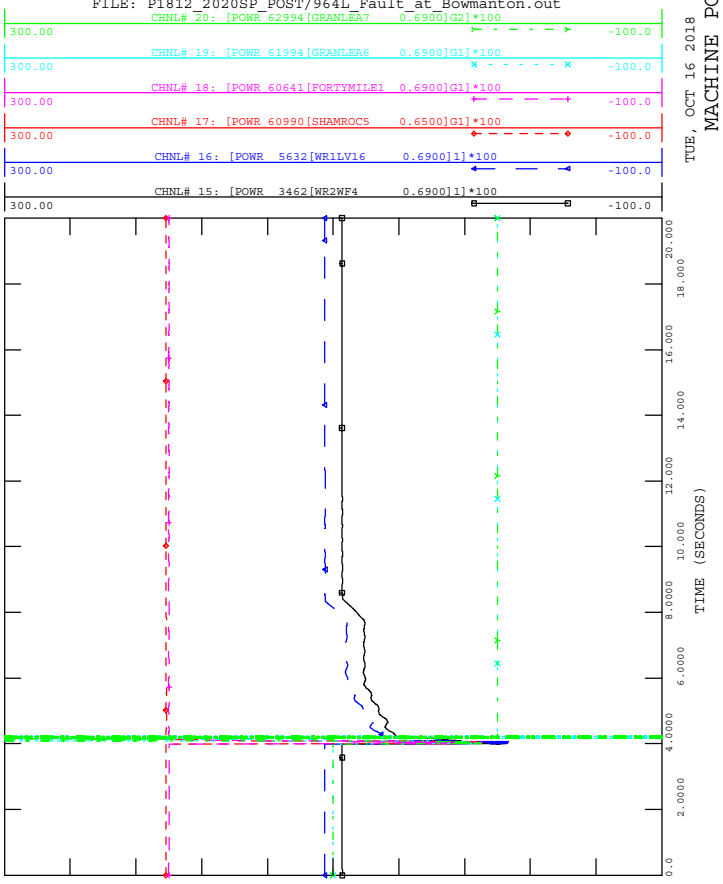
TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SP_POST
CATB -964L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/964L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:14

MACHINE POWER

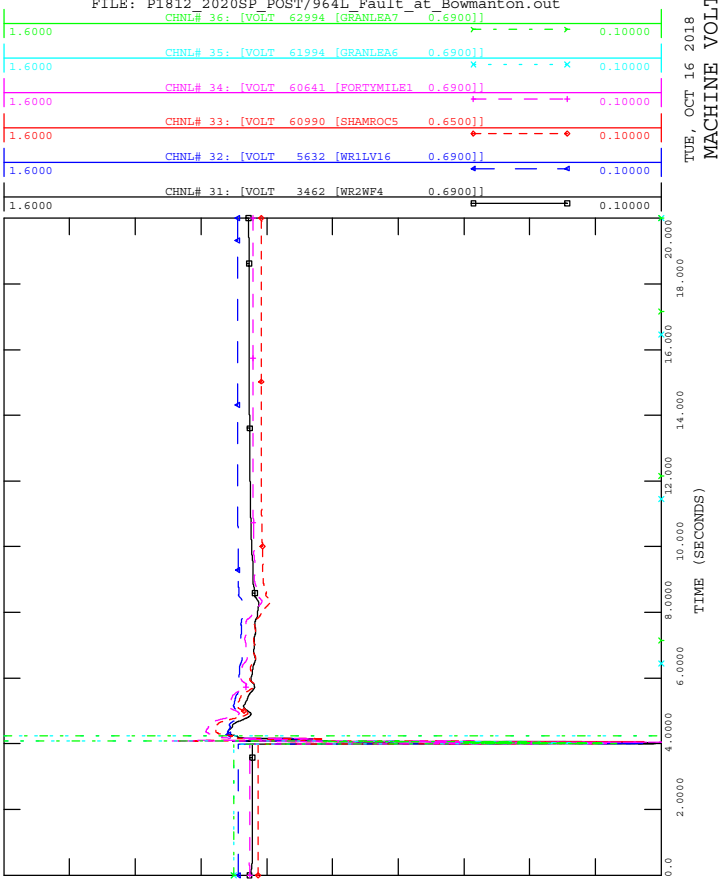


P1812_2020SP_POST
CATB -964L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/964L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:14

MACHINE VOLTAGE

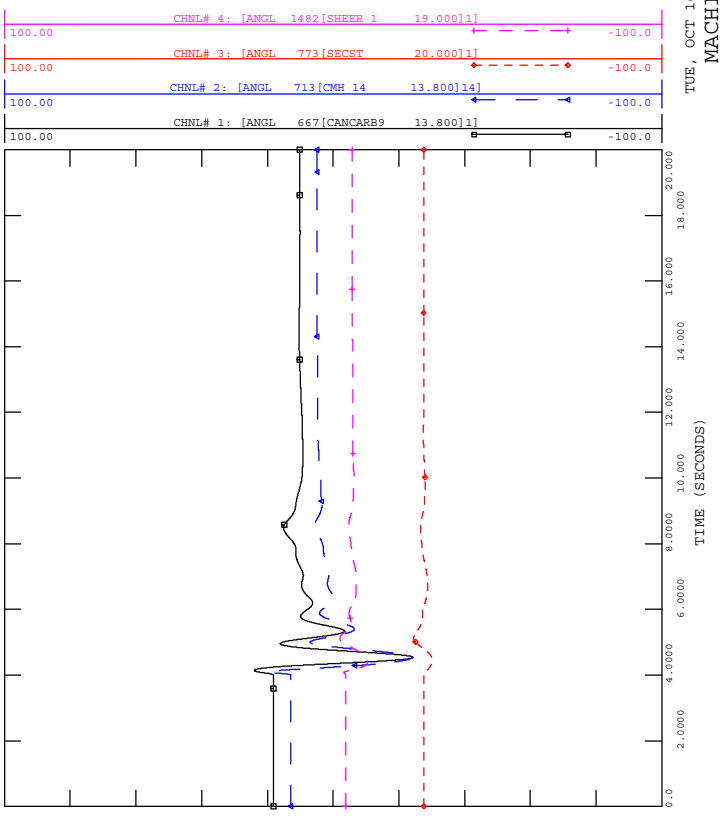


P1812_2020SP_POST
CATB -964L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/964L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:14

MACHINE ANGEL

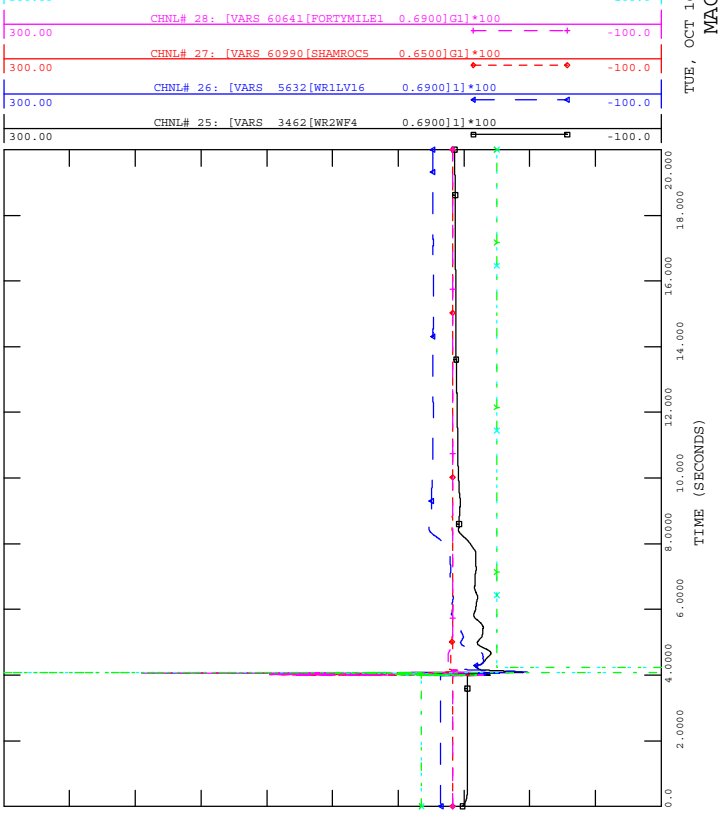


P1812_2020SP_POST
CATB -964L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/964L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:14

MACHINE VAR

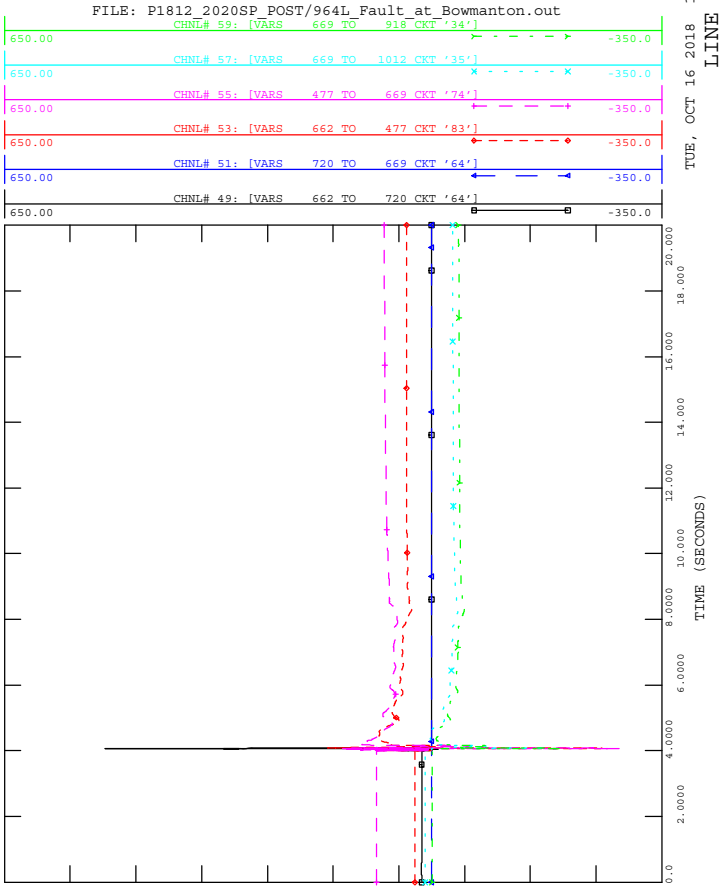


P1812_2020SP_POST
CATB -964L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/964L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:14

LINE VAR

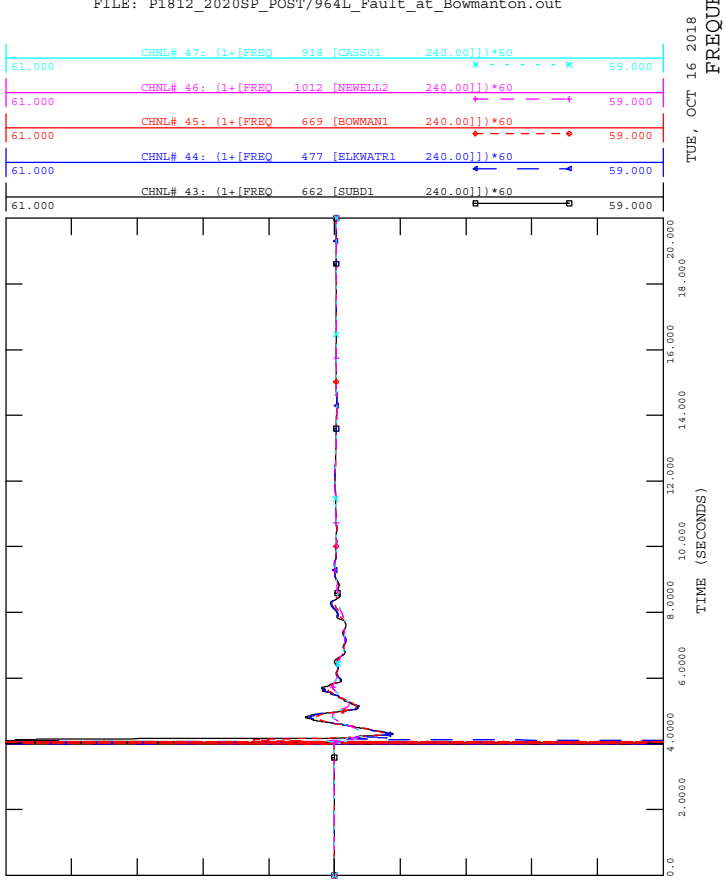


P1812_2020SP_POST
CATB -964L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/964L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:14

FREQUENCY

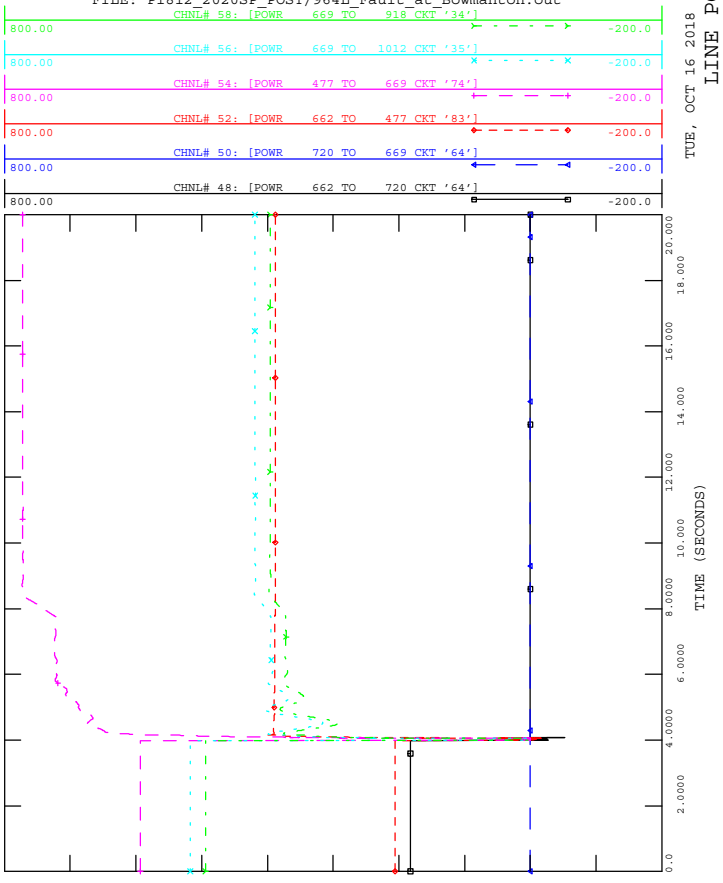


P1812_2020SP_POST
CATB -964L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/964L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:14

LINE POWER

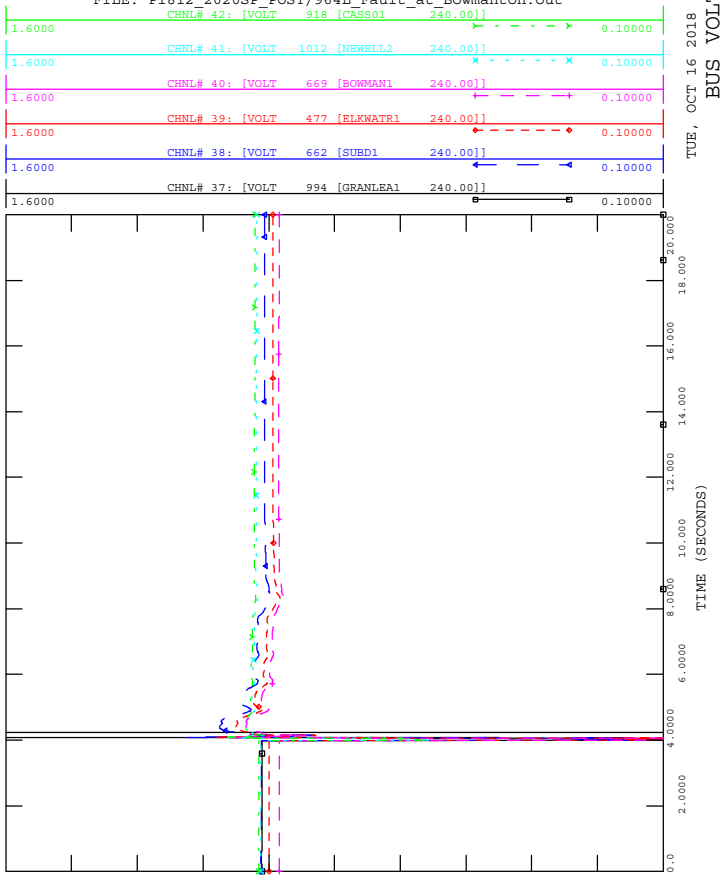


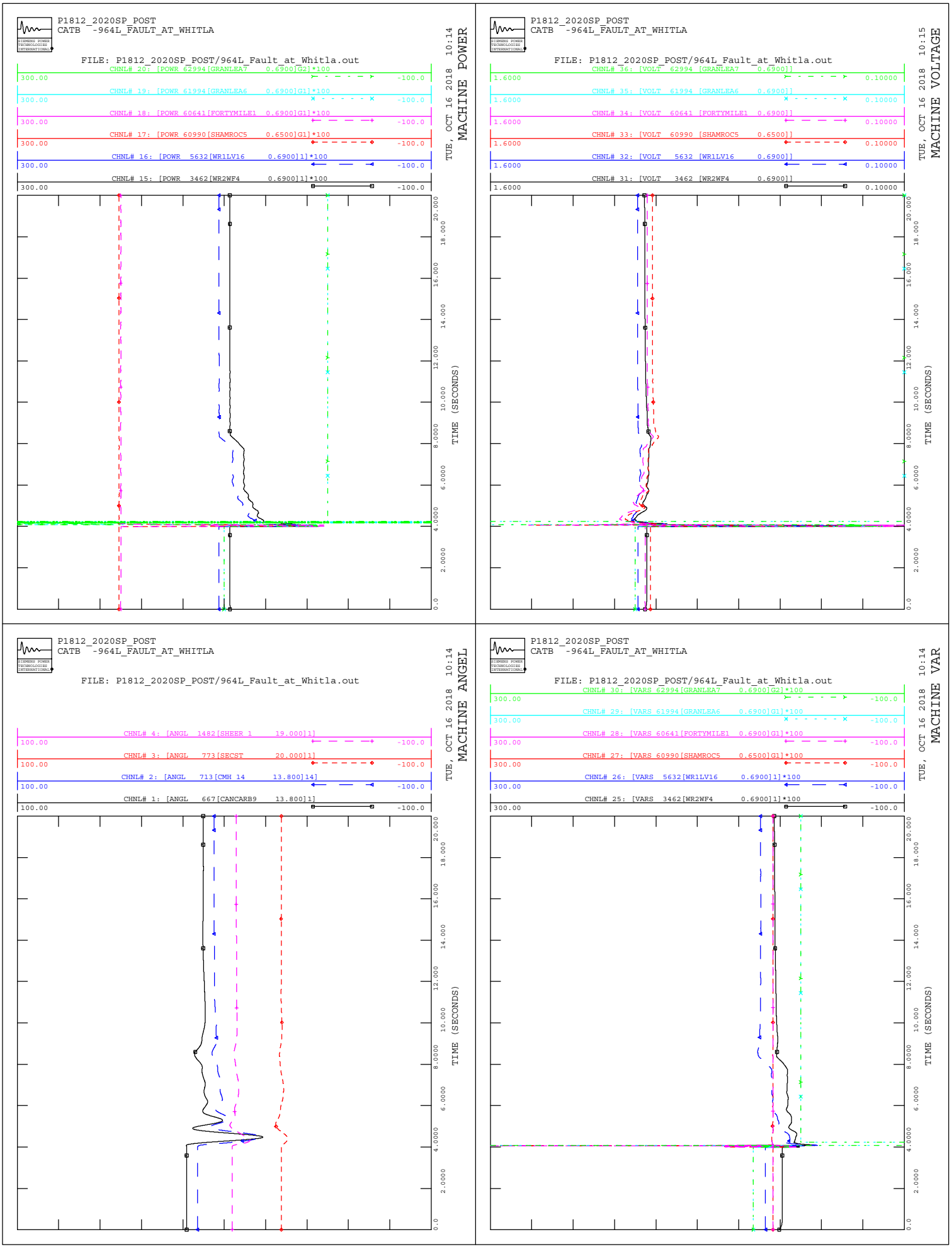
P1812_2020SP_POST
CATB -964L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/964L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:14

BUS VOLTAGE




P1812_2020SP_POST
CATB -964L_FAULT_AT_WHITLA
FILE: P1812_2020SP_POST/964L_Fault_at_Whitla.out
CHNL# 20: [POWR 62994[GRANLEA7 0.6900]G2]*100
CHNL# 19: [POWR 61994[GRANLEA6 0.6900]G1]*100
CHNL# 18: [POWR 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 17: [POWR 60990[SHAMROC5 0.6500]G1]*100
CHNL# 16: [POWR 5632[WR1LV16 0.6900]1]*100
CHNL# 15: [POWR 3462[WR2WF4 0.6900]1]*100
300.00
-100.0
TUE, OCT 16 2018 10:14
MACHINE POWER
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000
P1812_2020SP_POST
CATB -964L_FAULT_AT_WHITLA
FILE: P1812_2020SP_POST/964L_Fault_at_Whitla.out
CHNL# 36: [VOLT 62994 [GRANLEA7 0.6900]]
CHNL# 35: [VOLT 61994 [GRANLEA6 0.6900]]
CHNL# 34: [VOLT 60641 [FORTYMILE1 0.6900]]
CHNL# 33: [VOLT 60990 [SHAMROC5 0.6500]]
CHNL# 32: [VOLT 5632 [WR1LV16 0.6900]]
CHNL# 31: [VOLT 3462 [WR2WF4 0.6900]]
1.6000
0.10000
TUE, OCT 16 2018 10:15
MACHINE VOLTAGE
TIME (SECONDS)
P1812_2020SP_POST
CATB -964L_FAULT_AT_WHITLA
FILE: P1812_2020SP_POST/964L_Fault_at_Whitla.out
CHNL# 4: [ANGL 1482[SHEER 1 19.000]1]
CHNL# 3: [ANGL 773[SECST 20.000]1]
CHNL# 2: [ANGL 713[CMH 14 13.800]14]
CHNL# 1: [ANGL 667[CANCARB9 13.800]1]
100.00
-100.0
TUE, OCT 16 2018 10:14
MACHINE ANGEL
TIME (SECONDS)
P1812_2020SP_POST
CATB -964L_FAULT_AT_WHITLA
FILE: P1812_2020SP_POST/964L_Fault_at_Whitla.out
CHNL# 30: [VARS 62994[GRANLEA7 0.6900]G2]*100
CHNL# 29: [VARS 61994[GRANLEA6 0.6900]G1]*100
CHNL# 28: [VARS 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 27: [VARS 60990[SHAMROC5 0.6500]G1]*100
CHNL# 26: [VARS 5632[WR1LV16 0.6900]1]*100
CHNL# 25: [VARS 3462[WR2WF4 0.6900]1]*100
300.00
-100.0
TUE, OCT 16 2018 10:14
MACHINE VAR
TIME (SECONDS)

P1812_2020SP_POST
CATB -964L_FAULT_AT_WHITLA

FILE: P1812_2020SP_POST/964L_Fault_at_Whitla.out

TUE, OCT 16 2018 10:15 LINE VAR

CHNL# 59: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 57: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 55: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 53: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 51: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 49: [VARS 662 TO 720 CKT '64'] 650.00 -350.0

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000
TIME (SECONDS)

P1812_2020SP_POST
CATB -964L_FAULT_AT_WHITLA

FILE: P1812_2020SP_POST/964L_Fault_at_Whitla.out

TUE, OCT 16 2018 10:15 FREQUENCY

CHNL# 47: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000
TIME (SECONDS)

P1812_2020SP_POST
CATB -964L_FAULT_AT_WHITLA

FILE: P1812_2020SP_POST/964L_Fault_at_Whitla.out

TUE, OCT 16 2018 10:15 LINE POWER

CHNL# 58: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 56: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 54: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 52: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 50: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 48: [POWR 662 TO 720 CKT '64'] 800.00 -200.0

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000
TIME (SECONDS)

P1812_2020SP_POST
CATB -964L_FAULT_AT_WHITLA

FILE: P1812_2020SP_POST/964L_Fault_at_Whitla.out

TUE, OCT 16 2018 10:15 BUS VOLTAGE

CHNL# 42: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 41: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 40: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 39: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 38: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 37: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000

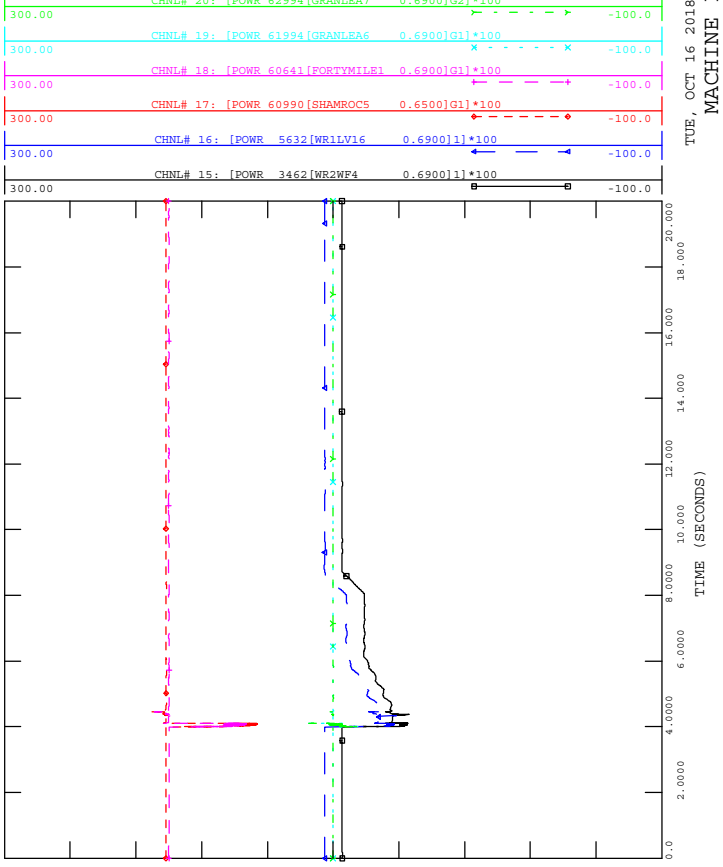
0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000
TIME (SECONDS)

P1812_2020SP_POST
CATB -892L_FAULT_AT_SUFFIELD

FILE: P1812_2020SP_POST/892L_Fault_at_Suffield.out

TUE, OCT 16 2018 10:15

MACHINE POWER

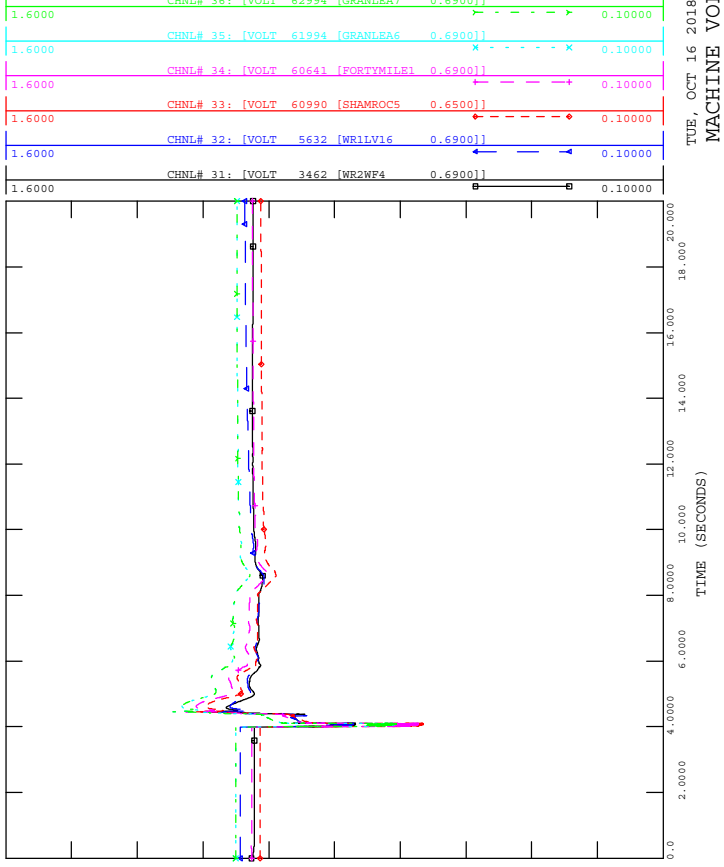


P1812_2020SP_POST
CATB -892L_FAULT_AT_SUFFIELD

FILE: P1812_2020SP_POST/892L_Fault_at_Suffield.out

TUE, OCT 16 2018 10:15

MACHINE VOLTAGE

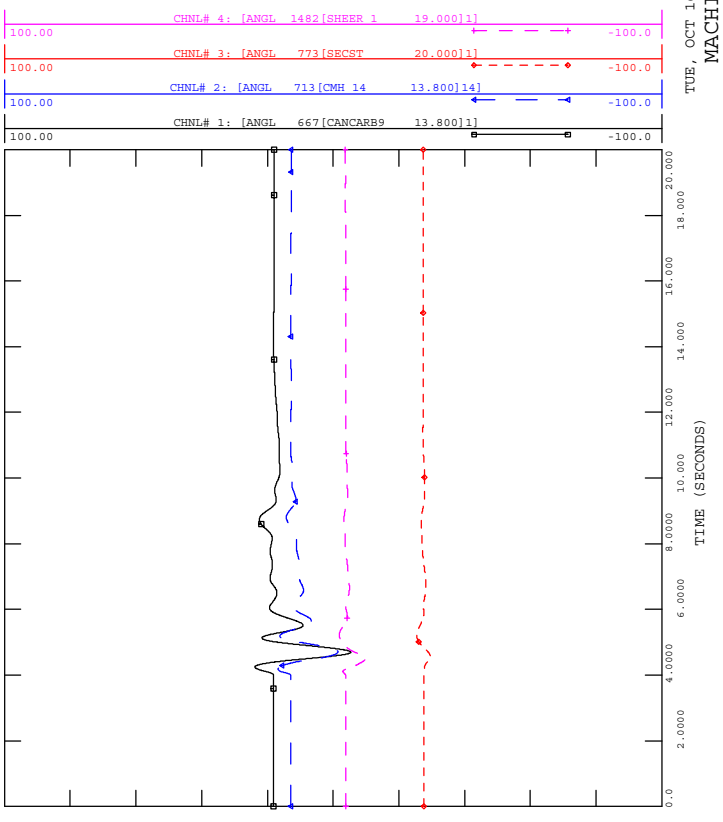


P1812_2020SP_POST
CATB -892L_FAULT_AT_SUFFIELD

FILE: P1812_2020SP_POST/892L_Fault_at_Suffield.out

TUE, OCT 16 2018 10:15

MACHINE ANGEL

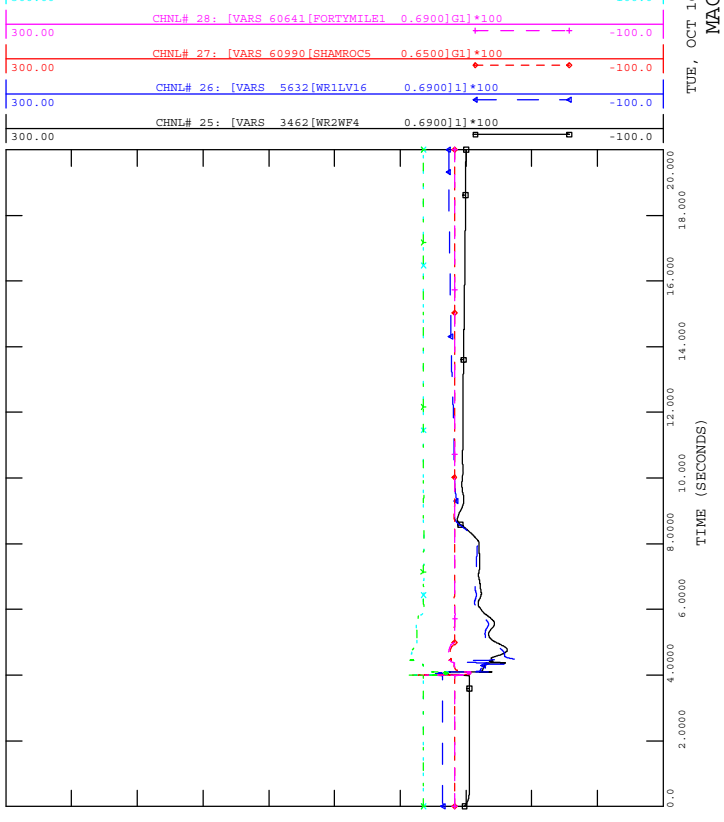


P1812_2020SP_POST
CATB -892L_FAULT_AT_SUFFIELD

FILE: P1812_2020SP_POST/892L_Fault_at_Suffield.out

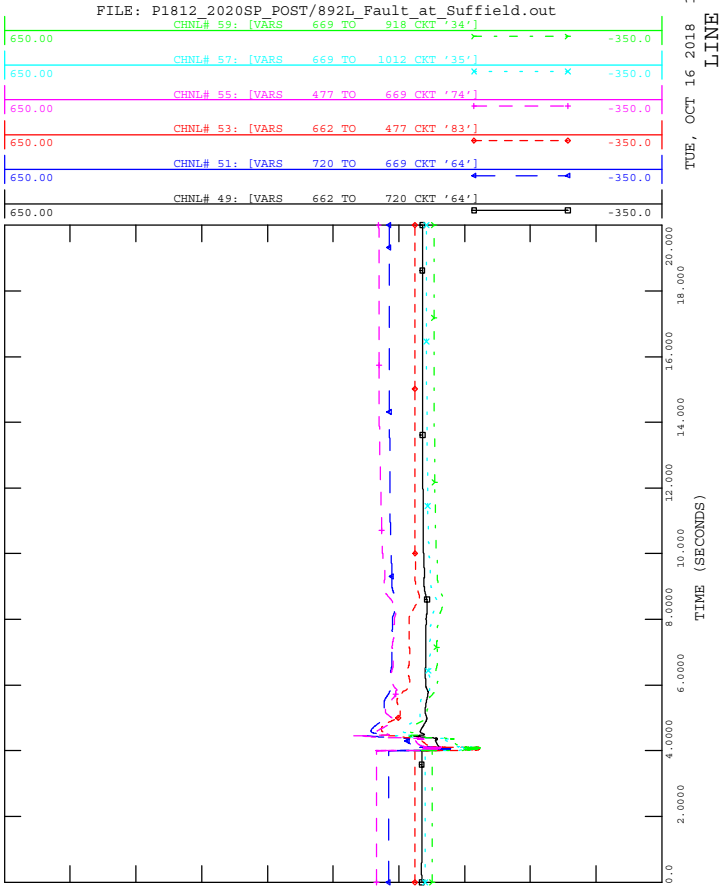
TUE, OCT 16 2018 10:15

MACHINE VAR



P1812_2020SP_POST
CATB -892L_FAULT_AT_SUFFIELD

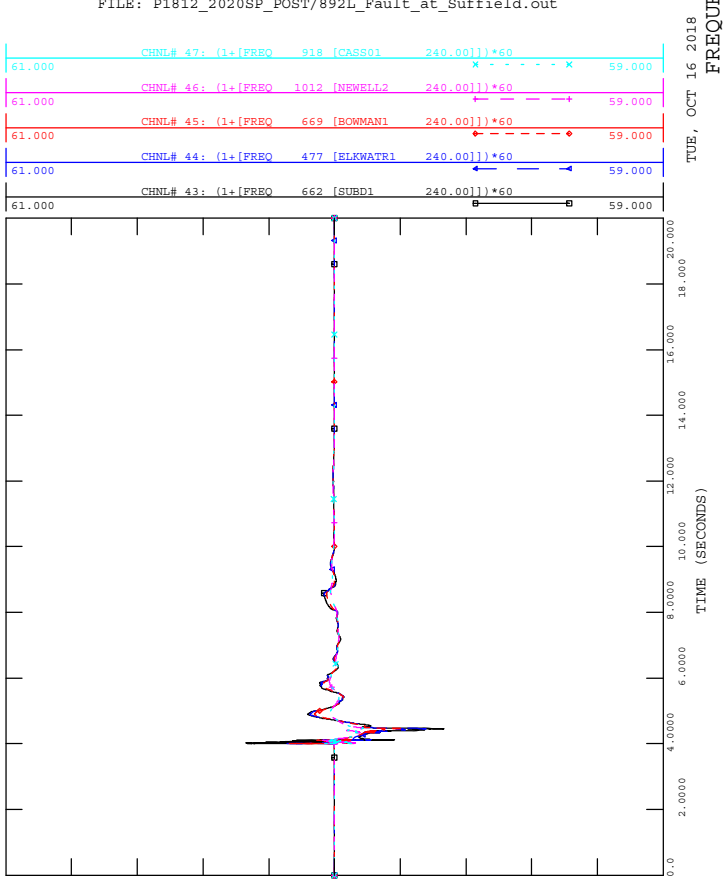
FILE: P1812_2020SP_POST/892L_Fault_at_Suffield.out



TUE, OCT 16 2018 10:15 LINE VAR

P1812_2020SP_POST
CATB -892L_FAULT_AT_SUFFIELD

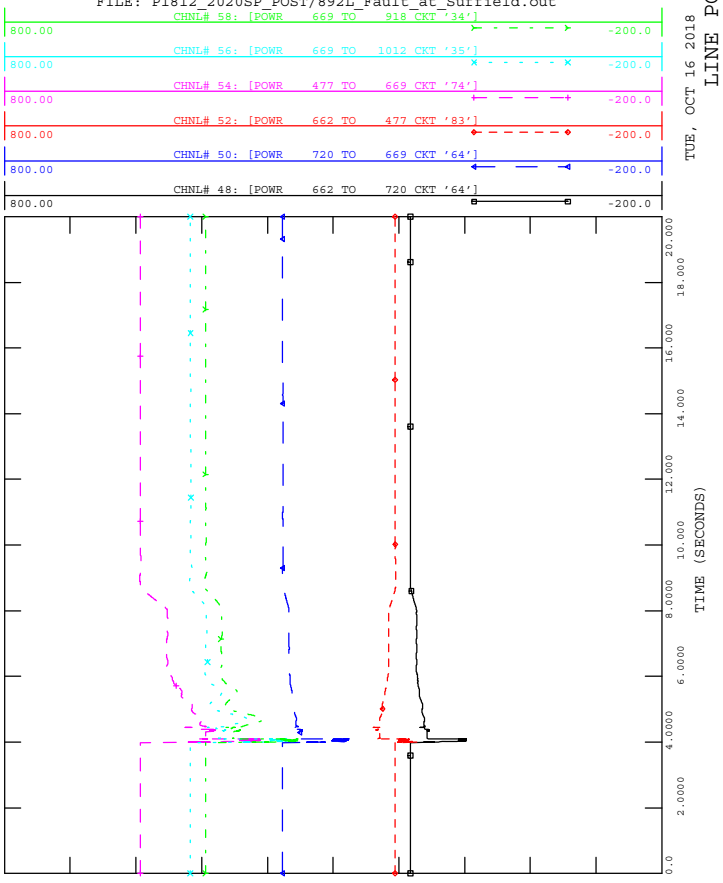
FILE: P1812_2020SP_POST/892L_Fault_at_Suffield.out



TUE, OCT 16 2018 10:15 FREQUENCY

P1812_2020SP_POST
CATB -892L_FAULT_AT_SUFFIELD

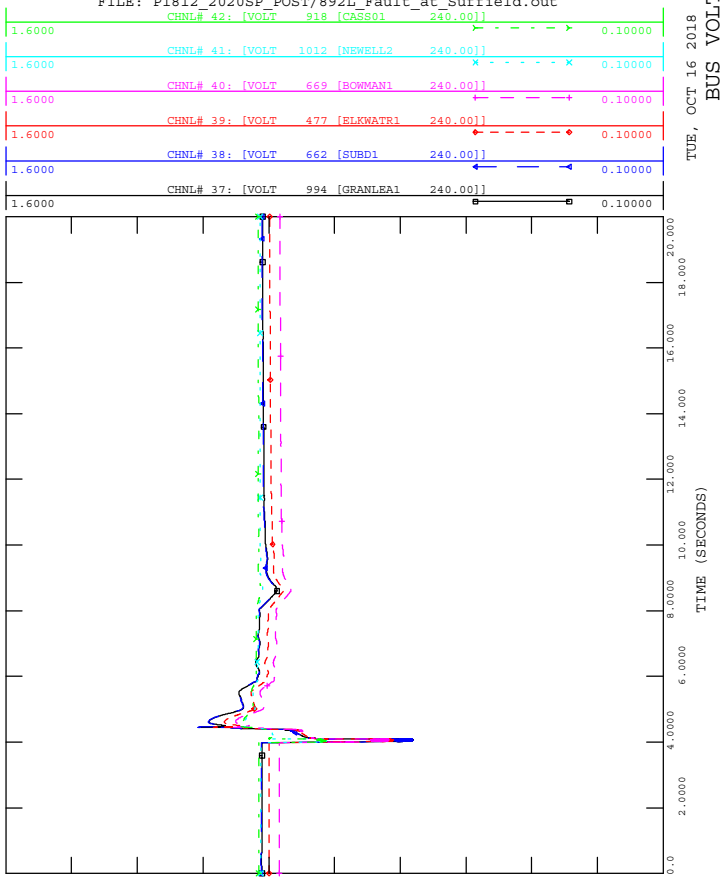
FILE: P1812_2020SP_POST/892L_Fault_at_Suffield.out



TUE, OCT 16 2018 10:15 LINE POWER

P1812_2020SP_POST
CATB -892L_FAULT_AT_SUFFIELD

FILE: P1812_2020SP_POST/892L_Fault_at_Suffield.out



TUE, OCT 16 2018 10:15 BUS VOLTAGE

P1812_2020SP_POST
CATB -892L_FAULT_AT_BOWMANTON

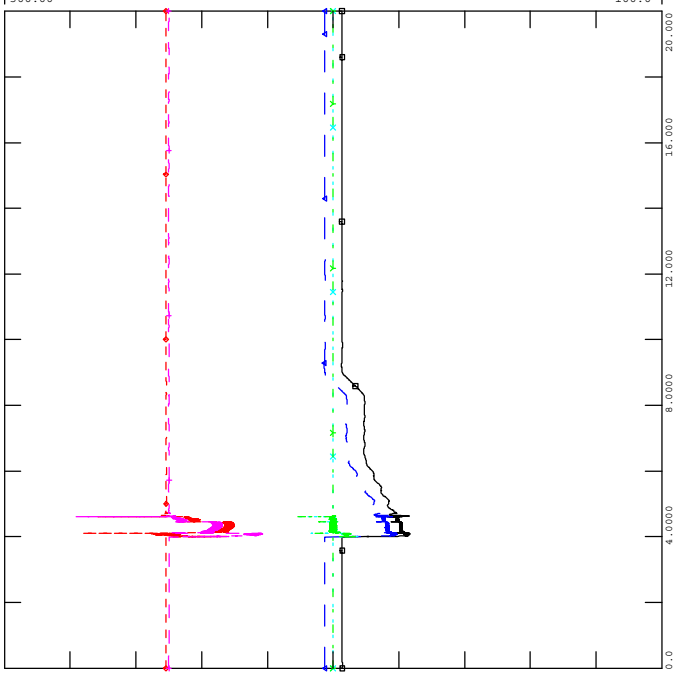
FILE: P1812_2020SP_POST/892L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15

MACHINE POWER

CHNL# 20: [POWR 62994[GRANLEA7 0.6900]G2]*100
CHNL# 19: [POWR 61994[GRANLEA6 0.6900]G1]*100
CHNL# 18: [POWR 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 17: [POWR 60990[SHAMROC5 0.6500]G1]*100
CHNL# 16: [POWR 5632[WR1LV16 0.6900]1]*100
CHNL# 15: [POWR 3462[WR2WF4 0.6900]1]*100

300.00 / -100.0



P1812_2020SP_POST
CATB -892L_FAULT_AT_BOWMANTON

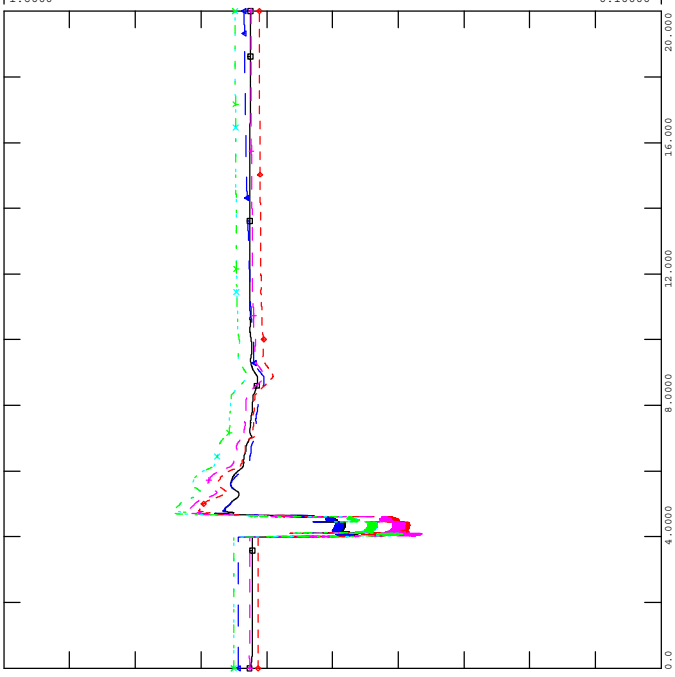
FILE: P1812_2020SP_POST/892L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15

MACHINE VOLTAGE

CHNL# 36: [VOLT 62994 [GRANLEA7 0.6900]]
CHNL# 35: [VOLT 61994 [GRANLEA6 0.6900]]
CHNL# 34: [VOLT 60641 [FORTYMILE1 0.6900]]
CHNL# 33: [VOLT 60990 [SHAMROC5 0.6500]]
CHNL# 32: [VOLT 5632 [WR1LV16 0.6900]]
CHNL# 31: [VOLT 3462 [WR2WF4 0.6900]]

1.6000 / 0.10000



P1812_2020SP_POST
CATB -892L_FAULT_AT_BOWMANTON

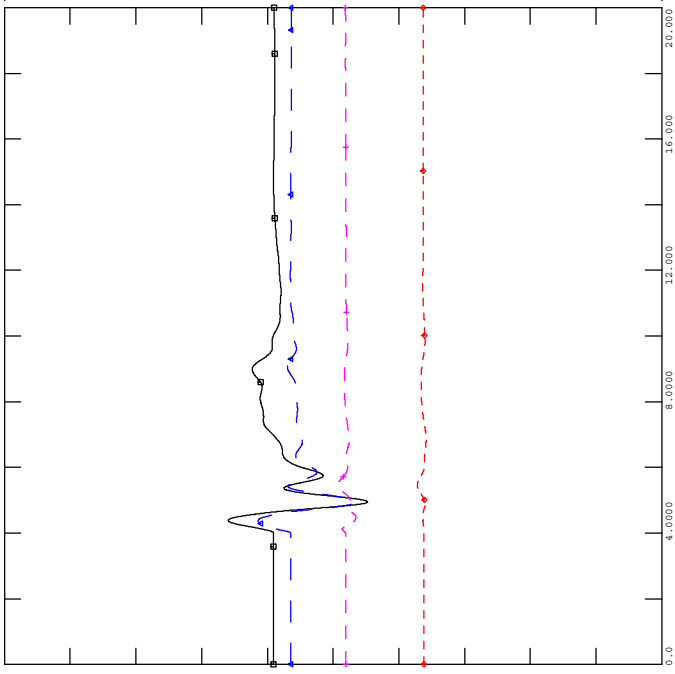
FILE: P1812_2020SP_POST/892L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15

MACHINE ANGEL

CHNL# 4: [ANGL 1482[SHEER 1 19.000]1]
CHNL# 3: [ANGL 773[SECST 20.000]1]
CHNL# 2: [ANGL 713[CMH 14 13.800]14]
CHNL# 1: [ANGL 667[CANCARB9 13.800]1]

100.00 / -100.0



P1812_2020SP_POST
CATB -892L_FAULT_AT_BOWMANTON

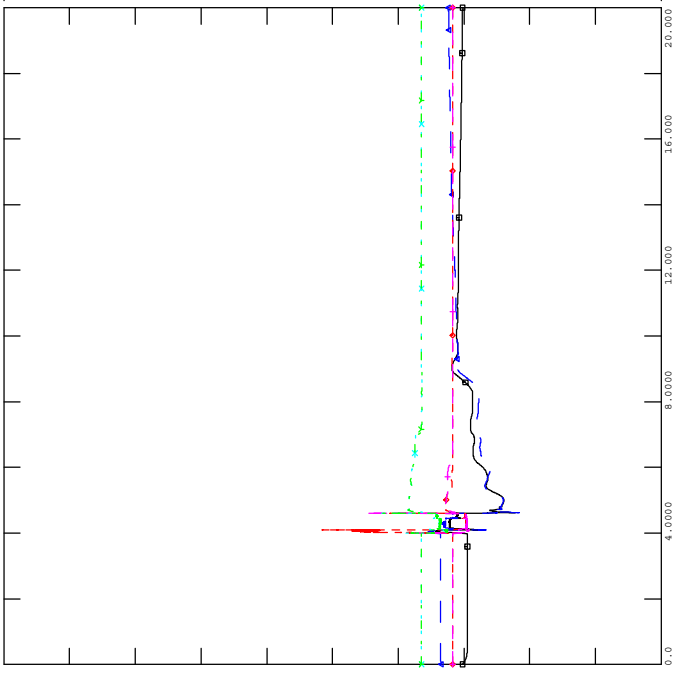
FILE: P1812_2020SP_POST/892L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15

MACHINE VAR

CHNL# 30: [VARS 62994[GRANLEA7 0.6900]G2]*100
CHNL# 29: [VARS 61994[GRANLEA6 0.6900]G1]*100
CHNL# 28: [VARS 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 27: [VARS 60990[SHAMROC5 0.6500]G1]*100
CHNL# 26: [VARS 5632[WR1LV16 0.6900]1]*100
CHNL# 25: [VARS 3462[WR2WF4 0.6900]1]*100

300.00 / -100.0

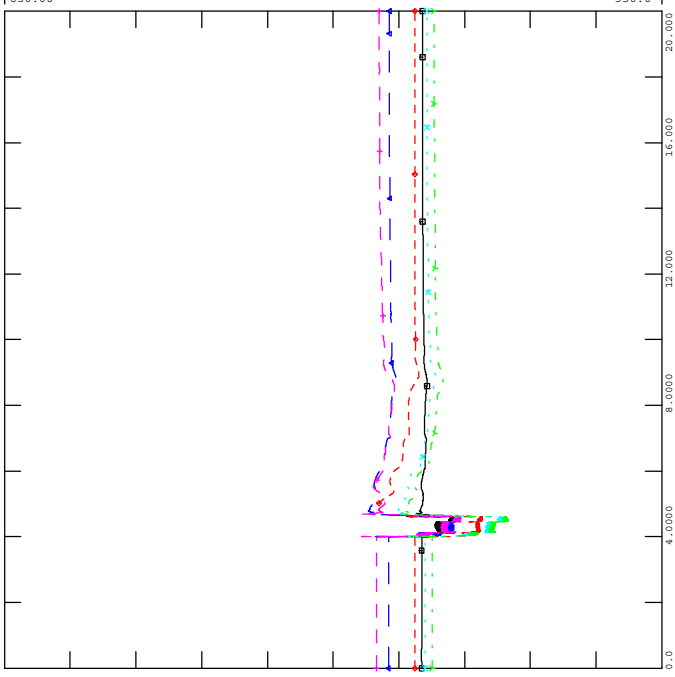


P1812_2020SP_POST
CATB -892L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/892L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15 LINE VAR

CHNL# 59: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 57: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 55: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 53: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 51: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 49: [VARS 662 TO 720 CKT '64'] 650.00 -350.0

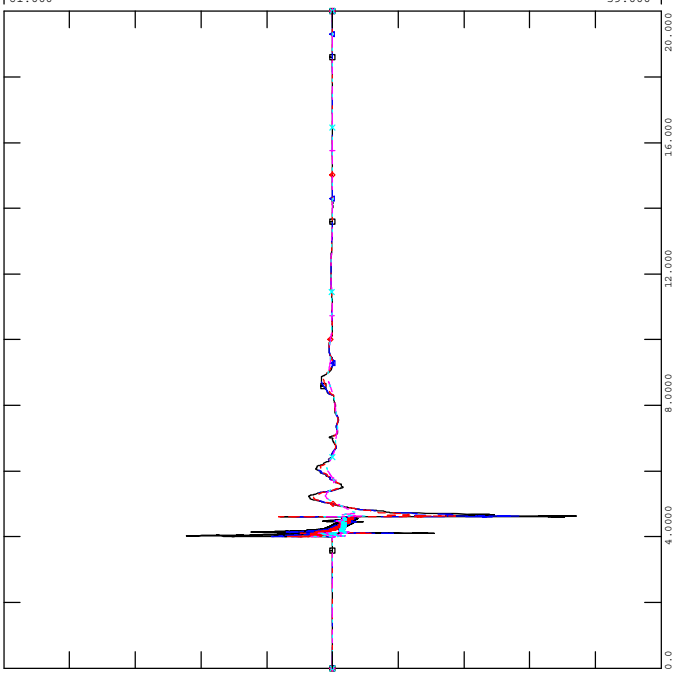


P1812_2020SP_POST
CATB -892L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/892L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15 FREQUENCY

CHNL# 47: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000

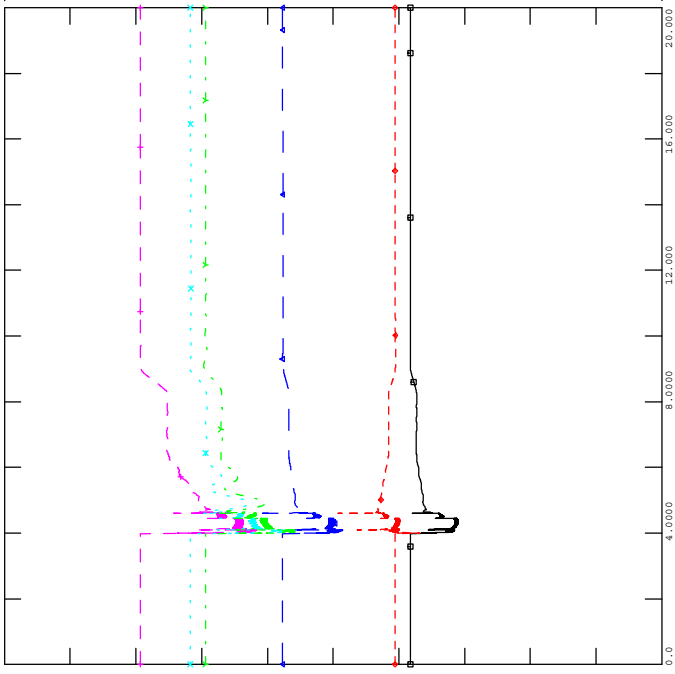


P1812_2020SP_POST
CATB -892L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/892L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15 LINE POWER

CHNL# 58: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 56: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 54: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 52: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 50: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 48: [POWR 662 TO 720 CKT '64'] 800.00 -200.0

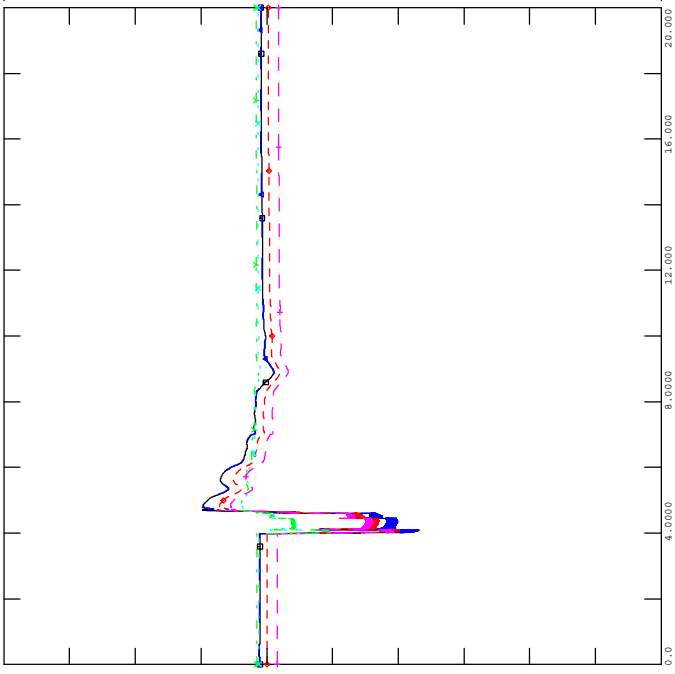


P1812_2020SP_POST
CATB -892L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/892L_Fault_at_Bowmanton.out

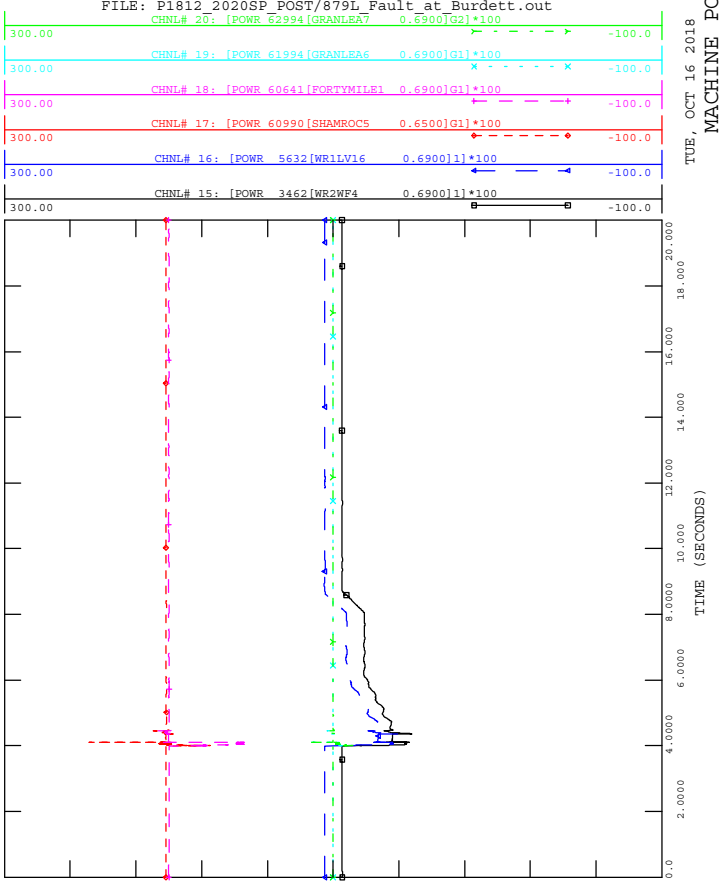
TUE, OCT 16 2018 10:15 BUS VOLTAGE

CHNL# 42: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 41: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 40: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 39: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 38: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 37: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000



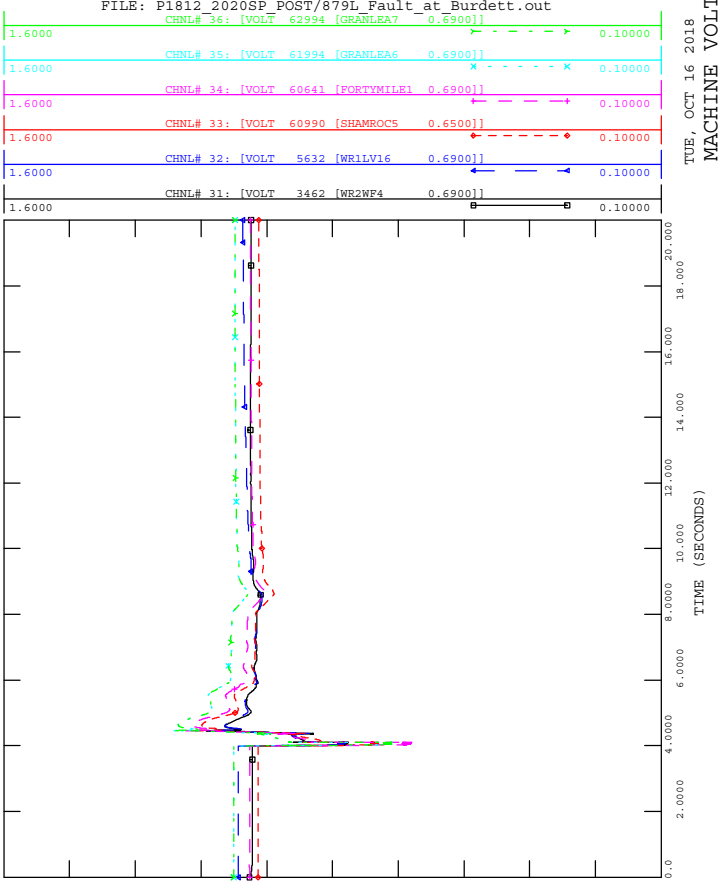
P1812_2020SP_POST
CATB -879L_FAULT_AT_BURDETT

FILE: P1812_2020SP_POST/879L_Fault_at_Burdett.out



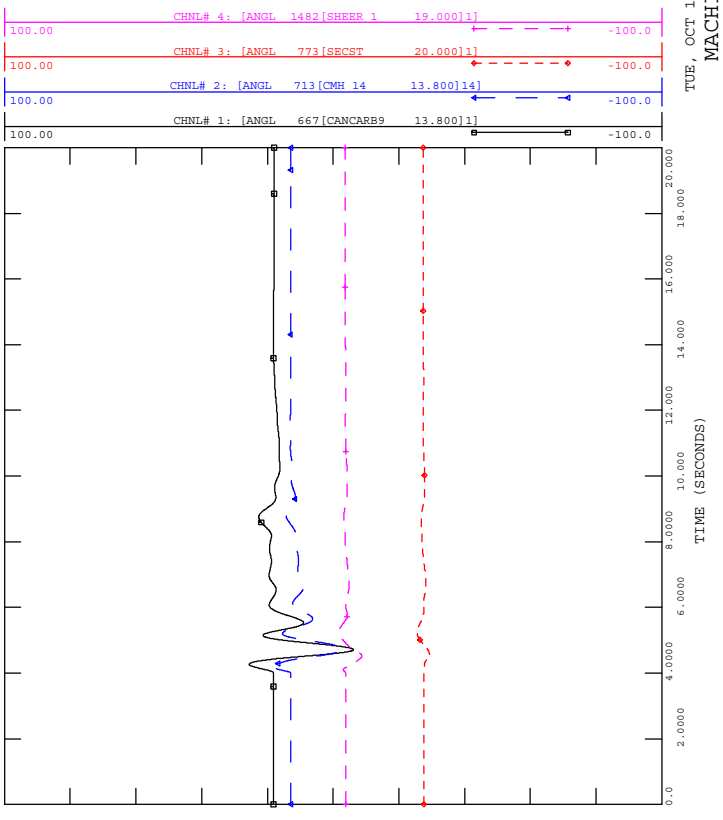
P1812_2020SP_POST
CATB -879L_FAULT_AT_BURDETT

FILE: P1812_2020SP_POST/879L_Fault_at_Burdett.out



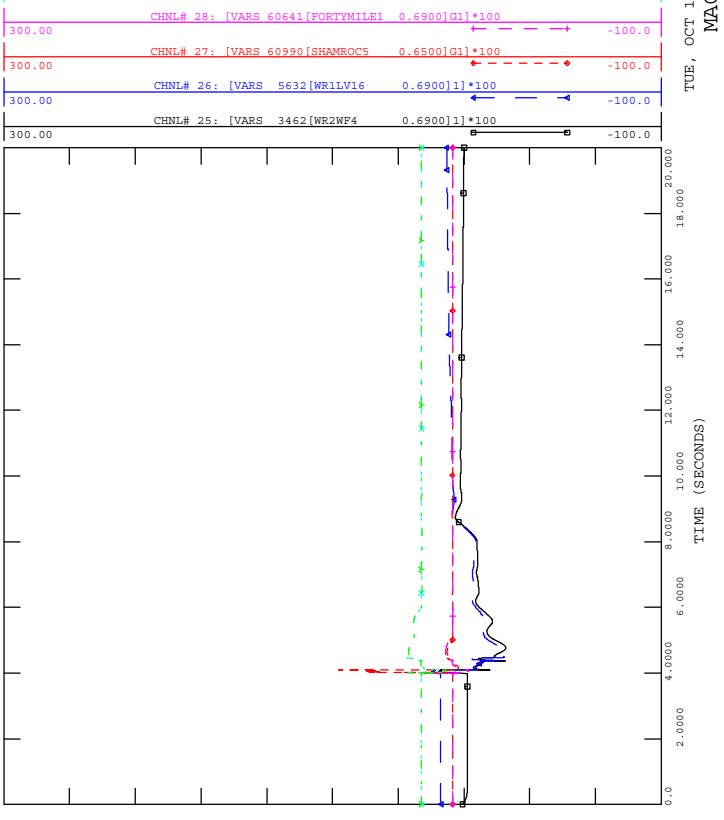
P1812_2020SP_POST
CATB -879L_FAULT_AT_BURDETT

FILE: P1812_2020SP_POST/879L_Fault_at_Burdett.out



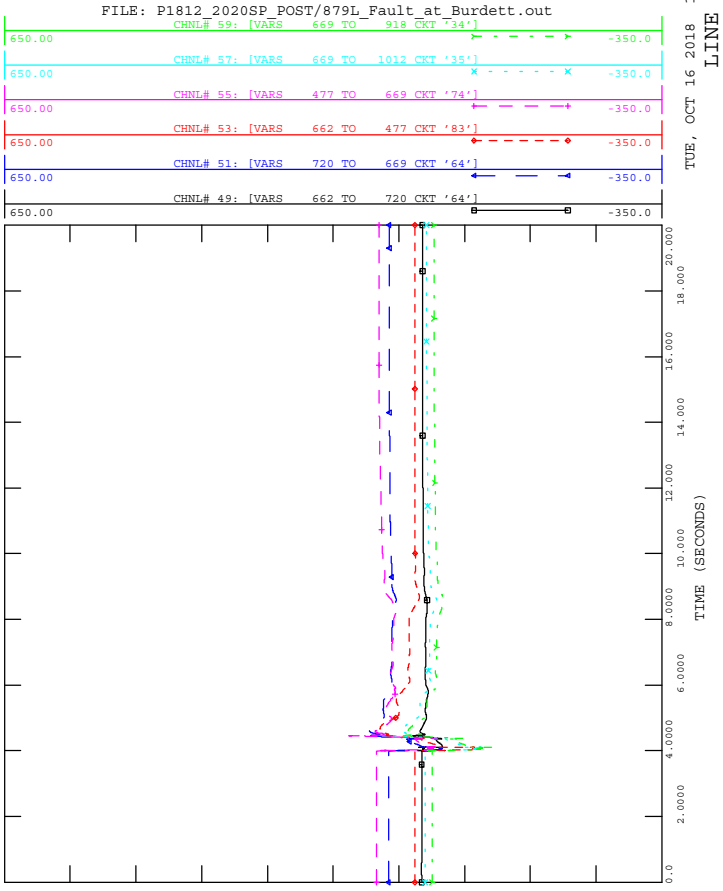
P1812_2020SP_POST
CATB -879L_FAULT_AT_BURDETT

FILE: P1812_2020SP_POST/879L_Fault_at_Burdett.out



P1812_2020SP_POST
CATB -879L_FAULT_AT_BURDETT

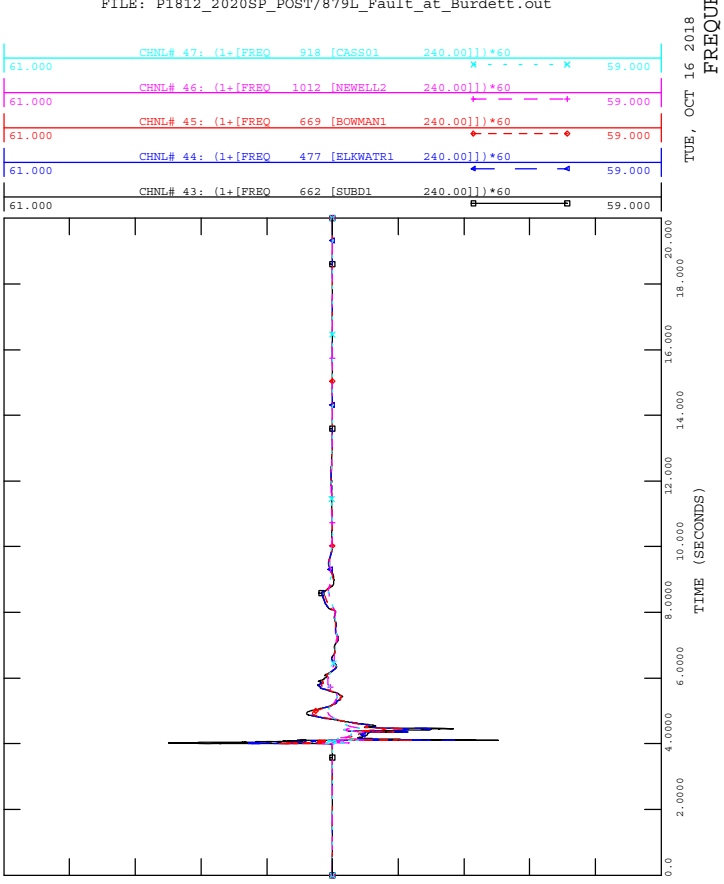
FILE: P1812_2020SP_POST/879L_Fault_at_Burdett.out



TUE, OCT 16 2018 10:15 LINE VAR

P1812_2020SP_POST
CATB -879L_FAULT_AT_BURDETT

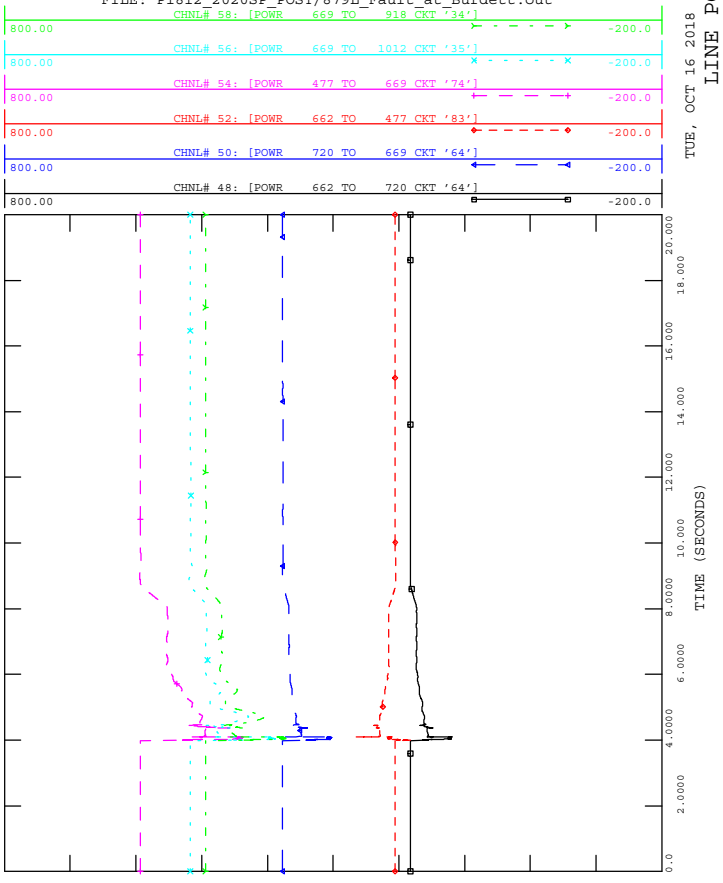
FILE: P1812_2020SP_POST/879L_Fault_at_Burdett.out



TUE, OCT 16 2018 10:15 FREQUENCY

P1812_2020SP_POST
CATB -879L_FAULT_AT_BURDETT

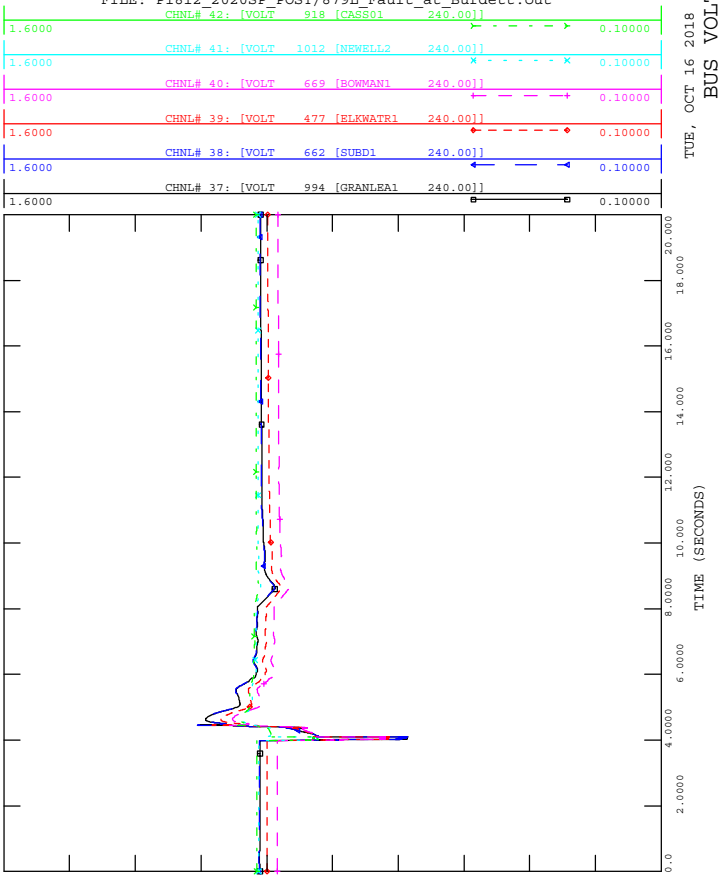
FILE: P1812_2020SP_POST/879L_Fault_at_Burdett.out



TUE, OCT 16 2018 10:15 LINE POWER

P1812_2020SP_POST
CATB -879L_FAULT_AT_BURDETT

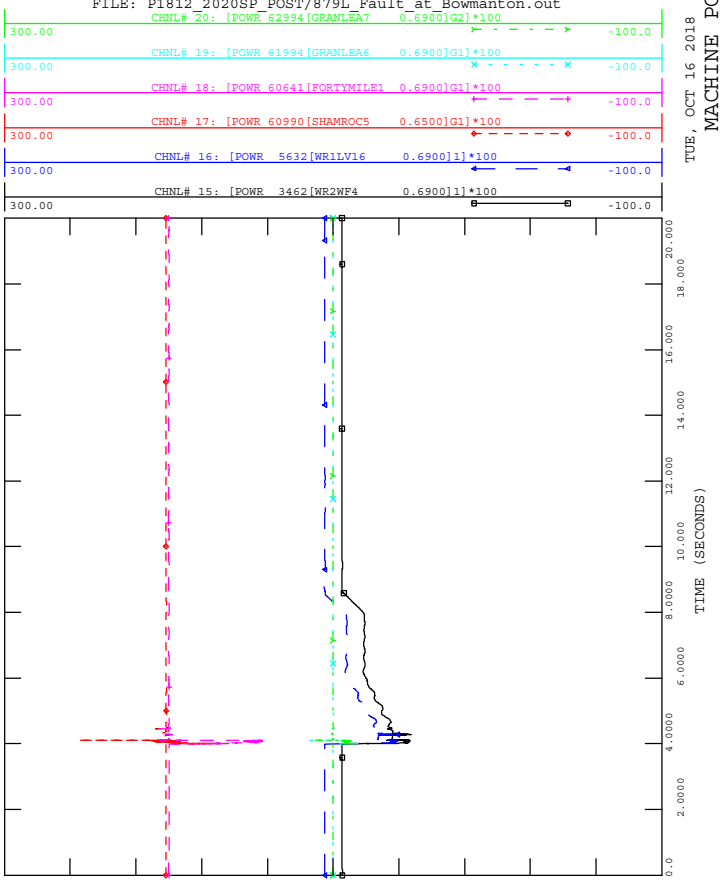
FILE: P1812_2020SP_POST/879L_Fault_at_Burdett.out



TUE, OCT 16 2018 10:15 BUS VOLTAGE

P1812_2020SP_POST
CATB -879L_FAULT_AT_BOWMANTON

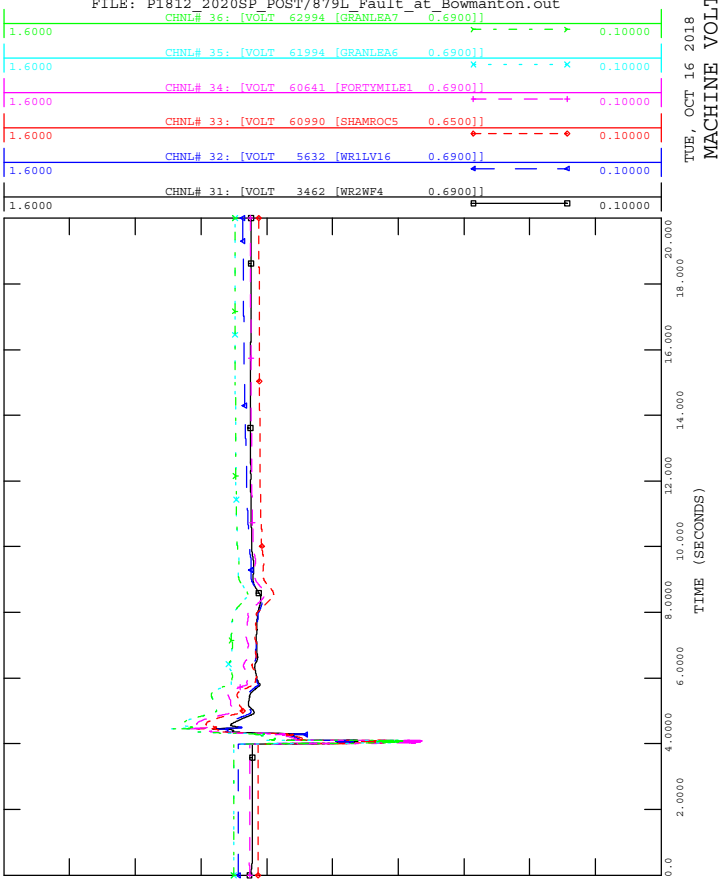
FILE: P1812_2020SP_POST/879L_Fault_at_Bowmanton.out



TUE, OCT 16 2018 10:15
MACHINE POWER

P1812_2020SP_POST
CATB -879L_FAULT_AT_BOWMANTON

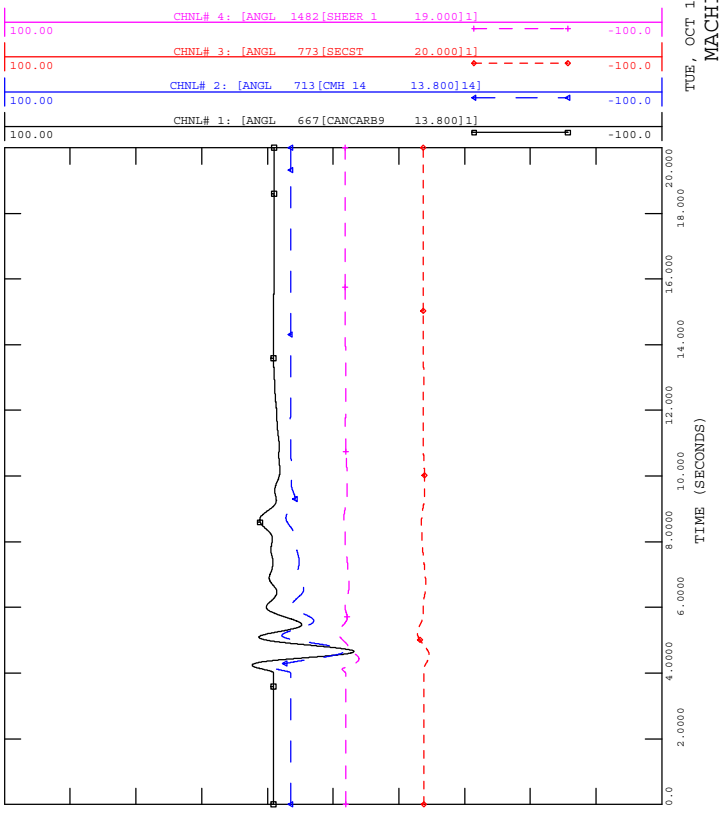
FILE: P1812_2020SP_POST/879L_Fault_at_Bowmanton.out



TUE, OCT 16 2018 10:15
MACHINE VOLTAGE

P1812_2020SP_POST
CATB -879L_FAULT_AT_BOWMANTON

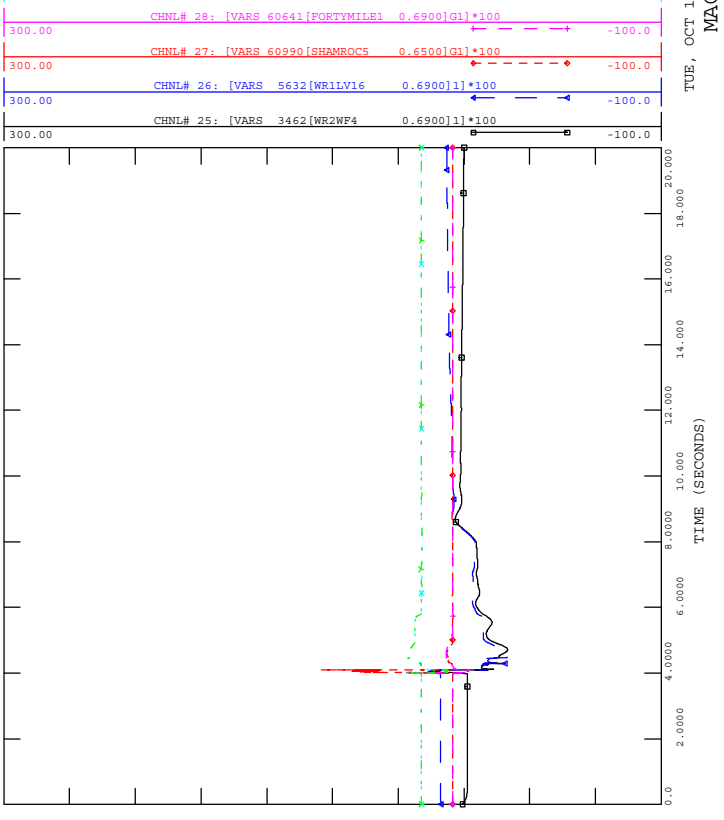
FILE: P1812_2020SP_POST/879L_Fault_at_Bowmanton.out



TUE, OCT 16 2018 10:15
MACHINE ANGEL

P1812_2020SP_POST
CATB -879L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/879L_Fault_at_Bowmanton.out



TUE, OCT 16 2018 10:15
MACHINE VAR

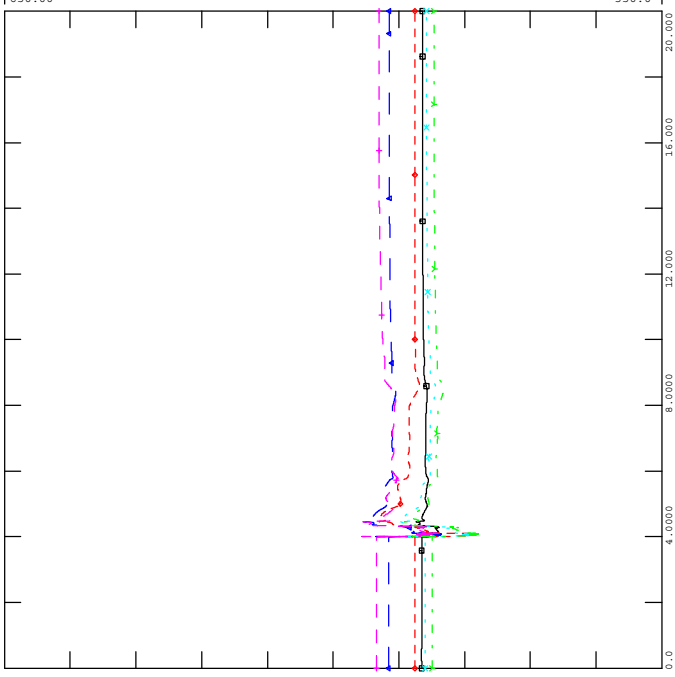
P1812_2020SP_POST
CATB -879L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/879L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15

LINE VAR

CHNL# 59: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 57: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 55: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 53: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 51: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 49: [VARS 662 TO 720 CKT '64'] 650.00 -350.0



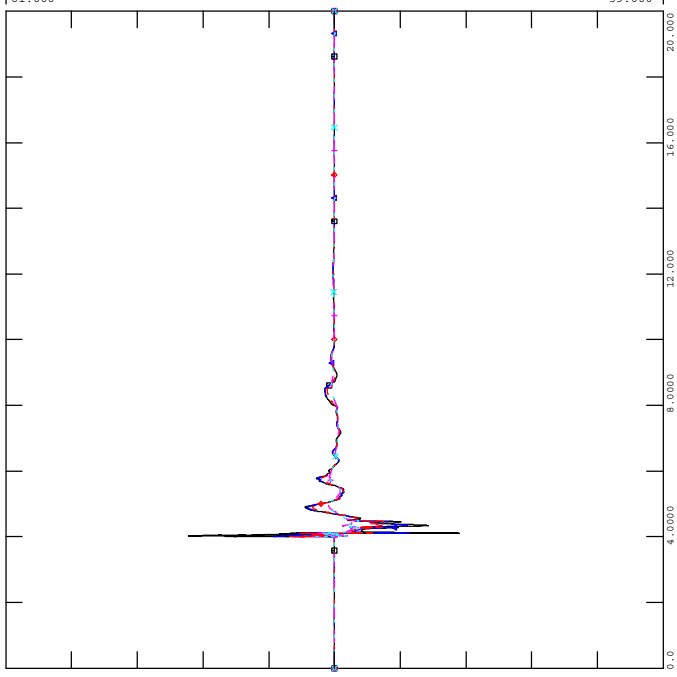
P1812_2020SP_POST
CATB -879L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/879L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15

FREQUENCY

CHNL# 47: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000



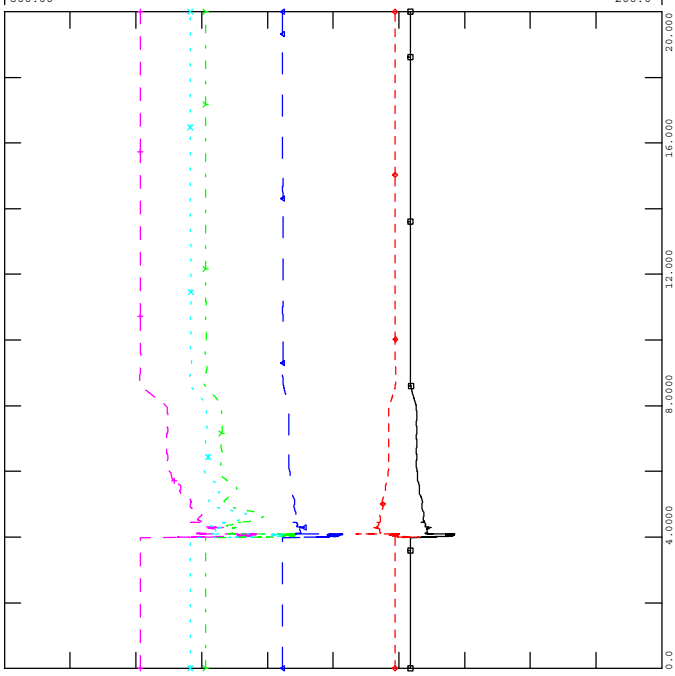
P1812_2020SP_POST
CATB -879L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/879L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15

LINE POWER

CHNL# 58: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 56: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 54: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 52: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 50: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 48: [POWR 662 TO 720 CKT '64'] 800.00 -200.0



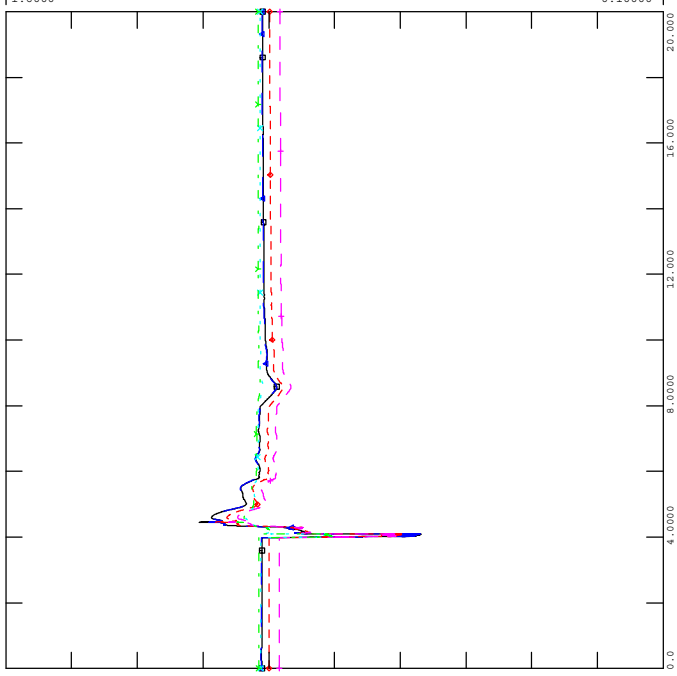
P1812_2020SP_POST
CATB -879L_FAULT_AT_BOWMANTON

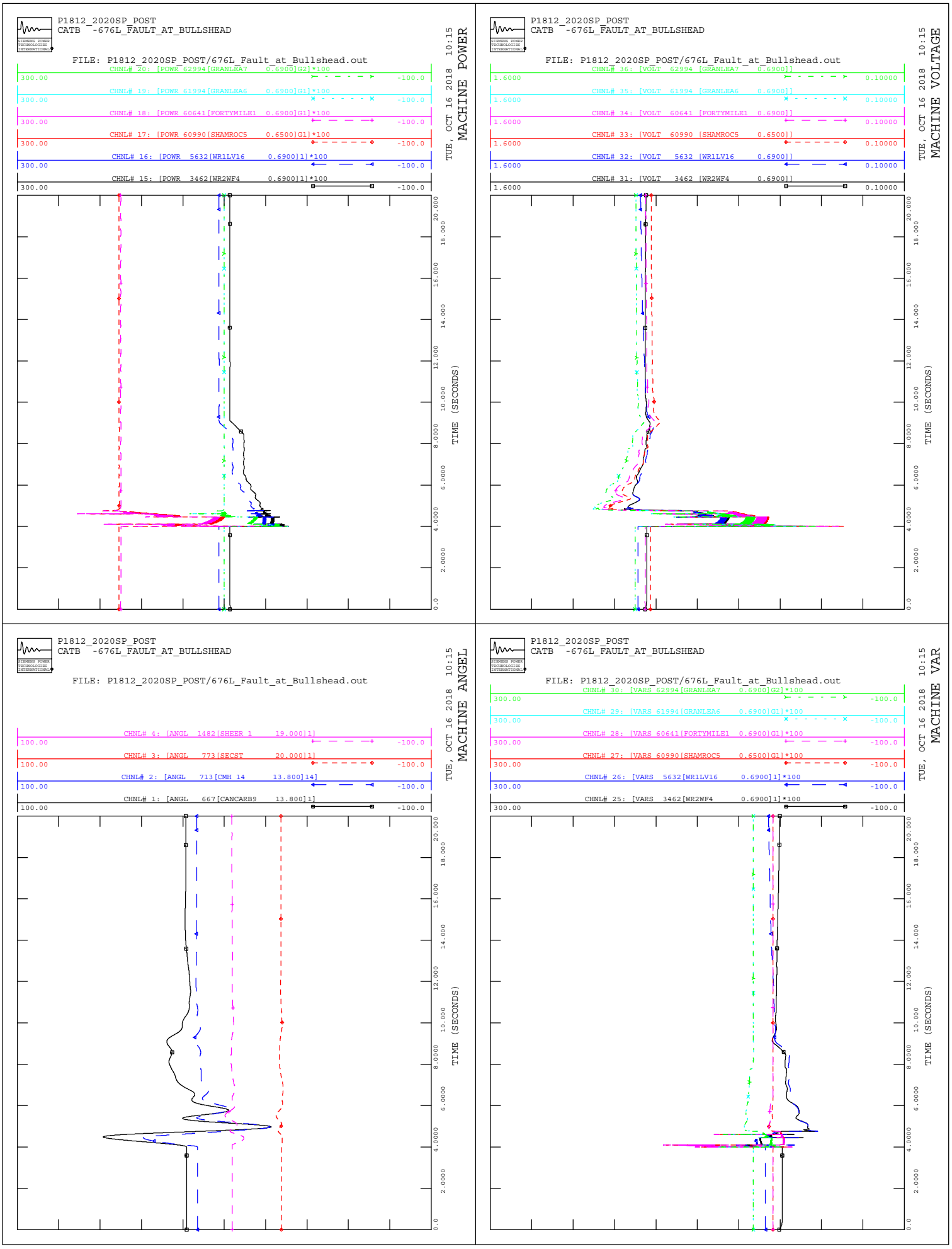
FILE: P1812_2020SP_POST/879L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15

BUS VOLTAGE

CHNL# 42: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 41: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 40: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 39: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 38: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 37: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000



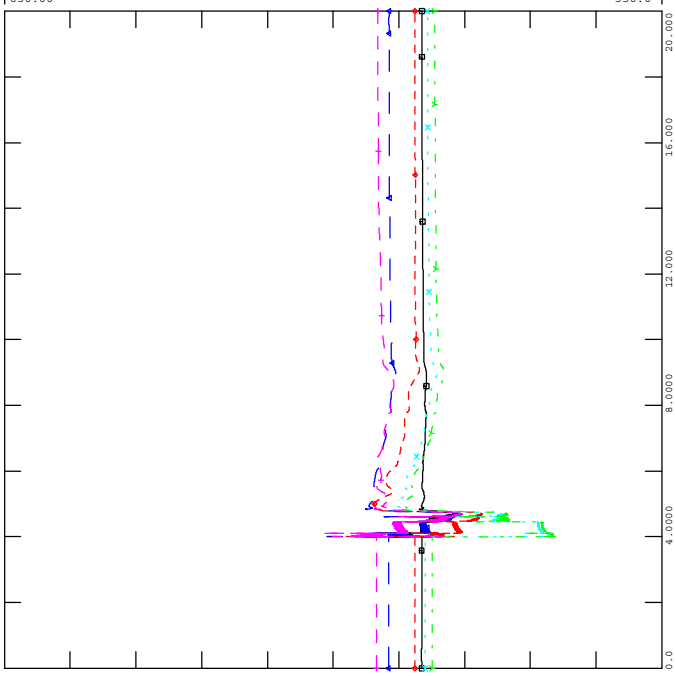

P1812_2020SP_POST
CATB -676L_FAULT_AT_BULLSHEAD
FILE: P1812_2020SP_POST/676L_Fault_at_Bullshead.out
CHNL# 20: [POWR 62994[GRANLEA7 0.6900]G2]*100
CHNL# 19: [POWR 61994[GRANLEA6 0.6900]G1]*100
CHNL# 18: [POWR 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 17: [POWR 60990[SHAMROC5 0.6500]G1]*100
CHNL# 16: [POWR 5632[WR1LV16 0.6900]1]*100
CHNL# 15: [POWR 3462[WR2WF4 0.6900]1]*100
300.00
-100.0
TUE, OCT 16 2018 10:15
MACHINE POWER
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000
P1812_2020SP_POST
CATB -676L_FAULT_AT_BULLSHEAD
FILE: P1812_2020SP_POST/676L_Fault_at_Bullshead.out
CHNL# 36: [VOLT 62994 [GRANLEA7 0.6900]]
CHNL# 35: [VOLT 61994 [GRANLEA6 0.6900]]
CHNL# 34: [VOLT 60641 [FORTYMILE1 0.6900]]
CHNL# 33: [VOLT 60990 [SHAMROC5 0.6500]]
CHNL# 32: [VOLT 5632 [WR1LV16 0.6900]]
CHNL# 31: [VOLT 3462 [WR2WF4 0.6900]]
1.6000
0.10000
TUE, OCT 16 2018 10:15
MACHINE VOLTAGE
TIME (SECONDS)
P1812_2020SP_POST
CATB -676L_FAULT_AT_BULLSHEAD
FILE: P1812_2020SP_POST/676L_Fault_at_Bullshead.out
CHNL# 4: [ANGL 1482[SHEER 1 19.000]1]
CHNL# 3: [ANGL 773[SECST 20.000]1]
CHNL# 2: [ANGL 713[CMH 14 13.800]14]
CHNL# 1: [ANGL 667[CANCARB9 13.800]1]
100.00
-100.0
TUE, OCT 16 2018 10:15
MACHINE ANGEL
TIME (SECONDS)
P1812_2020SP_POST
CATB -676L_FAULT_AT_BULLSHEAD
FILE: P1812_2020SP_POST/676L_Fault_at_Bullshead.out
CHNL# 30: [VARS 62994[GRANLEA7 0.6900]G2]*100
CHNL# 29: [VARS 61994[GRANLEA6 0.6900]G1]*100
CHNL# 28: [VARS 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 27: [VARS 60990[SHAMROC5 0.6500]G1]*100
CHNL# 26: [VARS 5632[WR1LV16 0.6900]1]*100
CHNL# 25: [VARS 3462[WR2WF4 0.6900]1]*100
300.00
-100.0
TUE, OCT 16 2018 10:15
MACHINE VAR
TIME (SECONDS)

P1812_2020SP_POST
CATB -676L_FAULT_AT_BULLSHEAD

FILE: P1812_2020SP_POST/676L_Fault_at_Bullshead.out

TUE, OCT 16 2018 10:15 LINE VAR

CHNL# 59: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 57: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 55: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 53: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 51: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 49: [VARS 662 TO 720 CKT '64'] 650.00 -350.0

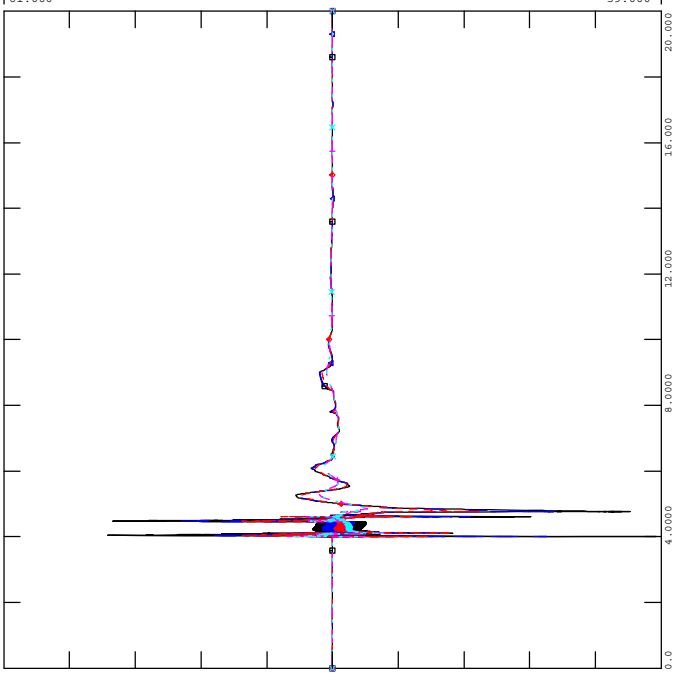


P1812_2020SP_POST
CATB -676L_FAULT_AT_BULLSHEAD

FILE: P1812_2020SP_POST/676L_Fault_at_Bullshead.out

TUE, OCT 16 2018 10:15 FREQUENCY

CHNL# 47: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000

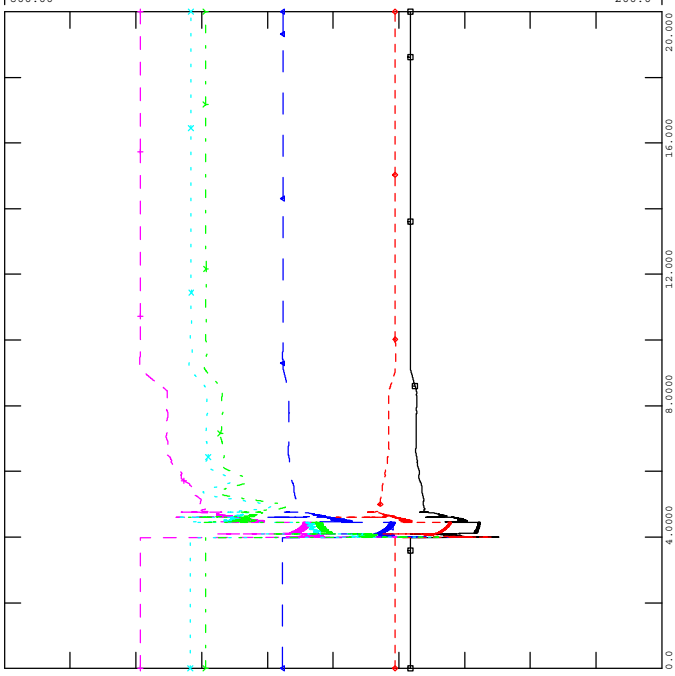


P1812_2020SP_POST
CATB -676L_FAULT_AT_BULLSHEAD

FILE: P1812_2020SP_POST/676L_Fault_at_Bullshead.out

TUE, OCT 16 2018 10:15 LINE POWER

CHNL# 58: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 56: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 54: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 52: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 50: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 48: [POWR 662 TO 720 CKT '64'] 800.00 -200.0

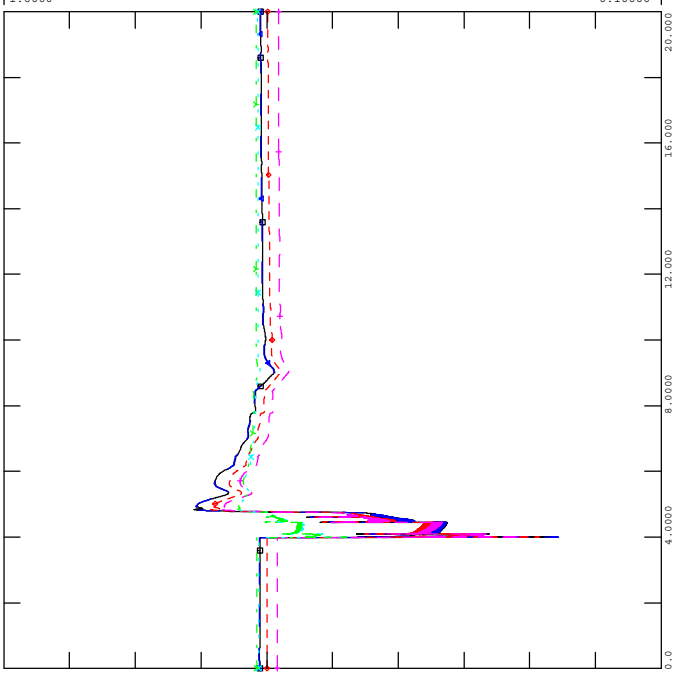


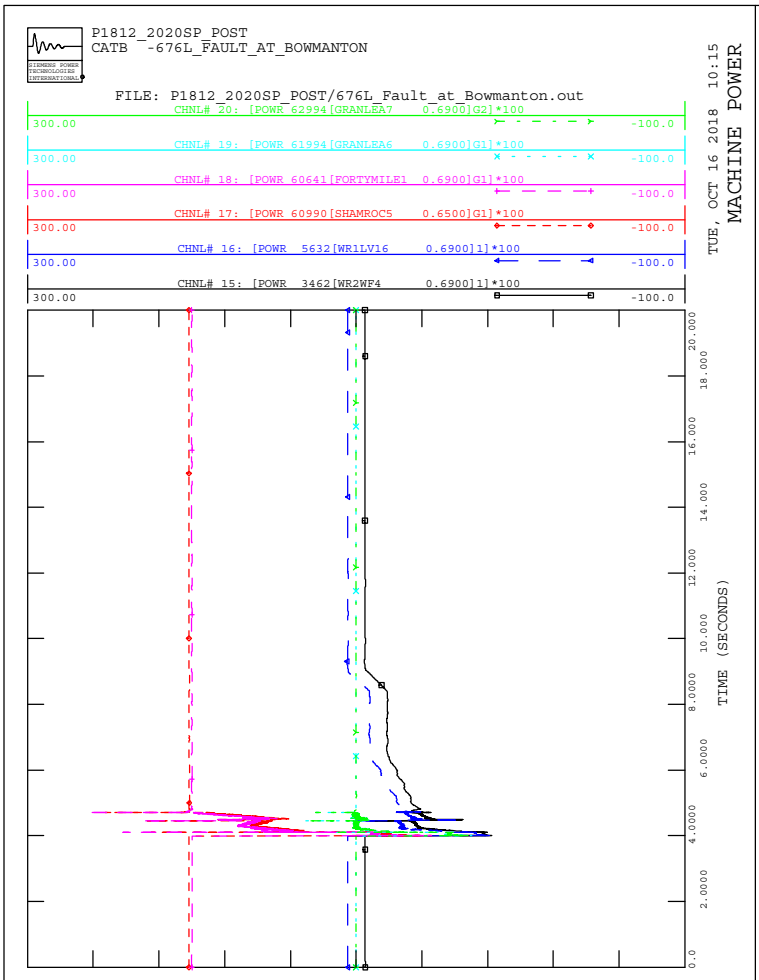
P1812_2020SP_POST
CATB -676L_FAULT_AT_BULLSHEAD

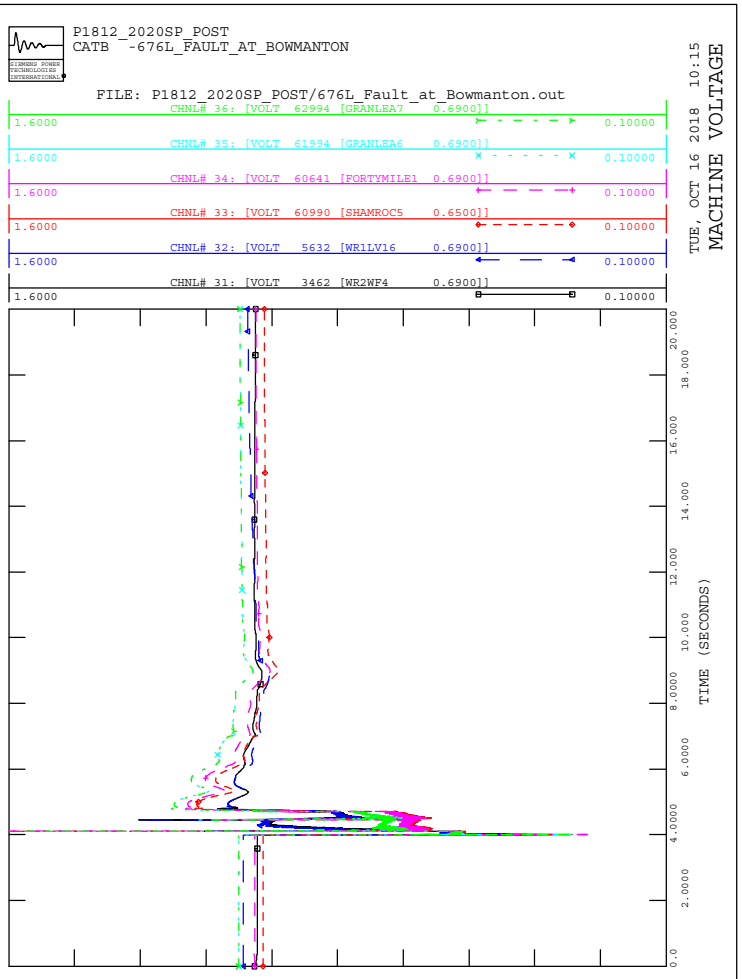
FILE: P1812_2020SP_POST/676L_Fault_at_Bullshead.out

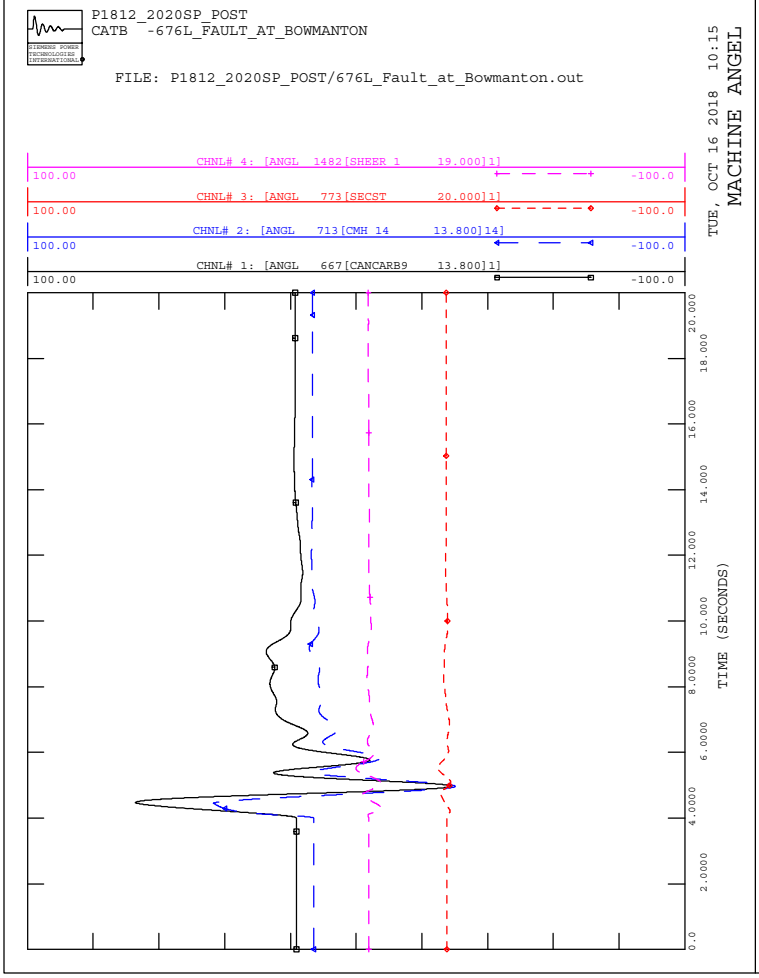
TUE, OCT 16 2018 10:15 BUS VOLTAGE

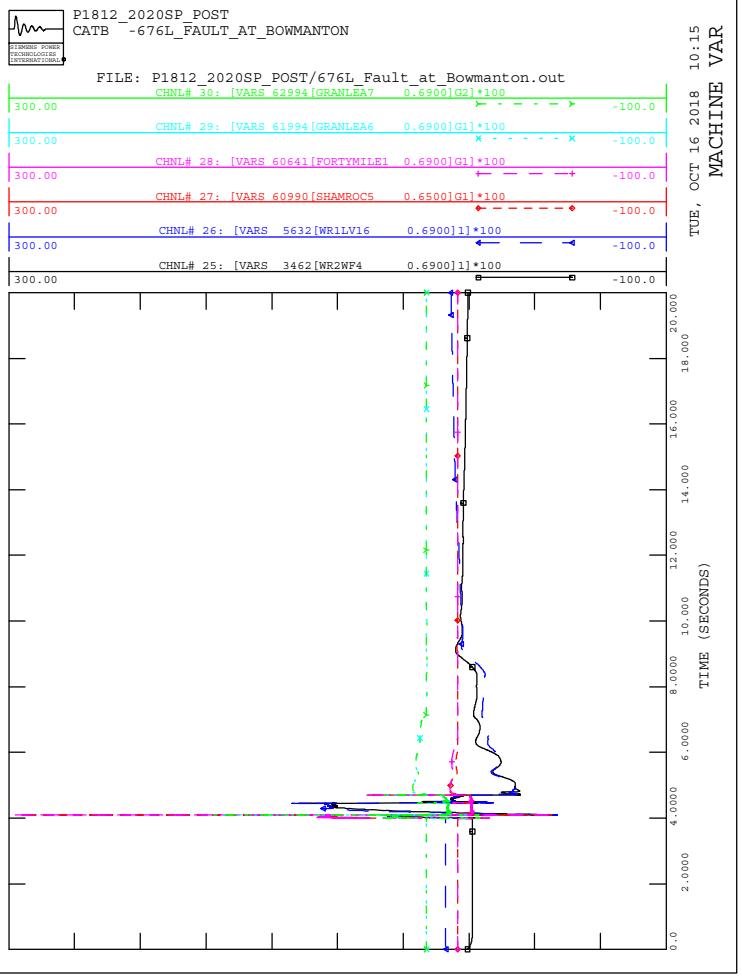
CHNL# 42: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 41: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 40: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 39: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 38: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 37: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000




P1812_2020SP_POST
CATB -676L_FAULT_AT_BOWMANTON
FILE: P1812_2020SP_POST/676L_Fault_at_Bowmanton.out
CHNL# 20: [POWR 62994[GRANLEA7 0.6900]G2]*100
CHNL# 19: [POWR 61994[GRANLEA6 0.6900]G1]*100
CHNL# 18: [POWR 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 17: [POWR 60990[SHAMROC5 0.6500]G1]*100
CHNL# 16: [POWR 5632[WR1LV16 0.6900]1]*100
CHNL# 15: [POWR 3462[WR2WF4 0.6900]1]*100
300.00
-100.0
TUE, OCT 16 2018 10:15
MACHINE POWER
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000


P1812_2020SP_POST
CATB -676L_FAULT_AT_BOWMANTON
FILE: P1812_2020SP_POST/676L_Fault_at_Bowmanton.out
CHNL# 36: [VOLT 62994 [GRANLEA7 0.6900]]
CHNL# 35: [VOLT 61994 [GRANLEA6 0.6900]]
CHNL# 34: [VOLT 60641 [FORTYMILE1 0.6900]]
CHNL# 33: [VOLT 60990 [SHAMROC5 0.6500]]
CHNL# 32: [VOLT 5632 [WR1LV16 0.6900]]
CHNL# 31: [VOLT 3462 [WR2WF4 0.6900]]
1.6000
0.10000
TUE, OCT 16 2018 10:15
MACHINE VOLTAGE
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000


P1812_2020SP_POST
CATB -676L_FAULT_AT_BOWMANTON
FILE: P1812_2020SP_POST/676L_Fault_at_Bowmanton.out
CHNL# 4: [ANGL 1482[SHEER 1 19.000]1]
CHNL# 3: [ANGL 773[SECST 20.000]1]
CHNL# 2: [ANGL 713[CMH 14 13.800]14]
CHNL# 1: [ANGL 667[CANCARB9 13.800]1]
100.00
-100.0
TUE, OCT 16 2018 10:15
MACHINE ANGEL
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000

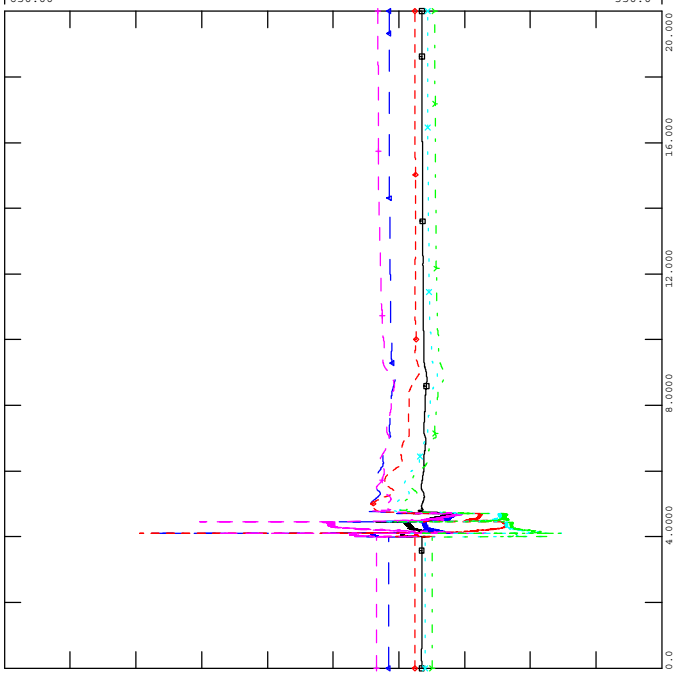

P1812_2020SP_POST
CATB -676L_FAULT_AT_BOWMANTON
FILE: P1812_2020SP_POST/676L_Fault_at_Bowmanton.out
CHNL# 30: [VARS 62994[GRANLEA7 0.6900]G2]*100
CHNL# 29: [VARS 61994[GRANLEA6 0.6900]G1]*100
CHNL# 28: [VARS 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 27: [VARS 60990[SHAMROC5 0.6500]G1]*100
CHNL# 26: [VARS 5632[WR1LV16 0.6900]1]*100
CHNL# 25: [VARS 3462[WR2WF4 0.6900]1]*100
300.00
-100.0
TUE, OCT 16 2018 10:15
MACHINE VAR
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000

P1812_2020SP_POST
CATB -676L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/676L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15 LINE VAR

CHNL# 59: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 57: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 55: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 53: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 51: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 49: [VARS 662 TO 720 CKT '64'] 650.00 -350.0

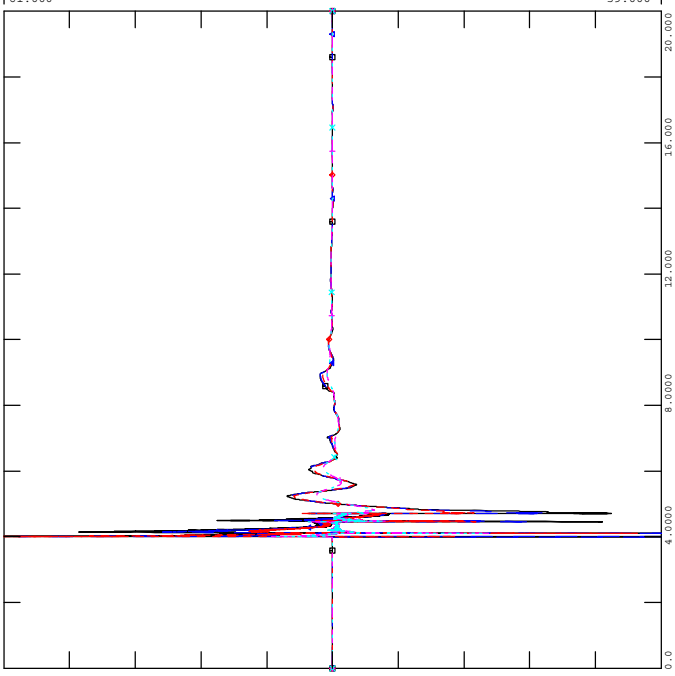


P1812_2020SP_POST
CATB -676L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/676L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15 FREQUENCY

CHNL# 47: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000

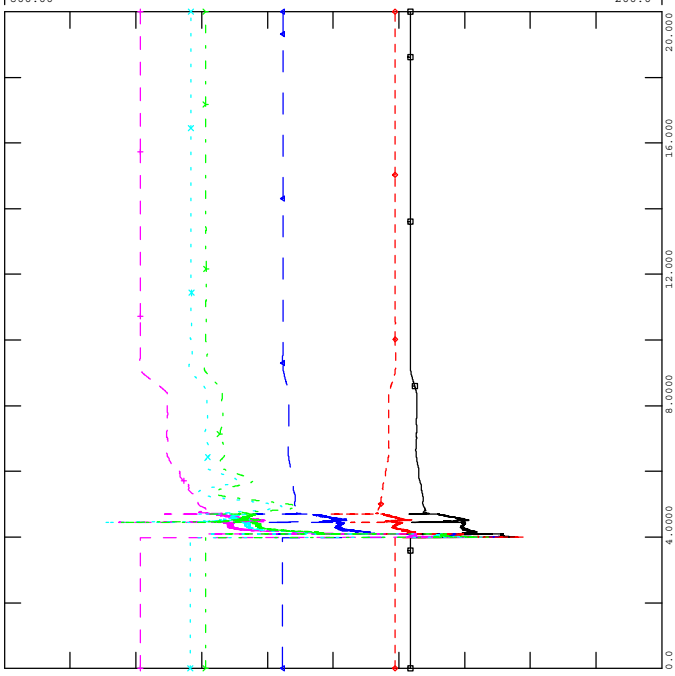


P1812_2020SP_POST
CATB -676L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/676L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15 LINE POWER

CHNL# 58: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 56: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 54: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 52: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 50: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 48: [POWR 662 TO 720 CKT '64'] 800.00 -200.0

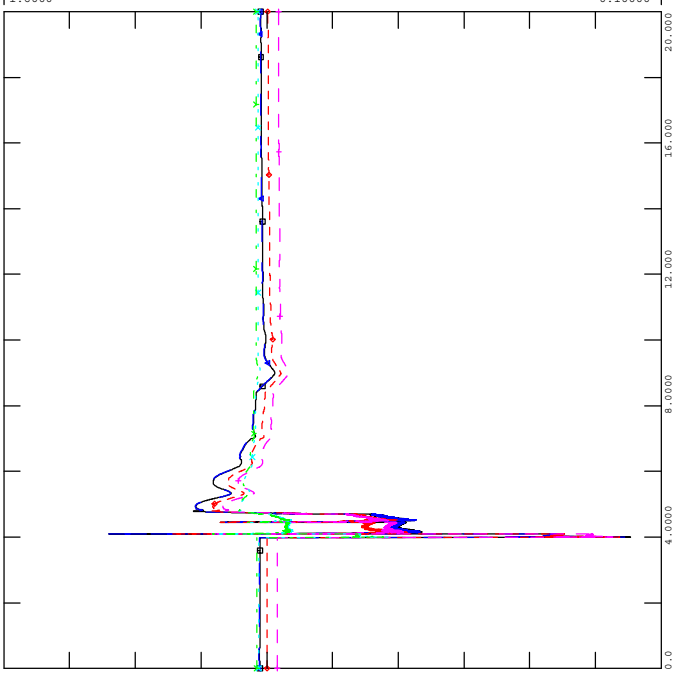


P1812_2020SP_POST
CATB -676L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/676L_Fault_at_Bowmanton.out

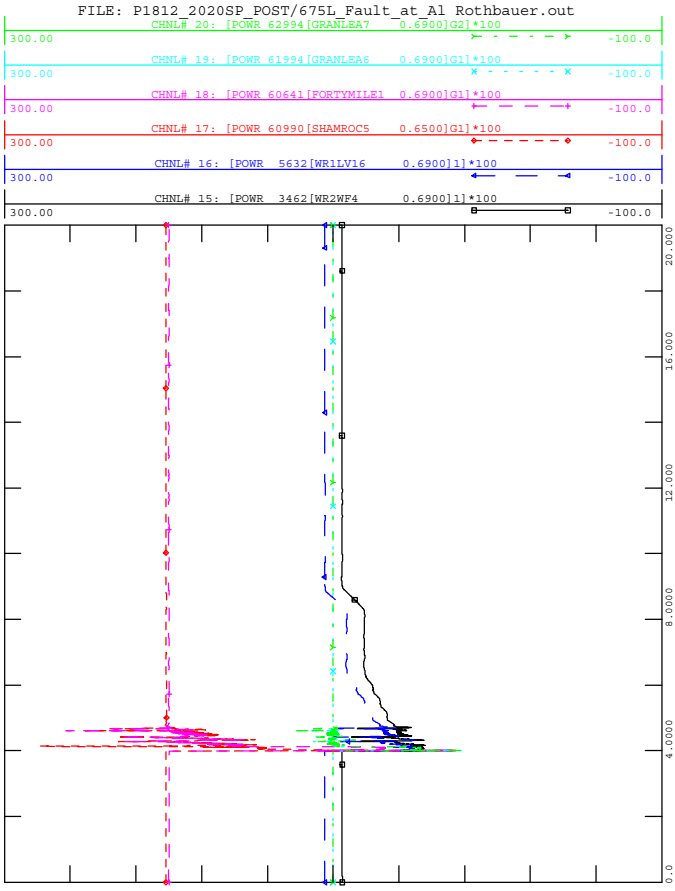
TUE, OCT 16 2018 10:15 BUS VOLTAGE

CHNL# 42: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 41: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 40: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 39: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 38: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 37: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000



P1812_2020SP_POST
CATB -675L_FAULT_AT_AL ROTHBAUER

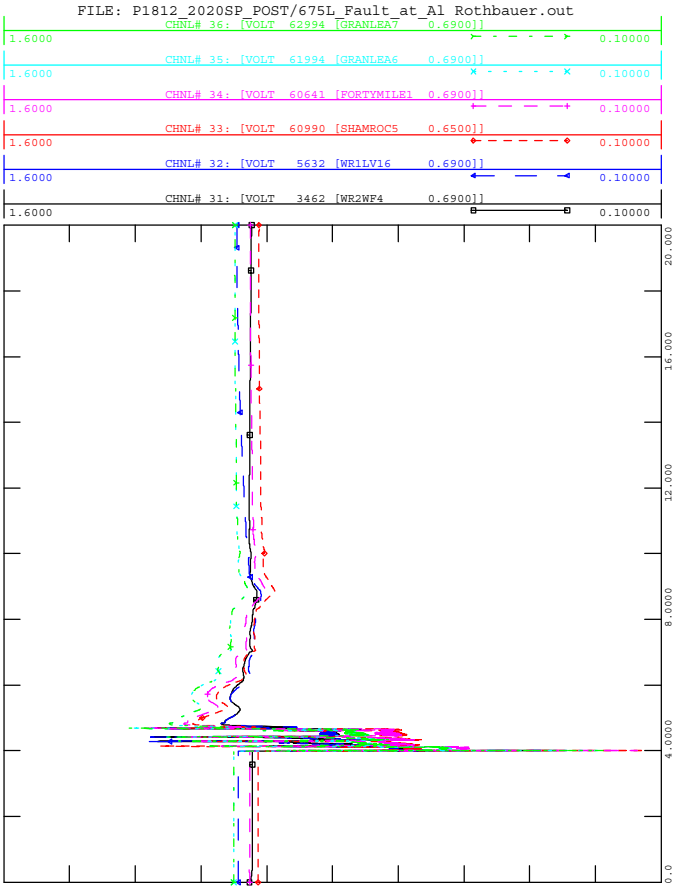
FILE: P1812_2020SP_POST/675L_Fault_at_Al Rothbauer.out



TUE, OCT 16 2018 10:15
MACHINE POWER

P1812_2020SP_POST
CATB -675L_FAULT_AT_AL ROTHBAUER

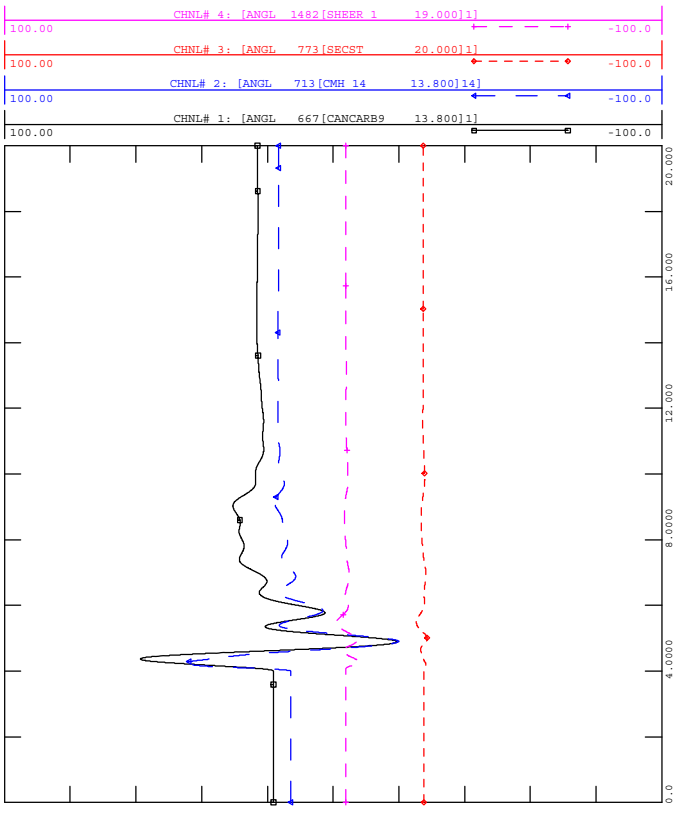
FILE: P1812_2020SP_POST/675L_Fault_at_Al Rothbauer.out



TUE, OCT 16 2018 10:15
MACHINE VOLTAGE

P1812_2020SP_POST
CATB -675L_FAULT_AT_AL ROTHBAUER

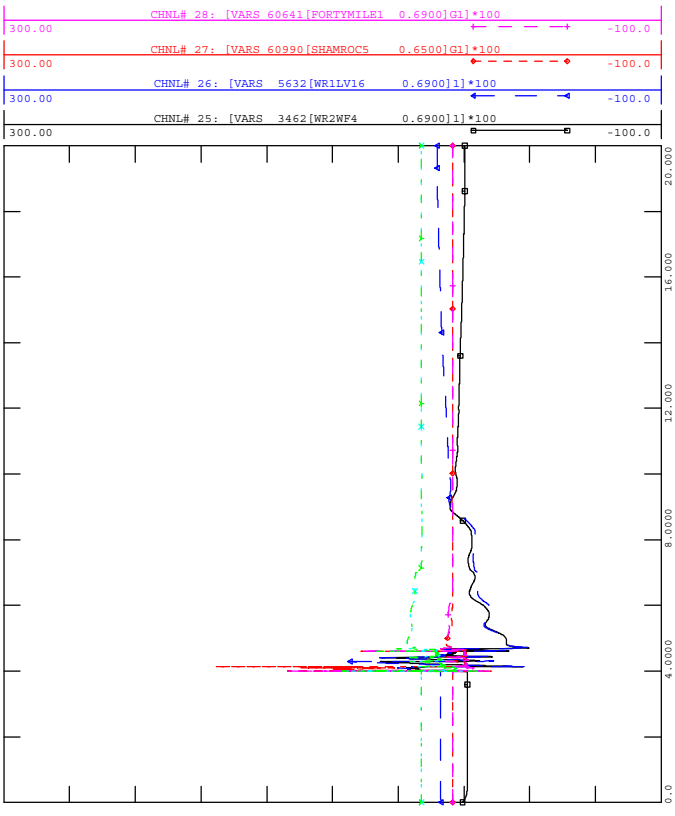
FILE: P1812_2020SP_POST/675L_Fault_at_Al Rothbauer.out



TUE, OCT 16 2018 10:15
MACHINE ANGEL

P1812_2020SP_POST
CATB -675L_FAULT_AT_AL ROTHBAUER

FILE: P1812_2020SP_POST/675L_Fault_at_Al Rothbauer.out



TUE, OCT 16 2018 10:15
MACHINE VAR

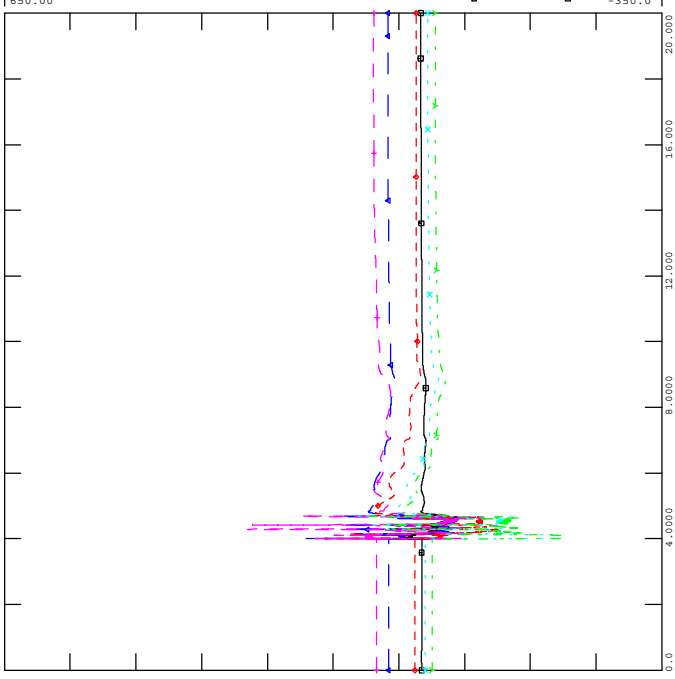
P1812_2020SP_POST
CATB -675L_FAULT_AT_AL ROTHBAUER

FILE: P1812_2020SP_POST/675L_Fault_at_Al Rothbauer.out

TUE, OCT 16 2018 10:15 LINE VAR

CHNL# 59: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 57: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 55: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 53: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 51: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 49: [VARS 662 TO 720 CKT '64'] 650.00 -350.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



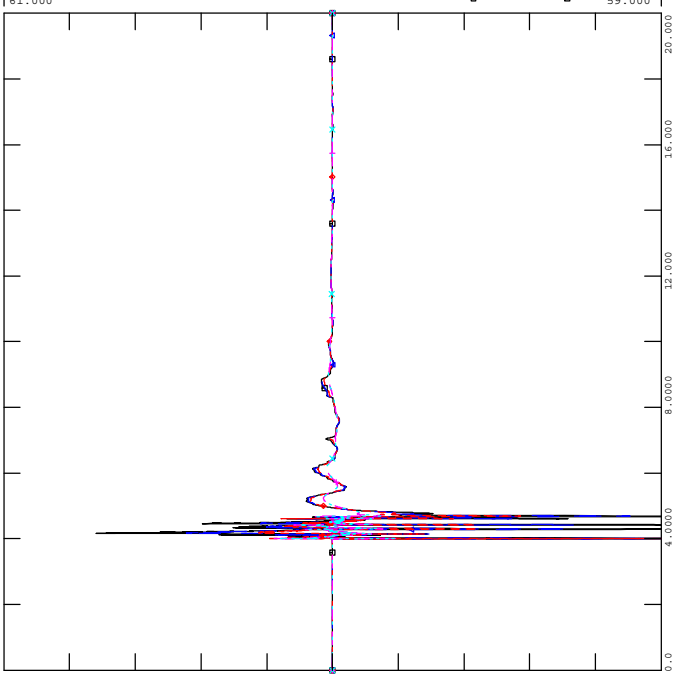
P1812_2020SP_POST
CATB -675L_FAULT_AT_AL ROTHBAUER

FILE: P1812_2020SP_POST/675L_Fault_at_Al Rothbauer.out

TUE, OCT 16 2018 10:15 FREQUENCY

CHNL# 47: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



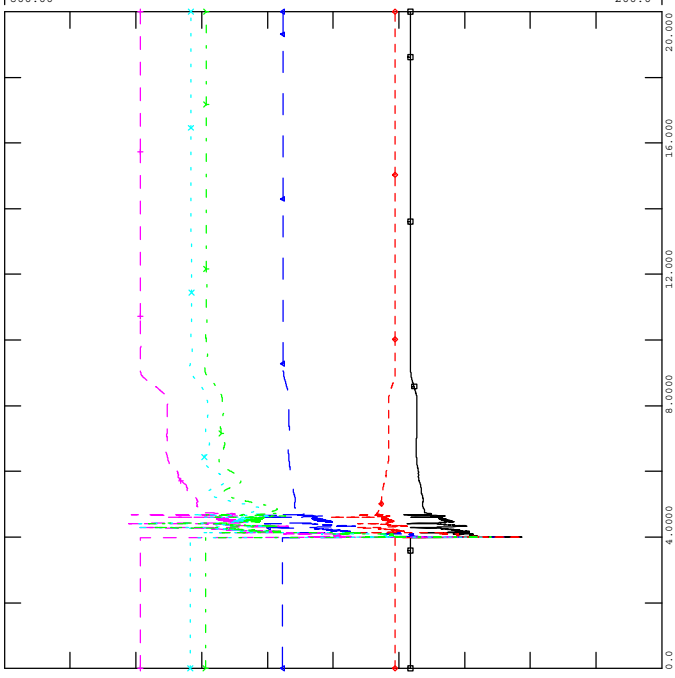
P1812_2020SP_POST
CATB -675L_FAULT_AT_AL ROTHBAUER

FILE: P1812_2020SP_POST/675L_Fault_at_Al Rothbauer.out

TUE, OCT 16 2018 10:15 LINE POWER

CHNL# 58: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 56: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 54: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 52: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 50: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 48: [POWR 662 TO 720 CKT '64'] 800.00 -200.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



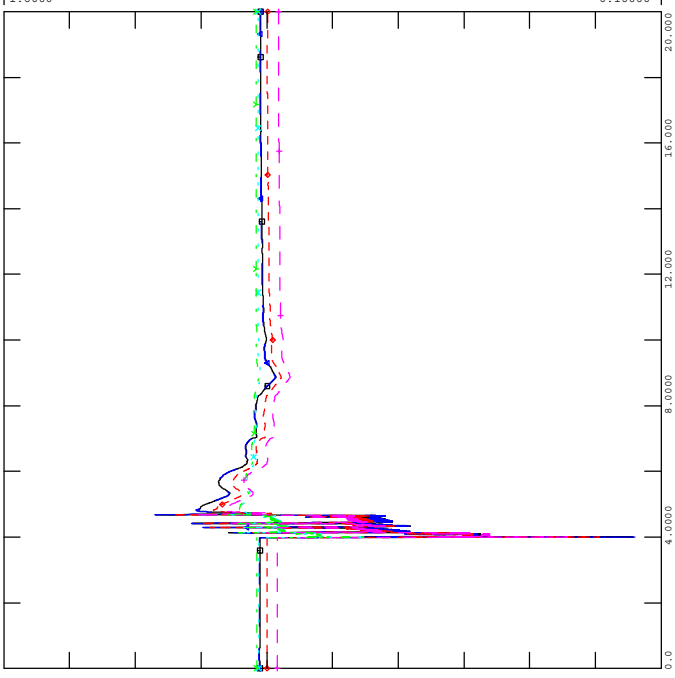
P1812_2020SP_POST
CATB -675L_FAULT_AT_AL ROTHBAUER

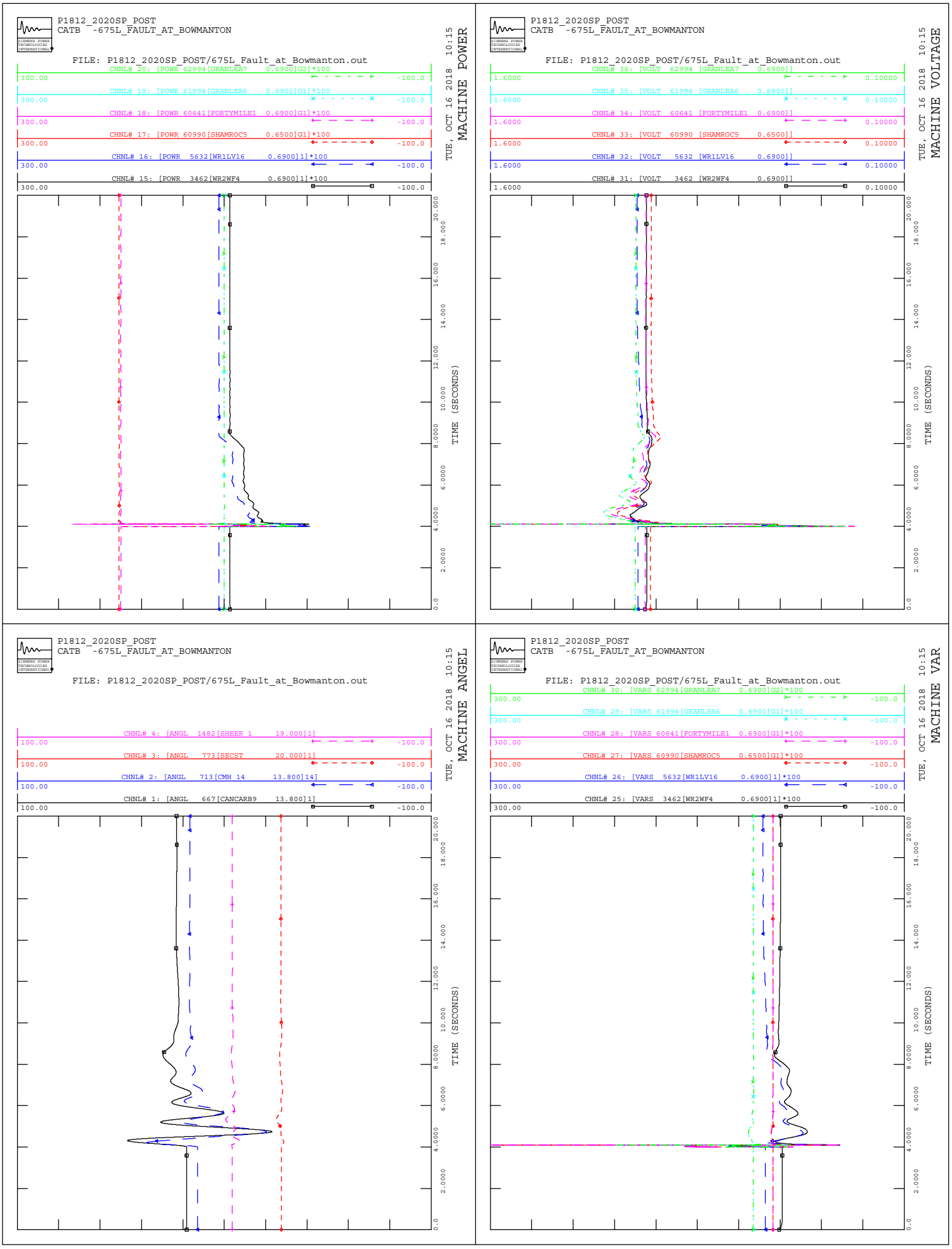
FILE: P1812_2020SP_POST/675L_Fault_at_Al Rothbauer.out

TUE, OCT 16 2018 10:15 BUS VOLTAGE

CHNL# 42: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 41: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 40: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 39: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 38: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 37: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



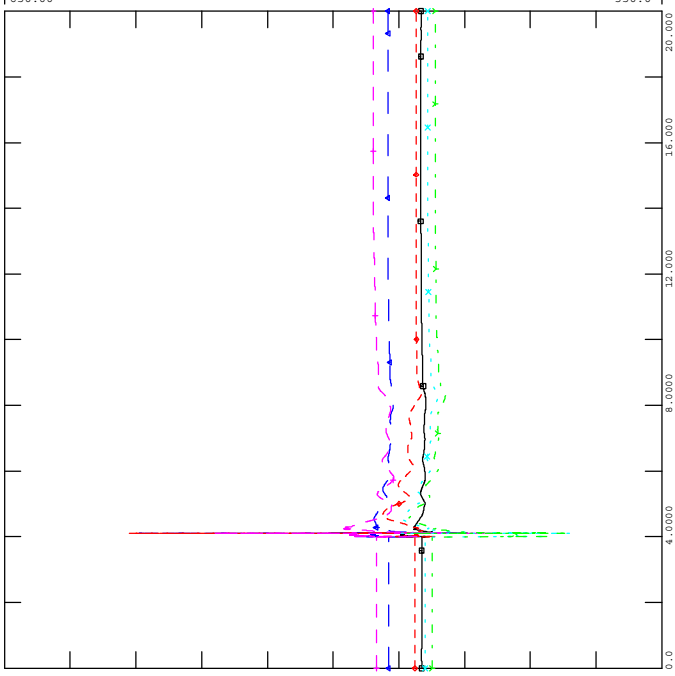

P1812_2020SP_POST
CATB -675L_FAULT_AT_BOWMANTON
FILE: P1812_2020SP_POST/675L_Fault_at_Bowmanton.out
CHNL# 20: [POWR 62994[GRANLEA7 0.6900]G2]*100
CHNL# 19: [POWR 61994[GRANLEA6 0.6900]G1]*100
CHNL# 18: [POWR 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 17: [POWR 60990[SHAMROC5 0.6500]G1]*100
CHNL# 16: [POWR 5632[WR1LV16 0.6900]1]*100
CHNL# 15: [POWR 3462[WR2WF4 0.6900]1]*100
300.00
-100.0
TUE, OCT 16 2018 10:15
MACHINE POWER
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000
P1812_2020SP_POST
CATB -675L_FAULT_AT_BOWMANTON
FILE: P1812_2020SP_POST/675L_Fault_at_Bowmanton.out
CHNL# 36: [VOLT 62994 [GRANLEA7 0.6900]]
CHNL# 35: [VOLT 61994 [GRANLEA6 0.6900]]
CHNL# 34: [VOLT 60641 [FORTYMILE1 0.6900]]
CHNL# 33: [VOLT 60990 [SHAMROC5 0.6500]]
CHNL# 32: [VOLT 5632 [WR1LV16 0.6900]]
CHNL# 31: [VOLT 3462 [WR2WF4 0.6900]]
1.6000
0.10000
TUE, OCT 16 2018 10:15
MACHINE VOLTAGE
TIME (SECONDS)
P1812_2020SP_POST
CATB -675L_FAULT_AT_BOWMANTON
FILE: P1812_2020SP_POST/675L_Fault_at_Bowmanton.out
CHNL# 4: [ANGL 1482[SHEER 1 19.000]1]
CHNL# 3: [ANGL 773[SECST 20.000]1]
CHNL# 2: [ANGL 713[CMH 14 13.800]14]
CHNL# 1: [ANGL 667[CANCARB9 13.800]1]
100.00
-100.0
TUE, OCT 16 2018 10:15
MACHINE ANGEL
TIME (SECONDS)
P1812_2020SP_POST
CATB -675L_FAULT_AT_BOWMANTON
FILE: P1812_2020SP_POST/675L_Fault_at_Bowmanton.out
CHNL# 30: [VARS 62994[GRANLEA7 0.6900]G2]*100
CHNL# 29: [VARS 61994[GRANLEA6 0.6900]G1]*100
CHNL# 28: [VARS 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 27: [VARS 60990[SHAMROC5 0.6500]G1]*100
CHNL# 26: [VARS 5632[WR1LV16 0.6900]1]*100
CHNL# 25: [VARS 3462[WR2WF4 0.6900]1]*100
300.00
-100.0
TUE, OCT 16 2018 10:15
MACHINE VAR
TIME (SECONDS)

P1812_2020SP_POST
CATB -675L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/675L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15 LINE VAR

CHNL# 59: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 57: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 55: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 53: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 51: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 49: [VARS 662 TO 720 CKT '64'] 650.00 -350.0

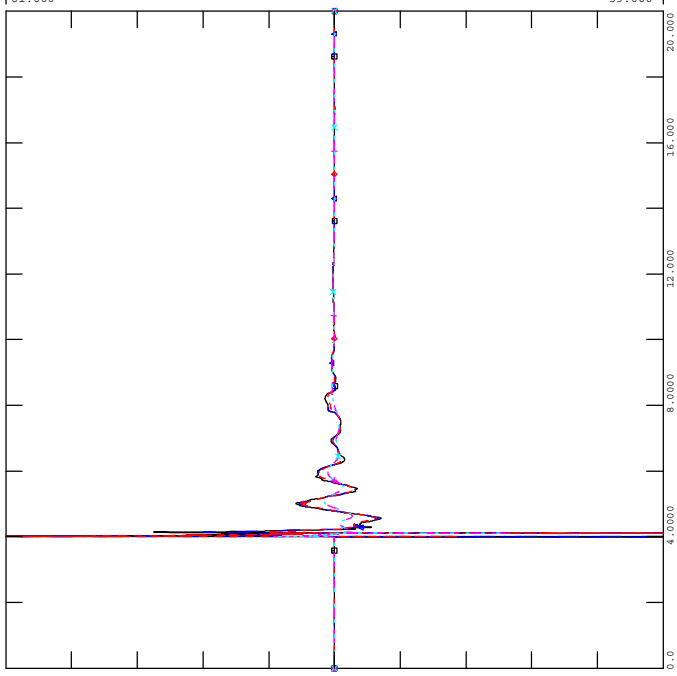


P1812_2020SP_POST
CATB -675L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/675L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15 FREQUENCY

CHNL# 47: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000

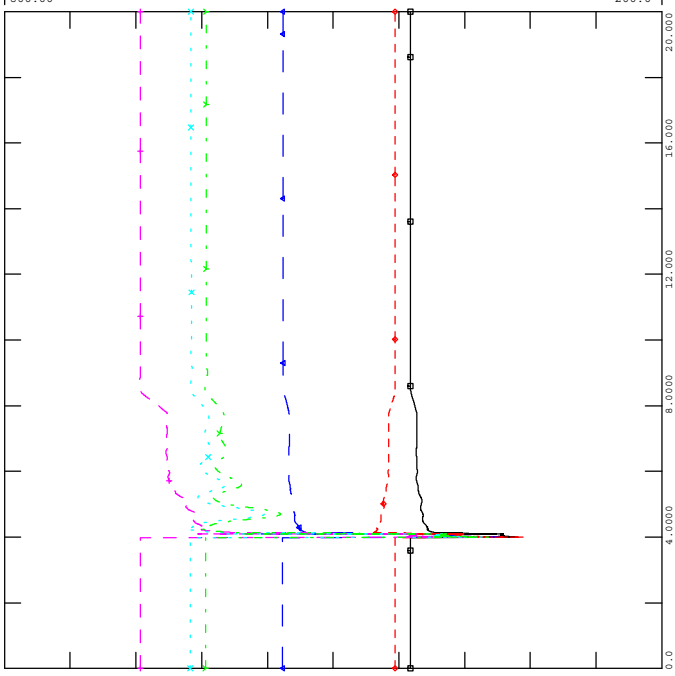


P1812_2020SP_POST
CATB -675L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/675L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15 LINE POWER

CHNL# 58: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 56: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 54: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 52: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 50: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 48: [POWR 662 TO 720 CKT '64'] 800.00 -200.0

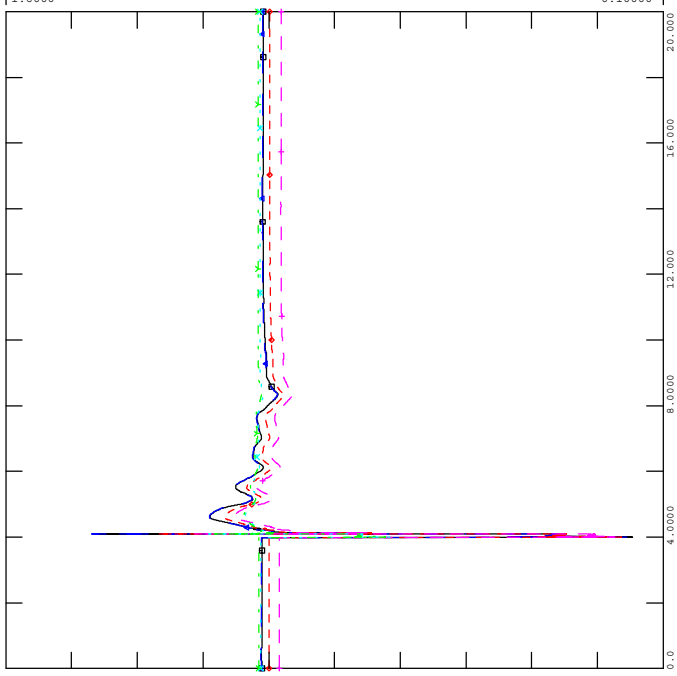


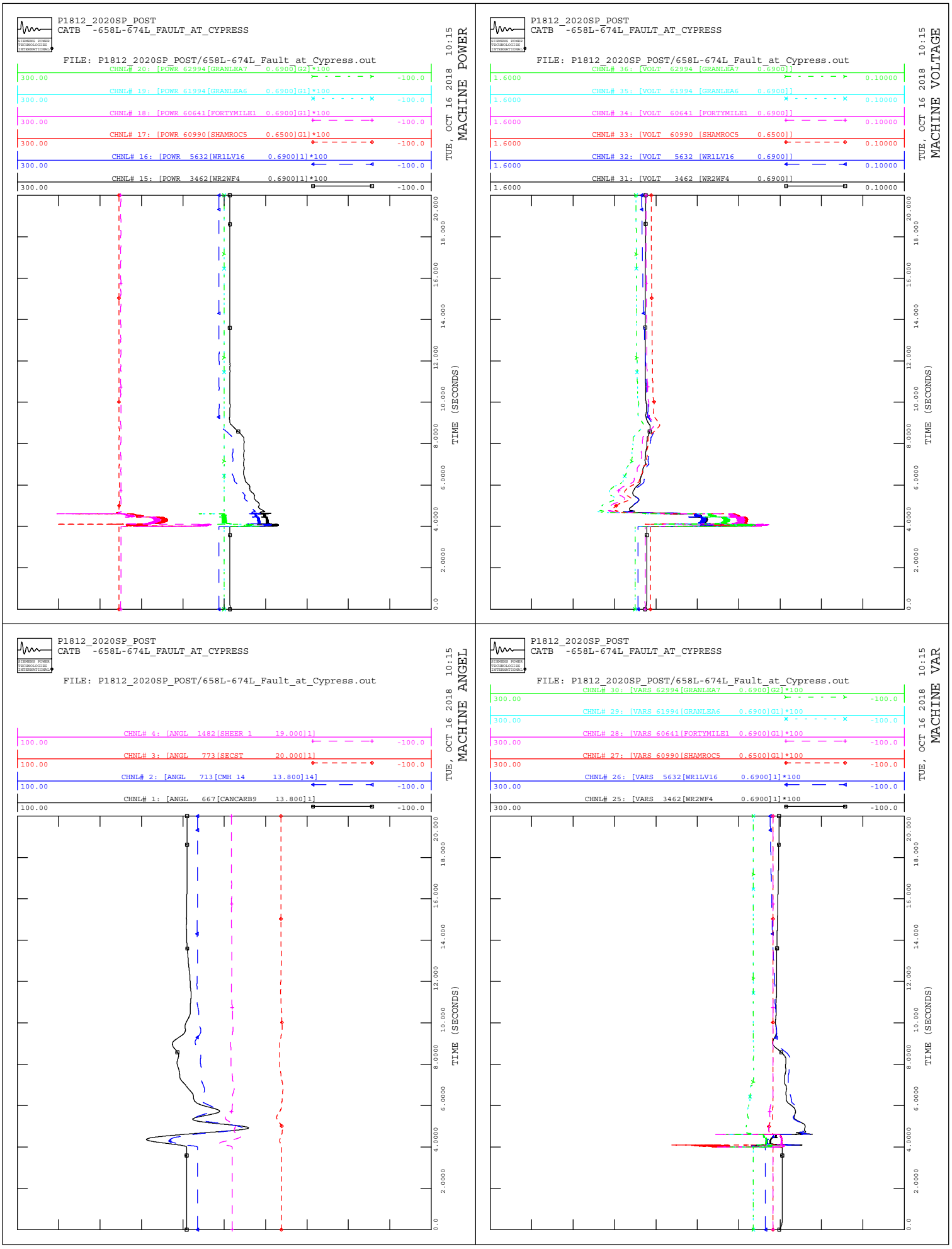
P1812_2020SP_POST
CATB -675L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/675L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15 BUS VOLTAGE

CHNL# 42: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 41: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 40: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 39: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 38: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 37: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000



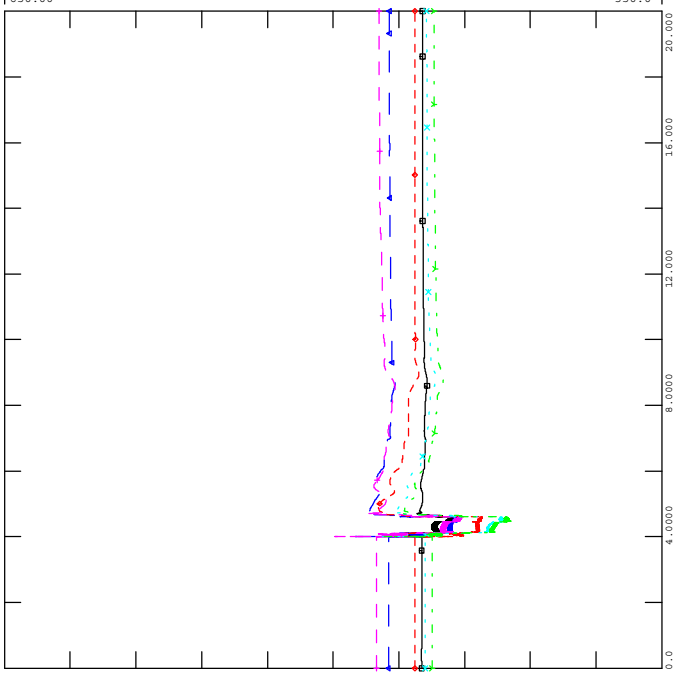

P1812_2020SP_POST
CATB -658L-674L_FAULT_AT_CYPRESS
FILE: P1812_2020SP_POST/658L-674L_Fault_at_Cypress.out
CHNL# 20: [POWR 62994[GRANLEA7 0.6900]G2]*100
CHNL# 19: [POWR 61994[GRANLEA6 0.6900]G1]*100
CHNL# 18: [POWR 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 17: [POWR 60990[SHAMROC5 0.6500]G1]*100
CHNL# 16: [POWR 5632[WR1LV16 0.6900]1]*100
CHNL# 15: [POWR 3462[WR2WF4 0.6900]1]*100
300.00
-100.0
TUE, OCT 16 2018 10:15
MACHINE POWER
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000
P1812_2020SP_POST
CATB -658L-674L_FAULT_AT_CYPRESS
FILE: P1812_2020SP_POST/658L-674L_Fault_at_Cypress.out
CHNL# 36: [VOLT 62994 [GRANLEA7 0.6900]]
CHNL# 35: [VOLT 61994 [GRANLEA6 0.6900]]
CHNL# 34: [VOLT 60641 [FORTYMILE1 0.6900]]
CHNL# 33: [VOLT 60990 [SHAMROC5 0.6500]]
CHNL# 32: [VOLT 5632 [WR1LV16 0.6900]]
CHNL# 31: [VOLT 3462 [WR2WF4 0.6900]]
1.6000
0.10000
TUE, OCT 16 2018 10:15
MACHINE VOLTAGE
TIME (SECONDS)
P1812_2020SP_POST
CATB -658L-674L_FAULT_AT_CYPRESS
FILE: P1812_2020SP_POST/658L-674L_Fault_at_Cypress.out
CHNL# 4: [ANGL 1482[SHEER 1 19.000]1]
CHNL# 3: [ANGL 773[SECST 20.000]1]
CHNL# 2: [ANGL 713[CMH 14 13.800]14]
CHNL# 1: [ANGL 667[CANCARB9 13.800]1]
100.00
-100.0
TUE, OCT 16 2018 10:15
MACHINE ANGEL
TIME (SECONDS)
P1812_2020SP_POST
CATB -658L-674L_FAULT_AT_CYPRESS
FILE: P1812_2020SP_POST/658L-674L_Fault_at_Cypress.out
CHNL# 30: [VARS 62994[GRANLEA7 0.6900]G2]*100
CHNL# 29: [VARS 61994[GRANLEA6 0.6900]G1]*100
CHNL# 28: [VARS 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 27: [VARS 60990[SHAMROC5 0.6500]G1]*100
CHNL# 26: [VARS 5632[WR1LV16 0.6900]1]*100
CHNL# 25: [VARS 3462[WR2WF4 0.6900]1]*100
300.00
-100.0
TUE, OCT 16 2018 10:15
MACHINE VAR
TIME (SECONDS)

P1812_2020SP_POST
CATB -658L-674L_FAULT_AT_CYPRESS

FILE: P1812_2020SP_POST/658L-674L_Fault_at_Cypress.out

TUE, OCT 16 2018 10:15 LINE VAR

CHNL# 59: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 57: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 55: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 53: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 51: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 49: [VARS 662 TO 720 CKT '64'] 650.00 -350.0

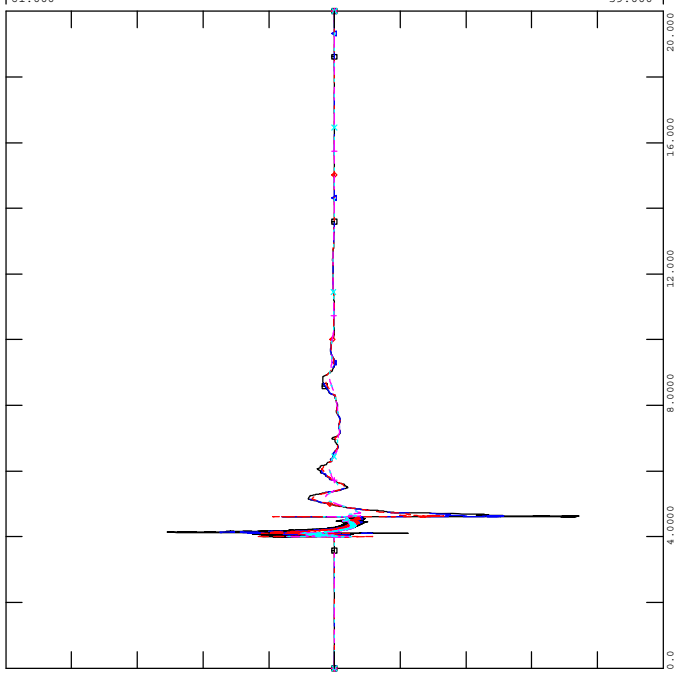


P1812_2020SP_POST
CATB -658L-674L_FAULT_AT_CYPRESS

FILE: P1812_2020SP_POST/658L-674L_Fault_at_Cypress.out

TUE, OCT 16 2018 10:15 FREQUENCY

CHNL# 47: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000

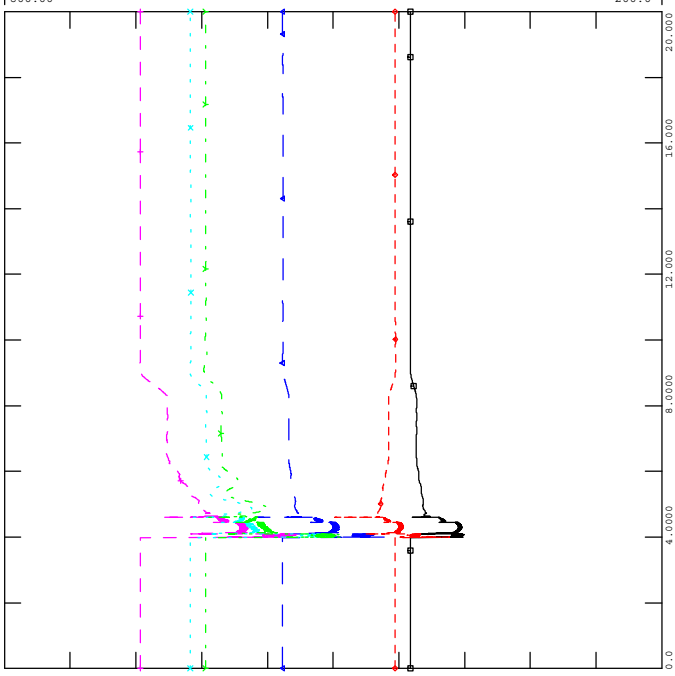


P1812_2020SP_POST
CATB -658L-674L_FAULT_AT_CYPRESS

FILE: P1812_2020SP_POST/658L-674L_Fault_at_Cypress.out

TUE, OCT 16 2018 10:15 LINE POWER

CHNL# 58: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 56: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 54: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 52: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 50: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 48: [POWR 662 TO 720 CKT '64'] 800.00 -200.0

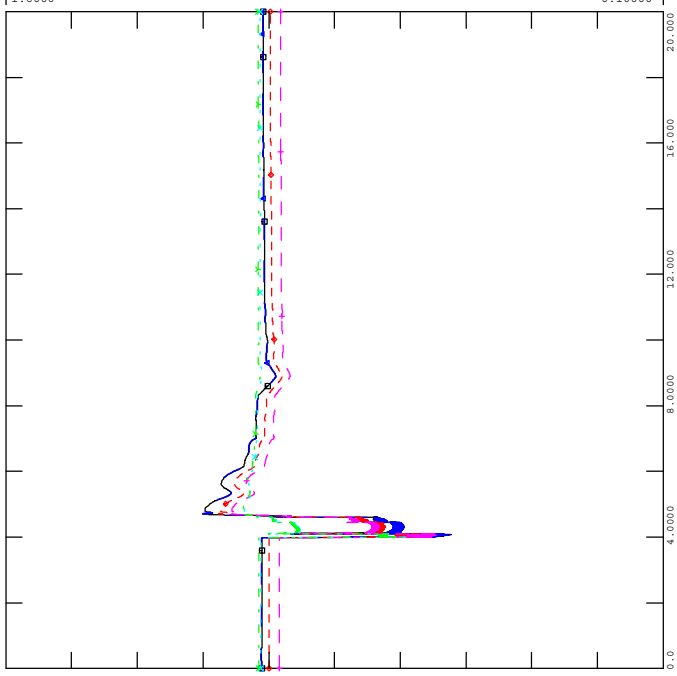


P1812_2020SP_POST
CATB -658L-674L_FAULT_AT_CYPRESS

FILE: P1812_2020SP_POST/658L-674L_Fault_at_Cypress.out

TUE, OCT 16 2018 10:15 BUS VOLTAGE

CHNL# 42: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 41: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 40: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 39: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 38: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 37: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000



P1812_2020SP_POST
CATB -658L-674L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/658L-674L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15

MACHINE POWER

CHNL# 20: [POWR 62994[GRANLEA7 0.6900]G2]*100
CHNL# 19: [POWR 61994[GRANLEA6 0.6900]G1]*100
CHNL# 18: [POWR 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 17: [POWR 60990[SHAMROC5 0.6500]G1]*100
CHNL# 16: [POWR 5632[WR1LV16 0.6900]1]*100
CHNL# 15: [POWR 3462[WR2WF4 0.6900]1]*100

300.00 / -100.0

TIME (SECONDS)

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SP_POST
CATB -658L-674L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/658L-674L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15

MACHINE VOLTAGE

CHNL# 36: [VOLT 62994 [GRANLEA7 0.6900]]
CHNL# 35: [VOLT 61994 [GRANLEA6 0.6900]]
CHNL# 34: [VOLT 60641 [FORTYMILE1 0.6900]]
CHNL# 33: [VOLT 60990 [SHAMROC5 0.6500]]
CHNL# 32: [VOLT 5632 [WR1LV16 0.6900]]
CHNL# 31: [VOLT 3462 [WR2WF4 0.6900]]

1.6000 / 0.10000

TIME (SECONDS)

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SP_POST
CATB -658L-674L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/658L-674L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15

MACHINE ANGEL

CHNL# 4: [ANGL 1482[SHEER 1 19.000]1]
CHNL# 3: [ANGL 773[SECST 20.000]1]
CHNL# 2: [ANGL 713[CMH 14 13.800]14]
CHNL# 1: [ANGL 667[CANCARB9 13.800]1]

100.00 / -100.0

TIME (SECONDS)

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SP_POST
CATB -658L-674L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/658L-674L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15

MACHINE VAR

CHNL# 30: [VARS 62994[GRANLEA7 0.6900]G2]*100
CHNL# 29: [VARS 61994[GRANLEA6 0.6900]G1]*100
CHNL# 28: [VARS 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 27: [VARS 60990[SHAMROC5 0.6500]G1]*100
CHNL# 26: [VARS 5632[WR1LV16 0.6900]1]*100
CHNL# 25: [VARS 3462[WR2WF4 0.6900]1]*100

300.00 / -100.0

TIME (SECONDS)

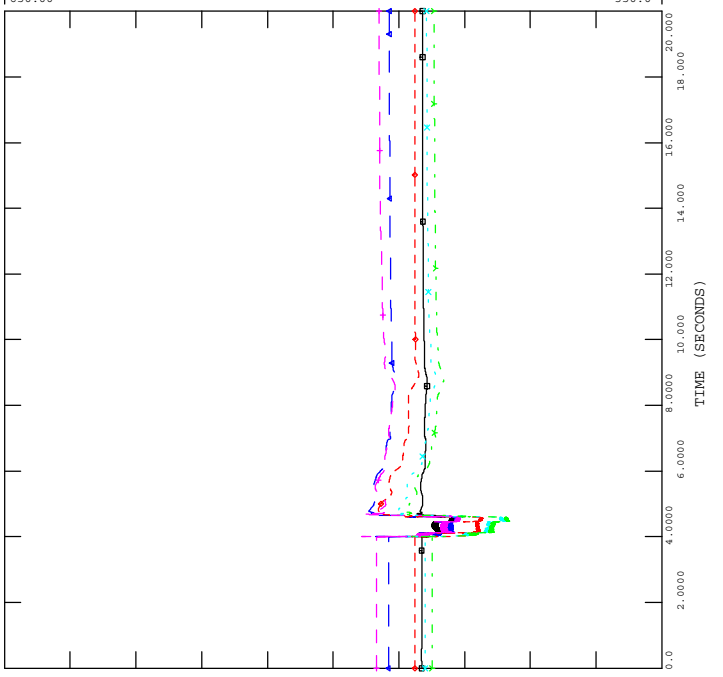
0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SP_POST
CATB -658L-674L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/658L-674L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15 LINE VAR

CHNL# 59: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 57: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 55: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 53: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 51: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 49: [VARS 662 TO 720 CKT '64'] 650.00 -350.0

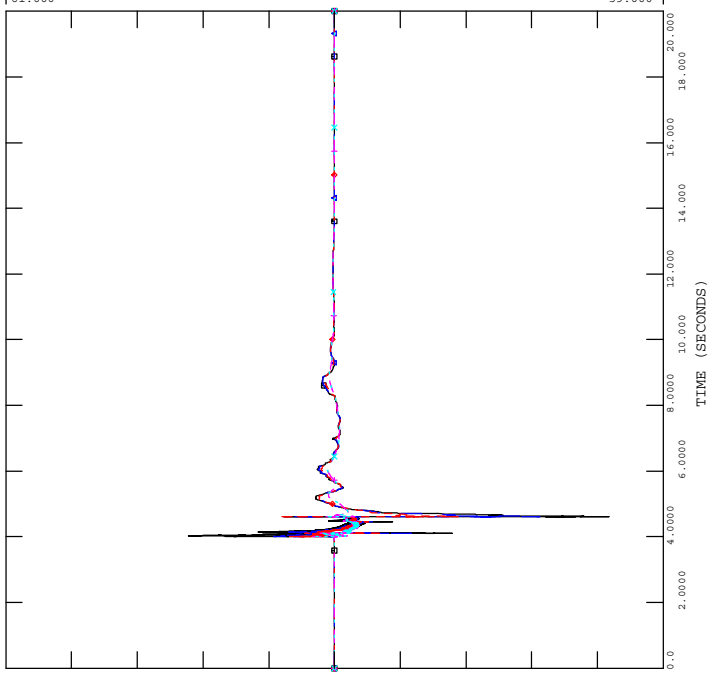


P1812_2020SP_POST
CATB -658L-674L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/658L-674L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15 FREQUENCY

CHNL# 47: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000

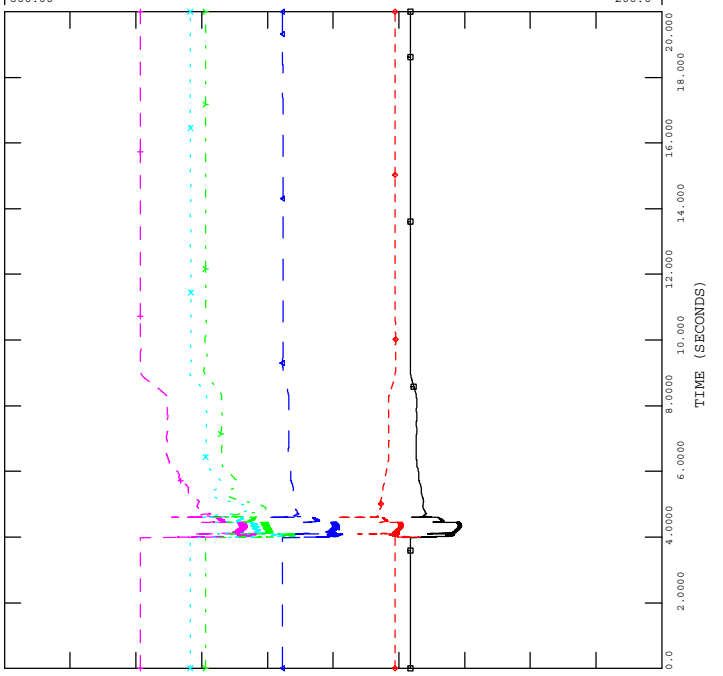


P1812_2020SP_POST
CATB -658L-674L_FAULT_AT_BOWMANTON

FILE: P1812_2020SP_POST/658L-674L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15 LINE POWER

CHNL# 58: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 56: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 54: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 52: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 50: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 48: [POWR 662 TO 720 CKT '64'] 800.00 -200.0

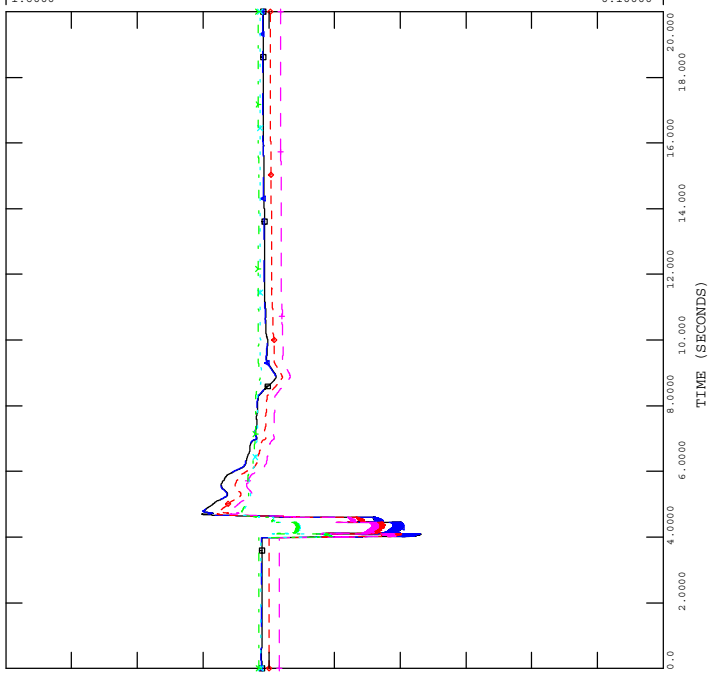


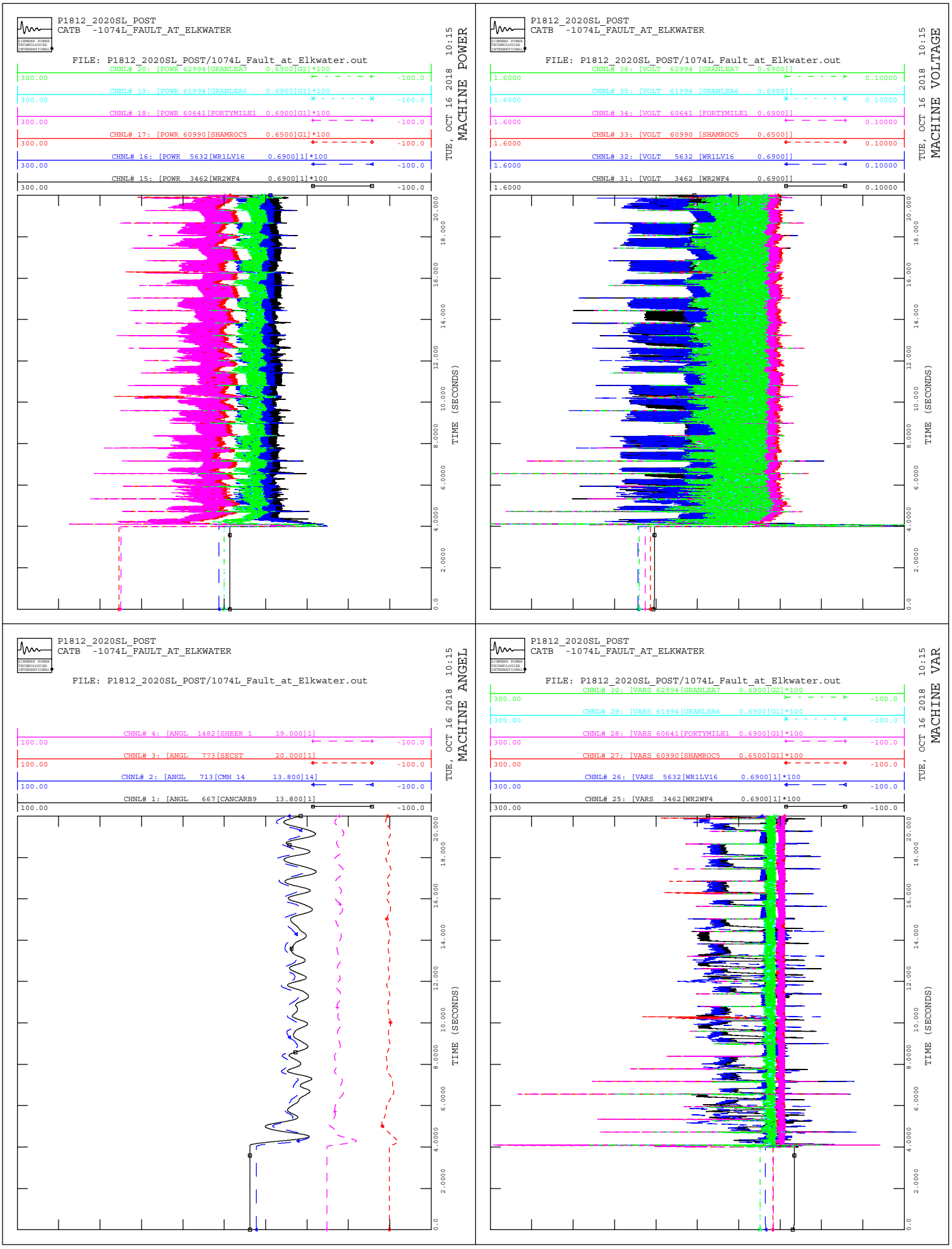
P1812_2020SP_POST
CATB -658L-674L_FAULT_AT_BOWMANTON

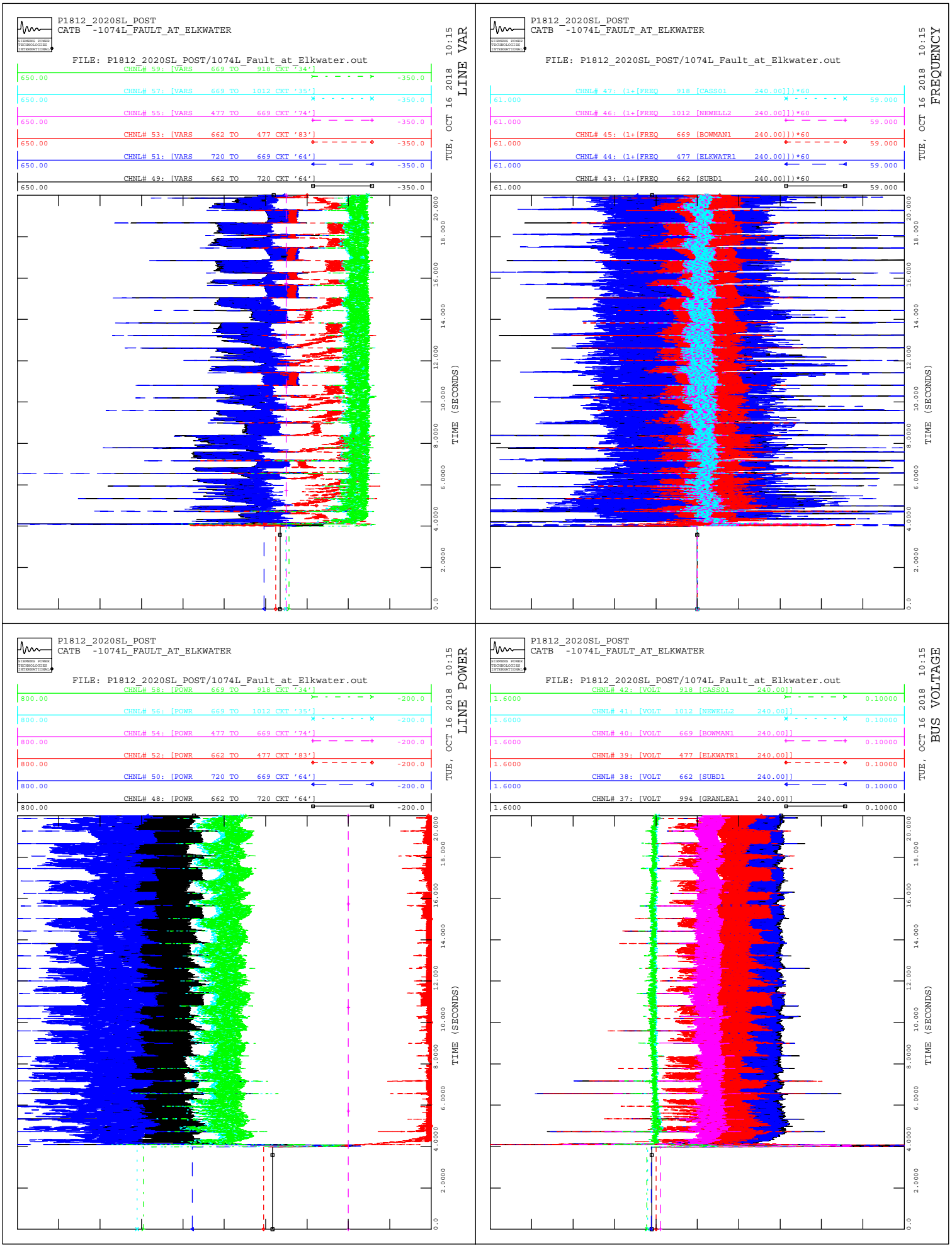
FILE: P1812_2020SP_POST/658L-674L_Fault_at_Bowmanton.out

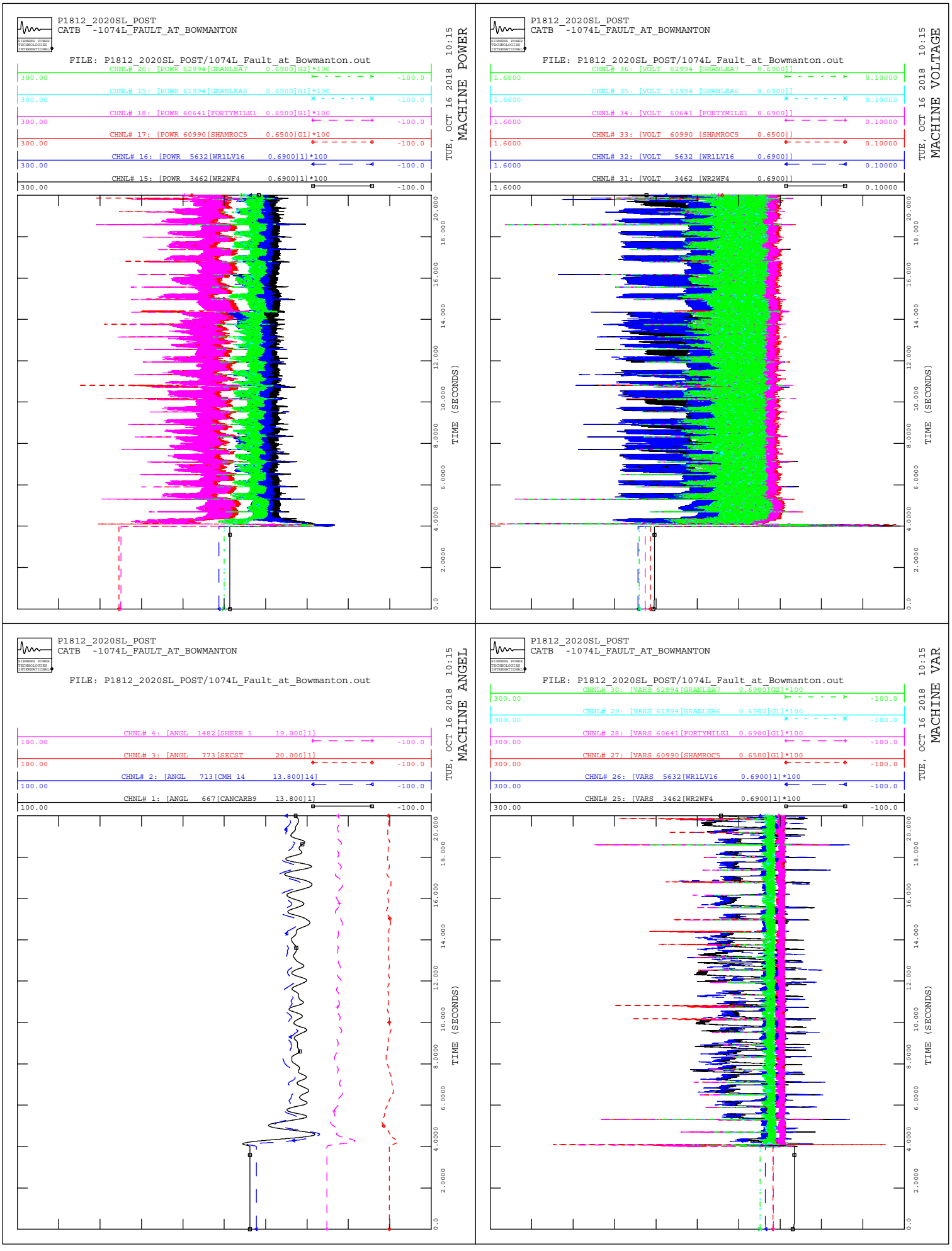
TUE, OCT 16 2018 10:15 BUS VOLTAGE

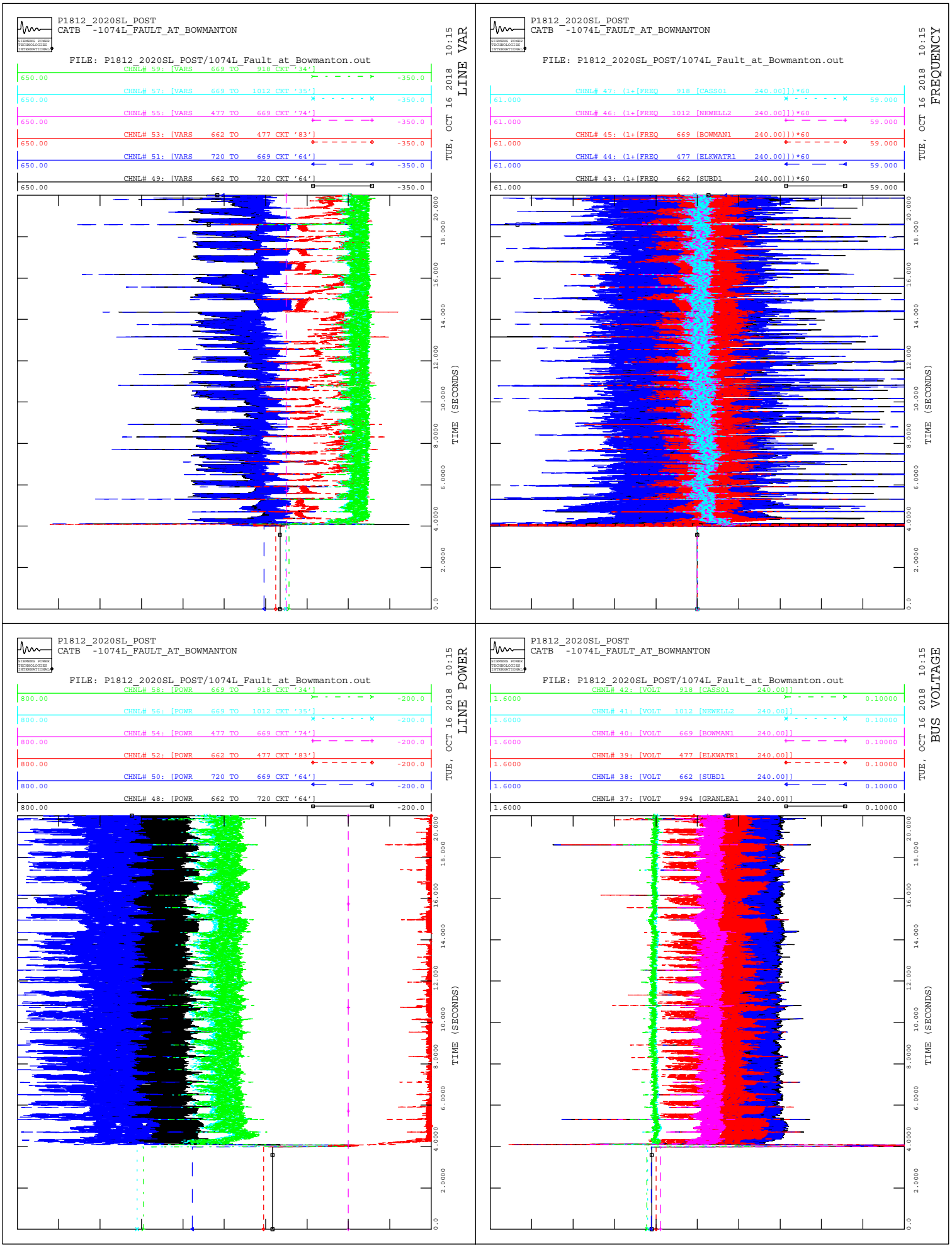
CHNL# 42: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 41: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 40: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 39: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 38: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 37: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000

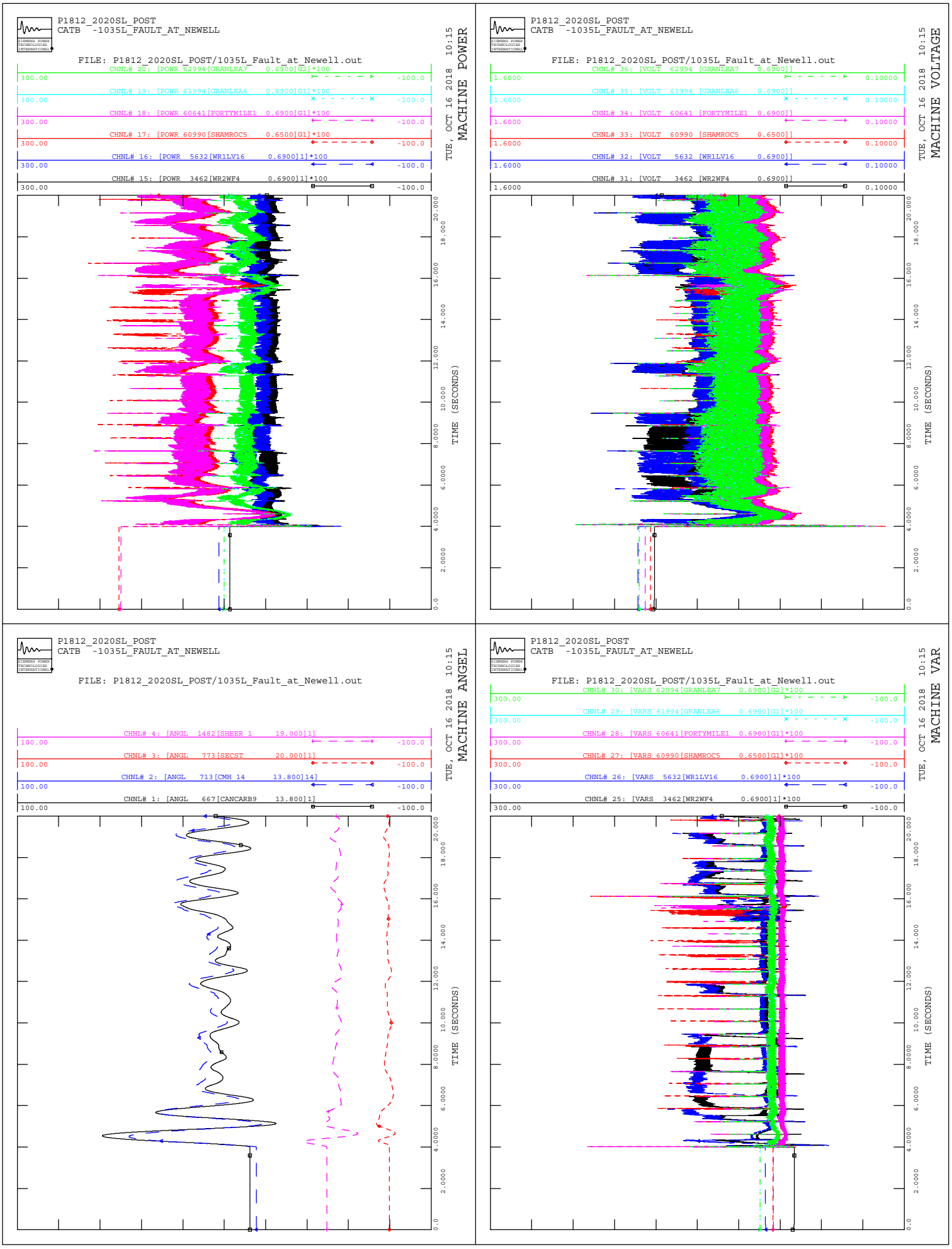


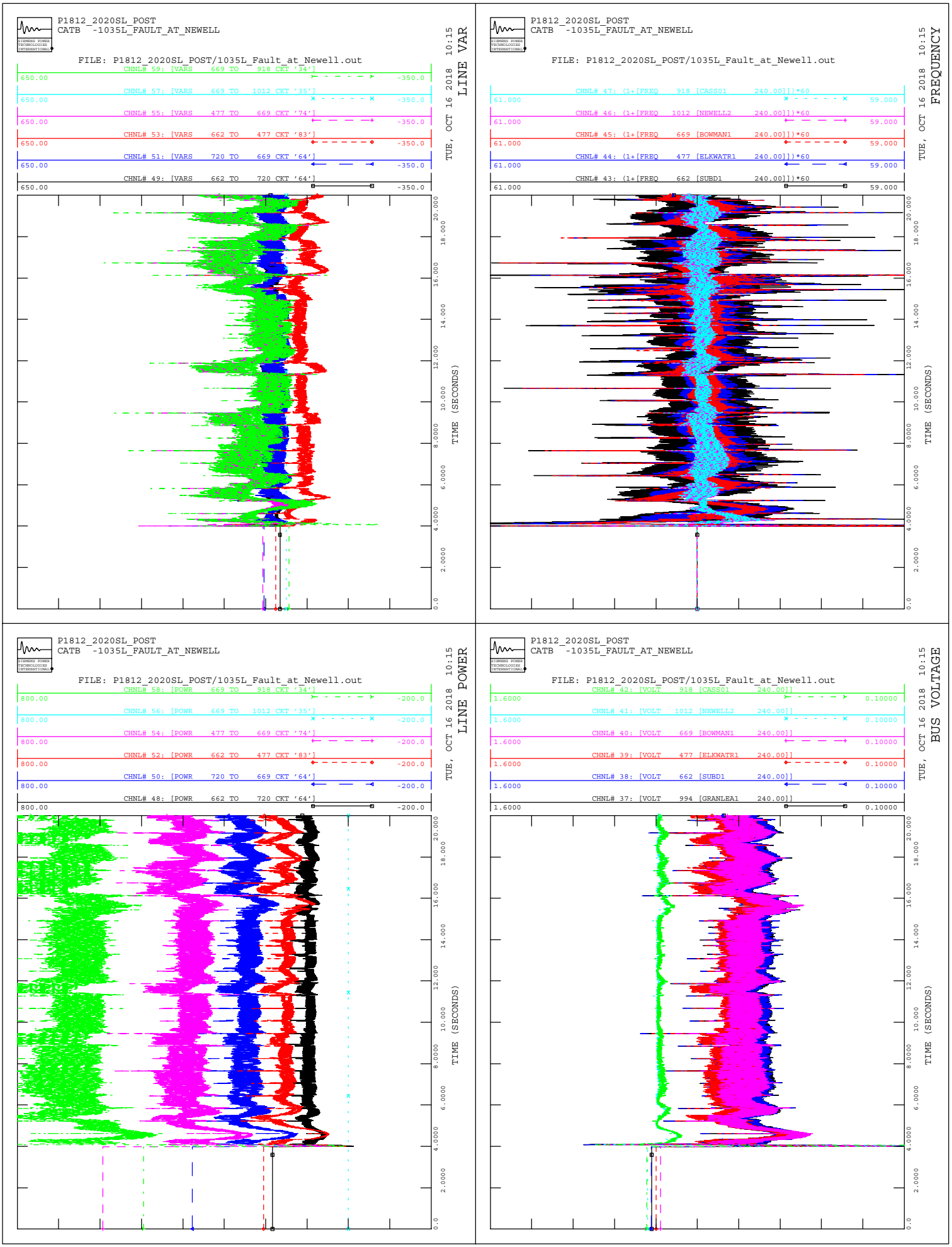

P1812_2020SL_POST
CATB -1074L_FAULT_AT_ELKWATER
FILE: P1812_2020SL_POST/1074L_Fault_at_Elkwater.out
CHNL# 20: [POWR 62994[GRANLEA7 0.6900]G2]*100
CHNL# 19: [POWR 61994[GRANLEA6 0.6900]G1]*100
CHNL# 18: [POWR 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 17: [POWR 60990[SHAMROC5 0.6500]G1]*100
CHNL# 16: [POWR 5632[WR1LV16 0.6900]1]*100
CHNL# 15: [POWR 3462[WR2WF4 0.6900]1]*100
TUE, OCT 16 2018 10:15
MACHINE POWER
TIME (SECONDS)
P1812_2020SL_POST
CATB -1074L_FAULT_AT_ELKWATER
FILE: P1812_2020SL_POST/1074L_Fault_at_Elkwater.out
CHNL# 36: [VOLT 62994 [GRANLEA7 0.6900]]
CHNL# 35: [VOLT 61994 [GRANLEA6 0.6900]]
CHNL# 34: [VOLT 60641 [FORTYMILE1 0.6900]]
CHNL# 33: [VOLT 60990 [SHAMROC5 0.6500]]
CHNL# 32: [VOLT 5632 [WR1LV16 0.6900]]
CHNL# 31: [VOLT 3462 [WR2WF4 0.6900]]
TUE, OCT 16 2018 10:15
MACHINE VOLTAGE
TIME (SECONDS)
P1812_2020SL_POST
CATB -1074L_FAULT_AT_ELKWATER
FILE: P1812_2020SL_POST/1074L_Fault_at_Elkwater.out
CHNL# 4: [ANGL 1482[SHEER 1 19.000]1]
CHNL# 3: [ANGL 773[SECST 20.000]1]
CHNL# 2: [ANGL 713[CMH 14 13.800]14]
CHNL# 1: [ANGL 667[CANCARB9 13.800]1]
TUE, OCT 16 2018 10:15
MACHINE ANGEL
TIME (SECONDS)
P1812_2020SL_POST
CATB -1074L_FAULT_AT_ELKWATER
FILE: P1812_2020SL_POST/1074L_Fault_at_Elkwater.out
CHNL# 30: [VARS 62994[GRANLEA7 0.6900]G2]*100
CHNL# 29: [VARS 61994[GRANLEA6 0.6900]G1]*100
CHNL# 28: [VARS 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 27: [VARS 60990[SHAMROC5 0.6500]G1]*100
CHNL# 26: [VARS 5632[WR1LV16 0.6900]1]*100
CHNL# 25: [VARS 3462[WR2WF4 0.6900]1]*100
TUE, OCT 16 2018 10:15
MACHINE VAR
TIME (SECONDS)


P1812_2020SL_POST
CATB -1074L_FAULT_AT_ELKWATER
FILE: P1812_2020SL_POST/1074L_Fault_at_Elkwater.out
CHNL# 59: [VARS 669 TO 918 CKT '34']
CHNL# 57: [VARS 669 TO 1012 CKT '35']
CHNL# 55: [VARS 477 TO 669 CKT '74']
CHNL# 53: [VARS 662 TO 477 CKT '83']
CHNL# 51: [VARS 720 TO 669 CKT '64']
CHNL# 49: [VARS 662 TO 720 CKT '64']
650.00
-350.0
TUE, OCT 16 2018 10:15
LINE VAR
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000
P1812_2020SL_POST
CATB -1074L_FAULT_AT_ELKWATER
FILE: P1812_2020SL_POST/1074L_Fault_at_Elkwater.out
CHNL# 47: (1+[FREQ 918 [CASS01 240.00])*60
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00])*60
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00])*60
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00])*60
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00])*60
61.000
59.000
TUE, OCT 16 2018 10:15
FREQUENCY
TIME (SECONDS)
P1812_2020SL_POST
CATB -1074L_FAULT_AT_ELKWATER
FILE: P1812_2020SL_POST/1074L_Fault_at_Elkwater.out
CHNL# 58: [POWR 669 TO 918 CKT '34']
CHNL# 56: [POWR 669 TO 1012 CKT '35']
CHNL# 54: [POWR 477 TO 669 CKT '74']
CHNL# 52: [POWR 662 TO 477 CKT '83']
CHNL# 50: [POWR 720 TO 669 CKT '64']
CHNL# 48: [POWR 662 TO 720 CKT '64']
800.00
-200.0
TUE, OCT 16 2018 10:15
LINE POWER
TIME (SECONDS)
P1812_2020SL_POST
CATB -1074L_FAULT_AT_ELKWATER
FILE: P1812_2020SL_POST/1074L_Fault_at_Elkwater.out
CHNL# 42: [VOLT 918 [CASS01 240.00]]
CHNL# 41: [VOLT 1012 [NEWELL2 240.00]]
CHNL# 40: [VOLT 669 [BOWMAN1 240.00]]
CHNL# 39: [VOLT 477 [ELKWATR1 240.00]]
CHNL# 38: [VOLT 662 [SUBD1 240.00]]
CHNL# 37: [VOLT 994 [GRANLEA1 240.00]]
1.6000
0.10000
TUE, OCT 16 2018 10:15
BUS VOLTAGE
TIME (SECONDS)


P1812_2020SL_POST
CATB -1074L_FAULT_AT_BOWMANTON
FILE: P1812_2020SL_POST/1074L_Fault_at_Bowmanton.out
CHNL# 20: [POWR 62994[GRANLEA7 0.6900]G2]*100
CHNL# 19: [POWR 61994[GRANLEA6 0.6900]G1]*100
CHNL# 18: [POWR 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 17: [POWR 60990[SHAMROC5 0.6500]G1]*100
CHNL# 16: [POWR 5632[WR1LV16 0.6900]1]*100
CHNL# 15: [POWR 3462[WR2WF4 0.6900]1]*100
300.00
-100.0
TUE, OCT 16 2018 10:15
MACHINE POWER
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000
P1812_2020SL_POST
CATB -1074L_FAULT_AT_BOWMANTON
FILE: P1812_2020SL_POST/1074L_Fault_at_Bowmanton.out
CHNL# 36: [VOLT 62994 [GRANLEA7 0.6900]]
CHNL# 35: [VOLT 61994 [GRANLEA6 0.6900]]
CHNL# 34: [VOLT 60641 [FORTYMILE1 0.6900]]
CHNL# 33: [VOLT 60990 [SHAMROC5 0.6500]]
CHNL# 32: [VOLT 5632 [WR1LV16 0.6900]]
CHNL# 31: [VOLT 3462 [WR2WF4 0.6900]]
1.6000
0.10000
TUE, OCT 16 2018 10:15
MACHINE VOLTAGE
TIME (SECONDS)
P1812_2020SL_POST
CATB -1074L_FAULT_AT_BOWMANTON
FILE: P1812_2020SL_POST/1074L_Fault_at_Bowmanton.out
CHNL# 4: [ANGL 1482[SHEER 1 19.000]1]
CHNL# 3: [ANGL 773[SECST 20.000]1]
CHNL# 2: [ANGL 713[CMH 14 13.800]14]
CHNL# 1: [ANGL 667[CANCARB9 13.800]1]
100.00
-100.0
TUE, OCT 16 2018 10:15
MACHINE ANGEL
TIME (SECONDS)
P1812_2020SL_POST
CATB -1074L_FAULT_AT_BOWMANTON
FILE: P1812_2020SL_POST/1074L_Fault_at_Bowmanton.out
CHNL# 30: [VARS 62994[GRANLEA7 0.6900]G2]*100
CHNL# 29: [VARS 61994[GRANLEA6 0.6900]G1]*100
CHNL# 28: [VARS 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 27: [VARS 60990[SHAMROC5 0.6500]G1]*100
CHNL# 26: [VARS 5632[WR1LV16 0.6900]1]*100
CHNL# 25: [VARS 3462[WR2WF4 0.6900]1]*100
300.00
-100.0
TUE, OCT 16 2018 10:15
MACHINE VAR
TIME (SECONDS)


P1812_2020SL_POST
CATB -1074L_FAULT_AT_BOWMANTON
FILE: P1812_2020SL_POST/1074L_Fault_at_Bowmanton.out
TUE, OCT 16 2018 10:15
LINE VAR
CHNL# 59: [VARS 669 TO 918 CKT '34']
CHNL# 57: [VARS 669 TO 1012 CKT '35']
CHNL# 55: [VARS 477 TO 669 CKT '74']
CHNL# 53: [VARS 662 TO 477 CKT '83']
CHNL# 51: [VARS 720 TO 669 CKT '64']
CHNL# 49: [VARS 662 TO 720 CKT '64']
650.00
-350.0
TIME (SECONDS)
P1812_2020SL_POST
CATB -1074L_FAULT_AT_BOWMANTON
FILE: P1812_2020SL_POST/1074L_Fault_at_Bowmanton.out
TUE, OCT 16 2018 10:15
FREQUENCY
CHNL# 47: (1+[FREQ 918 [CASS01 240.00]])*60
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00]])*60
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00]])*60
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00]])*60
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00]])*60
61.000
59.000
TIME (SECONDS)
P1812_2020SL_POST
CATB -1074L_FAULT_AT_BOWMANTON
FILE: P1812_2020SL_POST/1074L_Fault_at_Bowmanton.out
TUE, OCT 16 2018 10:15
LINE POWER
CHNL# 58: [POWR 669 TO 918 CKT '34']
CHNL# 56: [POWR 669 TO 1012 CKT '35']
CHNL# 54: [POWR 477 TO 669 CKT '74']
CHNL# 52: [POWR 662 TO 477 CKT '83']
CHNL# 50: [POWR 720 TO 669 CKT '64']
CHNL# 48: [POWR 662 TO 720 CKT '64']
800.00
-200.0
TIME (SECONDS)
P1812_2020SL_POST
CATB -1074L_FAULT_AT_BOWMANTON
FILE: P1812_2020SL_POST/1074L_Fault_at_Bowmanton.out
TUE, OCT 16 2018 10:15
BUS VOLTAGE
CHNL# 42: [VOLT 918 [CASS01 240.00]]
CHNL# 41: [VOLT 1012 [NEWELL2 240.00]]
CHNL# 40: [VOLT 669 [BOWMAN1 240.00]]
CHNL# 39: [VOLT 477 [ELKWATR1 240.00]]
CHNL# 38: [VOLT 662 [SUBD1 240.00]]
CHNL# 37: [VOLT 994 [GRANLEA1 240.00]]
1.6000
0.10000
TIME (SECONDS)


P1812_2020SL_POST
CATB -1035L_FAULT_AT_NEWELL
FILE: P1812_2020SL_POST/1035L_Fault_at_Newell.out
CHNL# 20: [POWR 62994[GRANLEA7 0.6900]G2]*100
CHNL# 19: [POWR 61994[GRANLEA6 0.6900]G1]*100
CHNL# 18: [POWR 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 17: [POWR 60990[SHAMROC5 0.6500]G1]*100
CHNL# 16: [POWR 5632[WR1LV16 0.6900]1]*100
CHNL# 15: [POWR 3462[WR2WF4 0.6900]1]*100
TUE, OCT 16 2018 10:15
MACHINE POWER
TIME (SECONDS)
P1812_2020SL_POST
CATB -1035L_FAULT_AT_NEWELL
FILE: P1812_2020SL_POST/1035L_Fault_at_Newell.out
CHNL# 36: [VOLT 62994 [GRANLEA7 0.6900]]
CHNL# 35: [VOLT 61994 [GRANLEA6 0.6900]]
CHNL# 34: [VOLT 60641 [FORTYMILE1 0.6900]]
CHNL# 33: [VOLT 60990 [SHAMROC5 0.6500]]
CHNL# 32: [VOLT 5632 [WR1LV16 0.6900]]
CHNL# 31: [VOLT 3462 [WR2WF4 0.6900]]
TUE, OCT 16 2018 10:15
MACHINE VOLTAGE
TIME (SECONDS)
P1812_2020SL_POST
CATB -1035L_FAULT_AT_NEWELL
FILE: P1812_2020SL_POST/1035L_Fault_at_Newell.out
CHNL# 4: [ANGL 1482[SHEER 1 19.000]1]
CHNL# 3: [ANGL 773[SECST 20.000]1]
CHNL# 2: [ANGL 713[CMH 14 13.800]14]
CHNL# 1: [ANGL 667[CANCARB9 13.800]1]
TUE, OCT 16 2018 10:15
MACHINE ANGEL
TIME (SECONDS)
P1812_2020SL_POST
CATB -1035L_FAULT_AT_NEWELL
FILE: P1812_2020SL_POST/1035L_Fault_at_Newell.out
CHNL# 30: [VARS 62994[GRANLEA7 0.6900]G2]*100
CHNL# 29: [VARS 61994[GRANLEA6 0.6900]G1]*100
CHNL# 28: [VARS 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 27: [VARS 60990[SHAMROC5 0.6500]G1]*100
CHNL# 26: [VARS 5632[WR1LV16 0.6900]1]*100
CHNL# 25: [VARS 3462[WR2WF4 0.6900]1]*100
TUE, OCT 16 2018 10:15
MACHINE VAR
TIME (SECONDS)


P1812_2020SL_POST
CATB -1035L_FAULT_AT_NEWELL
FILE: P1812_2020SL_POST/1035L_Fault_at_Newell.out
CHNL# 59: [VARS 669 TO 918 CKT '34']
CHNL# 57: [VARS 669 TO 1012 CKT '35']
CHNL# 55: [VARS 477 TO 669 CKT '74']
CHNL# 53: [VARS 662 TO 477 CKT '83']
CHNL# 51: [VARS 720 TO 669 CKT '64']
CHNL# 49: [VARS 662 TO 720 CKT '64']
650.00
-350.0
TUE, OCT 16 2018 10:15
LINE VAR
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000
P1812_2020SL_POST
CATB -1035L_FAULT_AT_NEWELL
FILE: P1812_2020SL_POST/1035L_Fault_at_Newell.out
CHNL# 47: (1+[FREQ 918 [CASS01 240.00])*60
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00])*60
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00])*60
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00])*60
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00])*60
61.000
59.000
TUE, OCT 16 2018 10:15
FREQUENCY
TIME (SECONDS)
P1812_2020SL_POST
CATB -1035L_FAULT_AT_NEWELL
FILE: P1812_2020SL_POST/1035L_Fault_at_Newell.out
CHNL# 58: [POWR 669 TO 918 CKT '34']
CHNL# 56: [POWR 669 TO 1012 CKT '35']
CHNL# 54: [POWR 477 TO 669 CKT '74']
CHNL# 52: [POWR 662 TO 477 CKT '83']
CHNL# 50: [POWR 720 TO 669 CKT '64']
CHNL# 48: [POWR 662 TO 720 CKT '64']
800.00
-200.0
TUE, OCT 16 2018 10:15
LINE POWER
TIME (SECONDS)
P1812_2020SL_POST
CATB -1035L_FAULT_AT_NEWELL
FILE: P1812_2020SL_POST/1035L_Fault_at_Newell.out
CHNL# 42: [VOLT 918 [CASS01 240.00]
CHNL# 41: [VOLT 1012 [NEWELL2 240.00]
CHNL# 40: [VOLT 669 [BOWMAN1 240.00]
CHNL# 39: [VOLT 477 [ELKWATR1 240.00]
CHNL# 38: [VOLT 662 [SUBD1 240.00]
CHNL# 37: [VOLT 994 [GRANLEA1 240.00]
1.6000
0.10000
TUE, OCT 16 2018 10:15
BUS VOLTAGE
TIME (SECONDS)

P1812_2020SL_POST
CATB -1035L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/1035L_Fault_at_Bowmanton.out

CHNL# 20: [POWR 62994[GRANLEA7 0.6900]G2]*100
CHNL# 19: [POWR 61994[GRANLEA6 0.6900]G1]*100
CHNL# 18: [POWR 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 17: [POWR 60990[SHAMROC5 0.6500]G1]*100
CHNL# 16: [POWR 5632[WR1LV16 0.6900]1]*100
CHNL# 15: [POWR 3462[WR2WF4 0.6900]1]*100

300.00 / -100.0

TUE, OCT 16 2018 10:15
MACHINE POWER

TIME (SECONDS)
0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SL_POST
CATB -1035L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/1035L_Fault_at_Bowmanton.out

CHNL# 36: [VOLT 62994 [GRANLEA7 0.6900]]
CHNL# 35: [VOLT 61994 [GRANLEA6 0.6900]]
CHNL# 34: [VOLT 60641 [FORTYMILE1 0.6900]]
CHNL# 33: [VOLT 60990 [SHAMROC5 0.6500]]
CHNL# 32: [VOLT 5632 [WR1LV16 0.6900]]
CHNL# 31: [VOLT 3462 [WR2WF4 0.6900]]

1.6000 / 0.10000

TUE, OCT 16 2018 10:15
MACHINE VOLTAGE

TIME (SECONDS)
0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SL_POST
CATB -1035L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/1035L_Fault_at_Bowmanton.out

CHNL# 4: [ANGL 1482[SHEER 1 19.000]1]
CHNL# 3: [ANGL 773[SECST 20.000]1]
CHNL# 2: [ANGL 713[CMH 14 13.800]14]
CHNL# 1: [ANGL 667[CANCARB9 13.800]1]

100.00 / -100.0

TUE, OCT 16 2018 10:15
MACHINE ANGEL

TIME (SECONDS)
0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SL_POST
CATB -1035L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/1035L_Fault_at_Bowmanton.out

CHNL# 30: [VARS 62994[GRANLEA7 0.6900]G2]*100
CHNL# 29: [VARS 61994[GRANLEA6 0.6900]G1]*100
CHNL# 28: [VARS 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 27: [VARS 60990[SHAMROC5 0.6500]G1]*100
CHNL# 26: [VARS 5632[WR1LV16 0.6900]1]*100
CHNL# 25: [VARS 3462[WR2WF4 0.6900]1]*100

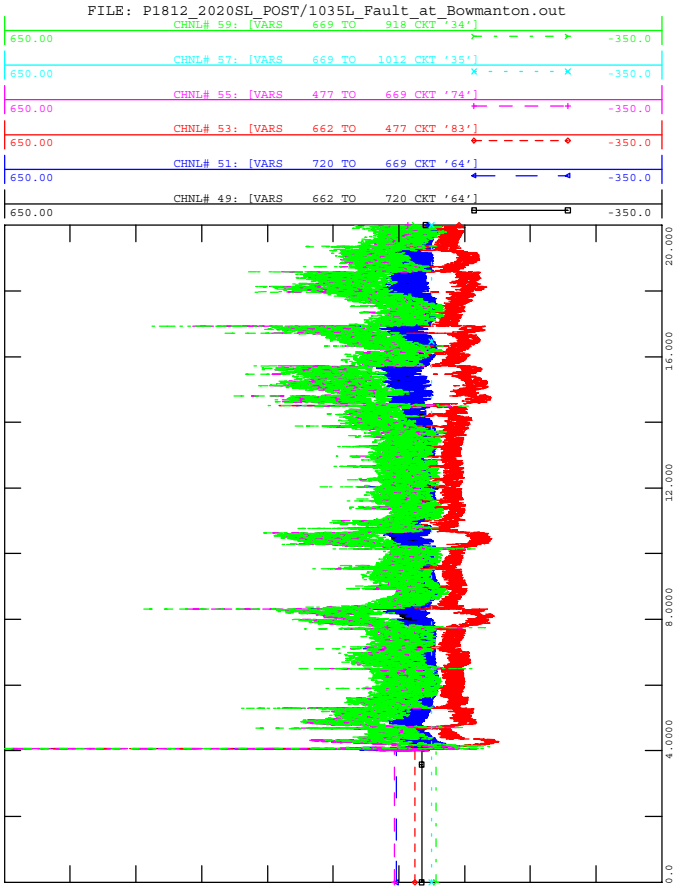
300.00 / -100.0

TUE, OCT 16 2018 10:15
MACHINE VAR

TIME (SECONDS)
0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SL_POST
CATB -1035L_FAULT_AT_BOWMANTON

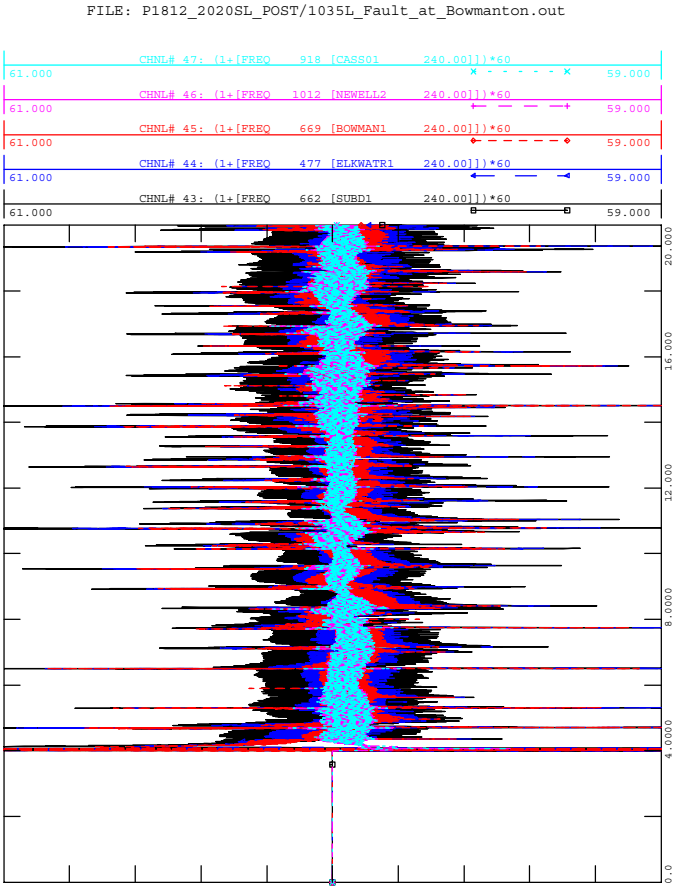
FILE: P1812_2020SL_POST/1035L_Fault_at_Bowmanton.out



TUE, OCT 16 2018 10:15
LINE VAR

P1812_2020SL_POST
CATB -1035L_FAULT_AT_BOWMANTON

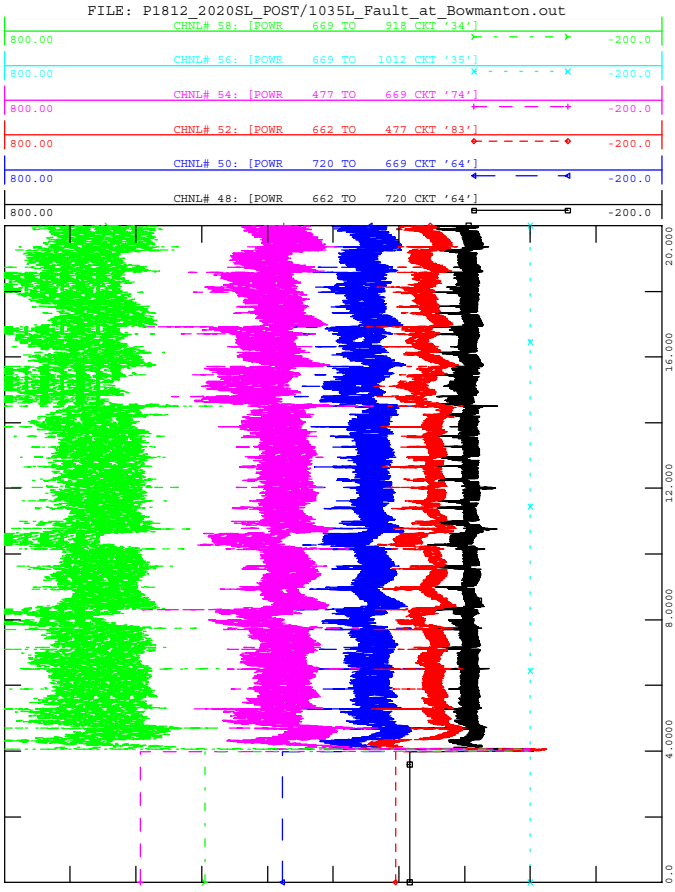
FILE: P1812_2020SL_POST/1035L_Fault_at_Bowmanton.out



TUE, OCT 16 2018 10:15
FREQUENCY

P1812_2020SL_POST
CATB -1035L_FAULT_AT_BOWMANTON

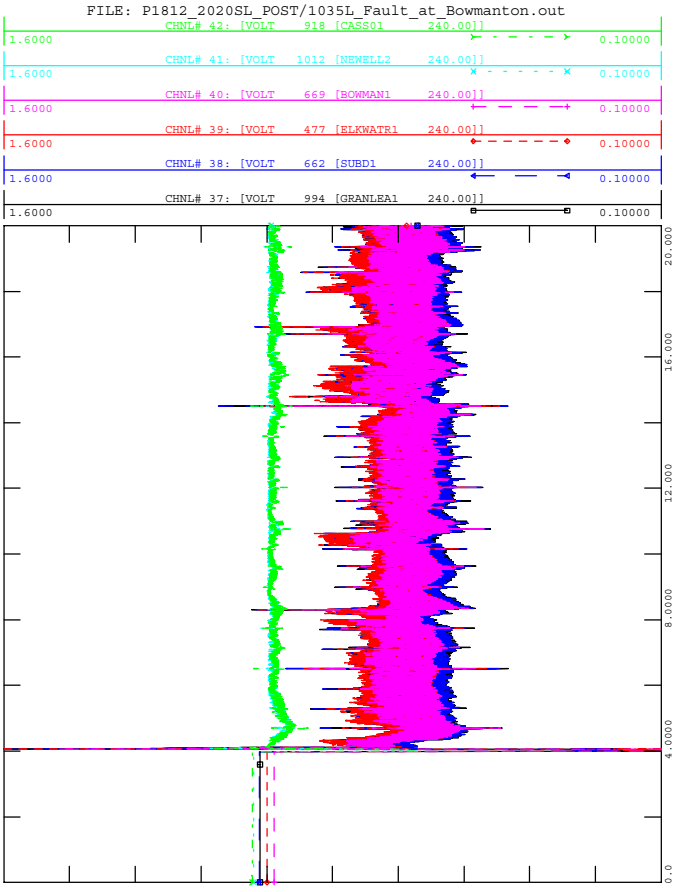
FILE: P1812_2020SL_POST/1035L_Fault_at_Bowmanton.out



TUE, OCT 16 2018 10:15
LINE POWER

P1812_2020SL_POST
CATB -1035L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/1035L_Fault_at_Bowmanton.out



TUE, OCT 16 2018 10:15
BUS VOLTAGE

P1812_2020SL_POST
CATB -1034L_FAULT_AT_CASSILS

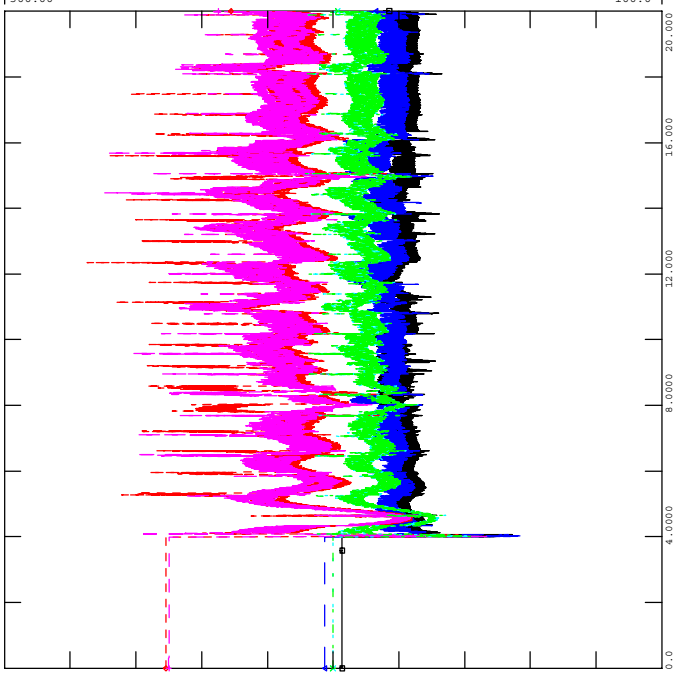
FILE: P1812_2020SL_POST/1034L_Fault_at_Cassils.out

CHNL# 20: [POWR 62994[GRANLEA7 0.6900]G2]*100
CHNL# 19: [POWR 61994[GRANLEA6 0.6900]G1]*100
CHNL# 18: [POWR 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 17: [POWR 60990[SHAMROC5 0.6500]G1]*100
CHNL# 16: [POWR 5632[WR1LV16 0.6900]1]*100
CHNL# 15: [POWR 3462[WR2WF4 0.6900]1]*100

TUE, OCT 16 2018 10:15

MACHINE POWER

TIME (SECONDS)



P1812_2020SL_POST
CATB -1034L_FAULT_AT_CASSILS

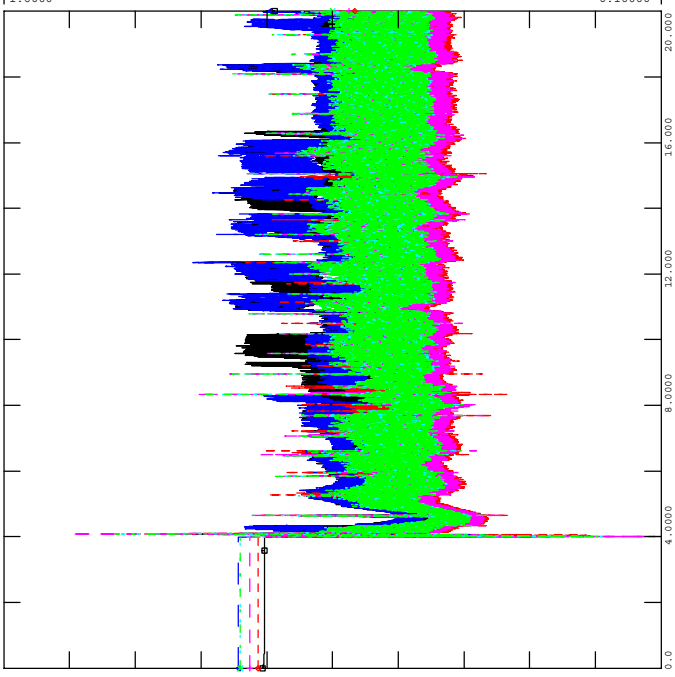
FILE: P1812_2020SL_POST/1034L_Fault_at_Cassils.out

CHNL# 36: [VOLT 62994 [GRANLEA7 0.6900]]
CHNL# 35: [VOLT 61994 [GRANLEA6 0.6900]]
CHNL# 34: [VOLT 60641 [FORTYMILE1 0.6900]]
CHNL# 33: [VOLT 60990 [SHAMROC5 0.6500]]
CHNL# 32: [VOLT 5632 [WR1LV16 0.6900]]
CHNL# 31: [VOLT 3462 [WR2WF4 0.6900]]

TUE, OCT 16 2018 10:15

MACHINE VOLTAGE

TIME (SECONDS)



P1812_2020SL_POST
CATB -1034L_FAULT_AT_CASSILS

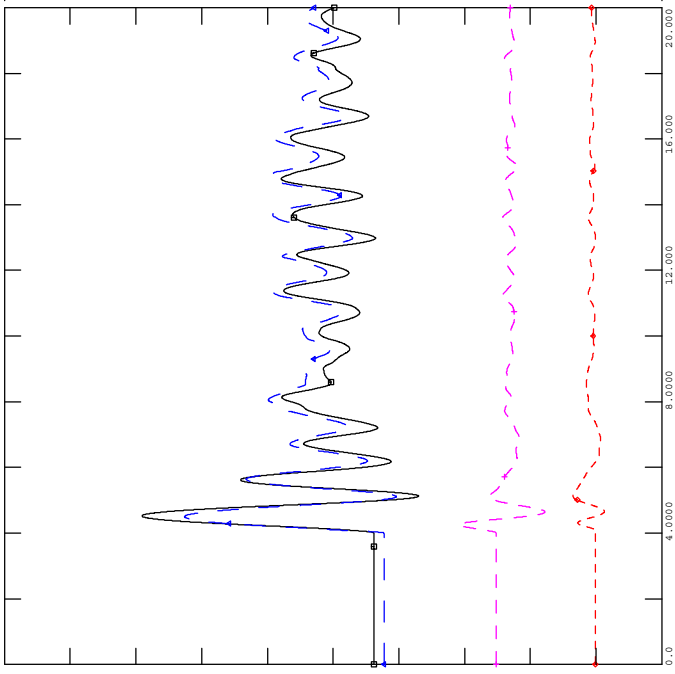
FILE: P1812_2020SL_POST/1034L_Fault_at_Cassils.out

CHNL# 4: [ANGL 1482[SHEER 1 19.000]1]
CHNL# 3: [ANGL 773[SECST 20.000]1]
CHNL# 2: [ANGL 713[CMH 14 13.800]14]
CHNL# 1: [ANGL 667[CANCARB9 13.800]1]

TUE, OCT 16 2018 10:15

MACHINE ANGEL

TIME (SECONDS)



P1812_2020SL_POST
CATB -1034L_FAULT_AT_CASSILS

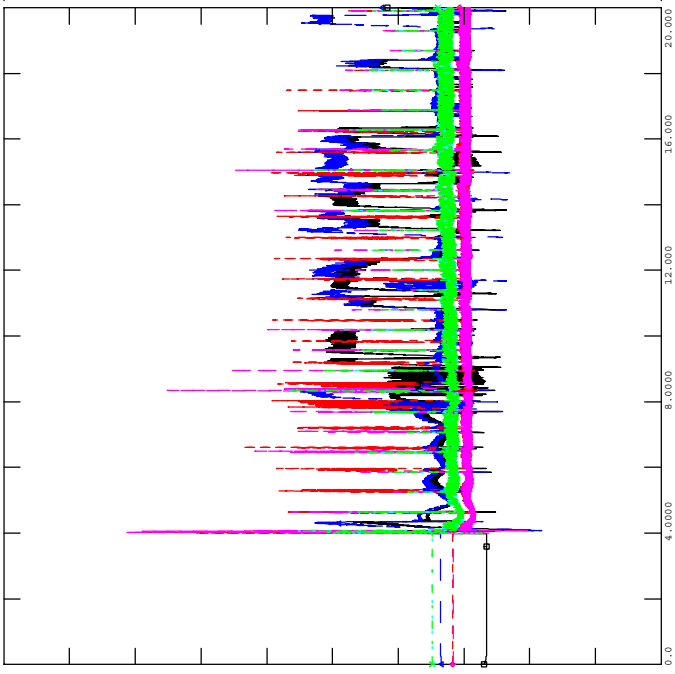
FILE: P1812_2020SL_POST/1034L_Fault_at_Cassils.out

CHNL# 30: [VARS 62994[GRANLEA7 0.6900]G2]*100
CHNL# 29: [VARS 61994[GRANLEA6 0.6900]G1]*100
CHNL# 28: [VARS 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 27: [VARS 60990[SHAMROC5 0.6500]G1]*100
CHNL# 26: [VARS 5632[WR1LV16 0.6900]1]*100
CHNL# 25: [VARS 3462[WR2WF4 0.6900]1]*100

TUE, OCT 16 2018 10:15

MACHINE VAR

TIME (SECONDS)



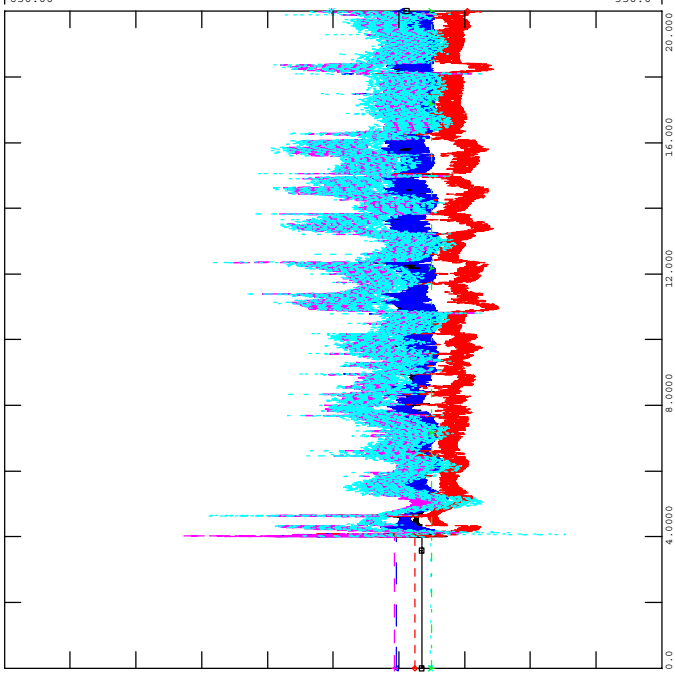
P1812_2020SL_POST
CATB -1034L_FAULT_AT_CASSILS

FILE: P1812_2020SL_POST/1034L_Fault_at_Cassils.out

TUE, OCT 16 2018 10:15 LINE VAR

CHNL# 59: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 57: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 55: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 53: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 51: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 49: [VARS 662 TO 720 CKT '64'] 650.00 -350.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



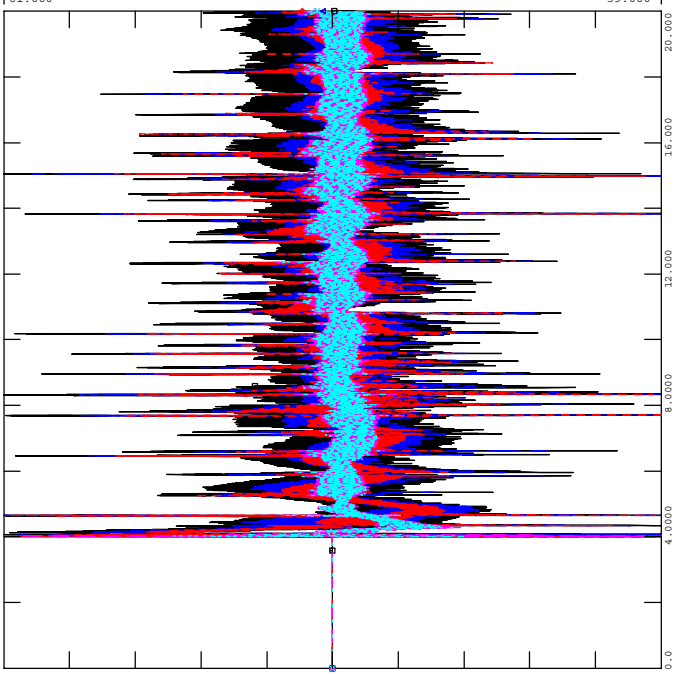
P1812_2020SL_POST
CATB -1034L_FAULT_AT_CASSILS

FILE: P1812_2020SL_POST/1034L_Fault_at_Cassils.out

TUE, OCT 16 2018 10:15 FREQUENCY

CHNL# 47: (1+[FREQ 918 [CASS01 240.00])*60 61.000 59.000
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00])*60 61.000 59.000
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00])*60 61.000 59.000
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00])*60 61.000 59.000
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00])*60 61.000 59.000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



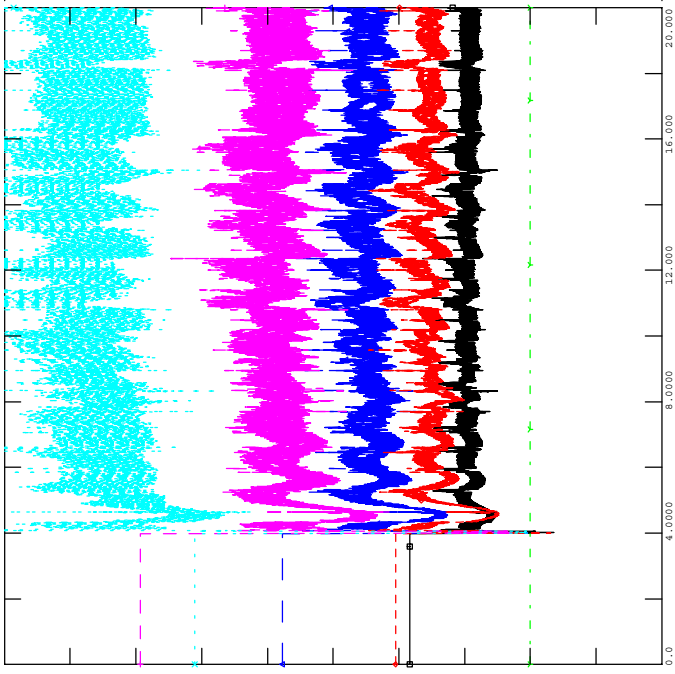
P1812_2020SL_POST
CATB -1034L_FAULT_AT_CASSILS

FILE: P1812_2020SL_POST/1034L_Fault_at_Cassils.out

TUE, OCT 16 2018 10:15 LINE POWER

CHNL# 58: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 56: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 54: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 52: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 50: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 48: [POWR 662 TO 720 CKT '64'] 800.00 -200.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



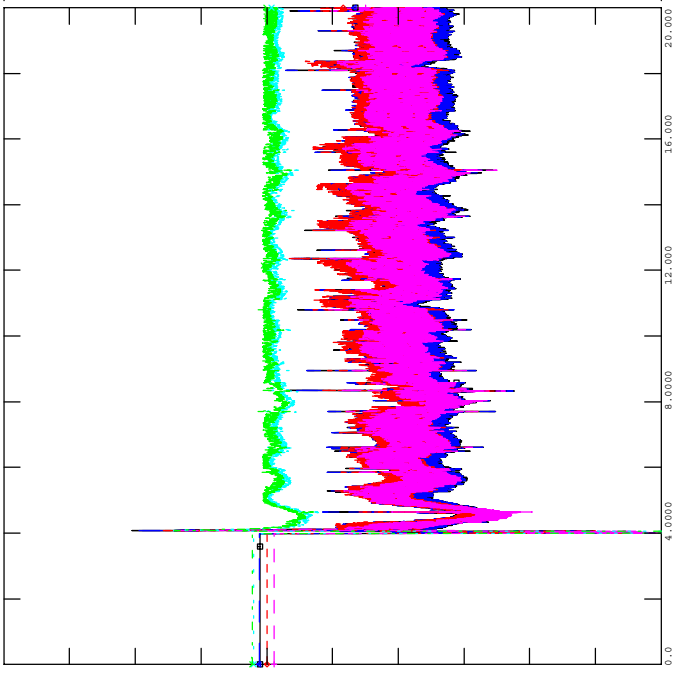
P1812_2020SL_POST
CATB -1034L_FAULT_AT_CASSILS

FILE: P1812_2020SL_POST/1034L_Fault_at_Cassils.out

TUE, OCT 16 2018 10:15 BUS VOLTAGE

CHNL# 42: [VOLT 918 [CASS01 240.00] 1.6000 0.10000
CHNL# 41: [VOLT 1012 [NEWELL2 240.00] 1.6000 0.10000
CHNL# 40: [VOLT 669 [BOWMAN1 240.00] 1.6000 0.10000
CHNL# 39: [VOLT 477 [ELKWATR1 240.00] 1.6000 0.10000
CHNL# 38: [VOLT 662 [SUBD1 240.00] 1.6000 0.10000
CHNL# 37: [VOLT 994 [GRANLEA1 240.00] 1.6000 0.10000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SL_POST
CATB -1034L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/1034L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15

MACHINE POWER

CHNL# 20: [POWR 62994[GRANLEA7 0.6900]G2]*100
CHNL# 19: [POWR 61994[GRANLEA6 0.6900]G1]*100
CHNL# 18: [POWR 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 17: [POWR 60990[SHAMROC5 0.6500]G1]*100
CHNL# 16: [POWR 5632[WR1LV16 0.6900]1]*100
CHNL# 15: [POWR 3462[WR2WF4 0.6900]1]*100

300.00 / -100.0

TIME (SECONDS)

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SL_POST
CATB -1034L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/1034L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15

MACHINE VOLTAGE

CHNL# 36: [VOLT 62994 [GRANLEA7 0.6900]]
CHNL# 35: [VOLT 61994 [GRANLEA6 0.6900]]
CHNL# 34: [VOLT 60641 [FORTYMILE1 0.6900]]
CHNL# 33: [VOLT 60990 [SHAMROC5 0.6500]]
CHNL# 32: [VOLT 5632 [WR1LV16 0.6900]]
CHNL# 31: [VOLT 3462 [WR2WF4 0.6900]]

1.6000 / 0.10000

TIME (SECONDS)

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SL_POST
CATB -1034L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/1034L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15

MACHINE ANGEL

CHNL# 4: [ANGL 1482[SHEER 1 19.000]1]
CHNL# 3: [ANGL 773[SECST 20.000]1]
CHNL# 2: [ANGL 713[CMH 14 13.800]14]
CHNL# 1: [ANGL 667[CANCARB9 13.800]1]

100.00 / -100.0

TIME (SECONDS)

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SL_POST
CATB -1034L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/1034L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15

MACHINE VAR

CHNL# 30: [VARS 62994[GRANLEA7 0.6900]G2]*100
CHNL# 29: [VARS 61994[GRANLEA6 0.6900]G1]*100
CHNL# 28: [VARS 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 27: [VARS 60990[SHAMROC5 0.6500]G1]*100
CHNL# 26: [VARS 5632[WR1LV16 0.6900]1]*100
CHNL# 25: [VARS 3462[WR2WF4 0.6900]1]*100

300.00 / -100.0

TIME (SECONDS)

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

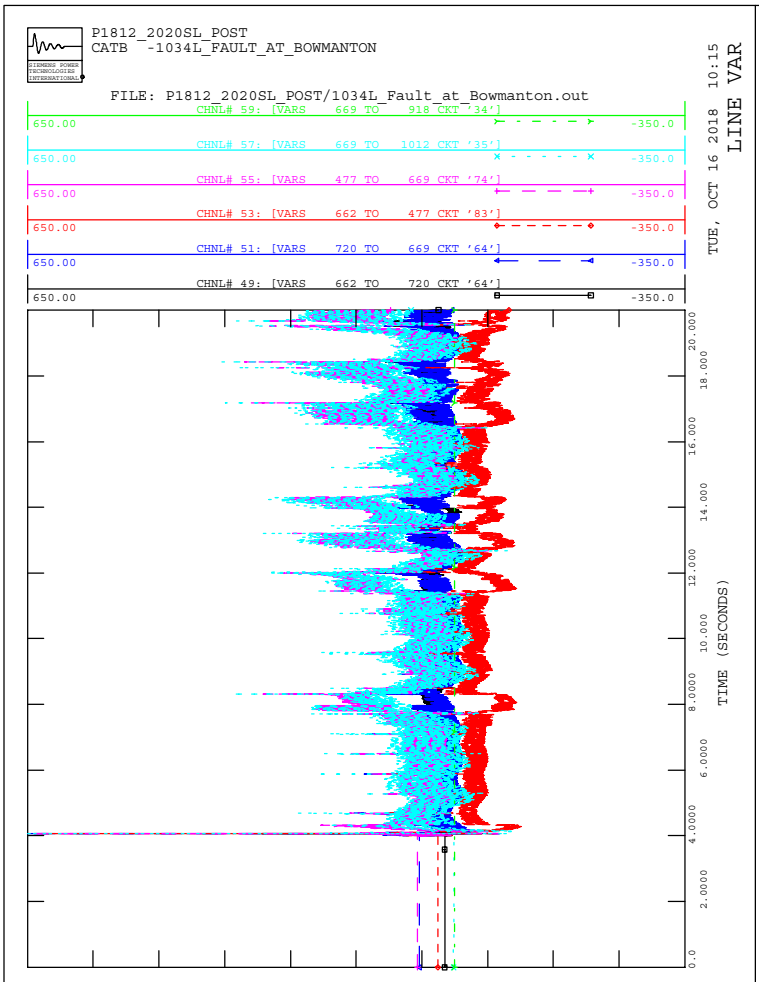
P1812_2020SL_POST
CATB -1034L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/1034L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15 LINE VAR

CHNL# 59: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 57: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 55: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 53: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 51: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 49: [VARS 662 TO 720 CKT '64'] 650.00 -350.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



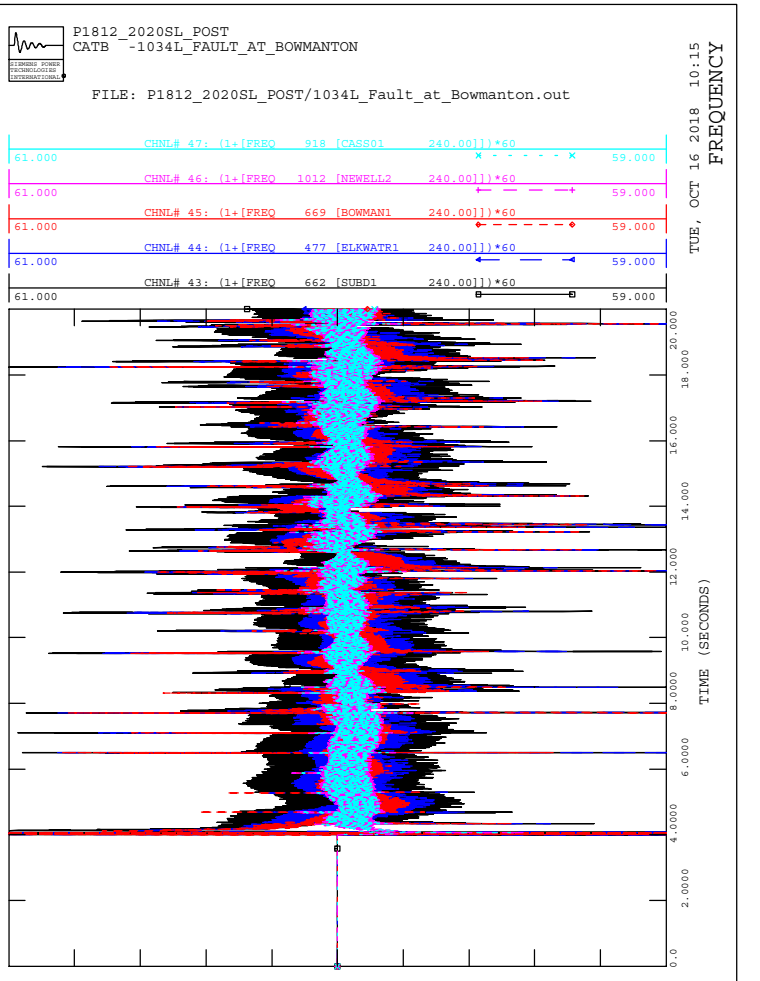
P1812_2020SL_POST
CATB -1034L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/1034L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15 FREQUENCY

CHNL# 47: (1+[FREQ 918 [CASS01 240.00])*60 61.000 59.000
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00])*60 61.000 59.000
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00])*60 61.000 59.000
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00])*60 61.000 59.000
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00])*60 61.000 59.000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



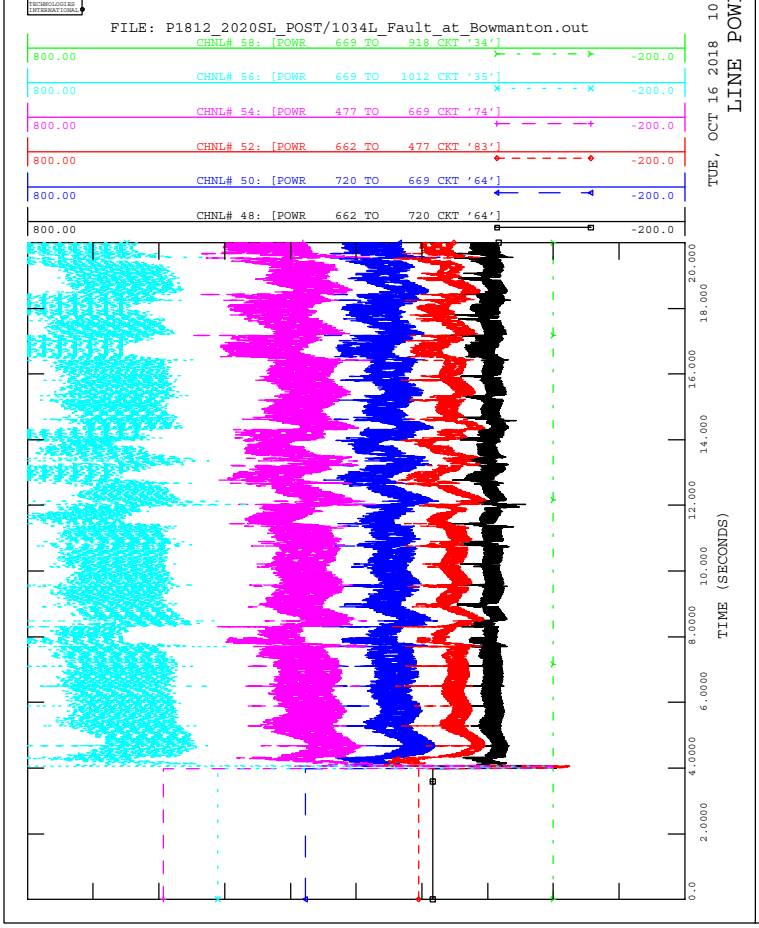
P1812_2020SL_POST
CATB -1034L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/1034L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15 LINE POWER

CHNL# 58: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 56: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 54: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 52: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 50: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 48: [POWR 662 TO 720 CKT '64'] 800.00 -200.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



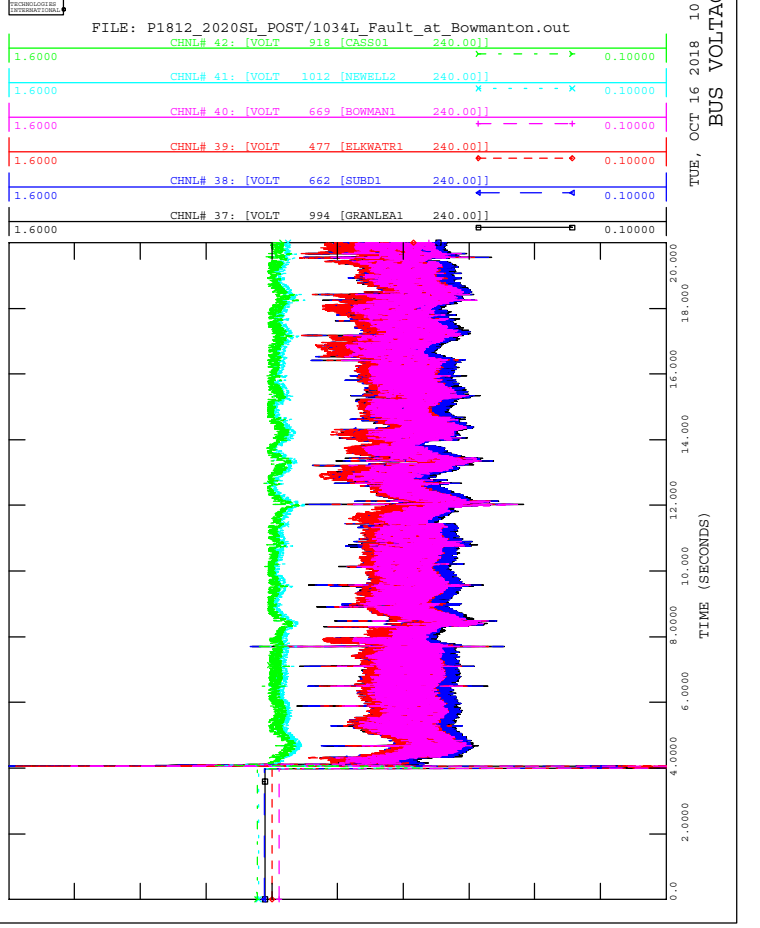
P1812_2020SL_POST
CATB -1034L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/1034L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:15 BUS VOLTAGE

CHNL# 42: [VOLT 918 [CASS01 240.00] 1.6000 0.10000
CHNL# 41: [VOLT 1012 [NEWELL2 240.00] 1.6000 0.10000
CHNL# 40: [VOLT 669 [BOWMAN1 240.00] 1.6000 0.10000
CHNL# 39: [VOLT 477 [ELKWATR1 240.00] 1.6000 0.10000
CHNL# 38: [VOLT 662 [SUBD1 240.00] 1.6000 0.10000
CHNL# 37: [VOLT 994 [GRANLEA1 240.00] 1.6000 0.10000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SL_POST
CATB -983L_FAULT_AT_ELKWATER

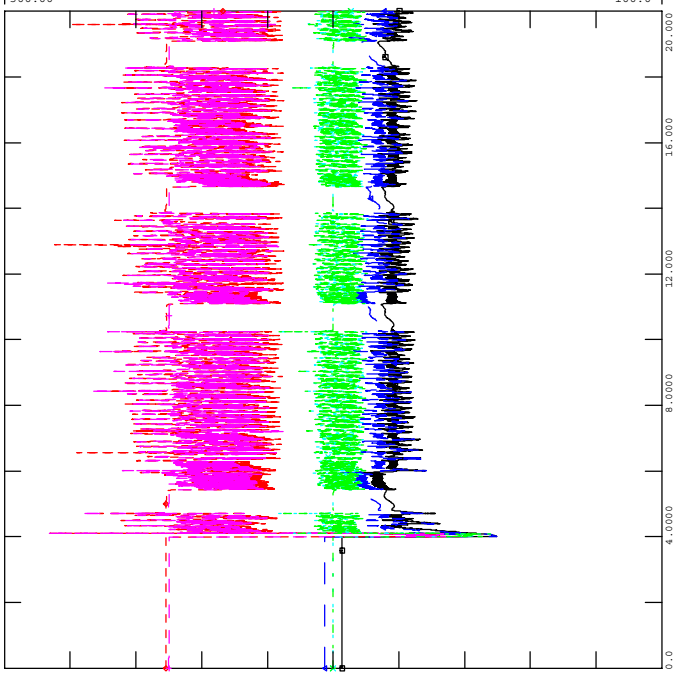
FILE: P1812_2020SL_POST/983L_Fault_at_Elkwater.out

TUE, OCT 16 2018 10:15

MACHINE POWER

CHNL# 20: [POWR 62994[GRANLEA7 0.6900]G2]*100
CHNL# 19: [POWR 61994[GRANLEA6 0.6900]G1]*100
CHNL# 18: [POWR 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 17: [POWR 60990[SHAMROC5 0.6500]G1]*100
CHNL# 16: [POWR 5632[WR1LV16 0.6900]1]*100
CHNL# 15: [POWR 3462[WR2WF4 0.6900]1]*100

300.00 / -100.0



P1812_2020SL_POST
CATB -983L_FAULT_AT_ELKWATER

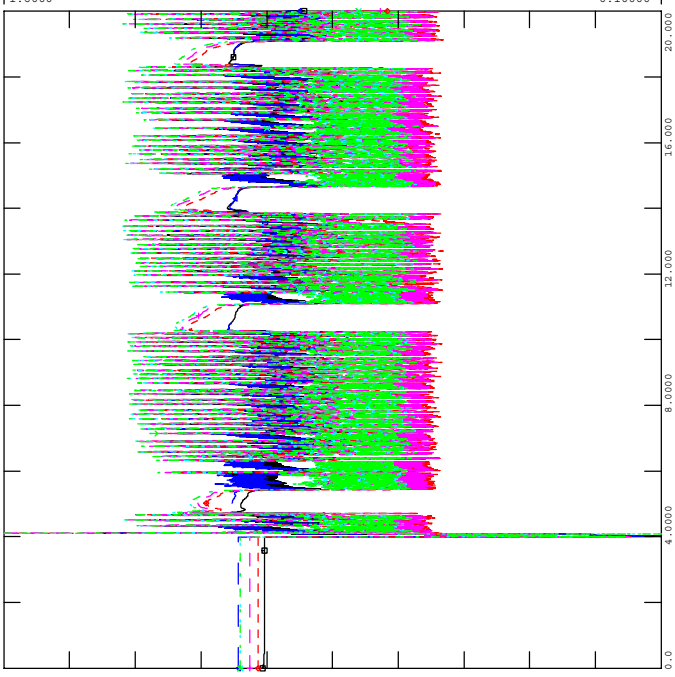
FILE: P1812_2020SL_POST/983L_Fault_at_Elkwater.out

TUE, OCT 16 2018 10:16

MACHINE VOLTAGE

CHNL# 36: [VOLT 62994 [GRANLEA7 0.6900]]
CHNL# 35: [VOLT 61994 [GRANLEA6 0.6900]]
CHNL# 34: [VOLT 60641 [FORTYMILE1 0.6900]]
CHNL# 33: [VOLT 60990 [SHAMROC5 0.6500]]
CHNL# 32: [VOLT 5632 [WR1LV16 0.6900]]
CHNL# 31: [VOLT 3462 [WR2WF4 0.6900]]

1.6000 / 0.10000



P1812_2020SL_POST
CATB -983L_FAULT_AT_ELKWATER

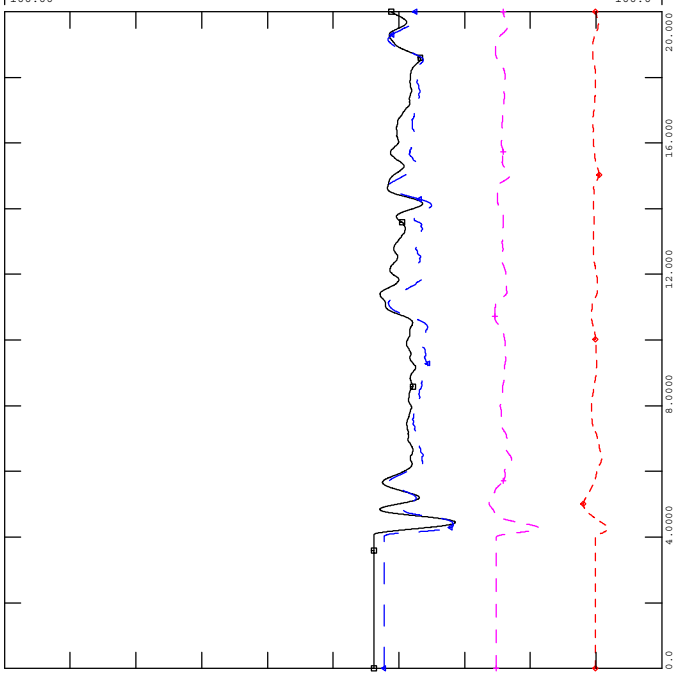
FILE: P1812_2020SL_POST/983L_Fault_at_Elkwater.out

TUE, OCT 16 2018 10:15

MACHINE ANGEL

CHNL# 4: [ANGL 1482[SHEER 1 19.000]1]
CHNL# 3: [ANGL 773[SECST 20.000]1]
CHNL# 2: [ANGL 713[CMH 14 13.800]14]
CHNL# 1: [ANGL 667[CANCARB9 13.800]1]

100.00 / -100.0



P1812_2020SL_POST
CATB -983L_FAULT_AT_ELKWATER

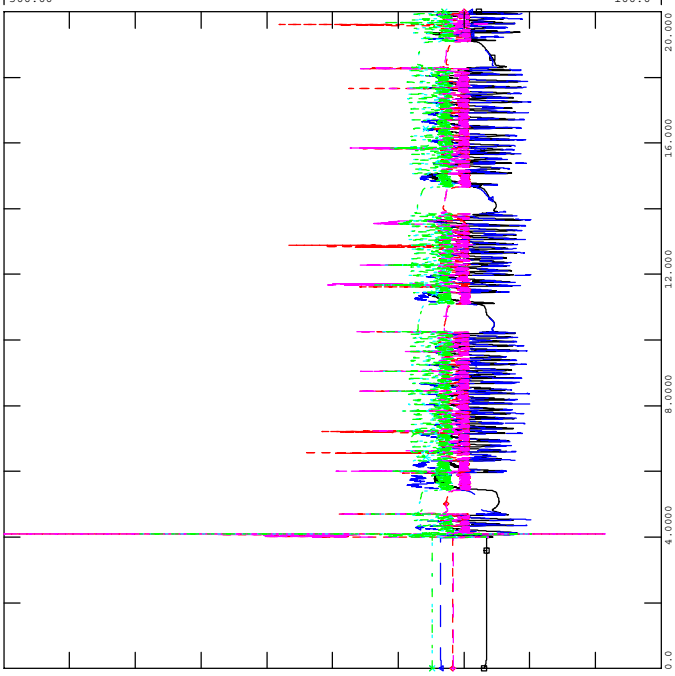
FILE: P1812_2020SL_POST/983L_Fault_at_Elkwater.out

TUE, OCT 16 2018 10:16

MACHINE VAR

CHNL# 30: [VARS 62994[GRANLEA7 0.6900]G2]*100
CHNL# 29: [VARS 61994[GRANLEA6 0.6900]G1]*100
CHNL# 28: [VARS 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 27: [VARS 60990[SHAMROC5 0.6500]G1]*100
CHNL# 26: [VARS 5632[WR1LV16 0.6900]1]*100
CHNL# 25: [VARS 3462[WR2WF4 0.6900]1]*100

300.00 / -100.0



P1812_2020SL_POST
CATB -983L_FAULT_AT_ELKWATER

FILE: P1812_2020SL_POST/983L_Fault_at_Elkwater.out

TUE, OCT 16 2018 10:16

LINE VAR

CHNL# 59: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 57: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 55: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 53: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 51: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 49: [VARS 662 TO 720 CKT '64'] 650.00 -350.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SL_POST
CATB -983L_FAULT_AT_ELKWATER

FILE: P1812_2020SL_POST/983L_Fault_at_Elkwater.out

TUE, OCT 16 2018 10:16

FREQUENCY

CHNL# 47: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SL_POST
CATB -983L_FAULT_AT_ELKWATER

FILE: P1812_2020SL_POST/983L_Fault_at_Elkwater.out

TUE, OCT 16 2018 10:16

LINE POWER

CHNL# 58: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 56: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 54: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 52: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 50: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 48: [POWR 662 TO 720 CKT '64'] 800.00 -200.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SL_POST
CATB -983L_FAULT_AT_ELKWATER

FILE: P1812_2020SL_POST/983L_Fault_at_Elkwater.out

TUE, OCT 16 2018 10:16

BUS VOLTAGE

CHNL# 42: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 41: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 40: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 39: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 38: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 37: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SL_POST
CATB -983L_FAULT_AT_WHITLA

FILE: P1812_2020SL_POST/983L_Fault_at_Whitla.out

CHNL# 20: [POWR 62994[GRANLEA7 0.6900]G2]*100
CHNL# 19: [POWR 61994[GRANLEA6 0.6900]G1]*100
CHNL# 18: [POWR 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 17: [POWR 60990[SHAMROC5 0.6500]G1]*100
CHNL# 16: [POWR 5632[WR1LV16 0.6900]1]*100
CHNL# 15: [POWR 3462[WR2WF4 0.6900]1]*100

TUE, OCT 16 2018 10:16
MACHINE POWER
TIME (SECONDS)

P1812_2020SL_POST
CATB -983L_FAULT_AT_WHITLA

FILE: P1812_2020SL_POST/983L_Fault_at_Whitla.out

CHNL# 36: [VOLT 62994 [GRANLEA7 0.6900]]
CHNL# 35: [VOLT 61994 [GRANLEA6 0.6900]]
CHNL# 34: [VOLT 60641 [FORTYMILE1 0.6900]]
CHNL# 33: [VOLT 60990 [SHAMROC5 0.6500]]
CHNL# 32: [VOLT 5632 [WR1LV16 0.6900]]
CHNL# 31: [VOLT 3462 [WR2WF4 0.6900]]

TUE, OCT 16 2018 10:16
MACHINE VOLTAGE
TIME (SECONDS)

P1812_2020SL_POST
CATB -983L_FAULT_AT_WHITLA

FILE: P1812_2020SL_POST/983L_Fault_at_Whitla.out

CHNL# 4: [ANGL 1482[SHEER 1 19.000]1]
CHNL# 3: [ANGL 773[SECST 20.000]1]
CHNL# 2: [ANGL 713[CMH 14 13.800]14]
CHNL# 1: [ANGL 667[CANCARB9 13.800]1]

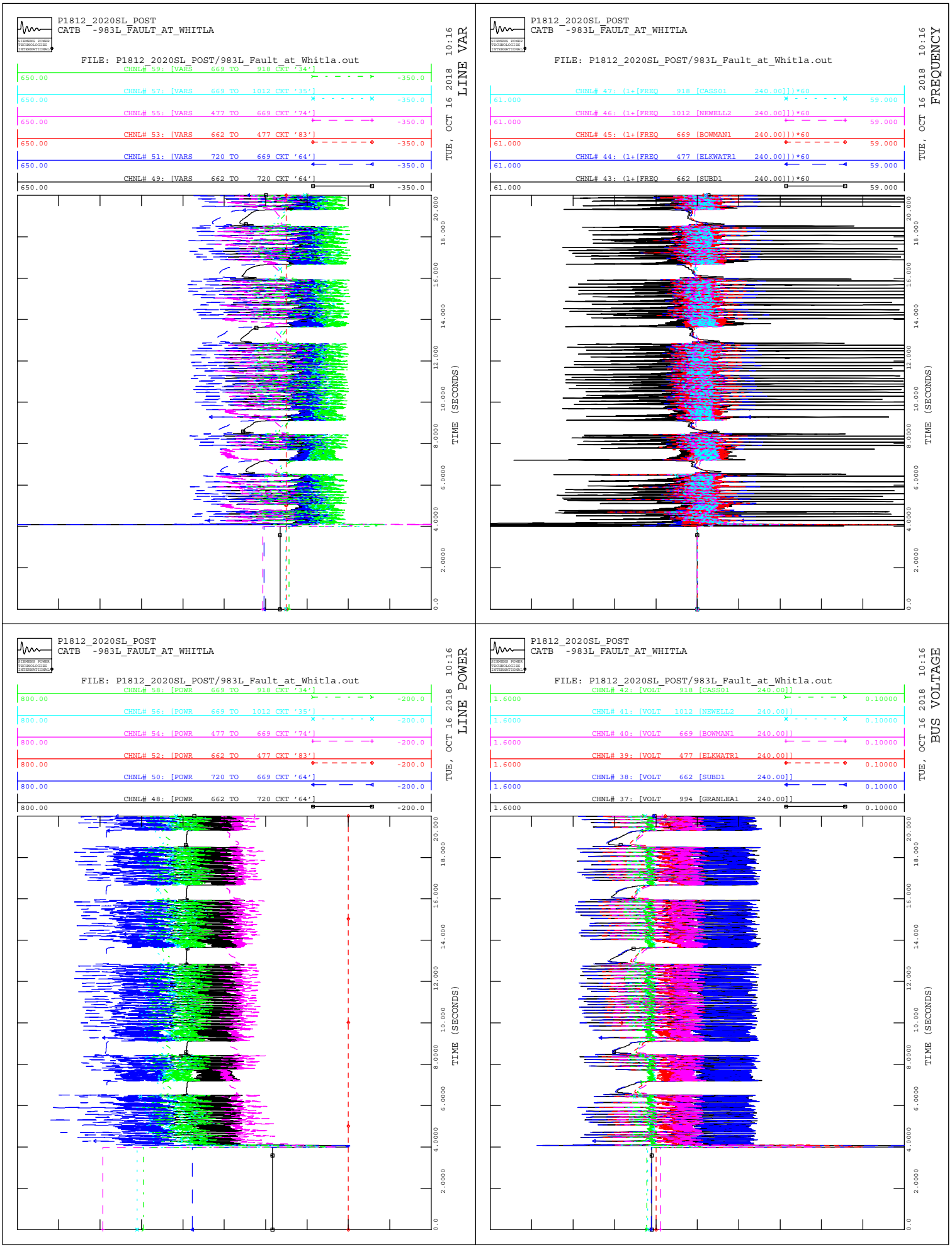
TUE, OCT 16 2018 10:16
MACHINE ANGEL
TIME (SECONDS)

P1812_2020SL_POST
CATB -983L_FAULT_AT_WHITLA

FILE: P1812_2020SL_POST/983L_Fault_at_Whitla.out

CHNL# 30: [VARS 62994[GRANLEA7 0.6900]G2]*100
CHNL# 29: [VARS 61994[GRANLEA6 0.6900]G1]*100
CHNL# 28: [VARS 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 27: [VARS 60990[SHAMROC5 0.6500]G1]*100
CHNL# 26: [VARS 5632[WR1LV16 0.6900]1]*100
CHNL# 25: [VARS 3462[WR2WF4 0.6900]1]*100

TUE, OCT 16 2018 10:16
MACHINE VAR
TIME (SECONDS)

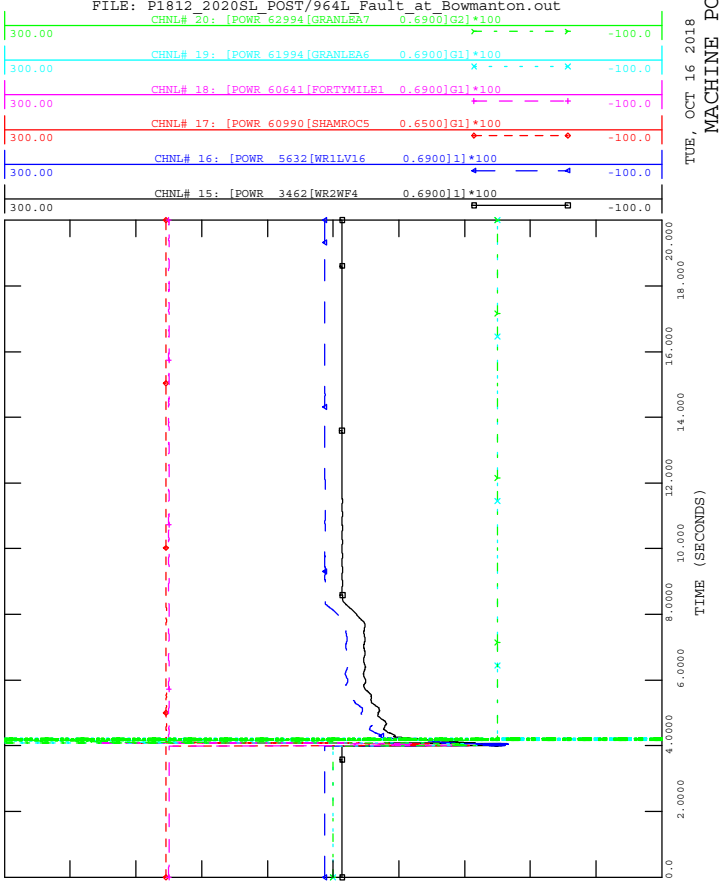

P1812_2020SL_POST
CATB -983L_FAULT_AT_WHITLA
FILE: P1812_2020SL_POST/983L_Fault_at_Whitla.out
CHNL# 59: [VARS 669 TO 918 CKT '34']
CHNL# 57: [VARS 669 TO 1012 CKT '35']
CHNL# 55: [VARS 477 TO 669 CKT '74']
CHNL# 53: [VARS 662 TO 477 CKT '83']
CHNL# 51: [VARS 720 TO 669 CKT '64']
CHNL# 49: [VARS 662 TO 720 CKT '64']
650.00
-350.0
TUE, OCT 16 2018 10:16
LINE VAR
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000
P1812_2020SL_POST
CATB -983L_FAULT_AT_WHITLA
FILE: P1812_2020SL_POST/983L_Fault_at_Whitla.out
CHNL# 47: (1+[FREQ 918 [CASS01 240.00]])*60
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00]])*60
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00]])*60
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00]])*60
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00]])*60
61.000
59.000
TUE, OCT 16 2018 10:16
FREQUENCY
TIME (SECONDS)
P1812_2020SL_POST
CATB -983L_FAULT_AT_WHITLA
FILE: P1812_2020SL_POST/983L_Fault_at_Whitla.out
CHNL# 58: [POWR 669 TO 918 CKT '34']
CHNL# 56: [POWR 669 TO 1012 CKT '35']
CHNL# 54: [POWR 477 TO 669 CKT '74']
CHNL# 52: [POWR 662 TO 477 CKT '83']
CHNL# 50: [POWR 720 TO 669 CKT '64']
CHNL# 48: [POWR 662 TO 720 CKT '64']
800.00
-200.0
TUE, OCT 16 2018 10:16
LINE POWER
TIME (SECONDS)
P1812_2020SL_POST
CATB -983L_FAULT_AT_WHITLA
FILE: P1812_2020SL_POST/983L_Fault_at_Whitla.out
CHNL# 42: [VOLT 918 [CASS01 240.00]]
CHNL# 41: [VOLT 1012 [NEWELL2 240.00]]
CHNL# 40: [VOLT 669 [BOWMAN1 240.00]]
CHNL# 39: [VOLT 477 [ELKWATR1 240.00]]
CHNL# 38: [VOLT 662 [SUBD1 240.00]]
CHNL# 37: [VOLT 994 [GRANLEA1 240.00]]
1.6000
0.10000
TUE, OCT 16 2018 10:16
BUS VOLTAGE
TIME (SECONDS)

P1812_2020SL_POST
CATB -964L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/964L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:16

MACHINE POWER

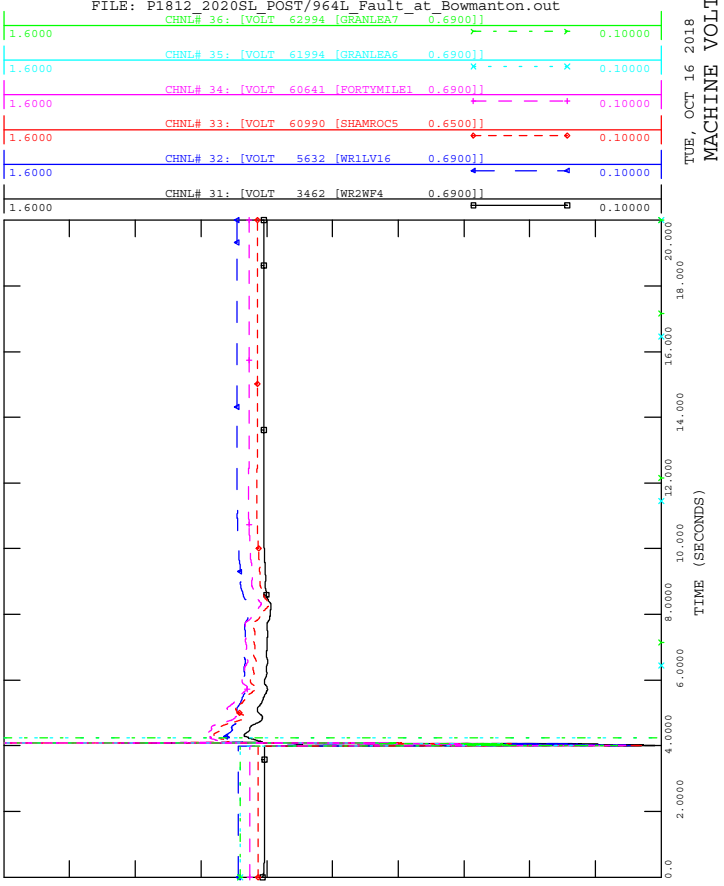


P1812_2020SL_POST
CATB -964L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/964L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:16

MACHINE VOLTAGE

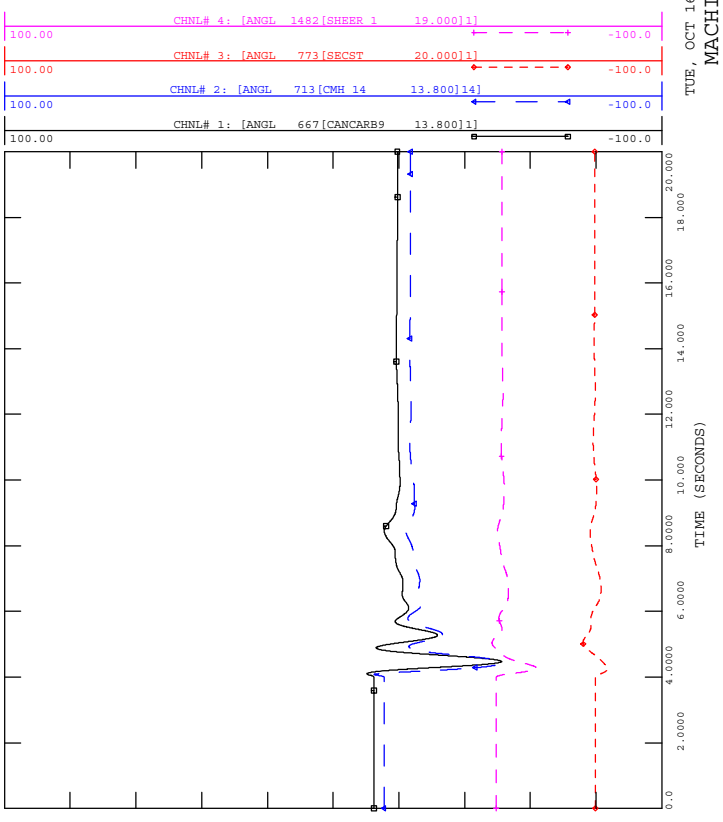


P1812_2020SL_POST
CATB -964L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/964L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:16

MACHINE ANGEL

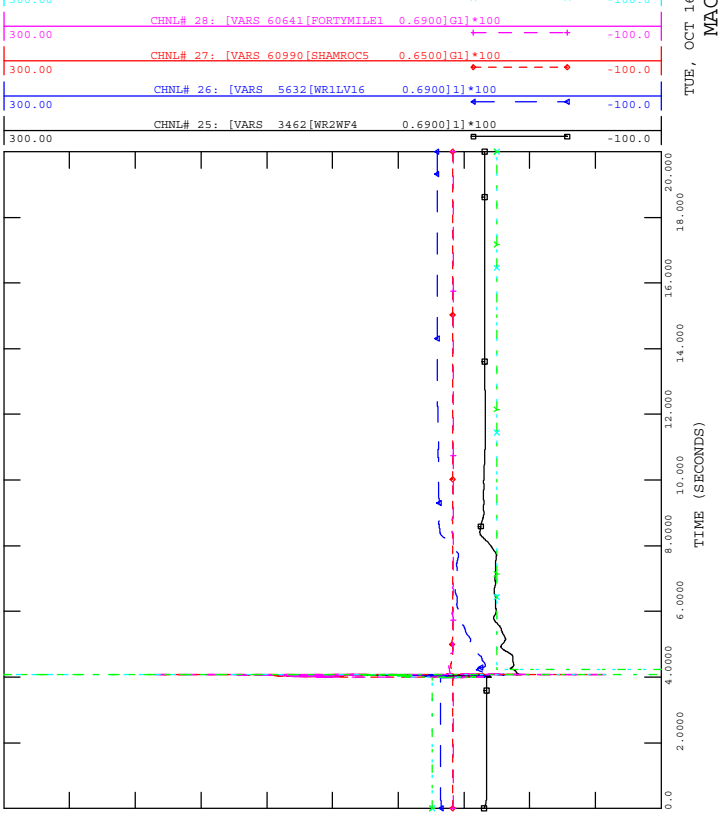


P1812_2020SL_POST
CATB -964L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/964L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:16

MACHINE VAR

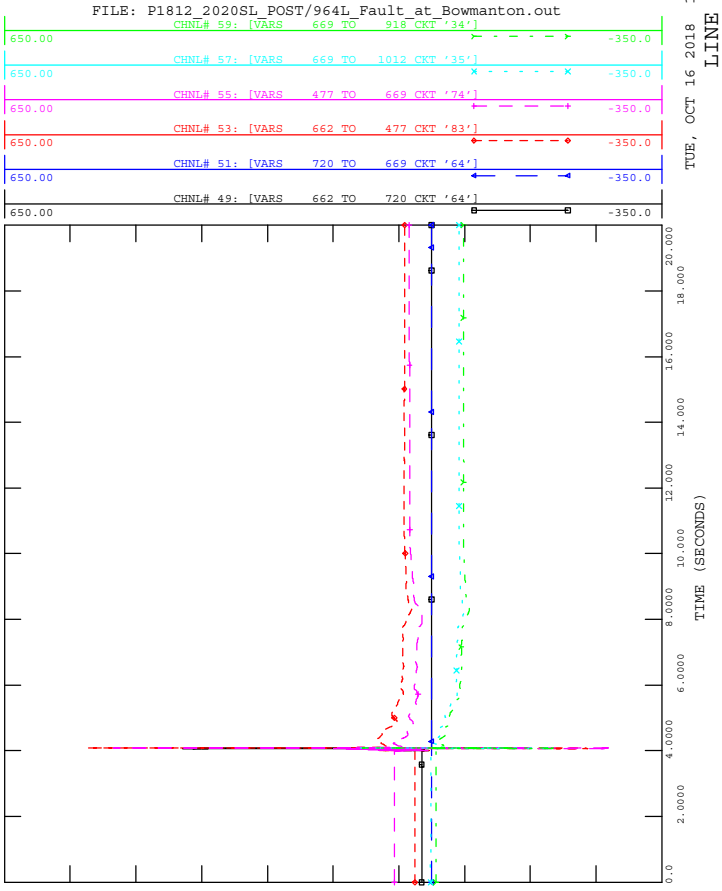


P1812_2020SL_POST
CATB -964L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/964L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:16

LINE VAR

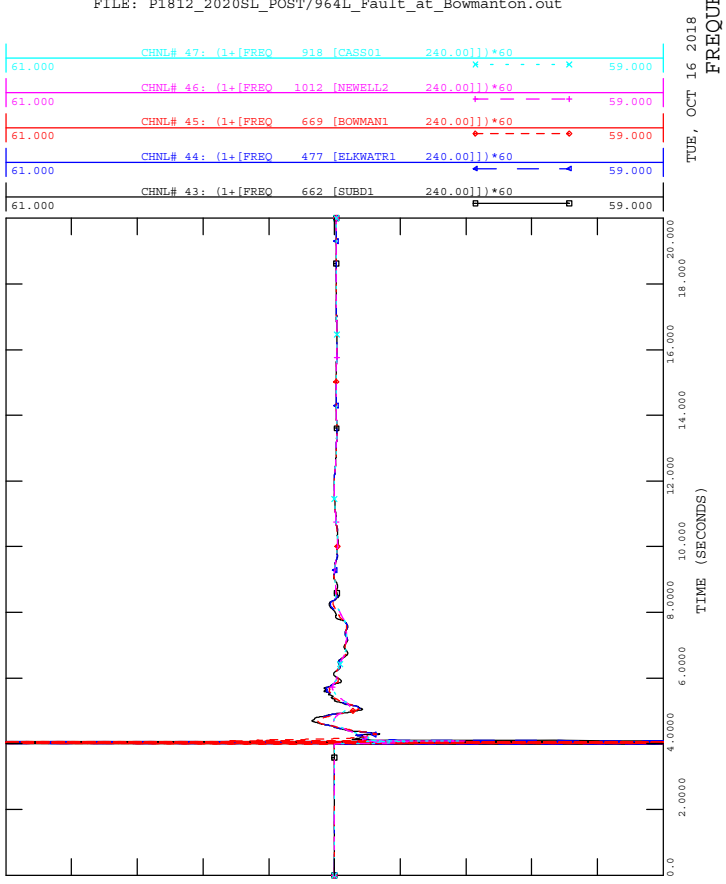


P1812_2020SL_POST
CATB -964L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/964L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:16

FREQUENCY

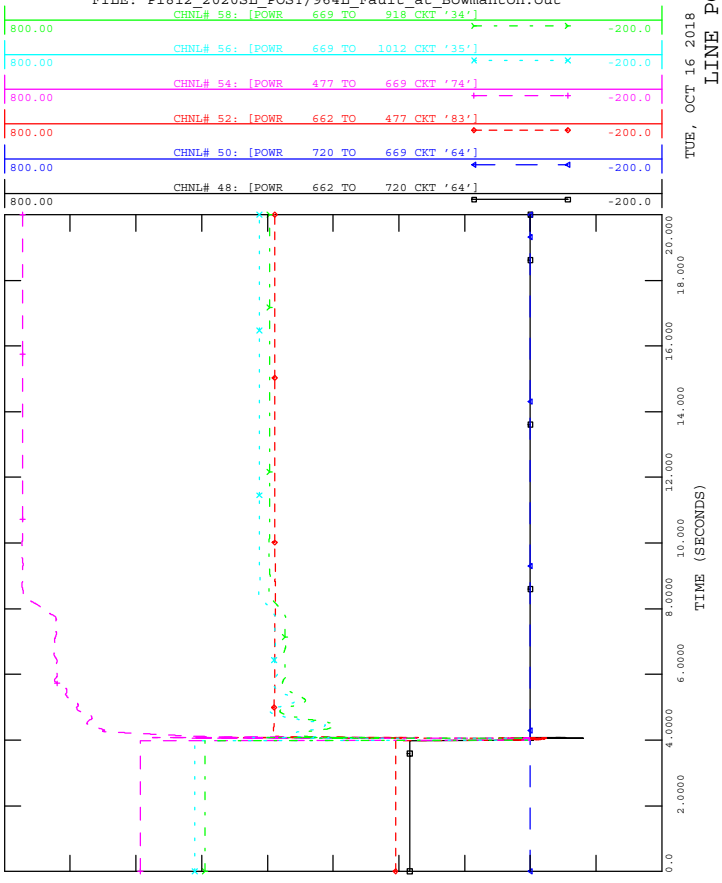


P1812_2020SL_POST
CATB -964L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/964L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:16

LINE POWER

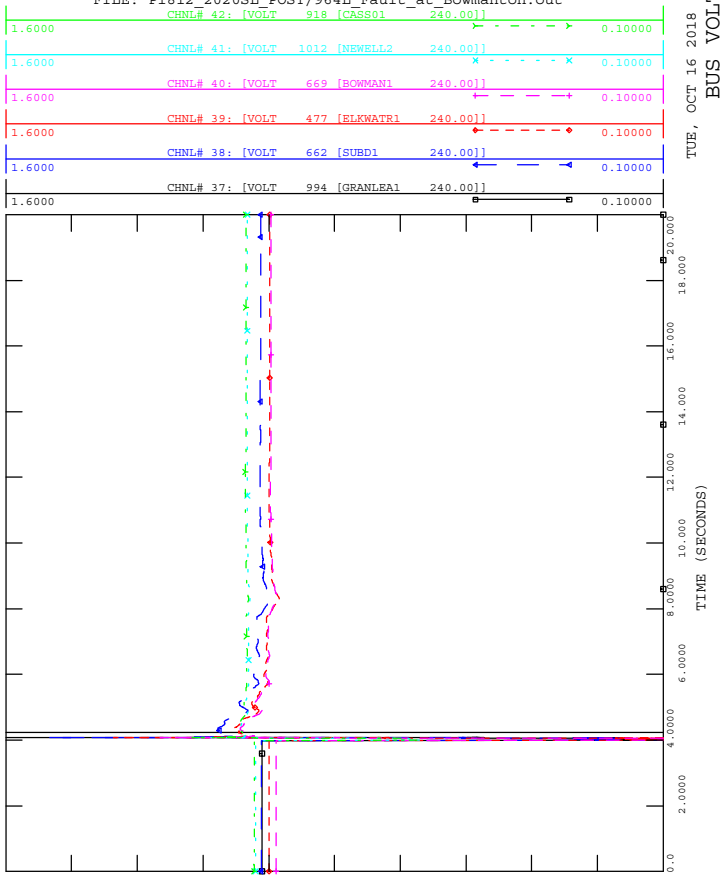


P1812_2020SL_POST
CATB -964L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/964L_Fault_at_Bowmanton.out

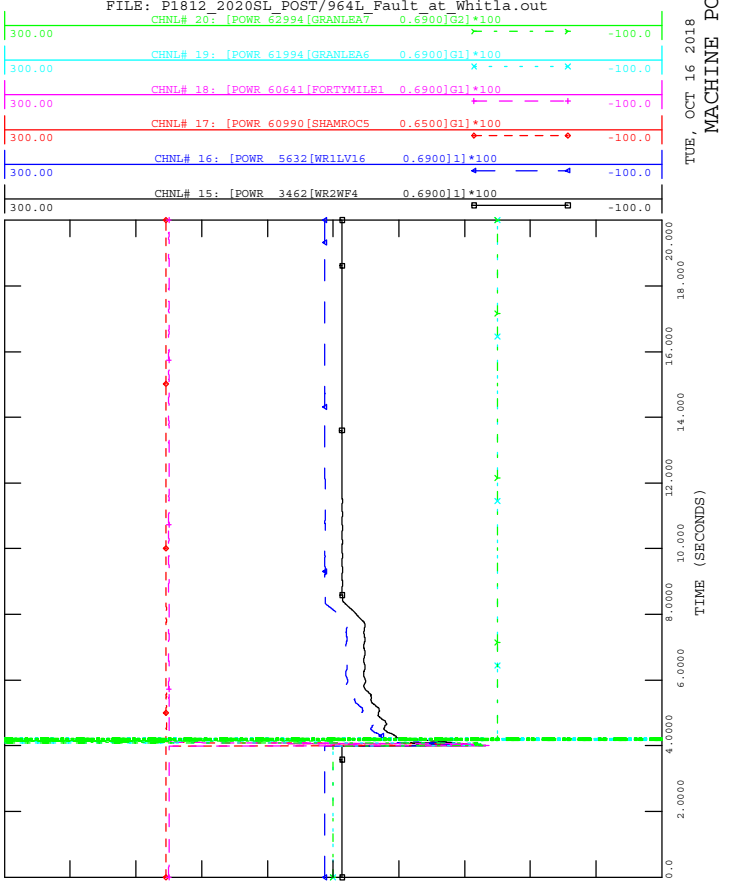
TUE, OCT 16 2018 10:16

BUS VOLTAGE



P1812_2020SL_POST
CATB -964L_FAULT_AT_WHITLA

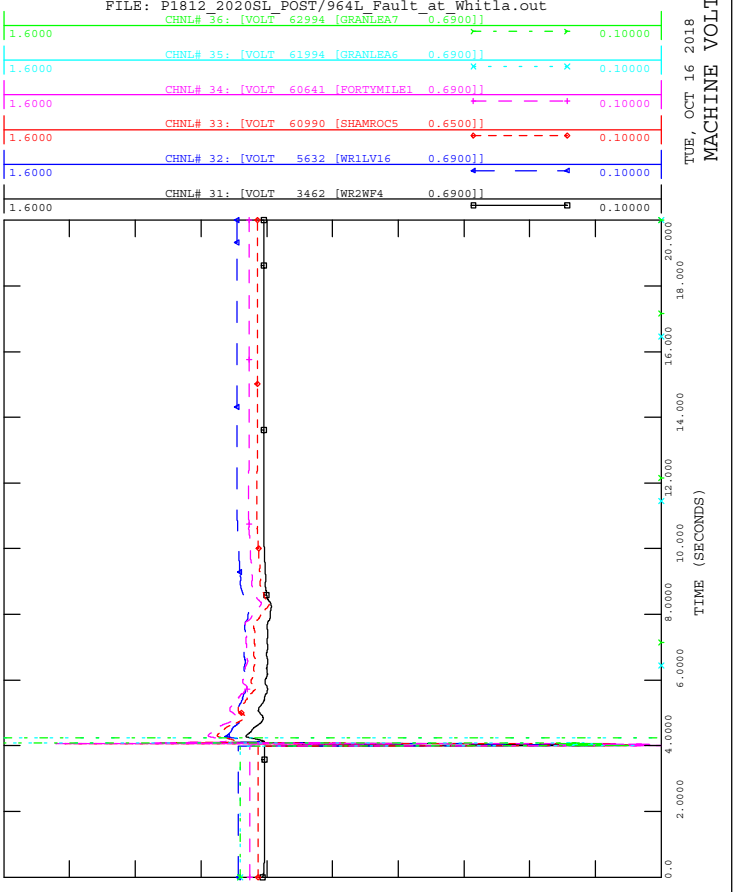
FILE: P1812_2020SL_POST/964L_Fault_at_Whitla.out



TUE, OCT 16 2018 10:16
MACHINE POWER

P1812_2020SL_POST
CATB -964L_FAULT_AT_WHITLA

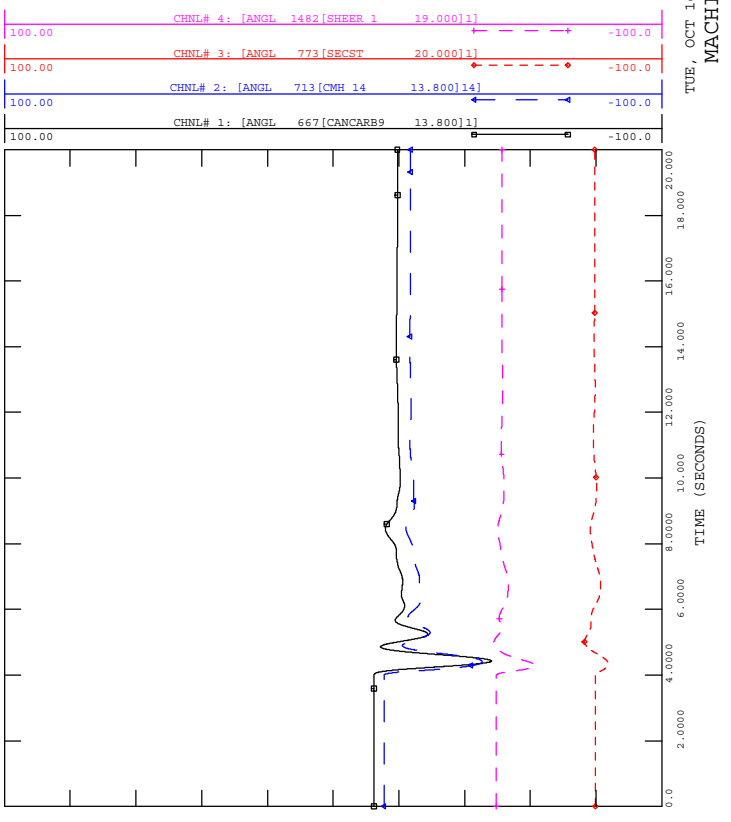
FILE: P1812_2020SL_POST/964L_Fault_at_Whitla.out



TUE, OCT 16 2018 10:16
MACHINE VOLTAGE

P1812_2020SL_POST
CATB -964L_FAULT_AT_WHITLA

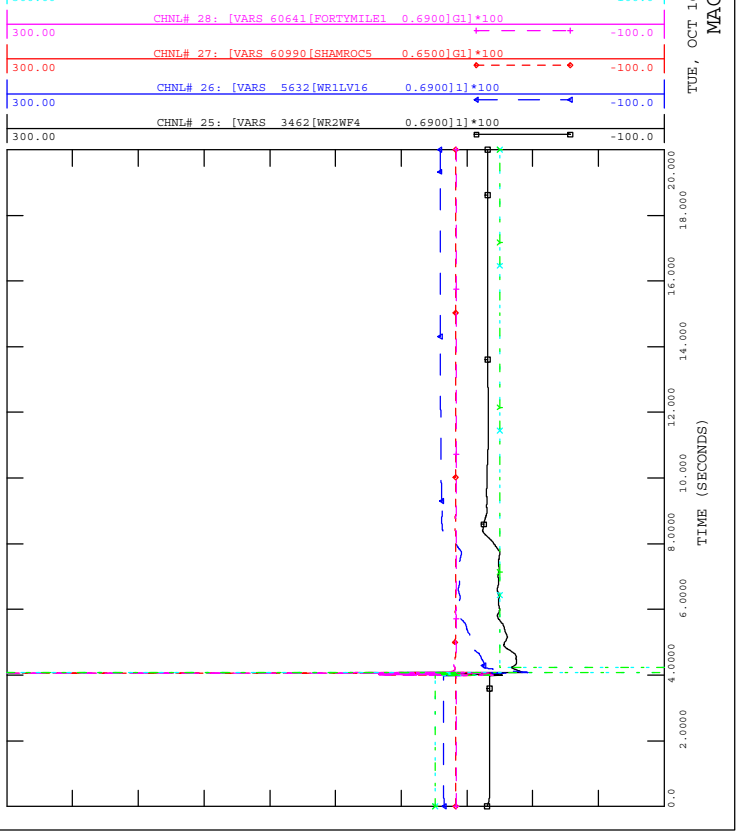
FILE: P1812_2020SL_POST/964L_Fault_at_Whitla.out



TUE, OCT 16 2018 10:16
MACHINE ANGEL

P1812_2020SL_POST
CATB -964L_FAULT_AT_WHITLA

FILE: P1812_2020SL_POST/964L_Fault_at_Whitla.out



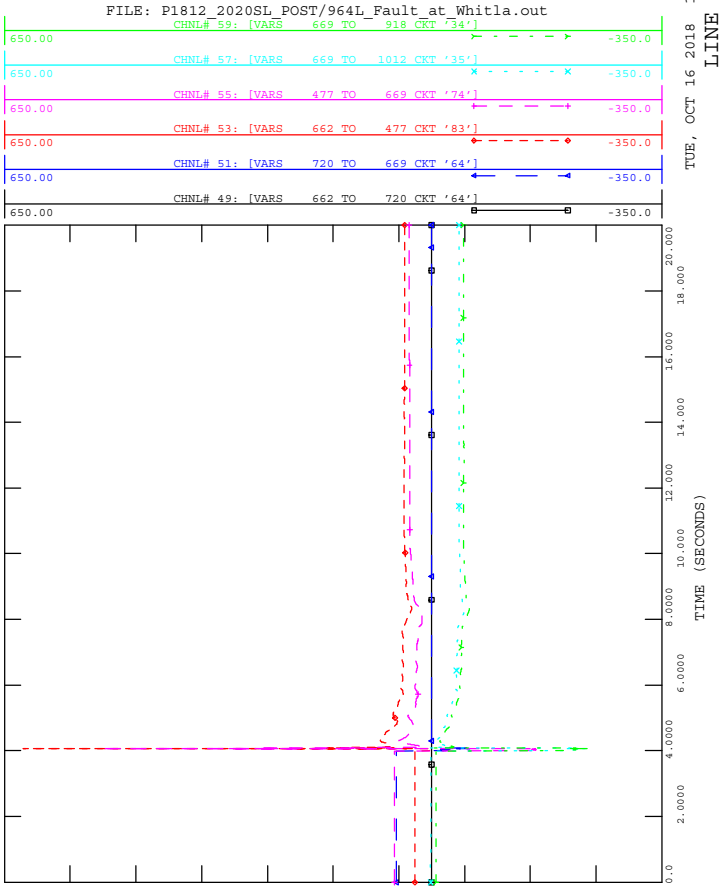
TUE, OCT 16 2018 10:16
MACHINE VAR

P1812_2020SL_POST
CATB -964L_FAULT_AT_WHITLA

FILE: P1812_2020SL_POST/964L_Fault_at_Whitla.out

TUE, OCT 16 2018 10:16

LINE VAR

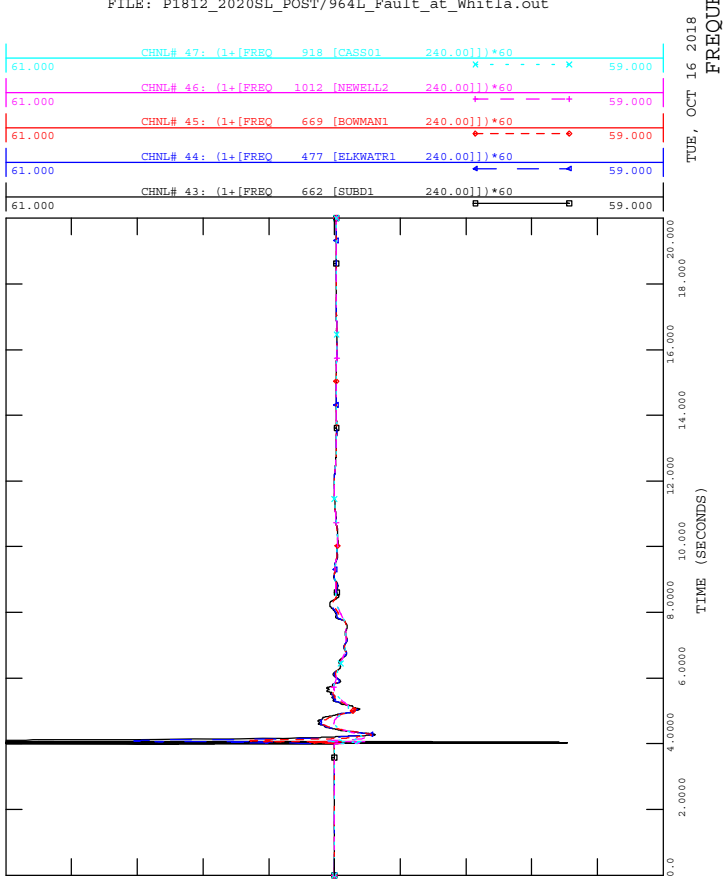


P1812_2020SL_POST
CATB -964L_FAULT_AT_WHITLA

FILE: P1812_2020SL_POST/964L_Fault_at_Whitla.out

TUE, OCT 16 2018 10:16

FREQUENCY

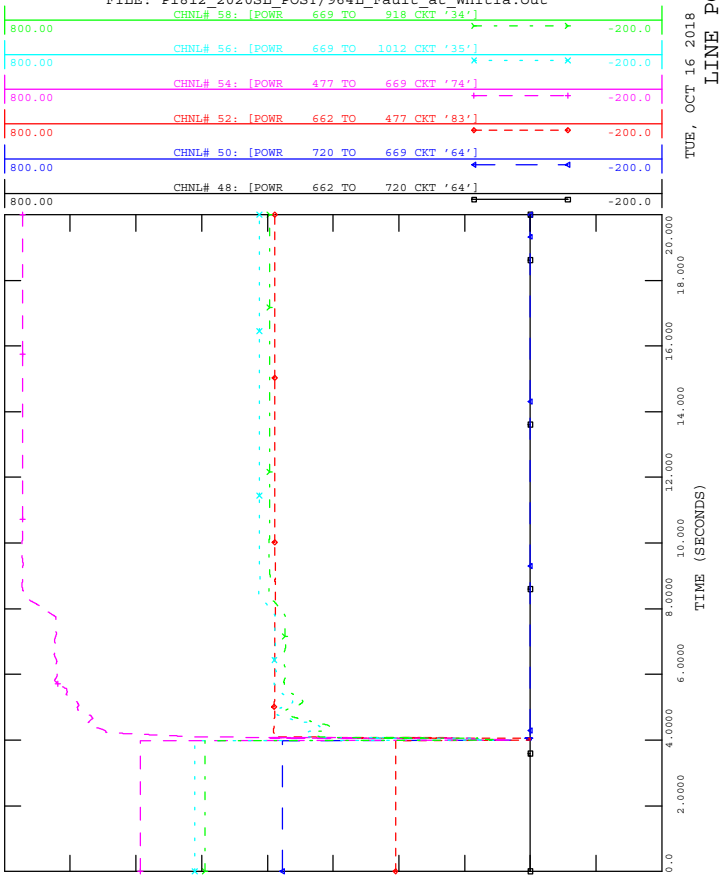


P1812_2020SL_POST
CATB -964L_FAULT_AT_WHITLA

FILE: P1812_2020SL_POST/964L_Fault_at_Whitla.out

TUE, OCT 16 2018 10:16

LINE POWER

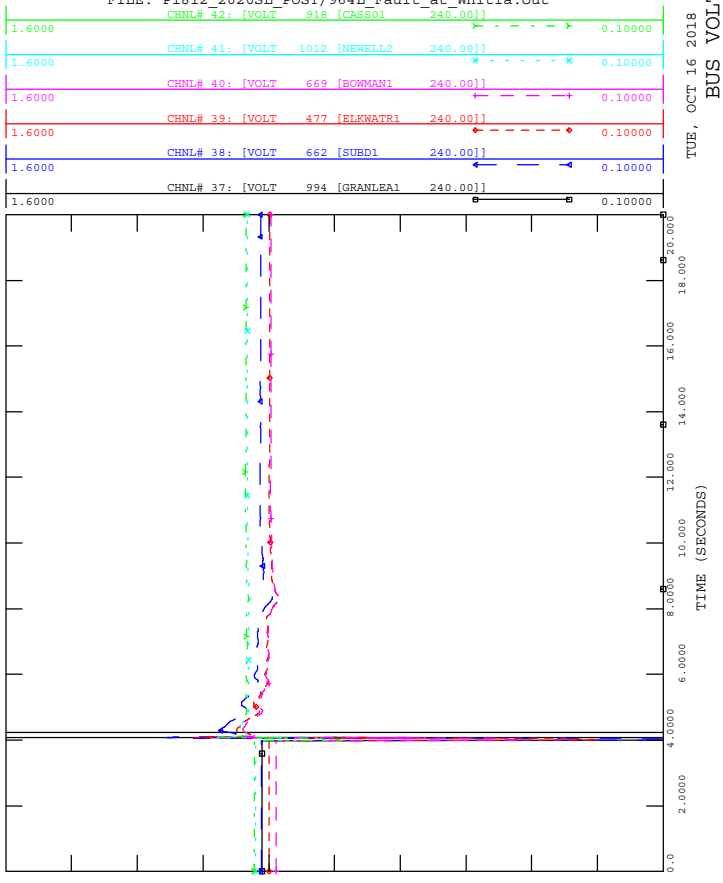


P1812_2020SL_POST
CATB -964L_FAULT_AT_WHITLA

FILE: P1812_2020SL_POST/964L_Fault_at_Whitla.out

TUE, OCT 16 2018 10:16

BUS VOLTAGE

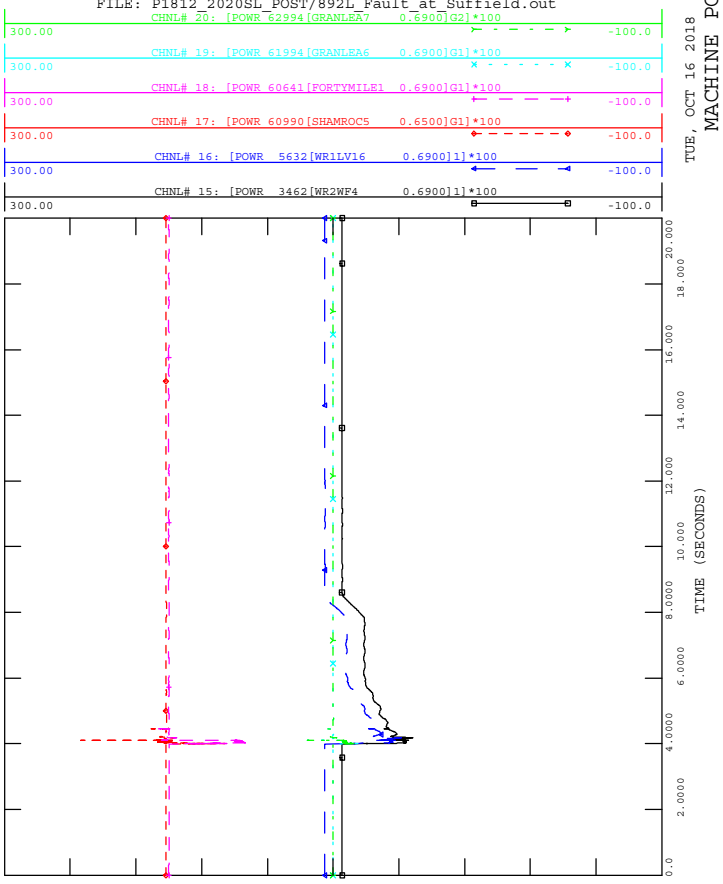


P1812_2020SL_POST
CATB -892L_FAULT_AT_SUFFIELD

FILE: P1812_2020SL_POST/892L_Fault_at_Suffield.out

TUE, OCT 16 2018 10:16

MACHINE POWER

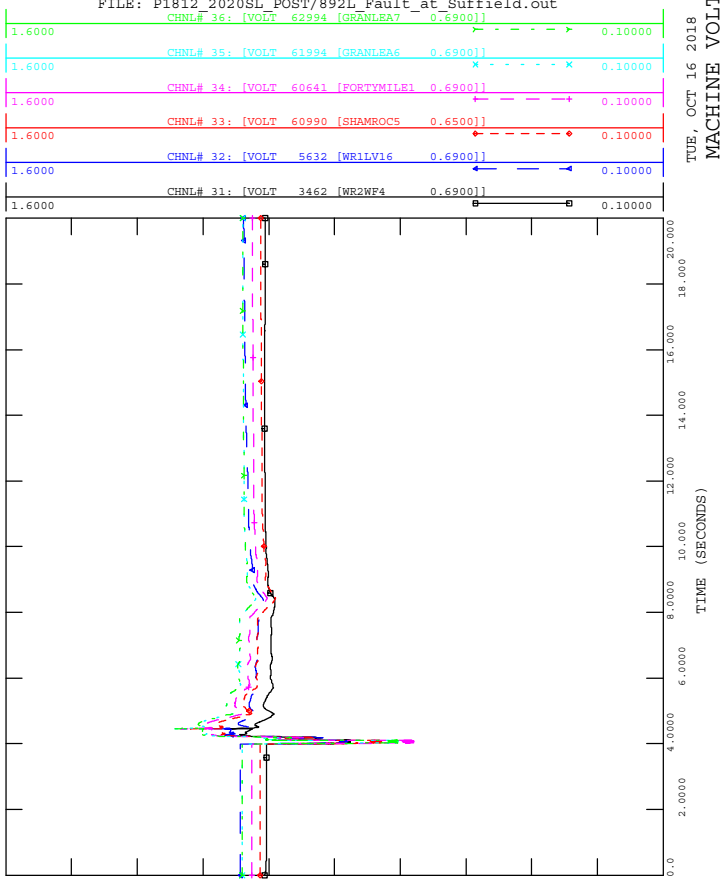


P1812_2020SL_POST
CATB -892L_FAULT_AT_SUFFIELD

FILE: P1812_2020SL_POST/892L_Fault_at_Suffield.out

TUE, OCT 16 2018 10:16

MACHINE VOLTAGE

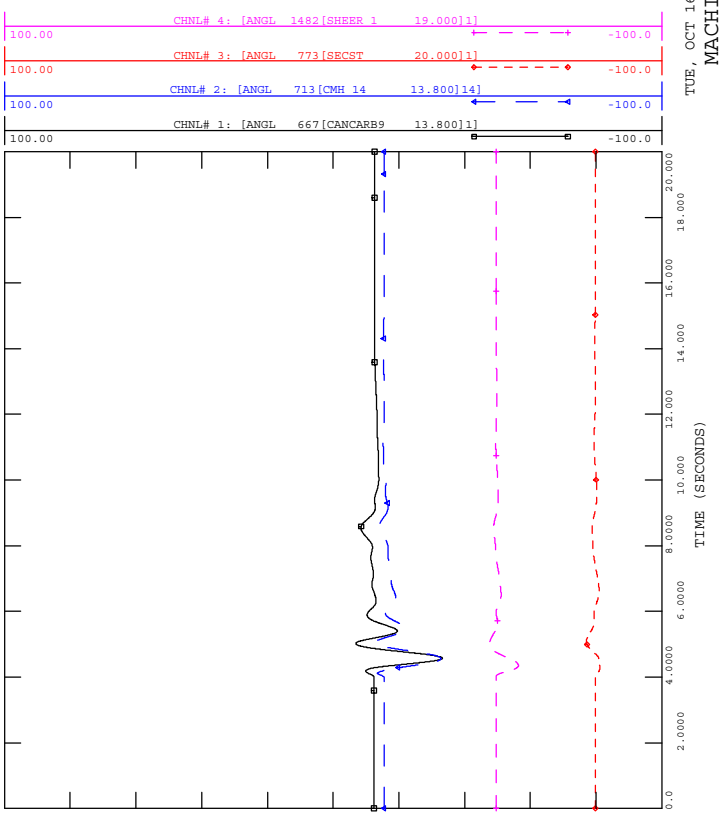


P1812_2020SL_POST
CATB -892L_FAULT_AT_SUFFIELD

FILE: P1812_2020SL_POST/892L_Fault_at_Suffield.out

TUE, OCT 16 2018 10:16

MACHINE ANGEL

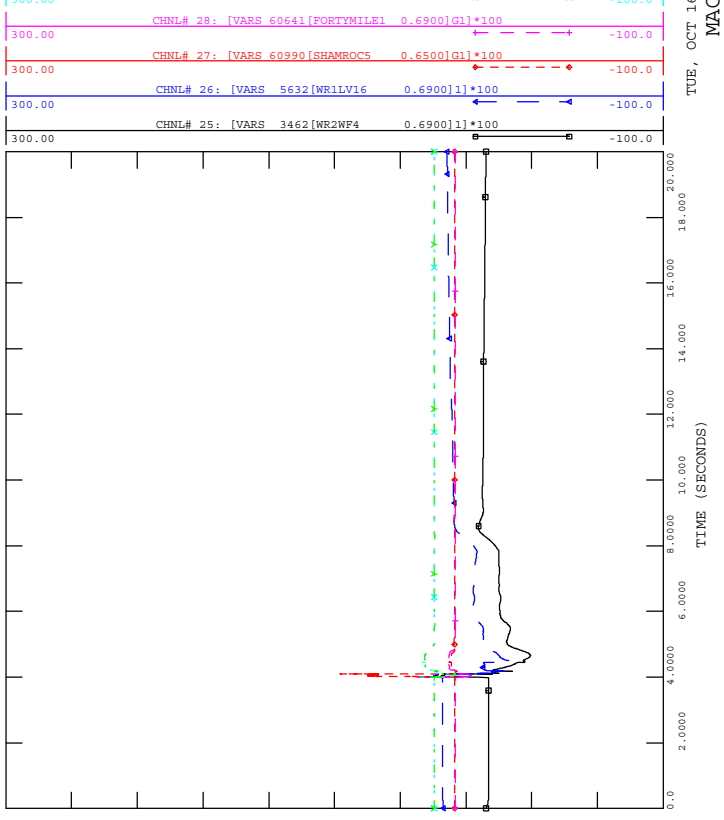


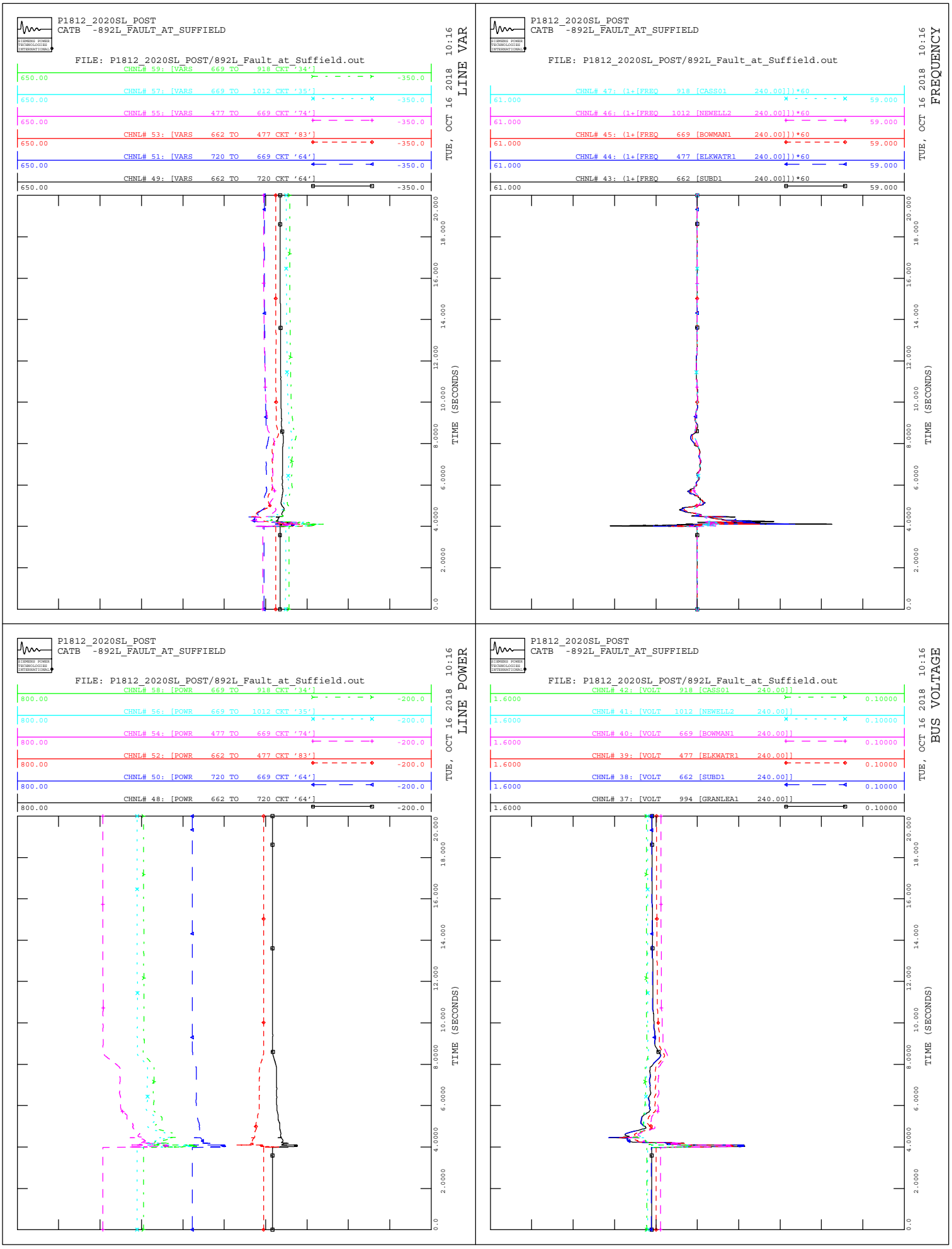
P1812_2020SL_POST
CATB -892L_FAULT_AT_SUFFIELD

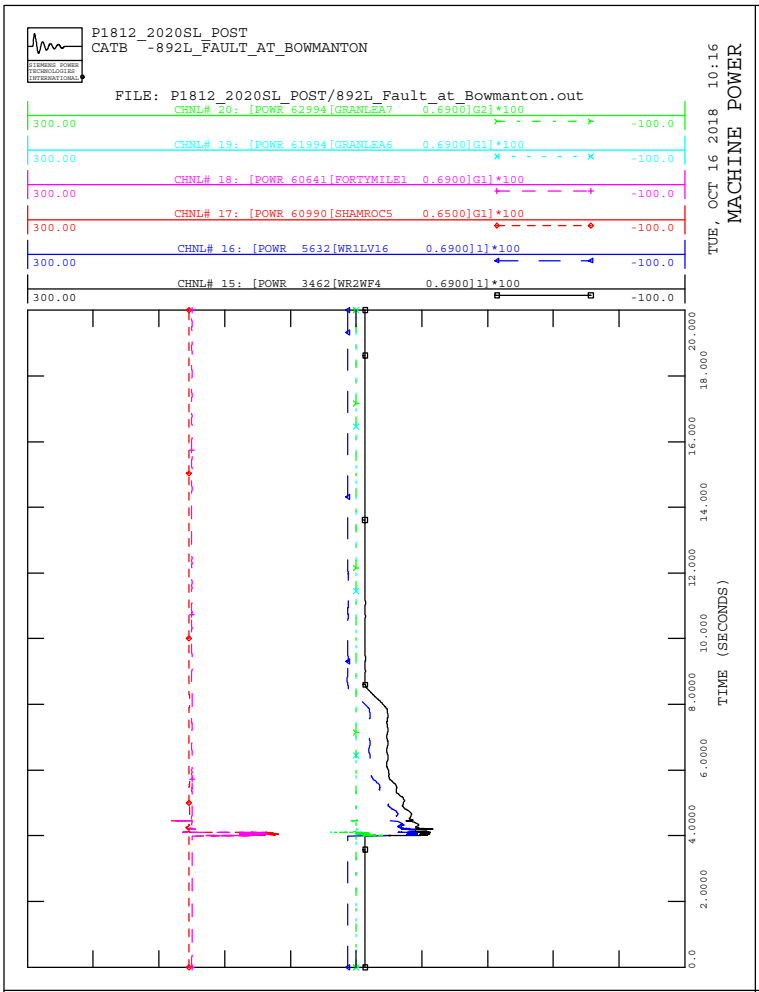
FILE: P1812_2020SL_POST/892L_Fault_at_Suffield.out

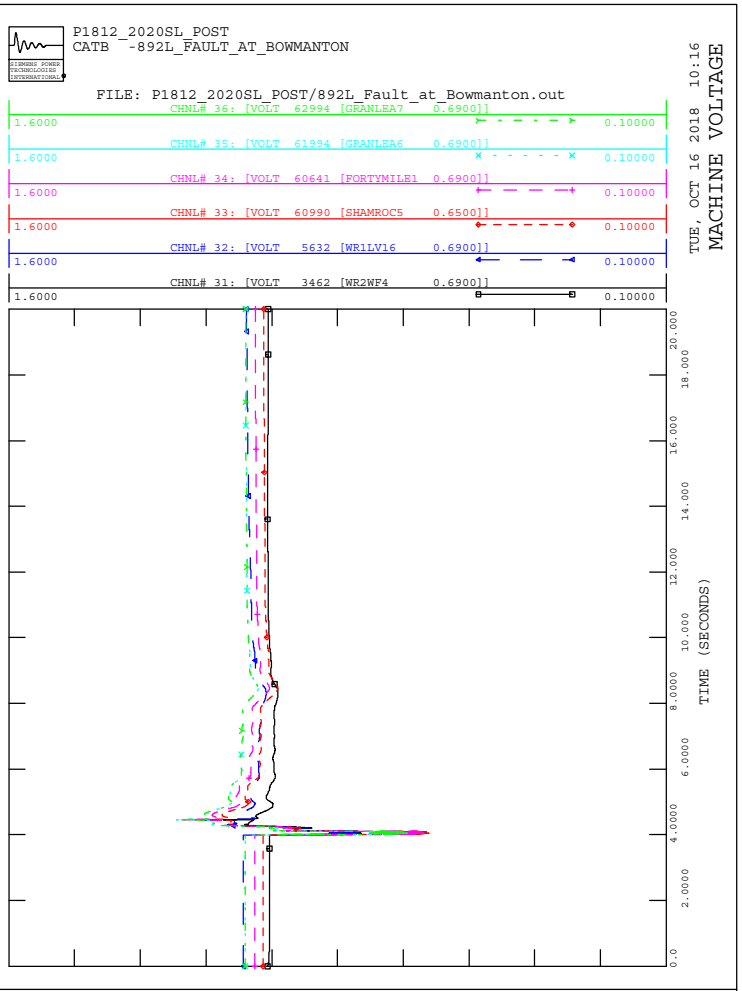
TUE, OCT 16 2018 10:16

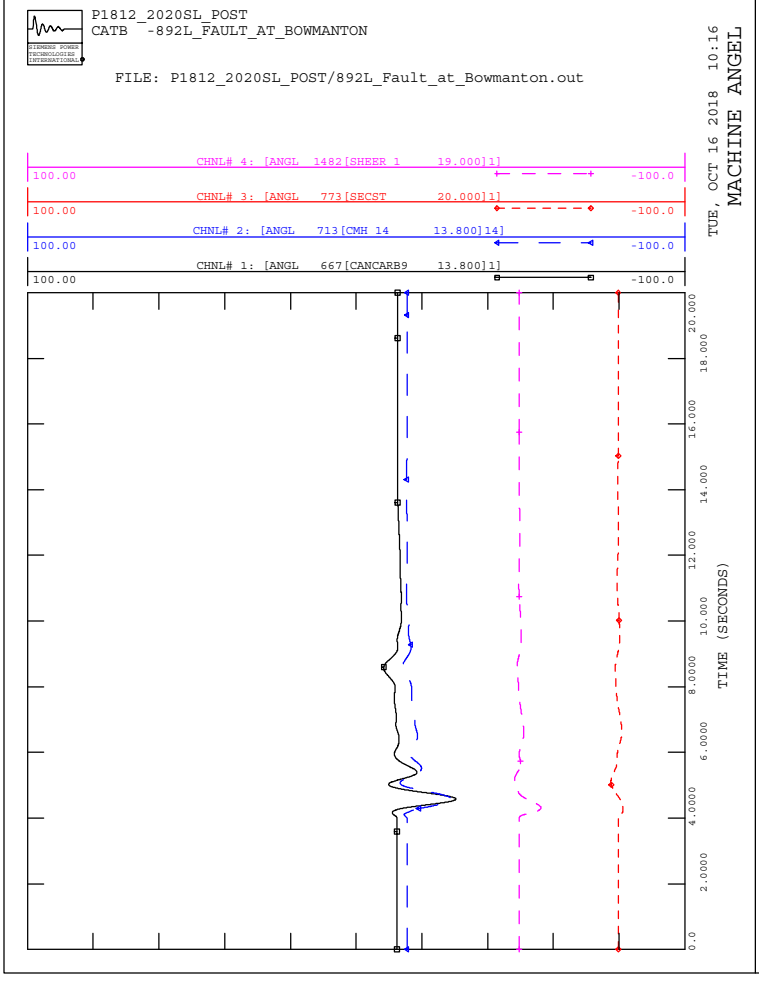
MACHINE VAR

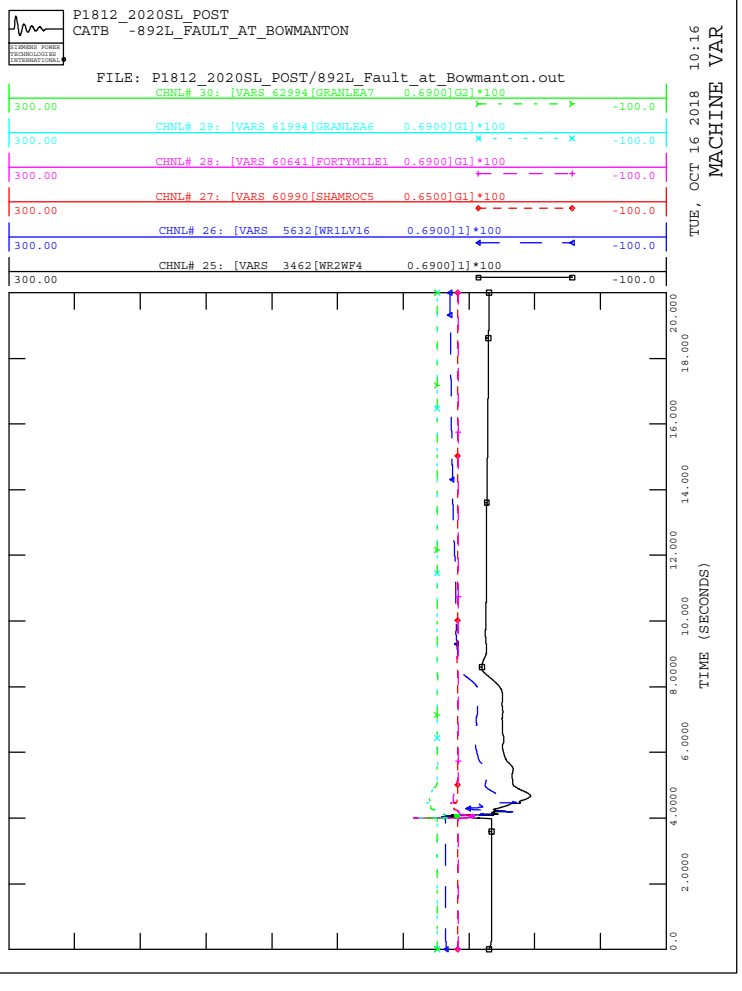



P1812_2020SL_POST
CATB -892L_FAULT_AT_SUFFIELD
FILE: P1812_2020SL_POST/892L_Fault_at_Suffield.out
CHNL# 59: [VARS 669 TO 918 CKT '34']
CHNL# 57: [VARS 669 TO 1012 CKT '35']
CHNL# 55: [VARS 477 TO 669 CKT '74']
CHNL# 53: [VARS 662 TO 477 CKT '83']
CHNL# 51: [VARS 720 TO 669 CKT '64']
CHNL# 49: [VARS 662 TO 720 CKT '64']
650.00
-350.0
TUE, OCT 16 2018 10:16
LINE VAR
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000
P1812_2020SL_POST
CATB -892L_FAULT_AT_SUFFIELD
FILE: P1812_2020SL_POST/892L_Fault_at_Suffield.out
CHNL# 47: (1+[FREQ 918 [CASS01 240.00])*60
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00])*60
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00])*60
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00])*60
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00])*60
61.000
59.000
TUE, OCT 16 2018 10:16
FREQUENCY
TIME (SECONDS)
P1812_2020SL_POST
CATB -892L_FAULT_AT_SUFFIELD
FILE: P1812_2020SL_POST/892L_Fault_at_Suffield.out
CHNL# 58: [POWR 669 TO 918 CKT '34']
CHNL# 56: [POWR 669 TO 1012 CKT '35']
CHNL# 54: [POWR 477 TO 669 CKT '74']
CHNL# 52: [POWR 662 TO 477 CKT '83']
CHNL# 50: [POWR 720 TO 669 CKT '64']
CHNL# 48: [POWR 662 TO 720 CKT '64']
800.00
-200.0
TUE, OCT 16 2018 10:16
LINE POWER
TIME (SECONDS)
P1812_2020SL_POST
CATB -892L_FAULT_AT_SUFFIELD
FILE: P1812_2020SL_POST/892L_Fault_at_Suffield.out
CHNL# 42: [VOLT 918 [CASS01 240.00]]
CHNL# 41: [VOLT 1012 [NEWELL2 240.00]]
CHNL# 40: [VOLT 669 [BOWMAN1 240.00]]
CHNL# 39: [VOLT 477 [ELKWATR1 240.00]]
CHNL# 38: [VOLT 662 [SUBD1 240.00]]
CHNL# 37: [VOLT 994 [GRANLEA1 240.00]]
1.6000
0.10000
TUE, OCT 16 2018 10:16
BUS VOLTAGE
TIME (SECONDS)


P1812_2020SL_POST
CATB -892L_FAULT_AT_BOWMANTON
FILE: P1812_2020SL_POST/892L_Fault_at_Bowmanton.out
CHNL# 20: [POWR 62994[GRANLEA7 0.6900]G2]*100
CHNL# 19: [POWR 61994[GRANLEA6 0.6900]G1]*100
CHNL# 18: [POWR 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 17: [POWR 60990[SHAMROC5 0.6500]G1]*100
CHNL# 16: [POWR 5632[WR1LV16 0.6900]1]*100
CHNL# 15: [POWR 3462[WR2WF4 0.6900]1]*100
300.00
-100.0
TUE, OCT 16 2018 10:16
MACHINE POWER
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000

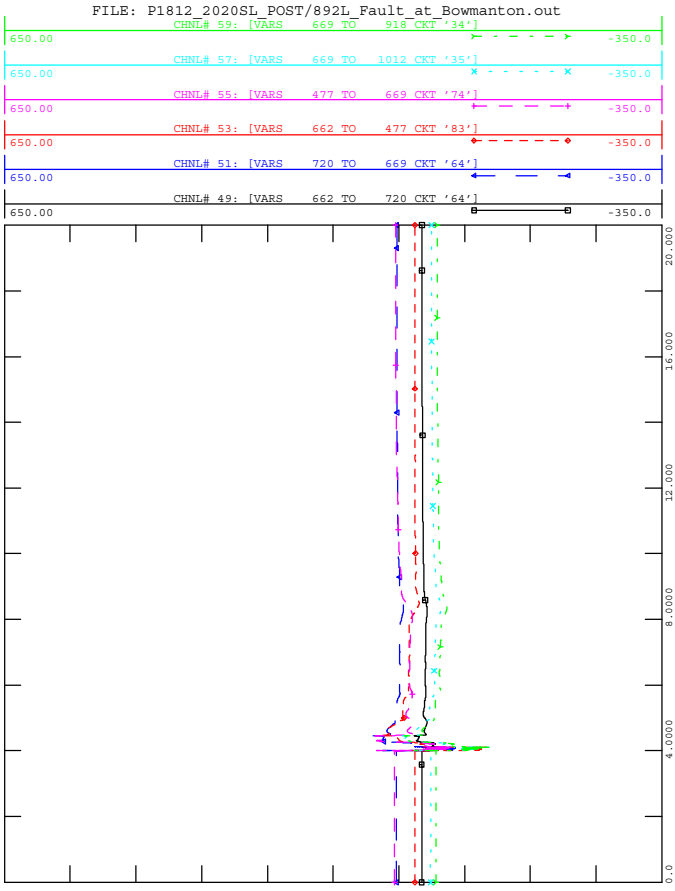

P1812_2020SL_POST
CATB -892L_FAULT_AT_BOWMANTON
FILE: P1812_2020SL_POST/892L_Fault_at_Bowmanton.out
CHNL# 36: [VOLT 62994 [GRANLEA7 0.6900]]
CHNL# 35: [VOLT 61994 [GRANLEA6 0.6900]]
CHNL# 34: [VOLT 60641 [FORTYMILE1 0.6900]]
CHNL# 33: [VOLT 60990 [SHAMROC5 0.6500]]
CHNL# 32: [VOLT 5632 [WR1LV16 0.6900]]
CHNL# 31: [VOLT 3462 [WR2WF4 0.6900]]
1.6000
0.10000
TUE, OCT 16 2018 10:16
MACHINE VOLTAGE
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000


P1812_2020SL_POST
CATB -892L_FAULT_AT_BOWMANTON
FILE: P1812_2020SL_POST/892L_Fault_at_Bowmanton.out
CHNL# 4: [ANGL 1482[SHEER 1 19.000]1]
CHNL# 3: [ANGL 773[SECST 20.000]1]
CHNL# 2: [ANGL 713[CMH 14 13.800]14]
CHNL# 1: [ANGL 667[CANCARB9 13.800]1]
100.00
-100.0
TUE, OCT 16 2018 10:16
MACHINE ANGEL
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000


P1812_2020SL_POST
CATB -892L_FAULT_AT_BOWMANTON
FILE: P1812_2020SL_POST/892L_Fault_at_Bowmanton.out
CHNL# 30: [VARS 62994[GRANLEA7 0.6900]G2]*100
CHNL# 29: [VARS 61994[GRANLEA6 0.6900]G1]*100
CHNL# 28: [VARS 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 27: [VARS 60990[SHAMROC5 0.6500]G1]*100
CHNL# 26: [VARS 5632[WR1LV16 0.6900]1]*100
CHNL# 25: [VARS 3462[WR2WF4 0.6900]1]*100
300.00
-100.0
TUE, OCT 16 2018 10:16
MACHINE VAR
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000

P1812_2020SL_POST
CATB -892L_FAULT_AT_BOWMANTON

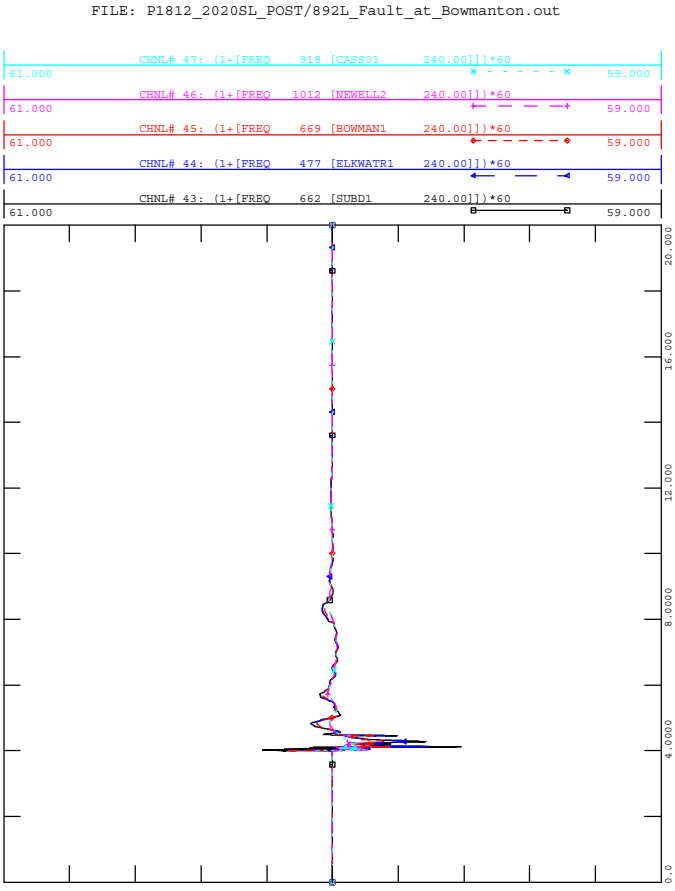
FILE: P1812_2020SL_POST/892L_Fault_at_Bowmanton.out



TUE, OCT 16 2018 10:16 LINE VAR

P1812_2020SL_POST
CATB -892L_FAULT_AT_BOWMANTON

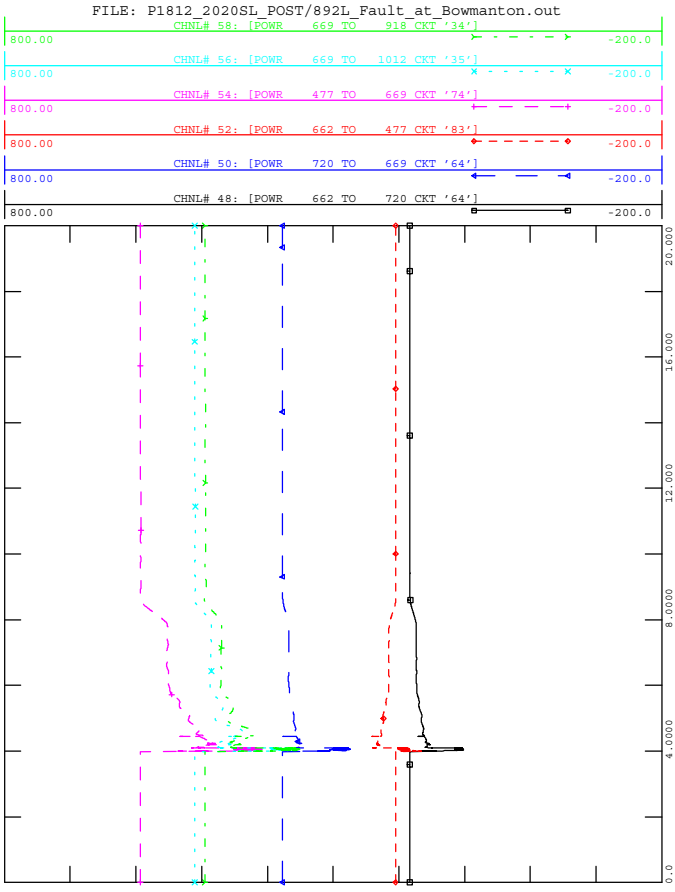
FILE: P1812_2020SL_POST/892L_Fault_at_Bowmanton.out



TUE, OCT 16 2018 10:16 FREQUENCY

P1812_2020SL_POST
CATB -892L_FAULT_AT_BOWMANTON

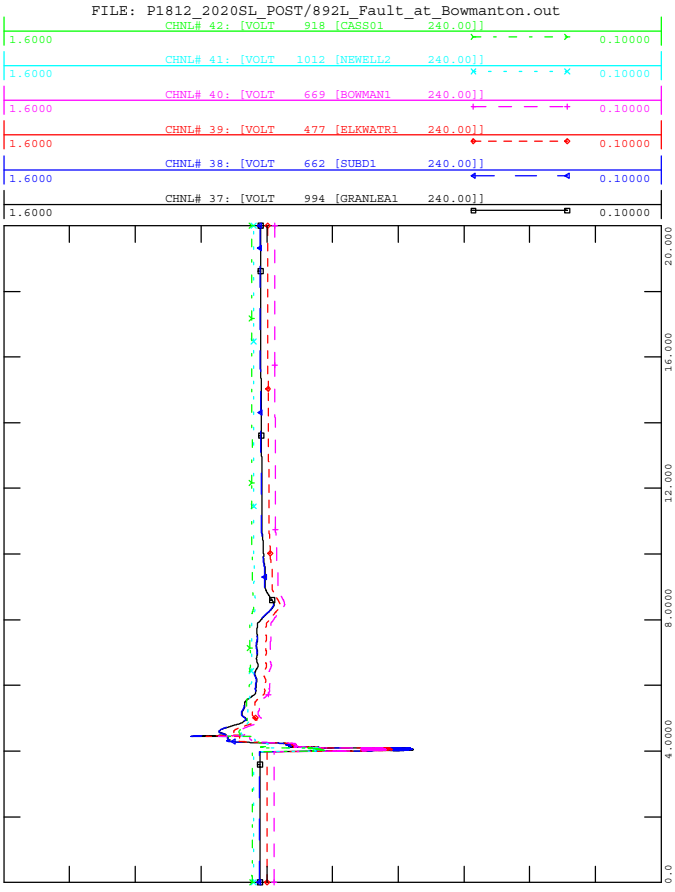
FILE: P1812_2020SL_POST/892L_Fault_at_Bowmanton.out



TUE, OCT 16 2018 10:16 LINE POWER

P1812_2020SL_POST
CATB -892L_FAULT_AT_BOWMANTON

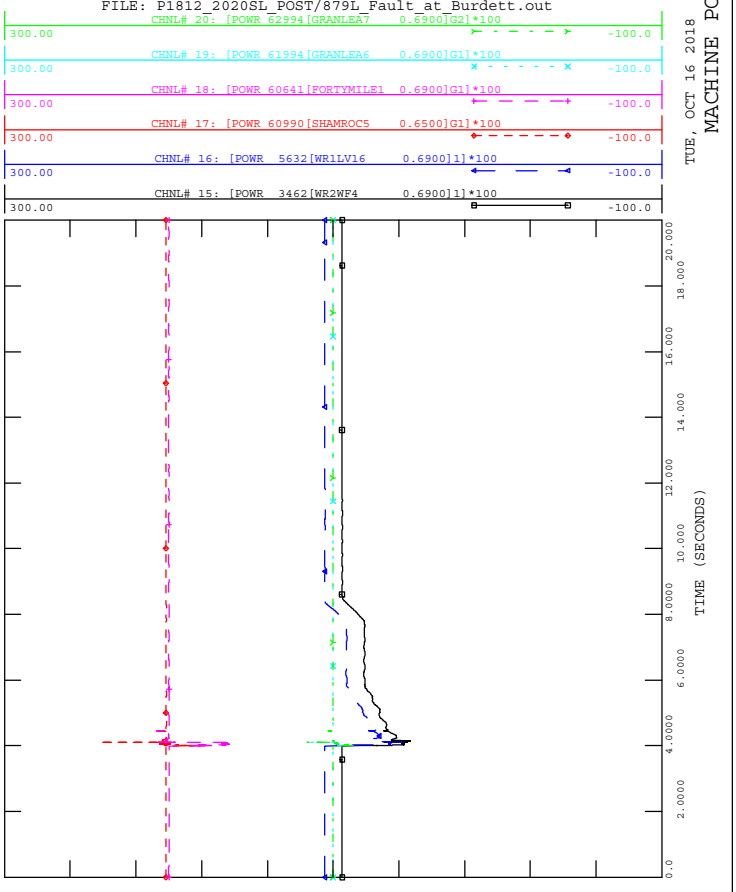
FILE: P1812_2020SL_POST/892L_Fault_at_Bowmanton.out



TUE, OCT 16 2018 10:16 BUS VOLTAGE

P1812_2020SL_POST
CATB -879L_FAULT_AT_BURDETT

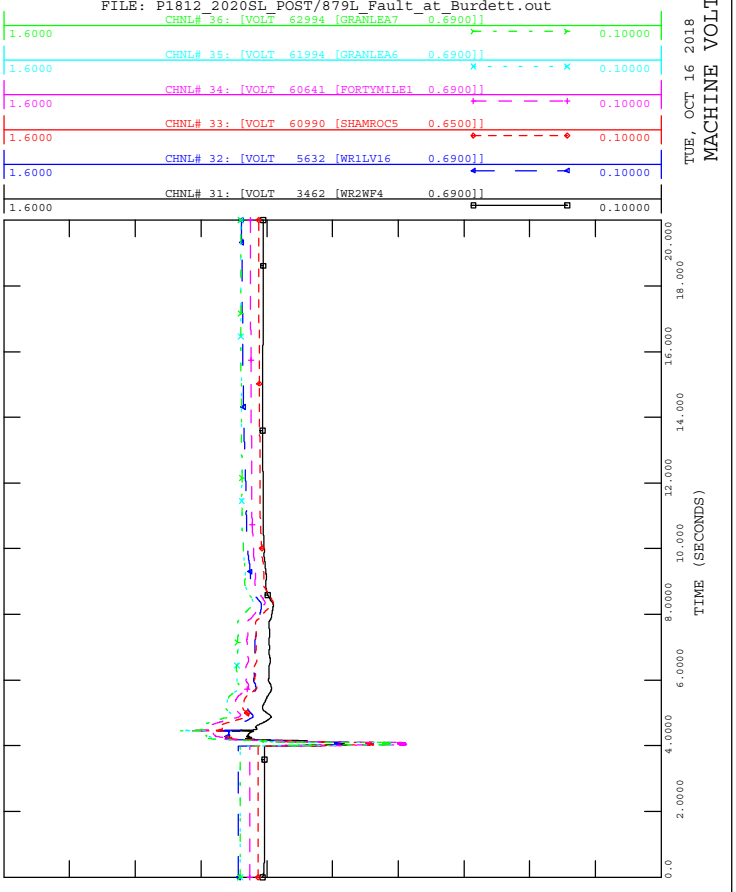
FILE: P1812_2020SL_POST/879L_Fault_at_Burdett.out



TUE, OCT 16 2018 10:16
MACHINE POWER

P1812_2020SL_POST
CATB -879L_FAULT_AT_BURDETT

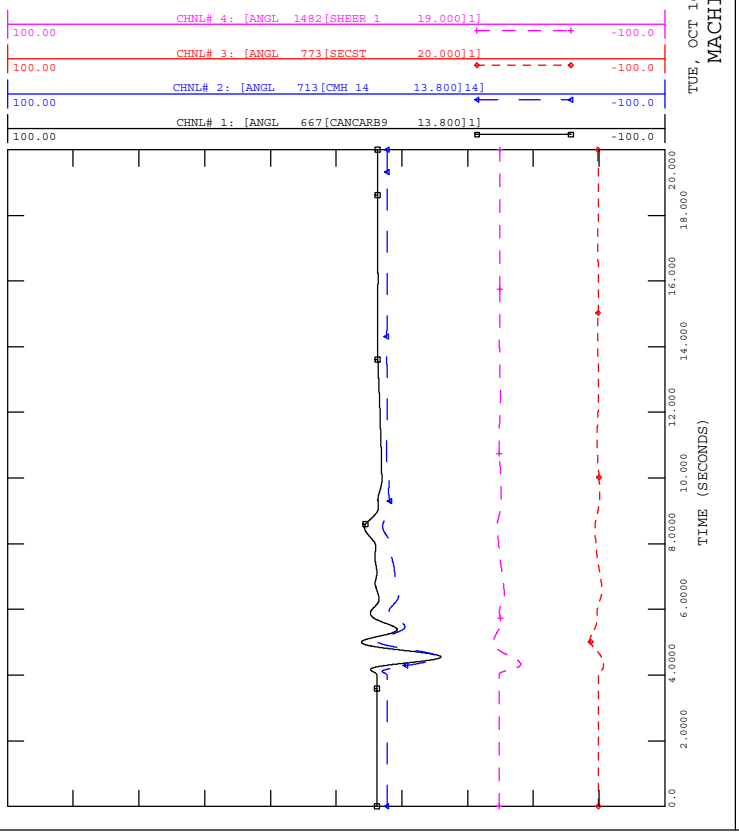
FILE: P1812_2020SL_POST/879L_Fault_at_Burdett.out



TUE, OCT 16 2018 10:16
MACHINE VOLTAGE

P1812_2020SL_POST
CATB -879L_FAULT_AT_BURDETT

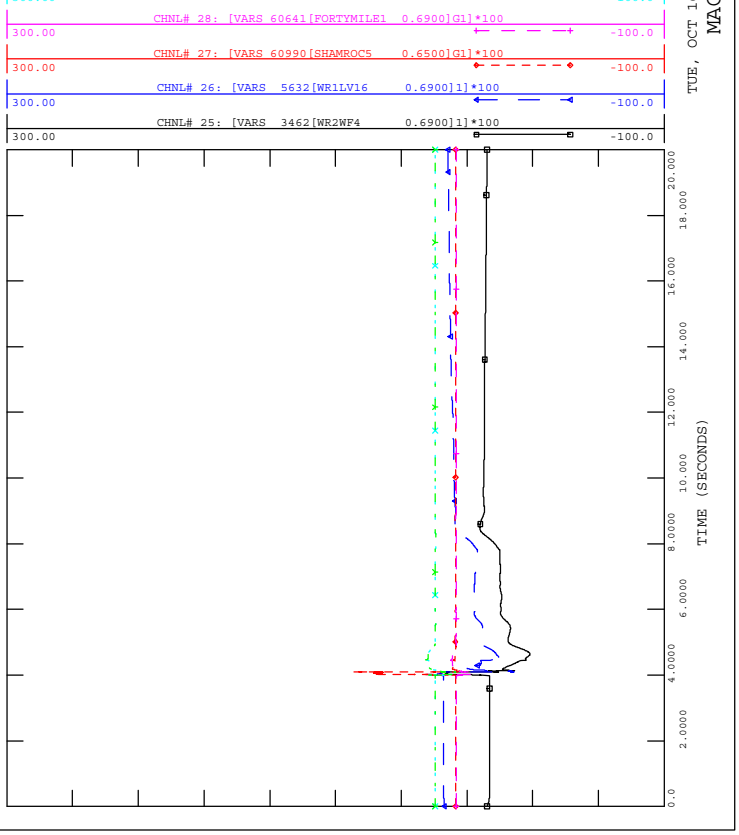
FILE: P1812_2020SL_POST/879L_Fault_at_Burdett.out



TUE, OCT 16 2018 10:16
MACHINE ANGEL

P1812_2020SL_POST
CATB -879L_FAULT_AT_BURDETT

FILE: P1812_2020SL_POST/879L_Fault_at_Burdett.out



TUE, OCT 16 2018 10:16
MACHINE VAR

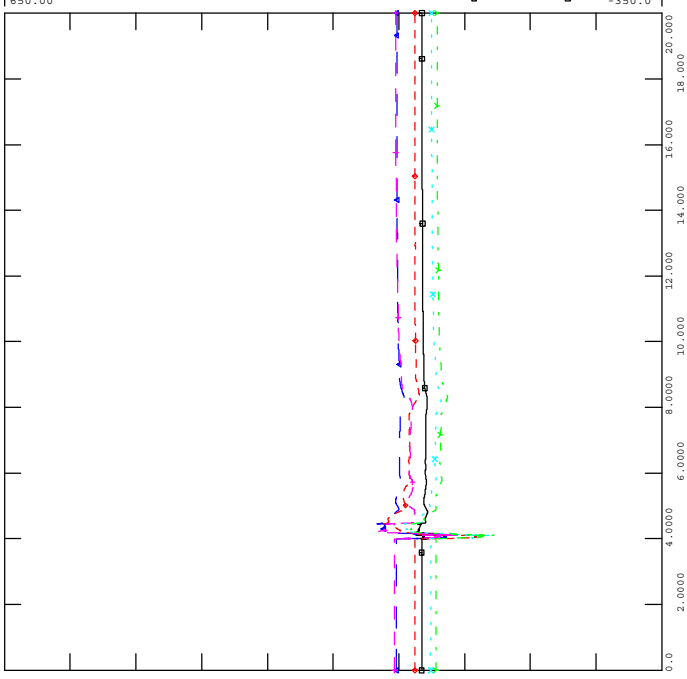
P1812_2020SL_POST
CATB -879L_FAULT_AT_BURDETT

FILE: P1812_2020SL_POST/879L_Fault_at_Burdett.out

TUE, OCT 16 2018 10:16 LINE VAR

CHNL# 59: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 57: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 55: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 53: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 51: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 49: [VARS 662 TO 720 CKT '64'] 650.00 -350.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



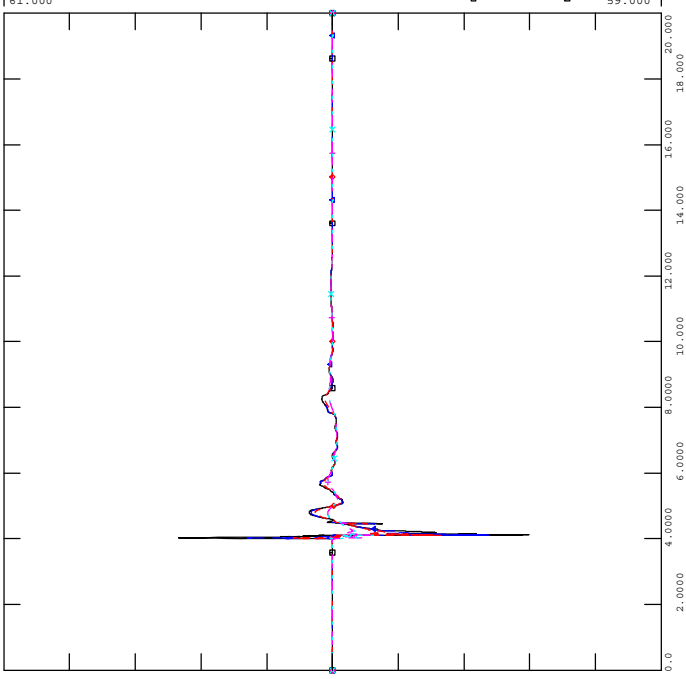
P1812_2020SL_POST
CATB -879L_FAULT_AT_BURDETT

FILE: P1812_2020SL_POST/879L_Fault_at_Burdett.out

TUE, OCT 16 2018 10:16 FREQUENCY

CHNL# 47: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



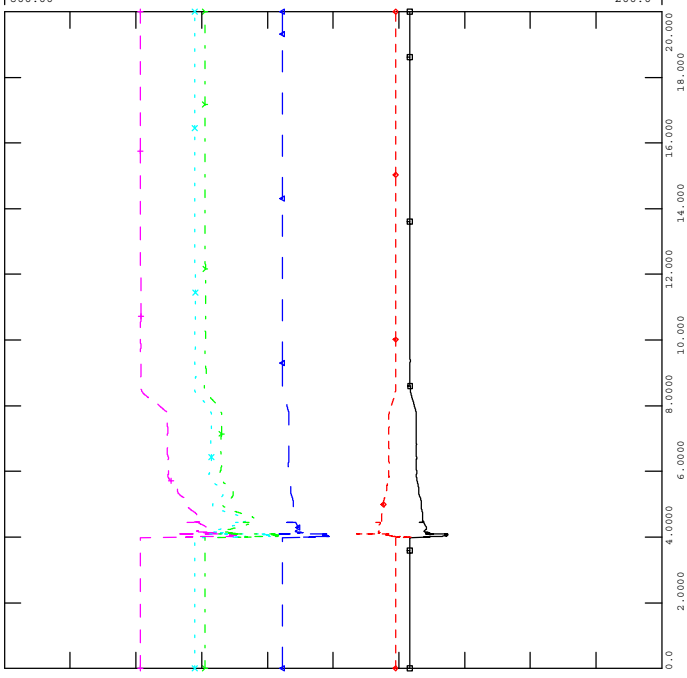
P1812_2020SL_POST
CATB -879L_FAULT_AT_BURDETT

FILE: P1812_2020SL_POST/879L_Fault_at_Burdett.out

TUE, OCT 16 2018 10:16 LINE POWER

CHNL# 58: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 56: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 54: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 52: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 50: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 48: [POWR 662 TO 720 CKT '64'] 800.00 -200.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



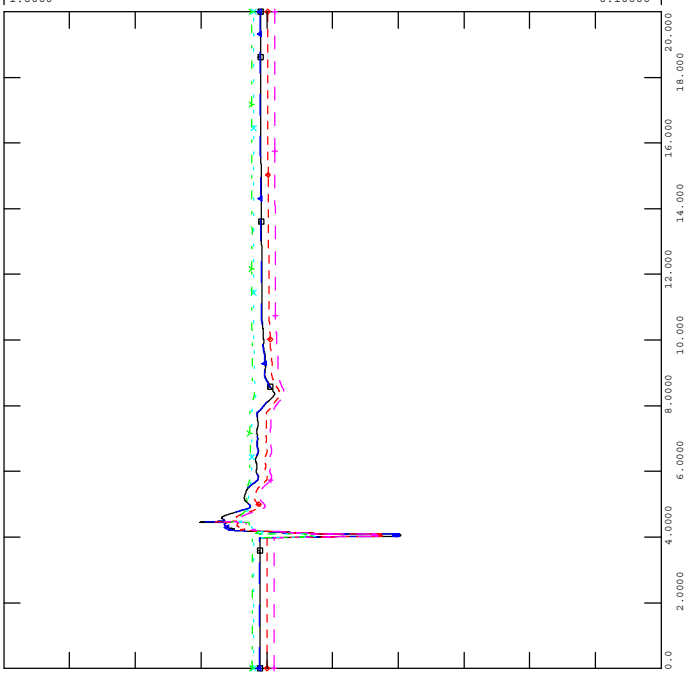
P1812_2020SL_POST
CATB -879L_FAULT_AT_BURDETT

FILE: P1812_2020SL_POST/879L_Fault_at_Burdett.out

TUE, OCT 16 2018 10:16 BUS VOLTAGE

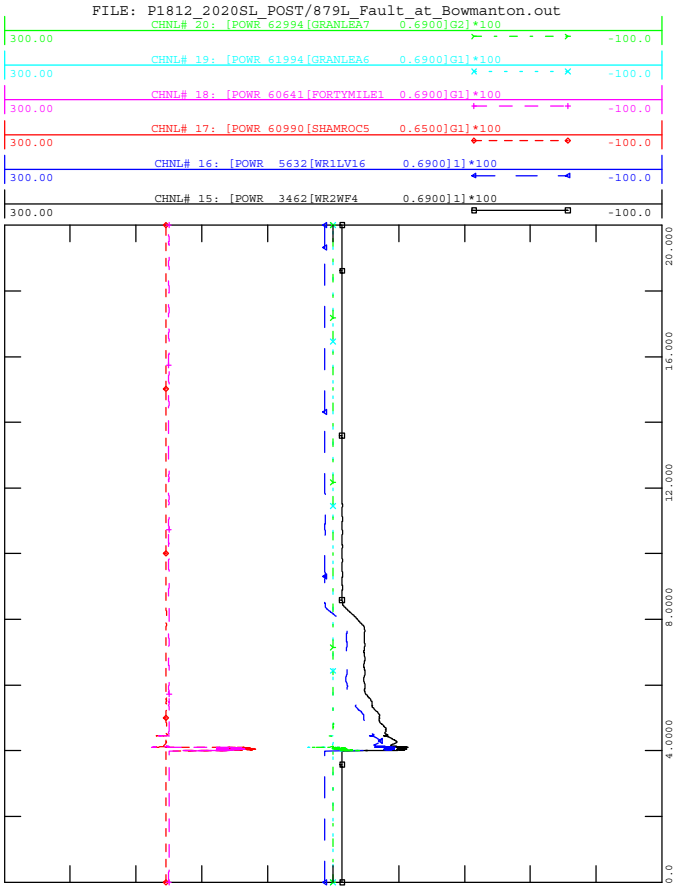
CHNL# 42: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 41: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 40: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 39: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 38: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 37: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SL_POST
CATB -879L_FAULT_AT_BOWMANTON

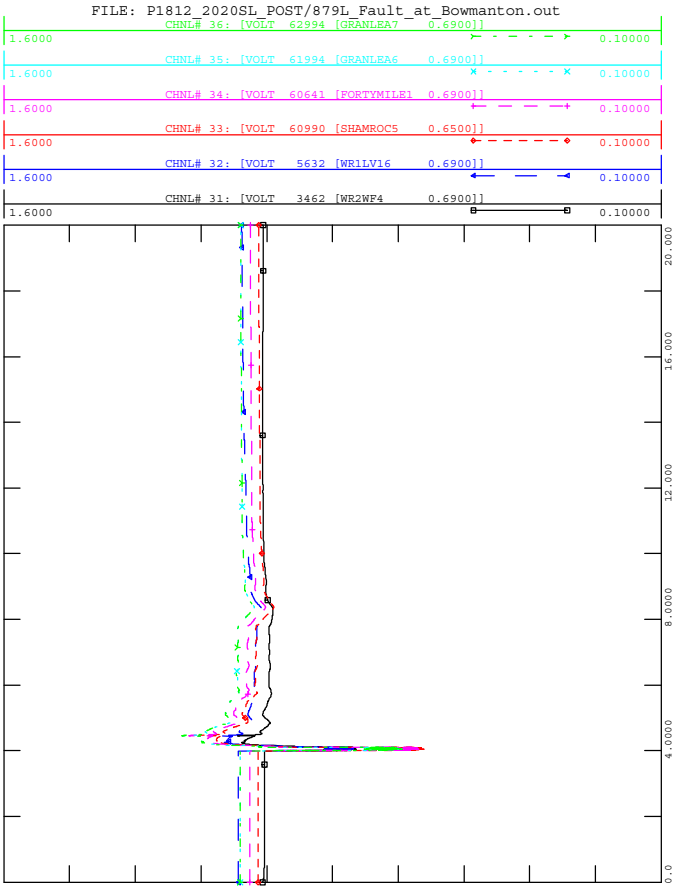
FILE: P1812_2020SL_POST/879L_Fault_at_Bowmanton.out



TUE, OCT 16 2018 10:16
MACHINE POWER

P1812_2020SL_POST
CATB -879L_FAULT_AT_BOWMANTON

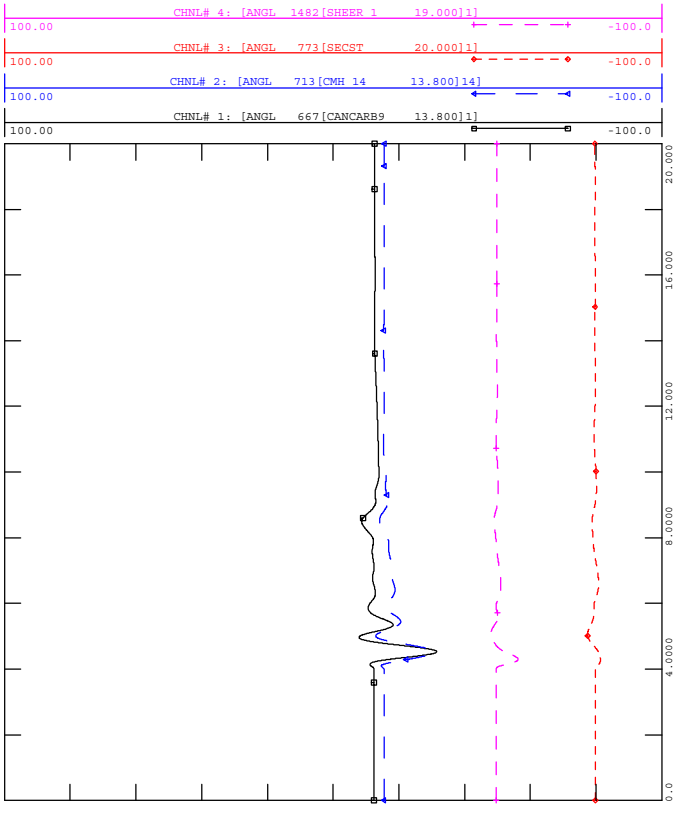
FILE: P1812_2020SL_POST/879L_Fault_at_Bowmanton.out



TUE, OCT 16 2018 10:16
MACHINE VOLTAGE

P1812_2020SL_POST
CATB -879L_FAULT_AT_BOWMANTON

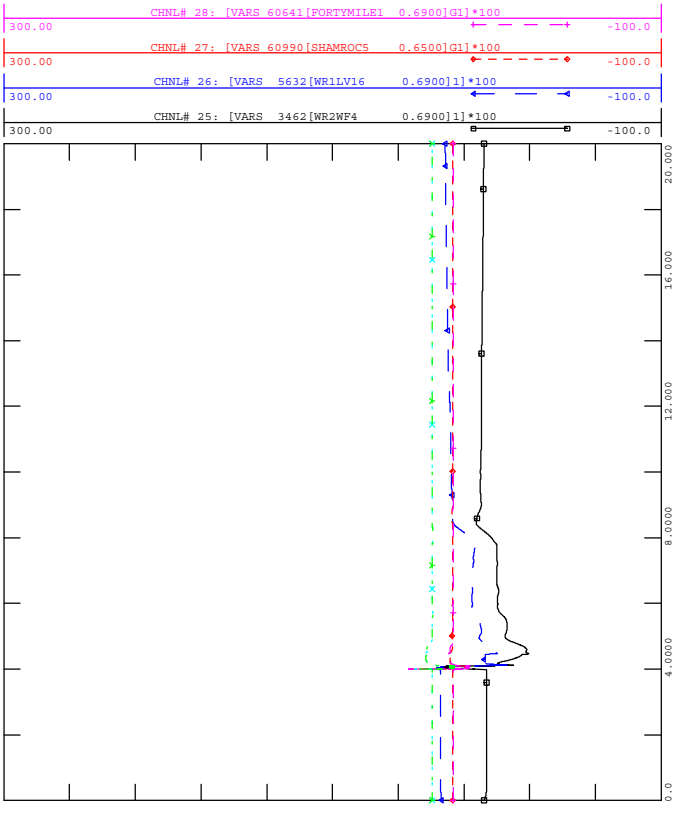
FILE: P1812_2020SL_POST/879L_Fault_at_Bowmanton.out



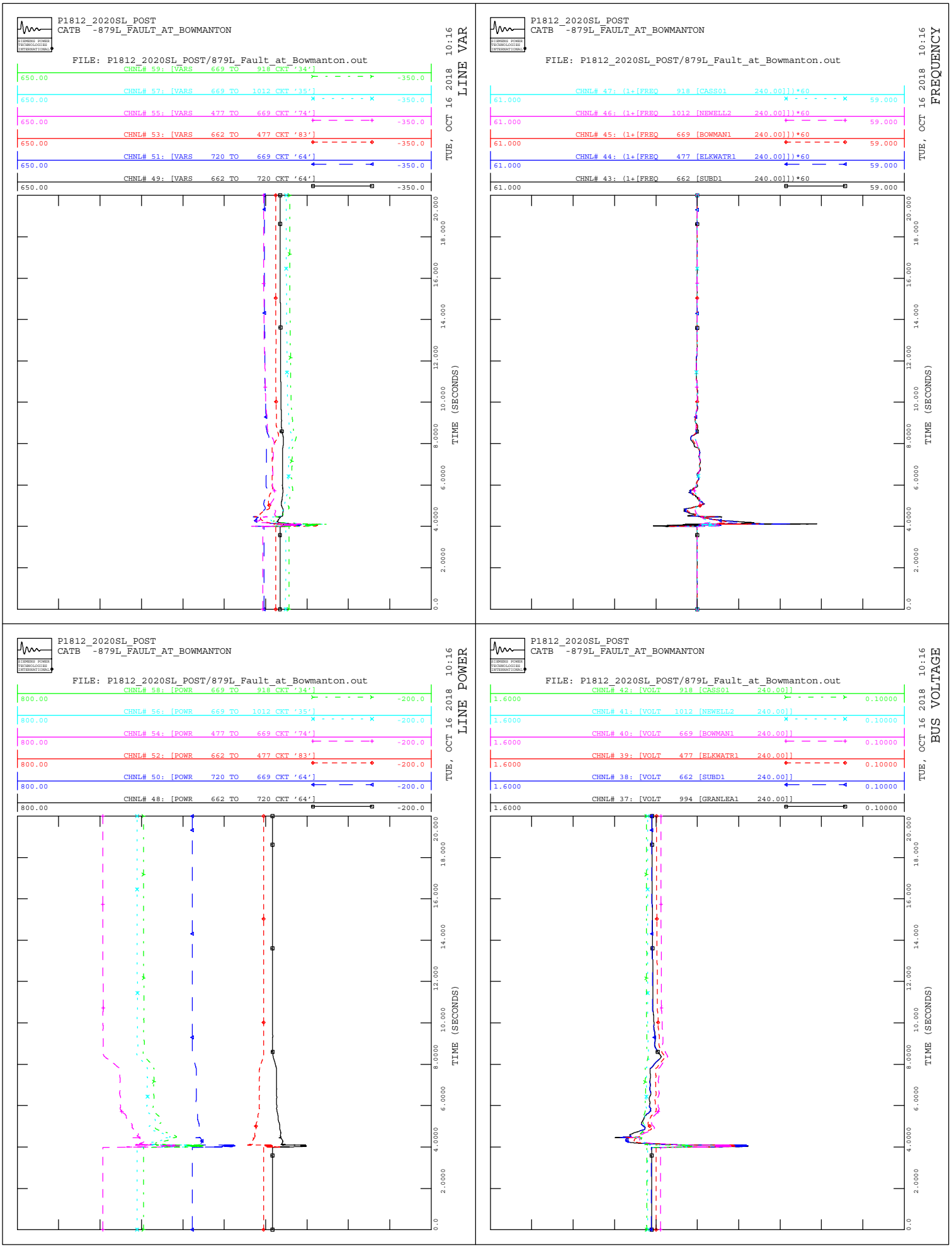
TUE, OCT 16 2018 10:16
MACHINE ANGEL

P1812_2020SL_POST
CATB -879L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/879L_Fault_at_Bowmanton.out



TUE, OCT 16 2018 10:16
MACHINE VAR

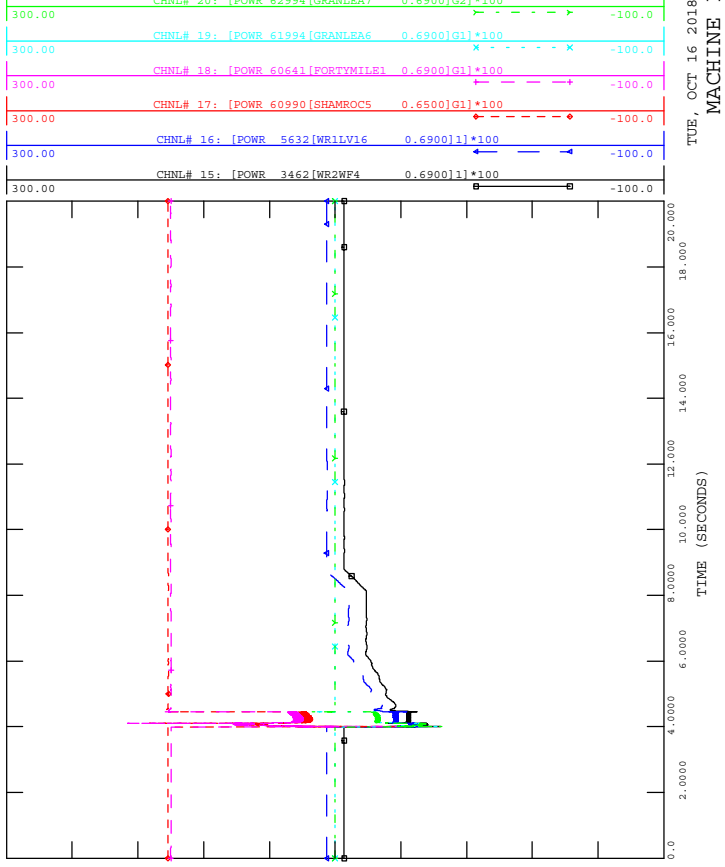

P1812_2020SL_POST
CATB -879L_FAULT_AT_BOWMANTON
FILE: P1812_2020SL_POST/879L_Fault_at_Bowmanton.out
CHNL# 59: [VARS 669 TO 918 CKT '34']
CHNL# 57: [VARS 669 TO 1012 CKT '35']
CHNL# 55: [VARS 477 TO 669 CKT '74']
CHNL# 53: [VARS 662 TO 477 CKT '83']
CHNL# 51: [VARS 720 TO 669 CKT '64']
CHNL# 49: [VARS 662 TO 720 CKT '64']
650.00
-350.0
TUE, OCT 16 2018 10:16
LINE VAR
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000
P1812_2020SL_POST
CATB -879L_FAULT_AT_BOWMANTON
FILE: P1812_2020SL_POST/879L_Fault_at_Bowmanton.out
CHNL# 47: (1+[FREQ 918 [CASS01 240.00]])*60
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00]])*60
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00]])*60
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00]])*60
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00]])*60
61.000
59.000
TUE, OCT 16 2018 10:16
FREQUENCY
TIME (SECONDS)
P1812_2020SL_POST
CATB -879L_FAULT_AT_BOWMANTON
FILE: P1812_2020SL_POST/879L_Fault_at_Bowmanton.out
CHNL# 58: [POWR 669 TO 918 CKT '34']
CHNL# 56: [POWR 669 TO 1012 CKT '35']
CHNL# 54: [POWR 477 TO 669 CKT '74']
CHNL# 52: [POWR 662 TO 477 CKT '83']
CHNL# 50: [POWR 720 TO 669 CKT '64']
CHNL# 48: [POWR 662 TO 720 CKT '64']
800.00
-200.0
TUE, OCT 16 2018 10:16
LINE POWER
TIME (SECONDS)
P1812_2020SL_POST
CATB -879L_FAULT_AT_BOWMANTON
FILE: P1812_2020SL_POST/879L_Fault_at_Bowmanton.out
CHNL# 42: [VOLT 918 [CASS01 240.00]]
CHNL# 41: [VOLT 1012 [NEWELL2 240.00]]
CHNL# 40: [VOLT 669 [BOWMAN1 240.00]]
CHNL# 39: [VOLT 477 [ELKWATR1 240.00]]
CHNL# 38: [VOLT 662 [SUBD1 240.00]]
CHNL# 37: [VOLT 994 [GRANLEA1 240.00]]
1.6000
0.10000
TUE, OCT 16 2018 10:16
BUS VOLTAGE
TIME (SECONDS)

P1812_2020SL_POST
CATB -676L_FAULT_AT_BULLSHEAD

FILE: P1812_2020SL_POST/676L_Fault_at_Bullshead.out

TUE, OCT 16 2018 10:16

MACHINE POWER

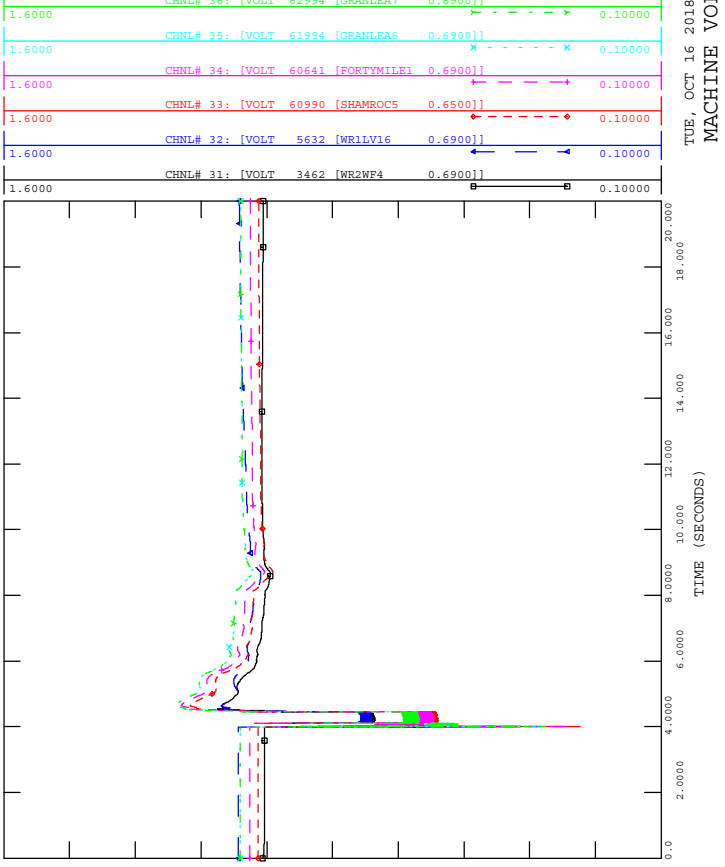


P1812_2020SL_POST
CATB -676L_FAULT_AT_BULLSHEAD

FILE: P1812_2020SL_POST/676L_Fault_at_Bullshead.out

TUE, OCT 16 2018 10:16

MACHINE VOLTAGE

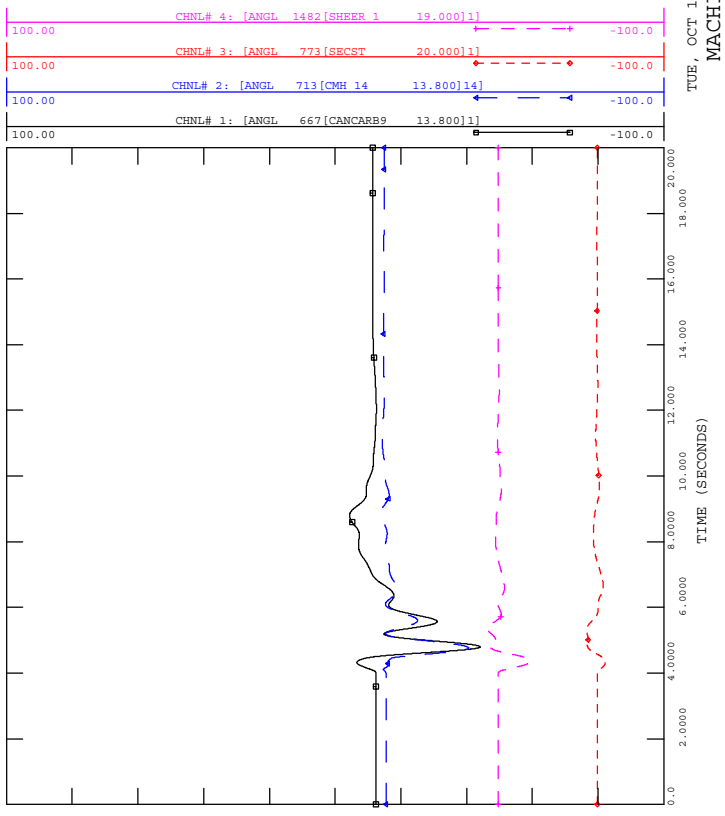


P1812_2020SL_POST
CATB -676L_FAULT_AT_BULLSHEAD

FILE: P1812_2020SL_POST/676L_Fault_at_Bullshead.out

TUE, OCT 16 2018 10:16

MACHINE ANGEL

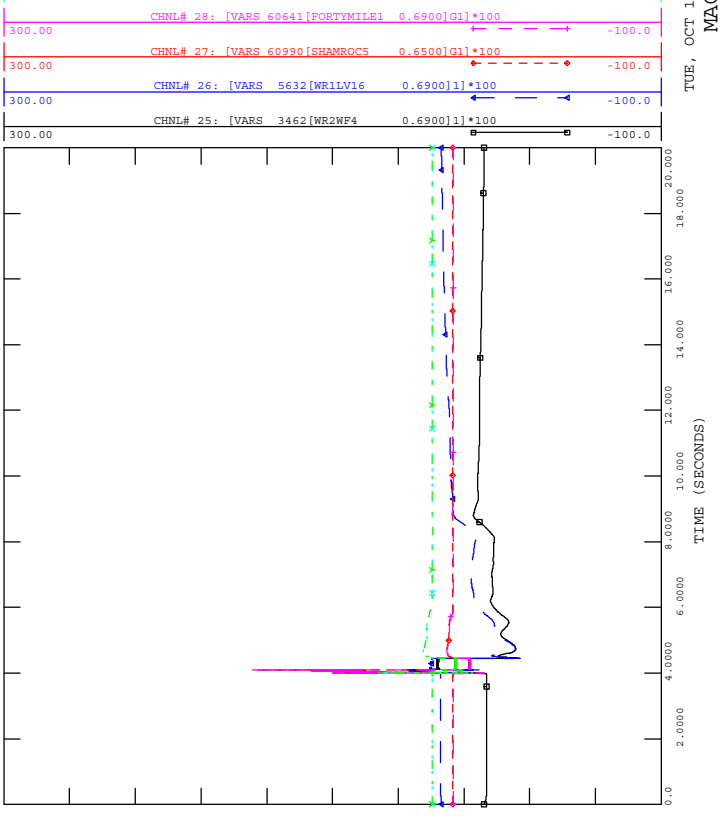


P1812_2020SL_POST
CATB -676L_FAULT_AT_BULLSHEAD

FILE: P1812_2020SL_POST/676L_Fault_at_Bullshead.out

TUE, OCT 16 2018 10:16

MACHINE VAR



P1812_2020SL_POST
CATB -676L_FAULT_AT_BULLSHEAD

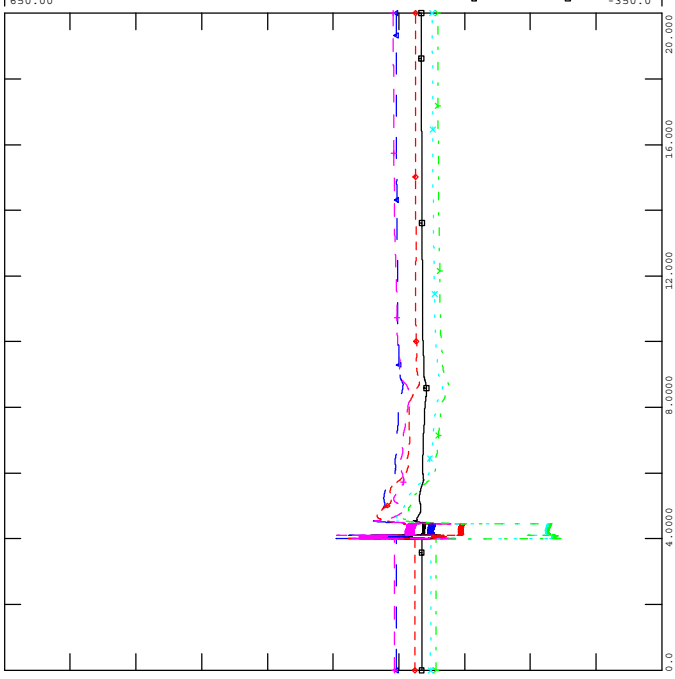
FILE: P1812_2020SL_POST/676L_Fault_at_Bullshead.out

TUE, OCT 16 2018 10:16

LINE VAR

CHNL# 59: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 57: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 55: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 53: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 51: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 49: [VARS 662 TO 720 CKT '64'] 650.00 -350.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SL_POST
CATB -676L_FAULT_AT_BULLSHEAD

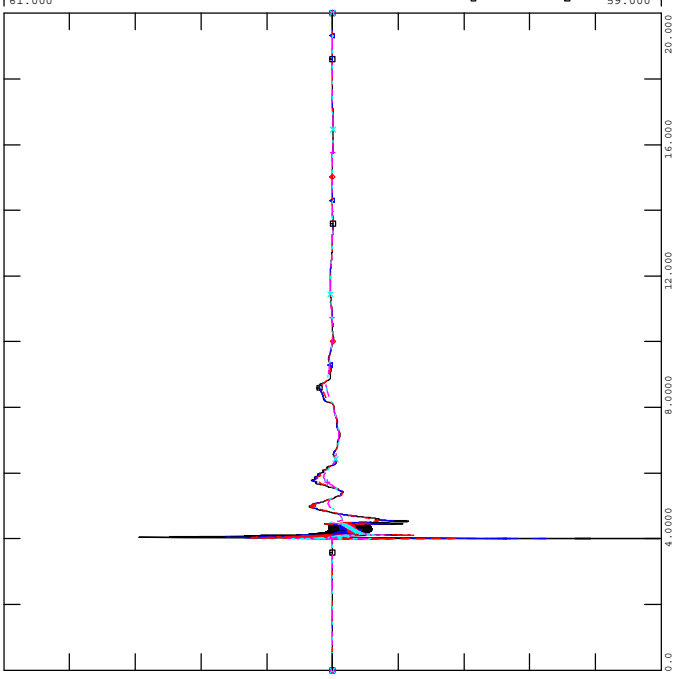
FILE: P1812_2020SL_POST/676L_Fault_at_Bullshead.out

TUE, OCT 16 2018 10:16

FREQUENCY

CHNL# 47: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SL_POST
CATB -676L_FAULT_AT_BULLSHEAD

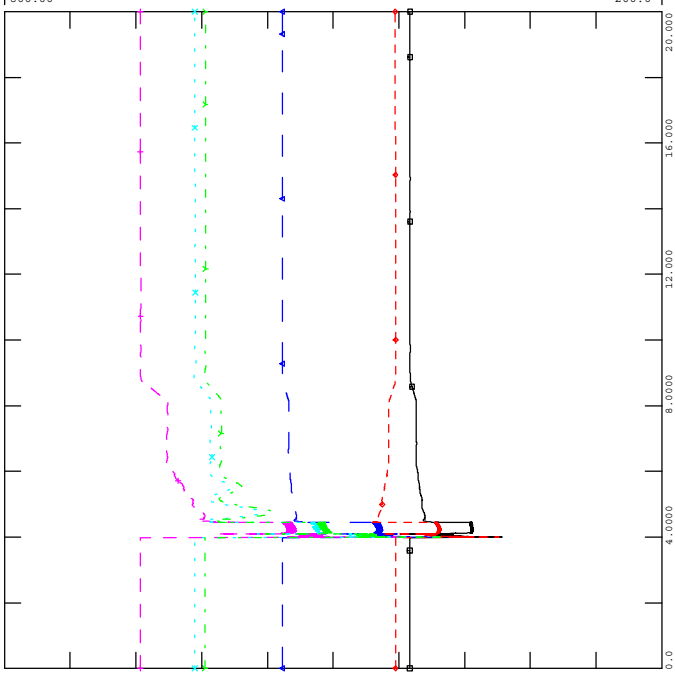
FILE: P1812_2020SL_POST/676L_Fault_at_Bullshead.out

TUE, OCT 16 2018 10:16

LINE POWER

CHNL# 58: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 56: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 54: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 52: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 50: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 48: [POWR 662 TO 720 CKT '64'] 800.00 -200.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SL_POST
CATB -676L_FAULT_AT_BULLSHEAD

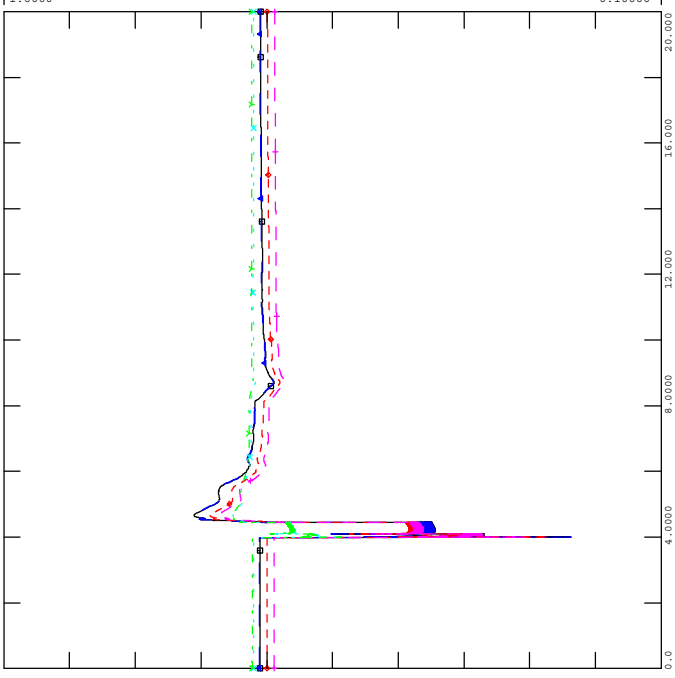
FILE: P1812_2020SL_POST/676L_Fault_at_Bullshead.out

TUE, OCT 16 2018 10:16

BUS VOLTAGE

CHNL# 42: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 41: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 40: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 39: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 38: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 37: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

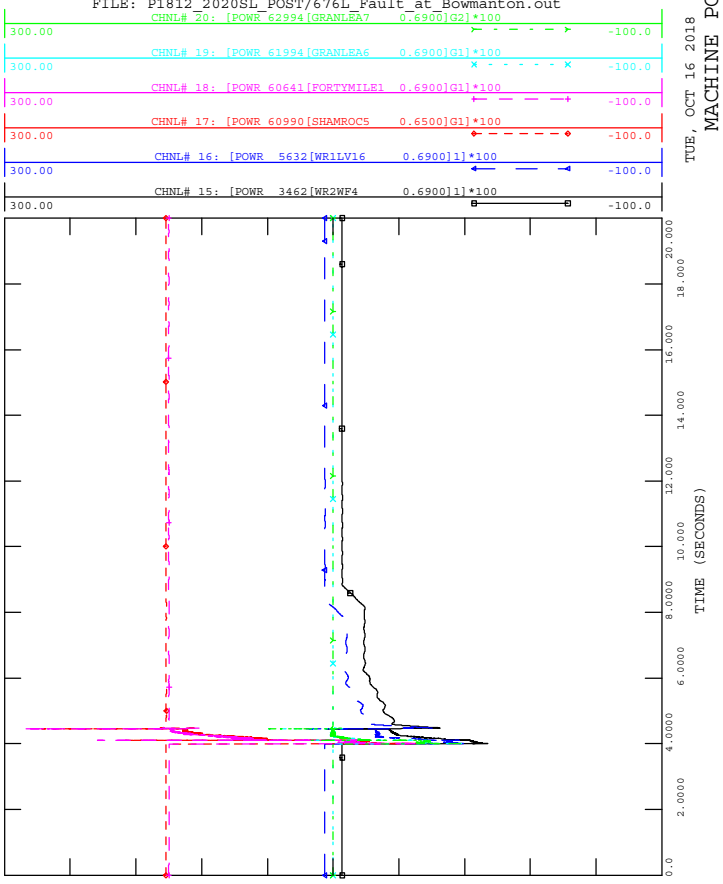


P1812_2020SL_POST
CATB -676L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/676L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:16

MACHINE POWER

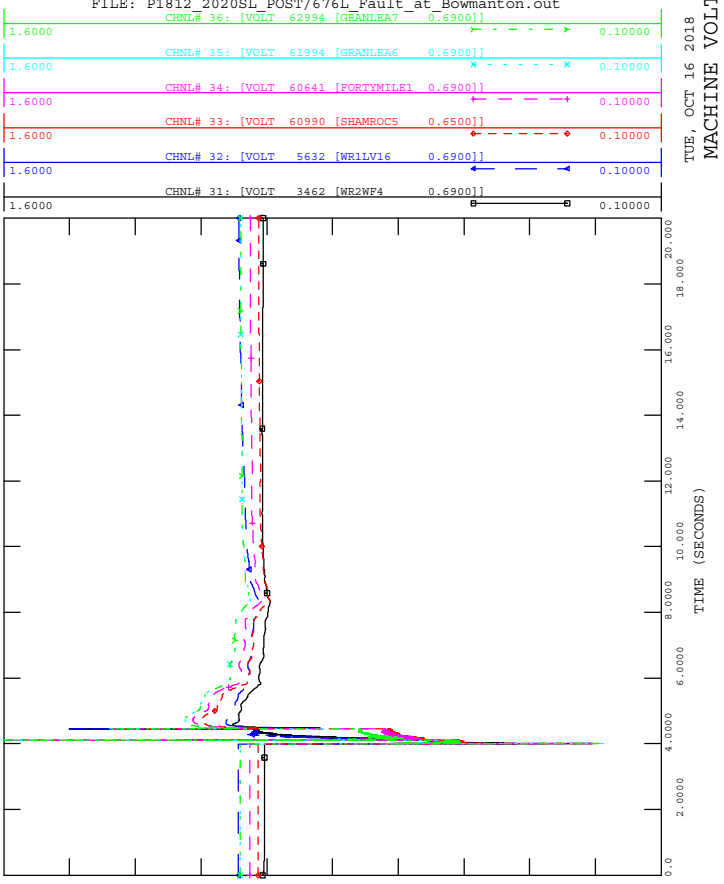


P1812_2020SL_POST
CATB -676L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/676L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:16

MACHINE VOLTAGE

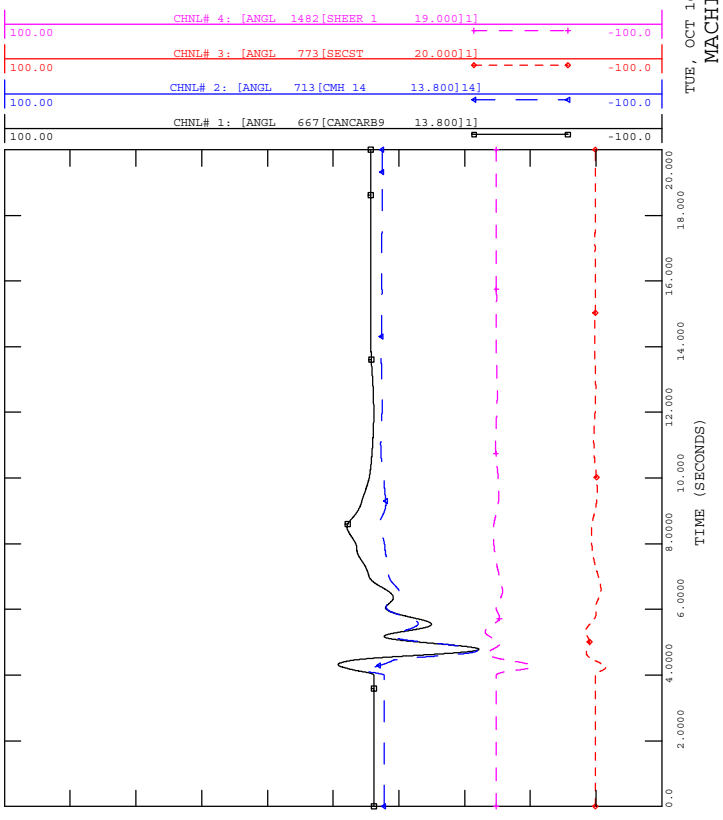


P1812_2020SL_POST
CATB -676L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/676L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:16

MACHINE ANGEL

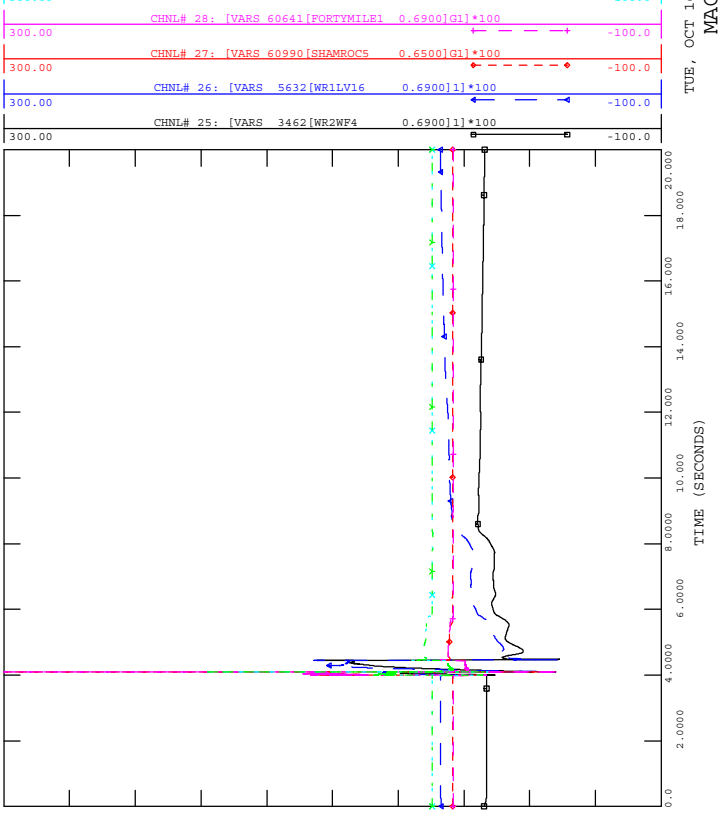


P1812_2020SL_POST
CATB -676L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/676L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:16

MACHINE VAR



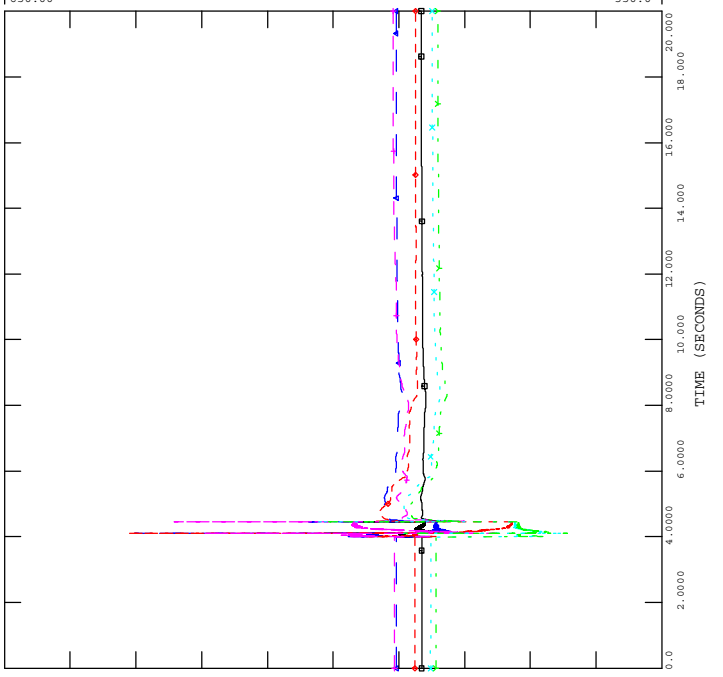
P1812_2020SL_POST
CATB -676L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/676L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:16

LINE VAR

CHNL# 59: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 57: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 55: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 53: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 51: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 49: [VARS 662 TO 720 CKT '64'] 650.00 -350.0



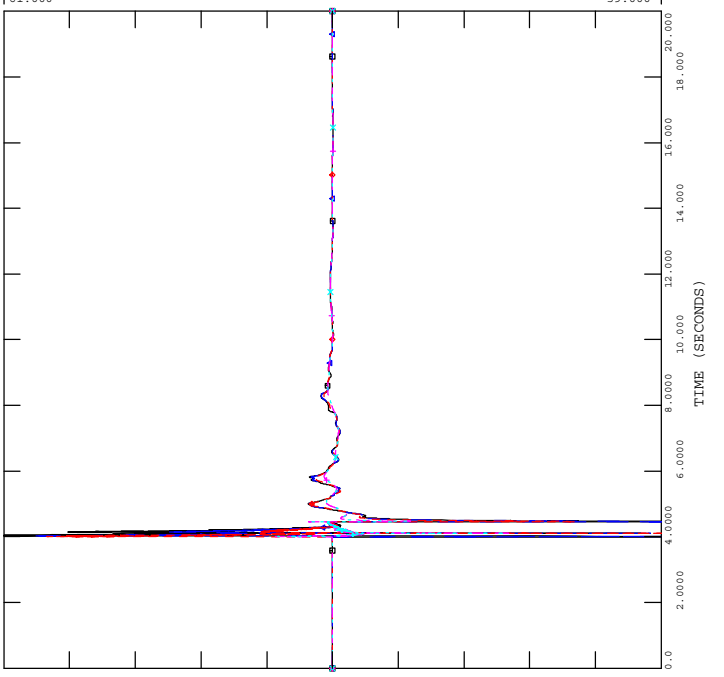
P1812_2020SL_POST
CATB -676L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/676L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:16

FREQUENCY

CHNL# 47: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000



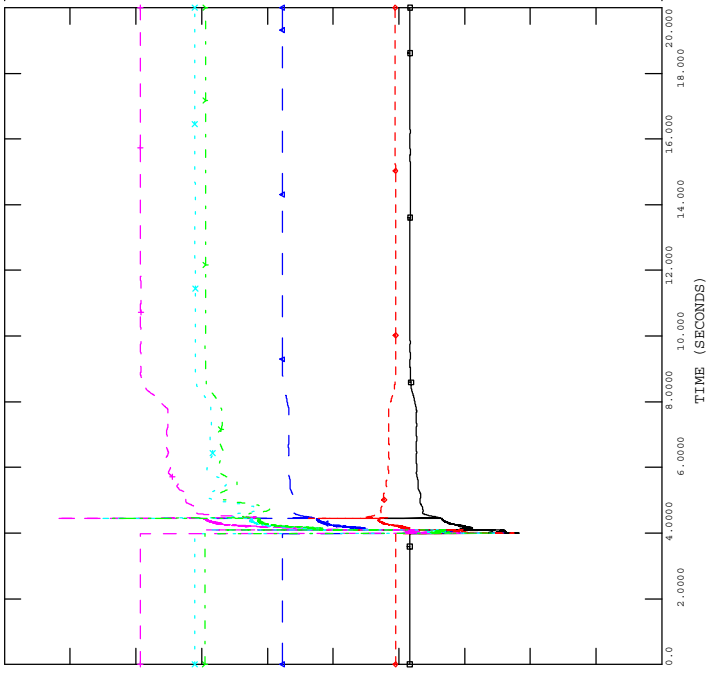
P1812_2020SL_POST
CATB -676L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/676L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:16

LINE POWER

CHNL# 58: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 56: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 54: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 52: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 50: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 48: [POWR 662 TO 720 CKT '64'] 800.00 -200.0



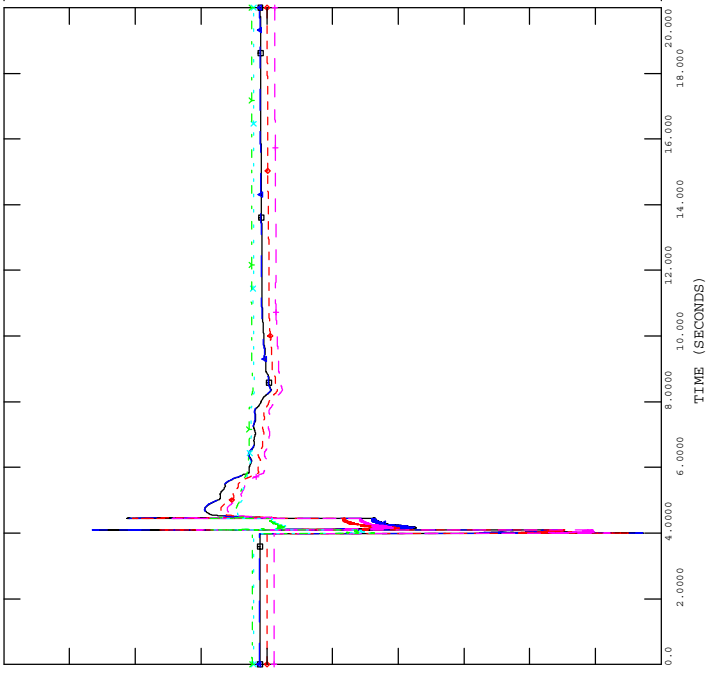
P1812_2020SL_POST
CATB -676L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/676L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:16

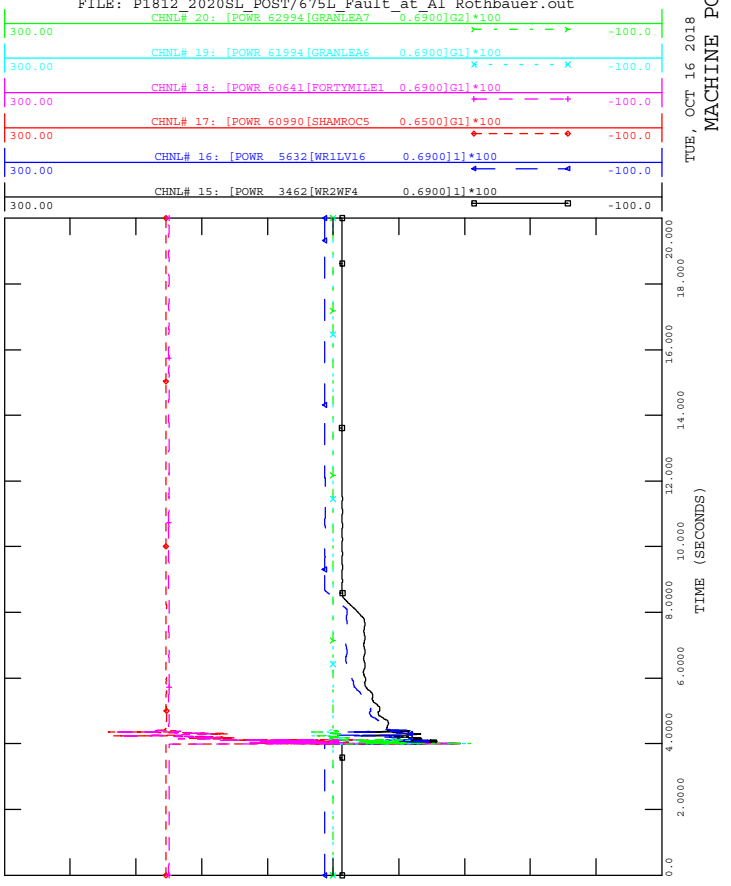
BUS VOLTAGE

CHNL# 42: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 41: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 40: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 39: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 38: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 37: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000



P1812_2020SL_POST
CATB -675L_FAULT_AT_AL ROTHBAUER

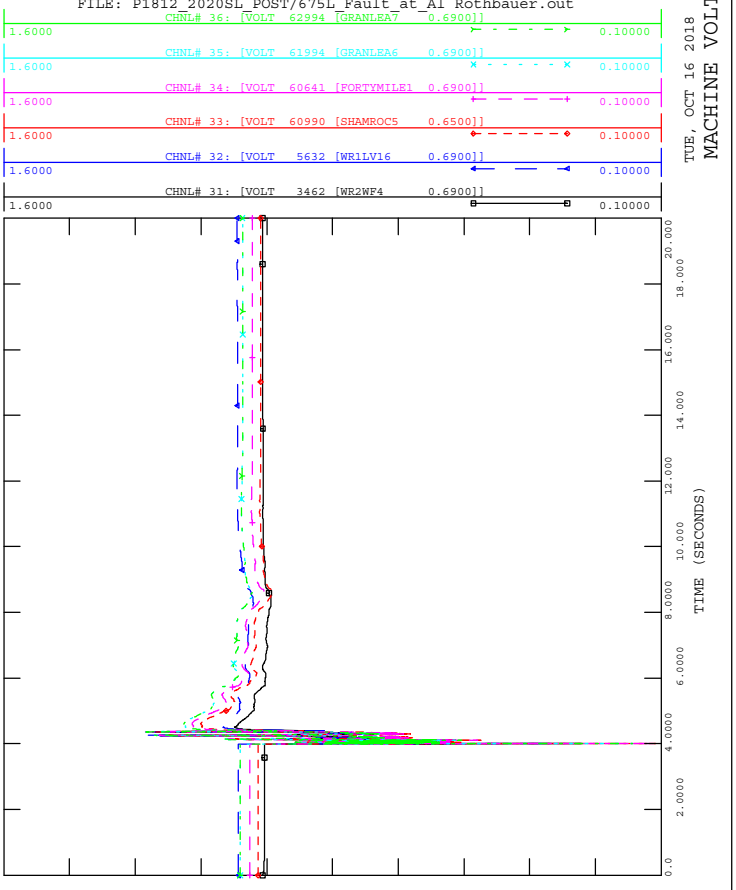
FILE: P1812_2020SL_POST/675L_Fault_at_Al Rothbauer.out



TUE, OCT 16 2018 10:16
MACHINE POWER

P1812_2020SL_POST
CATB -675L_FAULT_AT_AL ROTHBAUER

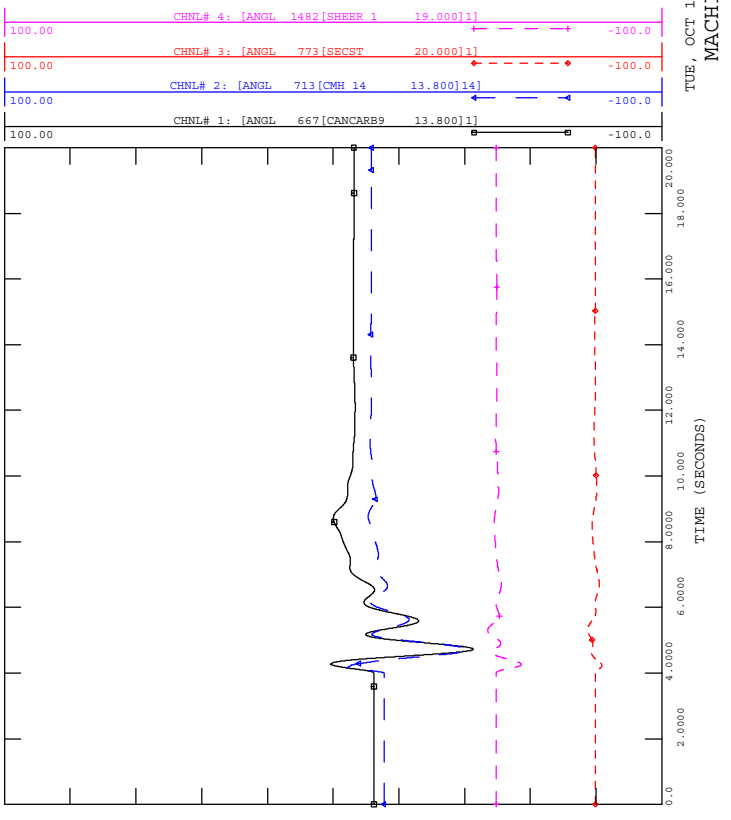
FILE: P1812_2020SL_POST/675L_Fault_at_Al Rothbauer.out



TUE, OCT 16 2018 10:16
MACHINE VOLTAGE

P1812_2020SL_POST
CATB -675L_FAULT_AT_AL ROTHBAUER

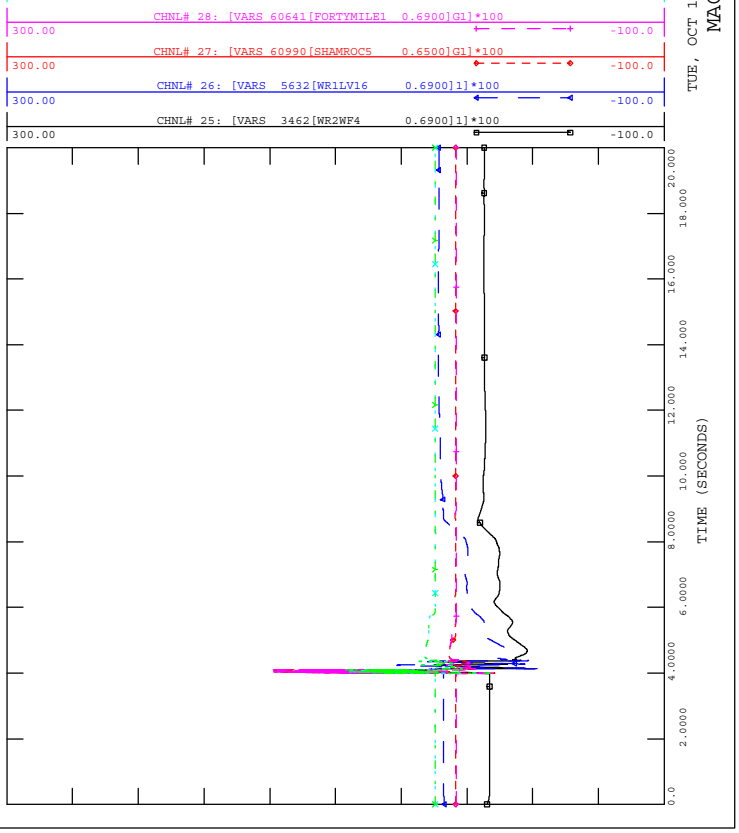
FILE: P1812_2020SL_POST/675L_Fault_at_Al Rothbauer.out



TUE, OCT 16 2018 10:16
MACHINE ANGEL

P1812_2020SL_POST
CATB -675L_FAULT_AT_AL ROTHBAUER

FILE: P1812_2020SL_POST/675L_Fault_at_Al Rothbauer.out



TUE, OCT 16 2018 10:16
MACHINE VAR

P1812_2020SL_POST
CATB -675L_FAULT_AT_AL ROTHBAUER

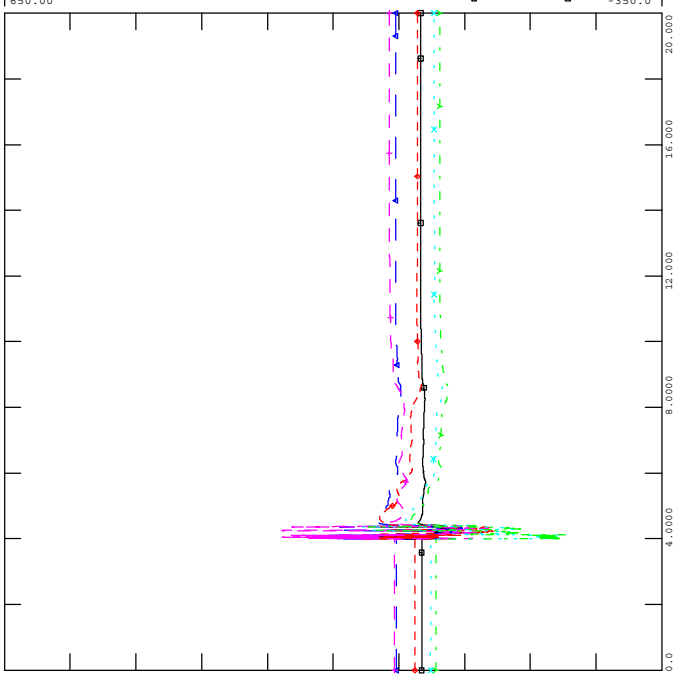
FILE: P1812_2020SL_POST/675L_Fault_at_Al Rothbauer.out

TUE, OCT 16 2018 10:16

LINE VAR

CHNL# 59: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 57: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 55: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 53: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 51: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 49: [VARS 662 TO 720 CKT '64'] 650.00 -350.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SL_POST
CATB -675L_FAULT_AT_AL ROTHBAUER

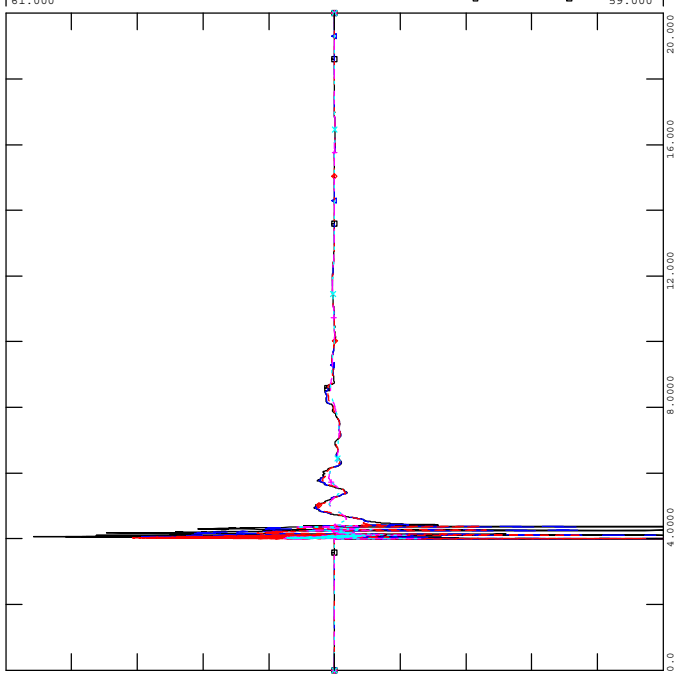
FILE: P1812_2020SL_POST/675L_Fault_at_Al Rothbauer.out

TUE, OCT 16 2018 10:16

FREQUENCY

CHNL# 47: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SL_POST
CATB -675L_FAULT_AT_AL ROTHBAUER

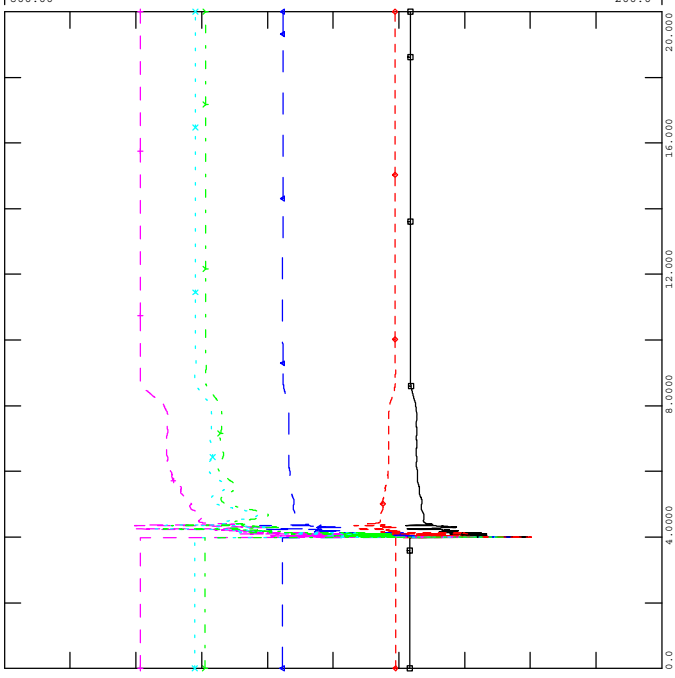
FILE: P1812_2020SL_POST/675L_Fault_at_Al Rothbauer.out

TUE, OCT 16 2018 10:16

LINE POWER

CHNL# 58: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 56: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 54: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 52: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 50: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 48: [POWR 662 TO 720 CKT '64'] 800.00 -200.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SL_POST
CATB -675L_FAULT_AT_AL ROTHBAUER

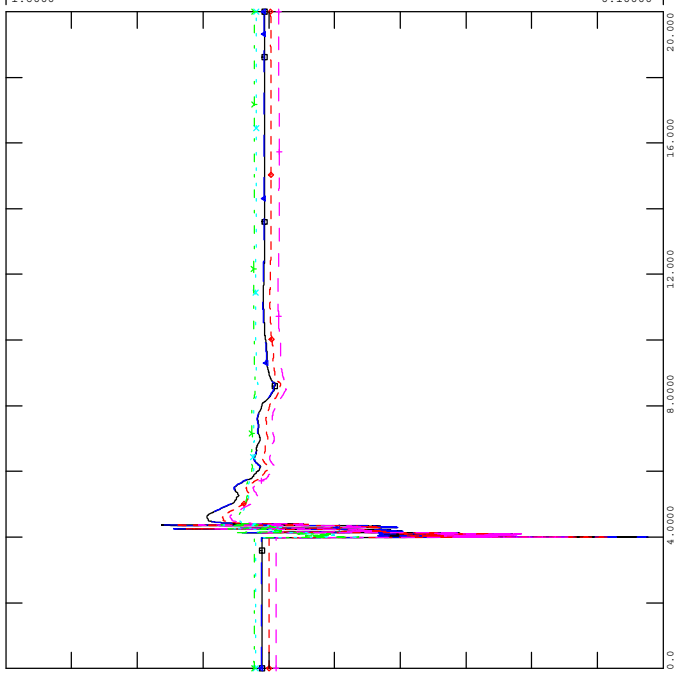
FILE: P1812_2020SL_POST/675L_Fault_at_Al Rothbauer.out

TUE, OCT 16 2018 10:16

BUS VOLTAGE

CHNL# 42: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 41: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 40: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 39: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 38: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 37: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

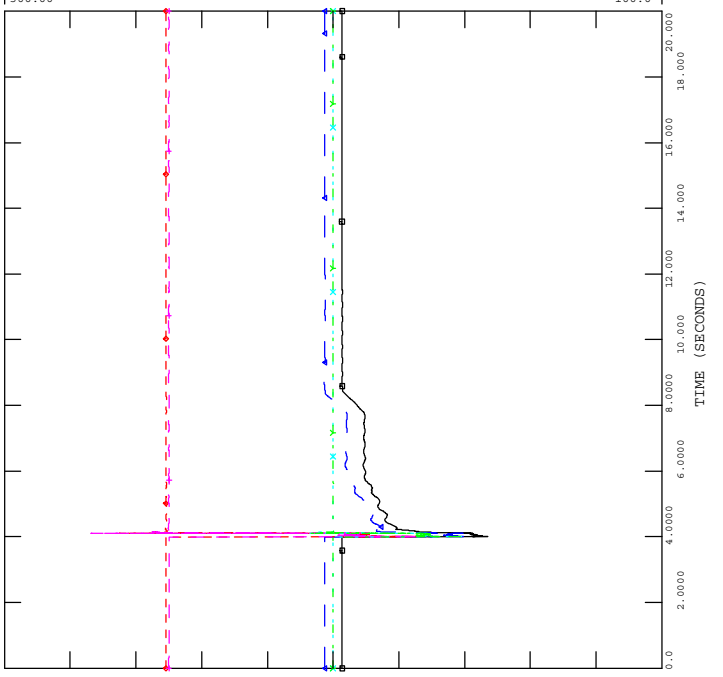


P1812_2020SL_POST
CATB -675L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/675L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:16

MACHINE POWER

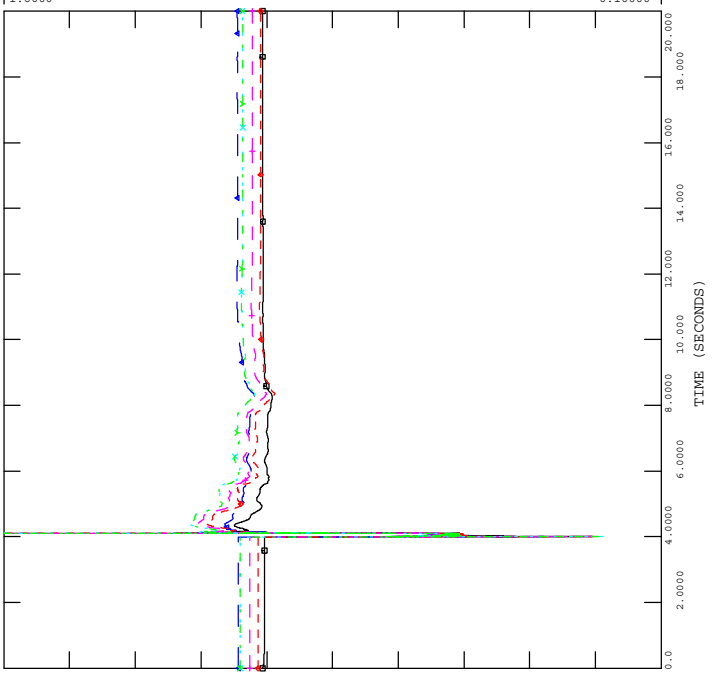


P1812_2020SL_POST
CATB -675L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/675L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:16

MACHINE VOLTAGE

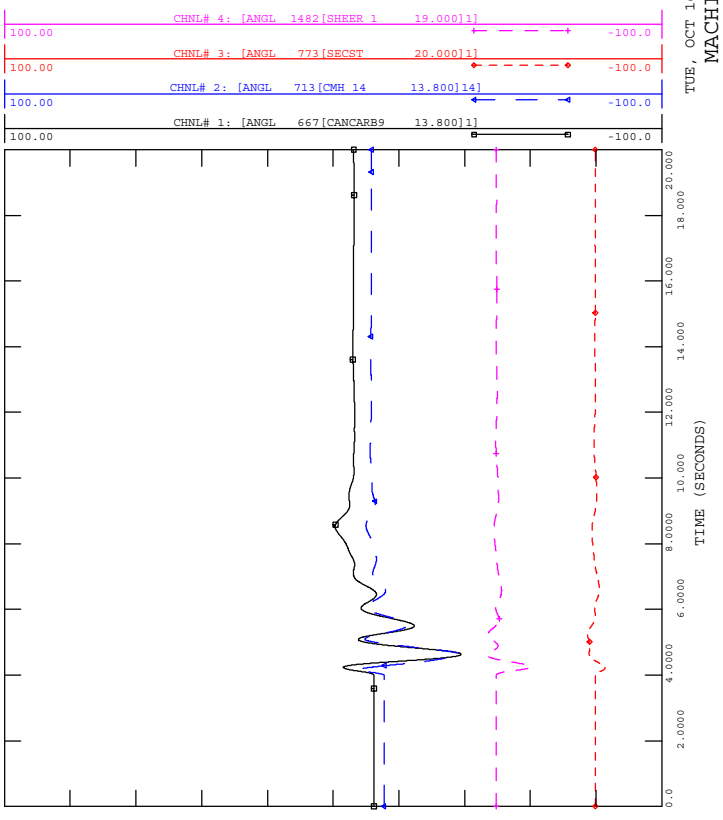


P1812_2020SL_POST
CATB -675L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/675L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:16

MACHINE ANGEL

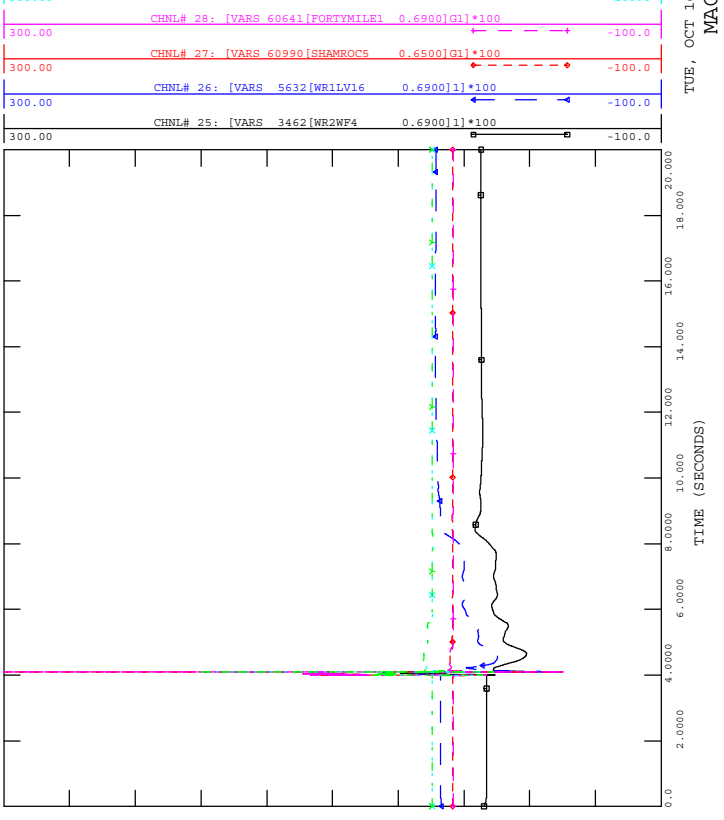


P1812_2020SL_POST
CATB -675L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/675L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:16

MACHINE VAR



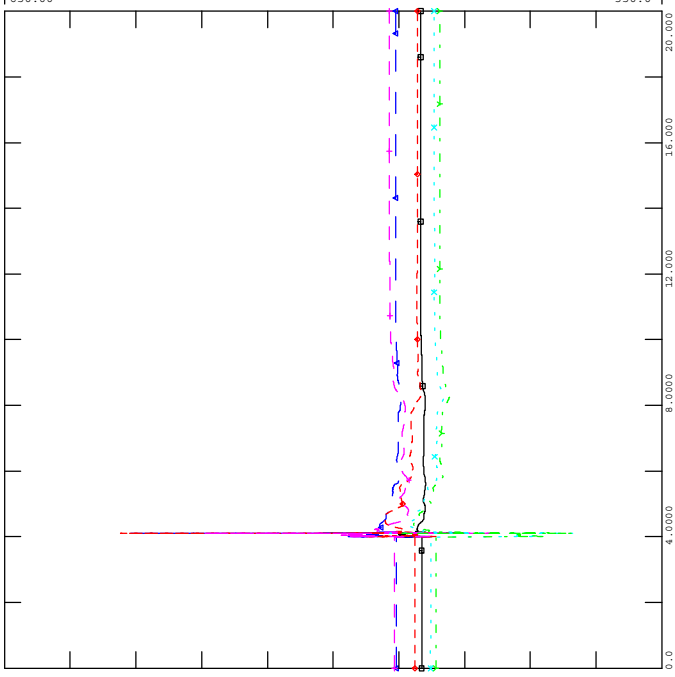
P1812_2020SL_POST
CATB -675L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/675L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:16

LINE VAR

CHNL# 59: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 57: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 55: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 53: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 51: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 49: [VARS 662 TO 720 CKT '64'] 650.00 -350.0



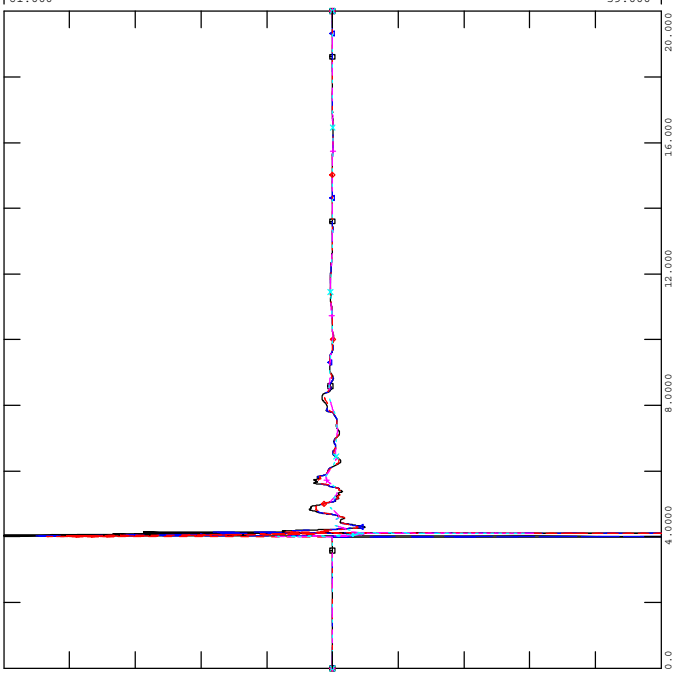
P1812_2020SL_POST
CATB -675L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/675L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:16

FREQUENCY

CHNL# 47: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000



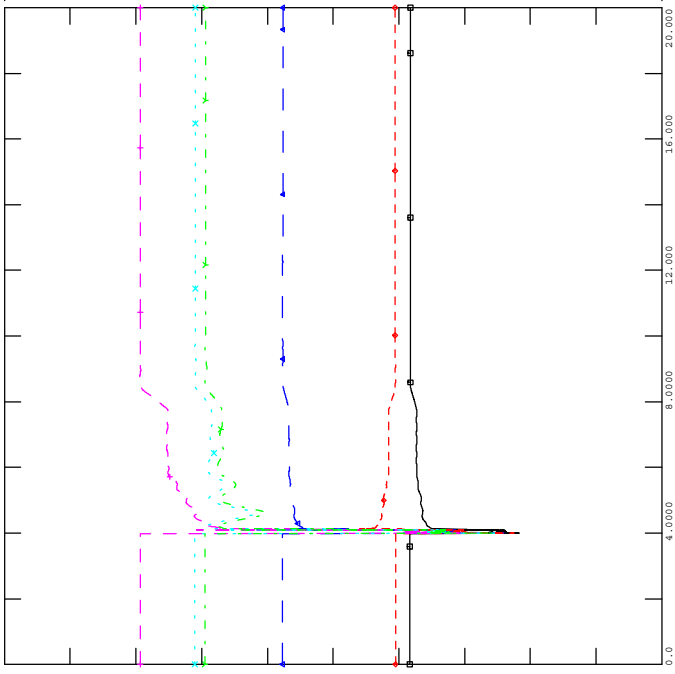
P1812_2020SL_POST
CATB -675L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/675L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:16

LINE POWER

CHNL# 58: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 56: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 54: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 52: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 50: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 48: [POWR 662 TO 720 CKT '64'] 800.00 -200.0



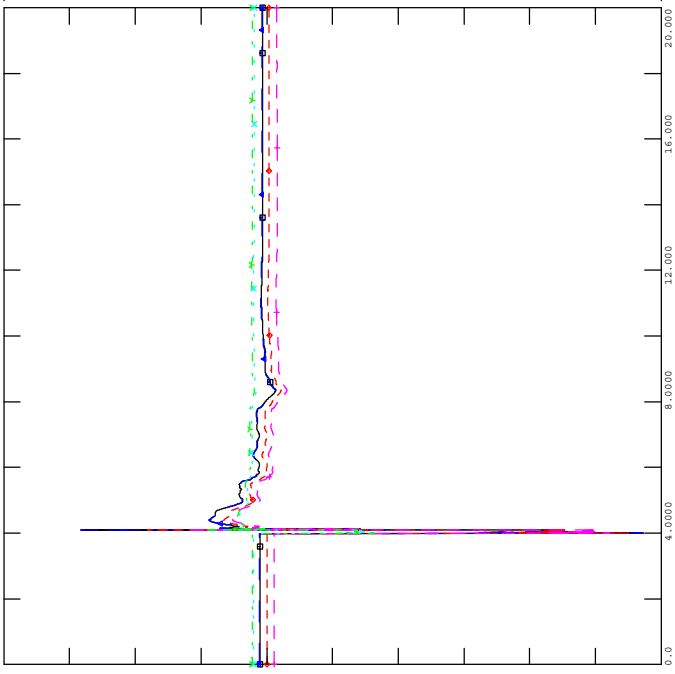
P1812_2020SL_POST
CATB -675L_FAULT_AT_BOWMANTON

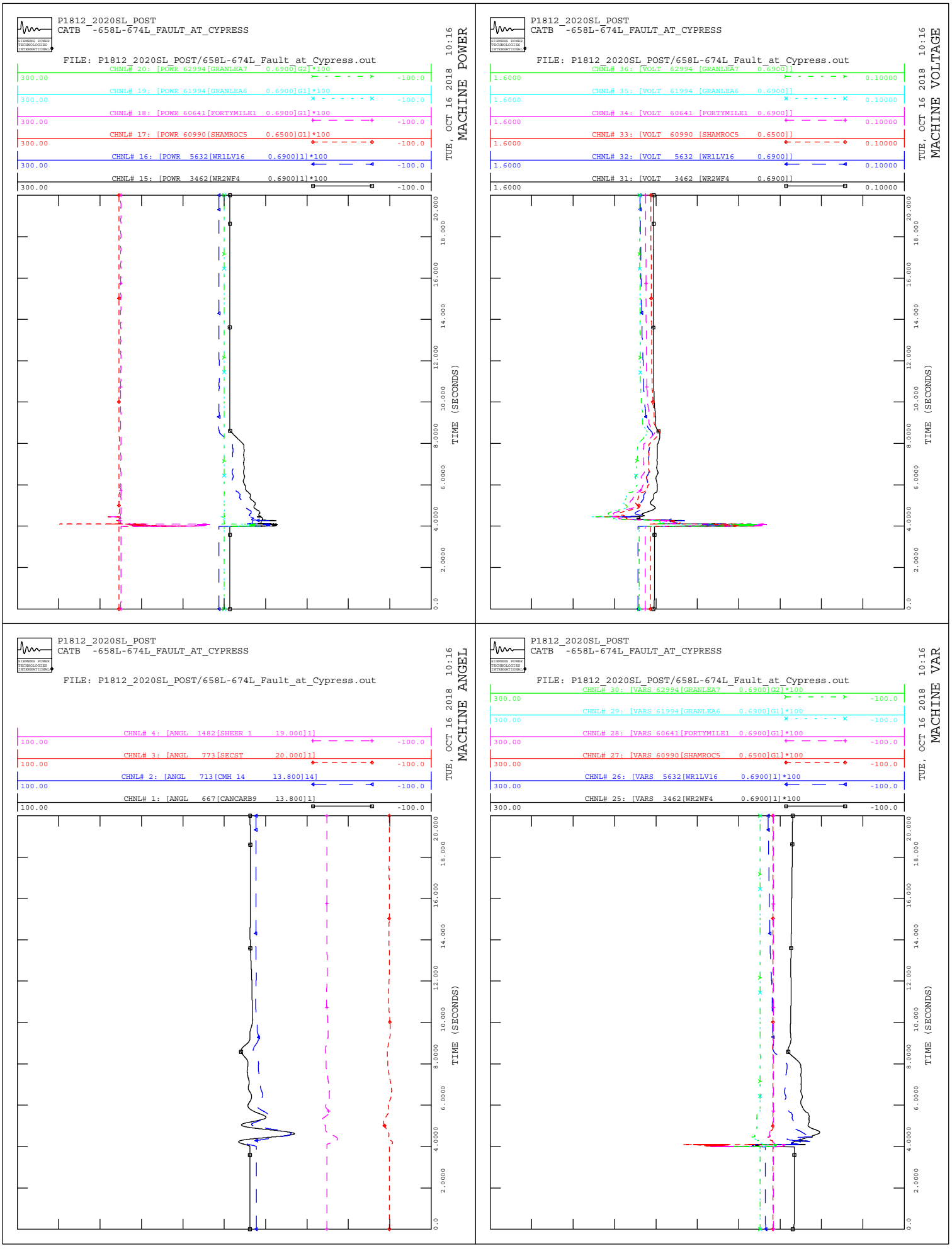
FILE: P1812_2020SL_POST/675L_Fault_at_Bowmanton.out

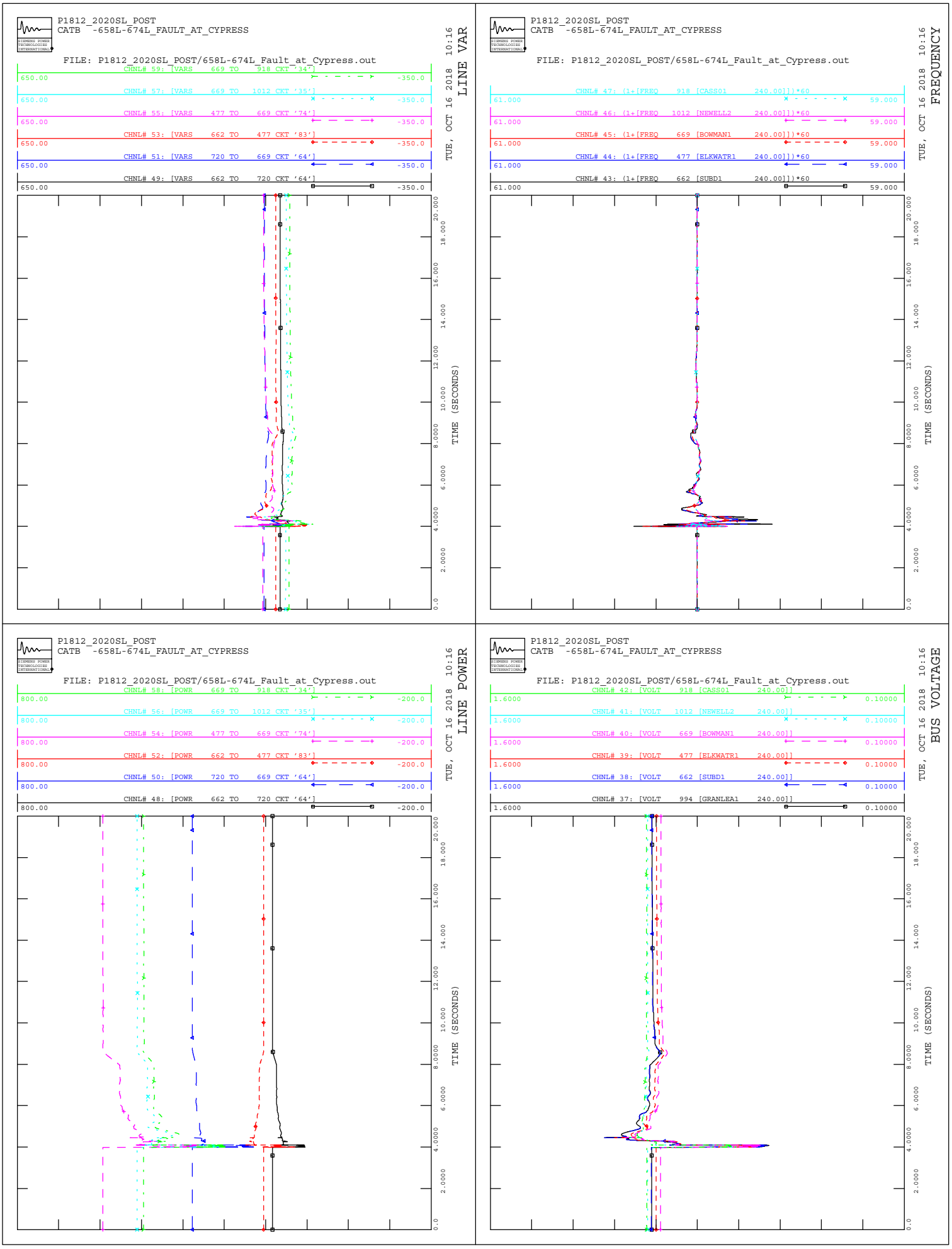
TUE, OCT 16 2018 10:16

BUS VOLTAGE

CHNL# 42: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 41: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 40: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 39: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 38: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 37: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000

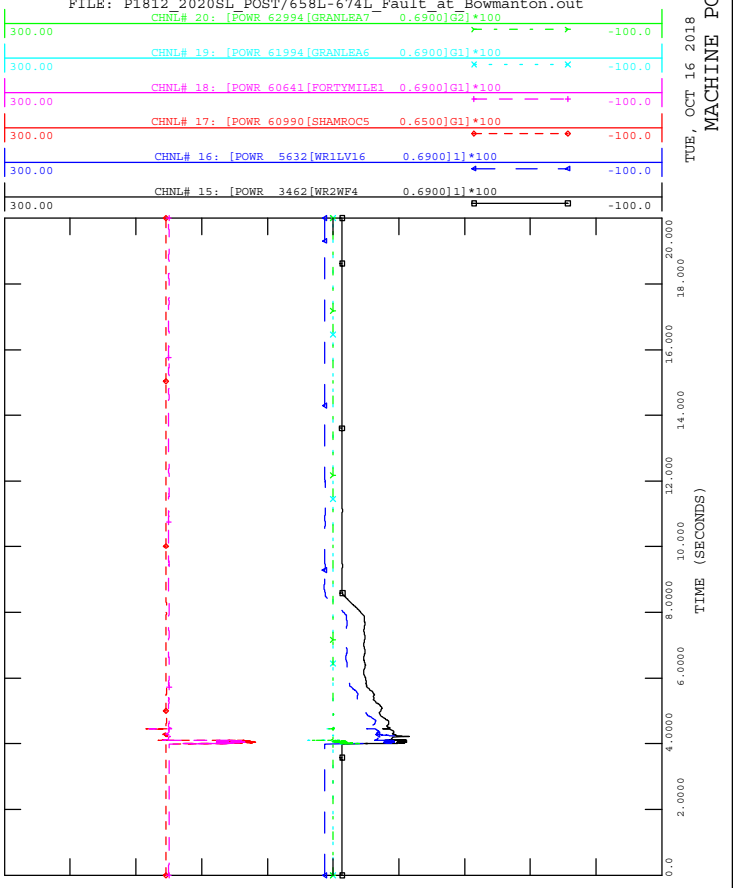



P1812_2020SL_POST
CATB -658L-674L_FAULT_AT_CYPRESS
FILE: P1812_2020SL_POST/658L-674L_Fault_at_Cypress.out
CHNL# 20: [POWR 62994[GRANLEA7 0.6900]G2]*100
CHNL# 19: [POWR 61994[GRANLEA6 0.6900]G1]*100
CHNL# 18: [POWR 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 17: [POWR 60990[SHAMROC5 0.6500]G1]*100
CHNL# 16: [POWR 5632[WR1LV16 0.6900]1]*100
CHNL# 15: [POWR 3462[WR2WF4 0.6900]1]*100
300.00
-100.0
TUE, OCT 16 2018 10:16
MACHINE POWER
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000
P1812_2020SL_POST
CATB -658L-674L_FAULT_AT_CYPRESS
FILE: P1812_2020SL_POST/658L-674L_Fault_at_Cypress.out
CHNL# 36: [VOLT 62994 [GRANLEA7 0.6900]]
CHNL# 35: [VOLT 61994 [GRANLEA6 0.6900]]
CHNL# 34: [VOLT 60641 [FORTYMILE1 0.6900]]
CHNL# 33: [VOLT 60990 [SHAMROC5 0.6500]]
CHNL# 32: [VOLT 5632 [WR1LV16 0.6900]]
CHNL# 31: [VOLT 3462 [WR2WF4 0.6900]]
1.6000
0.10000
TUE, OCT 16 2018 10:16
MACHINE VOLTAGE
TIME (SECONDS)
P1812_2020SL_POST
CATB -658L-674L_FAULT_AT_CYPRESS
FILE: P1812_2020SL_POST/658L-674L_Fault_at_Cypress.out
CHNL# 4: [ANGL 1482[SHEER 1 19.000]1]
CHNL# 3: [ANGL 773[SECST 20.000]1]
CHNL# 2: [ANGL 713[CMH 14 13.800]14]
CHNL# 1: [ANGL 667[CANCARB9 13.800]1]
100.00
-100.0
TUE, OCT 16 2018 10:16
MACHINE ANGEL
TIME (SECONDS)
P1812_2020SL_POST
CATB -658L-674L_FAULT_AT_CYPRESS
FILE: P1812_2020SL_POST/658L-674L_Fault_at_Cypress.out
CHNL# 30: [VARS 62994[GRANLEA7 0.6900]G2]*100
CHNL# 29: [VARS 61994[GRANLEA6 0.6900]G1]*100
CHNL# 28: [VARS 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 27: [VARS 60990[SHAMROC5 0.6500]G1]*100
CHNL# 26: [VARS 5632[WR1LV16 0.6900]1]*100
CHNL# 25: [VARS 3462[WR2WF4 0.6900]1]*100
300.00
-100.0
TUE, OCT 16 2018 10:16
MACHINE VAR
TIME (SECONDS)


P1812_2020SL_POST
CATB -658L-674L_FAULT_AT_CYPRESS
FILE: P1812_2020SL_POST/658L-674L_Fault_at_Cypress.out
CHNL# 59: [VARS 669 TO 918 CKT '34']
CHNL# 57: [VARS 669 TO 1012 CKT '35']
CHNL# 55: [VARS 477 TO 669 CKT '74']
CHNL# 53: [VARS 662 TO 477 CKT '83']
CHNL# 51: [VARS 720 TO 669 CKT '64']
CHNL# 49: [VARS 662 TO 720 CKT '64']
650.00
-350.0
TUE, OCT 16 2018 10:16
LINE VAR
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000
P1812_2020SL_POST
CATB -658L-674L_FAULT_AT_CYPRESS
FILE: P1812_2020SL_POST/658L-674L_Fault_at_Cypress.out
CHNL# 47: (1+[FREQ 918 [CASS01 240.00])*60
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00])*60
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00])*60
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00])*60
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00])*60
61.000
59.000
TUE, OCT 16 2018 10:16
FREQUENCY
TIME (SECONDS)
P1812_2020SL_POST
CATB -658L-674L_FAULT_AT_CYPRESS
FILE: P1812_2020SL_POST/658L-674L_Fault_at_Cypress.out
CHNL# 58: [POWR 669 TO 918 CKT '34']
CHNL# 56: [POWR 669 TO 1012 CKT '35']
CHNL# 54: [POWR 477 TO 669 CKT '74']
CHNL# 52: [POWR 662 TO 477 CKT '83']
CHNL# 50: [POWR 720 TO 669 CKT '64']
CHNL# 48: [POWR 662 TO 720 CKT '64']
800.00
-200.0
TUE, OCT 16 2018 10:16
LINE POWER
TIME (SECONDS)
P1812_2020SL_POST
CATB -658L-674L_FAULT_AT_CYPRESS
FILE: P1812_2020SL_POST/658L-674L_Fault_at_Cypress.out
CHNL# 42: [VOLT 918 [CASS01 240.00]]
CHNL# 41: [VOLT 1012 [NEWELL2 240.00]]
CHNL# 40: [VOLT 669 [BOWMAN1 240.00]]
CHNL# 39: [VOLT 477 [ELKWATR1 240.00]]
CHNL# 38: [VOLT 662 [SUBD1 240.00]]
CHNL# 37: [VOLT 994 [GRANLEA1 240.00]]
1.6000
0.10000
TUE, OCT 16 2018 10:16
BUS VOLTAGE
TIME (SECONDS)

P1812_2020SL_POST
CATB -658L-674L_FAULT_AT_BOWMANTON

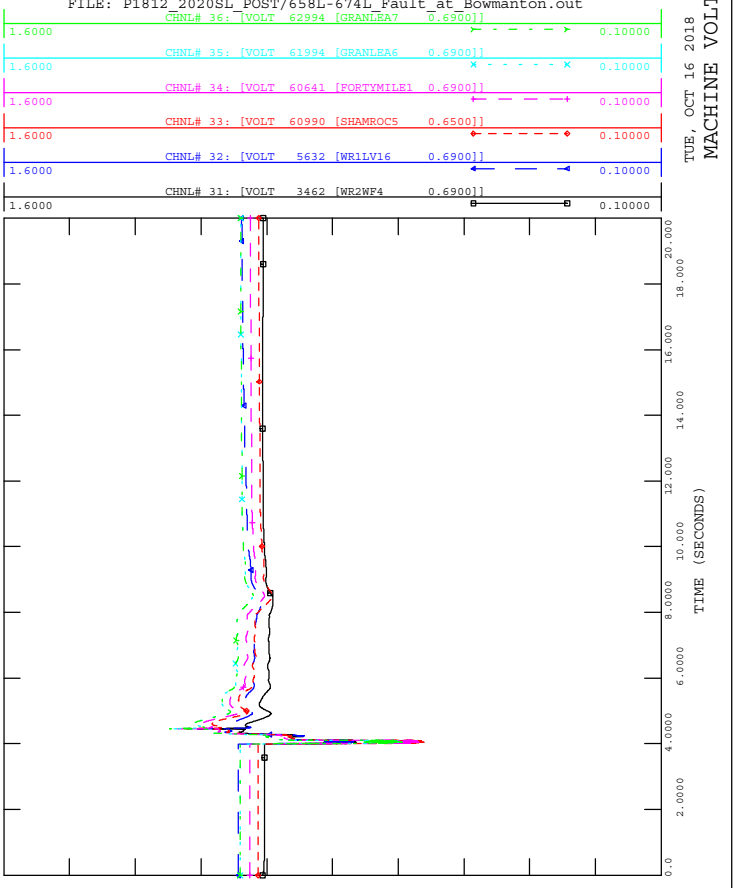
FILE: P1812_2020SL_POST/658L-674L_Fault_at_Bowmanton.out



TUE, OCT 16 2018 10:16
MACHINE POWER

P1812_2020SL_POST
CATB -658L-674L_FAULT_AT_BOWMANTON

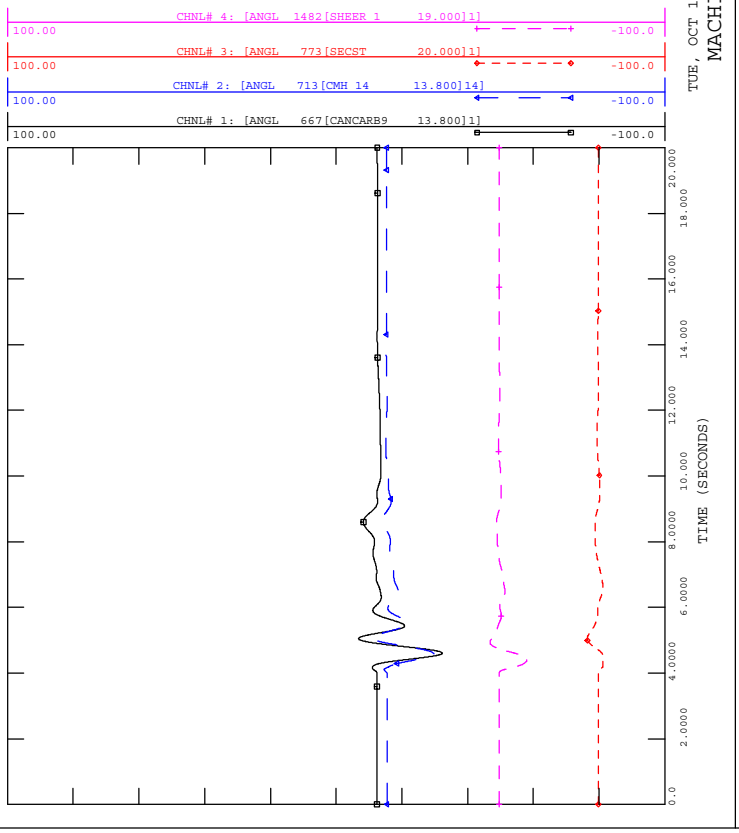
FILE: P1812_2020SL_POST/658L-674L_Fault_at_Bowmanton.out



TUE, OCT 16 2018 10:16
MACHINE VOLTAGE

P1812_2020SL_POST
CATB -658L-674L_FAULT_AT_BOWMANTON

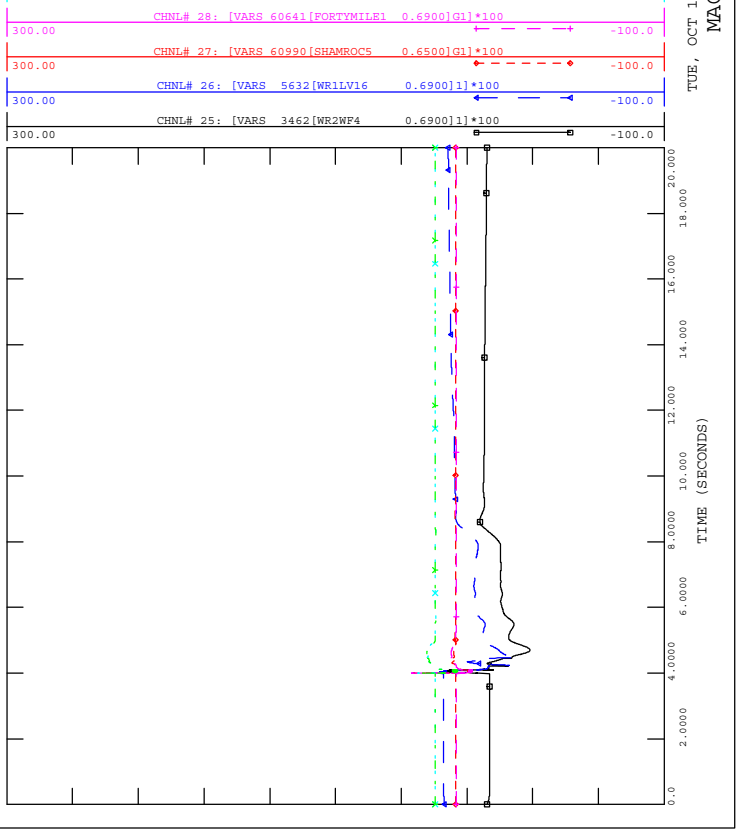
FILE: P1812_2020SL_POST/658L-674L_Fault_at_Bowmanton.out



TUE, OCT 16 2018 10:16
MACHINE ANGEL

P1812_2020SL_POST
CATB -658L-674L_FAULT_AT_BOWMANTON

FILE: P1812_2020SL_POST/658L-674L_Fault_at_Bowmanton.out



TUE, OCT 16 2018 10:16
MACHINE VAR

P1812_2020SL_POST
CATB -658L-674L_FAULT_AT_BOWMANTON

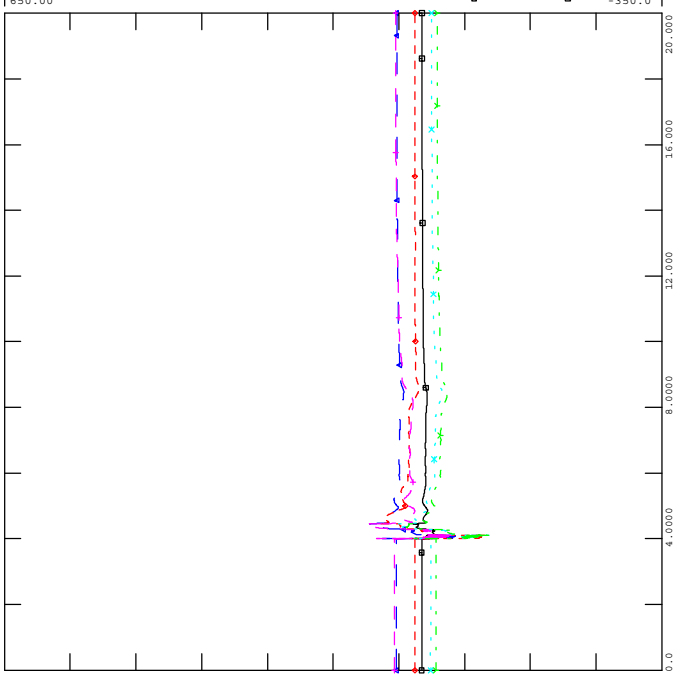
FILE: P1812_2020SL_POST/658L-674L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:16

LINE VAR

CHNL# 59: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 57: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 55: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 53: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 51: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 49: [VARS 662 TO 720 CKT '64'] 650.00 -350.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SL_POST
CATB -658L-674L_FAULT_AT_BOWMANTON

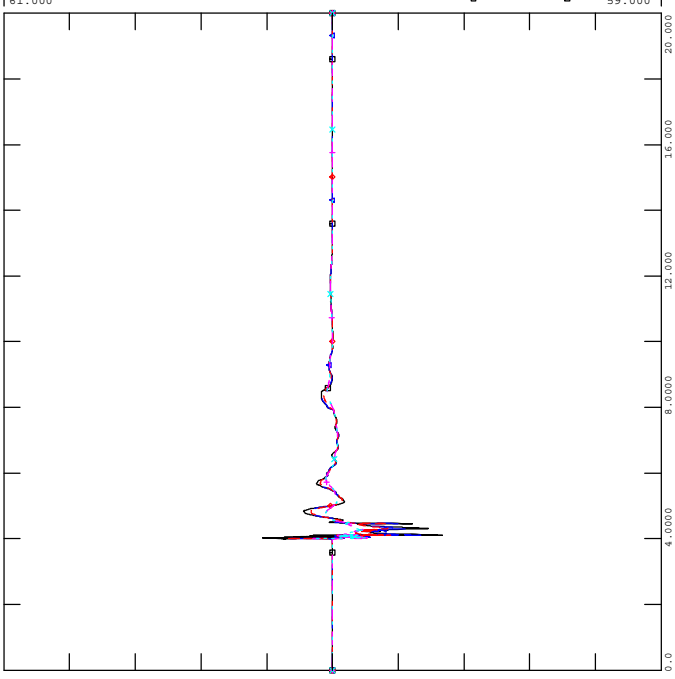
FILE: P1812_2020SL_POST/658L-674L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:16

FREQUENCY

CHNL# 47: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 46: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 45: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 44: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 43: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SL_POST
CATB -658L-674L_FAULT_AT_BOWMANTON

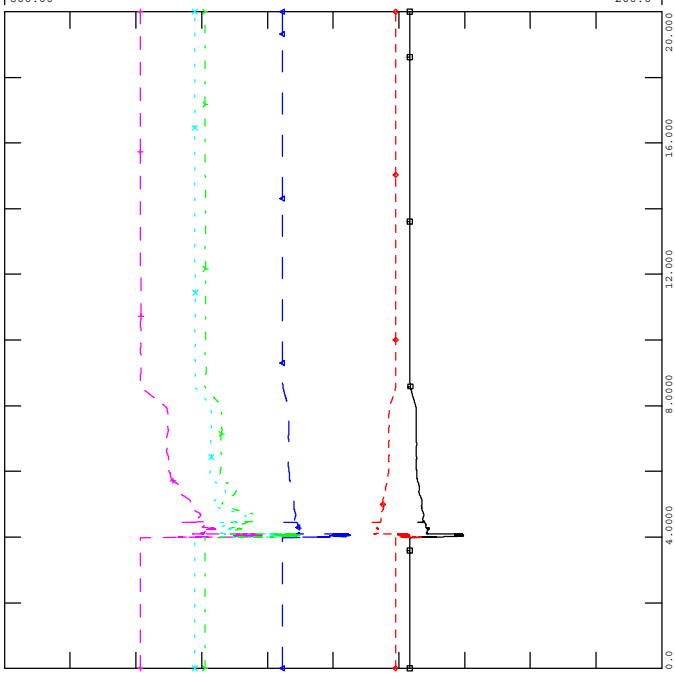
FILE: P1812_2020SL_POST/658L-674L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:16

LINE POWER

CHNL# 58: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 56: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 54: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 52: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 50: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 48: [POWR 662 TO 720 CKT '64'] 800.00 -200.0

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



P1812_2020SL_POST
CATB -658L-674L_FAULT_AT_BOWMANTON

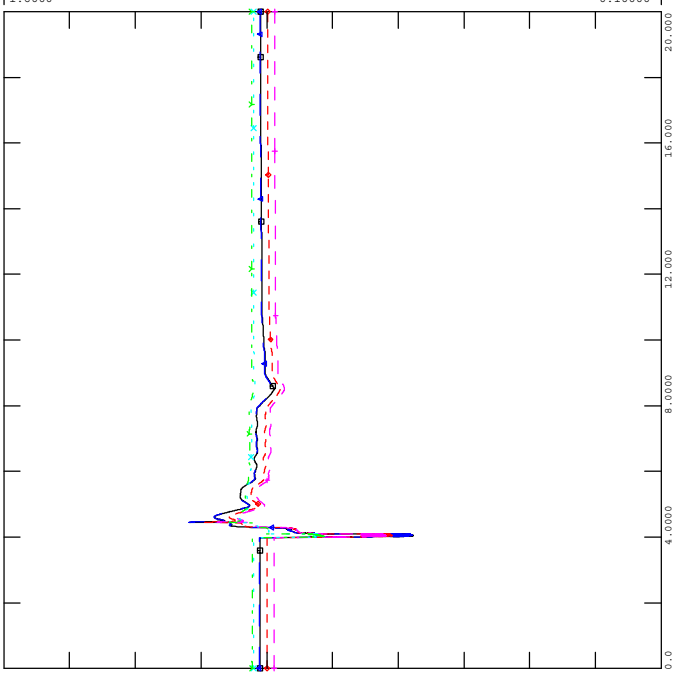
FILE: P1812_2020SL_POST/658L-674L_Fault_at_Bowmanton.out

TUE, OCT 16 2018 10:16

BUS VOLTAGE

CHNL# 42: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 41: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 40: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 39: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 38: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 37: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000

TIME (SECONDS) 0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000



Attachment A5
Dynamic Data and Assumptions

Table A5-1: Generic Renewable Energy Generator/Converter Model

Renewable Energy Generator/Converter Model (REGCAU1)									
Tg	**Rrpwr**	**Brkpt**	**Zerox**	**Lvpl1**	**Volim**	**Lvpnt1**	**Lvpnt0**	**Iolim**	**Tfltr**
0	10	0.15	0.06	1.2	1.2	0.1	-999	-1	0.03
Khv	**Iqrmax**	**Iqrmin**	**Accel**	**Lvplsw**					
0	106.15	-106.2	1	1					

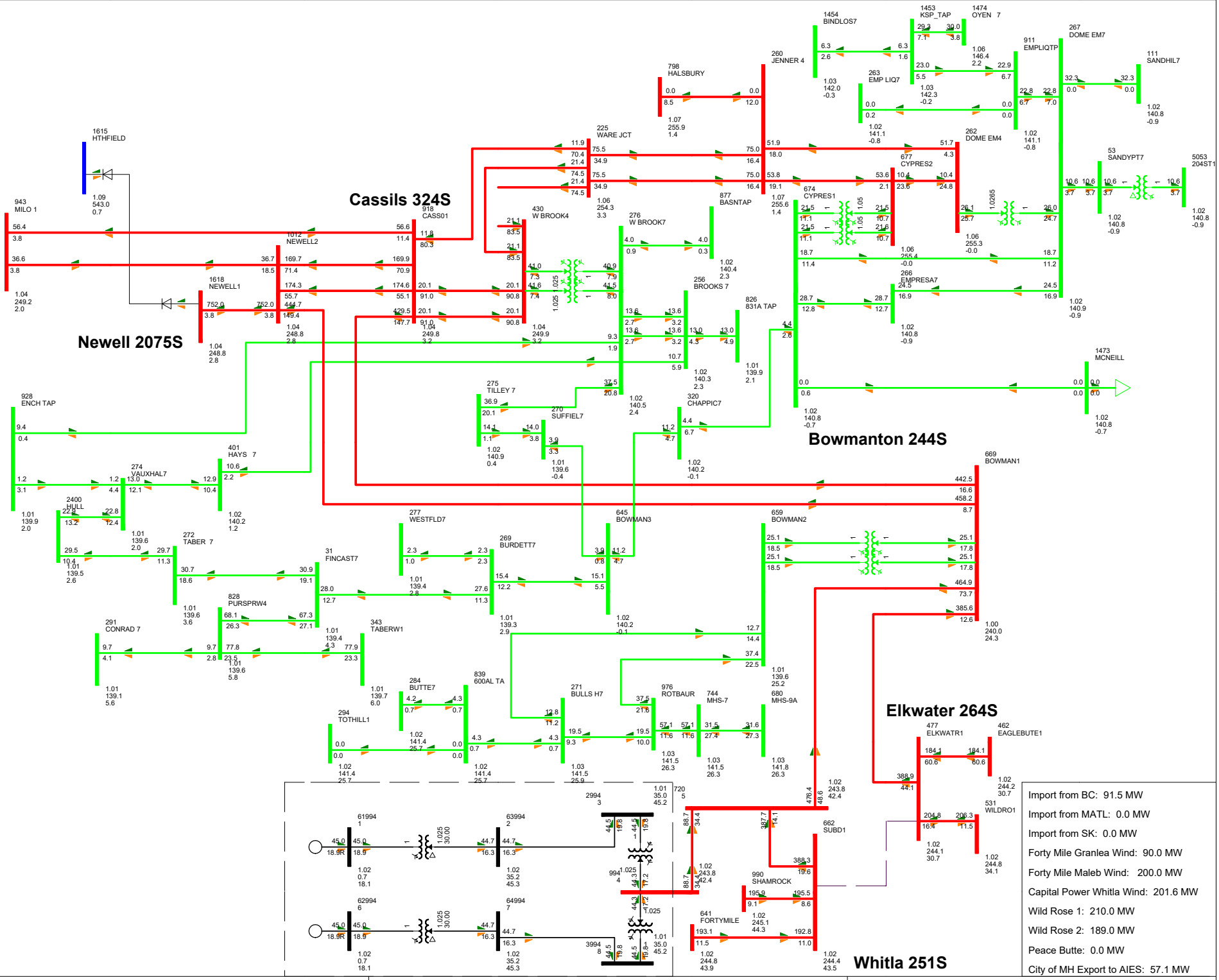
Table A5-2: Generic Renewable Electrical Control Model

Generic Renewable Electrical Control Model (REECAU1)											
Vdip	**Vup**	**Trv**	**dbd1**	**dbd2**	**Kqv**	**Iqhl**	**Iqll**	**Vref0**	**Iqfrz**	**Thld**	**Thld2**
0.9	1.1	0	-0.2	0.1	2	1.0	-1.0	0	0	0.6	0
Tp	**QMax**	**QMin**	**VMAX**	**VMIN**	**Kqp**	**Kqi**	**Kvp**	**Kvi**	**Vbias**	**Tiq**	**dPmax**
0.05	0. 5	-0.5	1.1	0.9	0	3	18	5	0	0.05	106.2
dPmin	**PMAX**	**PMIN**	**Imax**	**Tpord**	**Vq1**	**Iq1**	**Vq2**	**Iq2**	**Vq3**	**Iq3**	**Vq4**
-10.62	1.05	0.05	1.44	0.01	0.066	0.374	0.15	0.682	0.175	0.989	0.179
Iq4	**Vp1**	**Ip1**	**Vp2**	**Ip2**	**Vp3**	**Ip3**	**Vp4**	**Ip4**	**Bus**	**PFFLAG**	**VFLAG**
1.07	0.066	0.22	0.1	0.39	0.5	0.39	0.79	1.44	0	0	0
QFLAG	**PFLAG**	**PQFLAG**									
0	0	0									

Table A5-3: Generic Renewable Plant Control Model

Renewable Energy Generator/Converter Model (REPCAU1)											
Tfltr	**Kp**	**Ki**	**Tft**	**Tfv**	**Vfrz**	**Rc**	**Xc**	**Kc**	**emax**	**emin**	**dbd1**
0.03	0.5	10	0	0	0.85	0	0	0.05	5	-5	-0.001
dbd2	**Qmax**	**Qmin**	**Kpg**	**Kig**	**Tp**	**fdbd1**	**Fdbd2**	**femax**	**femin**	**Pmax**	**Pmin**
0.001	0.638	-0.638	0.4	2.6667	0.25	-0.0005	0.0005	0.0083	-0.0083	1.1	0
Tg	**Ddn**	**Dup**	**Bus**	**FromBus**	**ToBus**	**ID**	**VCFlag**	**RefFlag**	**Fflag**		
0.1	20	0	0	0	0	‘0’	0	1	1		

Attachment A6
Post-Mitigation Power Flow Diagrams

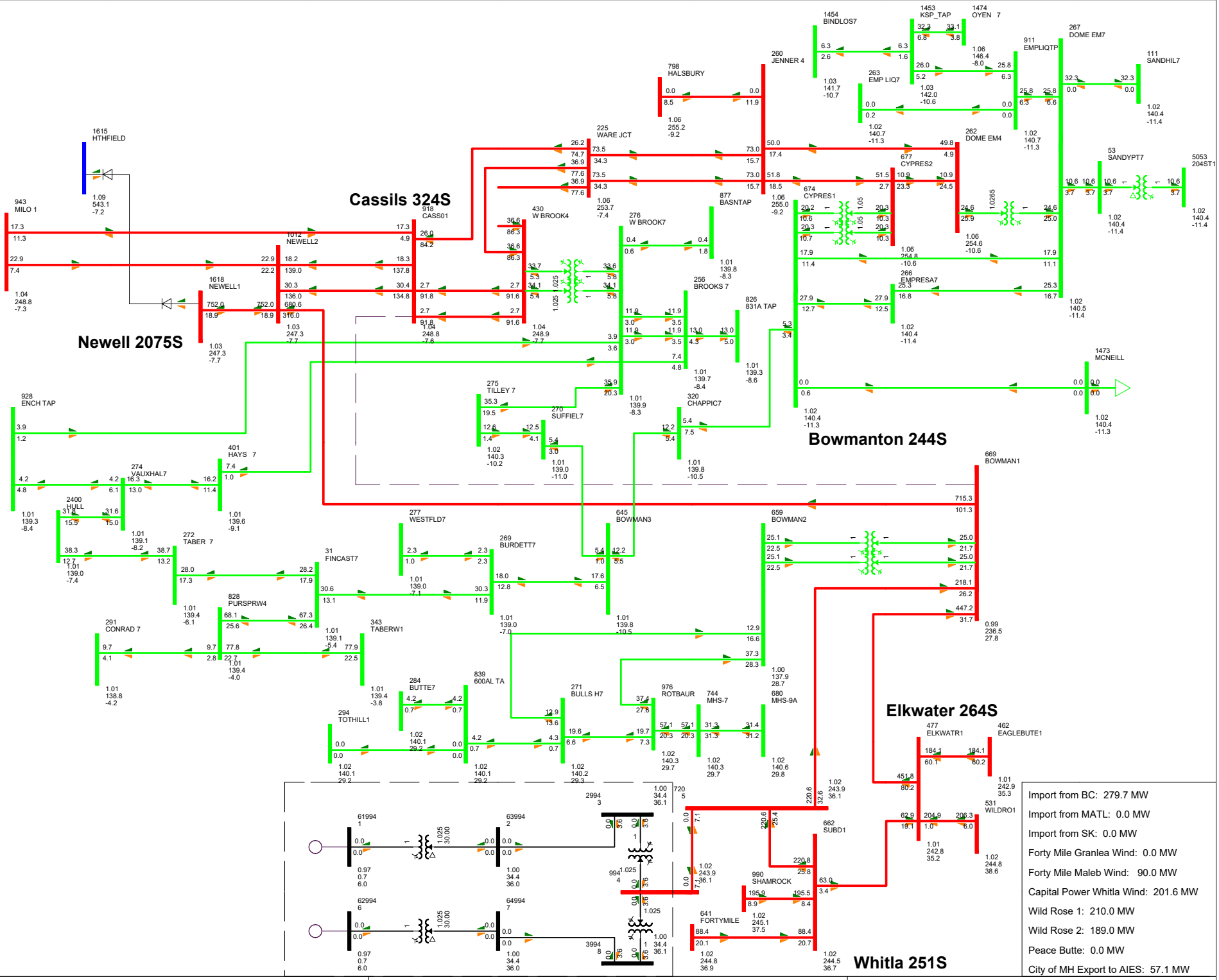


Forty Mile Granlea WAGF

AESO Project Number: P1812

FIGURE E-1: P1812_2020SL_POST.SAV
CATEGORY B - 983L (WHITLA 251S TO ELKWATER 264S) WITH RAS
FRI, OCT 05 2018 11:01

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000V 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000

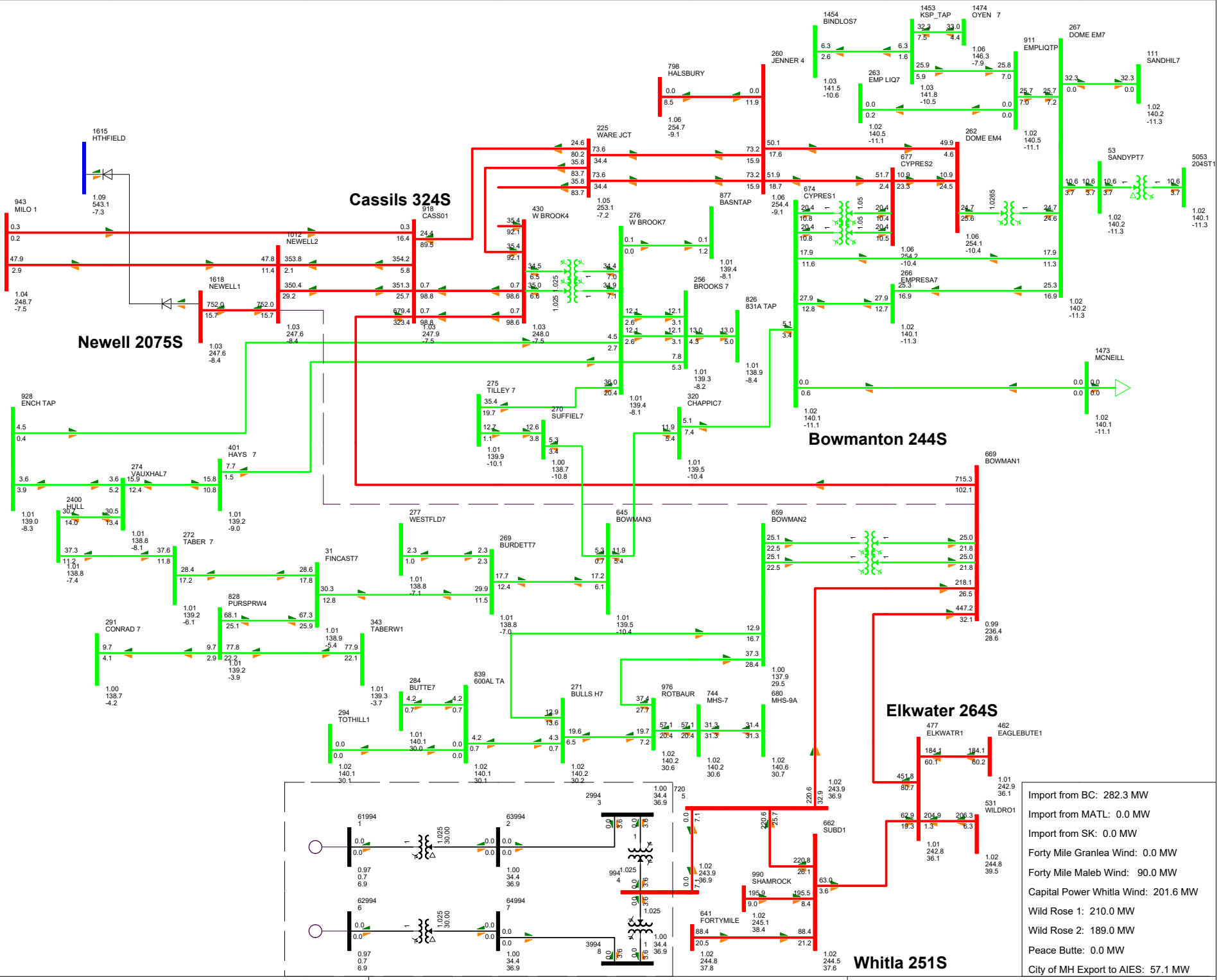


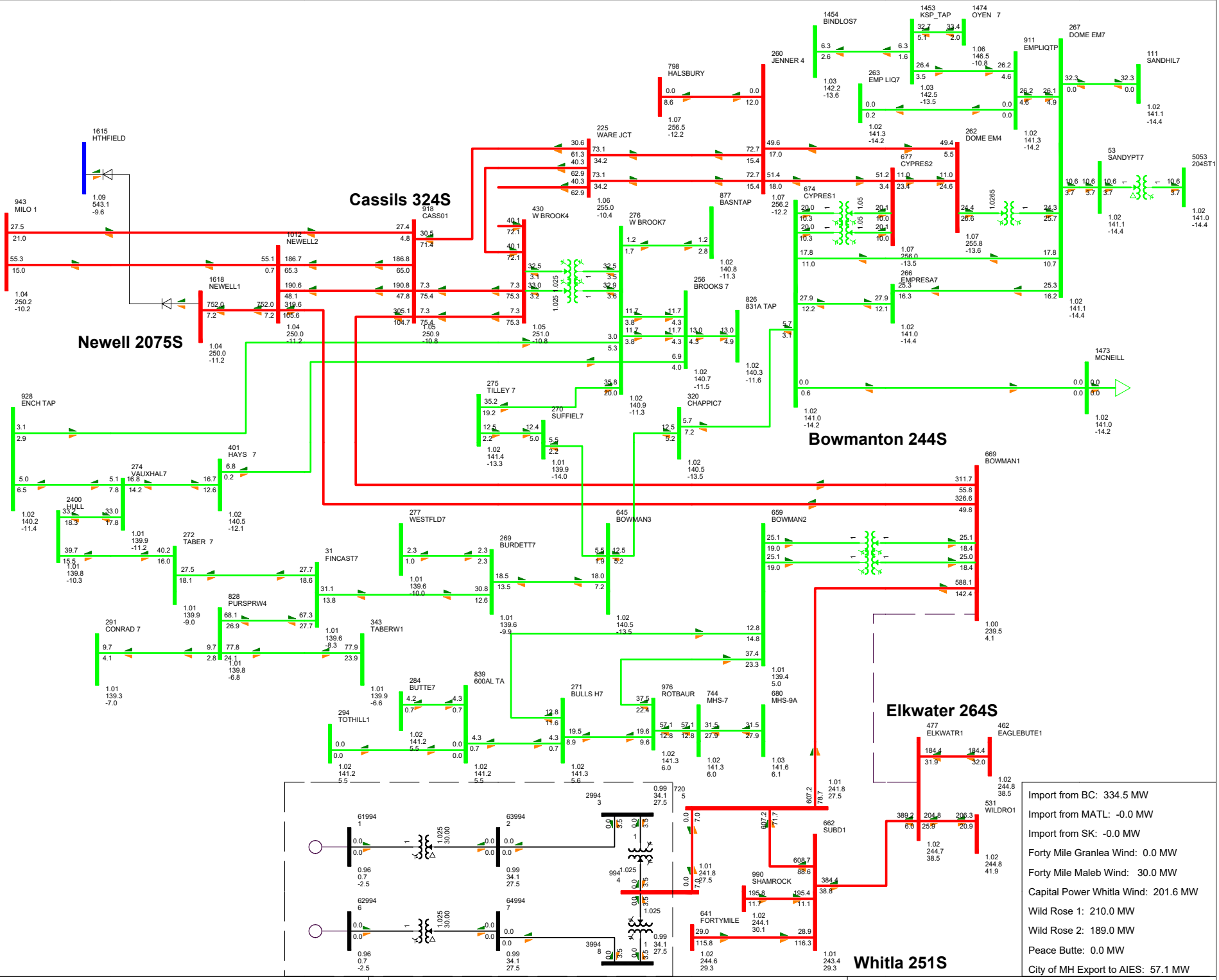
Forty Mile Granlea WAGF

AESO Project Number: P1812

FIGURE E-2: P1812_2020SL_POST.SAV
CATEGORY B - 1034L (CASSILS 324S TO BOWMANTON 244S) WITH RAS
FRI, OCT 05 2018 11:02

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000V 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000


Cassils 324S
Newell 2075S
Bowmanton 244S
Elkwater 264S
Whitla 251S
1615 HTHFIELD
1.09 543.1 -7.3
943 MILO 1
1.04 248.7 -7.5
1618 NEWELL1
1012 NEWELL2
918 CASS01
1.03 247.6 -8.4
1.03 247.9 -7.5
1.03 248.0 -7.5
225 WARE JCT
1.05 253.1 -7.2
798 HALSBURY
1.06 254.7 -9.1
430 W BROOK4
276 W BROOK7
256 BROOKS 7
877 BASNTAP
1.06 254.4 -9.1
826 831A TAP
1.01 139.3 -8.2
1.01 139.4 -8.1
1.01 138.9 -8.4
1454 BINDLOS7
1.03 141.5 -10.6
1453 KSP_TAP
1474 OYEN 7
1.06 146.3 -7.9
263 EMP LIQ7
1.03 141.8 -10.5
1.02 140.5 -11.1
260 JENNER 4
262 DOME EM4
677 CYPRES2
674 CYPRES1
1.06 254.1 -10.4
1.06 254.2 -10.4
266 EMPRESA7
1.02 140.1 -11.3
911 EMPLIQTP
267 DOME EM7
111 SANDHIL7
1.02 140.2 -11.3
53 SANDYPT7
5053 204ST1
1.02 140.1 -11.3
1473 MCNEILL
1.02 140.1 -11.1
928 ENCH TAP
401 HAYS 7
1.01 139.2 -9.0
274 VAUXHAL7
2400 HULL
1.01 139.0 -8.3
272 TABER 7
1.01 138.8 -7.4
1.01 139.2 -6.1
828 PURSPRW4
291 CONRAD 7
1.00 138.7 -4.2
343 TABERW1
1.01 139.3 -3.7
31 FINCAST7
277 WESTFLD7
1.01 138.8 -7.1
269 BURDETT7
275 TILLEY 7
1.01 139.9 -10.1
270 SUFFIEL7
1.00 138.7 -10.8
320 CHAPPIC7
1.01 139.5 -10.4
645 BOWMAN3
1.01 139.5 -10.4
669 BOWMAN1
0.99 236.4 28.6
659 BOWMAN2
1.02 140.1 -11.1
284 BUTTE7
1.01 140.1 30.0
839 600AL TA
1.02 140.1 30.1
294 TOTHILL1
1.02 140.1 30.1
271 BULLS H7
1.02 140.2 30.2
976 ROTBAUR
1.02 140.2 30.6
744 MHS-7
1.02 140.2 30.6
680 MHS-9A
1.02 140.6 30.7
1.00 137.9 29.5
1.00 138.8 -7.0
1.01 138.8 -8.1
1.01 139.2 -9.0
1.01 139.2 -3.9
1.01 138.9 -5.4
1.01 139.0 -3.7
1.01 139.3 -3.7
1.01 139.2 -3.9
1.01 139.1 -3.7
1.01 139.2 -3.9

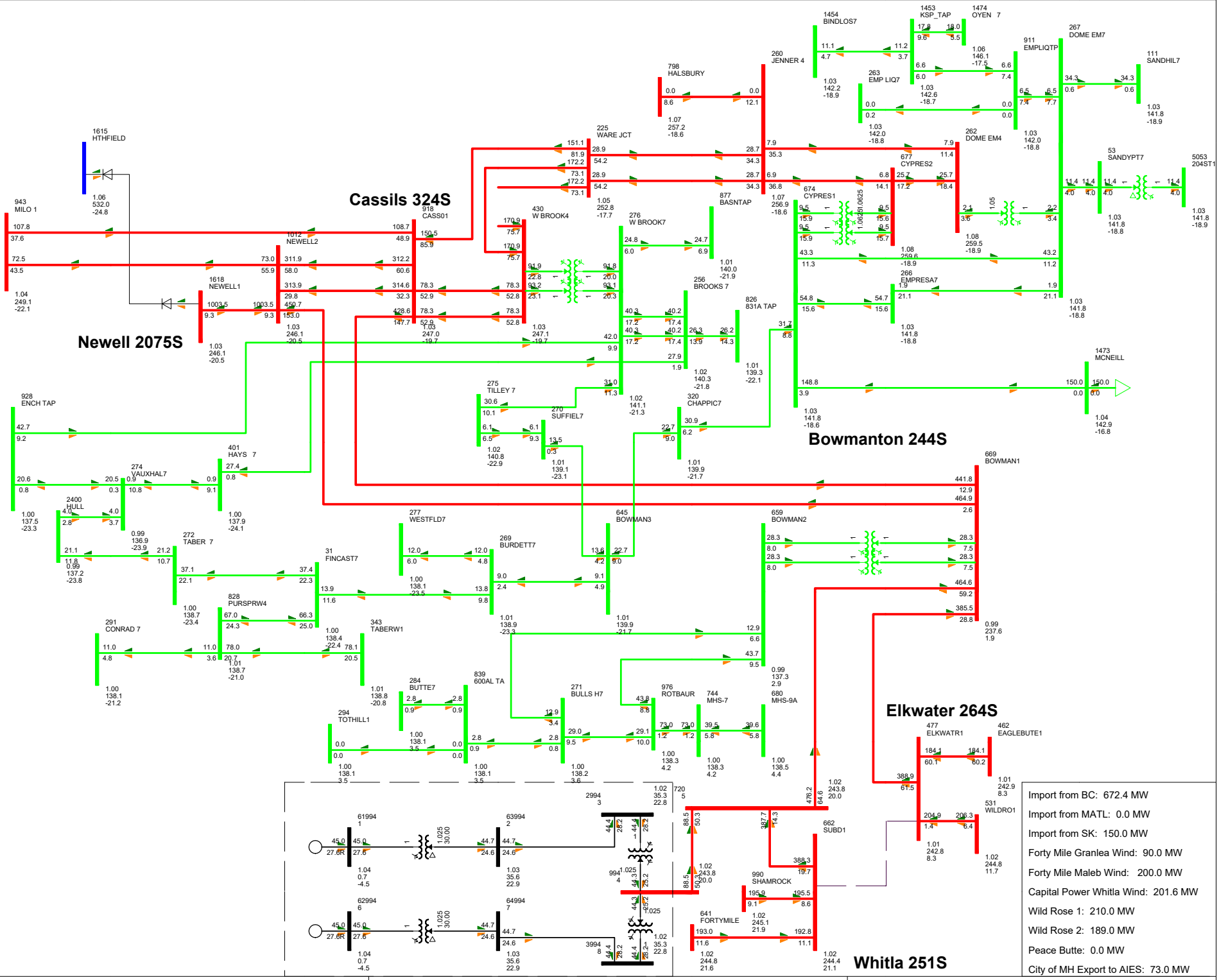


Forty Mile Granlea WAGF

AESO Project Number: P1812

FIGURE E-4: P1812_2020SL_POST.SAV
CATEGORY B - 1074L (BOWMANTON 244S TO ELKWATER 264S) WITH
FRI, OCT 05 2018 11:13

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000V 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000

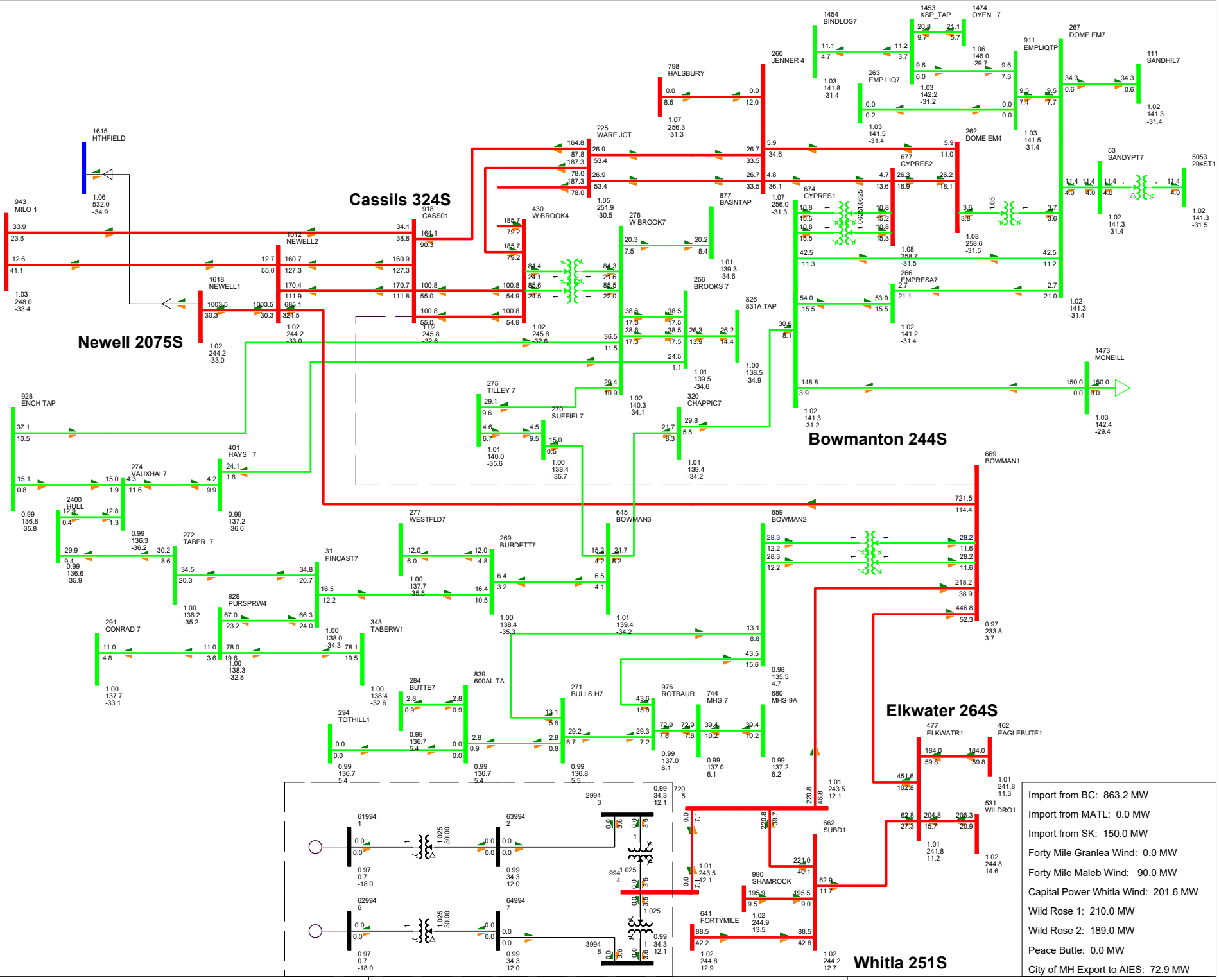


Forty Mile Granlea WAGF

AESO Project Number: P1812

FIGURE E-5: P1812_2020SP_POST.SAV
CATEGORY B - 983L (WHITLA 251S TO ELKWATER 264S) WITH RAS
FRI, OCT 05 2018 11:14

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000V 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000

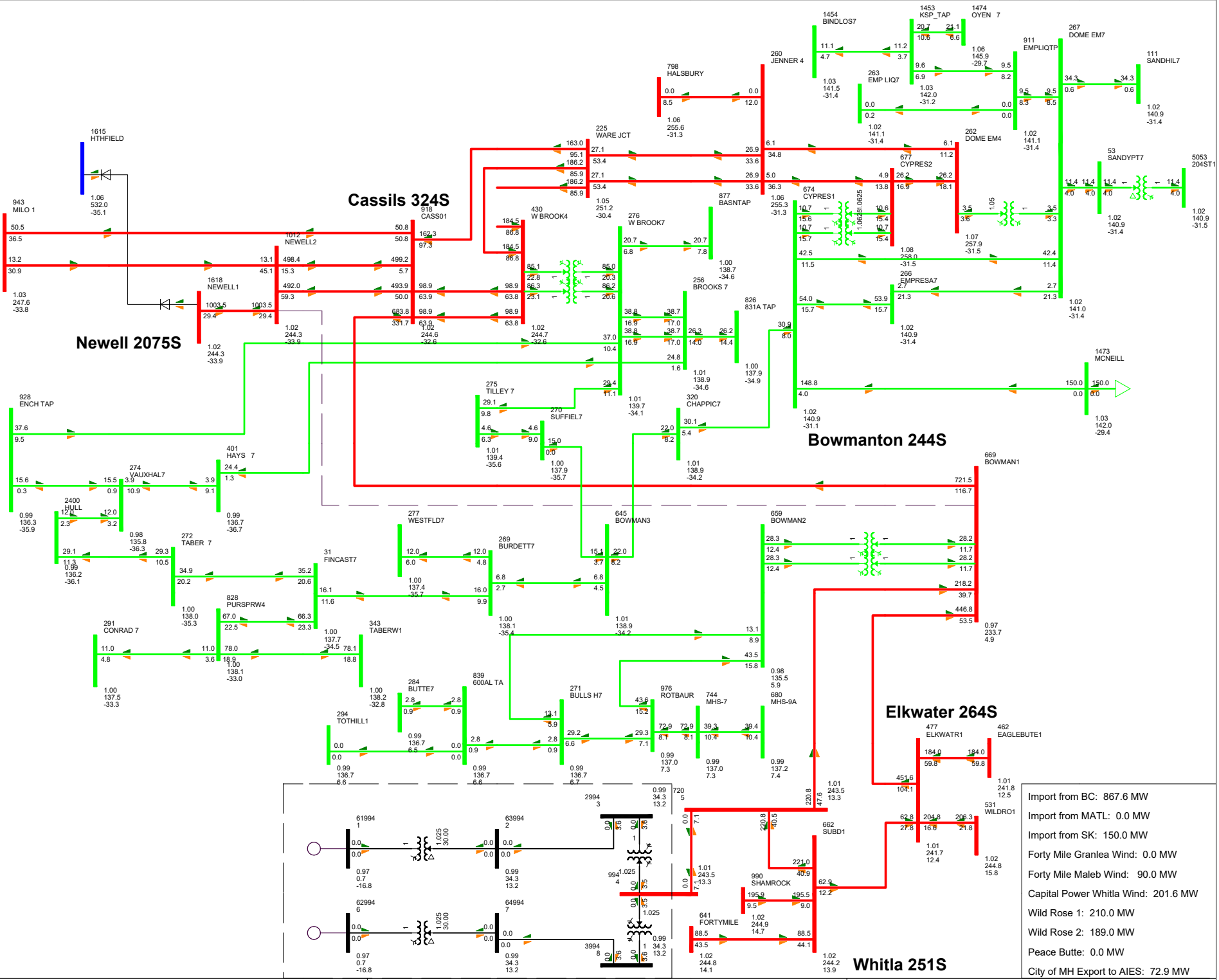


Forty Mile Granlea WAGF

AESO Project Number: P1812

FIGURE E-6: P1812_2020SP_POST.SAV
CATEGORY B - 1034L (CASSILS 324S TO BOWMANTON 244S) WITH RAS
FRI, OCT 05 2018 11:14

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000V 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000

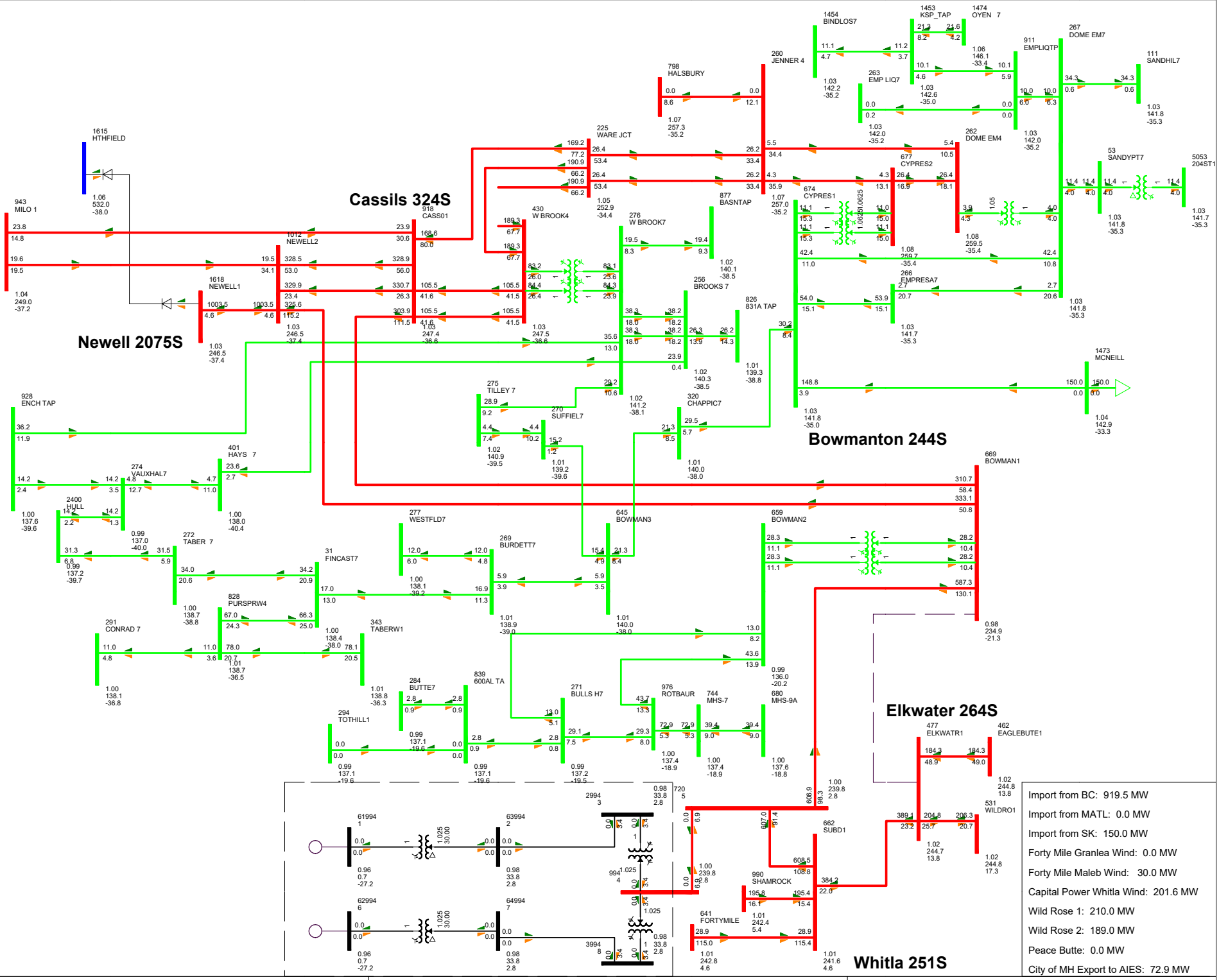


Forty Mile Granlea WAGF

AESO Project Number: P1812

FIGURE E-7: P1812_2020SP_POST.SAV
CATEGORY B - 1035L (NEWELL 2075S TO BOWMANTON 244S) WITH RAS
FRI, OCT 05 2018 11:14

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000V 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000



Forty Mile Granlea WAGF

AESO Project Number: P1812

FIGURE E-8: P1812_2020SP_POST.SAV
CATEGORY B - 1074L (BOWMANTON 244S TO ELKWATER 264S) WITH
FRI, OCT 05 2018 11:15

Bus - Voltage (kV/pu)/Angle
Branch - MW/Mvar
Equipment - MW/Mvar
100.0%Rate A
1.1000V 0.900UV
kV: >0.000 <=69.000 <=138.000 <=240.000 <=500.000 <=800.000 <=1000.000 >1000.000

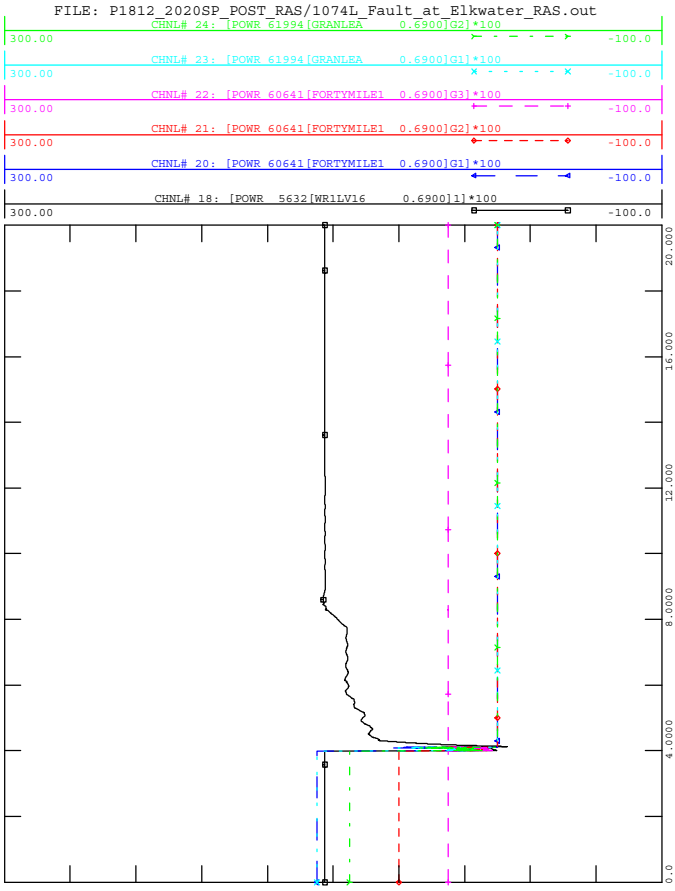
Attachment A7
Post-Mitigation Transient Stability Diagrams

P1812_2020SP_POST_RAS
CATB -1074L_FAULT_AT_ELKWATER_RAS

FILE: P1812_2020SP_POST_RAS/1074L_Fault_at_Elkwater_RAS.out

TUE, OCT 16 2018 10:31

MACHINE POWER

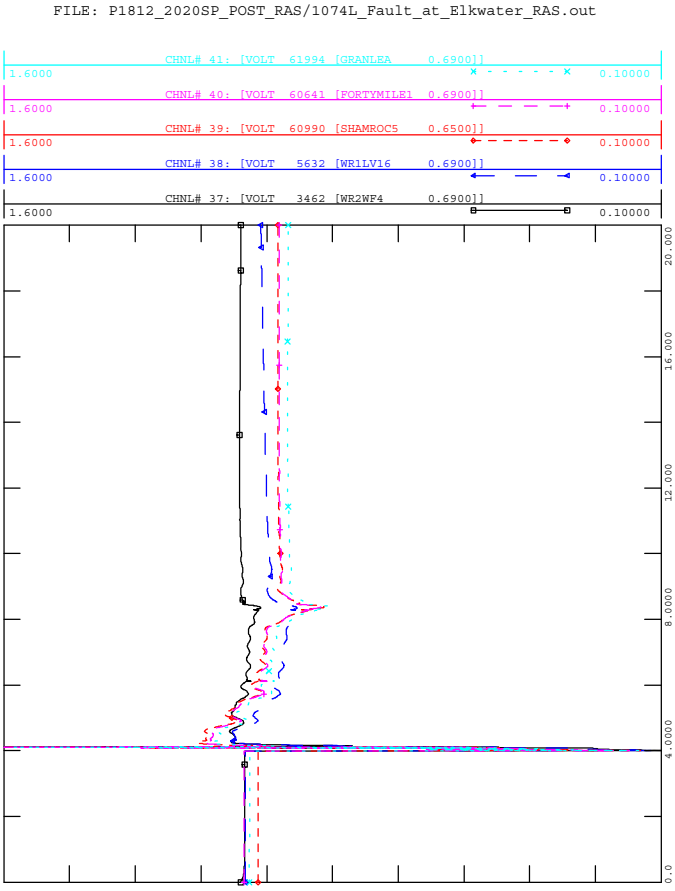


P1812_2020SP_POST_RAS
CATB -1074L_FAULT_AT_ELKWATER_RAS

FILE: P1812_2020SP_POST_RAS/1074L_Fault_at_Elkwater_RAS.out

TUE, OCT 16 2018 10:31

MACHINE VOLTAGE

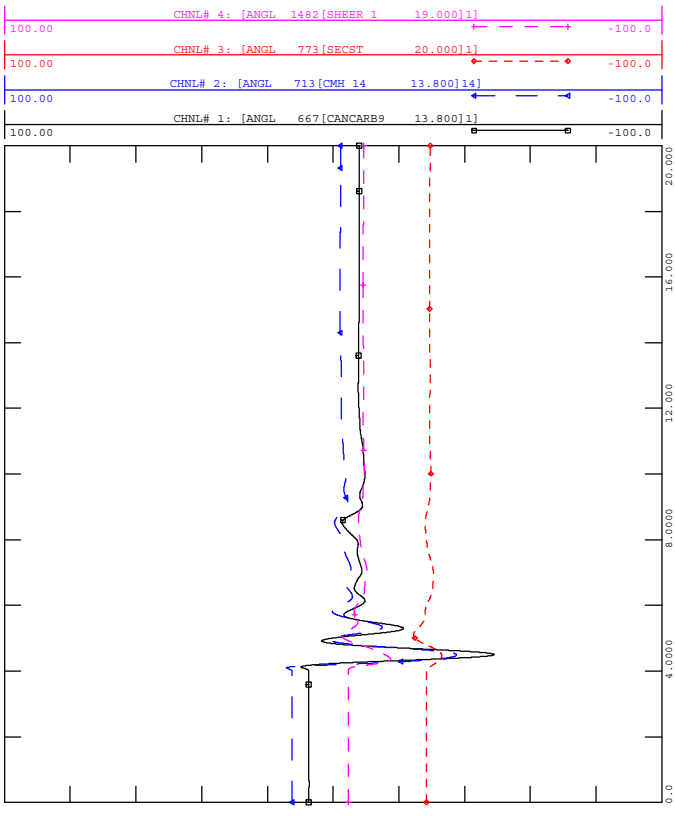


P1812_2020SP_POST_RAS
CATB -1074L_FAULT_AT_ELKWATER_RAS

FILE: P1812_2020SP_POST_RAS/1074L_Fault_at_Elkwater_RAS.out

TUE, OCT 16 2018 10:31

MACHINE ANGEL

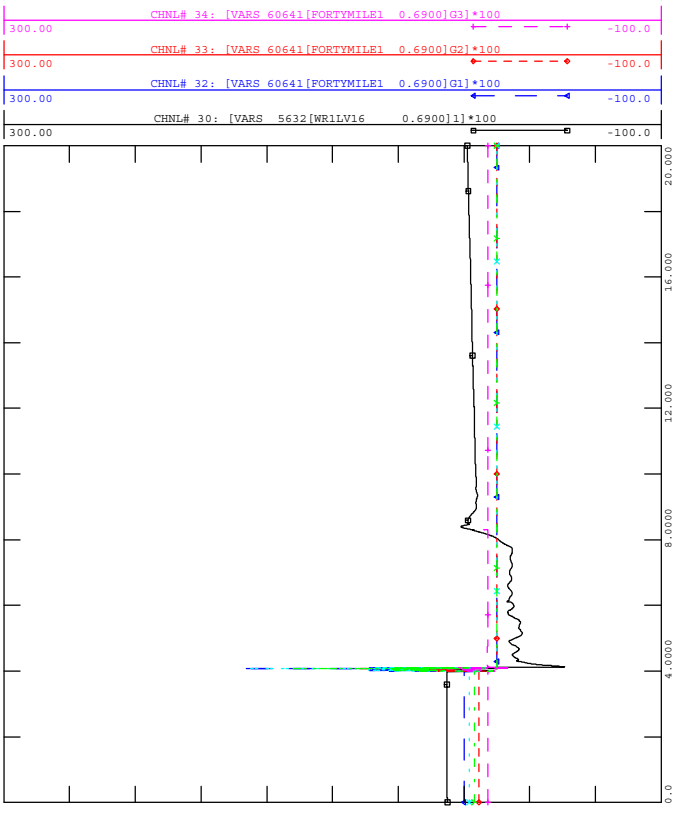


P1812_2020SP_POST_RAS
CATB -1074L_FAULT_AT_ELKWATER_RAS

FILE: P1812_2020SP_POST_RAS/1074L_Fault_at_Elkwater_RAS.out

TUE, OCT 16 2018 10:31

MACHINE VAR



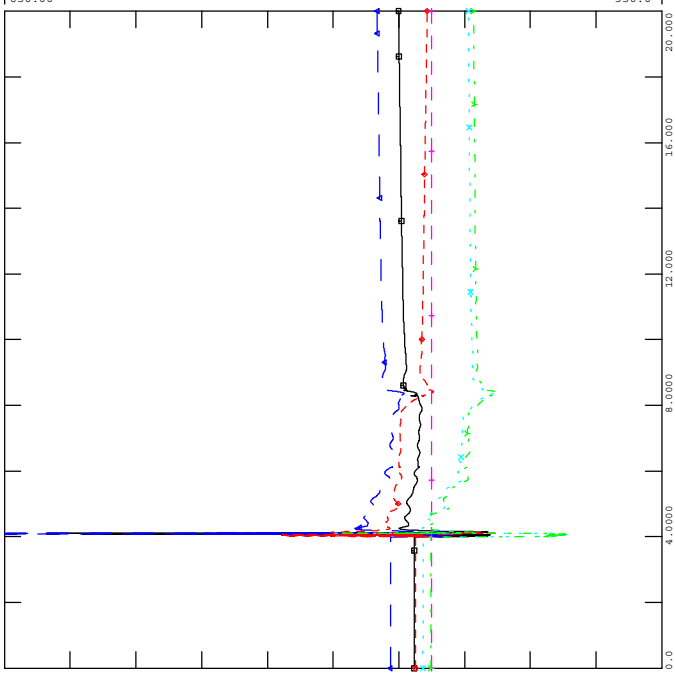
P1812_2020SP_POST_RAS
CATB -1074L_FAULT_AT_ELKWATER_RAS

FILE: P1812_2020SP_POST_RAS/1074L_Fault_at_Elkwater_RAS.out

TUE, OCT 16 2018 10:31

LINE VAR

CHNL# 64: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 62: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 60: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 58: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 56: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 54: [VARS 662 TO 720 CKT '64'] 650.00 -350.0



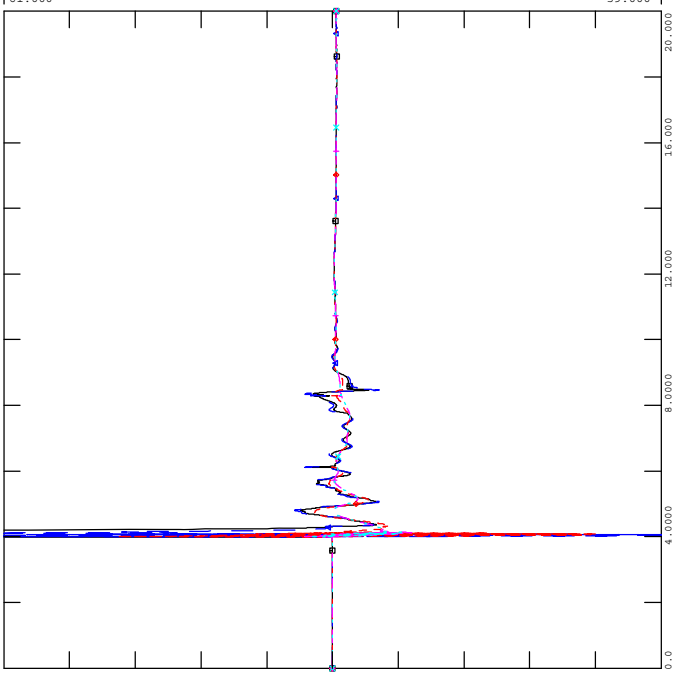
P1812_2020SP_POST_RAS
CATB -1074L_FAULT_AT_ELKWATER_RAS

FILE: P1812_2020SP_POST_RAS/1074L_Fault_at_Elkwater_RAS.out

TUE, OCT 16 2018 10:31

FREQUENCY

CHNL# 52: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 51: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 50: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 49: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 48: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000



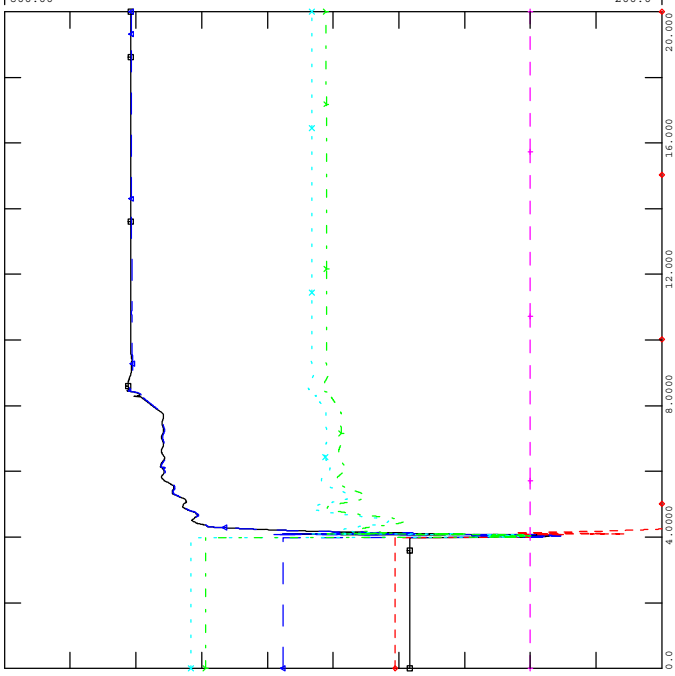
P1812_2020SP_POST_RAS
CATB -1074L_FAULT_AT_ELKWATER_RAS

FILE: P1812_2020SP_POST_RAS/1074L_Fault_at_Elkwater_RAS.out

TUE, OCT 16 2018 10:31

LINE POWER

CHNL# 63: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 61: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 59: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 57: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 55: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 53: [POWR 662 TO 720 CKT '64'] 800.00 -200.0



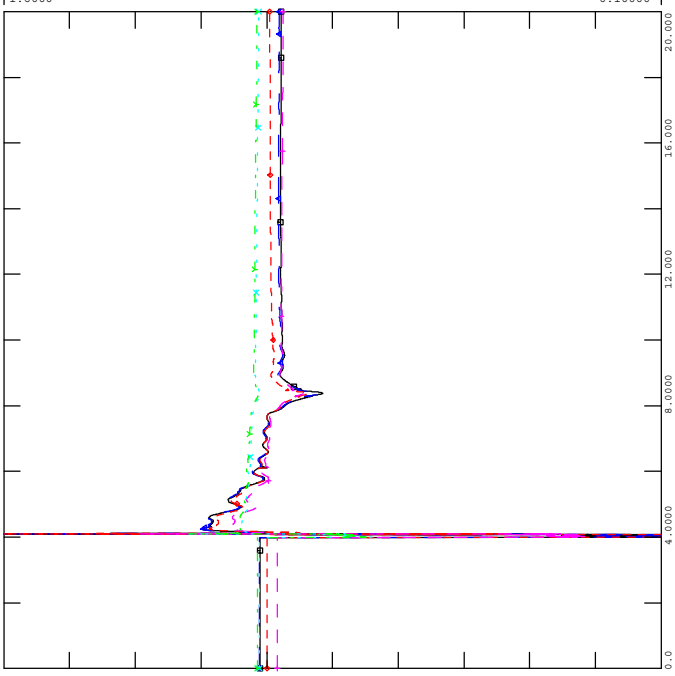
P1812_2020SP_POST_RAS
CATB -1074L_FAULT_AT_ELKWATER_RAS

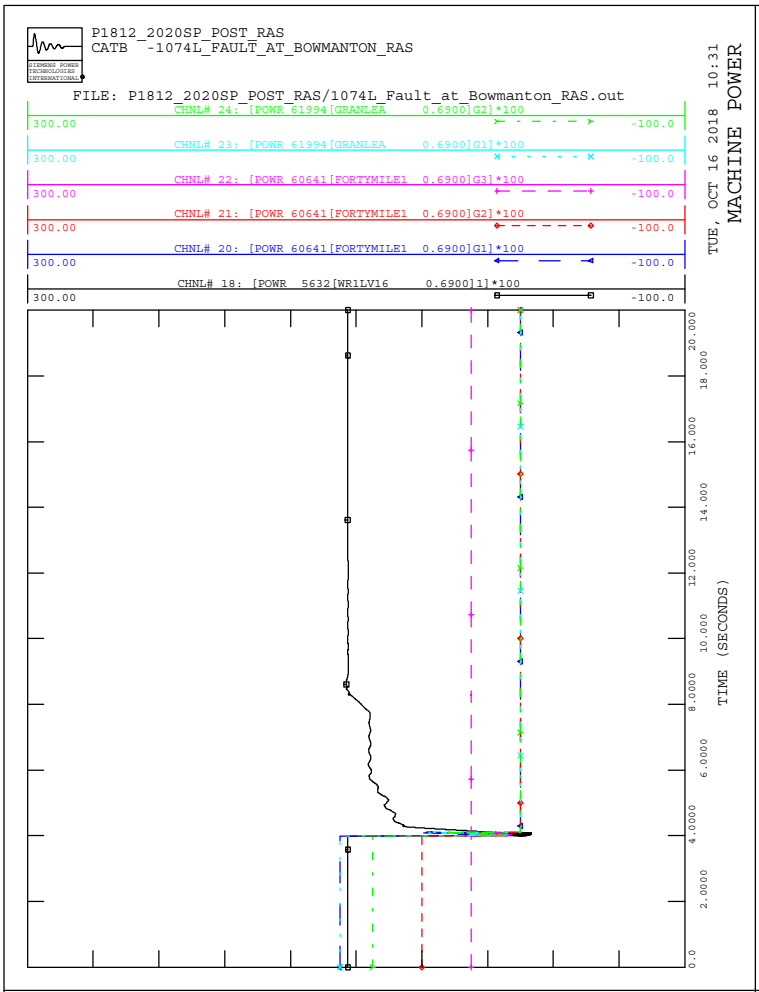
FILE: P1812_2020SP_POST_RAS/1074L_Fault_at_Elkwater_RAS.out

TUE, OCT 16 2018 10:31

BUS VOLTAGE

CHNL# 47: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 46: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 45: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 44: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 43: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 42: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000

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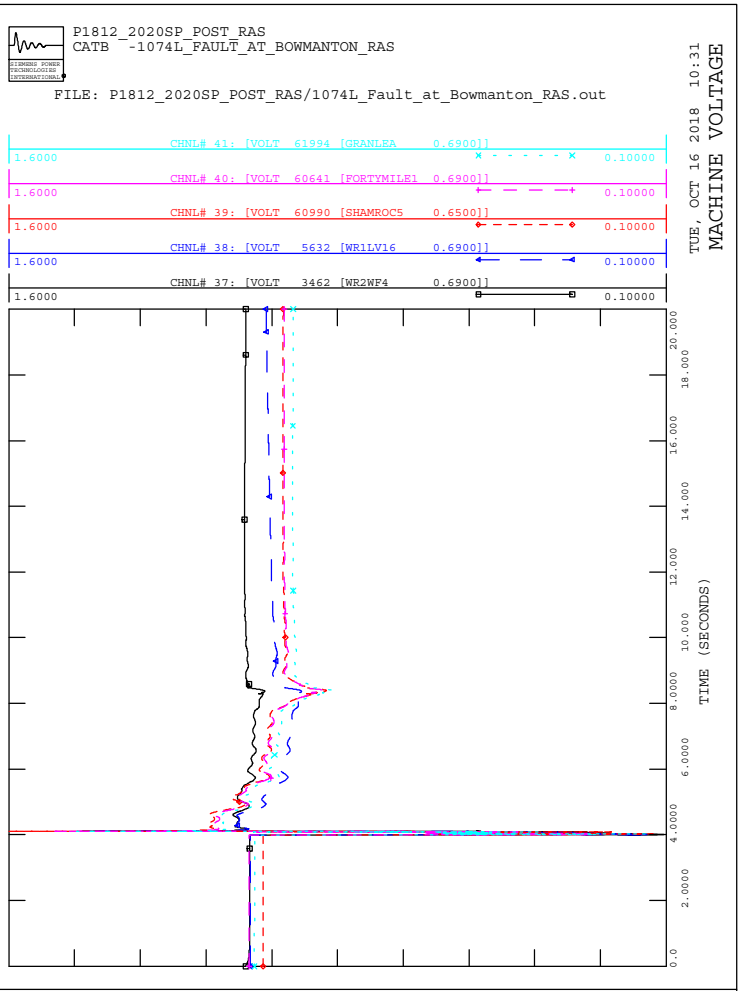
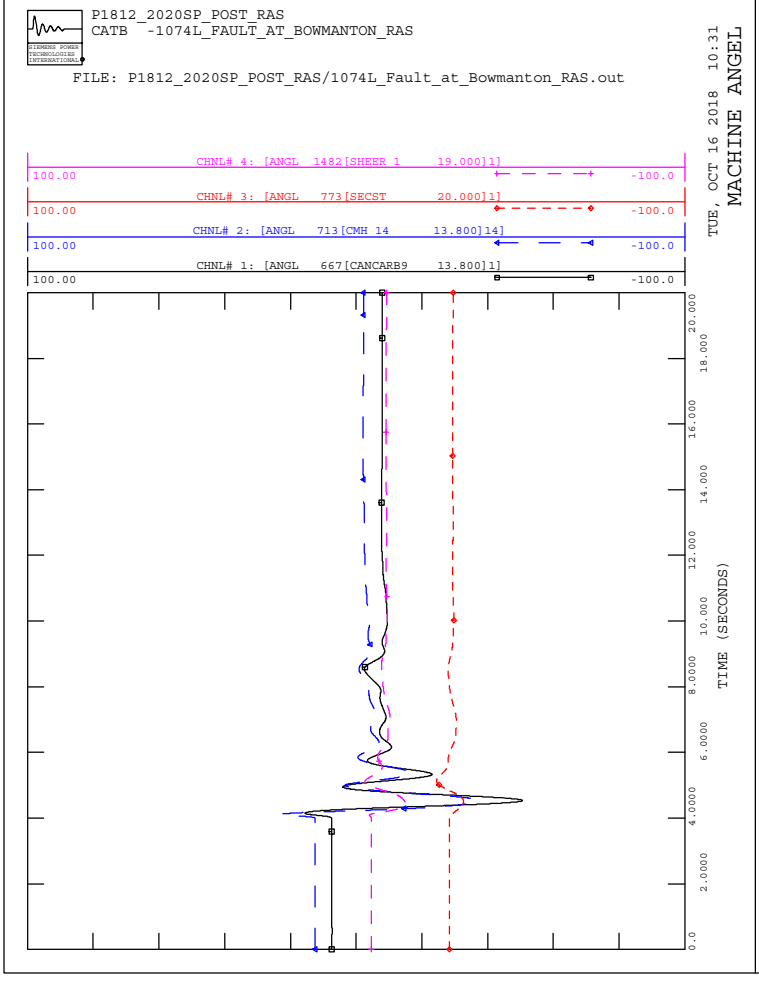
CHNL# 24: [POWR 61994[GRANLEA 0.6900]G2]*100
CHNL# 23: [POWR 61994[GRANLEA 0.6900]G1]*100
CHNL# 22: [POWR 60641[FORTYMILE1 0.6900]G3]*100
CHNL# 21: [POWR 60641[FORTYMILE1 0.6900]G2]*100
CHNL# 20: [POWR 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 18: [POWR 5632[WR1LV16 0.6900]1]*100
300.00
-100.0
TUE, OCT 16 2018 10:31
MACHINE POWER
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000


P1812_2020SP_POST_RAS
CATB -1074L_FAULT_AT_BOWMANTON_RAS
FILE: P1812_2020SP_POST_RAS/1074L_Fault_at_Bowmanton_RAS.out
CHNL# 41: [VOLT 61994 [GRANLEA 0.6900]]
CHNL# 40: [VOLT 60641 [FORTYMILE1 0.6900]]
CHNL# 39: [VOLT 60990 [SHAMROC5 0.6500]]
CHNL# 38: [VOLT 5632 [WR1LV16 0.6900]]
CHNL# 37: [VOLT 3462 [WR2WF4 0.6900]]
1.6000
0.10000
TUE, OCT 16 2018 10:31
MACHINE VOLTAGE
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000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CATB -1074L_FAULT_AT_BOWMANTON_RAS
FILE: P1812_2020SP_POST_RAS/1074L_Fault_at_Bowmanton_RAS.out
CHNL# 4: [ANGL 1482[SHEER 1 19.000]1]
CHNL# 3: [ANGL 773[SECST 20.000]1]
CHNL# 2: [ANGL 713[CMH 14 13.800]14]
CHNL# 1: [ANGL 667[CANCARB9 13.800]1]
100.00
-100.0
TUE, OCT 16 2018 10:31
MACHINE ANGEL
TIME (SECONDS)
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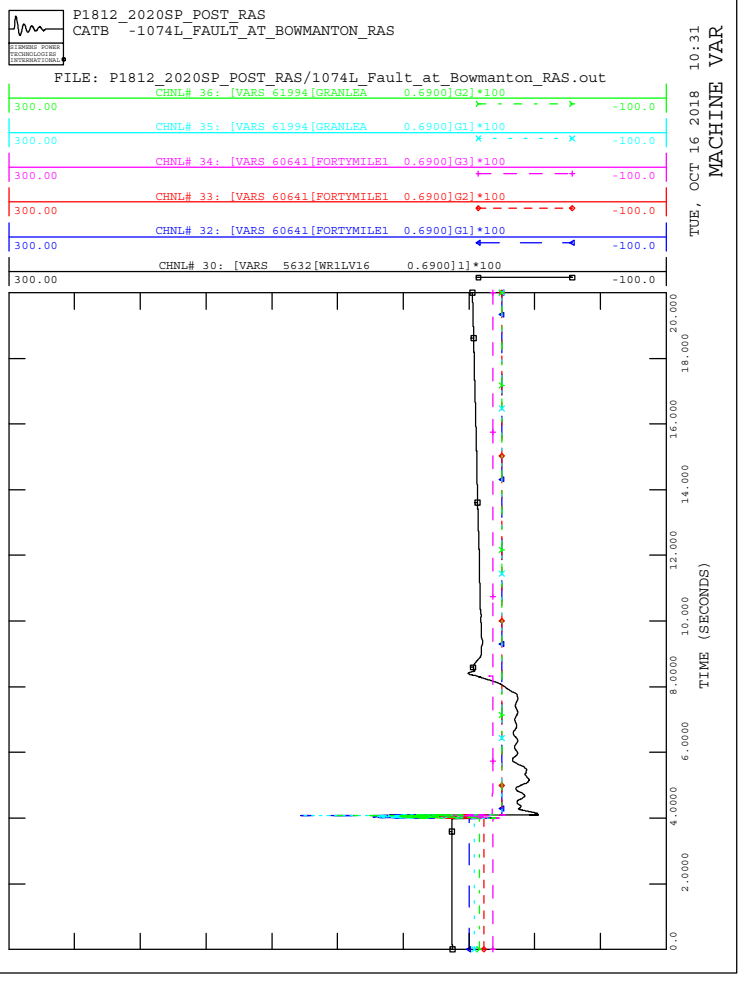
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000


P1812_2020SP_POST_RAS
CATB -1074L_FAULT_AT_BOWMANTON_RAS
FILE: P1812_2020SP_POST_RAS/1074L_Fault_at_Bowmanton_RAS.out
CHNL# 36: [VARS 61994[GRANLEA 0.6900]G2]*100
CHNL# 35: [VARS 61994[GRANLEA 0.6900]G1]*100
CHNL# 34: [VARS 60641[FORTYMILE1 0.6900]G3]*100
CHNL# 33: [VARS 60641[FORTYMILE1 0.6900]G2]*100
CHNL# 32: [VARS 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 30: [VARS 5632[WR1LV16 0.6900]1]*100
300.00
-100.0
TUE, OCT 16 2018 10:31
MACHINE VAR
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000

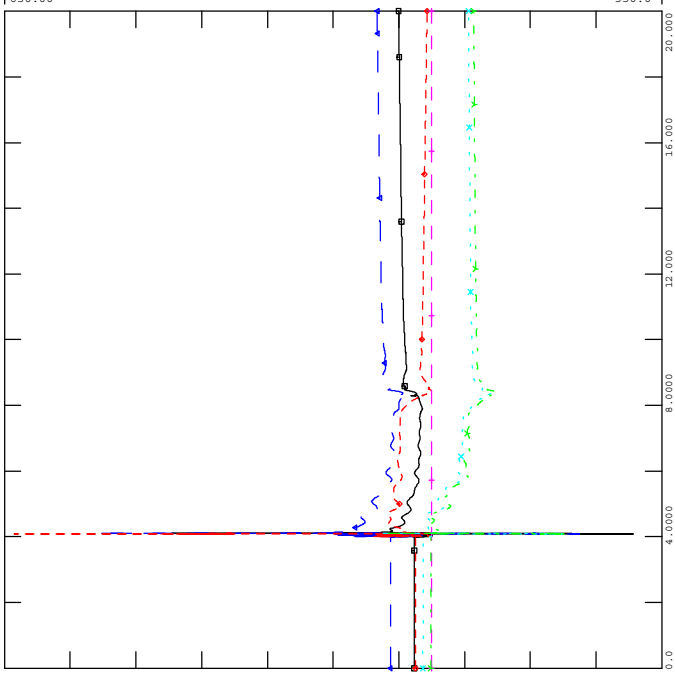
P1812_2020SP_POST_RAS
CATB -1074L_FAULT_AT_BOWMANTON_RAS

FILE: P1812_2020SP_POST_RAS/1074L_Fault_at_Bowmanton_RAS.out

TUE, OCT 16 2018 10:31

LINE VAR

CHNL# 64: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 62: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 60: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 58: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 56: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 54: [VARS 662 TO 720 CKT '64'] 650.00 -350.0



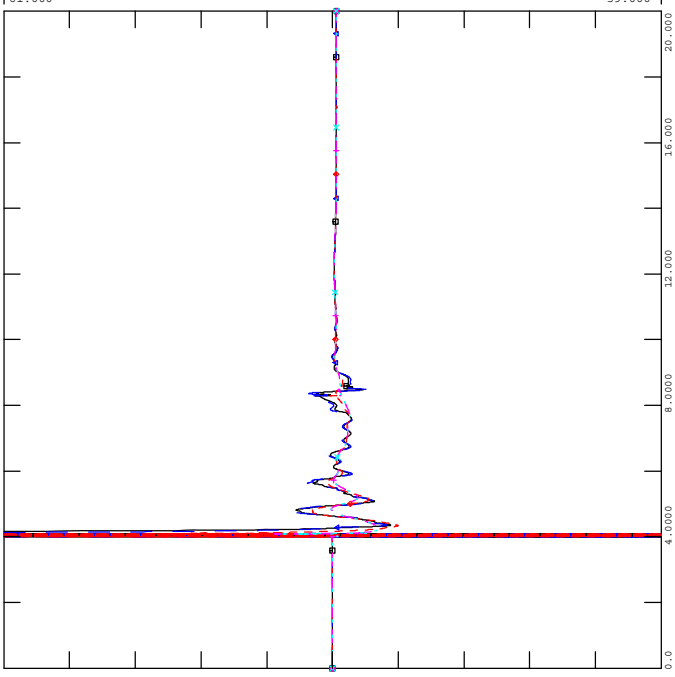
P1812_2020SP_POST_RAS
CATB -1074L_FAULT_AT_BOWMANTON_RAS

FILE: P1812_2020SP_POST_RAS/1074L_Fault_at_Bowmanton_RAS.out

TUE, OCT 16 2018 10:31

FREQUENCY

CHNL# 52: (1+[FREQ 918 [CASS01 240.00])*60 61.000 59.000
CHNL# 51: (1+[FREQ 1012 [NEWELL2 240.00])*60 61.000 59.000
CHNL# 50: (1+[FREQ 669 [BOWMAN1 240.00])*60 61.000 59.000
CHNL# 49: (1+[FREQ 477 [ELKWATR1 240.00])*60 61.000 59.000
CHNL# 48: (1+[FREQ 662 [SUBD1 240.00])*60 61.000 59.000



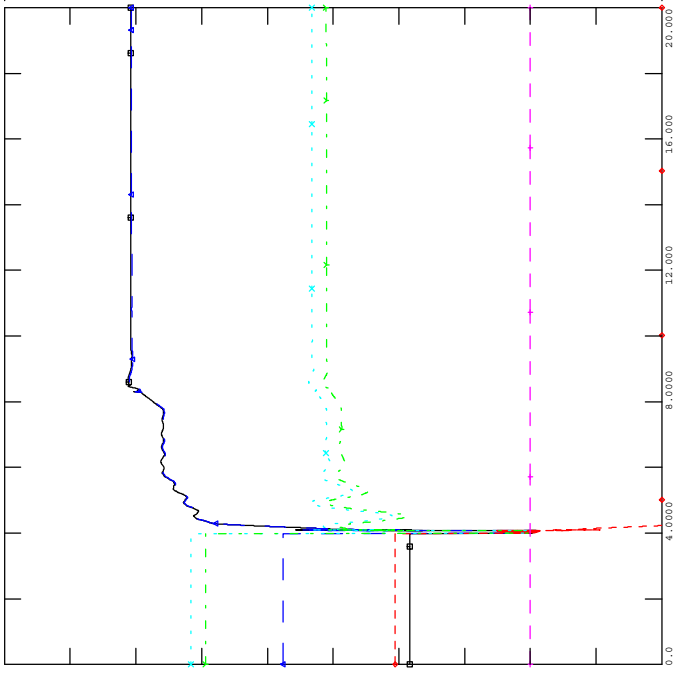
P1812_2020SP_POST_RAS
CATB -1074L_FAULT_AT_BOWMANTON_RAS

FILE: P1812_2020SP_POST_RAS/1074L_Fault_at_Bowmanton_RAS.out

TUE, OCT 16 2018 10:31

LINE POWER

CHNL# 63: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 61: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 59: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 57: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 55: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 53: [POWR 662 TO 720 CKT '64'] 800.00 -200.0



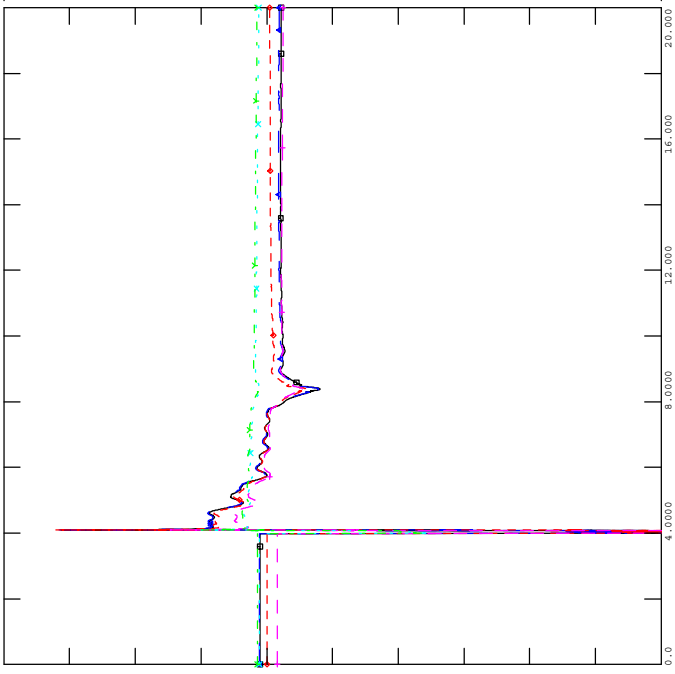
P1812_2020SP_POST_RAS
CATB -1074L_FAULT_AT_BOWMANTON_RAS

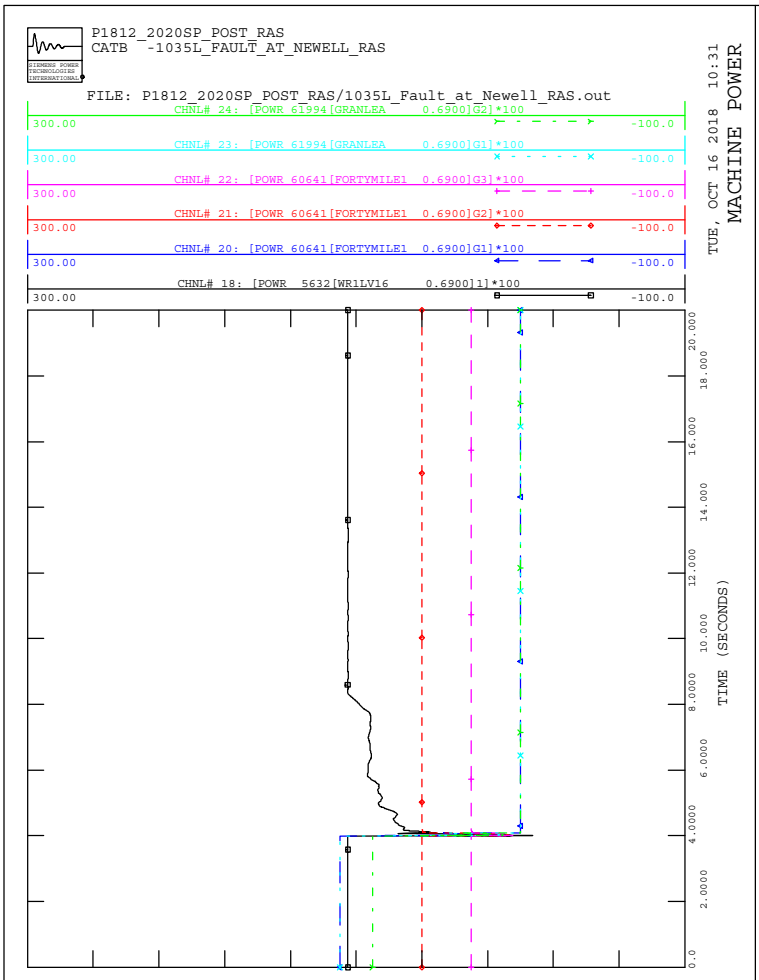
FILE: P1812_2020SP_POST_RAS/1074L_Fault_at_Bowmanton_RAS.out

TUE, OCT 16 2018 10:31

BUS VOLTAGE

CHNL# 47: [VOLT 918 [CASS01 240.00] 1.6000 0.10000
CHNL# 46: [VOLT 1012 [NEWELL2 240.00] 1.6000 0.10000
CHNL# 45: [VOLT 669 [BOWMAN1 240.00] 1.6000 0.10000
CHNL# 44: [VOLT 477 [ELKWATR1 240.00] 1.6000 0.10000
CHNL# 43: [VOLT 662 [SUBD1 240.00] 1.6000 0.10000
CHNL# 42: [VOLT 994 [GRANLEA1 240.00] 1.6000 0.10000




P1812_2020SP_POST_RAS
CATB -1035L_FAULT_AT_NEWELL_RAS
FILE: P1812_2020SP_POST_RAS/1035L_Fault_at_Newell_RAS.out
CHNL# 24: [POWR 61994[GRANLEA 0.6900]G2]*100
CHNL# 23: [POWR 61994[GRANLEA 0.6900]G1]*100
CHNL# 22: [POWR 60641[FORTYMILE1 0.6900]G3]*100
CHNL# 21: [POWR 60641[FORTYMILE1 0.6900]G2]*100
CHNL# 20: [POWR 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 18: [POWR 5632[WR1LV16 0.6900]1]*100
300.00
-100.0
TUE, OCT 16 2018 10:31
MACHINE POWER
TIME (SECONDS)
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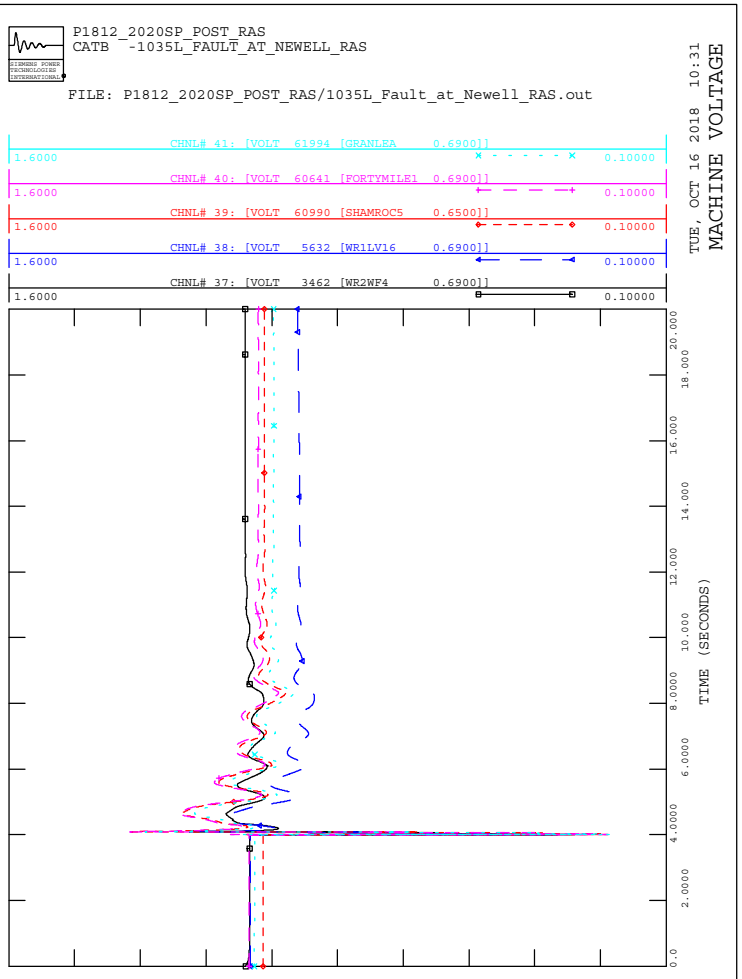
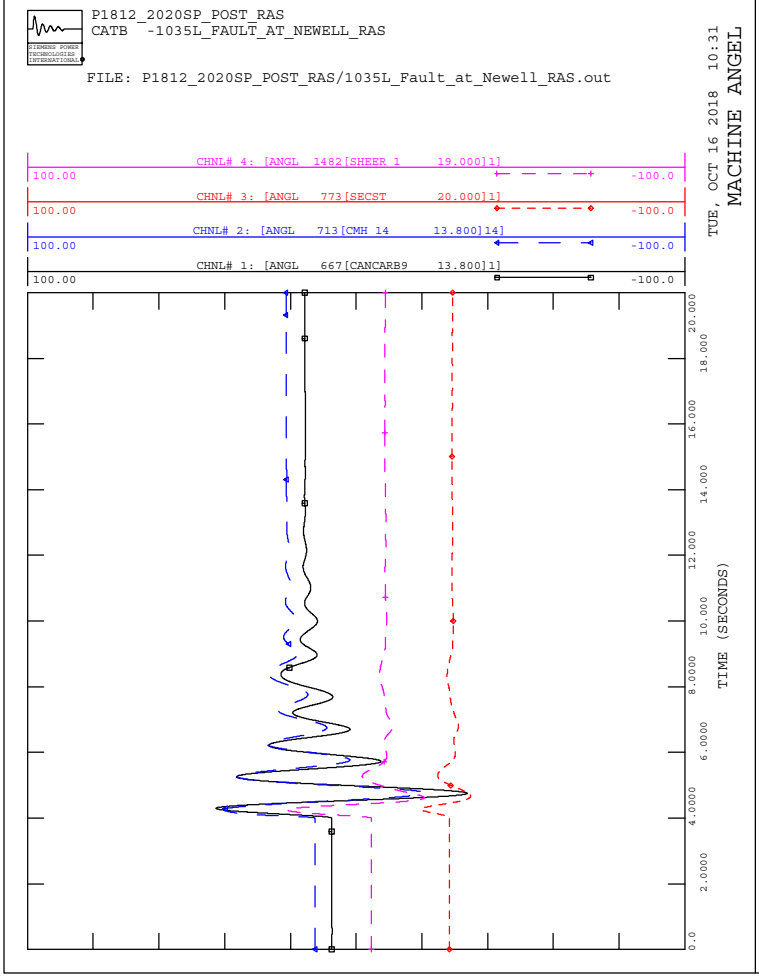
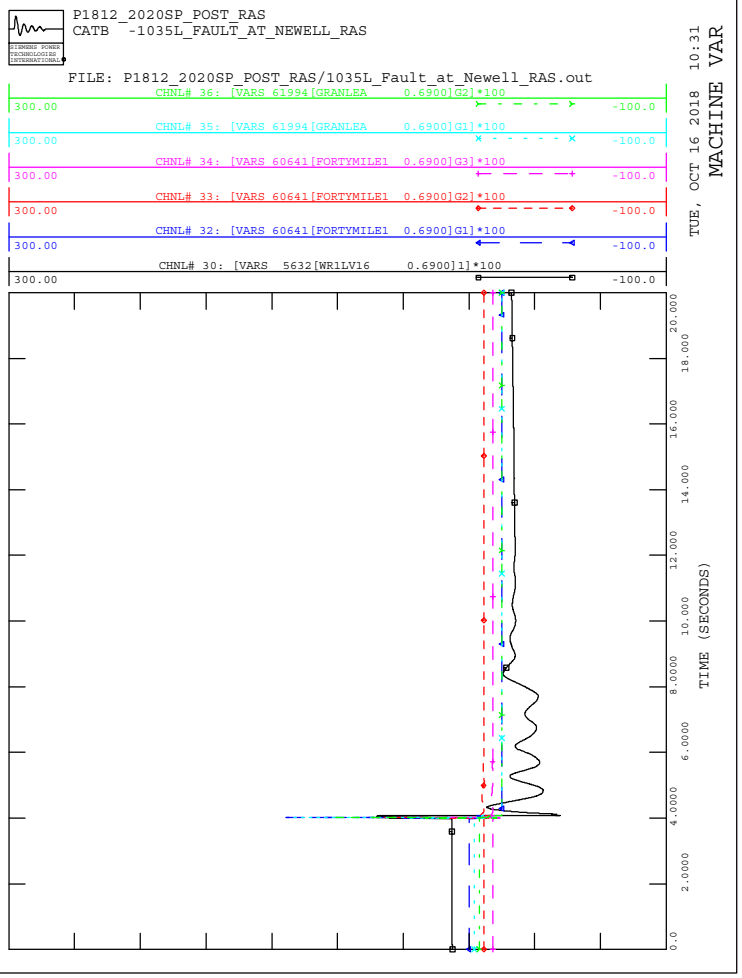
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000


P1812_2020SP_POST_RAS
CATB -1035L_FAULT_AT_NEWELL_RAS
FILE: P1812_2020SP_POST_RAS/1035L_Fault_at_Newell_RAS.out
CHNL# 41: [VOLT 61994 [GRANLEA 0.6900]]
CHNL# 40: [VOLT 60641 [FORTYMILE1 0.6900]]
CHNL# 39: [VOLT 60990 [SHAMROC5 0.6500]]
CHNL# 38: [VOLT 5632 [WR1LV16 0.6900]]
CHNL# 37: [VOLT 3462 [WR2WF4 0.6900]]
1.6000
0.10000
TUE, OCT 16 2018 10:31
MACHINE VOLTAGE
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000


P1812_2020SP_POST_RAS
CATB -1035L_FAULT_AT_NEWELL_RAS
FILE: P1812_2020SP_POST_RAS/1035L_Fault_at_Newell_RAS.out
CHNL# 4: [ANGL 1482[SHEER 1 19.000]1]
CHNL# 3: [ANGL 773[SECST 20.000]1]
CHNL# 2: [ANGL 713[CMH 14 13.800]14]
CHNL# 1: [ANGL 667[CANCARB9 13.800]1]
100.00
-100.0
TUE, OCT 16 2018 10:31
MACHINE ANGEL
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000


P1812_2020SP_POST_RAS
CATB -1035L_FAULT_AT_NEWELL_RAS
FILE: P1812_2020SP_POST_RAS/1035L_Fault_at_Newell_RAS.out
CHNL# 36: [VARS 61994[GRANLEA 0.6900]G2]*100
CHNL# 35: [VARS 61994[GRANLEA 0.6900]G1]*100
CHNL# 34: [VARS 60641[FORTYMILE1 0.6900]G3]*100
CHNL# 33: [VARS 60641[FORTYMILE1 0.6900]G2]*100
CHNL# 32: [VARS 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 30: [VARS 5632[WR1LV16 0.6900]1]*100
300.00
-100.0
TUE, OCT 16 2018 10:31
MACHINE VAR
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000

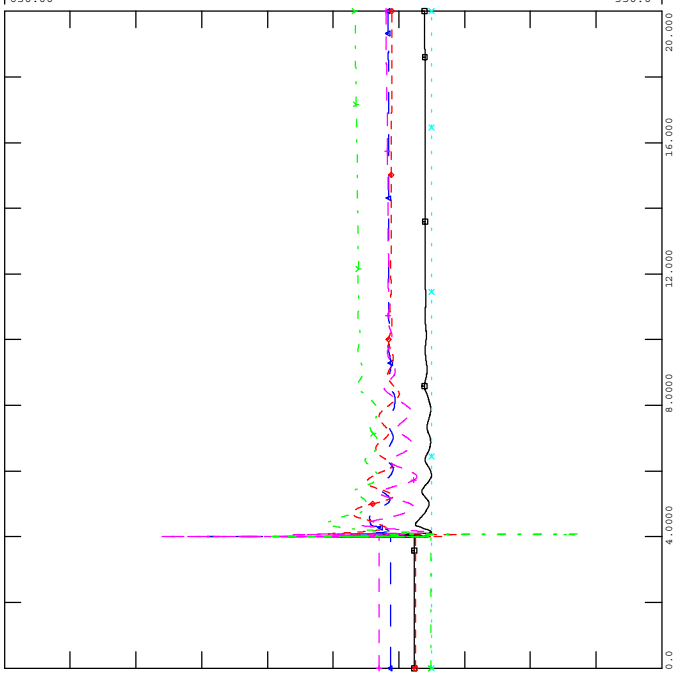
P1812_2020SP_POST_RAS
CATB -1035L_FAULT_AT_NEWELL_RAS

FILE: P1812_2020SP_POST_RAS/1035L_Fault_at_Newell_RAS.out

TUE, OCT 16 2018 10:31

LINE VAR

CHNL# 64: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 62: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 60: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 58: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 56: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 54: [VARS 662 TO 720 CKT '64'] 650.00 -350.0



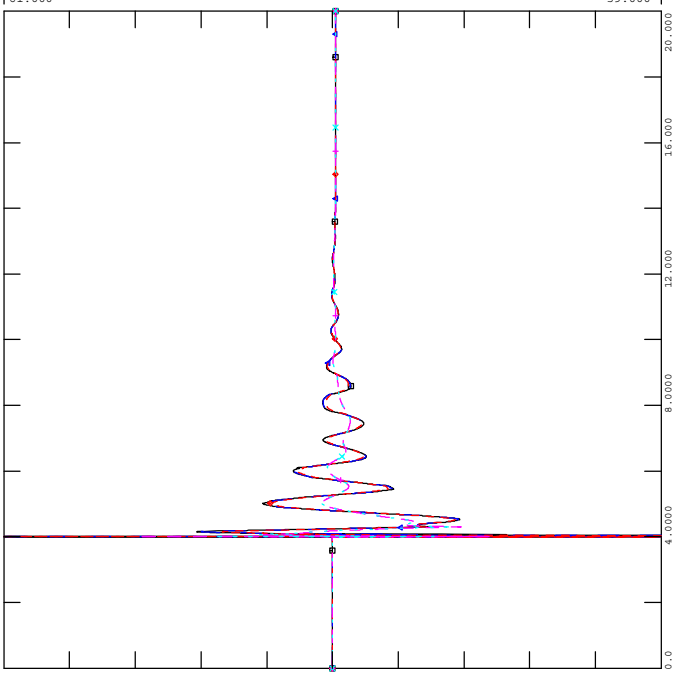
P1812_2020SP_POST_RAS
CATB -1035L_FAULT_AT_NEWELL_RAS

FILE: P1812_2020SP_POST_RAS/1035L_Fault_at_Newell_RAS.out

TUE, OCT 16 2018 10:31

FREQUENCY

CHNL# 52: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 51: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 50: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 49: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 48: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000



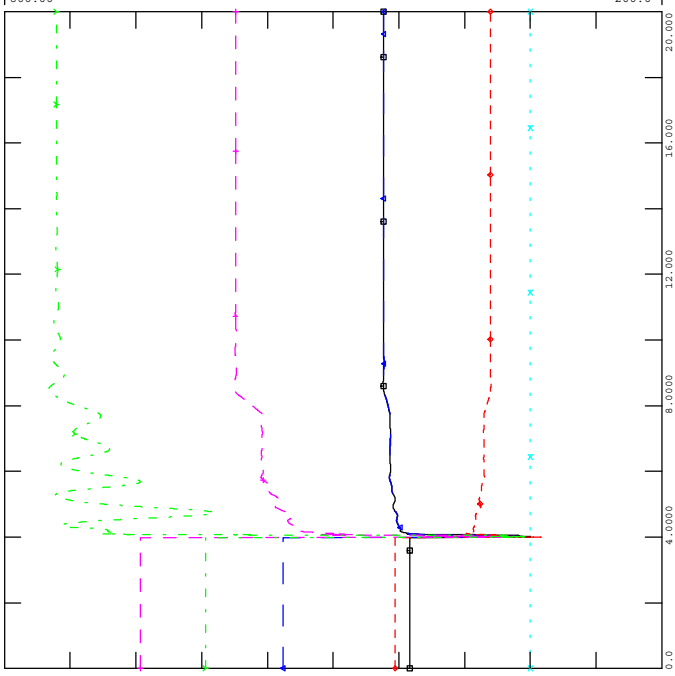
P1812_2020SP_POST_RAS
CATB -1035L_FAULT_AT_NEWELL_RAS

FILE: P1812_2020SP_POST_RAS/1035L_Fault_at_Newell_RAS.out

TUE, OCT 16 2018 10:31

LINE POWER

CHNL# 63: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 61: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 59: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 57: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 55: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 53: [POWR 662 TO 720 CKT '64'] 800.00 -200.0



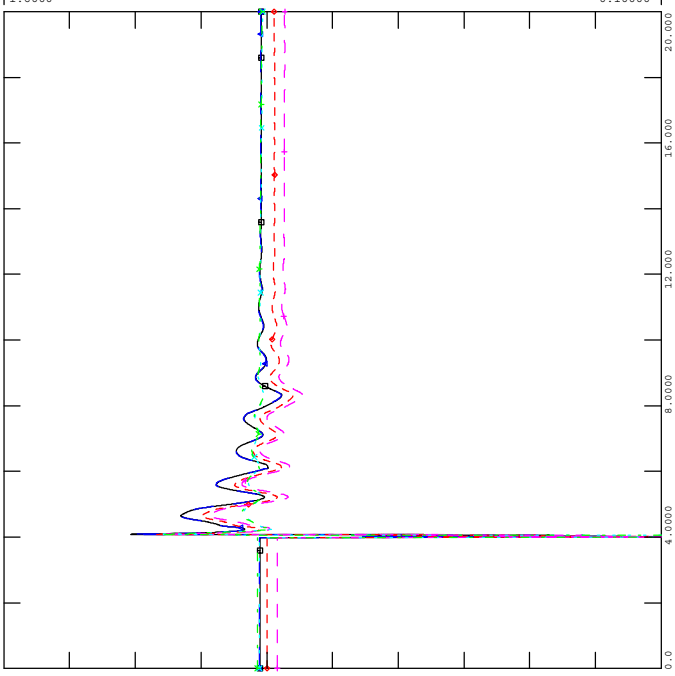
P1812_2020SP_POST_RAS
CATB -1035L_FAULT_AT_NEWELL_RAS

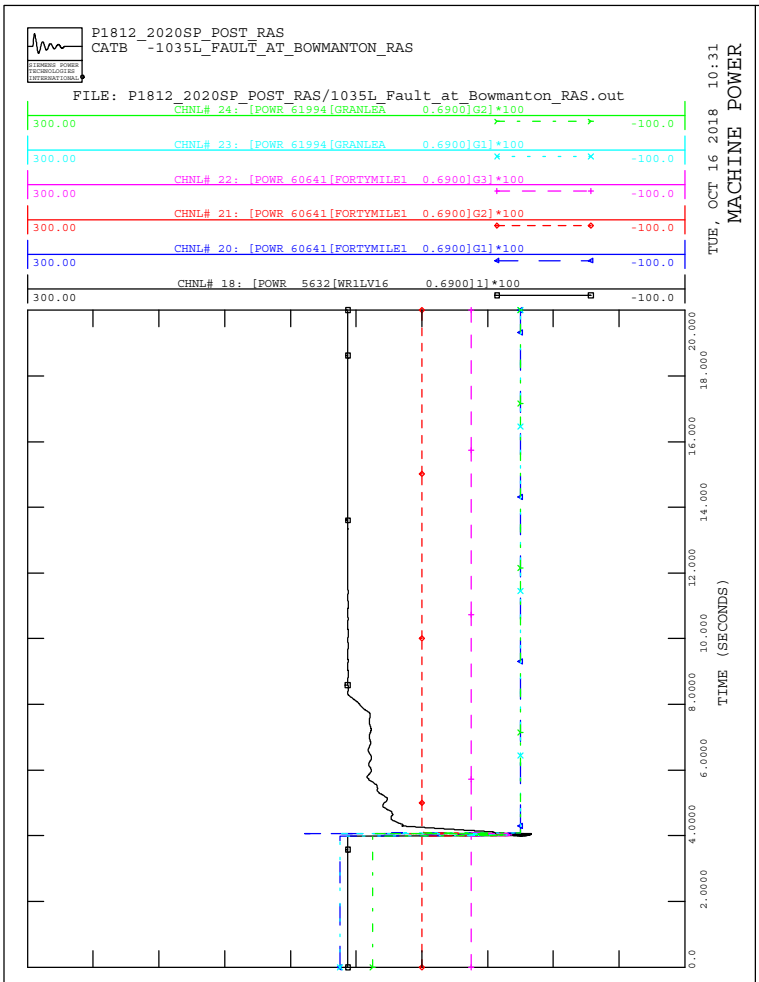
FILE: P1812_2020SP_POST_RAS/1035L_Fault_at_Newell_RAS.out

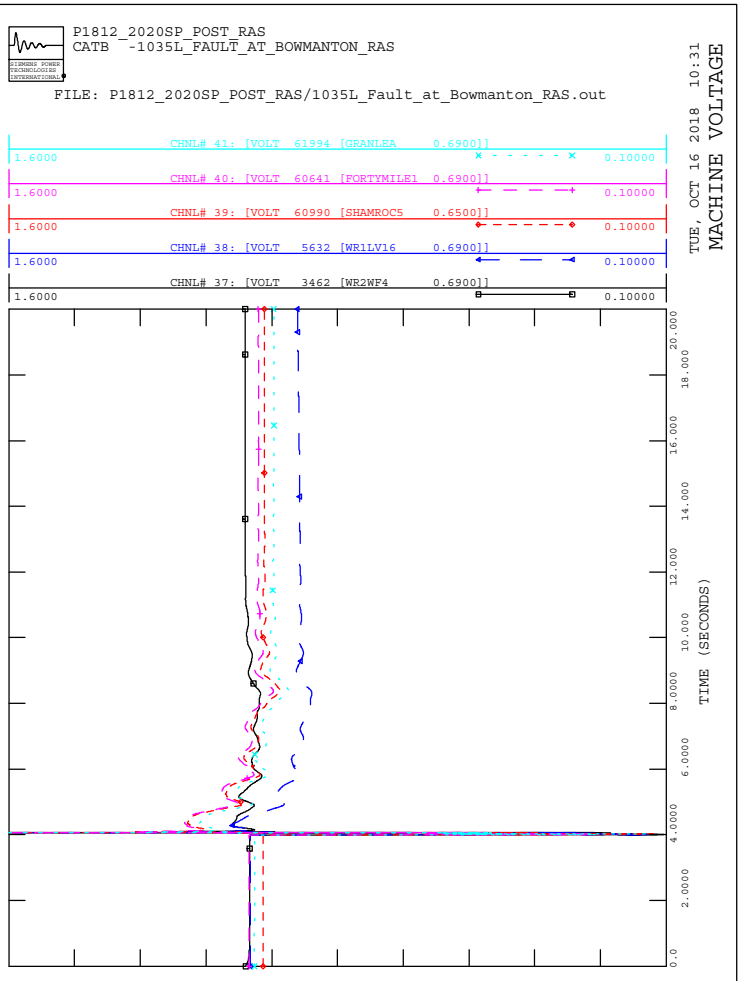
TUE, OCT 16 2018 10:31

BUS VOLTAGE

CHNL# 47: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 46: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 45: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 44: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 43: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 42: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000




P1812_2020SP_POST_RAS
CATB -1035L_FAULT_AT_BOWMANTON_RAS
FILE: P1812_2020SP_POST_RAS/1035L_Fault_at_Bowmanton_RAS.out
CHNL# 24: [POWR 61994[GRANLEA 0.6900]G2]*100
CHNL# 23: [POWR 61994[GRANLEA 0.6900]G1]*100
CHNL# 22: [POWR 60641[FORTYMILE1 0.6900]G3]*100
CHNL# 21: [POWR 60641[FORTYMILE1 0.6900]G2]*100
CHNL# 20: [POWR 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 18: [POWR 5632[WR1LV16 0.6900]1]*100
300.00
-100.0
TUE, OCT 16 2018 10:31
MACHINE POWER
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000


P1812_2020SP_POST_RAS
CATB -1035L_FAULT_AT_BOWMANTON_RAS
FILE: P1812_2020SP_POST_RAS/1035L_Fault_at_Bowmanton_RAS.out
CHNL# 41: [VOLT 61994 [GRANLEA 0.6900]]
CHNL# 40: [VOLT 60641 [FORTYMILE1 0.6900]]
CHNL# 39: [VOLT 60990 [SHAMROC5 0.6500]]
CHNL# 38: [VOLT 5632 [WR1LV16 0.6900]]
CHNL# 37: [VOLT 3462 [WR2WF4 0.6900]]
1.6000
0.10000
TUE, OCT 16 2018 10:31
MACHINE VOLTAGE
TIME (SECONDS)
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2.0000
4.0000
6.0000
8.0000
10.000
12.000
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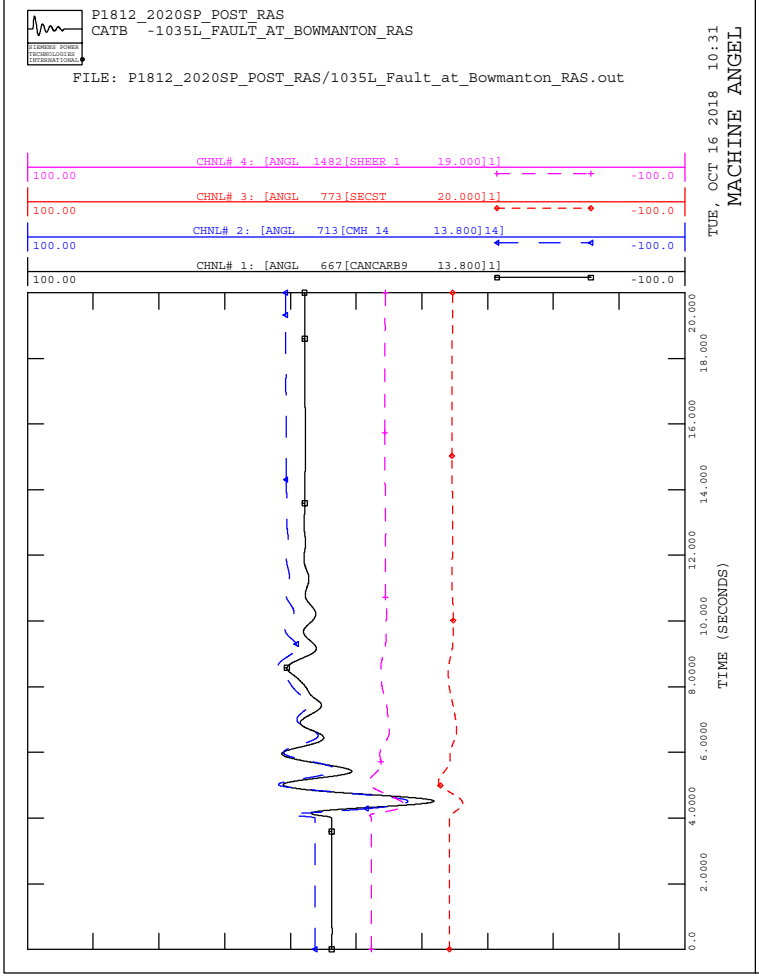
20.000


P1812_2020SP_POST_RAS
CATB -1035L_FAULT_AT_BOWMANTON_RAS
FILE: P1812_2020SP_POST_RAS/1035L_Fault_at_Bowmanton_RAS.out
CHNL# 4: [ANGL 1482[SHEER 1 19.000]1]
CHNL# 3: [ANGL 773[SECST 20.000]1]
CHNL# 2: [ANGL 713[CMH 14 13.800]14]
CHNL# 1: [ANGL 667[CANCARB9 13.800]1]
100.00
-100.0
TUE, OCT 16 2018 10:31
MACHINE ANGEL
TIME (SECONDS)
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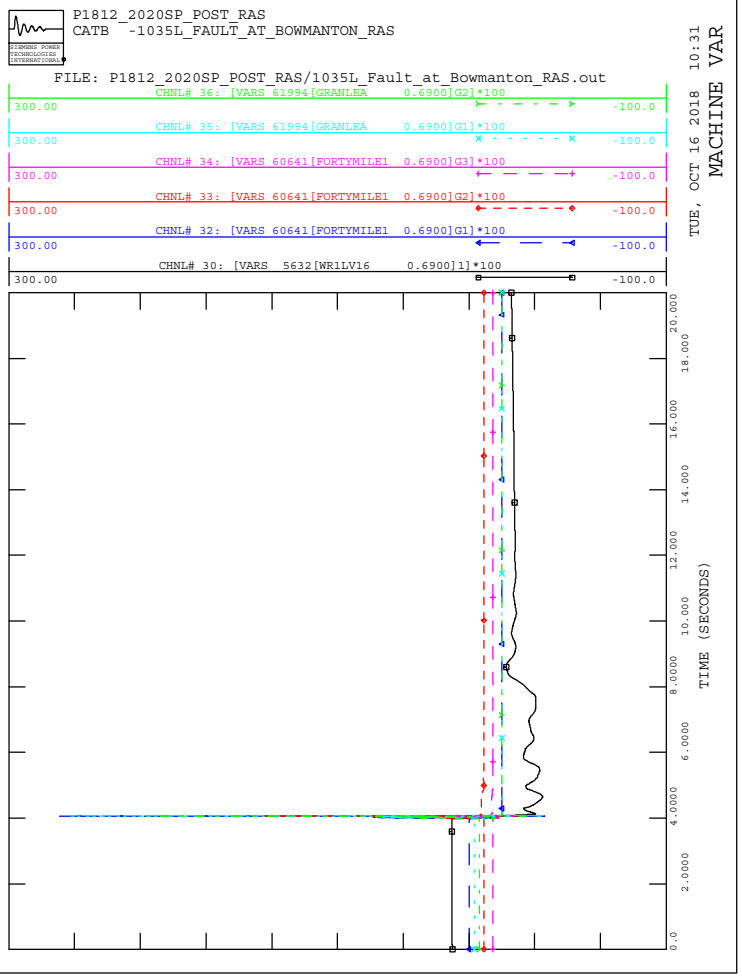
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000


P1812_2020SP_POST_RAS
CATB -1035L_FAULT_AT_BOWMANTON_RAS
FILE: P1812_2020SP_POST_RAS/1035L_Fault_at_Bowmanton_RAS.out
CHNL# 36: [VARS 61994[GRANLEA 0.6900]G2]*100
CHNL# 35: [VARS 61994[GRANLEA 0.6900]G1]*100
CHNL# 34: [VARS 60641[FORTYMILE1 0.6900]G3]*100
CHNL# 33: [VARS 60641[FORTYMILE1 0.6900]G2]*100
CHNL# 32: [VARS 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 30: [VARS 5632[WR1LV16 0.6900]1]*100
300.00
-100.0
TUE, OCT 16 2018 10:31
MACHINE VAR
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000

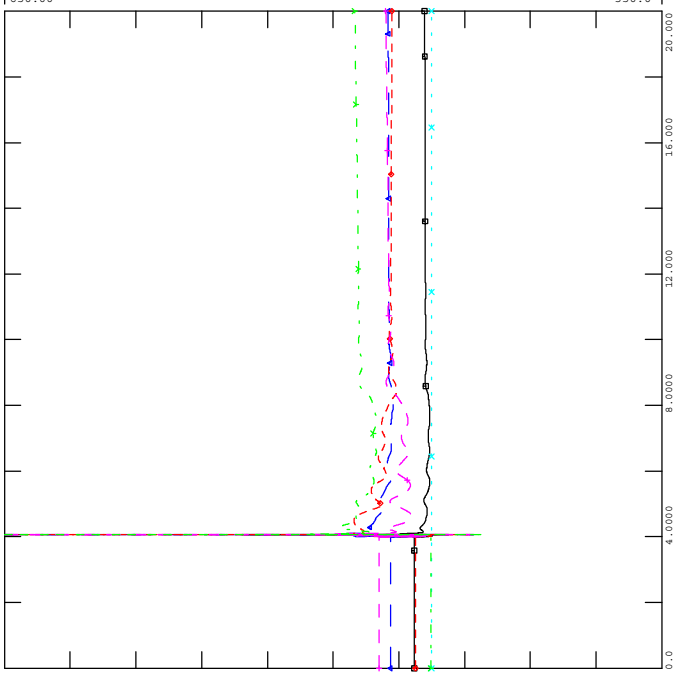
P1812_2020SP_POST_RAS
CATB -1035L_FAULT_AT_BOWMANTON_RAS

FILE: P1812_2020SP_POST_RAS/1035L_Fault_at_Bowmanton_RAS.out

TUE, OCT 16 2018 10:31

LINE VAR

CHNL# 64: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 62: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 60: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 58: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 56: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 54: [VARS 662 TO 720 CKT '64'] 650.00 -350.0



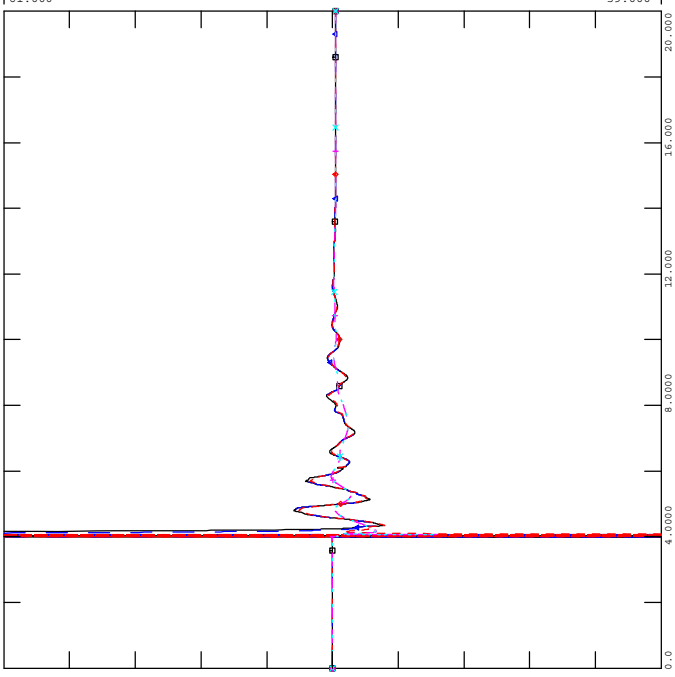
P1812_2020SP_POST_RAS
CATB -1035L_FAULT_AT_BOWMANTON_RAS

FILE: P1812_2020SP_POST_RAS/1035L_Fault_at_Bowmanton_RAS.out

TUE, OCT 16 2018 10:31

FREQUENCY

CHNL# 52: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 51: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 50: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 49: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 48: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000



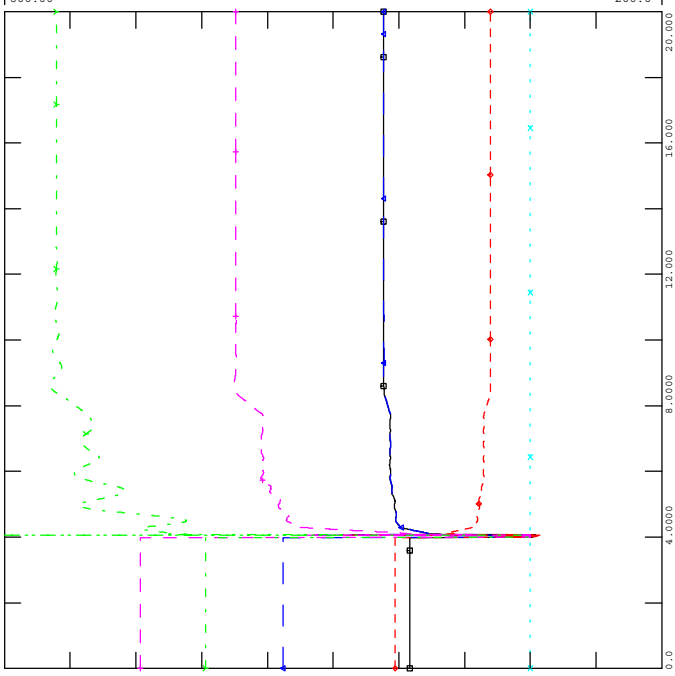
P1812_2020SP_POST_RAS
CATB -1035L_FAULT_AT_BOWMANTON_RAS

FILE: P1812_2020SP_POST_RAS/1035L_Fault_at_Bowmanton_RAS.out

TUE, OCT 16 2018 10:31

LINE POWER

CHNL# 63: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 61: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 59: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 57: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 55: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 53: [POWR 662 TO 720 CKT '64'] 800.00 -200.0



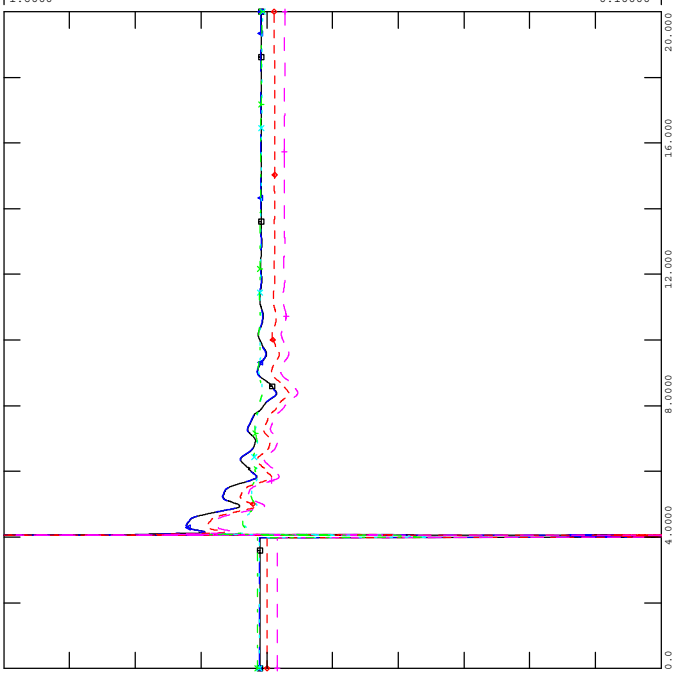
P1812_2020SP_POST_RAS
CATB -1035L_FAULT_AT_BOWMANTON_RAS

FILE: P1812_2020SP_POST_RAS/1035L_Fault_at_Bowmanton_RAS.out

TUE, OCT 16 2018 10:31

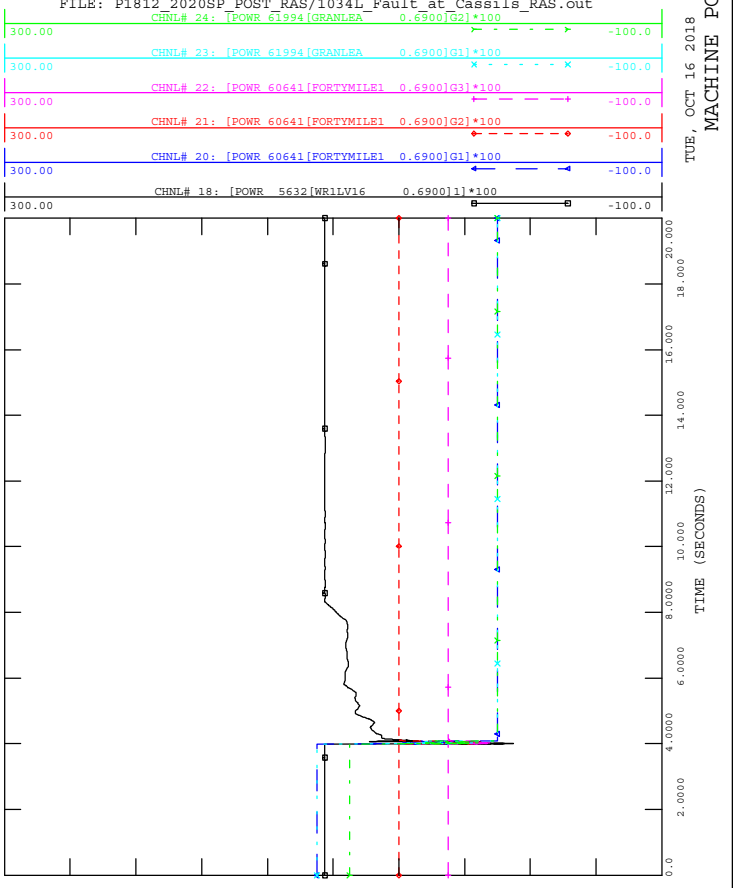
BUS VOLTAGE

CHNL# 47: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 46: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 45: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 44: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 43: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 42: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000



P1812_2020SP_POST_RAS
CATB -1034L_FAULT_AT_CASSILS_RAS

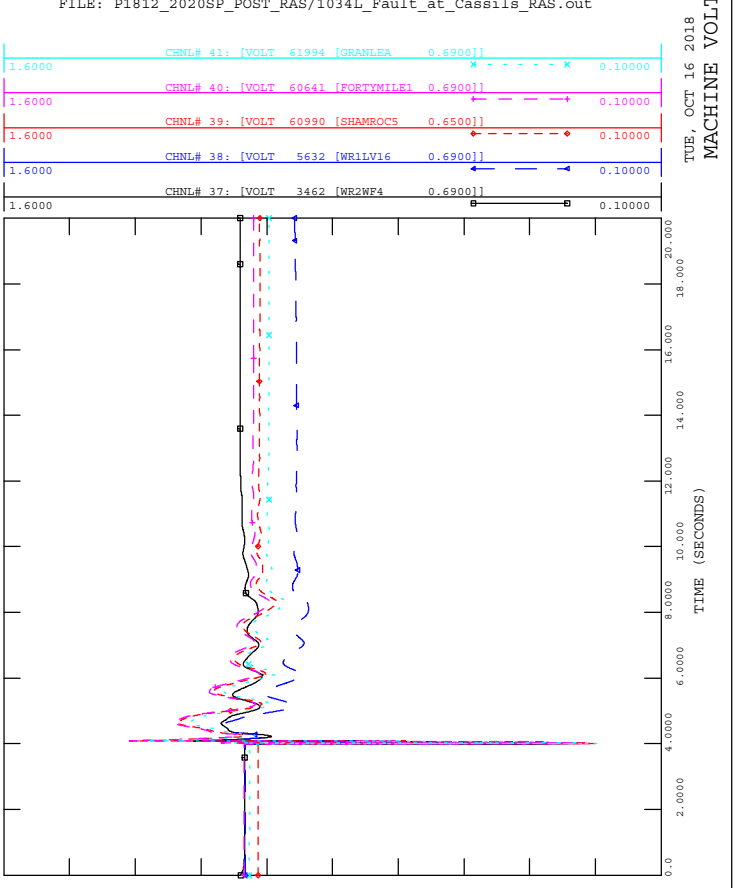
FILE: P1812_2020SP_POST_RAS/1034L_Fault_at_Cassils_RAS.out



TUE, OCT 16 2018 10:31
MACHINE POWER

P1812_2020SP_POST_RAS
CATB -1034L_FAULT_AT_CASSILS_RAS

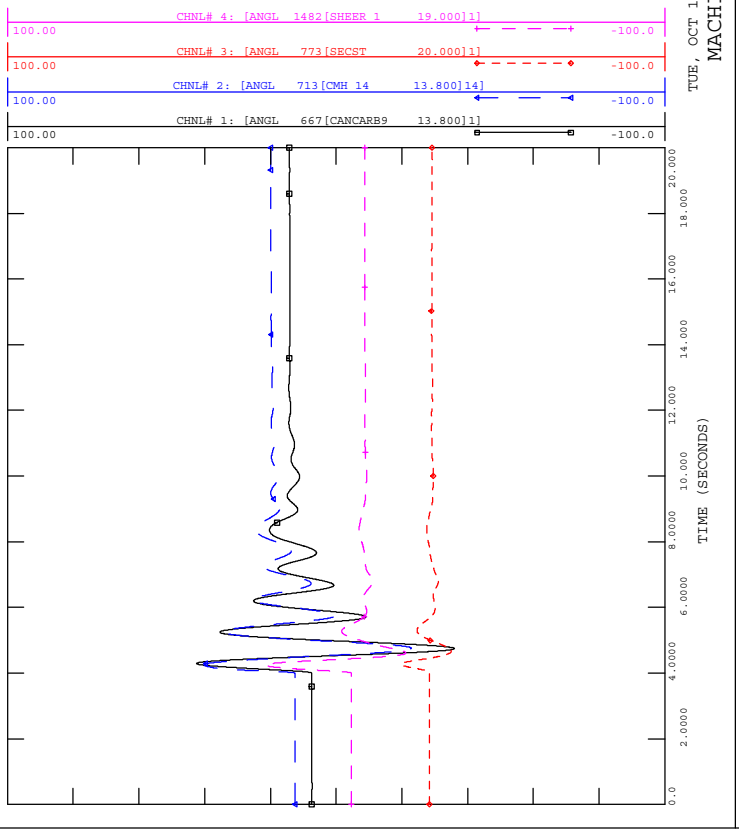
FILE: P1812_2020SP_POST_RAS/1034L_Fault_at_Cassils_RAS.out



TUE, OCT 16 2018 10:31
MACHINE VOLTAGE

P1812_2020SP_POST_RAS
CATB -1034L_FAULT_AT_CASSILS_RAS

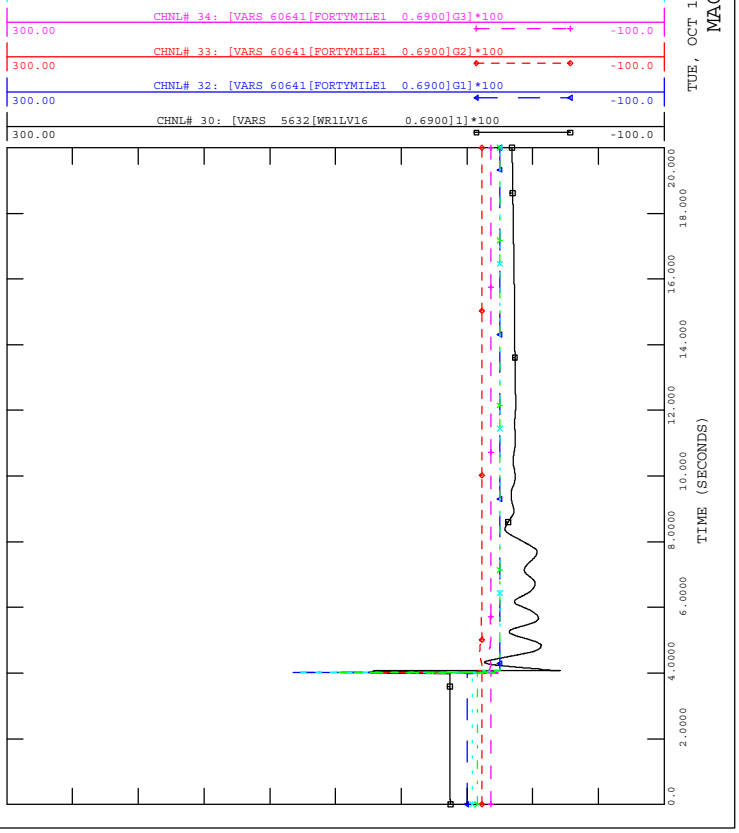
FILE: P1812_2020SP_POST_RAS/1034L_Fault_at_Cassils_RAS.out



TUE, OCT 16 2018 10:31
MACHINE ANGEL

P1812_2020SP_POST_RAS
CATB -1034L_FAULT_AT_CASSILS_RAS

FILE: P1812_2020SP_POST_RAS/1034L_Fault_at_Cassils_RAS.out



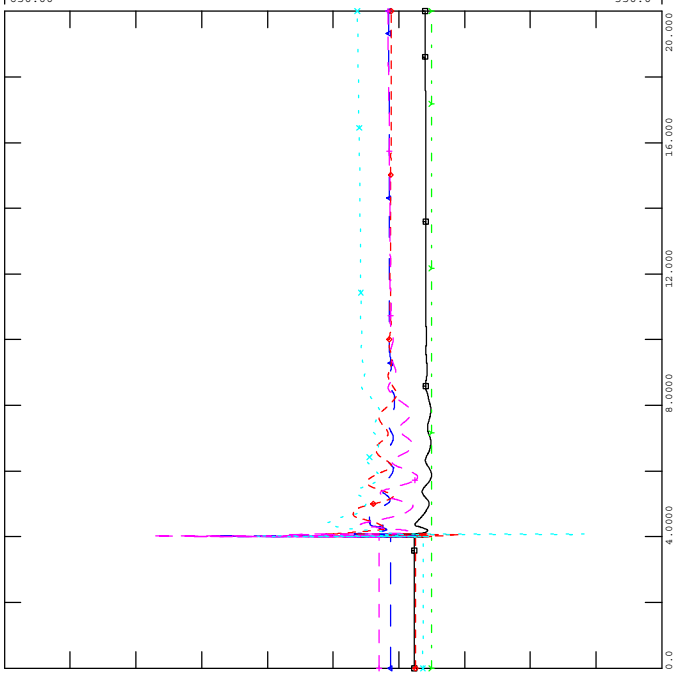
TUE, OCT 16 2018 10:31
MACHINE VAR

P1812_2020SP_POST_RAS
CATB -1034L_FAULT_AT_CASSILS_RAS

FILE: P1812_2020SP_POST_RAS/1034L_Fault_at_Cassils_RAS.out

TUE, OCT 16 2018 10:31 LINE VAR

CHNL# 64: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 62: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 60: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 58: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 56: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 54: [VARS 662 TO 720 CKT '64'] 650.00 -350.0

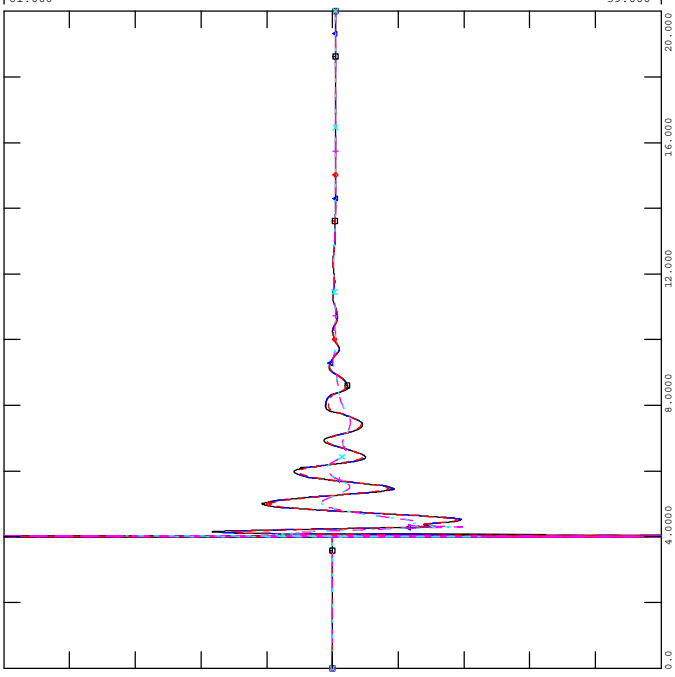


P1812_2020SP_POST_RAS
CATB -1034L_FAULT_AT_CASSILS_RAS

FILE: P1812_2020SP_POST_RAS/1034L_Fault_at_Cassils_RAS.out

TUE, OCT 16 2018 10:31 FREQUENCY

CHNL# 52: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 51: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 50: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 49: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 48: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000

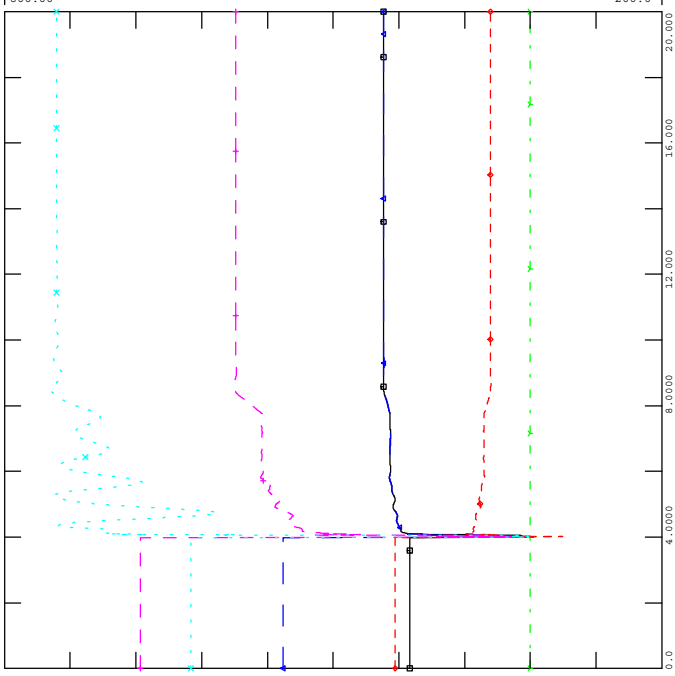


P1812_2020SP_POST_RAS
CATB -1034L_FAULT_AT_CASSILS_RAS

FILE: P1812_2020SP_POST_RAS/1034L_Fault_at_Cassils_RAS.out

TUE, OCT 16 2018 10:31 LINE POWER

CHNL# 63: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 61: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 59: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 57: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 55: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 53: [POWR 662 TO 720 CKT '64'] 800.00 -200.0

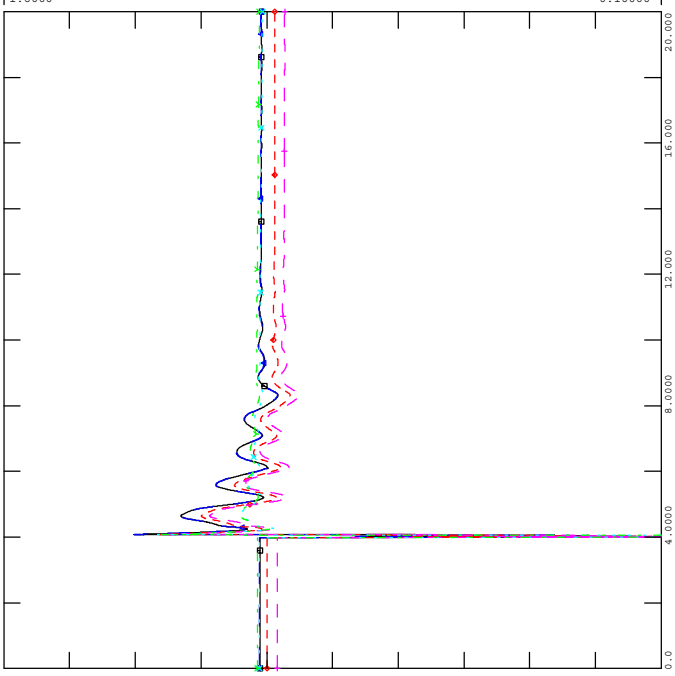


P1812_2020SP_POST_RAS
CATB -1034L_FAULT_AT_CASSILS_RAS

FILE: P1812_2020SP_POST_RAS/1034L_Fault_at_Cassils_RAS.out

TUE, OCT 16 2018 10:31 BUS VOLTAGE

CHNL# 47: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 46: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 45: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 44: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 43: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 42: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000

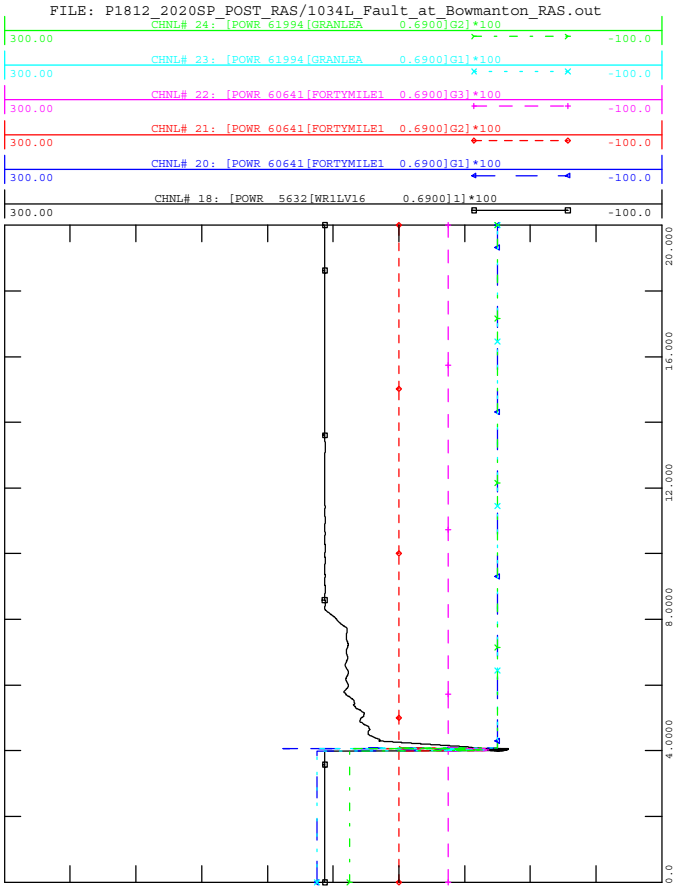


P1812_2020SP_POST_RAS
CATB -1034L_FAULT_AT_BOWMANTON_RAS

FILE: P1812_2020SP_POST_RAS/1034L_Fault_at_Bowmanton_RAS.out

TUE, OCT 16 2018 10:31

MACHINE POWER

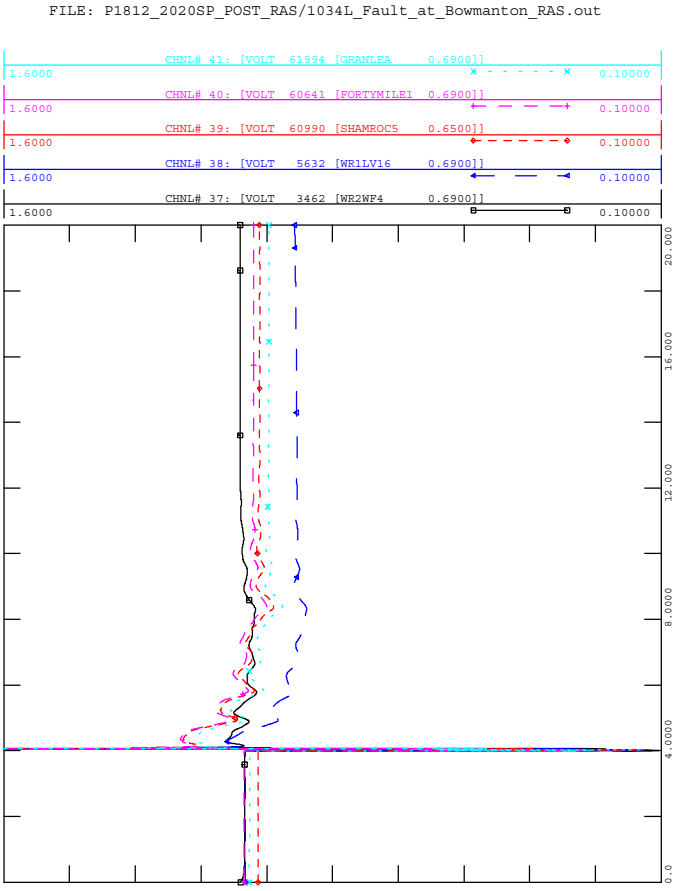


P1812_2020SP_POST_RAS
CATB -1034L_FAULT_AT_BOWMANTON_RAS

FILE: P1812_2020SP_POST_RAS/1034L_Fault_at_Bowmanton_RAS.out

TUE, OCT 16 2018 10:31

MACHINE VOLTAGE

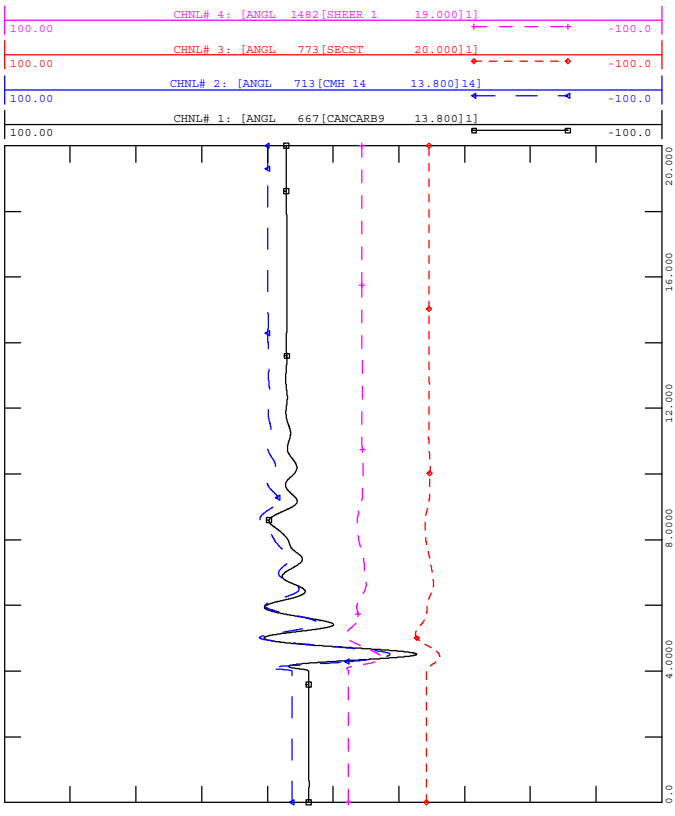


P1812_2020SP_POST_RAS
CATB -1034L_FAULT_AT_BOWMANTON_RAS

FILE: P1812_2020SP_POST_RAS/1034L_Fault_at_Bowmanton_RAS.out

TUE, OCT 16 2018 10:31

MACHINE ANGEL

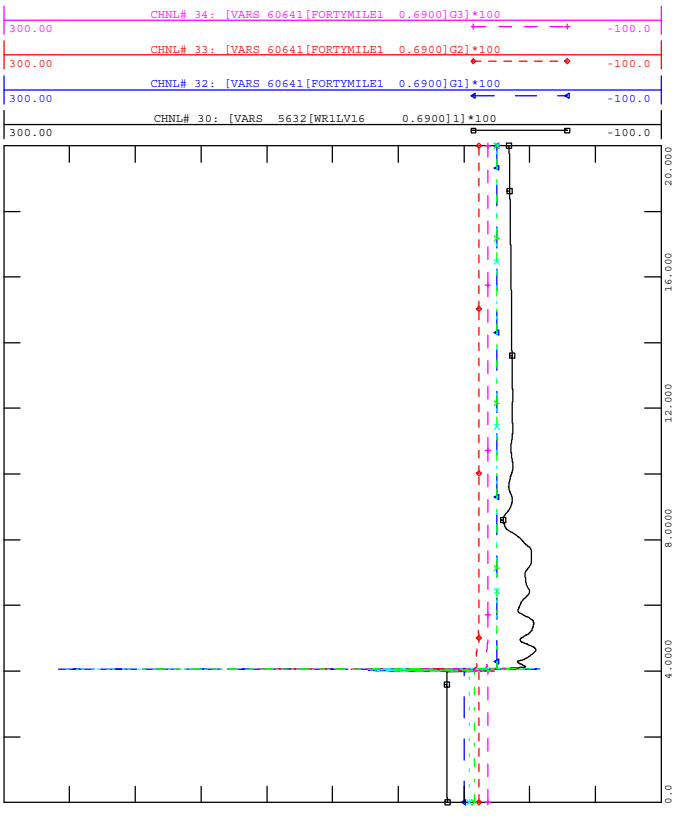


P1812_2020SP_POST_RAS
CATB -1034L_FAULT_AT_BOWMANTON_RAS

FILE: P1812_2020SP_POST_RAS/1034L_Fault_at_Bowmanton_RAS.out

TUE, OCT 16 2018 10:31

MACHINE VAR



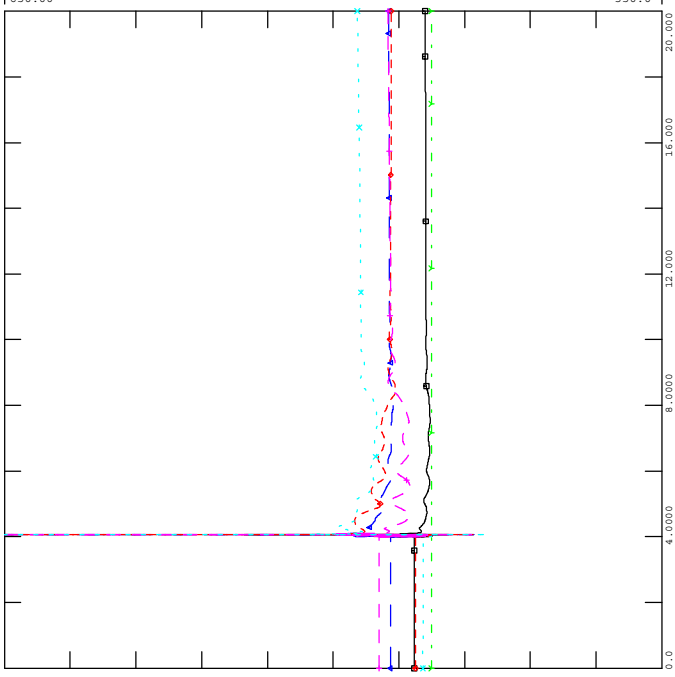
P1812_2020SP_POST_RAS
CATB -1034L_FAULT_AT_BOWMANTON_RAS

FILE: P1812_2020SP_POST_RAS/1034L_Fault_at_Bowmanton_RAS.out

TUE, OCT 16 2018 10:31

LINE VAR

CHNL# 64: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 62: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 60: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 58: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 56: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 54: [VARS 662 TO 720 CKT '64'] 650.00 -350.0



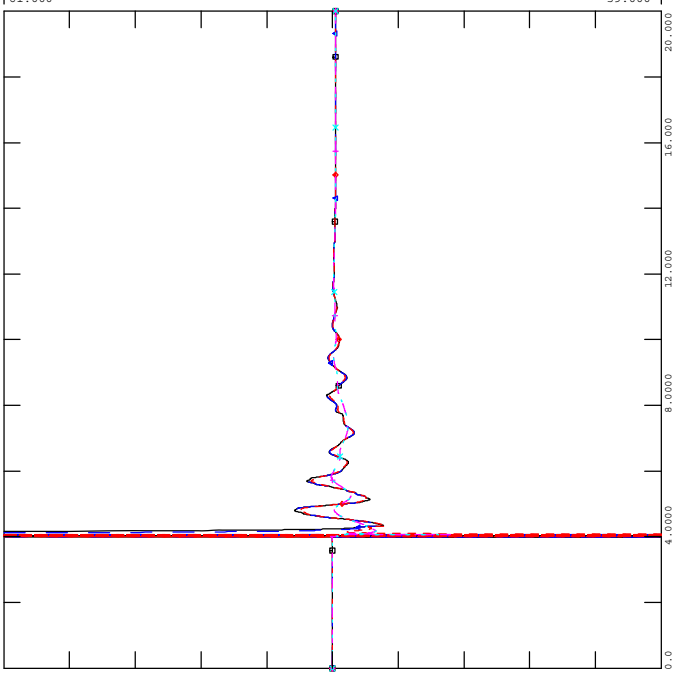
P1812_2020SP_POST_RAS
CATB -1034L_FAULT_AT_BOWMANTON_RAS

FILE: P1812_2020SP_POST_RAS/1034L_Fault_at_Bowmanton_RAS.out

TUE, OCT 16 2018 10:31

FREQUENCY

CHNL# 52: (1+[FREQ 918 [CASS01 240.00])*60 61.000 59.000
CHNL# 51: (1+[FREQ 1012 [NEWELL2 240.00])*60 61.000 59.000
CHNL# 50: (1+[FREQ 669 [BOWMAN1 240.00])*60 61.000 59.000
CHNL# 49: (1+[FREQ 477 [ELKWATR1 240.00])*60 61.000 59.000
CHNL# 48: (1+[FREQ 662 [SUBD1 240.00])*60 61.000 59.000



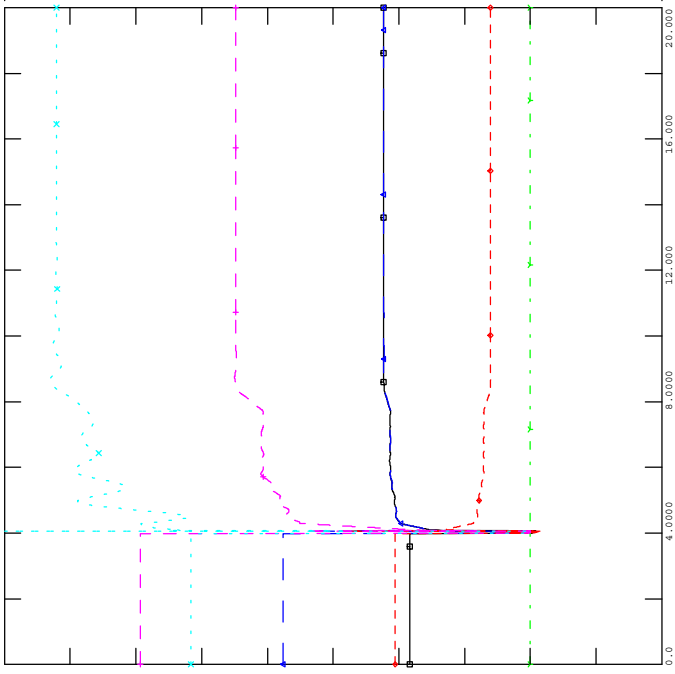
P1812_2020SP_POST_RAS
CATB -1034L_FAULT_AT_BOWMANTON_RAS

FILE: P1812_2020SP_POST_RAS/1034L_Fault_at_Bowmanton_RAS.out

TUE, OCT 16 2018 10:31

LINE POWER

CHNL# 63: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 61: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 59: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 57: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 55: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 53: [POWR 662 TO 720 CKT '64'] 800.00 -200.0



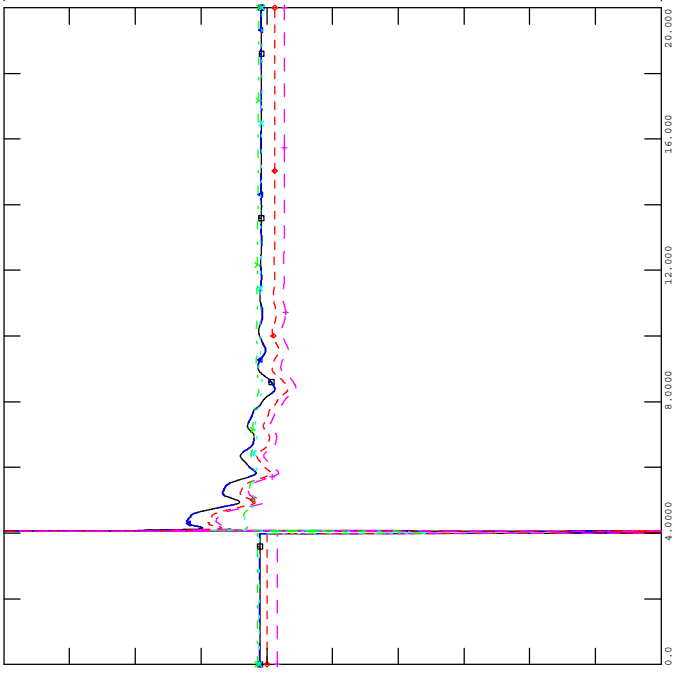
P1812_2020SP_POST_RAS
CATB -1034L_FAULT_AT_BOWMANTON_RAS

FILE: P1812_2020SP_POST_RAS/1034L_Fault_at_Bowmanton_RAS.out

TUE, OCT 16 2018 10:31

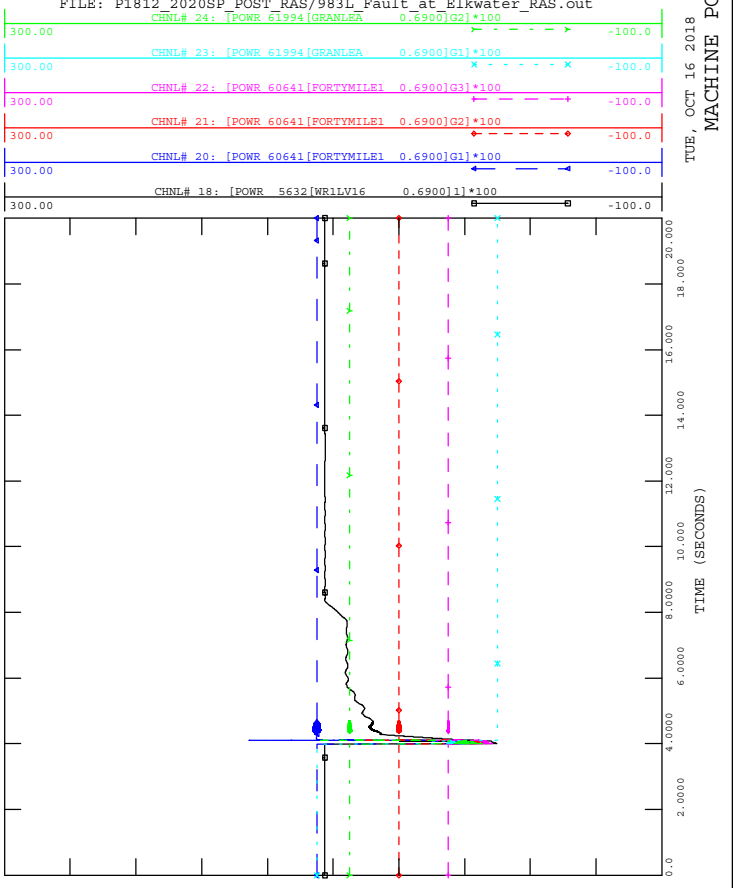
BUS VOLTAGE

CHNL# 47: [VOLT 918 [CASS01 240.00] 1.6000 0.10000
CHNL# 46: [VOLT 1012 [NEWELL2 240.00] 1.6000 0.10000
CHNL# 45: [VOLT 669 [BOWMAN1 240.00] 1.6000 0.10000
CHNL# 44: [VOLT 477 [ELKWATR1 240.00] 1.6000 0.10000
CHNL# 43: [VOLT 662 [SUBD1 240.00] 1.6000 0.10000
CHNL# 42: [VOLT 994 [GRANLEA1 240.00] 1.6000 0.10000



P1812_2020SP_POST_RAS
CATB -983L_FAULT_AT_ELKWATER_RAS

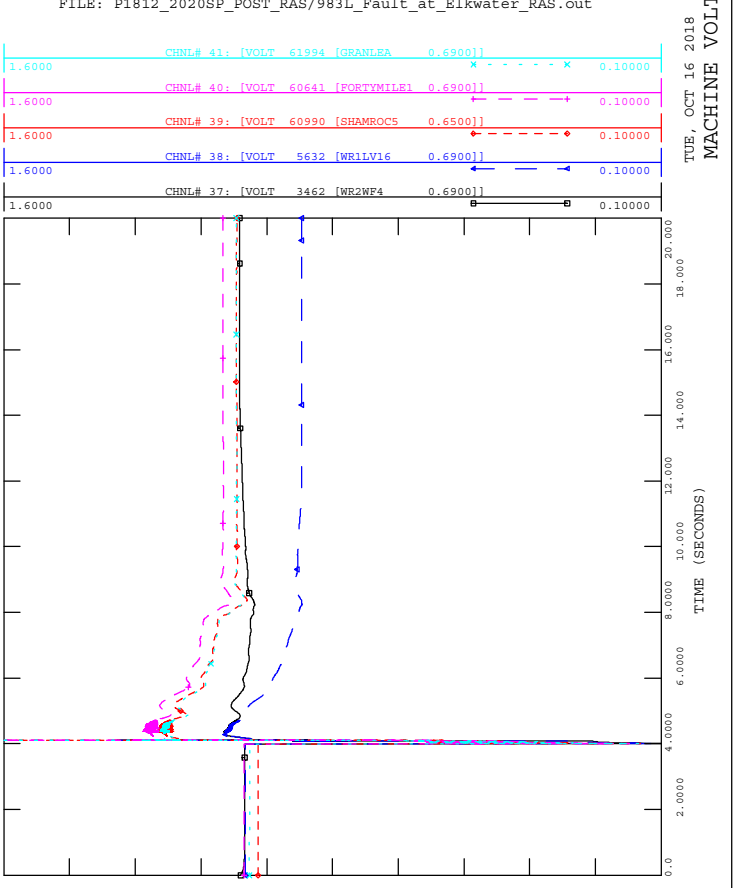
FILE: P1812_2020SP_POST_RAS/983L_Fault_at_Elkwater_RAS.out



TUE, OCT 16 2018 10:31
MACHINE POWER

P1812_2020SP_POST_RAS
CATB -983L_FAULT_AT_ELKWATER_RAS

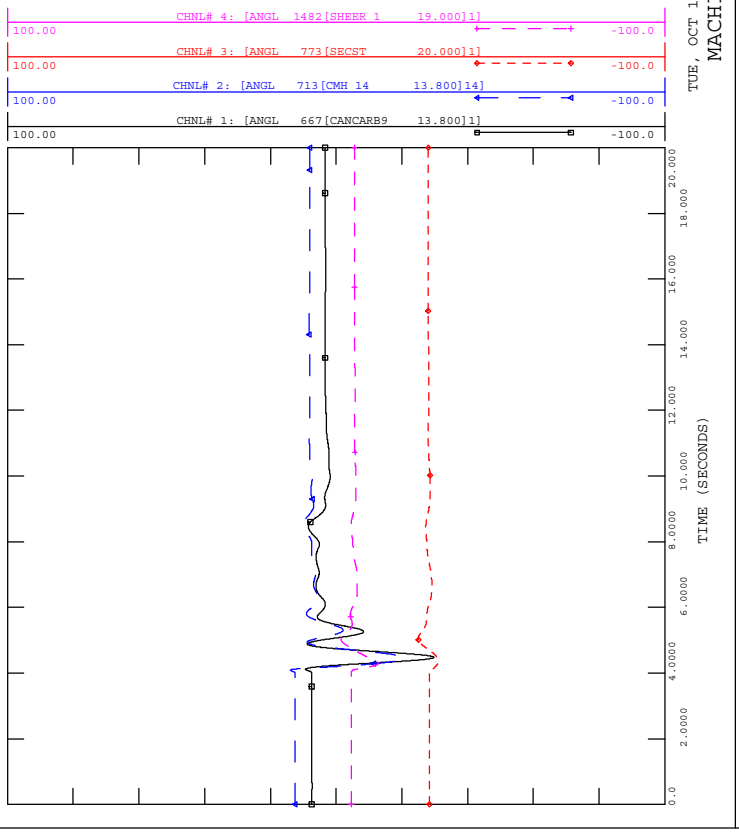
FILE: P1812_2020SP_POST_RAS/983L_Fault_at_Elkwater_RAS.out



TUE, OCT 16 2018 10:31
MACHINE VOLTAGE

P1812_2020SP_POST_RAS
CATB -983L_FAULT_AT_ELKWATER_RAS

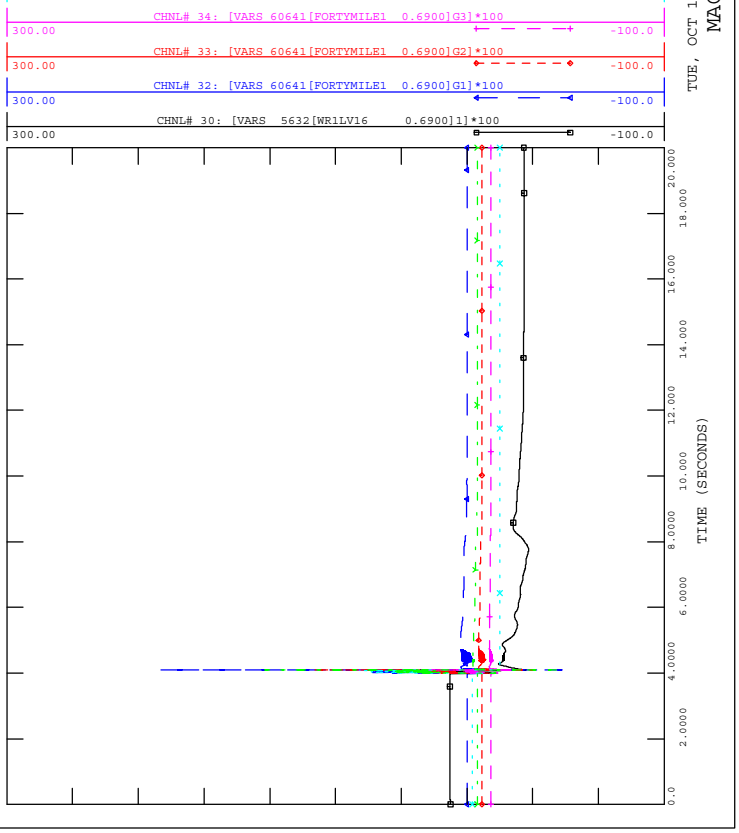
FILE: P1812_2020SP_POST_RAS/983L_Fault_at_Elkwater_RAS.out



TUE, OCT 16 2018 10:31
MACHINE ANGEL

P1812_2020SP_POST_RAS
CATB -983L_FAULT_AT_ELKWATER_RAS

FILE: P1812_2020SP_POST_RAS/983L_Fault_at_Elkwater_RAS.out



TUE, OCT 16 2018 10:31
MACHINE VAR

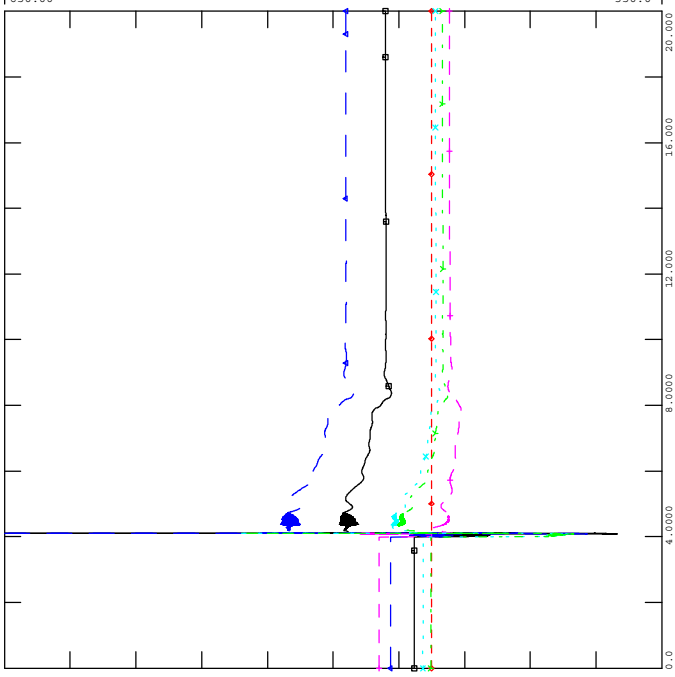
P1812_2020SP_POST_RAS
CATB -983L_FAULT_AT_ELKWATER_RAS

FILE: P1812_2020SP_POST_RAS/983L_Fault_at_Elkwater_RAS.out

TUE, OCT 16 2018 10:31

LINE VAR

CHNL# 64: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 62: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 60: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 58: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 56: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 54: [VARS 662 TO 720 CKT '64'] 650.00 -350.0



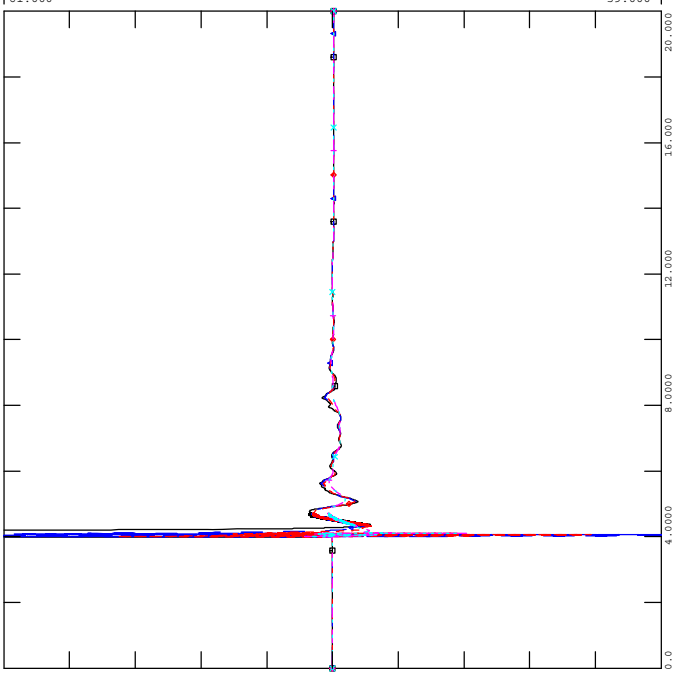
P1812_2020SP_POST_RAS
CATB -983L_FAULT_AT_ELKWATER_RAS

FILE: P1812_2020SP_POST_RAS/983L_Fault_at_Elkwater_RAS.out

TUE, OCT 16 2018 10:31

FREQUENCY

CHNL# 52: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 51: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 50: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 49: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 48: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000



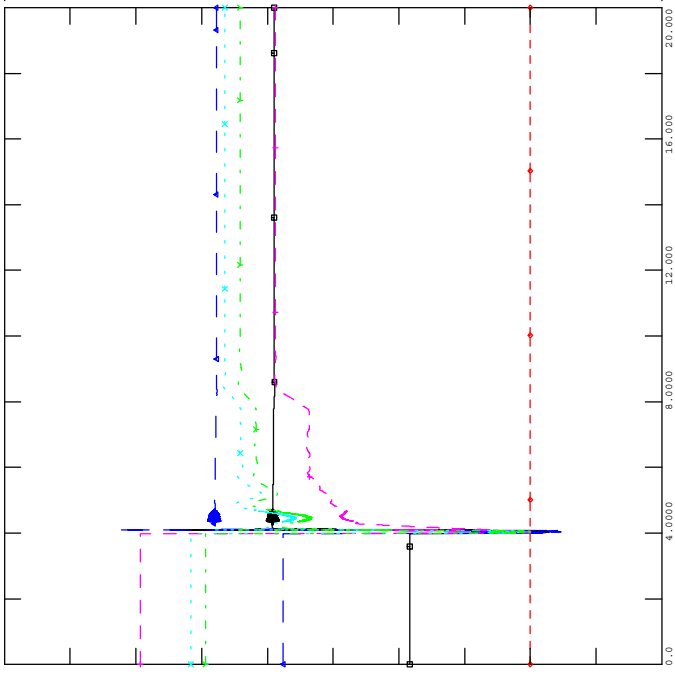
P1812_2020SP_POST_RAS
CATB -983L_FAULT_AT_ELKWATER_RAS

FILE: P1812_2020SP_POST_RAS/983L_Fault_at_Elkwater_RAS.out

TUE, OCT 16 2018 10:31

LINE POWER

CHNL# 63: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 61: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 59: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 57: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 55: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 53: [POWR 662 TO 720 CKT '64'] 800.00 -200.0



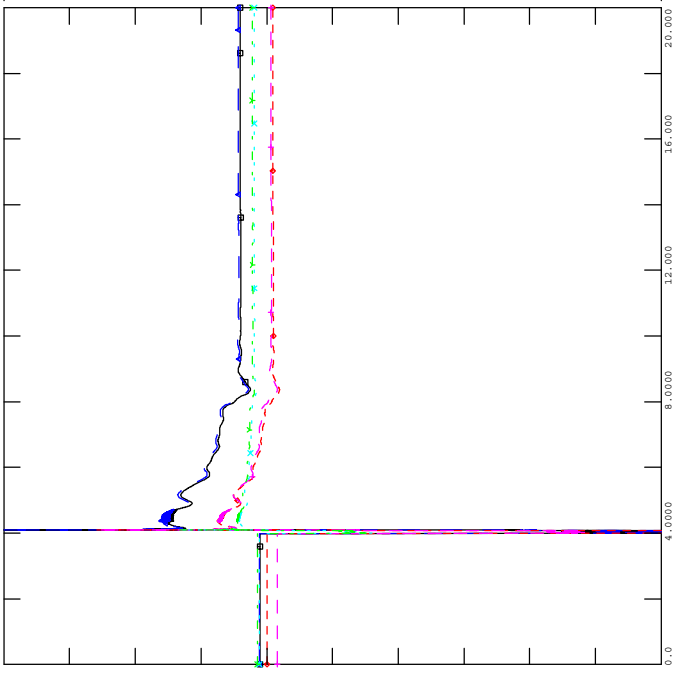
P1812_2020SP_POST_RAS
CATB -983L_FAULT_AT_ELKWATER_RAS

FILE: P1812_2020SP_POST_RAS/983L_Fault_at_Elkwater_RAS.out

TUE, OCT 16 2018 10:31

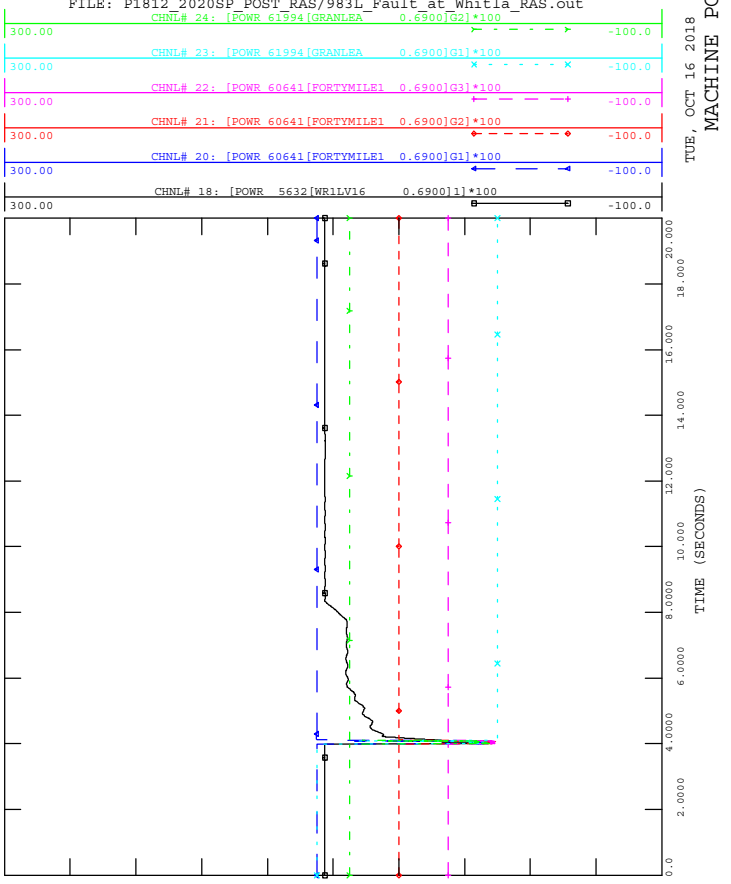
BUS VOLTAGE

CHNL# 47: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 46: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 45: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 44: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 43: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 42: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000



P1812_2020SP_POST_RAS
CATB -983L_FAULT_AT_WHITLA_RAS

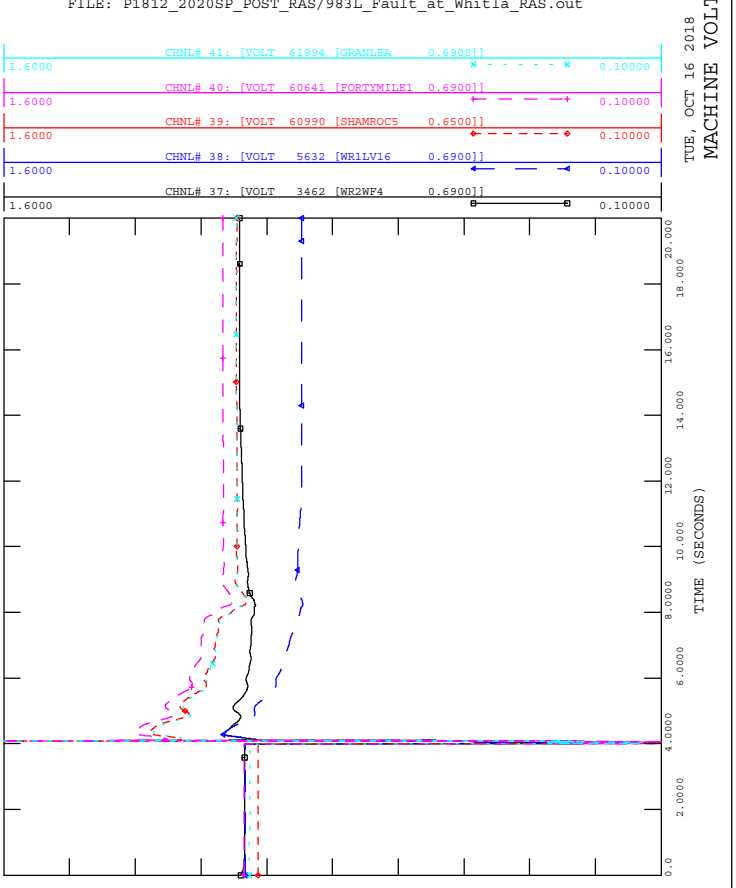
FILE: P1812_2020SP_POST_RAS/983L_Fault_at_Whitla_RAS.out



TUE, OCT 16 2018 10:31
MACHINE POWER

P1812_2020SP_POST_RAS
CATB -983L_FAULT_AT_WHITLA_RAS

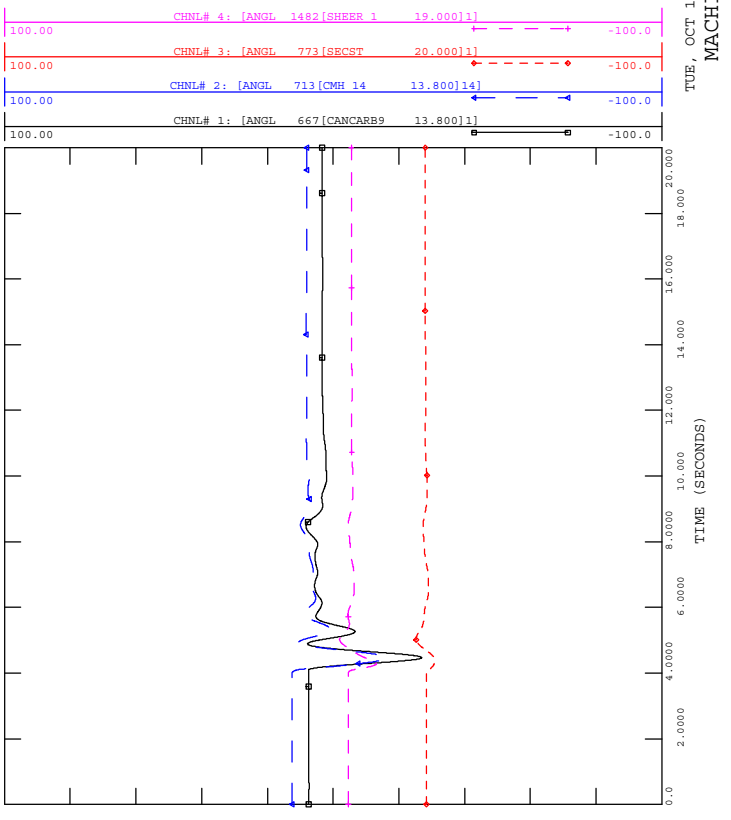
FILE: P1812_2020SP_POST_RAS/983L_Fault_at_Whitla_RAS.out



TUE, OCT 16 2018 10:31
MACHINE VOLTAGE

P1812_2020SP_POST_RAS
CATB -983L_FAULT_AT_WHITLA_RAS

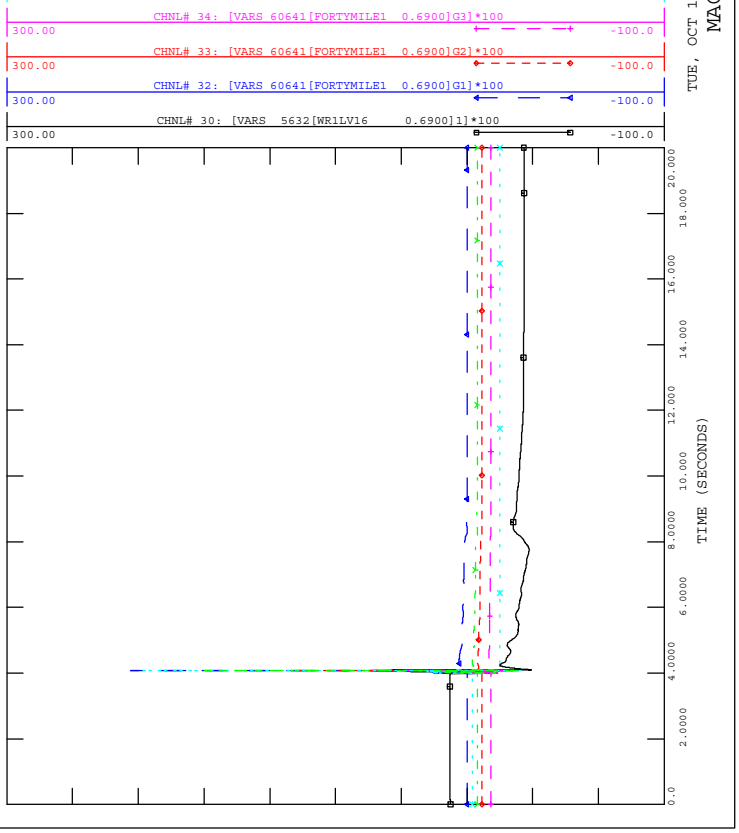
FILE: P1812_2020SP_POST_RAS/983L_Fault_at_Whitla_RAS.out



TUE, OCT 16 2018 10:31
MACHINE ANGEL

P1812_2020SP_POST_RAS
CATB -983L_FAULT_AT_WHITLA_RAS

FILE: P1812_2020SP_POST_RAS/983L_Fault_at_Whitla_RAS.out



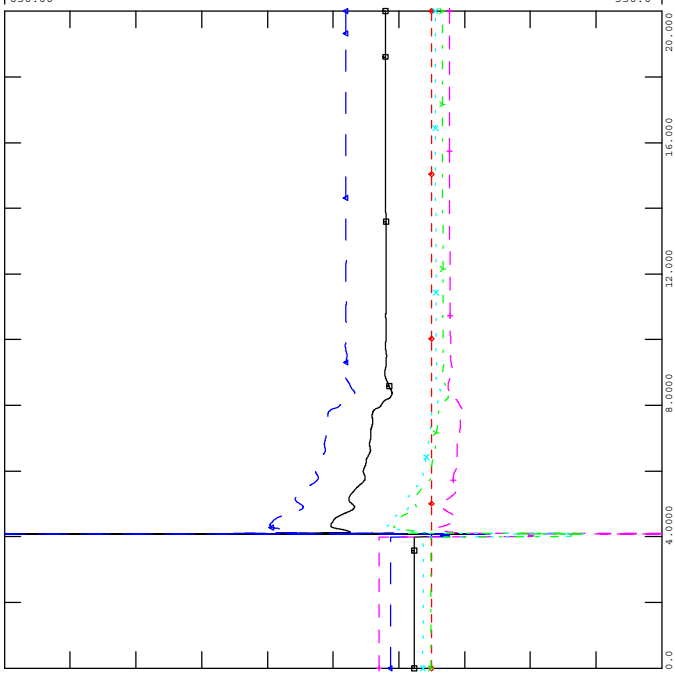
TUE, OCT 16 2018 10:31
MACHINE VAR

P1812_2020SP_POST_RAS
CATB -983L_FAULT_AT_WHITLA_RAS

FILE: P1812_2020SP_POST_RAS/983L_Fault_at_Whitla_RAS.out

TUE, OCT 16 2018 10:31 LINE VAR

CHNL# 64: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 62: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 60: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 58: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 56: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 54: [VARS 662 TO 720 CKT '64'] 650.00 -350.0

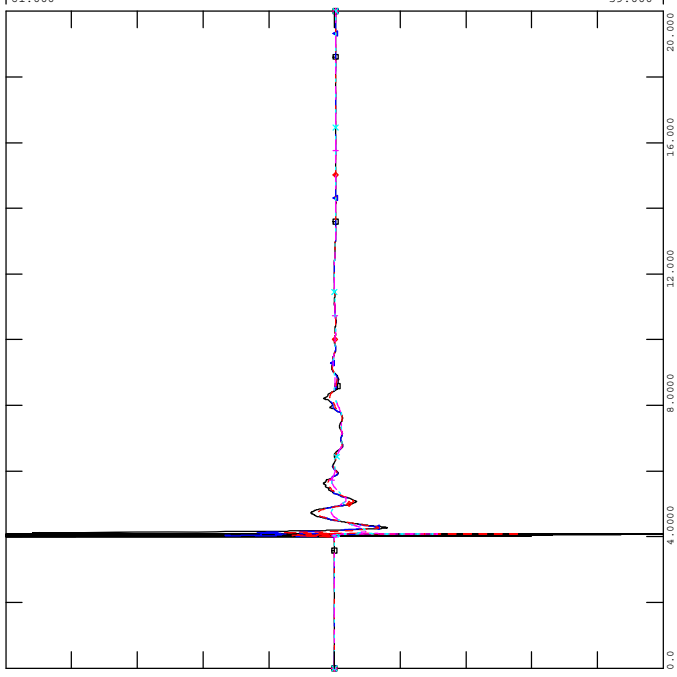


P1812_2020SP_POST_RAS
CATB -983L_FAULT_AT_WHITLA_RAS

FILE: P1812_2020SP_POST_RAS/983L_Fault_at_Whitla_RAS.out

TUE, OCT 16 2018 10:31 FREQUENCY

CHNL# 52: (1+[FREQ 918 [CASS01 240.00])*60 61.000 59.000
CHNL# 51: (1+[FREQ 1012 [NEWELL2 240.00])*60 61.000 59.000
CHNL# 50: (1+[FREQ 669 [BOWMAN1 240.00])*60 61.000 59.000
CHNL# 49: (1+[FREQ 477 [ELKWATR1 240.00])*60 61.000 59.000
CHNL# 48: (1+[FREQ 662 [SUBD1 240.00])*60 61.000 59.000

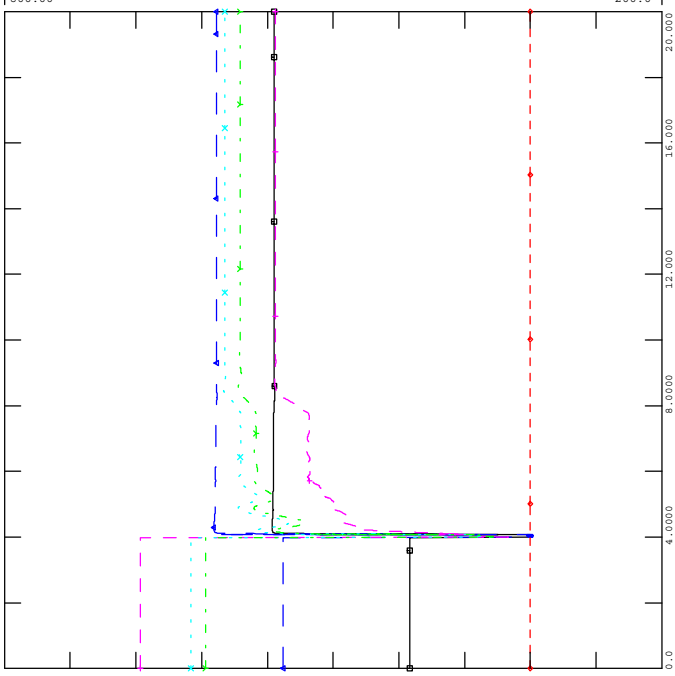


P1812_2020SP_POST_RAS
CATB -983L_FAULT_AT_WHITLA_RAS

FILE: P1812_2020SP_POST_RAS/983L_Fault_at_Whitla_RAS.out

TUE, OCT 16 2018 10:31 LINE POWER

CHNL# 63: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 61: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 59: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 57: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 55: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 53: [POWR 662 TO 720 CKT '64'] 800.00 -200.0

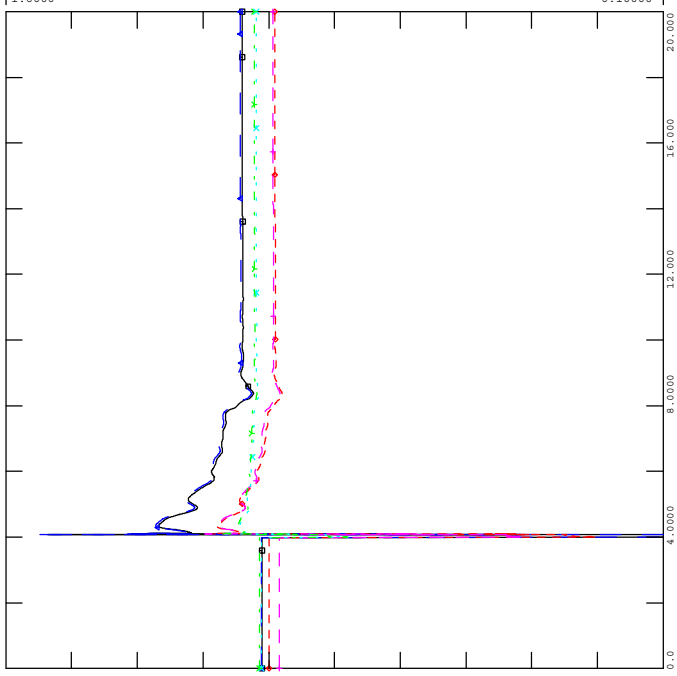


P1812_2020SP_POST_RAS
CATB -983L_FAULT_AT_WHITLA_RAS

FILE: P1812_2020SP_POST_RAS/983L_Fault_at_Whitla_RAS.out

TUE, OCT 16 2018 10:31 BUS VOLTAGE

CHNL# 47: [VOLT 918 [CASS01 240.00] 1.6000 0.10000
CHNL# 46: [VOLT 1012 [NEWELL2 240.00] 1.6000 0.10000
CHNL# 45: [VOLT 669 [BOWMAN1 240.00] 1.6000 0.10000
CHNL# 44: [VOLT 477 [ELKWATR1 240.00] 1.6000 0.10000
CHNL# 43: [VOLT 662 [SUBD1 240.00] 1.6000 0.10000
CHNL# 42: [VOLT 994 [GRANLEA1 240.00] 1.6000 0.10000

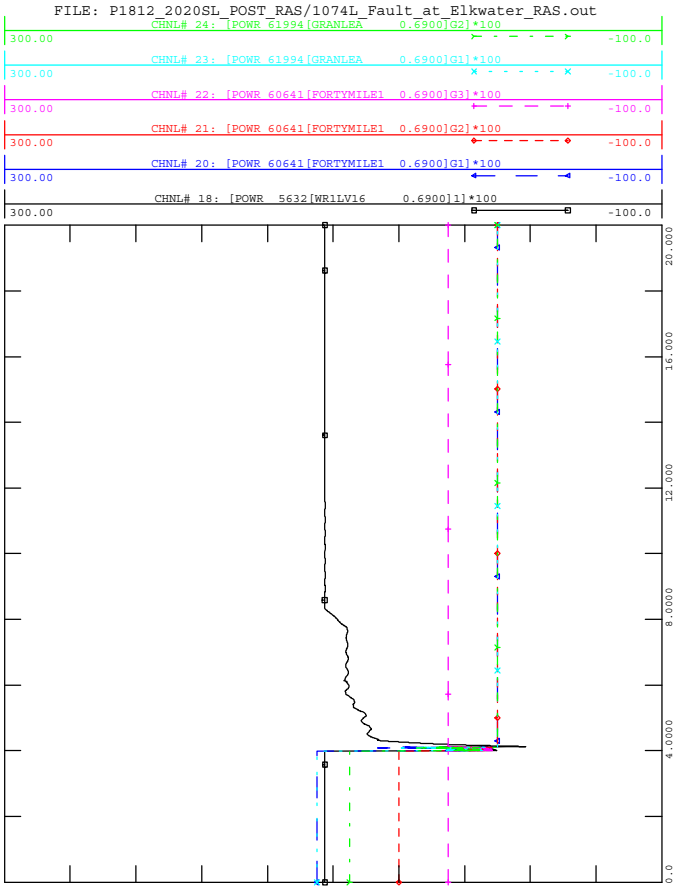


P1812_2020SL_POST_RAS
CATB -1074L_FAULT_AT_ELKWATER_RAS

FILE: P1812_2020SL_POST_RAS/1074L_Fault_at_Elkwater_RAS.out

TUE, OCT 16 2018 10:31

MACHINE POWER

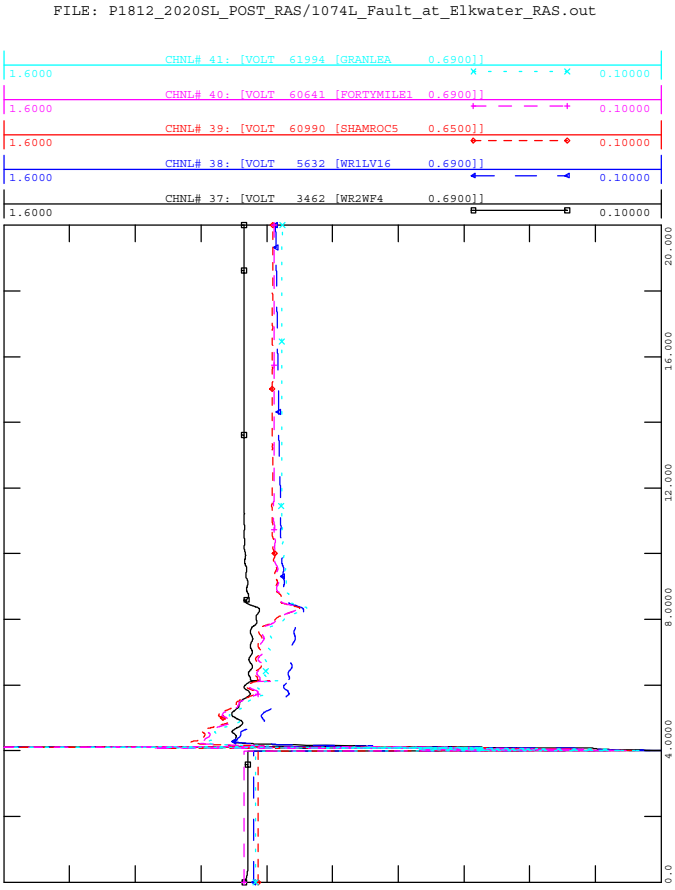


P1812_2020SL_POST_RAS
CATB -1074L_FAULT_AT_ELKWATER_RAS

FILE: P1812_2020SL_POST_RAS/1074L_Fault_at_Elkwater_RAS.out

TUE, OCT 16 2018 10:31

MACHINE VOLTAGE

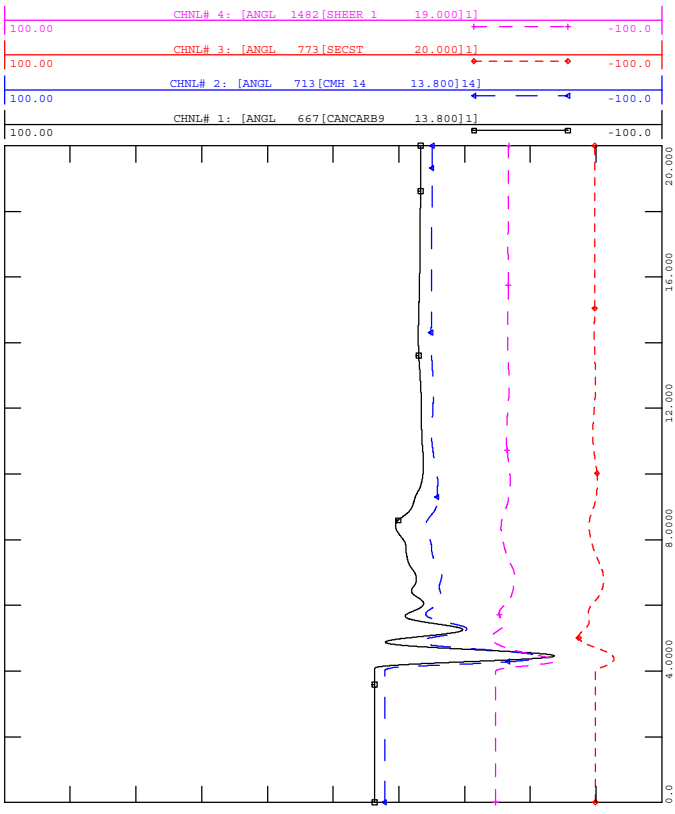


P1812_2020SL_POST_RAS
CATB -1074L_FAULT_AT_ELKWATER_RAS

FILE: P1812_2020SL_POST_RAS/1074L_Fault_at_Elkwater_RAS.out

TUE, OCT 16 2018 10:31

MACHINE ANGEL

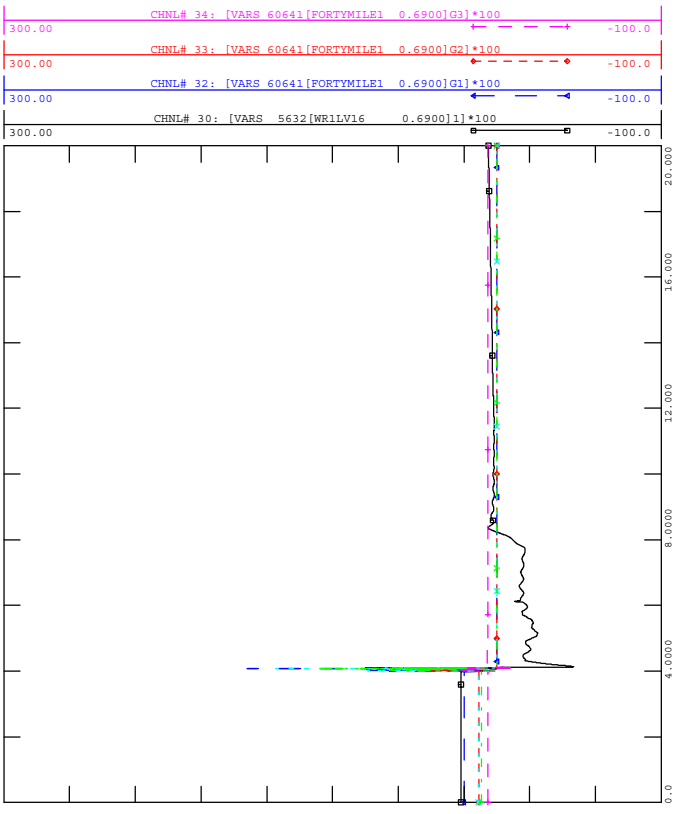


P1812_2020SL_POST_RAS
CATB -1074L_FAULT_AT_ELKWATER_RAS

FILE: P1812_2020SL_POST_RAS/1074L_Fault_at_Elkwater_RAS.out

TUE, OCT 16 2018 10:31

MACHINE VAR

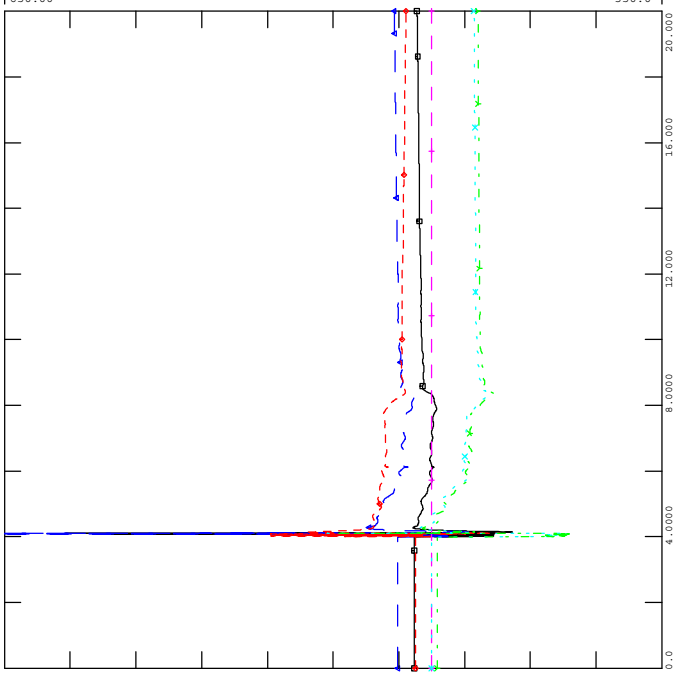


P1812_2020SL_POST_RAS
CATB -1074L_FAULT_AT_ELKWATER_RAS

FILE: P1812_2020SL_POST_RAS/1074L_Fault_at_Elkwater_RAS.out

TUE, OCT 16 2018 10:31 LINE VAR

CHNL# 64: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 62: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 60: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 58: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 56: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 54: [VARS 662 TO 720 CKT '64'] 650.00 -350.0

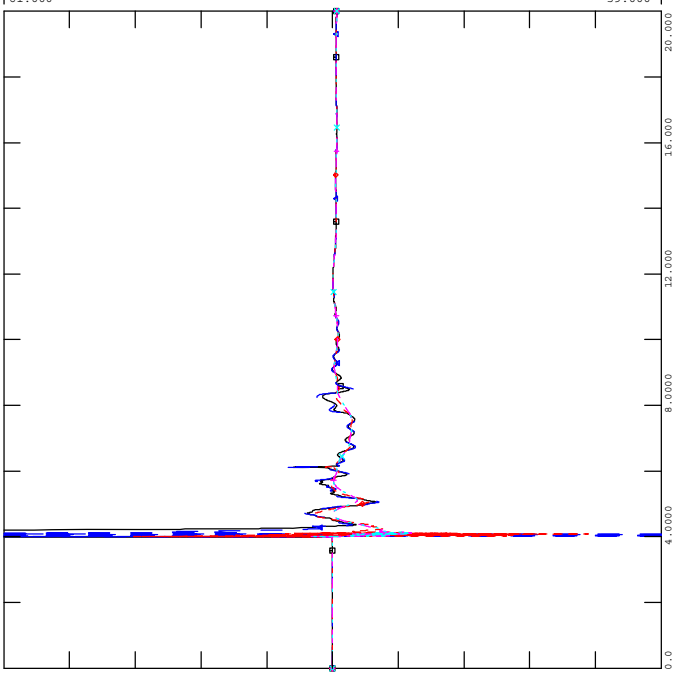


P1812_2020SL_POST_RAS
CATB -1074L_FAULT_AT_ELKWATER_RAS

FILE: P1812_2020SL_POST_RAS/1074L_Fault_at_Elkwater_RAS.out

TUE, OCT 16 2018 10:31 FREQUENCY

CHNL# 52: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 51: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 50: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 49: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 48: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000

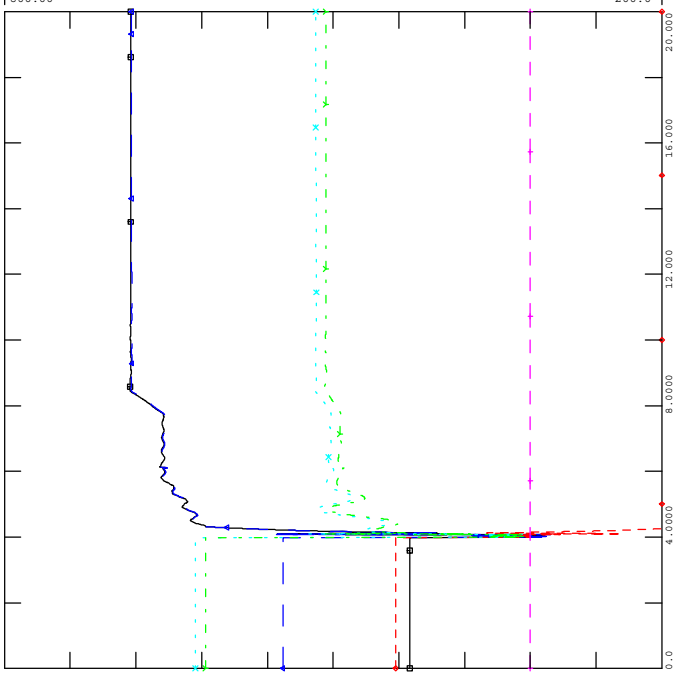


P1812_2020SL_POST_RAS
CATB -1074L_FAULT_AT_ELKWATER_RAS

FILE: P1812_2020SL_POST_RAS/1074L_Fault_at_Elkwater_RAS.out

TUE, OCT 16 2018 10:31 LINE POWER

CHNL# 63: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 61: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 59: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 57: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 55: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 53: [POWR 662 TO 720 CKT '64'] 800.00 -200.0

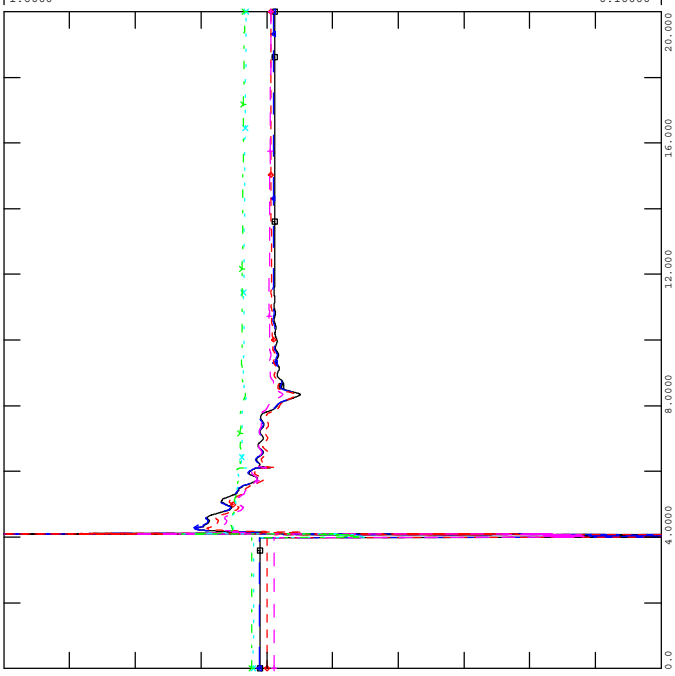


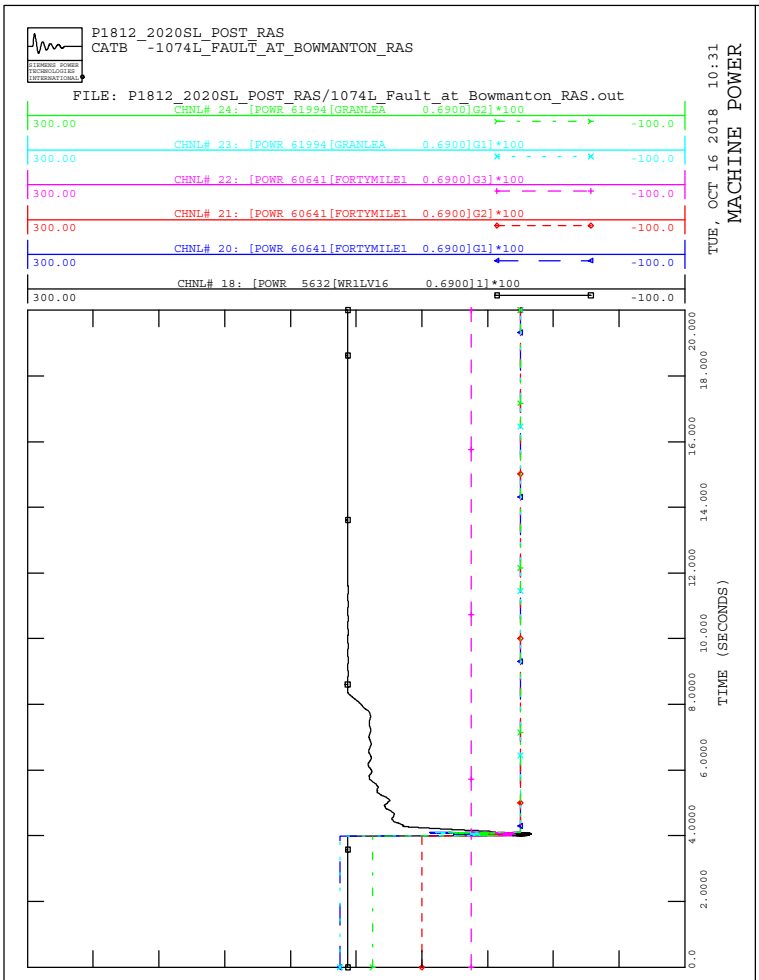
P1812_2020SL_POST_RAS
CATB -1074L_FAULT_AT_ELKWATER_RAS

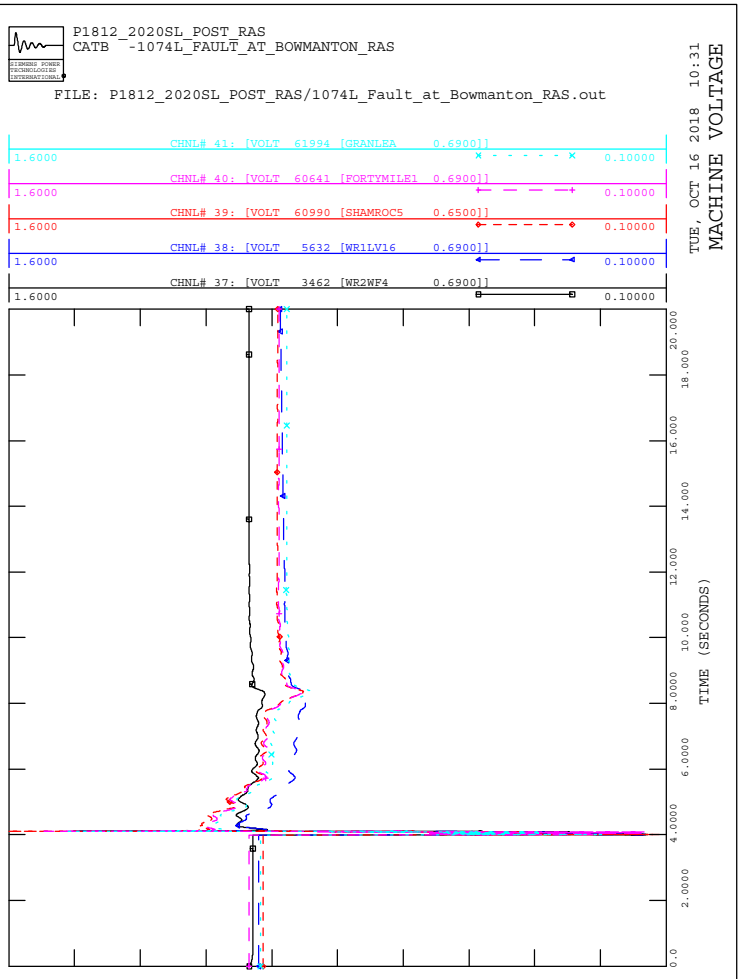
FILE: P1812_2020SL_POST_RAS/1074L_Fault_at_Elkwater_RAS.out

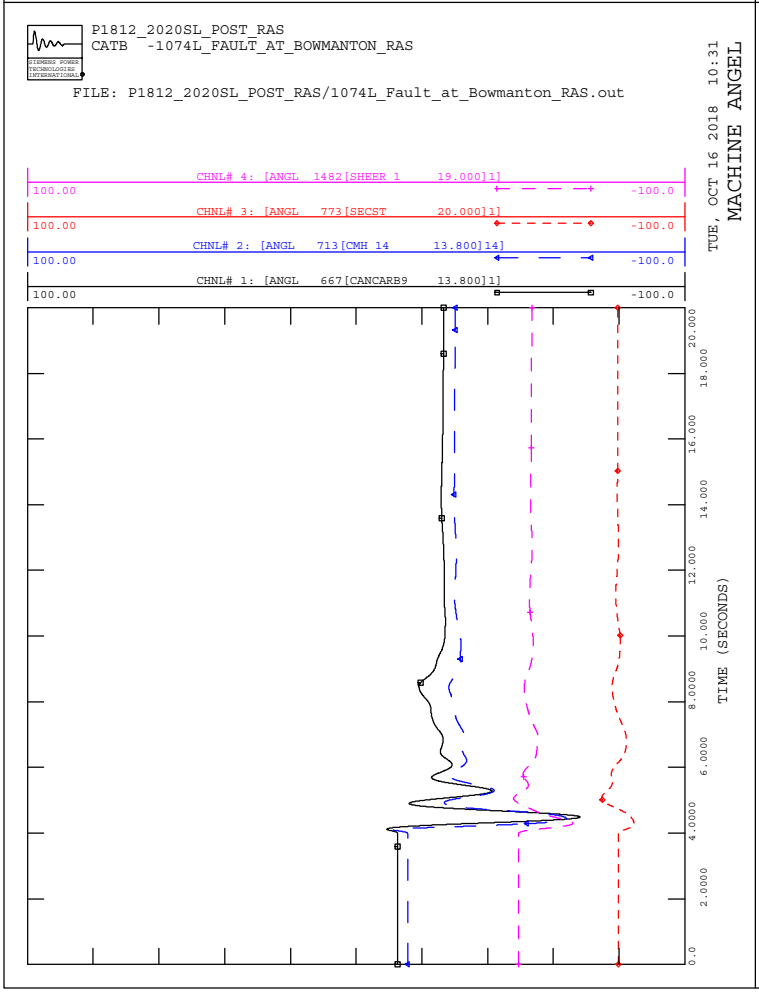
TUE, OCT 16 2018 10:31 BUS VOLTAGE

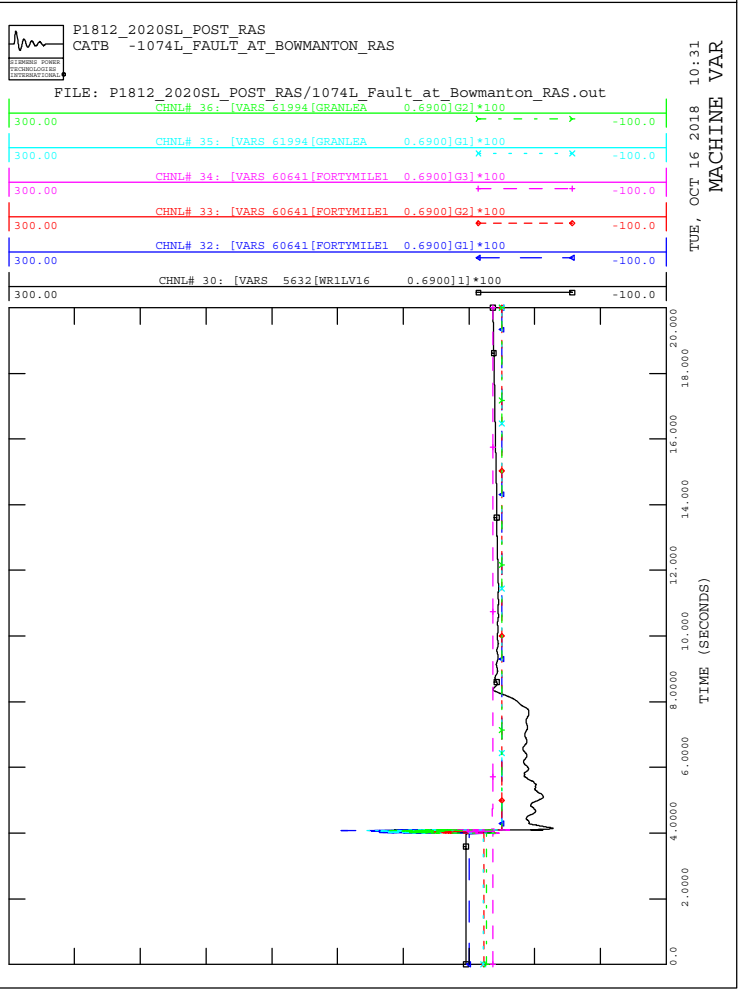
CHNL# 47: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 46: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 45: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 44: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 43: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 42: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000




P1812_2020SL_POST_RAS
CATB -1074L_FAULT_AT_BOWMANTON_RAS
FILE: P1812_2020SL_POST_RAS/1074L_Fault_at_Bowmanton_RAS.out
CHNL# 24: [POWR 61994[GRANLEA 0.6900]G2]*100
CHNL# 23: [POWR 61994[GRANLEA 0.6900]G1]*100
CHNL# 22: [POWR 60641[FORTYMILE1 0.6900]G3]*100
CHNL# 21: [POWR 60641[FORTYMILE1 0.6900]G2]*100
CHNL# 20: [POWR 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 18: [POWR 5632[WR1LV16 0.6900]1]*100
300.00
-100.0
TUE, OCT 16 2018 10:31
MACHINE POWER
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000


P1812_2020SL_POST_RAS
CATB -1074L_FAULT_AT_BOWMANTON_RAS
FILE: P1812_2020SL_POST_RAS/1074L_Fault_at_Bowmanton_RAS.out
CHNL# 41: [VOLT 61994 [GRANLEA 0.6900]]
CHNL# 40: [VOLT 60641 [FORTYMILE1 0.6900]]
CHNL# 39: [VOLT 60990 [SHAMROC5 0.6500]]
CHNL# 38: [VOLT 5632 [WR1LV16 0.6900]]
CHNL# 37: [VOLT 3462 [WR2WF4 0.6900]]
1.6000
0.10000
TUE, OCT 16 2018 10:31
MACHINE VOLTAGE
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000


P1812_2020SL_POST_RAS
CATB -1074L_FAULT_AT_BOWMANTON_RAS
FILE: P1812_2020SL_POST_RAS/1074L_Fault_at_Bowmanton_RAS.out
CHNL# 4: [ANGL 1482[SHEER 1 19.000]1]
CHNL# 3: [ANGL 773[SECST 20.000]1]
CHNL# 2: [ANGL 713[CMH 14 13.800]14]
CHNL# 1: [ANGL 667[CANCARB9 13.800]1]
100.00
-100.0
TUE, OCT 16 2018 10:31
MACHINE ANGEL
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000

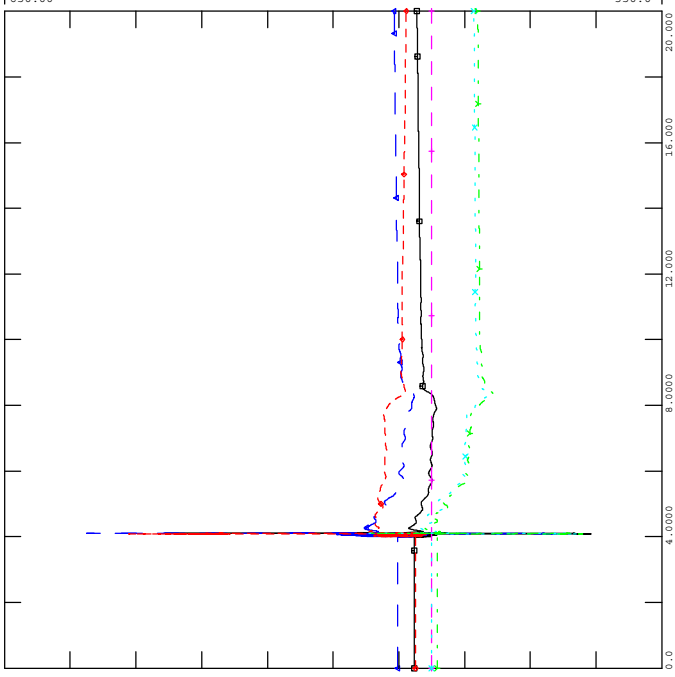

P1812_2020SL_POST_RAS
CATB -1074L_FAULT_AT_BOWMANTON_RAS
FILE: P1812_2020SL_POST_RAS/1074L_Fault_at_Bowmanton_RAS.out
CHNL# 36: [VARS 61994[GRANLEA 0.6900]G2]*100
CHNL# 35: [VARS 61994[GRANLEA 0.6900]G1]*100
CHNL# 34: [VARS 60641[FORTYMILE1 0.6900]G3]*100
CHNL# 33: [VARS 60641[FORTYMILE1 0.6900]G2]*100
CHNL# 32: [VARS 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 30: [VARS 5632[WR1LV16 0.6900]1]*100
300.00
-100.0
TUE, OCT 16 2018 10:31
MACHINE VAR
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000

P1812_2020SL_POST_RAS
CATB -1074L_FAULT_AT_BOWMANTON_RAS

FILE: P1812_2020SL_POST_RAS/1074L_Fault_at_Bowmanton_RAS.out

TUE, OCT 16 2018 10:31 LINE VAR

CHNL# 64: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 62: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 60: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 58: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 56: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 54: [VARS 662 TO 720 CKT '64'] 650.00 -350.0

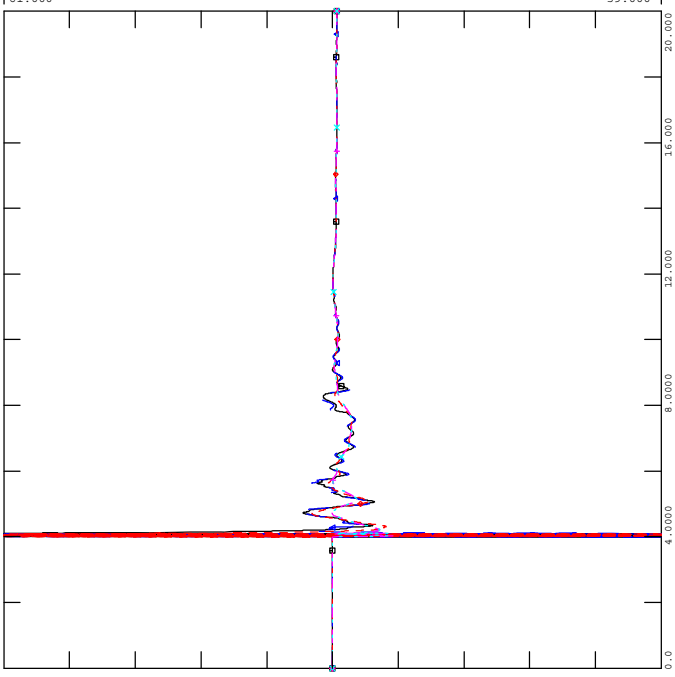


P1812_2020SL_POST_RAS
CATB -1074L_FAULT_AT_BOWMANTON_RAS

FILE: P1812_2020SL_POST_RAS/1074L_Fault_at_Bowmanton_RAS.out

TUE, OCT 16 2018 10:31 FREQUENCY

CHNL# 52: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 51: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 50: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 49: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 48: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000

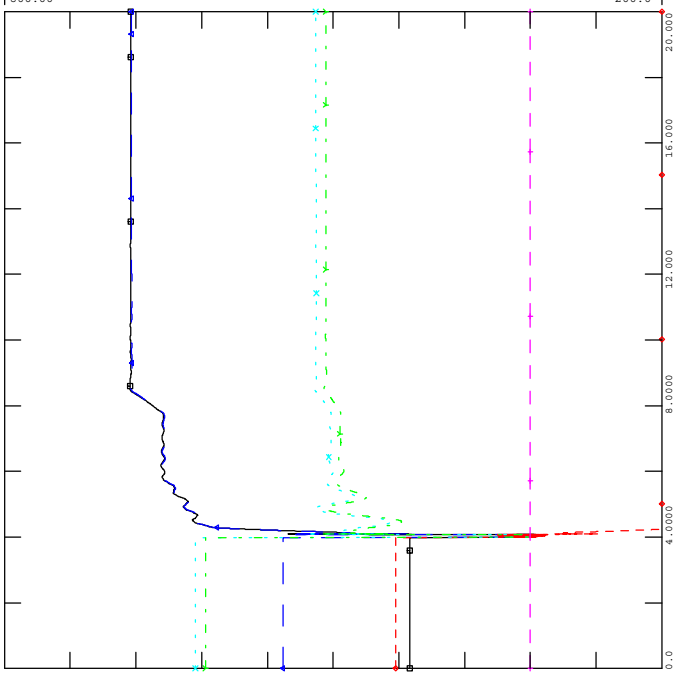


P1812_2020SL_POST_RAS
CATB -1074L_FAULT_AT_BOWMANTON_RAS

FILE: P1812_2020SL_POST_RAS/1074L_Fault_at_Bowmanton_RAS.out

TUE, OCT 16 2018 10:31 LINE POWER

CHNL# 63: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 61: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 59: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 57: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 55: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 53: [POWR 662 TO 720 CKT '64'] 800.00 -200.0

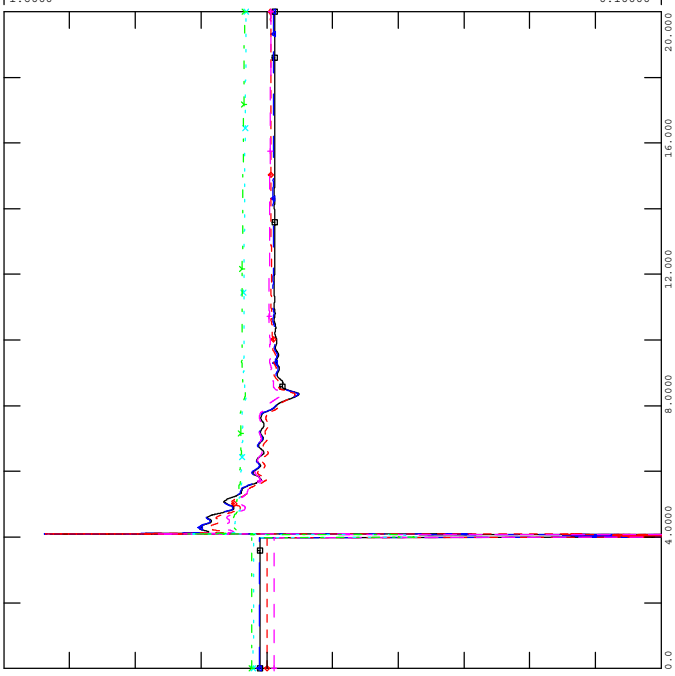


P1812_2020SL_POST_RAS
CATB -1074L_FAULT_AT_BOWMANTON_RAS

FILE: P1812_2020SL_POST_RAS/1074L_Fault_at_Bowmanton_RAS.out

TUE, OCT 16 2018 10:31 BUS VOLTAGE

CHNL# 47: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 46: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 45: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 44: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 43: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 42: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000

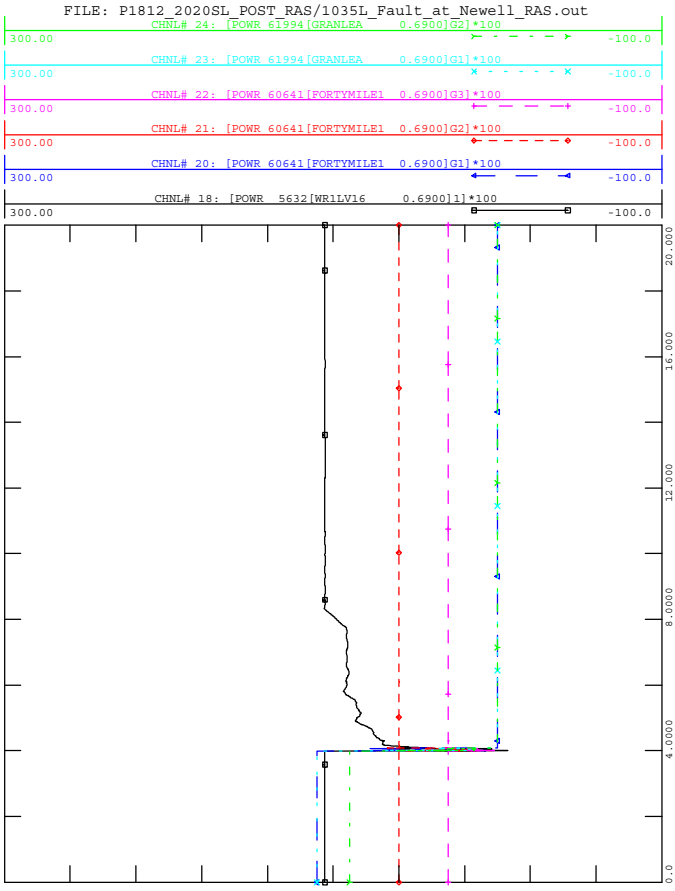


P1812_2020SL_POST_RAS
CATB -1035L_FAULT_AT_NEWELL_RAS

FILE: P1812_2020SL_POST_RAS/1035L_Fault_at_Newell_RAS.out

TUE, OCT 16 2018 10:31

MACHINE POWER

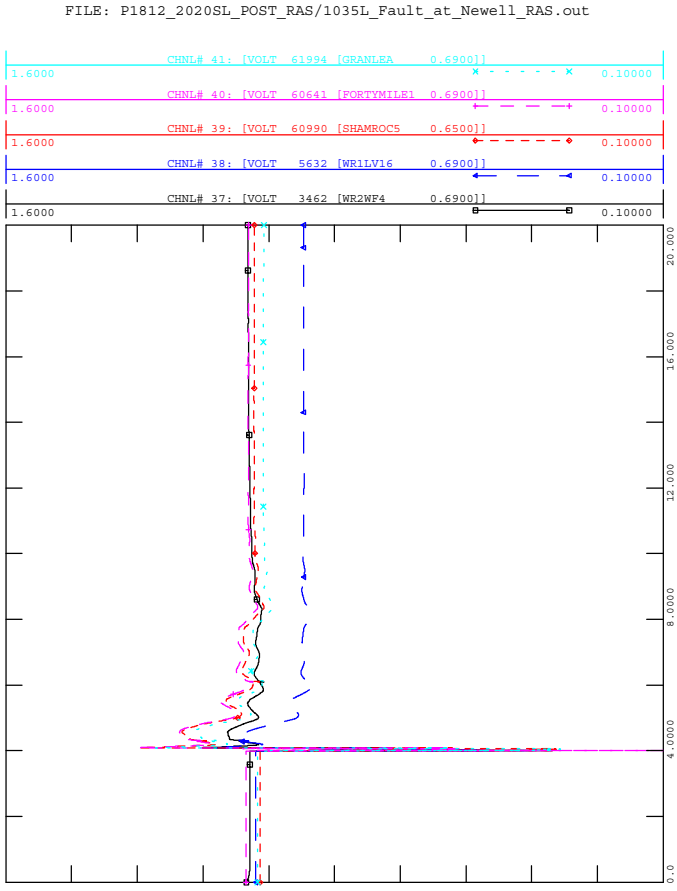


P1812_2020SL_POST_RAS
CATB -1035L_FAULT_AT_NEWELL_RAS

FILE: P1812_2020SL_POST_RAS/1035L_Fault_at_Newell_RAS.out

TUE, OCT 16 2018 10:31

MACHINE VOLTAGE

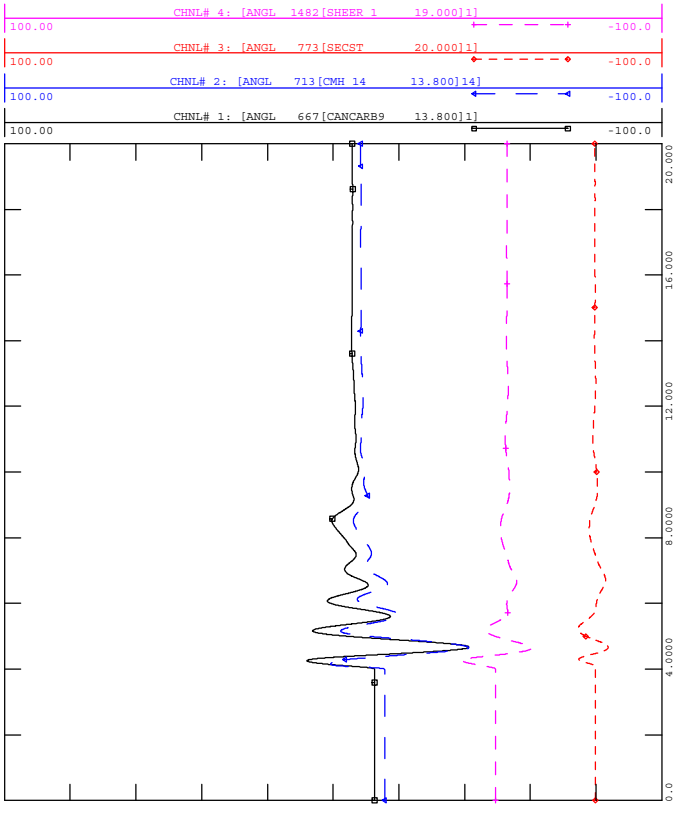


P1812_2020SL_POST_RAS
CATB -1035L_FAULT_AT_NEWELL_RAS

FILE: P1812_2020SL_POST_RAS/1035L_Fault_at_Newell_RAS.out

TUE, OCT 16 2018 10:31

MACHINE ANGEL

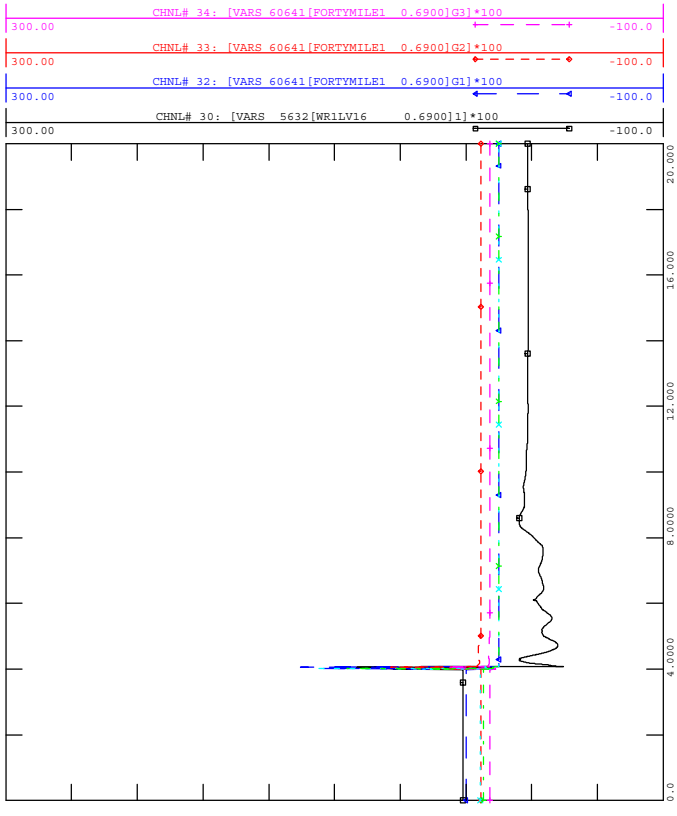


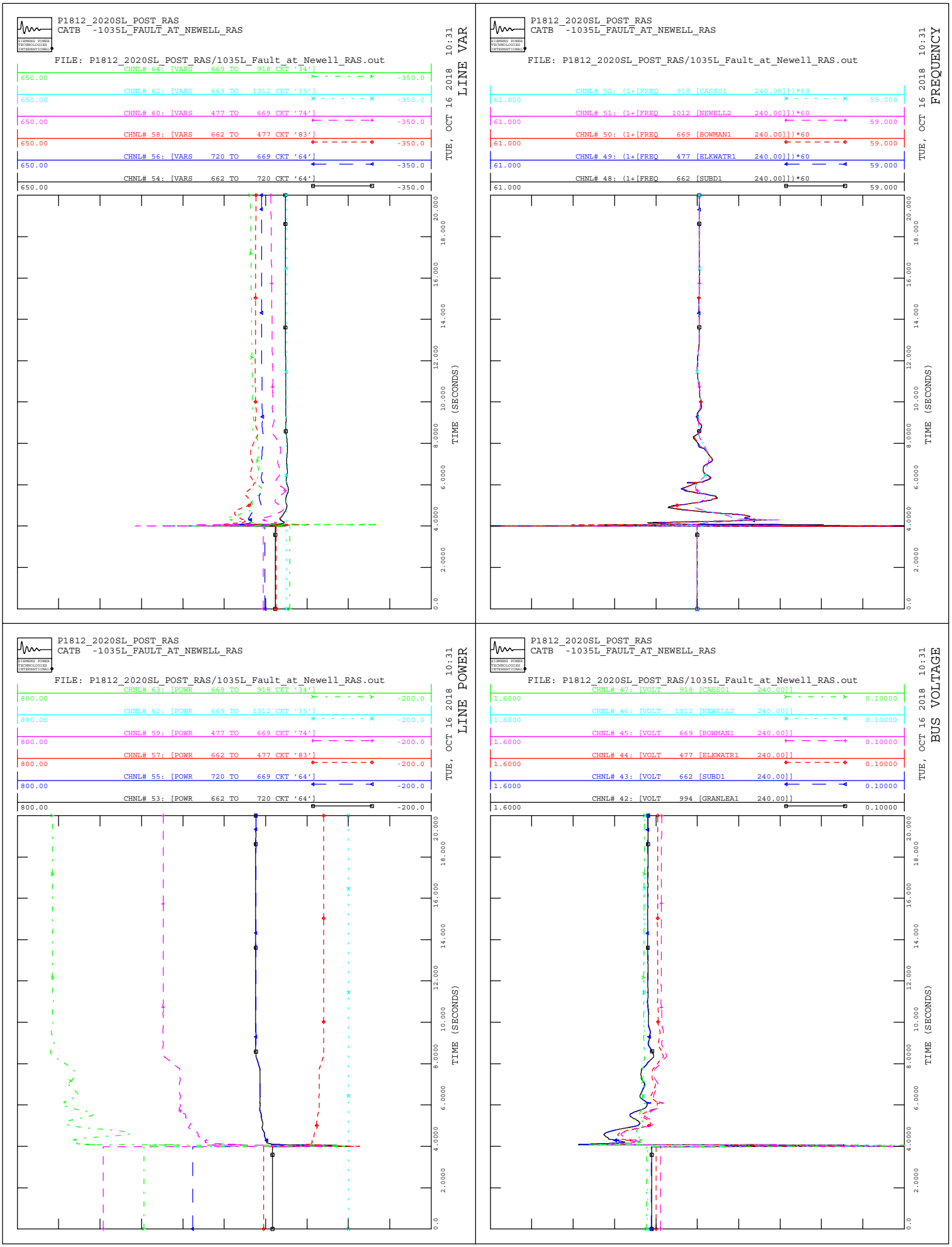
P1812_2020SL_POST_RAS
CATB -1035L_FAULT_AT_NEWELL_RAS

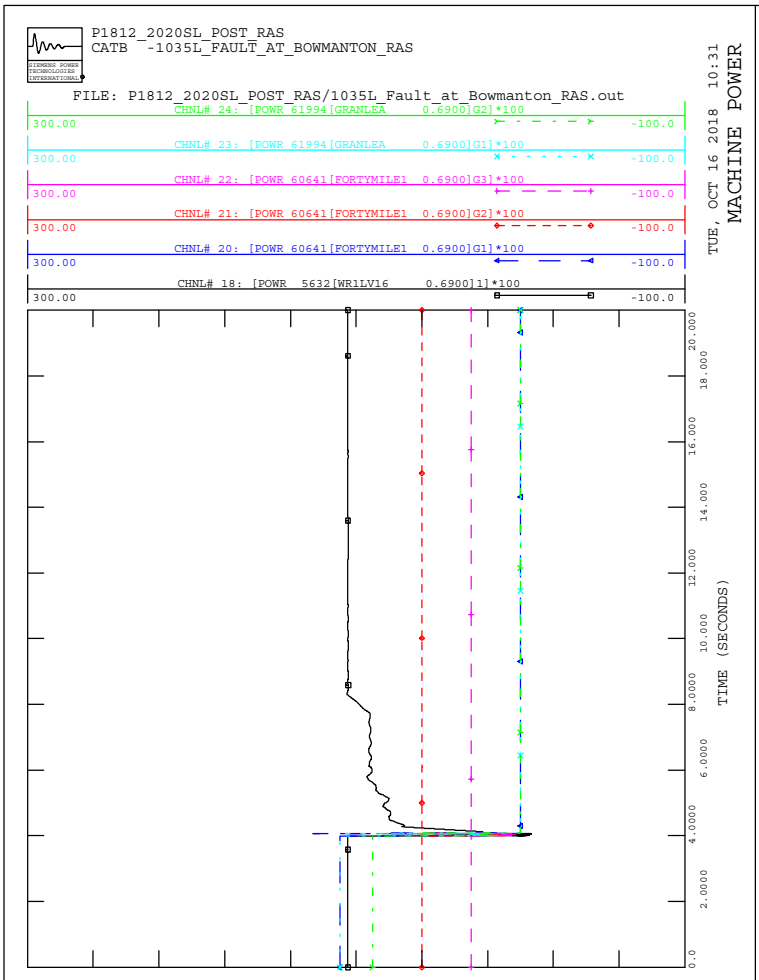
FILE: P1812_2020SL_POST_RAS/1035L_Fault_at_Newell_RAS.out

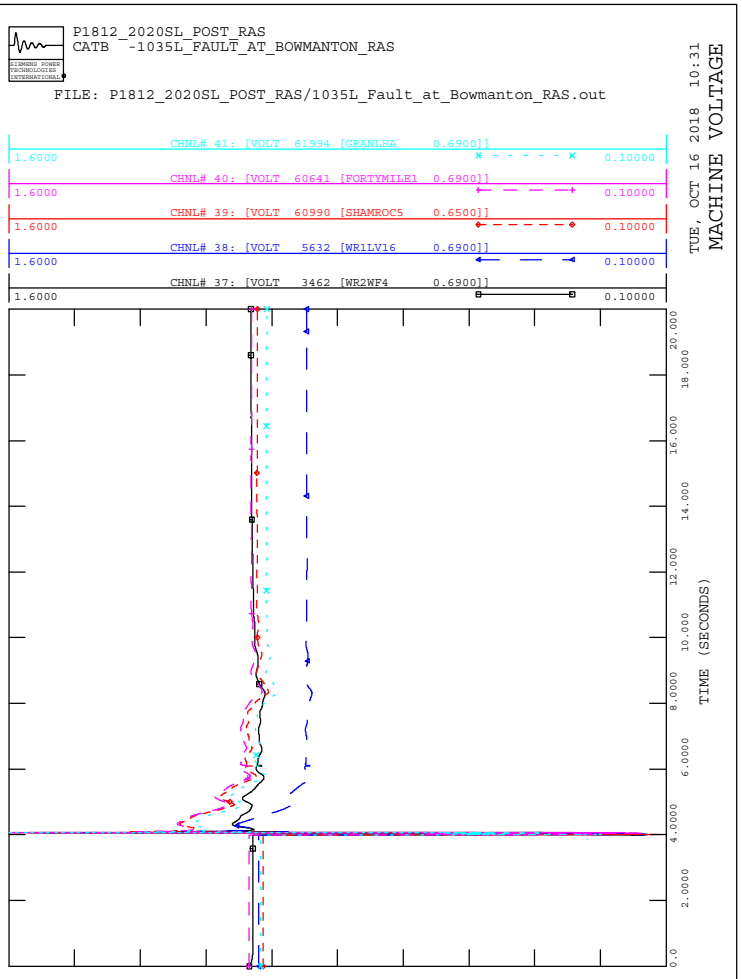
TUE, OCT 16 2018 10:31

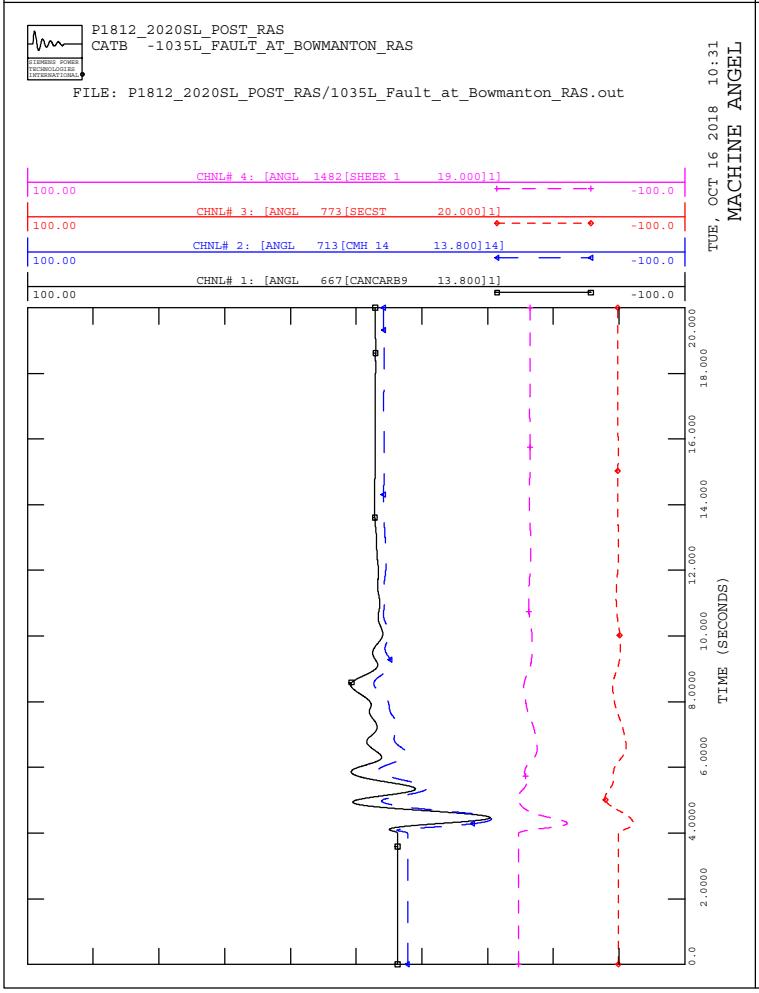
MACHINE VAR

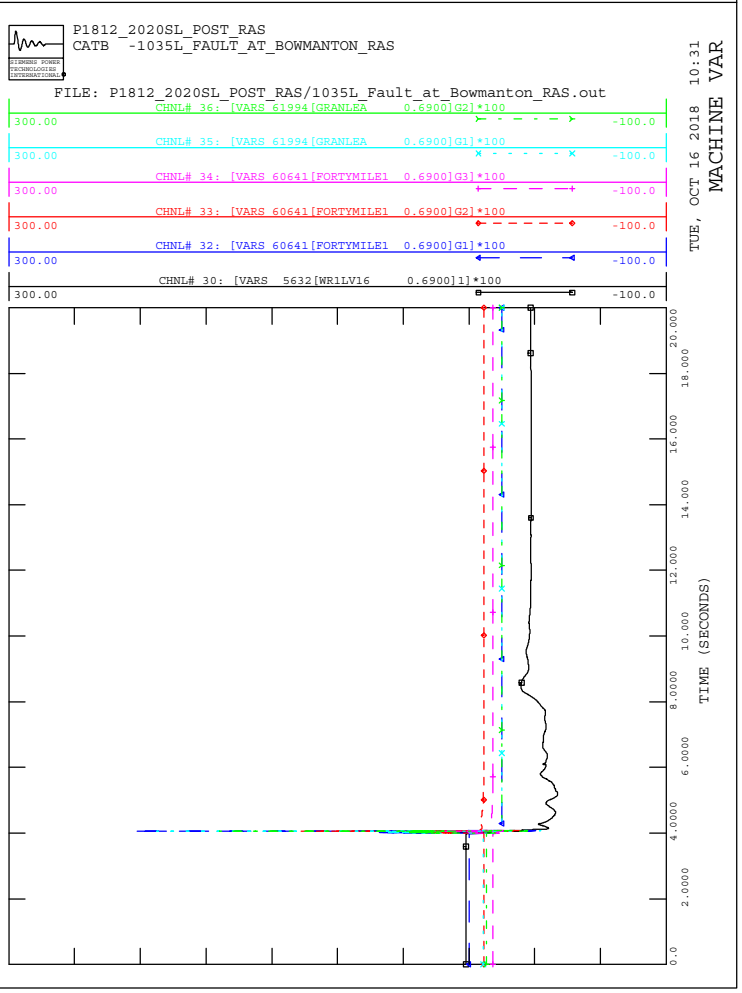



P1812_2020SL_POST_RAS
CATB -1035L_FAULT_AT_NEWELL_RAS
FILE: P1812_2020SL_POST_RAS/1035L_Fault_at_Newell_RAS.out
TUE, OCT 16 2018 10:31
LINE VAR
CHNL# 64: [VARS 669 TO 918 CKT '34']
CHNL# 62: [VARS 669 TO 1012 CKT '35']
CHNL# 60: [VARS 477 TO 669 CKT '74']
CHNL# 58: [VARS 662 TO 477 CKT '83']
CHNL# 56: [VARS 720 TO 669 CKT '64']
CHNL# 54: [VARS 662 TO 720 CKT '64']
650.00
-350.0
TIME (SECONDS)
P1812_2020SL_POST_RAS
CATB -1035L_FAULT_AT_NEWELL_RAS
FILE: P1812_2020SL_POST_RAS/1035L_Fault_at_Newell_RAS.out
TUE, OCT 16 2018 10:31
FREQUENCY
CHNL# 52: (1+[FREQ 918 [CASS01 240.00]])*60
CHNL# 51: (1+[FREQ 1012 [NEWELL2 240.00]])*60
CHNL# 50: (1+[FREQ 669 [BOWMAN1 240.00]])*60
CHNL# 49: (1+[FREQ 477 [ELKWATR1 240.00]])*60
CHNL# 48: (1+[FREQ 662 [SUBD1 240.00]])*60
61.000
59.000
TIME (SECONDS)
P1812_2020SL_POST_RAS
CATB -1035L_FAULT_AT_NEWELL_RAS
FILE: P1812_2020SL_POST_RAS/1035L_Fault_at_Newell_RAS.out
TUE, OCT 16 2018 10:31
LINE POWER
CHNL# 63: [POWR 669 TO 918 CKT '34']
CHNL# 61: [POWR 669 TO 1012 CKT '35']
CHNL# 59: [POWR 477 TO 669 CKT '74']
CHNL# 57: [POWR 662 TO 477 CKT '83']
CHNL# 55: [POWR 720 TO 669 CKT '64']
CHNL# 53: [POWR 662 TO 720 CKT '64']
800.00
-200.0
TIME (SECONDS)
P1812_2020SL_POST_RAS
CATB -1035L_FAULT_AT_NEWELL_RAS
FILE: P1812_2020SL_POST_RAS/1035L_Fault_at_Newell_RAS.out
TUE, OCT 16 2018 10:31
BUS VOLTAGE
CHNL# 47: [VOLT 918 [CASS01 240.00]]
CHNL# 46: [VOLT 1012 [NEWELL2 240.00]]
CHNL# 45: [VOLT 669 [BOWMAN1 240.00]]
CHNL# 44: [VOLT 477 [ELKWATR1 240.00]]
CHNL# 43: [VOLT 662 [SUBD1 240.00]]
CHNL# 42: [VOLT 994 [GRANLEA1 240.00]]
1.6000
0.10000
TIME (SECONDS)


P1812_2020SL_POST_RAS
CATB -1035L_FAULT_AT_BOWMANTON_RAS
FILE: P1812_2020SL_POST_RAS/1035L_Fault_at_Bowmanton_RAS.out
CHNL# 24: [POWR 61994[GRANLEA 0.6900]G2]*100
CHNL# 23: [POWR 61994[GRANLEA 0.6900]G1]*100
CHNL# 22: [POWR 60641[FORTYMILE1 0.6900]G3]*100
CHNL# 21: [POWR 60641[FORTYMILE1 0.6900]G2]*100
CHNL# 20: [POWR 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 18: [POWR 5632[WR1LV16 0.6900]1]*100
300.00
-100.0
TIME (SECONDS)
TUE, OCT 16 2018 10:31
MACHINE POWER


P1812_2020SL_POST_RAS
CATB -1035L_FAULT_AT_BOWMANTON_RAS
FILE: P1812_2020SL_POST_RAS/1035L_Fault_at_Bowmanton_RAS.out
CHNL# 41: [VOLT 61994 [GRANLEA 0.6900]]
CHNL# 40: [VOLT 60641 [FORTYMILE1 0.6900]]
CHNL# 39: [VOLT 60990 [SHAMROC5 0.6500]]
CHNL# 38: [VOLT 5632 [WR1LV16 0.6900]]
CHNL# 37: [VOLT 3462 [WR2WF4 0.6900]]
1.6000
0.10000
TIME (SECONDS)
TUE, OCT 16 2018 10:31
MACHINE VOLTAGE


P1812_2020SL_POST_RAS
CATB -1035L_FAULT_AT_BOWMANTON_RAS
FILE: P1812_2020SL_POST_RAS/1035L_Fault_at_Bowmanton_RAS.out
CHNL# 4: [ANGL 1482[SHEER 1 19.000]1]
CHNL# 3: [ANGL 773[SECST 20.000]1]
CHNL# 2: [ANGL 713[CMH 14 13.800]14]
CHNL# 1: [ANGL 667[CANCARB9 13.800]1]
100.00
-100.0
TIME (SECONDS)
TUE, OCT 16 2018 10:31
MACHINE ANGEL


P1812_2020SL_POST_RAS
CATB -1035L_FAULT_AT_BOWMANTON_RAS
FILE: P1812_2020SL_POST_RAS/1035L_Fault_at_Bowmanton_RAS.out
CHNL# 36: [VARS 61994[GRANLEA 0.6900]G2]*100
CHNL# 35: [VARS 61994[GRANLEA 0.6900]G1]*100
CHNL# 34: [VARS 60641[FORTYMILE1 0.6900]G3]*100
CHNL# 33: [VARS 60641[FORTYMILE1 0.6900]G2]*100
CHNL# 32: [VARS 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 30: [VARS 5632[WR1LV16 0.6900]1]*100
300.00
-100.0
TIME (SECONDS)
TUE, OCT 16 2018 10:31
MACHINE VAR

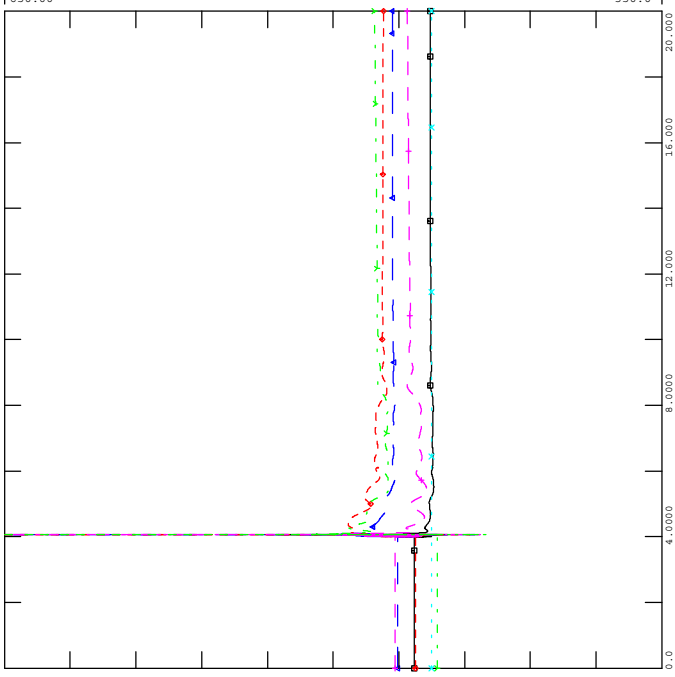
P1812_2020SL_POST_RAS
CATB -1035L_FAULT_AT_BOWMANTON_RAS

FILE: P1812_2020SL_POST_RAS/1035L_Fault_at_Bowmanton_RAS.out

TUE, OCT 16 2018 10:31

LINE VAR

CHNL# 64: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 62: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 60: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 58: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 56: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 54: [VARS 662 TO 720 CKT '64'] 650.00 -350.0



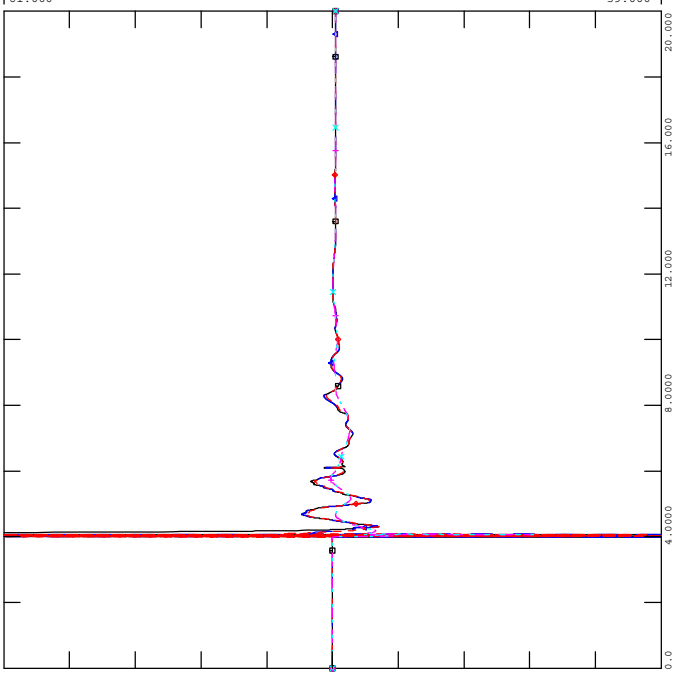
P1812_2020SL_POST_RAS
CATB -1035L_FAULT_AT_BOWMANTON_RAS

FILE: P1812_2020SL_POST_RAS/1035L_Fault_at_Bowmanton_RAS.out

TUE, OCT 16 2018 10:31

FREQUENCY

CHNL# 52: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 51: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 50: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 49: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 48: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000



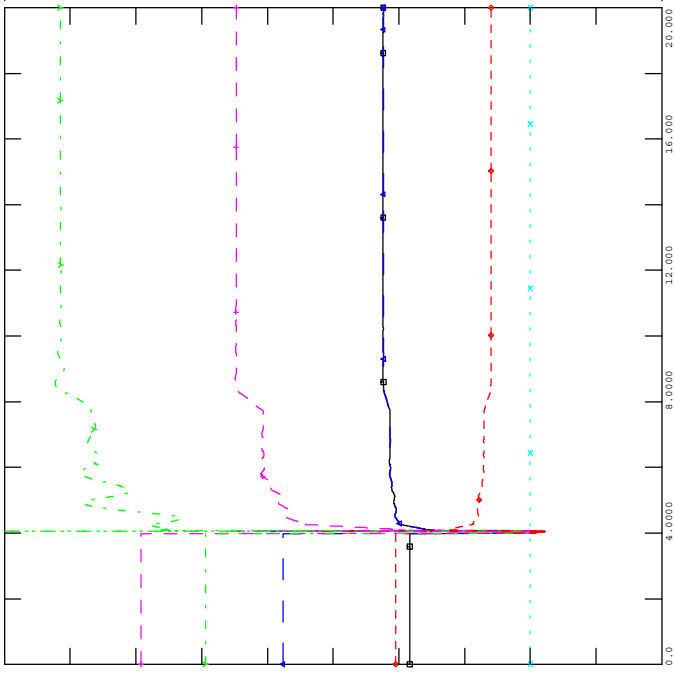
P1812_2020SL_POST_RAS
CATB -1035L_FAULT_AT_BOWMANTON_RAS

FILE: P1812_2020SL_POST_RAS/1035L_Fault_at_Bowmanton_RAS.out

TUE, OCT 16 2018 10:31

LINE POWER

CHNL# 63: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 61: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 59: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 57: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 55: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 53: [POWR 662 TO 720 CKT '64'] 800.00 -200.0



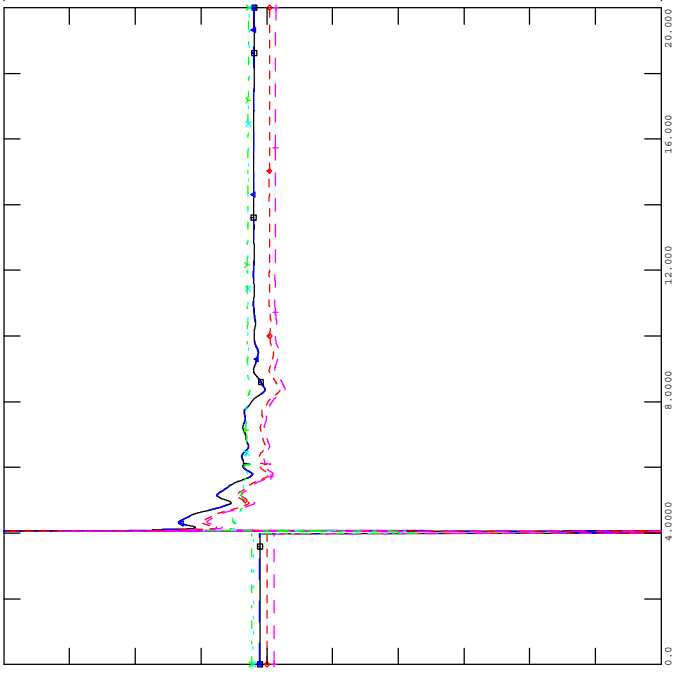
P1812_2020SL_POST_RAS
CATB -1035L_FAULT_AT_BOWMANTON_RAS

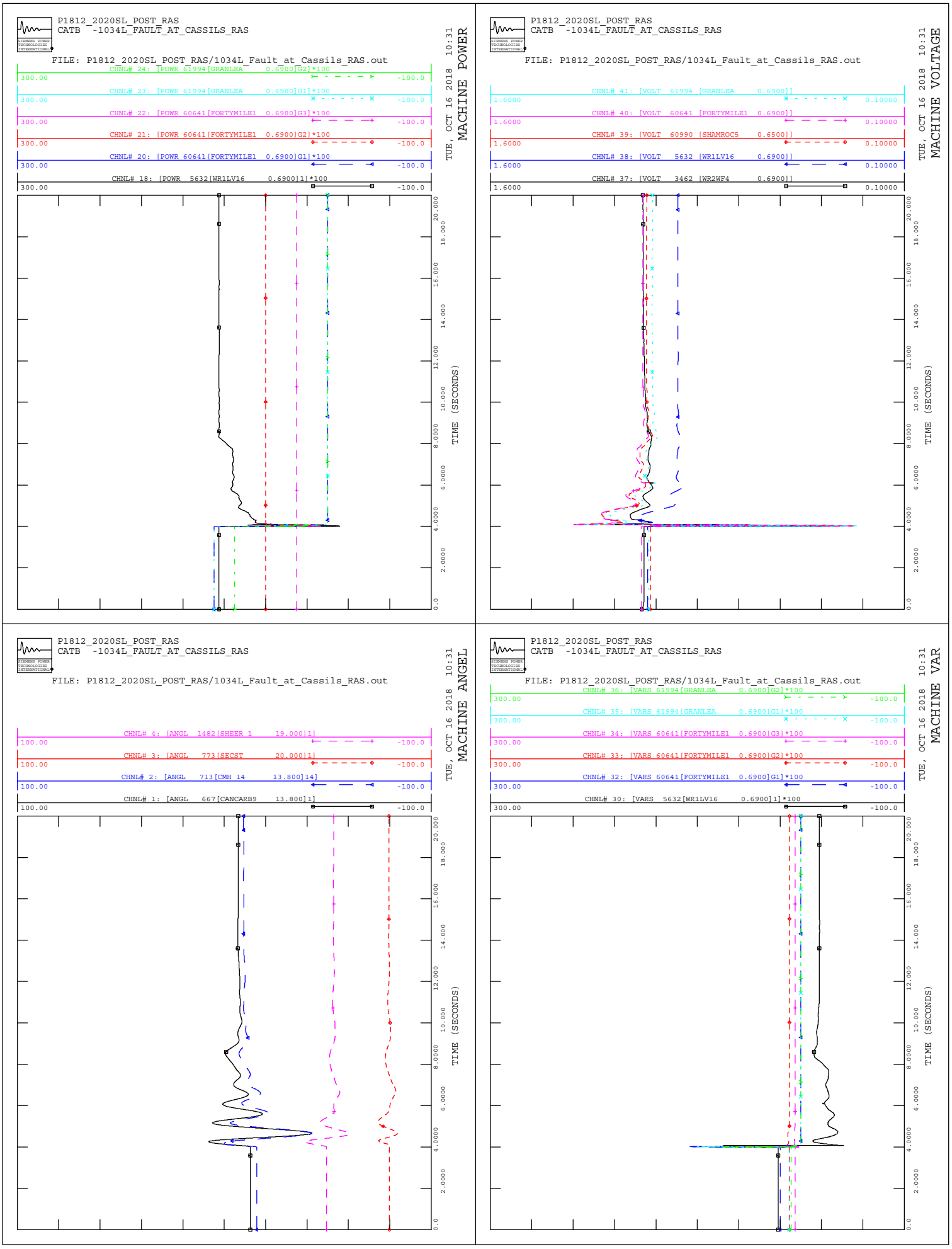
FILE: P1812_2020SL_POST_RAS/1035L_Fault_at_Bowmanton_RAS.out

TUE, OCT 16 2018 10:31

BUS VOLTAGE

CHNL# 47: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 46: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 45: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 44: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 43: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 42: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000




P1812_2020SL_POST_RAS
CATB -1034L_FAULT_AT_CASSILS_RAS
FILE: P1812_2020SL_POST_RAS/1034L_Fault_at_Cassils_RAS.out
CHNL# 24: [POWR 61994[GRANLEA 0.6900]G2]*100
CHNL# 23: [POWR 61994[GRANLEA 0.6900]G1]*100
CHNL# 22: [POWR 60641[FORTYMILE1 0.6900]G3]*100
CHNL# 21: [POWR 60641[FORTYMILE1 0.6900]G2]*100
CHNL# 20: [POWR 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 18: [POWR 5632[WR1LV16 0.6900]1]*100
300.00
-100.0
TUE, OCT 16 2018 10:31
MACHINE POWER
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000
P1812_2020SL_POST_RAS
CATB -1034L_FAULT_AT_CASSILS_RAS
FILE: P1812_2020SL_POST_RAS/1034L_Fault_at_Cassils_RAS.out
CHNL# 41: [VOLT 61994 [GRANLEA 0.6900]]
CHNL# 40: [VOLT 60641 [FORTYMILE1 0.6900]]
CHNL# 39: [VOLT 60990 [SHAMROC5 0.6500]]
CHNL# 38: [VOLT 5632 [WR1LV16 0.6900]]
CHNL# 37: [VOLT 3462 [WR2WF4 0.6900]]
1.6000
0.10000
TUE, OCT 16 2018 10:31
MACHINE VOLTAGE
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000
P1812_2020SL_POST_RAS
CATB -1034L_FAULT_AT_CASSILS_RAS
FILE: P1812_2020SL_POST_RAS/1034L_Fault_at_Cassils_RAS.out
CHNL# 4: [ANGL 1482[SHEER 1 19.000]1]
CHNL# 3: [ANGL 773[SECST 20.000]1]
CHNL# 2: [ANGL 713[CMH 14 13.800]14]
CHNL# 1: [ANGL 667[CANCARB9 13.800]1]
100.00
-100.0
TUE, OCT 16 2018 10:31
MACHINE ANGEL
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000
P1812_2020SL_POST_RAS
CATB -1034L_FAULT_AT_CASSILS_RAS
FILE: P1812_2020SL_POST_RAS/1034L_Fault_at_Cassils_RAS.out
CHNL# 36: [VARS 61994[GRANLEA 0.6900]G2]*100
CHNL# 35: [VARS 61994[GRANLEA 0.6900]G1]*100
CHNL# 34: [VARS 60641[FORTYMILE1 0.6900]G3]*100
CHNL# 33: [VARS 60641[FORTYMILE1 0.6900]G2]*100
CHNL# 32: [VARS 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 30: [VARS 5632[WR1LV16 0.6900]1]*100
300.00
-100.0
TUE, OCT 16 2018 10:31
MACHINE VAR
TIME (SECONDS)
0.0
2.0000
4.0000
6.0000
8.0000
10.000
12.000
14.000
16.000
18.000
20.000

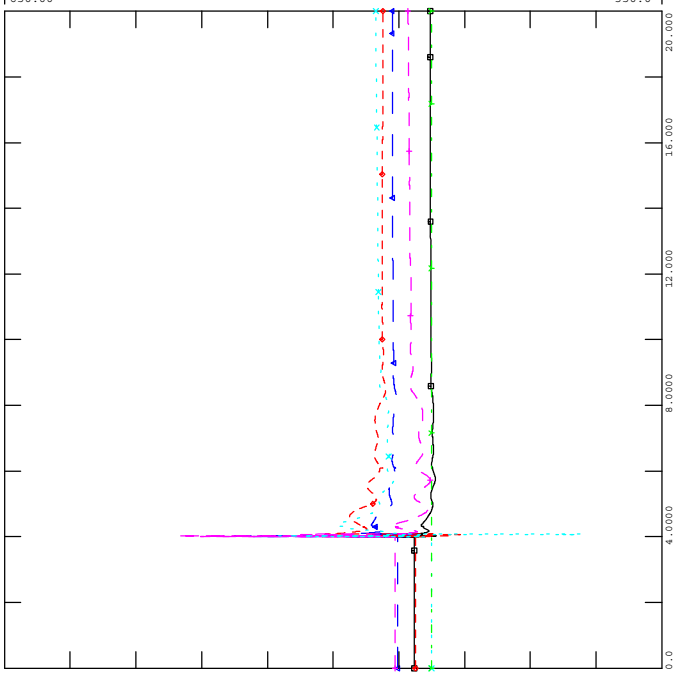
P1812_2020SL_POST_RAS
CATB -1034L_FAULT_AT_CASSILS_RAS

FILE: P1812_2020SL_POST_RAS/1034L_Fault_at_Cassils_RAS.out

TUE, OCT 16 2018 10:31

LINE VAR

CHNL# 64: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 62: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 60: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 58: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 56: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 54: [VARS 662 TO 720 CKT '64'] 650.00 -350.0



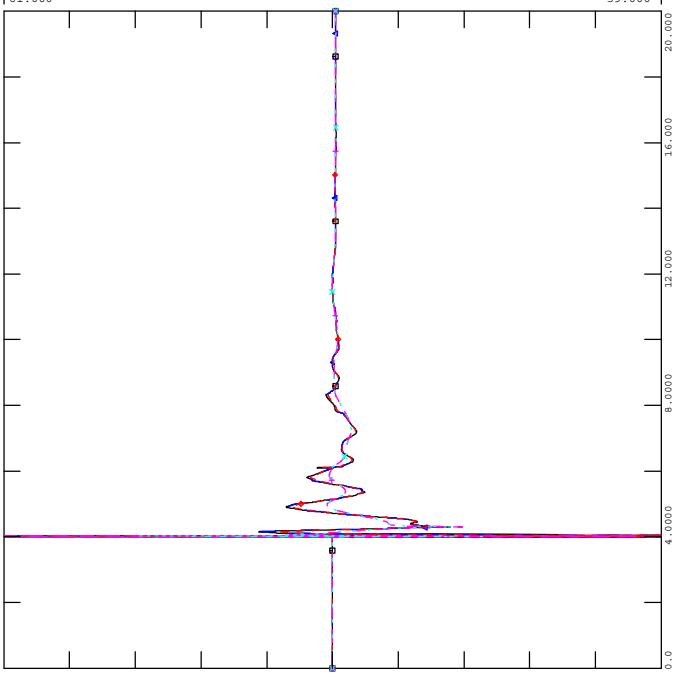
P1812_2020SL_POST_RAS
CATB -1034L_FAULT_AT_CASSILS_RAS

FILE: P1812_2020SL_POST_RAS/1034L_Fault_at_Cassils_RAS.out

TUE, OCT 16 2018 10:31

FREQUENCY

CHNL# 52: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 51: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 50: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 49: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 48: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000



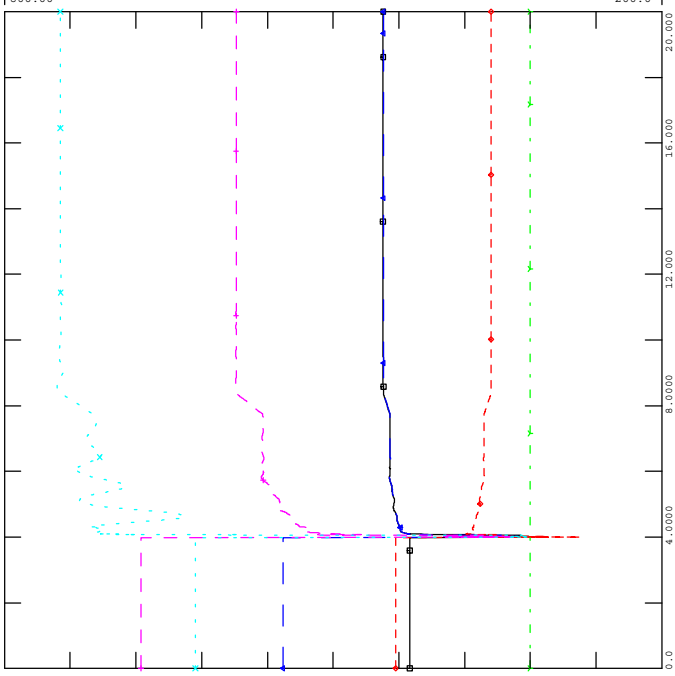
P1812_2020SL_POST_RAS
CATB -1034L_FAULT_AT_CASSILS_RAS

FILE: P1812_2020SL_POST_RAS/1034L_Fault_at_Cassils_RAS.out

TUE, OCT 16 2018 10:31

LINE POWER

CHNL# 63: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 61: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 59: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 57: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 55: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 53: [POWR 662 TO 720 CKT '64'] 800.00 -200.0



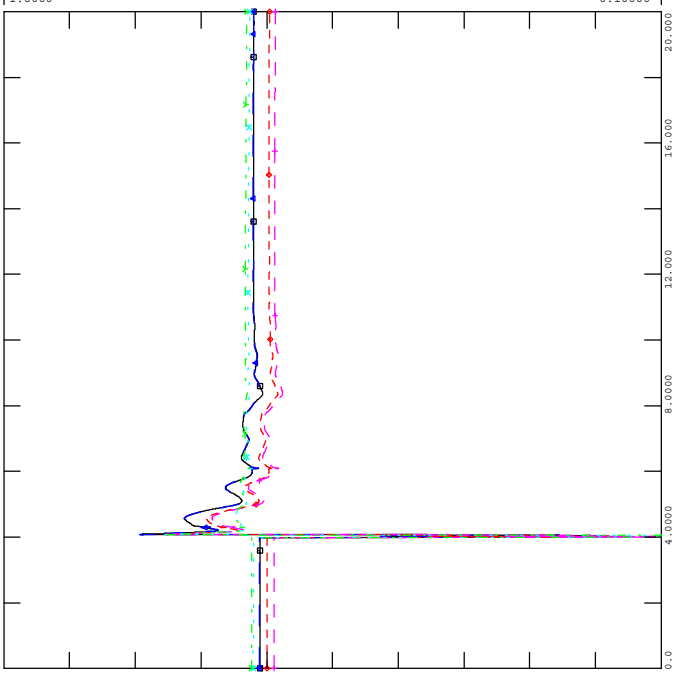
P1812_2020SL_POST_RAS
CATB -1034L_FAULT_AT_CASSILS_RAS

FILE: P1812_2020SL_POST_RAS/1034L_Fault_at_Cassils_RAS.out

TUE, OCT 16 2018 10:31

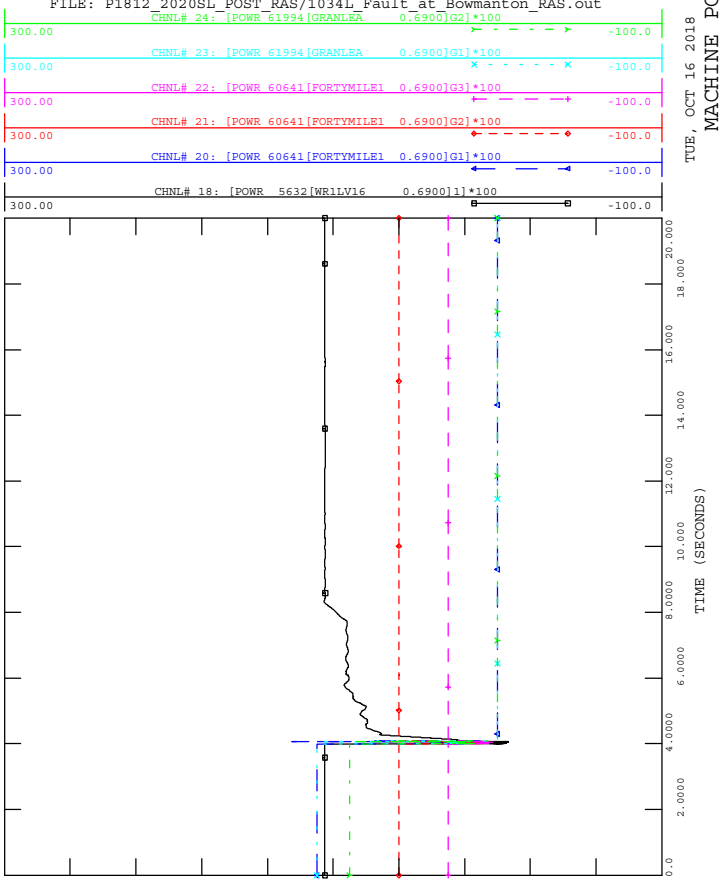
BUS VOLTAGE

CHNL# 47: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 46: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 45: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 44: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 43: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 42: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000



P1812_2020SL_POST_RAS
CATB -1034L_FAULT_AT_BOWMANTON_RAS

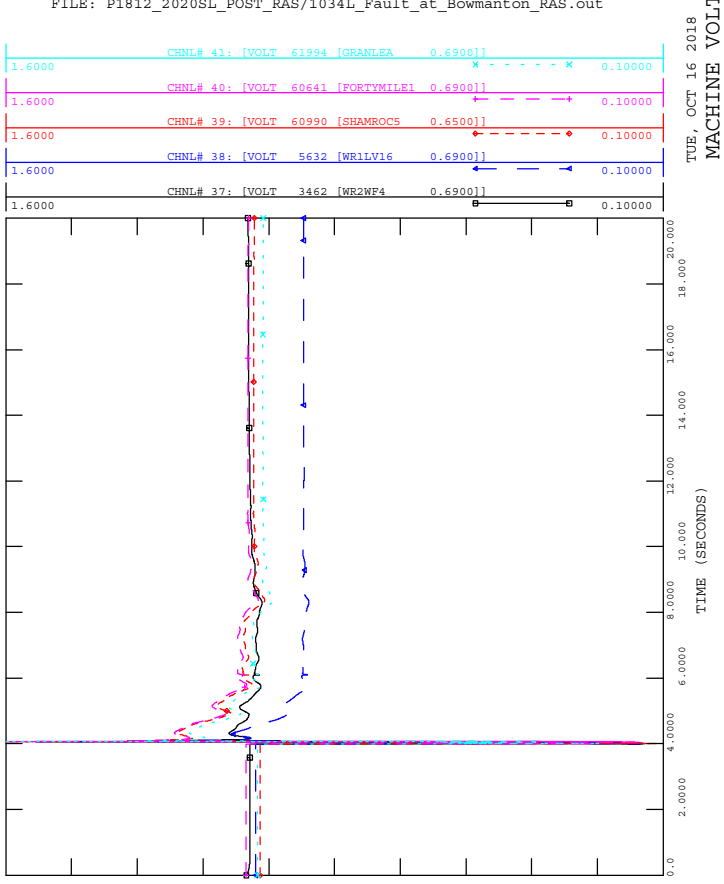
FILE: P1812_2020SL_POST_RAS/1034L_Fault_at_Bowmanton_RAS.out



TUE, OCT 16 2018 10:31
MACHINE POWER

P1812_2020SL_POST_RAS
CATB -1034L_FAULT_AT_BOWMANTON_RAS

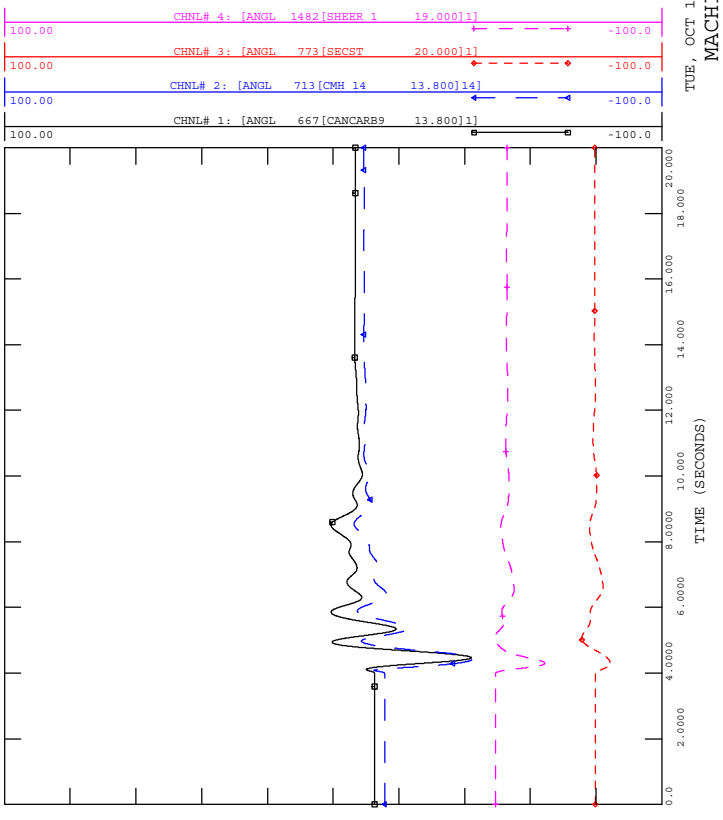
FILE: P1812_2020SL_POST_RAS/1034L_Fault_at_Bowmanton_RAS.out



TUE, OCT 16 2018 10:31
MACHINE VOLTAGE

P1812_2020SL_POST_RAS
CATB -1034L_FAULT_AT_BOWMANTON_RAS

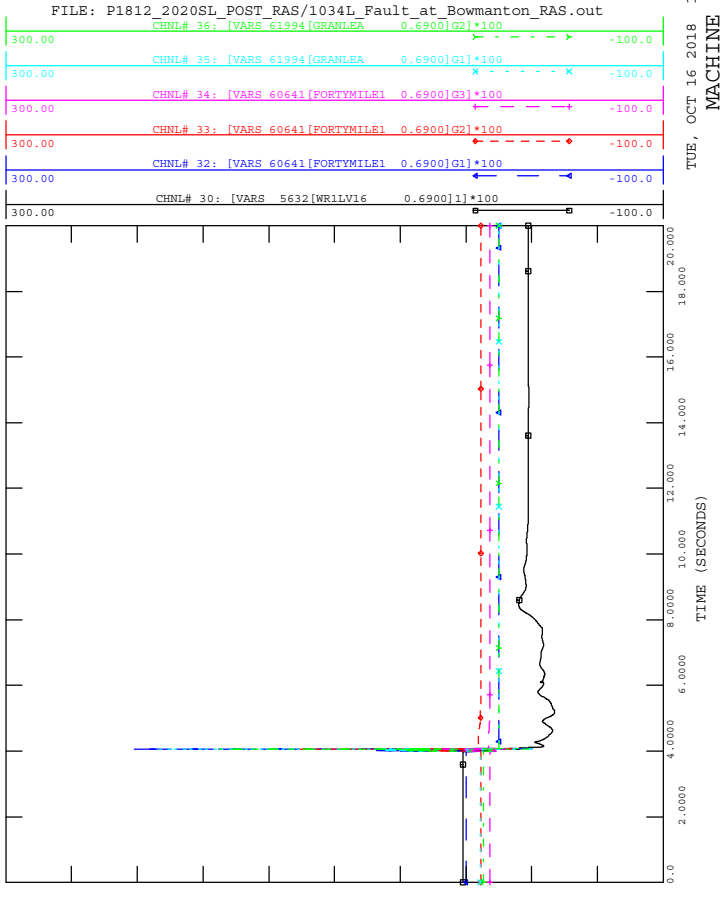
FILE: P1812_2020SL_POST_RAS/1034L_Fault_at_Bowmanton_RAS.out



TUE, OCT 16 2018 10:31
MACHINE ANGEL

P1812_2020SL_POST_RAS
CATB -1034L_FAULT_AT_BOWMANTON_RAS

FILE: P1812_2020SL_POST_RAS/1034L_Fault_at_Bowmanton_RAS.out



TUE, OCT 16 2018 10:31
MACHINE VAR

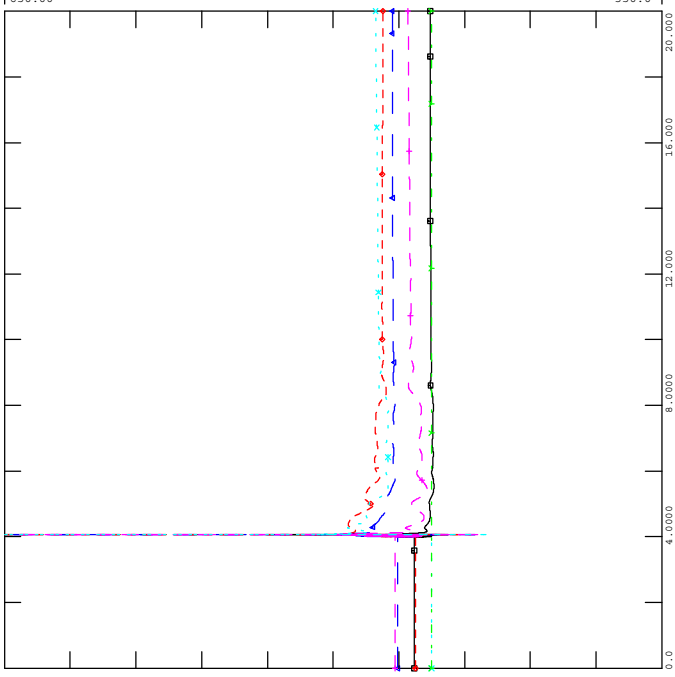
P1812_2020SL_POST_RAS
CATB -1034L_FAULT_AT_BOWMANTON_RAS

FILE: P1812_2020SL_POST_RAS/1034L_Fault_at_Bowmanton_RAS.out

TUE, OCT 16 2018 10:31

LINE VAR

CHNL# 64: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 62: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 60: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 58: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 56: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 54: [VARS 662 TO 720 CKT '64'] 650.00 -350.0



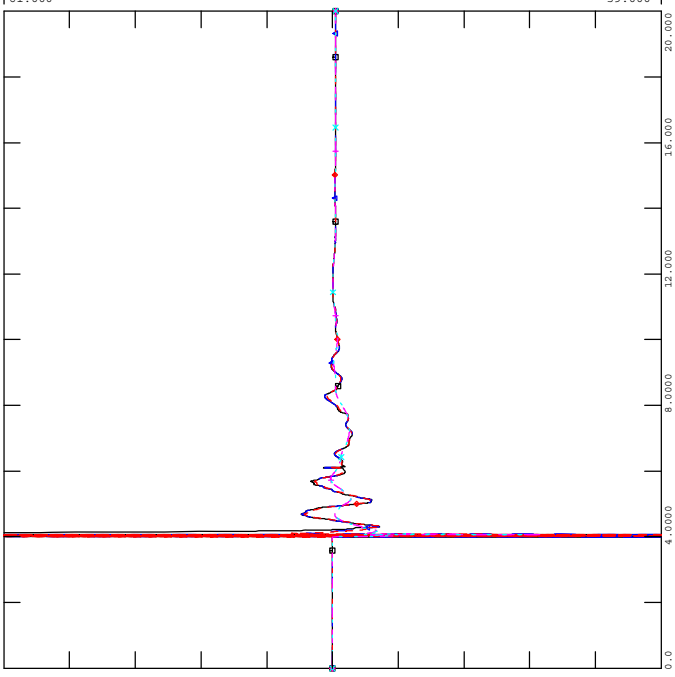
P1812_2020SL_POST_RAS
CATB -1034L_FAULT_AT_BOWMANTON_RAS

FILE: P1812_2020SL_POST_RAS/1034L_Fault_at_Bowmanton_RAS.out

TUE, OCT 16 2018 10:31

FREQUENCY

CHNL# 52: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 51: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 50: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 49: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 48: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000



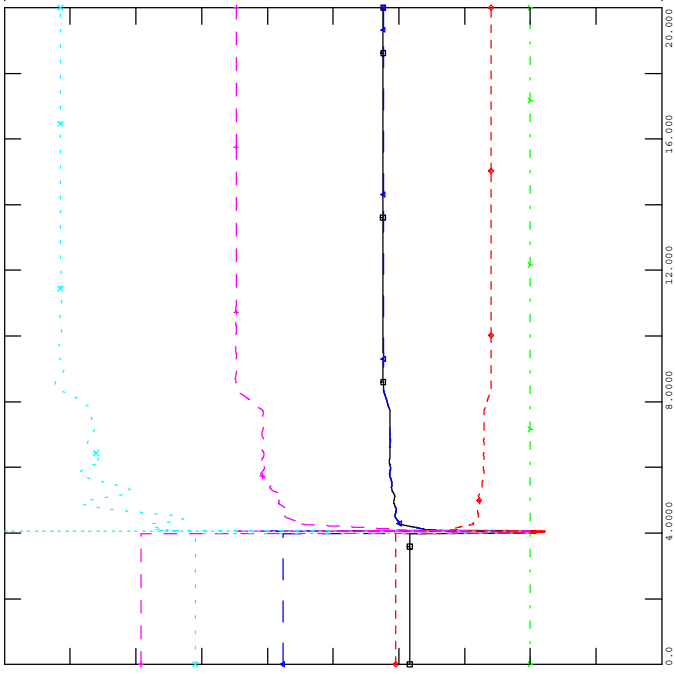
P1812_2020SL_POST_RAS
CATB -1034L_FAULT_AT_BOWMANTON_RAS

FILE: P1812_2020SL_POST_RAS/1034L_Fault_at_Bowmanton_RAS.out

TUE, OCT 16 2018 10:31

LINE POWER

CHNL# 63: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 61: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 59: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 57: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 55: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 53: [POWR 662 TO 720 CKT '64'] 800.00 -200.0



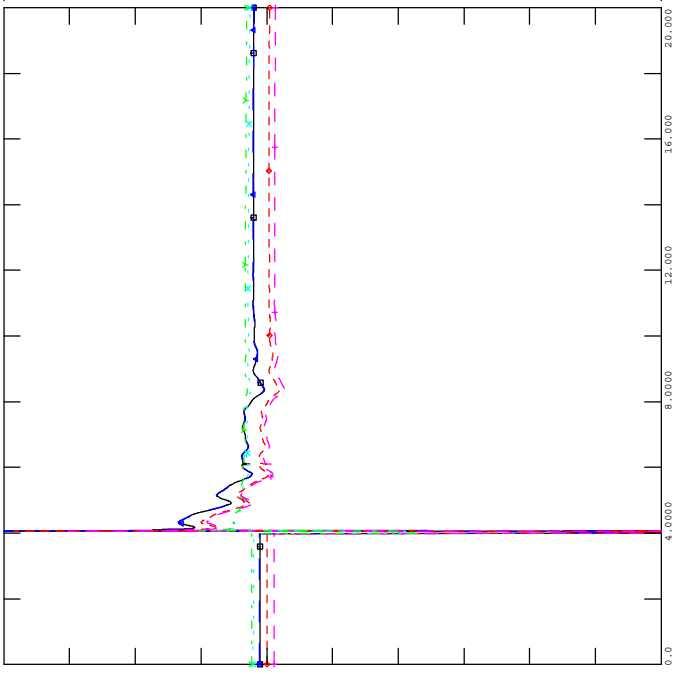
P1812_2020SL_POST_RAS
CATB -1034L_FAULT_AT_BOWMANTON_RAS

FILE: P1812_2020SL_POST_RAS/1034L_Fault_at_Bowmanton_RAS.out

TUE, OCT 16 2018 10:31

BUS VOLTAGE

CHNL# 47: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 46: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 45: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 44: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 43: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 42: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000



P1812_2020SL_POST_RAS
CATB -983L_FAULT_AT_ELKWATER_RAS

FILE: P1812_2020SL_POST_RAS/983L_Fault_at_Elkwater_RAS.out

TUE, OCT 16 2018 10:31

MACHINE POWER

CHNL# 24: [POWR 61994[GRANLEA 0.6900]G2]*100
CHNL# 23: [POWR 61994[GRANLEA 0.6900]G1]*100
CHNL# 22: [POWR 60641[FORTYMILE1 0.6900]G3]*100
CHNL# 21: [POWR 60641[FORTYMILE1 0.6900]G2]*100
CHNL# 20: [POWR 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 18: [POWR 5632[WR1LV16 0.6900]1]*100

300.00 / -100.0

TIME (SECONDS)

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SL_POST_RAS
CATB -983L_FAULT_AT_ELKWATER_RAS

FILE: P1812_2020SL_POST_RAS/983L_Fault_at_Elkwater_RAS.out

TUE, OCT 16 2018 10:31

MACHINE VOLTAGE

CHNL# 41: [VOLT 61994 [GRANLEA 0.6900]]
CHNL# 40: [VOLT 60641 [FORTYMILE1 0.6900]]
CHNL# 39: [VOLT 60990 [SHAMROC5 0.6500]]
CHNL# 38: [VOLT 5632 [WR1LV16 0.6900]]
CHNL# 37: [VOLT 3462 [WR2WF4 0.6900]]

1.6000 / 0.10000

TIME (SECONDS)

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SL_POST_RAS
CATB -983L_FAULT_AT_ELKWATER_RAS

FILE: P1812_2020SL_POST_RAS/983L_Fault_at_Elkwater_RAS.out

TUE, OCT 16 2018 10:31

MACHINE ANGEL

CHNL# 4: [ANGL 1482[SHEER 1 19.000]1]
CHNL# 3: [ANGL 773[SECST 20.000]1]
CHNL# 2: [ANGL 713[CMH 14 13.800]14]
CHNL# 1: [ANGL 667[CANCARB9 13.800]1]

100.00 / -100.0

TIME (SECONDS)

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

P1812_2020SL_POST_RAS
CATB -983L_FAULT_AT_ELKWATER_RAS

FILE: P1812_2020SL_POST_RAS/983L_Fault_at_Elkwater_RAS.out

TUE, OCT 16 2018 10:31

MACHINE VAR

CHNL# 36: [VARS 61994[GRANLEA 0.6900]G2]*100
CHNL# 35: [VARS 61994[GRANLEA 0.6900]G1]*100
CHNL# 34: [VARS 60641[FORTYMILE1 0.6900]G3]*100
CHNL# 33: [VARS 60641[FORTYMILE1 0.6900]G2]*100
CHNL# 32: [VARS 60641[FORTYMILE1 0.6900]G1]*100
CHNL# 30: [VARS 5632[WR1LV16 0.6900]1]*100

300.00 / -100.0

TIME (SECONDS)

0.0 2.0000 4.0000 6.0000 8.0000 10.000 12.000 14.000 16.000 18.000 20.000

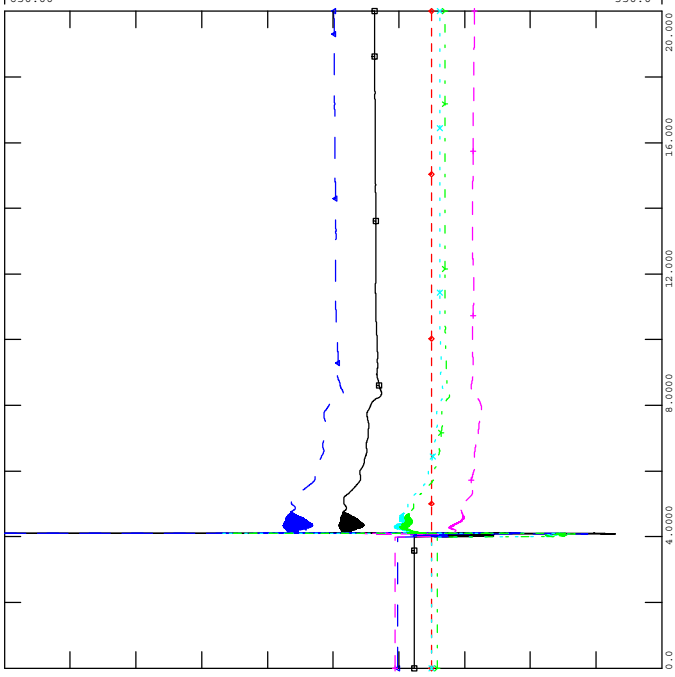
P1812_2020SL_POST_RAS
CATB -983L_FAULT_AT_ELKWATER_RAS

FILE: P1812_2020SL_POST_RAS/983L_Fault_at_Elkwater_RAS.out

TUE, OCT 16 2018 10:31

LINE VAR

CHNL# 64: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 62: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 60: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 58: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 56: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 54: [VARS 662 TO 720 CKT '64'] 650.00 -350.0



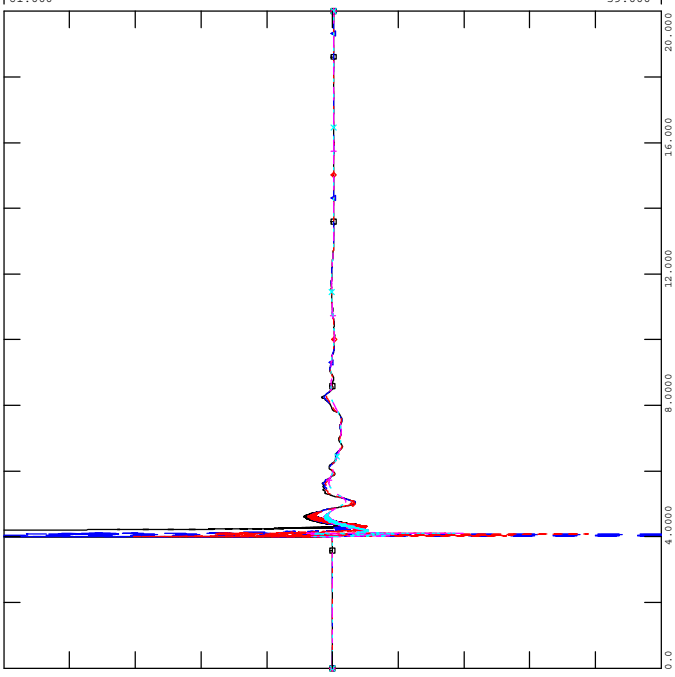
P1812_2020SL_POST_RAS
CATB -983L_FAULT_AT_ELKWATER_RAS

FILE: P1812_2020SL_POST_RAS/983L_Fault_at_Elkwater_RAS.out

TUE, OCT 16 2018 10:31

FREQUENCY

CHNL# 52: (1+[FREQ 918 [CASS01 240.00]])*60 61.000 59.000
CHNL# 51: (1+[FREQ 1012 [NEWELL2 240.00]])*60 61.000 59.000
CHNL# 50: (1+[FREQ 669 [BOWMAN1 240.00]])*60 61.000 59.000
CHNL# 49: (1+[FREQ 477 [ELKWATR1 240.00]])*60 61.000 59.000
CHNL# 48: (1+[FREQ 662 [SUBD1 240.00]])*60 61.000 59.000



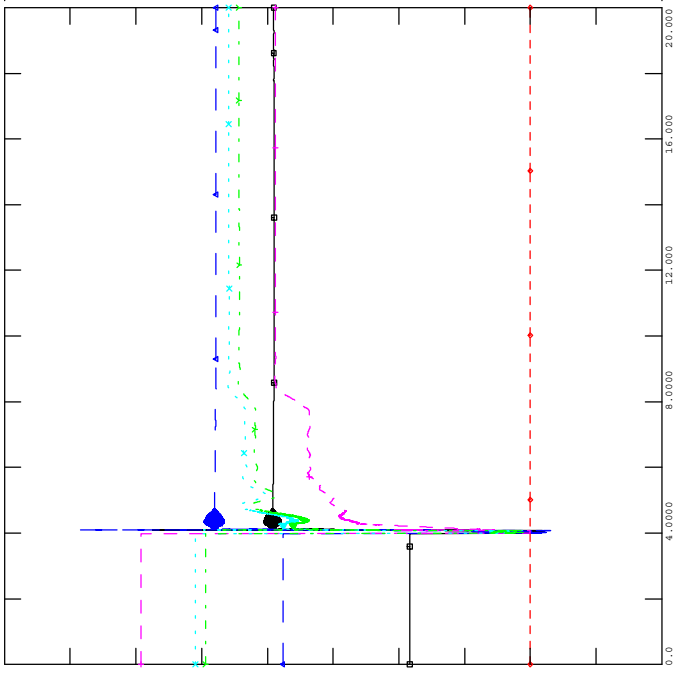
P1812_2020SL_POST_RAS
CATB -983L_FAULT_AT_ELKWATER_RAS

FILE: P1812_2020SL_POST_RAS/983L_Fault_at_Elkwater_RAS.out

TUE, OCT 16 2018 10:31

LINE POWER

CHNL# 63: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 61: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 59: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 57: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 55: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 53: [POWR 662 TO 720 CKT '64'] 800.00 -200.0



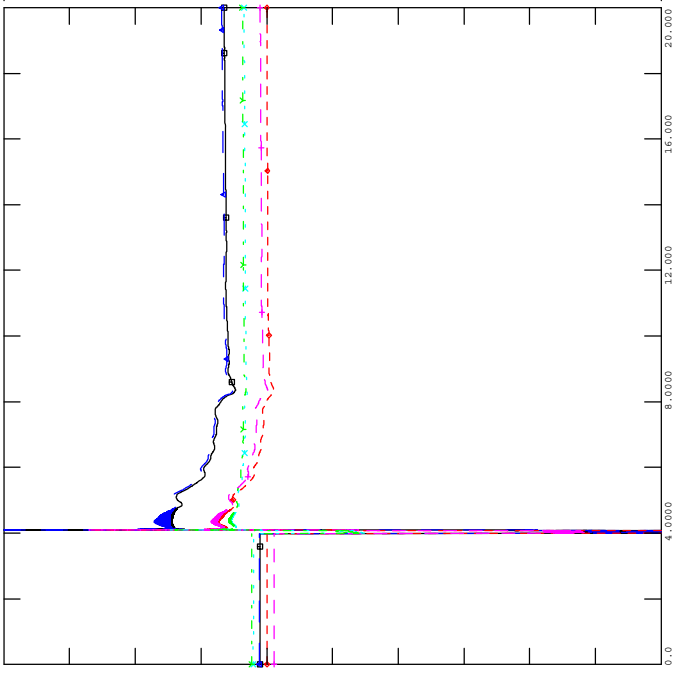
P1812_2020SL_POST_RAS
CATB -983L_FAULT_AT_ELKWATER_RAS

FILE: P1812_2020SL_POST_RAS/983L_Fault_at_Elkwater_RAS.out

TUE, OCT 16 2018 10:31

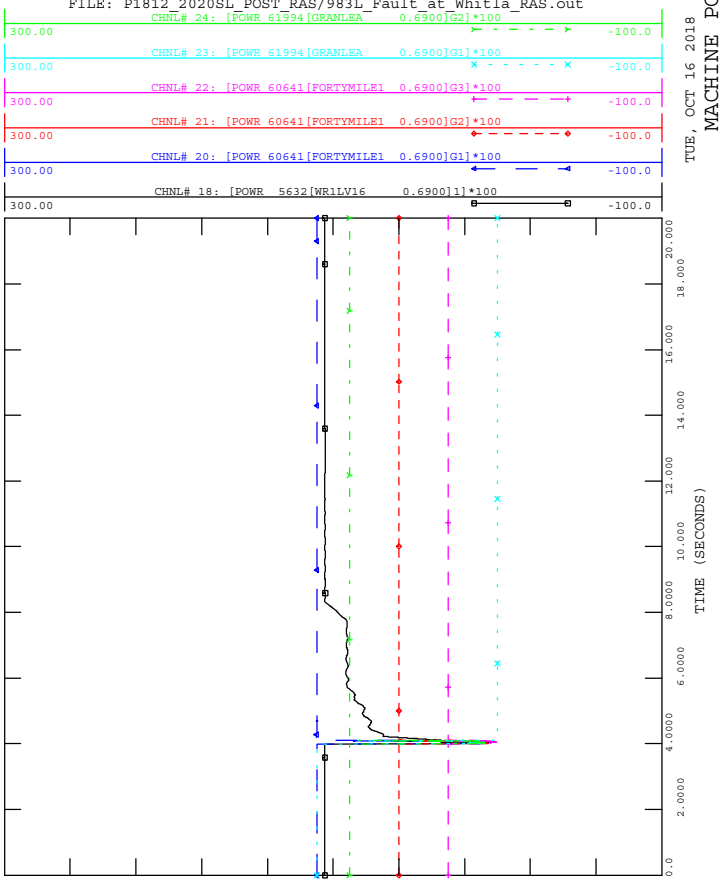
BUS VOLTAGE

CHNL# 47: [VOLT 918 [CASS01 240.00]] 1.6000 0.10000
CHNL# 46: [VOLT 1012 [NEWELL2 240.00]] 1.6000 0.10000
CHNL# 45: [VOLT 669 [BOWMAN1 240.00]] 1.6000 0.10000
CHNL# 44: [VOLT 477 [ELKWATR1 240.00]] 1.6000 0.10000
CHNL# 43: [VOLT 662 [SUBD1 240.00]] 1.6000 0.10000
CHNL# 42: [VOLT 994 [GRANLEA1 240.00]] 1.6000 0.10000



P1812_2020SL_POST_RAS
CATB -983L_FAULT_AT_WHITLA_RAS

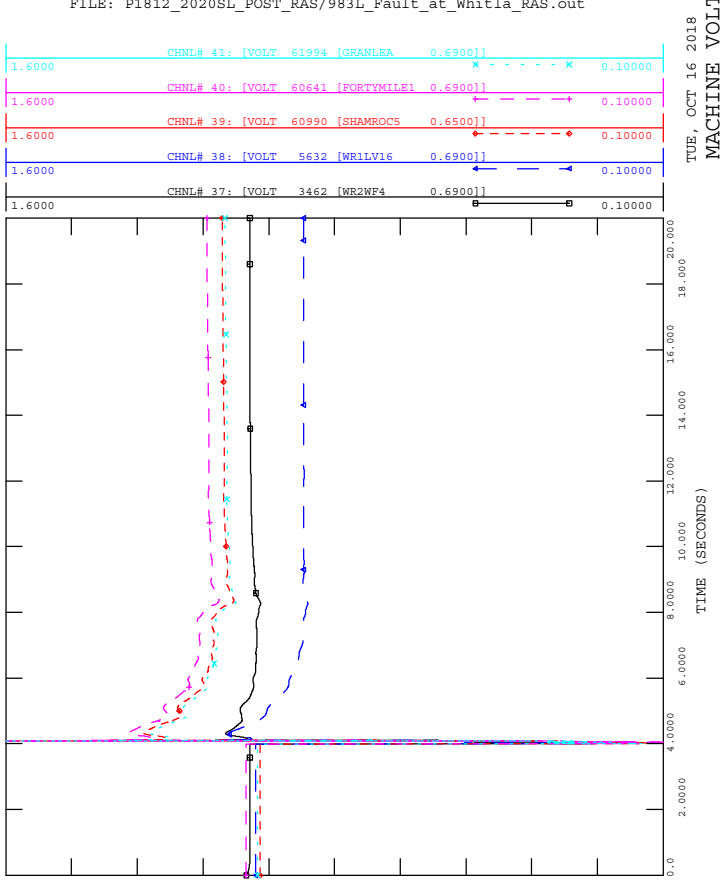
FILE: P1812_2020SL_POST_RAS/983L_Fault_at_Whitla_RAS.out



TUE, OCT 16 2018 10:31
MACHINE POWER

P1812_2020SL_POST_RAS
CATB -983L_FAULT_AT_WHITLA_RAS

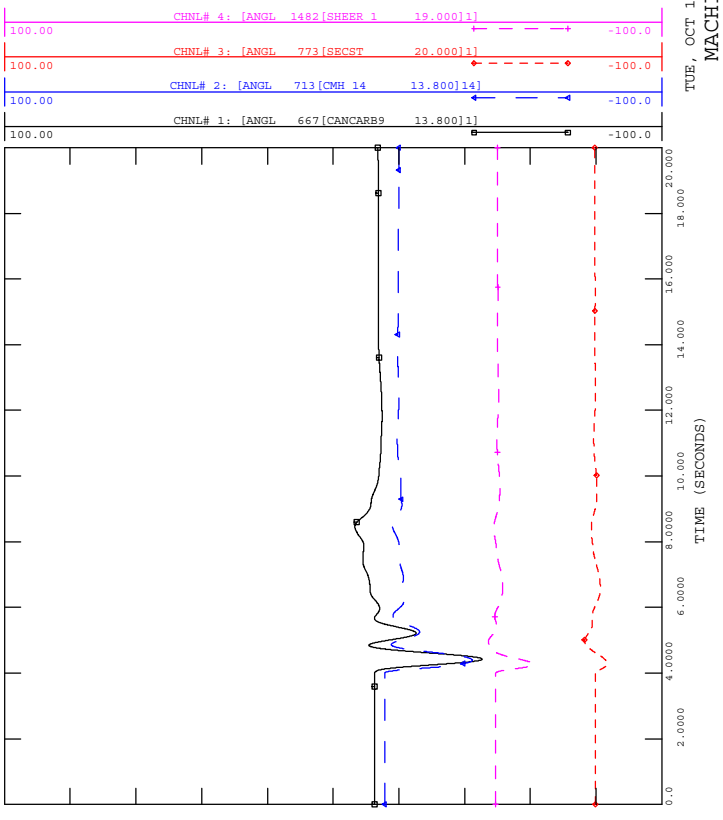
FILE: P1812_2020SL_POST_RAS/983L_Fault_at_Whitla_RAS.out



TUE, OCT 16 2018 10:31
MACHINE VOLTAGE

P1812_2020SL_POST_RAS
CATB -983L_FAULT_AT_WHITLA_RAS

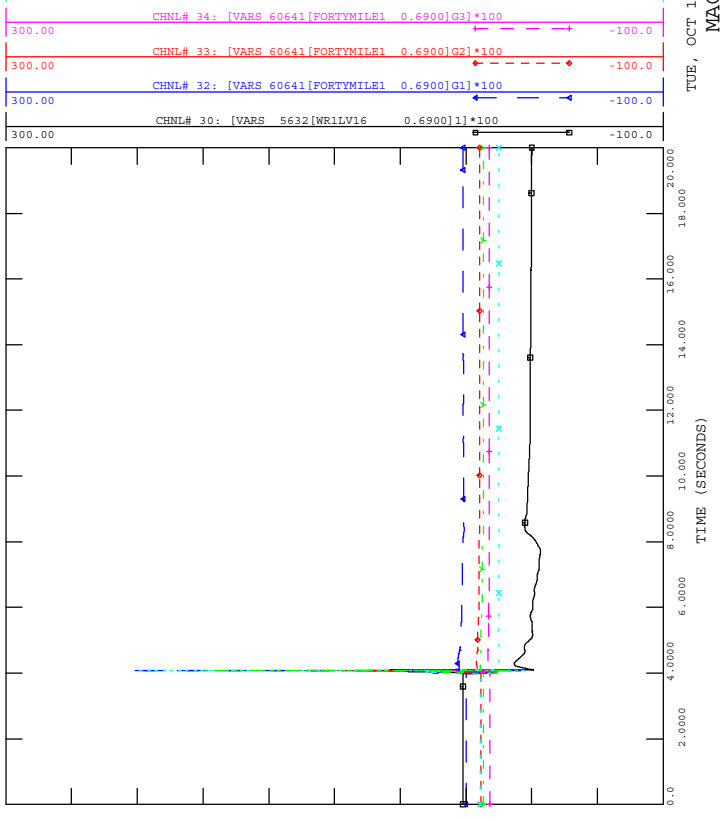
FILE: P1812_2020SL_POST_RAS/983L_Fault_at_Whitla_RAS.out



TUE, OCT 16 2018 10:31
MACHINE ANGEL

P1812_2020SL_POST_RAS
CATB -983L_FAULT_AT_WHITLA_RAS

FILE: P1812_2020SL_POST_RAS/983L_Fault_at_Whitla_RAS.out



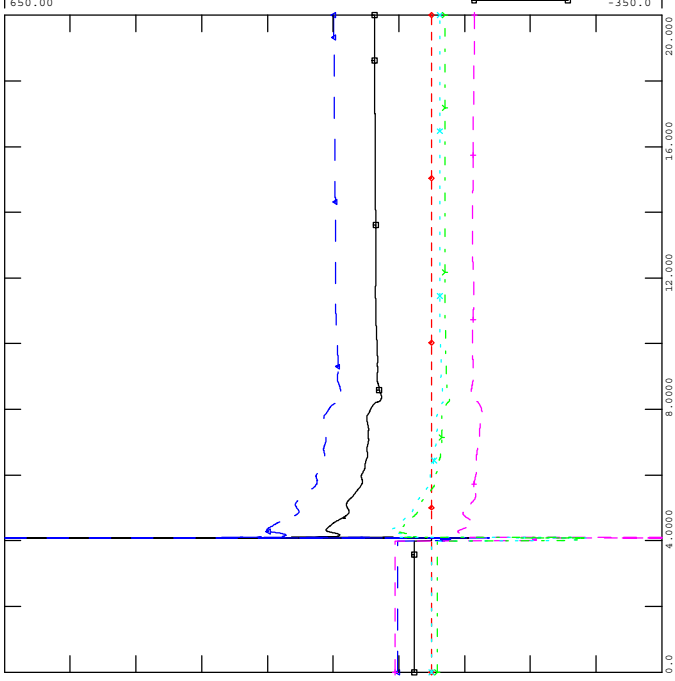
TUE, OCT 16 2018 10:31
MACHINE VAR

P1812_2020SL_POST_RAS
CATB -983L_FAULT_AT_WHITLA_RAS

FILE: P1812_2020SL_POST_RAS/983L_Fault_at_Whitla_RAS.out

TUE, OCT 16 2018 10:31 LINE VAR

CHNL# 64: [VARS 669 TO 918 CKT '34'] 650.00 -350.0
CHNL# 62: [VARS 669 TO 1012 CKT '35'] 650.00 -350.0
CHNL# 60: [VARS 477 TO 669 CKT '74'] 650.00 -350.0
CHNL# 58: [VARS 662 TO 477 CKT '83'] 650.00 -350.0
CHNL# 56: [VARS 720 TO 669 CKT '64'] 650.00 -350.0
CHNL# 54: [VARS 662 TO 720 CKT '64'] 650.00 -350.0

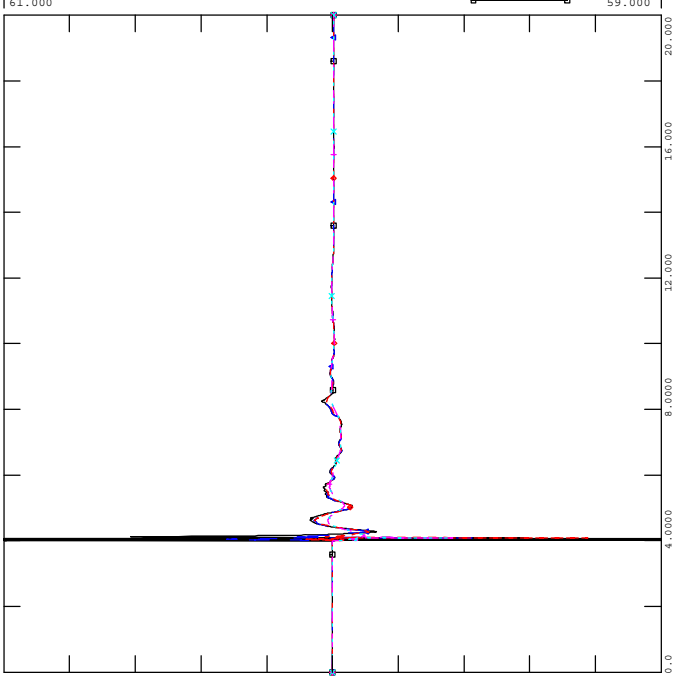


P1812_2020SL_POST_RAS
CATB -983L_FAULT_AT_WHITLA_RAS

FILE: P1812_2020SL_POST_RAS/983L_Fault_at_Whitla_RAS.out

TUE, OCT 16 2018 10:31 FREQUENCY

CHNL# 52: (1+[FREQ 918 [CASS01 240.00])*60 61.000 59.000
CHNL# 51: (1+[FREQ 1012 [NEWELL2 240.00])*60 61.000 59.000
CHNL# 50: (1+[FREQ 669 [BOWMAN1 240.00])*60 61.000 59.000
CHNL# 49: (1+[FREQ 477 [ELKWATR1 240.00])*60 61.000 59.000
CHNL# 48: (1+[FREQ 662 [SUBD1 240.00])*60 61.000 59.000

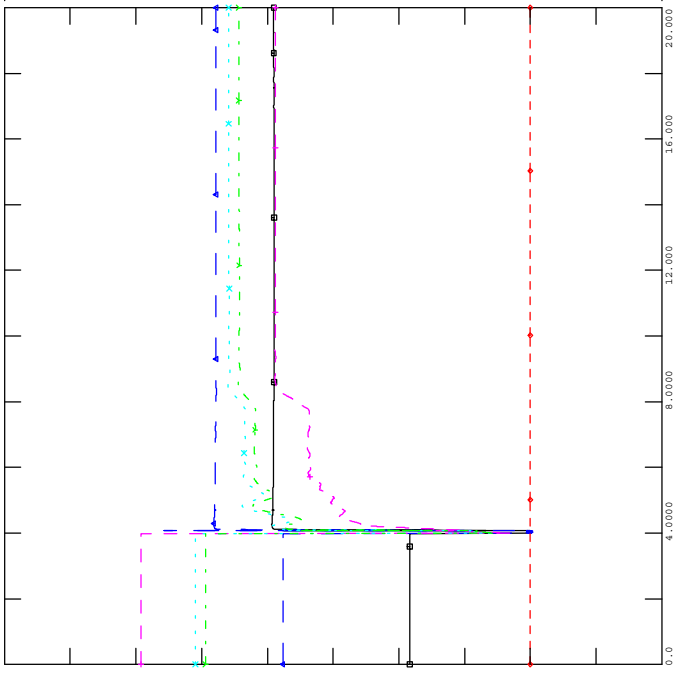


P1812_2020SL_POST_RAS
CATB -983L_FAULT_AT_WHITLA_RAS

FILE: P1812_2020SL_POST_RAS/983L_Fault_at_Whitla_RAS.out

TUE, OCT 16 2018 10:31 LINE POWER

CHNL# 63: [POWR 669 TO 918 CKT '34'] 800.00 -200.0
CHNL# 61: [POWR 669 TO 1012 CKT '35'] 800.00 -200.0
CHNL# 59: [POWR 477 TO 669 CKT '74'] 800.00 -200.0
CHNL# 57: [POWR 662 TO 477 CKT '83'] 800.00 -200.0
CHNL# 55: [POWR 720 TO 669 CKT '64'] 800.00 -200.0
CHNL# 53: [POWR 662 TO 720 CKT '64'] 800.00 -200.0



P1812_2020SL_POST_RAS
CATB -983L_FAULT_AT_WHITLA_RAS

FILE: P1812_2020SL_POST_RAS/983L_Fault_at_Whitla_RAS.out

TUE, OCT 16 2018 10:31 BUS VOLTAGE

CHNL# 47: [VOLT 918 [CASS01 240.00] 1.6000 0.10000
CHNL# 46: [VOLT 1012 [NEWELL2 240.00] 1.6000 0.10000
CHNL# 45: [VOLT 669 [BOWMAN1 240.00] 1.6000 0.10000
CHNL# 44: [VOLT 477 [ELKWATR1 240.00] 1.6000 0.10000
CHNL# 43: [VOLT 662 [SUBD1 240.00] 1.6000 0.10000
CHNL# 42: [VOLT 994 [GRANLEA1 240.00] 1.6000 0.10000