

Estudio para análisis de falla EAF 239/2021

“Apertura automática del interruptor 52CT2 de S/E Frutillar”

Fecha de Emisión: 14-09-2021

1. Descripción general de la interrupción

a. Fecha y Hora de la falla

Fecha	24/08/2021
Hora	19:18
Consumos desconectados (MW)	5.60
Demanda previa del sistema (MW)	10863.34
Porcentaje de desconexión	0.05%
Calificación Apagón	No aplica (porcentaje de desconexión < 10%)

b. Identificación instalación afectada

Nombre de la instalación	Barra 13.2 kV de S/E Frutillar / BA01T003SE010T003
Tipo de instalación	Barra
Tensión nominal	13.2 kV
Segmento	Transmisión zonal
Propietario instalación fallada	Sistema de Transmisión del Sur S.A. (STS S.A.)
RUT	77.683.400-9
Representante Legal	Francisco Alliende
Dirección	Manuel Bulnes 441, Osorno.

c. Identificación del elemento fallado

Nombre del elemento fallado	Barra 13.2 kV de S/E Frutillar / BA01T003SE010T003
Propietario elemento fallado	Sistema de Transmisión del Sur S.A. (STS S.A.)
RUT	77.683.400-9
Representante Legal	Francisco Alliende
Dirección	Manuel Bulnes 441, Osorno.

d.1 Origen y causa de la falla

Se produjo la apertura automática del interruptor 52CT2 de S/E Frutillar, correspondiente a la barra 13.2 kV de dicha subestación, por medio de la operación de la protección temporizada de sobrecorriente de fases.

La empresa STS S.A. declara que la operación de la protección temporizada de sobrecorriente de fases se produjo a causa de sobrecarga.

d.2 Fenómeno Físico:

DIS2: Sobrecarga.

d.3 Reiteración:

Reiteración Fenómeno Físico en la instalación afectada: No se han producido fallas en la misma instalación por el mismo fenómeno físico, durante los últimos 24 meses móviles.

Reiteración Fenómeno Físico en instalaciones del mismo propietario: Sí se han producido fallas en instalaciones del mismo propietario con el mismo fenómeno físico, durante los últimos 24 meses móviles.

Descripción	Elemento	EAF	Acciones informadas
Apertura intempestiva del interruptor 52ET3 de S/E Osorno	Barra	396-2019	La empresa STS S.A. indica que se aíslan los contactos del relé de alivio de presión (63R) de los circuitos de alarmas y del relé 86T, para el transformador N°2 66/23 kV de S/E Osorno. Además, indica que se programará mantenimiento al sistema de control del transformador N°2 66/23 kV de S/E Osorno, donde se realizará limpieza y sellado de la caja de paso y finalmente medida de resistencia de aislación en el circuito de control.

Cantidad de fallas (sin importar Fenómeno Físico) en la misma instalación: No se han producido fallas en la misma instalación afectada, durante los últimos 24 meses móviles.

d.4 Fenómeno eléctrico

PR51: Protección de sobrecorriente temporizada de fase.

e. Detalles de la instalación, equipo o elemento donde se produjo la falla

El elemento involucrado en el evento en cuestión corresponde al sistema de protecciones del paño CT2 de S/E Frutillar, que según lo informado por el propietario del equipo está conformado por un relé SEL 651RA.

La empresa STS S.A. sólo presenta, como parte de los probatorios requeridos para el fenómeno físico declarado, los ajustes de las protecciones involucradas, faltando los siguientes antecedentes:

- Demanda de los últimos 24 meses.
- Informe técnico de las posibles causas que propician la sobrecarga.
- Año de primera puesta en servicio y años efectivos en operación (transformador).

f. Ubicación urbana o rural según DS 327/1997

Subestación	Alimentador	Comuna	Densidad	Descripción
Frutillar	52C2 Frutillar Bajo	Frutillar	D2	Baja
	52C2 Frutillar Bajo	Llanquihue	D2	Baja
	52C3 Quilanto	Frutillar	D2	Baja
	52C3 Quilanto	Puerto Octay	D1	Muy baja
	52C3 Quilanto	Purranque	D2	Baja

g. Proposición del propietario respecto del origen de la falla

Interna.

h. Comuna donde se presenta la falla

10105: Frutillar.

i. Fecha de entrega de la información al Coordinador

Coordinado	Informe de 48 horas (26-08-2021)	Informe de 5 días (31-08-2021)
Sistema de Transmisión del Sur S.A. (STS S.A.)	24-08-2021	31-08-2021

2. Descripción del equipamiento afectado

a. Sistema de Generación

b. Sistema de Transmisión

Elemento Afectado	Segmento	Tramo	Hora Desc.	Hora Norm.
S/E Frutillar	ST Zonal	Barra 13.2 kV	19:18	19:30

- Los horarios señalados corresponden a lo informado por la empresa STS S.A.

c. Consumos

Sub-Estación	Alimentador / Paño	Comuna	Pérdida de Consumo (MW)	% consumo pre-falla	Clientes Afectados	H. Desc.	H. Dispon.	H. Norm.
Frutillar	Frutillar Bajo/C2	Frutillar y Llanquihue	0.11	0.001	145	19:18	19:30	19:28
Frutillar	Frutillar Bajo/C2		4.59	0.042	6107	19:18	19:30	19:32
Frutillar	Quilanto/C3	Frutillar, Puerto Octay y Purranque	0.19	0.002	220	19:18	19:30	19:25
Frutillar	Quilanto/C3		0.71	0.007	850	19:18	19:30	19:32
Total:			5.60 MW	0.052%	7322			

- Los montos y horarios señalados corresponden a lo informado por la empresa STS S.A.

3. Estimación de la energía no suministrada

Sub-Estación	Alimentador / Paño	Empresa	Tipo de Cliente	Pérdida de Consumo (MW)	Tiempo Indispon. (h)	Tiempo Desc. (h)	ENS (MWh)
Frutillar	Frutillar Bajo/C2	SAESA	Regulado	0.11	0.20	0.17	0.02
Frutillar	Frutillar Bajo/C2	SAESA	Regulado	4.59	0.20	0.23	1.07
Frutillar	Quilanto/C3	SAESA	Regulado	0.19	0.20	0.12	0.02
Frutillar	Quilanto/C3	SAESA	Regulado	0.71	0.20	0.23	0.17

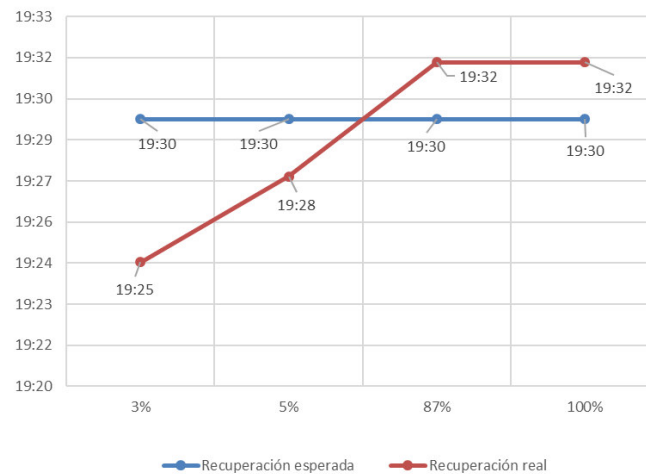
Cientes Regulados : 1.28 MWh

Cientes Libres : 0.00 MWh

Total : 1.28 MWh

- Los montos y horarios señalados corresponden a lo informado por la empresa STS S.A.

- Curva de recuperación esperada v/s recuperación real.



Según el gráfico presentado, no se aprecian diferencias significativas entre la recuperación real respecto de los horarios de disponibilidad de la barra 13.2 kV de la S/E Frutillar, con una diferencia máxima de 5 minutos antes de lo esperado para el primer bloque recuperado (correspondiente al 3% del total de los consumos).

- Velocidad promedio de recuperación.

Rango	Potencia (MW)	Tiempo recuperación (h)	Velocidad de recuperación (MW/h)
Primer 80 %	4.48	0.23	19.20
Último 20 %	1.12	0.23	4.80
100 % Total	5.60	0.23	24.00

4. Descripción de las configuraciones en los momentos previo y posterior a la falla

Demanda del sistema previo a la falla: 10863.34 MW

Regulación de Frecuencia

Control distribuido de frecuencia en el SEN previo a la falla, mediante las centrales Andina (CTA), Atacama 1 (TG1A y TG2B), Cochrane (CCH1 y CCH2), Guacolda (U3 y U4), Hornitos (CTH), Kelar (TG2), Mejillones (CTM3), Norgener (NTO2), Pehuenche (U1 y U2) y Tocopilla (U14 y U15).

Operación Programada

En Anexo N°1 se adjunta el detalle de la generación programada para el día 24 de agosto de 2021.

Operación Real

En Anexo N°2 se adjunta el detalle de la generación real del día 24 de agosto de 2021.

Movimiento de centrales e informe diario del CDC

En Anexo N°3 se presenta el detalle del Movimiento de Centrales e Informe Diario del CDC para el día 24 de agosto de 2021.

Mantenimientos

En Anexo N°4 se presenta el detalle de los mantenimientos programados y forzados para el día 24 de agosto de 2021.

Estado y configuración previo a la falla

Las instalaciones de transmisión se encontraban en servicio normal en los momentos previos a la desconexión forzada.

Otros antecedentes relevantes

Según lo informado por la empresa STS S.A.:

"Unidad de control y protección del interruptor 52CT2 de S/E Frutillar opera en su elemento sobrecorriente de fase de tiempo inverso 52P1T, debido al aumento de la carga en fase A de paño CT2.

La unidad de control y protección del interruptor 52CT2 de S/E Frutillar opera en 15.45 segundos.

El interruptor 52CT2 opera en 35 milisegundos.

Con las modificaciones ejecutadas en 52ET2, 87T2 y 52CT2, se asegura que el evento de operación del interruptor 52CT2 por sobrecarga no vuelva a ocurrir."

Acciones preventivas y/o correctivas

- a) La instalación afectada no cuenta con un plan de acción u otro tipo de mantenimiento en curso.
- b) Acciones correctivas a corto plazo:

- o La empresa STS S.A. indica lo siguiente:

"El día 26 de agosto de 2021, bajo la solicitud de curso forzoso N°2021074692 ingresada en plataforma Neomante, se realizan aumentos en los pick up de los elementos de sobrecorriente de fase de tiempo inverso de la unidad de control y protección 52ET2 SEL-351S, Relé protección 87-T2 SEL-787 y Unidad de control 52CT2 SEL-651RA.

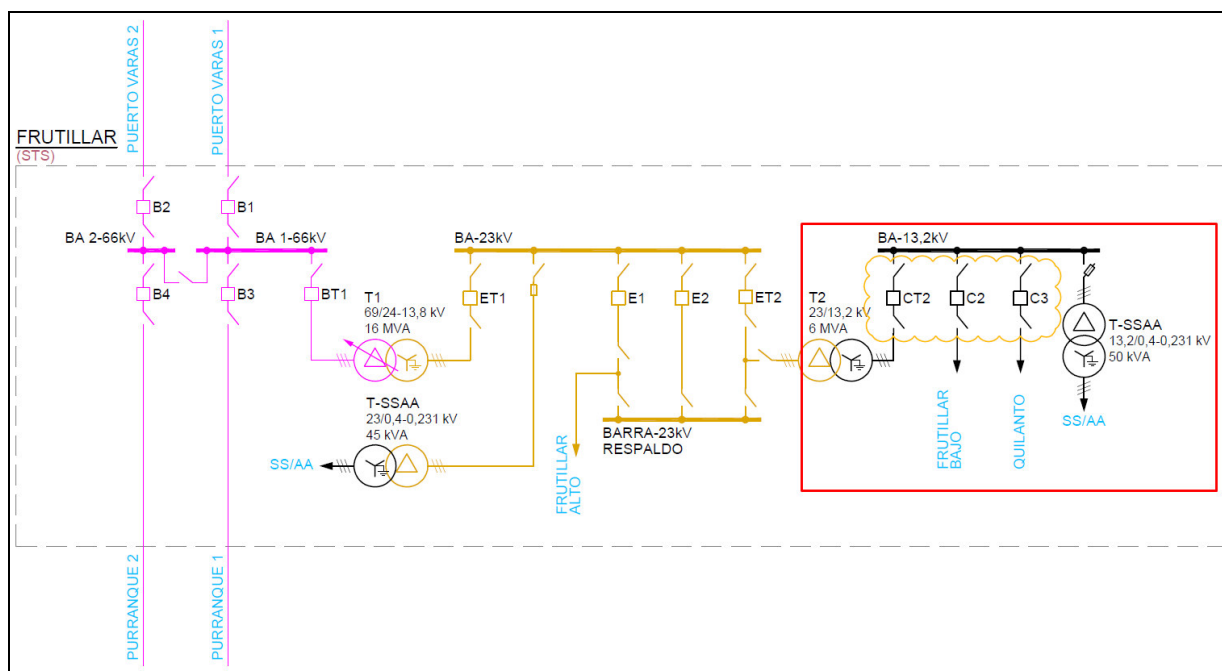
Dichas modificaciones, se adjuntan en Anexo 1 "ECAP "ESTUDIO DE MODIFICACION DE AJUSTE EN SE FRUTILLAR T2 23-13,2"."

Número	Coordinado	Tipo Programación	Tipo/Trabajo/Objetivo	Fecha Inicio	Fecha Fin
2021074692	SISTEMA DE TRANSMISIÓN DEL SUR S.A.	Curso Forzoso	SubEstación ▶ S/E FRUTILLAR ▶ Tipo: transformadores2d - FRUTILLAR 23/13,2KV 6 MVA.2 ▶ Intervención / Origen Interno / Curso Forzoso ▶ No tiene consumo afectado ▶ Trabajos a Realizar: Modificar ajustes de protecciones, elementos de sobrecorriente de fase de relé 51RT2 SEL-351S, 87T2 SEL-787 y 52CT2 SEL-651RA, debido a operación por sobrecarga de 52CT2 el 24 de agosto de 2021. ▶ Desc. Nivel Riesgo: Trabajo se requiere realizar para evitar la operación indeseada nuevamente del paño 52CT2 por sobrecarga. ▶ Comentarios Adicionales: Trabajos asociados al IF 2021002394.	26-08-2021 14:00	26-08-2021 18:00
				Fecha Efectiva Inicio 26-08-2021 13:22	Fecha Efectiva Fin 26-08-2021 14:18

c) Acciones correctivas a largo plazo:

- o La empresa STS S.A. no indica a acciones correctivas a largo plazo.

Diagrama simplificado de las instalaciones previo a la falla



5. Cronología de eventos y la descripción de las causas de los eventos

Hora	Involucrado	Evento
19:18	STS	Apertura automática del interruptor 52CT2 de S/E Frutillar, correspondiente a la barra 13.2 kV de dicha subestación, por medio de la operación de la protección temporizada de sobrecorriente de fases.

- La hora señalada corresponde a lo informado por la empresa STS S.A.

6. Normalización del servicio

Fecha	Involucrado	Hora	Acción
24-08-2021	STS	19:19	Se da aviso al CDC del Coordinador Eléctrico Nacional, distribuidora SAESA y personal de Mantenimiento de Transmisión.
24-08-2021	STS	19:20	Se revisan protecciones alarmadas.
24-08-2021	STS	19:25	Se recuperan 0.19 MW de consumos del alimentador 52C3 Quilanto de S/E Frutillar, por medio de maniobras MT desde el alimentador 52ET2 Río Negro de S/E Purranque.
24-08-2021	STS	19:26	Apertura manual de los alimentadores 52C2 Frutillar Bajo y 52C3 Quilanto de S/E Frutillar por maniobras de recuperación.
24-08-2021	STS	19:27	Se solicita autorización al CDC del Coordinador Eléctrico Nacional para realizar un intento de cierre del interruptor 52CT2 en vacío.
24-08-2021	STS	19:28	Análisis de las protecciones arroja que la apertura automática del interruptor 52CT2 en S/E Frutillar se habría producido por sobrecarga.
24-08-2021	STS	19:28	Se recuperan 0.11 MW de consumos del alimentador 52C2 Frutillar Bajo de S/E Frutillar, por medio de maniobras MT desde alimentador 52ET2 Río Negro de S/E Purranque.
24-08-2021	STS	19:30	Cierre manual con éxito del interruptor 52CT2 de S/E Frutillar. Se energiza en vacío la barra 13.2 kV de dicha subestación.
24-08-2021	STS	19:30	Cierre manual de los alimentadores 52C2 Frutillar Bajo y 52C3 Quilanto de S/E Frutillar. Se recupera la totalidad de los consumos afectados de dichos alimentadores.

- Las fecha y las horas señaladas corresponden a lo informado por las empresas STS S.A.

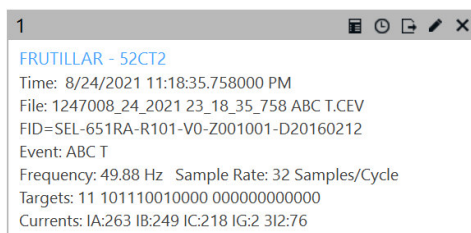
7. Análisis de las causas de la falla y de la actuación de los dispositivos de protección y control

Apertura automática del interruptor 52CT2 de S/E Frutillar, correspondiente a la barra 13.2 kV de dicha subestación, por medio de la operación de la protección temporizada de sobrecorriente de fases.

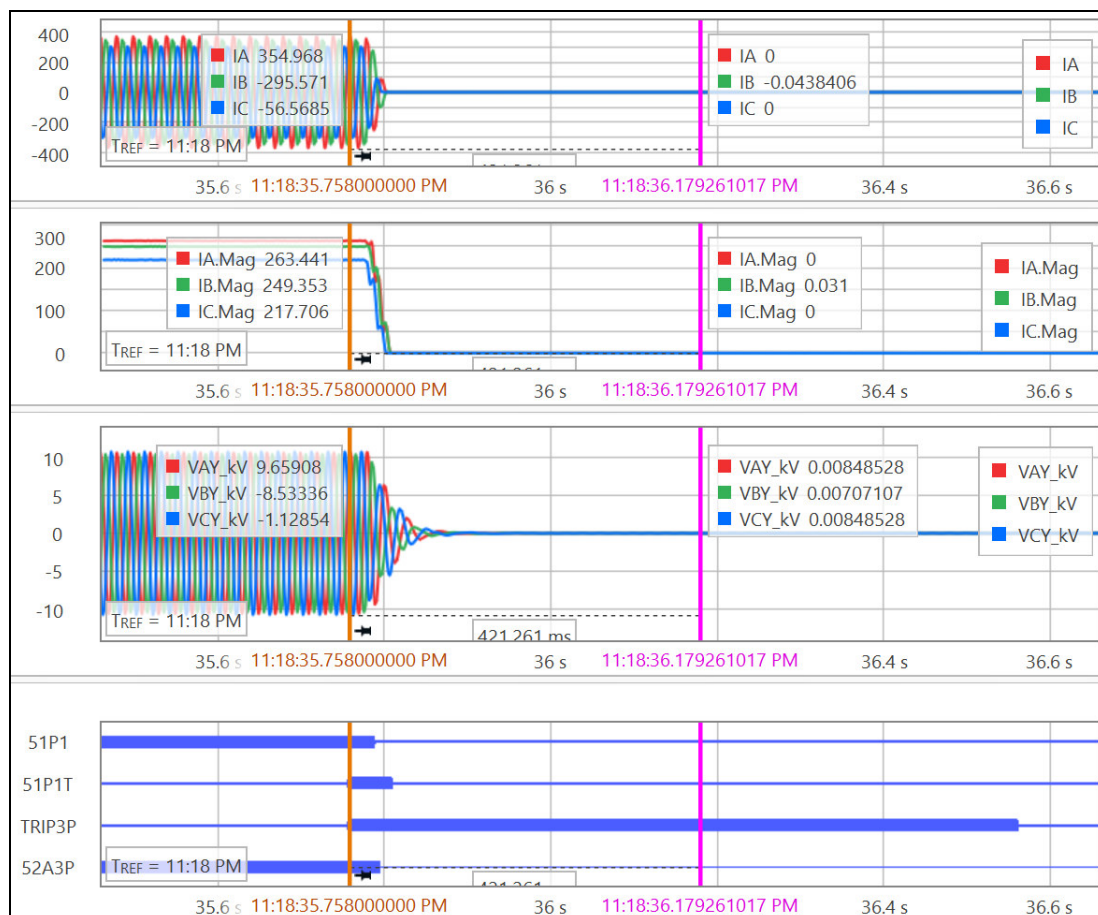
La empresa STS S.A. declara que la operación de la protección temporizada de sobrecorriente de fases se produjo a causa de sobrecarga.

A raíz del evento en cuestión resultaron afectados 5.6 MW de consumos abastecidos desde la barra 13.2 kV de S/E Frutillar.

Apertura automática del interruptor 52CT2 de S/E Frutillar, correspondiente a la barra 13.2 kV de dicha subestación. Relé SEL 651RA.



En el resumen del evento se registra una falla trifásica y corrientes de orden de magnitud similares en las tres fases.



En el registro oscilográfico presentado se aprecian corrientes y tensiones con magnitudes y formas de onda normales, situación que permite descartar la presencia de una falla. Al respecto, se aprecia que la magnitud de la corriente por la fase "C" (263 [A]) supera el umbral de la función temporizada de sobrecorriente de fases ajustada en 260 [A]. En relación con las señales digitales, se registra la activación de la función temporizada de sobrecorriente de fases ($51P1 = 1$) y su posterior operación ($51P1T = 1$).

Se presenta a continuación el registro secuencial de eventos de la protección:

52CT2
FRUTILLAR

Date: 08/25/2021 Time: 00:02:46.210
Time Source: external

FID=SEL-651RA-R101-V0-Z001001-D20160212 CID=6A2B

#	Date	Time	Element	State
29	08/24/2021	23:08:20.206	51P1	Deasserted
28	08/24/2021	23:08:20.306	OUT106	Asserted
27	08/24/2021	23:08:20.306	51P1	Asserted
26	08/24/2021	23:18:35.758	TRIP3P	Asserted
25	08/24/2021	23:18:35.758	OUT105	Asserted
24	08/24/2021	23:18:35.758	51P1T	Asserted
23	08/24/2021	23:18:35.778	PINC	Deasserted
22	08/24/2021	23:18:35.788	OUT106	Deasserted
21	08/24/2021	23:18:35.788	51P1	Deasserted
20	08/24/2021	23:18:35.793	52A3P	Deasserted
19	08/24/2021	23:18:35.793	SV30	Asserted
18	08/24/2021	23:18:35.808	OUT105	Deasserted
17	08/24/2021	23:18:35.808	51P1T	Deasserted
16	08/24/2021	23:18:36.560	TRIP3P	Deasserted
15	08/24/2021	23:29:58.682	IN102	Asserted
14	08/24/2021	23:29:58.687	CLOSE3P	Asserted
13	08/24/2021	23:29:58.737	PINC	Asserted
12	08/24/2021	23:29:58.737	CLOSE3P	Deasserted
11	08/24/2021	23:29:58.742	52A3P	Asserted
10	08/24/2021	23:29:58.742	SV30	Deasserted
9	08/24/2021	23:30:03.186	IN102	Deasserted
8	08/24/2021	23:32:05.304	OUT106	Asserted
7	08/24/2021	23:32:05.304	51P1	Asserted
6	08/24/2021	23:32:05.773	OUT106	Deasserted
5	08/24/2021	23:32:05.773	51P1	Deasserted
4	08/24/2021	23:32:42.927	OUT106	Asserted
3	08/24/2021	23:32:42.927	51P1	Asserted
2	08/24/2021	23:32:42.947	OUT106	Deasserted
1	08/24/2021	23:32:42.947	51P1	Deasserted

En el registro N°27 se aprecia la activación de la función temporizada de sobrecorriente de fases (51P1 = *Asserted*) y su consecuente operación en un tiempo de 10 minutos y 15 segundos (51P1T = *Asserted*, registro N°24). El tiempo de apertura del interruptor fue de 35 ms (52A3P = *Deasserted*, registro N°20).

Posteriormente, a las 19:30 horas (horario corregido) se registra el cierre manual del interruptor 52CT2 de S/E Frutillar (52A3P = *Asserted*, registro N°11).

Se observa un desfase de 4 horas en la estampa de tiempo de la protección con respecto al horario real del evento (horario UTC - 0).

8. Detalle de toda la información utilizada en la evaluación de la falla

- Detalle de la generación programada para el día 24 de agosto de 2021 (Anexo N°1).
- Detalle de la generación real del día 24 de agosto de 2021 (Anexo N°2).
- Detalle del Movimiento de Centrales e Informe Diario del CDC correspondientes al día 24 de agosto de 2021 (Anexo N°3).
- Detalle de los mantenimientos programados y forzados para el día 24 de agosto de 2021 (Anexo N°4).
- Informes de fallas de instalaciones ingresados en el sistema del Coordinador Eléctrico Nacional por la empresa Sistema de Transmisión del Sur S.A. (Anexo N°5).
- Otros antecedentes aportados por la empresa Sistema de Transmisión del Sur S.A. (Anexo N°6).

9. Análisis de las actuaciones de protecciones

9.1 Incumplimiento Normativo

Los incumplimientos normativos detectados en el desarrollo de la falla, por parte de los involucrados son:

STS S.A.

- Completitud de la información entregada al Coordinador, de acuerdo con lo indicado en las Resoluciones Exentas de la SEC N°30891-2019 y N°30989-2019.

9.2 Estándares Normativos Art. 1-14 NTSyCS

Los incumplimientos del propietario del elemento afectado, reportados en la versión vigente del "Informe Anual de Cumplimientos, Artículo 1-14 Norma Técnica de Seguridad y Calidad de Servicio", no incidieron en el origen y causa de la falla, ni en el desarrollo de las maniobras que permitieron la normalización de servicio.

9.3 Desempeño de Protecciones Eléctricas y Modo de operación de interruptores

Según los antecedentes proporcionados por la empresa STS S.A. y el respectivo análisis realizado por el Coordinador:

- Se concluye incorrecta operación del sistema de protecciones (relé SEL 651RA) asociado al paño CT2 de S/E Frutillar, correspondiente a la barra 13.2 kV de dicha subestación, por medio de su protección temporizada de sobrecorriente de fases, ante una condición de aumento de la carga abastecida sin presencia de falla o equipamiento sometido a sobrecarga.

Se concluye un correcto modo de operación del interruptor 52CT2 de S/E Frutillar.

9.4 Desempeño EDAC

No aplica pronunciarse sobre el desempeño de EDAC ante este evento.

9.5 Desempeño EDAG

No aplica pronunciarse sobre el desempeño de EDAG ante este evento.

10. Pronunciamiento Técnico del Coordinador Eléctrico Nacional

De acuerdo con el análisis realizado por el Coordinador:

- a) Se registró una condición de sobrecarga en el paño CT2 de S/E Frutillar, donde la magnitud de la corriente de la fase "C" de 263 A sobrepasó el umbral de la protección temporizada de sobrecorriente de fases, ajustada en 260 A. Si bien, la función de protección indicada opera según sus ajustes, se considera incorrecta al no tratarse de una falla o sobrecarga efectiva de algún elemento serie del sistema de transmisión, debiendo las protecciones estar ajustadas para evitar su operación ante corrientes de carga.

En relación con el modo de operación del interruptor 52CT2 de S/E Frutillar, este se considera correcto en base a su tiempo de apertura registrado (35 ms).

- b) No se evidenciaron reiteraciones del fenómeno físico que afecten la barra 13.2 kV de S/E Frutillar durante los últimos 24 meses.
- c) Si se evidenciaron incumplimientos normativos en el desarrollo del evento que provocó la desconexión forzada de la barra 13.2 kV de S/E Frutillar, al producirse la operación de protecciones sin la presencia de una falla.
- d) No se evidenciaron incumplimientos asociados al elemento afectado por la falla, reportados en la versión vigente del "Informe Anual de Cumplimientos, Artículo 1-14 Norma Técnica de Seguridad y Calidad de Servicio".
- e) Para el desarrollo del evento no hay observaciones respecto de la aplicación de los Planes de Recuperación de servicio asociados a las instalaciones involucradas, ni de las actuaciones del CDC y los respectivos CC durante la falla del día 24 de agosto de 2021.

11. Recomendación respecto de las instalaciones a las cuales el Coordinador Eléctrico Nacional debería solicitar una auditoría

- a) Auditorías, planes de acción, instrucciones de acciones correctivas de largo y/o corto plazo.

No se solicitan, dado que se implementaron acciones correctivas inmediatas.

- b) Solicitudes de ampliación de información

Se solicitará a la empresa STS S.A.:

- o Antecedentes probatorios requeridos para el Fenómeno Físico declarado (DIS2: Sobrecarga), según Resolución Exenta SEC N°30989-2019, en particular, demanda de los últimos 24 meses, informe técnico de las posibles causas que propician la sobrecarga y año de la primera puesta en servicio y años efectivos en operación (transformador).

ANEXO N°1

Detalle de la generación programada para el día 24 de agosto de 2021

Table with 25 columns: COORDINADOR ELECTRICO NACIONAL, Programación Diaria del Sistema Eléctrico Nacional, and 24 days (1-24). Rows include 'martes, 24 de agosto de 2021', 'Costos Operación', 'Costos Encendido/Detención', 'Costos Totales [kUSD]', 'Costo Marginal Quillota 220 kV', 'Pérdidas [MWh]', 'Consumos Propios [MWh]', 'Demanda Total [MWh]', and 'Generación Total [MWh]'. Total generation is 236,754 MWh.

Table with 25 columns: Station Name and 24 days (1-24). Rows list various PFV stations such as PFV-SANTAAMELIA, PFV-ANTONIA, PFV-LORETO, etc., with numerical values for each day and a total on the right.

COORDINADOR ELÉCTRICO NACIONAL	Programación Diaria del Sistema Eléctrico Nacional																							
martes, 24 de agosto de 2021	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Costos Operación	452	456	441	414	387	389	380	367	312	284	283	281	294	315	318	323	346	375	387	406	387	399	386	416
Costos Encendido/Detención	18	0	2	3	0	0	0	2	1	0	55	2	8	0	0	0	0	10	21	1	2	0	0	0
Costos Totales [kUSD]	470	456	444	417	387	389	380	368	313	284	338	283	302	315	318	323	346	385	408	407	389	399	386	416
Costo Marginal Quillota 220 kV	151.4	151.3	150.2	130.5	116.7	116.2	116.2	113.4	63.3	50.4	50.2	52.7	61.2	113.8	114.2	114.8	114.8	117.4	117.5	117.0	118.9	118.3	118.5	119.3
Pérdidas [MWh]	279	272	268	249	224	207	196	182	246	324	354	410	453	452	445	419	364	259	230	231	228	228	237	243
Consumos Propios [MWh]	484	484	483	481	481	481	481	482	475	475	477	476	467	467	467	467	467	476	484	484	484	484	484	484
Demanda Total [MWh]	9721	9636	9475	9200	8689	8421	8265	8204	8247	8326	8523	8812	9069	9253	9397	9417	9421	9387	9335	9392	9437	9459	9570	9624
Generación Total [MWh]	10485	10392	10226	9930	9394	9109	8941	8867	8968	9124	9354	9698	9990	10172	10310	10303	10252	10123	10049	10107	10149	10170	10290	10351
TOTAL	8,799	125																						
Costo Marginal Quillota 220 kV	8,924																							
Pérdidas [MWh]	7,000																							
Consumos Propios [MWh]	11,475																							
Demanda Total [MWh]	218,278																							
Generación Total [MWh]	236,754																							

ATACAMA-2TG2AB_TG2A+TG2B+TV2_GNL_B	290	290	290	290	290	290	290	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2030	
ATACAMA-2TG2AB_TG2A+TG2B+TV2_GNL_C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATACAMA-2TG2AB_TG2A+TG2B+TV2_GNL_D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATACAMA-2TG2AB_TG2A+TG2B+TV2_GNL_E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATACAMA-2TG2AB_TG2A+TG2B+TV2_GNL_A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATACAMA-2TG2AB_TG2A+TG2B+TV2_GNL_INFLEX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATACAMA-2TG2B_TG2B_DIESEL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATACAMA-2TG2B_TG2B_GNL_A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATACAMA-2TG2B_TG2B_GNL_B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATACAMA-2TG2B_TG2B_GNL_C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATACAMA-2TG2B_TG2B_GNL_D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATACAMA-2TG2B_TG2B_GNL_E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATACAMA-2TG2B_TG2B_GNL_A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATACAMA-2TG2B_TG2B_GNL_INFLEX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATACAMA-2TG2B_TG2B+0.5TV2_DIESEL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATACAMA-2TG2B_TG2B+0.5TV2_GNL_A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATACAMA-2TG2B_TG2B+0.5TV2_GNL_B	0	0	0	0	0	0	0	136	109	109	109	109	109	109	109	109	109	109	136	136	136	136	136	165	136	2099
ATACAMA-2TG2B_TG2B+0.5TV2_GNL_C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATACAMA-2TG2B_TG2B+0.5TV2_GNL_D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATACAMA-2TG2B_TG2B+0.5TV2_GNL_E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATACAMA-2TG2B_TG2B+0.5TV2_GNL_A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATACAMA-2TG2B_TG2B+0.5TV2_GNL_INFLEX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PAM_COGEN	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	528
MANTOSBLANCOS-MIMB_DIESEL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LAPORTADA-TECNET_DIESEL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INACAL_DIESEL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AGUASBLANCAS-AGB_DIESEL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TALTAL-1_DIESEL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TALTAL-1_GNL_A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TALTAL-1_GNL_B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TALTAL-1_GNL_C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TALTAL-1_GNL_D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TALTAL-1_GNL_E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TALTAL-1_GNL_A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TALTAL-1_GNL_INFLEX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TALTAL-2_DIESEL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TALTAL-2_GNL_A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TALTAL-2_GNL_B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TALTAL-2_GNL_C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TALTAL-2_GNL_D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TALTAL-2_GNL_E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TALTAL-2_GNL_A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TALTAL-2_GNL_INFLEX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DALMAGRO_DIESEL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANDES-1_DIESEL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANDES-1_F06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANDES-2_DIESEL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANDES-2_F06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANDES-3_DIESEL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANDES-3_F06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANDES-4_DIESEL	0	0																								

COORDINADOR ELECTRICO NACIONAL	Programación Diaria del Sistema Eléctrico Nacional																								
<i>martes, 24 de agosto de 2021</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Costos Operación	452	456	441	414	387	389	380	367	312	284	283	281	294	315	318	323	346	375	387	406	387	399	386	416	8,799
Costos Encendido/Detención	18	0	2	3	0	0	0	2	1	0	55	2	8	0	0	0	10	21	1	2	0	0	0	0	125
Costos Totales [kUSD]	470	456	444	417	387	389	380	368	313	284	338	283	302	315	318	323	346	385	408	407	389	399	386	416	8,924
Costo Marginal Quillota 220 kV	151.4	151.3	150.2	130.5	116.7	116.2	116.2	113.4	63.3	50.4	50.2	52.7	61.2	113.8	114.2	114.8	114.8	117.4	117.5	117.0	118.9	118.3	118.5	119.3	108.67
Pérdidas [MWh]	279	272	268	249	224	207	196	182	246	324	354	410	453	452	445	419	364	259	230	231	228	228	237	243	7,000
Consumos Propios [MWh]	484	484	483	481	481	481	481	482	475	475	477	476	467	467	467	467	476	476	484	484	484	484	484	484	11,475
Demanda Total [MWh]	9721	9636	9475	9200	8689	8421	8265	8204	8247	8326	8523	8812	9069	9253	9397	9417	9421	9387	9335	9392	9437	9459	9570	9624	218,278
Generación Total [MWh]	10485	10392	10226	9930	9394	9109	8941	8867	8968	9124	9354	9698	9990	10172	10310	10303	10252	10123	10049	10107	10149	10170	10290	10351	236,754

NEHUENCO-9B_GNL_F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NEHUENCO-9B_GNL_G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NEHUENCO-9B_GNL_INFLEX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
COLMITO_DIESEL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
COLMITO_GNL_A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
COLMITO_GNL_INFLEX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CONCON_DIESEL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ENAPACONCAGUA_COGEN	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	631
PLACILLA_DIESEL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
QUINTAY_DIESEL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ELTOTOSAL_DIESEL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
LASVEGAS_DIESEL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
LOSVENTOS_DIESEL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
LOSVENTOS_DIESEL_CNAVIA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
LOMALOSCOLORADOS-1_BIOGAS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
LOMALOSCOLORADOS-2_BIOGAS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NUEVARENCA_TG1+TV1_DIESEL	338	338	338	338	205	205	205	205	205	205	205	205	205	205	205	205	205	205	205	205	205	221	205	214	316	5588
NUEVARENCA_TG1+TV1_GN_A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NUEVARENCA_TG1+TV1_GN_B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NUEVARENCA_TG1+TV1_GNL_A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NUEVARENCA_TG1+TV1_GNL_B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NUEVARENCA_TG1+TV1_GNL_C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NUEVARENCA_TG1+TV1_GNL_D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NUEVARENCA_TG1+TV1_GNL_E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NUEVARENCA_TG1+TV1_GNL_F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NUEVARENCA_TG1+TV1_GNL_INFLEX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NUEVARENCA_TG1+TV1_GNL_P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NUEVARENCA_TG1+TV1+FA1_GLP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NUEVARENCA_TG1+TV1+FA1_GN_A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NUEVARENCA_TG1+TV1+FA1_GNL_A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NUEVARENCA_TG1+TV1+FA1_GNL_B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NUEVARENCA_TG1+TV1+FA1_GNL_INFLEX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NUEVARENCA_TG1+TV1+FA1_GNL_P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
RENCA-1_DIESEL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
RENCA-2_DIESEL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CMPCCORDILLERA_GNL_A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SANTAMARTA_COGEN	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	240
CANDELARIA-1_DIESEL	80	100	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	240
CANDELARIA-1_GN_A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CANDELARIA-1_GNL_A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CANDELARIA-1_GNL_B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CANDELARIA-1_GNL_C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CANDELARIA-1_GNL_D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CANDELARIA-1_GNL_E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CANDELARIA-1_GNL_F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CANDELARIA-1_GNL_G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CANDELARIA-1_GNL_INFLEX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CANDELARIA-2_DIESEL	75	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	155
CANDELARIA-2_GN_A	0																									

Table with 24 columns (1-24) and rows for 'COORDINADOR ELECTRICO NACIONAL'. Rows include 'Programación Diaria del Sistema Eléctrico Nacional', 'Costos Operación', 'Costos Encendido/Detención', 'Costos Totales [kUSD]', 'Costo Marginal Quillota 220 kV', 'Pérdidas [MWh]', 'Consumos Propios [MWh]', 'Demanda Total [MWh]', and 'Generación Total [MWh]'. Total values are shown in the last column.

Large table listing 60 categories (e.g., CANDELARIA-2_GNL_F, COLIHUES-1_DIESEL) across 24 columns. Each row contains numerical values for each column and a total value in the final column. The categories include various types of power generation, transmission, and distribution losses.

COORDINADOR ELÉCTRICO NACIONAL	Programación Diaria del Sistema Eléctrico Nacional																								
martes, 24 de agosto de 2021	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Costos Operación	452	456	441	414	387	389	380	367	312	284	283	281	294	315	318	323	346	375	387	406	387	399	386	416	8,799
Costos Encendido/Detención	18	0	2	3	0	0	0	2	1	0	55	2	8	0	0	0	0	10	21	1	2	0	0	0	125
Costos Totales [kUSD]	470	456	444	417	387	389	380	368	313	284	338	283	302	315	318	323	346	385	408	407	389	399	386	416	8,924
Costo Marginal Quillota 220 kV	151.4	151.3	150.2	130.5	116.7	116.2	116.2	113.4	63.3	50.4	50.2	52.7	61.2	113.8	114.2	114.8	114.8	117.4	117.5	117.0	118.9	118.3	118.5	119.3	108.67
Pérdidas [MWh]	279	272	268	249	224	207	196	182	246	324	354	410	453	452	445	419	364	259	230	231	228	228	237	243	7,000
Consumos Propios [MWh]	484	484	483	481	481	481	481	482	475	475	477	476	467	467	467	467	476	476	484	484	484	484	484	484	11,475
Demanda Total [MWh]	9721	9636	9475	9200	8689	8421	8265	8204	8247	8326	8523	8812	9069	9253	9397	9417	9421	9387	9335	9392	9437	9459	9570	9624	218,278
Generación Total [MWh]	10485	10392	10226	9930	9394	9109	8941	8867	8968	9124	9354	9698	9990	10172	10310	10303	10252	10123	10049	10107	10149	10170	10290	10351	236,754

CURILLINQUE	40	40	40	40	40	40	40	40	22	22	22	22	22	31	31	31	32	40	40	40	40	40	40	40	831	
LOMAALTA	16	16	16	16	16	16	16	16	8	8	8	8	8	12	12	12	12	16	16	16	16	16	16	16	321	
LOSHIERROS	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	504	
LOSHIERROS-2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	72	
PEHUENCHE-1	270	270	270	270	270	214	251	139	0	0	0	0	0	0	0	0	0	270	270	270	270	270	270	270	3844	
PEHUENCHE-2	270	270	270	270	270	270	270	257	0	0	0	0	0	0	151	155	175	270	270	270	270	270	270	270	4519	
COLBUN-1	200	200	200	175	0	0	0	0	0	0	0	0	0	0	0	0	0	110	110	110	110	110	110	110	1546	
COLBUN-2	201	201	201	201	0	0	0	0	0	0	0	0	0	0	0	0	0	0	110	110	110	110	110	110	1353	
MACHICURA-1	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	312	
MACHICURA-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CHIBURGO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SANCLEMENTE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SANIGNACIO	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	151	
ELTORO-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ELTORO-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ELTORO-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ELTORO-4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ABANICO	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	732	
ANTUCO-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ANTUCO-2	119	119	119	119	119	119	119	117	117	117	117	117	117	117	117	117	117	119	119	119	119	119	119	119	2843	
RUCUE	67	67	67	67	67	67	67	66	66	66	66	66	66	66	66	66	66	67	67	67	67	67	67	67	1599	
QUILLECO	29	29	29	29	29	29	29	28	28	28	28	28	28	28	28	28	28	29	29	29	29	29	29	29	687	
LAJA1	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	293	
RALCO-1	168	168	0	0	157	126	126	0	0	0	0	0	0	0	0	90	144	0	0	0	156	170	95	182	1580	
RALCO-2	0	0	0	0	95	95	95	0	0	0	0	0	0	0	0	0	0	0	0	95	95	259	282	1016		
PALMUCHO	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	509	
PANGUE-1	130	180	225	225	225	83	80	80	80	80	80	80	80	80	80	80	80	80	130	180	209	138	141	181	220	3148
PANGUE-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ANGOSTURA-1	83	79	74	95	79	74	76	76	76	76	76	76	76	76	76	76	76	140	74	112	74	140	140	119	2119	
ANGOSTURA-2	140	74	140	74	74	79	0	0	0	0	0	0	0	0	0	0	0	0	140	140	79	0	0	74	1014	
ANGOSTURA-3	47	25	45	47	24	0	0	0	0	0	0	0	0	0	0	0	0	0	46	24	24	27	27	24	360	
CANUTILLAR-1	53	55	53	54	59	57	57	55	55	50	55	55	55	55	59	50	55	55	51	55	50	62	62	55	1319	
CANUTILLAR-2	55	53	55	55	57	57	54	55	55	50	55	55	55	55	55	57	55	55	59	55	50	60	60	55	1325	

ANEXO N°2
Detalle de la generación real del día 24 de agosto de 2021

Table with columns for 24 days (1-24), TOT.DIA, DMAX, and DMED. Rows list various energy units and generation types such as IQUIQUE-MAIQ_DIESEL, ZOFRI_1_DIESEL, CTTAR_CARBÓN, UG1_DIESEL, etc.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TOT.DIA MWh	DMAX MWh/h	DMED. MWh/h
HORA	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DMAX :	7755.8	7756

ANEXO N°3

Detalle del Movimiento de Centrales e Informe Diario del CDC correspondientes al día
24 de agosto de 2021

24-08-2021	Última Actualización:	24-08-2021	23:57	CMG-Online:	115.0	Quillota_220 kv:	SANISIDRO-1_TG1+TV1_GNL_A											SS.CC.
Hora Movl.	Equipo /	Central-Unidad	Configuración	Despacho	Estado	EG	Consigna	Consigna	Instrucción Cmg	Motivo	Zona Desacople	Condición	Neomante	Centro de	SSCC	BASEPOINT		
0:00	Instalación			Requerido (MW)	Operacional	Combustibles	Cmg	Limitación	Condición	Comentario		del Embalse		Control	Activo			
22:26	-	CANUTILLAR-2	CANUTILLAR	62	N	-	CI	-	OT	Línea de 220 kV Canutillar - Puerto Montt 2 con solicitud de desconexión de curso forzoso. Causa informada: Por nevadas en la zona se mantendrá en servicio línea 220kV Canutillar - Puerto Montt 1. Según SDCF 2021074020.		N	-	COLBUN	-			
22:35	-	CANUTILLAR-2	CANUTILLAR	55	N	-	CI	-	OT	Línea de 220 kV Canutillar - Puerto Montt 2 con solicitud de desconexión de curso forzoso. Causa informada: Por nevadas en la zona se mantendrá en servicio línea 220kV Canutillar - Puerto Montt 1. Según SDCF 2021074020.		N	-	COLBUN	-			
22:40	-	LOSPINOS	LOSPINOS DIESEL	MT	N	LC	PS	-	OM					COLBUN	-	MT		
22:40	-	NUEVARENCA	NUEVARENCA_TG1+TV1_DIESEL	MT	RD	LC	MT	-	OM				IL 2020001697 -SD 2021072253	GENERADORA METROPOLITANA	-	MT		
22:40	-	CMPCPACIFICO	CMPCPACIFICO BL1-BL2 COGEN	PC	N	-	PC	-	OM					SANTA FE	-	PC		
22:40	-	TALTAL-2	TALTAL-2_GNL_B	-	N	LC	PS	-	OM					ENEL GENERACION	-	-		
22:40	-	COLIHUES-1	COLIHUES-1_HFO	MT	RD	LC	MT	MTP	OM				IL 2021001545	ENOR CHILE	-	MT		
22:46	-	ANGOSTURA-2	RALCO_sinv	-	DN	-	PP	-	RE					COLBUN	-	-		
22:50	-	ANGOSTURA-2	RALCO_sinv	MT	N	-	MT	-	RE					COLBUN	-	MT		
22:51	-	LOSPINOS	LOSPINOS DIESEL	0	DN	DLC	FS	-	OM		F/S			COLBUN	-	-		
22:53	-	RAPEL-2	RAPEL	MT	N	-	PS	-	OM			N	-	ENEL GENERACION	-	-		
22:53	-	RAPEL-3	RAPEL	MT	N	-	PS	-	OM			N	-	ENEL GENERACION	-	-		
22:53	-	RAPEL-4	RAPEL	MT	N	-	PS	-	OM			N	-	ENEL GENERACION	-	-		
22:55	-	TALTAL-2	TALTAL-2_GNL_B	0	DN	DLC	FS	-	OM					ENEL GENERACION	-	-		
22:56	-	RAPEL-2	RAPEL	0	DN	-	FS	-	OM			N	-	ENEL GENERACION	-	-		
22:57	-	RAPEL-3	RAPEL	0	DN	-	FS	-	OM			N	-	ENEL GENERACION	-	-		
22:57	-	RAPEL-4	RAPEL	0	DN	-	FS	-	OM			N	-	ENEL GENERACION	-	-		
22:59	-	RALCO-2	RALCO_sinv	MT	RD	-	MT	-	OM			N	IL 2021001131	ENEL GENERACION	-	MT		
23:00	-	SANISIDRO-2	SANISIDRO-2 TG1+TV1_GNL_A	PC	N	LC	PC	-	OM	Cambio de Combustible de GNL E a GNL A.				ENEL GENERACION	-	PC		
23:00	-	TOCOPILLA-U16	TOCOPILLA-U16_TG1+TV1_GNL_B	PC	RD	LC	PC	MTP	OM	Cambio de combustible de GNL_A a GNL_B.			IL 2021001511 - IL 2021001815	ENGIE GENERACION	-	-		
23:08	-	VENTANAS-2	VENTANAS-2_CAR	MT	LF	LC	MT	PCP	OT	Control Suministro combustible.			IL XXXXX - IL 2021002022	AES ANDES	-	MT		
23:10	-	RALCO-1	RALCO_sinv	MT	RD	-	MT	-	OM			N	2021001531	ENEL GENERACION	-	MT		
23:24	-	RALCO-2	RALCO_sinv	MT	RD	-	PS	-	OM			N	IL 2021001131	ENEL GENERACION	-	-		
23:24	-	CIPRESES-3	CIPRESES_sinv	MT	N	-	PS	-	OM			N	-	ENEL GENERACION	-	-		
23:26	-	RALCO-2	RALCO_sinv	0	DRO	-	FS	-	OM			N	IL 2021001131	ENEL GENERACION	-	-		
23:29	-	ANGOSTURA-2	RALCO_sinv	PC	N	-	PC	-	RE					COLBUN	-	PC		
23:32	-	CIPRESES-3	CIPRESES_sinv	0	DN	-	FS	-	OM			N	-	ENEL GENERACION	-	-		
23:46	-	PEHUENCHE-1	PEHUENCHE	MT	N	-	MT	-	OM			N	-	ENEL GENERACION	-	MT		
23:46	-	PEHUENCHE-2	PEHUENCHE	MT	N	-	MT	-	OM			N	-	ENEL GENERACION	-	MT		
23:46	-	SANISIDRO-2	SANISIDRO-2 TG1+TV1_GNL_A	MT	N	LC	MT	-	OM					ENEL GENERACION	-	MT		
23:46	-	RAPEL-5	RAPEL	MT	N	-	PS	-	OM			N	-	ENEL GENERACION	-	-		
23:46	-	RALCO-1	RALCO_sinv	MT	RD	-	PS	-	OM			N	IL 2021001531	ENEL GENERACION	-	-		
23:50	-	RAPEL-5	RAPEL	0	DN	-	FS	-	OM			N	-	ENEL GENERACION	-	-		
23:58	-	RALCO-1	RALCO_sinv	0	DRO	-	FS	-	OM			N	IL 2021001531	ENEL GENERACION	-	-		
23:59	-	MOV. CMG	-	-	-	-	-	-	-	Movimiento para estimar CMG horario				CDC	-	-		
23:59	-	-	-	-	-	-	-	-	-	Movimiento para estimación del Cmg On-Line				-	-	-		

INFORME DIARIO

Martes 24 de Agosto del 2021



DESVIACIONES DE LA PROGRAMACION

1.1. Centrales

Centrales	Prog.	Real	Desv %	Estado	Centrales	Prog.	Real	Desv %	Estado
AILLIN	-	29.1	-	PMG, P	Masisa	204.0	203.3	-0.36 %	LF
ATACAMA SOLAR S.A.	-	0.0	-	P	Maule	0.0	0.0	-	-
Abanico	733.0	740.5	+1.02 %	RO	Mejillones IEM	8520.0	8371.4	-1.74 %	LF
Aguas Blancas Diésel	0.0	0.0	-	-	Mejillones-CTM1	2838.6	1635.7	(*) -42.38 %	LF
Alena	496.3	609.1	+22.73 %	P	Mejillones-CTM1 Fuel Oil	-	0.0	-	-
Alfalfal	798.7	815.1	+2.05 %	MM	Mejillones-CTM2	0.0	0.0	-	MM
Alhué	0.0	0.0	-	-	Mejillones-CTM3 Diésel	0.0	0.0	-	-
Alto Renaico	18.8	28.5	+51.46 %	PMG	Mejillones-CTM3 GNL	2222.7	3922.1	(*) +76.46 %	-
Ancoa	16.8	16.4	-2.50 %	-	Mejillones-CTM3 Gas Arg	0.0	-	-	-
Andes Diésel	0.0	0.0	-	-	Mejillones-PAM	528.0	507.0	-3.97 %	-
Andes FO6	0.0	0.0	-	-	Mercurio Sur	6.8	13.8	+104.53 %	P
Andina-CTA	3372.3	3542.9	+5.06 %	LF	Mocho	247.4	132.9	-46.29 %	-
Angamos-ANG1	0.0	0.0	-	MM	NEGRETE	245.0	344.4	+40.57 %	P
Angamos-ANG2	6365.8	5991.7	-5.88 %	-	Nalcas	121.8	82.2	-32.50 %	PMG
Angostura	3549.0	2930.0	-17.44 %	RO	Nehuenco 1 Diésel	0.0	0.0	-	-
Antihue	0.0	0.0	-	-	Nehuenco 1 GNL	6125.0	6150.0	+0.41 %	-
Antuco	2839.8	3984.9	+40.33 %	RO	Nehuenco 1 Gas Arg	0.0	0.0	-	-
Arauco	0.0	12.5	GNP	LF	Nehuenco 2 Diésel	0.0	0.0	-	-
Arica-GMAR	0.0	0.0	-	-	Nehuenco 2 GNL	7982.9	6826.0	-14.49 %	-
Arica-M1AR	0.0	0.0	-	MM	Nehuenco 2 Gas Arg	0.0	0.0	-	-
Arica-M2AR	0.0	0.0	-	-	Nehuenco 9B Diésel	0.0	0.0	-	-
Atacama-1 Diésel	0.0	0.0	-	RO, LF	Nehuenco 9B GNL	0.0	0.0	-	-
Atacama-1 GNL	3601.6	3066.9	-14.85 %	RO	Nehuenco 9B Gas Arg	0.0	0.0	-	-
Atacama-2 Diésel	0.0	0.0	-	RO	Newen Diésel	0.0	0.0	-	-
Atacama-2 GNL	4128.8	2788.9	(*) -32.45 %	-	Newen Gas	0.0	0.0	-	-
Bess Andes	-	9.7	GNP	-	Newen Gas Arg	0.0	0.0	-	-
Bess Angamos	-	7.3	GNP	-	Newen Propano	0.0	-	-	-
Bess Cochrane	-	0.3	GNP	-	Norgener-NTO1	1830.0	2924.7	+59.82 %	LF
Blanco	103.0	99.2	-3.69 %	-	Norgener-NTO2	2726.9	2913.5	+6.84 %	-
Bocamina 2	8389.2	8204.0	-2.21 %	-	Norgener-NTO2 Fuel Oil	-	0.0	-	-
CALAMA	1007.9	821.6	-18.48 %	P	Nueva Aldea 1	0.0	0.0	-	MM
CAMPOS DEL SOL	125.6	84.4	-32.84 %	P	Nueva Aldea 2	0.0	0.0	-	DF
CERRO DOMINADOR CSP	0.0	0.0	-	P	Nueva Aldea 3	888.0	501.7	-43.51 %	-
CMPC Cordillera	0.0	0.0	-	RO	Nueva Renca Diésel	4920.0	5761.0	+17.09 %	-
CMPC Laja	600.0	508.5	-15.25 %	-	Nueva Renca GNL	0.0	0.0	-	-
CMPC Pacífico	552.8	524.1	-5.19 %	-	Nueva Renca Gas Arg	0.0	0.0	-	-
CMPC Santa Fe	0.0	0.0	-	MM	Nueva Ventanas	1968.0	1986.0	+0.91 %	LF
CMPC Tissue	-	26.7	-	PMG	Ojos de Agua	92.4	95.5	+3.35 %	PMG
COMBARBALA	-	0.0	-	P	Olivos	0.0	0.0	-	-
Callao	50.0	26.7	-46.73 %	PMG	PFV AZABACHE	31.9	7.4	-76.82 %	P
Calle Calle	0.0	0.0	-	MM	PFV Del Desierto	-	0.0	-	PMG, P
Campiche	2016.0	2026.0	+0.50 %	LF	PFV Diego de Almagro Sur	-	0.0	-	P

Centrales	Prog.	Real	Desv %	Estado	Centrales	Prog.	Real	Desv %	Estado
Candelaria 1 Diésel	0.0	220.0	GNP		PFV EL SALITRAL	26.1	17.9	-31.59 %	P
Candelaria 1 GNL	60.0	0.0	-100.00 %		PFV Las Majadas	0.0	0.0	-	P
Candelaria 1 Gas Arg	0.0	0.0	-		PFV PLAYERITO	5.9	19.0	+223.77 %	P
Candelaria 2 Diésel	0.0	141.0	GNP		PFV PLAYERO	5.9	19.2	+226.97 %	P
Candelaria 2 GNL	0.0	0.0	-		PFV RÍO ESCONDIDO	1165.2	554.0	-52.45 %	P
Candelaria 2 Gas Arg	0.0	0.0	-		PFV SANTA ISABEL	1136.5	1073.9	-5.51 %	P
Candelaria Solar	15.9	17.4	+9.53 %		PFV SOL DE LILA	0.0	0.0	-	P
Canutillar	2643.7	1906.0	-27.90 %		PFV Sol de los Andes	-	0.0	-	P
Capullo	288.0	248.5	-13.72 %		PFV Sol del Desierto	161.5	0.4	-99.73 %	P
Cardones	0.0	0.0	-	DRO	PFV Sol del Norte	-	0.0	-	PMG, P
Carena	55.0	58.4	+6.18 %	PMG, MM	PFV de los Andes	-	0.0	-	PMG, P
Carilafquén	96.0	55.4	-42.28 %		PMG CH Corrales	-	4.9	-	PMG, P
Celco	120.2	90.2	-24.94 %		PMGD PFV Kaufmann	0.0	0.0	-	P
Cementos Bío Bío	0.0	0.0	-	LF, RO	Pajonales	0.0	0.0	-	
Cenizas	0.0	0.0	-		Palacios	1.3	2.2	+66.69 %	PMG
Cerro Tigre	-	0.0	-		Palmucho	509.2	594.1	+16.68 %	
Chacabuquito	124.0	142.7	+15.08 %		Pangue	3124.3	3448.2	+10.37 %	
Chacayes	499.7	529.4	+5.95 %		Parque Eólico Mesamávida	-	0.0	-	P
Chagual	-	0.0	-	P	Pehuenche	8996.4	6650.2	(*) -26.08 %	
Chapiquiña	120.0	122.4	+2.00 %		Peuchén	1091.2	965.3	-11.53 %	
Chiburgo	0.0	24.0	-	PMG, MM	Pilmaiquén	720.0	726.9	+0.95 %	RO
Chillan	-	0.0	-		Placilla	0.0	0.0	-	PMG
Chiloé	0.0	0.0	-	PMG	Planta Valdivia	0.0	90.5	GNP	
Cholguán	216.0	108.9	-49.57 %	DF, LF	Pretty Field	19.8	11.2	-43.75 %	P
Cholguán IFO	-	0.0	-		Providencia	216.0	216.5	+0.23 %	
Chuyaca	0.0	0.0	-	LF	Puente Solar	15.4	16.2	+5.15 %	P
Cipreses	818.9	320.8	-60.83 %		Pulelfu	216.0	175.0	-18.98 %	PMG
Cipresillos	-	0.0	-	PMG	Pullinque	480.9	479.2	-0.34 %	
Cochrane-CCH1	5833.5	5808.6	-0.43 %		Punta Colorada Diésel	0.0	0.0	-	
Cochrane-CCH2	5845.0	5833.2	-0.20 %		Punta Colorada IFO	0.0	0.0	-	
Cogen. Aconcagua	631.0	650.4	+3.09 %	MM, RO	Puntilla	148.5	55.8	-62.42 %	MM
Cogen. Biobío	492.0	1259.0	+155.89 %		Queltehues	471.0	510.8	+8.45 %	DF
Colbún	2191.6	2455.0	+12.02 %	RO	Quilleco	685.7	1147.0	+67.28 %	
Colihues Diésel	-	0.0	-	DF, LF	Quintay	0.0	0.0	-	PMG
Colihues HFO	131.0	134.2	+2.44 %	DF, RO	Quintero 1A Diésel	0.0	0.0	-	RO
Colmito Diésel	0.0	96.5	GNP	LF	Quintero 1A GNL	0.0	35.0	GNP	
Colmito GNL	0.0	0.0	-		Quintero 1A Gas Arg	0.0	0.0	-	
Concón	0.0	0.0	-	PMG	Quintero 1B Diésel	0.0	0.0	-	RO
Constitución	0.0	12.1	-	PMG	Quintero 1B GNL	0.0	34.0	GNP	
Convento Viejo	240.0	285.8	+19.08 %		Quintero 1B Gas Arg	0.0	0.0	-	
Coronel Diésel	0.0	0.0	-		RENAICO 2	-	0.0	-	P
Coronel GNL	0.0	0.0	-		Ralco	2528.7	3696.9	(*) +46.20 %	RO
Coronel Gas Arg	0.0	0.0	-		Rapel	2544.4	2310.5	-9.19 %	
Coya	0.0	0.0	-		Rauquén	38.6	45.8	+18.57 %	
Cumbres	144.0	140.7	-2.28 %		Renaico	66.1	137.6	+108.02 %	PMG
Curillinque	846.4	570.0	-32.66 %	RO	Renca	0.0	0.0	-	
Dadinco	-	0.0	-		Rinconada	38.4	43.2	+12.42 %	
Degañ	0.0	0.0	-	LF	Rucatayo	762.0	794.3	+4.24 %	
Degañ 2	0.0	0.0	-	DF	Rucúe	1595.7	2739.0	+71.65 %	
Deuco	-	0.0	-		Río Colorado	228.0	182.8	-19.82 %	
Diego de Almagro	0.0	0.0	-		Río Huasco	21.1	20.3	-3.79 %	

Centrales	Prog.	Real	Desv %	Estado	Centrales	Prog.	Real	Desv %	Estado
Digua	0.0	0.0	-	P	Río Picoquén	480.0	391.1	-18.52 %	
Domeyko	0.0	0.0	-	P	SF Energía	1353.9	738.4	-45.46 %	LF
Don Jorge	21.9	20.3	-7.36 %		San Andrés	81.0	27.6	-65.95 %	
Dos Valles	0.0	0.0	-	PMG	San Clemente	0.0	0.0	-	PMG
El Paso	0.0	0.0	-		San Gregorio	0.0	0.0	-	PMG
El Peñón	0.0	0.0	-		San Ignacio	150.5	144.0	-4.33 %	
El Pinar	-	0.0	-		San Isidro 1 Diésel	0.0	0.0	-	RO
El Rincón	5.9	6.0	+1.45 %	PMG	San Isidro 1 GNL	7109.6	6762.0	-4.89 %	
El Salvador	0.0	0.0	-		San Isidro 1 Gas Arg	0.0	0.0	-	
El Toro	0.0	3.7	GNP	RO	San Isidro 2 Diésel	0.0	0.0	-	RO
El Totoral	0.0	0.0	-	PMG	San Isidro 2 GNL	7479.1	7100.0	-5.07 %	
Emelda 1	0.0	0.0	-		San Isidro 2 Gas Arg	0.0	0.0	-	
Emelda 2	0.0	0.0	-		San Javier	24.4	30.0	+22.87 %	
Enaex-CUMMINS	0.0	0.0	-		San Lorenzo 1	0.0	0.0	-	
Enaex-DEUTZ	0.0	0.0	-		San Lorenzo 2	0.0	0.0	-	
Energía Pacífico	384.0	348.2	-9.31 %	RO	San Lorenzo 3	0.0	0.0	-	
Escuadrón	192.0	248.2	+29.27 %	LF	San Ramiro	24.0	57.4	+138.71 %	
Esperanza-DS1	0.0	0.0	-		Santa Fe	18.6	55.9	+199.81 %	
Esperanza-DS2	0.0	0.0	-		Santa Lidia	0.0	0.0	-	
Esperanza-TG1	0.0	0.0	-	LF	Santa Marta	240.0	106.2	-55.75 %	
Espinos	0.0	0.0	-		Santa María	8975.8	8793.0	-2.04 %	RO
Eólica Aurora	993.3	1006.5	+1.32 %		Santa Rita	11.1	17.2	+54.29 %	
Eólica Cabo Leones 1	462.6	206.0	-55.47 %		Sauzal	469.0	444.2	-5.28 %	MM, RO
Eólica Cabo Leones 2	697.4	248.4	-64.38 %		Sauzal 60 Hz	-	0.0	-	
Eólica Cabo Leones 3	430.6	105.8	-75.43 %		Sauzalito	71.0	76.0	+7.04 %	
Eólica Canela	23.9	13.0	-45.32 %		Solar Aguila 1	14.5	14.9	+2.70 %	
Eólica Canela 2	120.5	75.6	-37.21 %		Solar Almeyda	348.0	192.2	-44.76 %	
Eólica Cuel	217.0	250.7	+15.53 %		Solar Andes	164.3	167.6	+2.03 %	
Eólica El Arrayán	238.0	181.4	-23.79 %		Solar Andes 2A	566.2	551.7	-2.55 %	LF
Eólica El Maitén	90.4	110.3	+21.96 %		Solar Antay	69.8	28.1	-59.80 %	PMG
Eólica La Esperanza	57.0	90.3	+58.33 %	PMG	Solar Atacama 2	931.6	1062.7	+14.07 %	
Eólica La Estrella	341.3	174.3	-48.93 %	DF	Solar Carrera Pinto	360.0	321.1	-10.81 %	
Eólica La Flor	231.4	307.7	+32.98 %		Solar Cerro Dominador	805.6	848.4	+5.31 %	
Eólica Lebu	50.7	19.4	-61.73 %	PMG	Solar Chañares	161.8	107.2	-33.71 %	
Eólica Los Buenos Aires	208.9	204.4	-2.18 %		Solar Diego de Almagro	137.7	80.3	-41.68 %	
Eólica Los Cururos	339.2	303.7	-10.46 %		Solar Doña Carmen	125.3	203.5	+62.48 %	
Eólica Monte Redondo	82.1	70.9	-13.68 %		Solar El Pelicano	380.2	261.3	-31.28 %	
Eólica Punta Colorada	24.6	1.3	-94.72 %	DF	Solar El Pilar - Los Amarillos	0.0	0.0	-	PMG
Eólica Punta Palmeras	81.9	76.8	-6.24 %		Solar El Romero	916.7	590.1	-35.63 %	
Eólica Punta Sierra	329.5	246.2	-25.30 %	RO	Solar FV Bolero	938.6	976.5	+4.05 %	
Eólica Renaico	651.6	738.2	+13.29 %		Solar Finis Terrae	842.3	931.7	+10.62 %	
Eólica San Gabriel	1240.1	1132.0	-8.72 %		Solar GPG San Pedro	731.7	714.9	-2.30 %	
Eólica San Juan	815.0	178.9	-78.05 %		Solar Huatacondo	662.7	587.3	-11.36 %	
Eólica San Pedro	303.0	340.2	+12.26 %		Solar Jama	458.4	366.5	-20.05 %	
Eólica San Pedro 2	651.7	679.5	+4.26 %	LF	Solar Javiera	305.0	203.3	-33.33 %	
Eólica Sarco	750.5	186.8	-75.11 %		Solar La Huayca 2	158.8	164.0	+3.27 %	
Eólica Sierra Gorda	1252.7	1655.1	+32.12 %		Solar La Silla	4.4	7.0	+58.18 %	
Eólica Talinay Oriente	376.9	280.8	-25.49 %		Solar Lalackama	330.3	279.9	-15.24 %	
Eólica Talinay Poniente	241.4	197.6	-18.15 %		Solar Lalackama 2	83.7	86.5	+3.39 %	
Eólica Taltal	2008.9	1547.4	-22.97 %	LF	Solar Llano de Llampos	396.6	280.6	-29.25 %	

Centrales	Prog.	Real	Desv %	Estado	Centrales	Prog.	Real	Desv %	Estado
Eólica Tolpán Sur	742.6	536.3	-27.78 %		Solar Loma Los Colorados	4.7	4.2	-10.64 %	PMG
Eólica Totoral	60.6	59.1	-2.52 %		Solar Los Loros	136.5	143.6	+5.22 %	LF
Eólica Ucuquer 2	32.8	43.4	+32.03 %		Solar Los Tilos	19.3	19.2	-0.55 %	
Eólica Valle de los Vientos	747.0	796.9	+6.68 %		Solar Luz del Norte	609.3	561.1	-7.92 %	RO
Florida	0.0	0.0	-		Solar María Elena	469.0	427.7	-8.80 %	
Geo. Cerro Pabellón	897.4	1008.9	+12.43 %		Solar Nuevo Quillagua	779.4	579.1	-25.70 %	
Guacolda 1	3003.0	2958.0	-1.50 %	LF	Solar PVFV Granja Solar	888.7	770.0	-13.36 %	
Guacolda 2	2465.0	2497.0	+1.30 %	LF	Solar PV Conejo	513.8	603.8	+17.51 %	LF
Guacolda 3	3261.9	3387.0	+3.84 %		Solar PV Salvador	250.0	348.3	+39.32 %	
Guacolda 4	3045.8	2967.0	-2.59 %	LF	Solar Pampa Camarones	42.1	38.1	-9.48 %	
Guacolda 5	3480.0	3492.0	+0.34 %		Solar Pampa Solar Norte	391.1	396.9	+1.48 %	
Guayacán	106.6	107.7	+1.03 %		Solar Piloto Cardones	1.0	0.0	-99.01 %	PMG
HP EL ATAJO	4.2	7.8	+86.19 %		Solar Pozo Almonte 2	63.9	50.4	-21.15 %	
HP FLORIDA II	62.0	52.7	-15.00 %		Solar Pozo Almonte 3	122.3	108.7	-11.11 %	
HP FLORIDA III	50.4	48.6	-3.57 %		Solar Puerto Seco	78.9	84.7	+7.37 %	PMG
Hidroeléctrica Chilco	-	0.0	-		Solar Quilapilún	429.2	465.0	+8.36 %	
Horcones Diésel	0.0	0.0	-		Solar SDGx01	2.8	2.6	-6.07 %	PMG
Horcones TG	-	0.0	-		Solar San Andrés	210.0	158.6	-24.48 %	
Hornitos	120.0	37.7	-68.58 %	DF	Solar Santiago	387.2	514.1	+32.76 %	
Hornitos-CTH	3428.1	3125.6	-8.82 %		Solar Uribe	349.9	235.5	-32.69 %	
Huasco	2.0	0.0	-100.00 %		Solar Usya	390.0	359.4	-7.84 %	LF
Huasco TG IFO	0.0	-	-		TAMAYA SOLAR	-	0.0	-	P
Inacal	0.0	0.0	-		TER SAN JAVIER 1	-	0.0	-	
Isla	811.0	578.6	-28.65 %		TER SAN JAVIER 2	-	0.0	-	
Itata	480.0	473.4	-1.38 %		Taltal 1 Diésel	0.0	0.0	-	DLC, RO
Juncal	96.0	108.1	+12.60 %		Taltal 1 GNL	0.0	224.0		GNP RO
Kelar Diésel	2550.1	2384.8	-6.48 %		Taltal 2 Diésel	0.0	0.0	-	DLC
Kelar GNL	1555.4	2182.6	+40.33 %		Taltal 2 GNL	0.0	439.0		GNP
LA CRUZ SOLAR	-	0.0	-	P	Tamaya-Suta	0.0	0.0	-	
LA HUELLA	357.2	202.4	-43.34 %	P	Tarapacá-CTTAR	0.0	0.0	-	
LOS OLMOS	79.7	0.0	-100.00 %	P	Tarapacá-CTTAR Fuel Oil	-	0.0	-	
La Confluencia	451.0	392.2	-13.04 %		Tarapacá-TGTAR	0.0	8.8		GNP
La Higuera	510.0	681.6	+33.65 %	MM	Tchamma	24.8	0.0	-100.00 %	
La Mina	102.7	0.0	-100.00 %		Teno	0.0	0.0	-	LF
La Portada-TECNET	0.0	0.0	-		Teno Gas 50	0.0	0.0	-	
Laja 1	293.4	615.1	+109.62 %		Termopacifico	0.0	0.0	-	LF
Laja Energía Verde	240.0	114.0	-52.50 %		Tocopilla-TG1	0.0	0.0	-	
Las Vegas	0.0	0.0	-	PMG	Tocopilla-TG2	0.0	0.0	-	
Lautaro 1	624.0	159.2	-74.48 %		Tocopilla-TG3 Diésel	0.0	0.0	-	
Lautaro 2	0.0	0.0	-	MM	Tocopilla-TG3 GNL	0.0	0.0	-	DF
Lebu	-	0.0	-	PMG	Tocopilla-U14	1520.4	1629.5	+7.18 %	LF
Licantén	156.0	63.5	-59.31 %	LF	Tocopilla-U14 Fuel Oil	-	0.0	-	
Licán	282.0	216.9	-23.08 %		Tocopilla-U15	1627.9	1740.4	+6.91 %	LF
Linares Norte	0.0	0.0	-	PMG	Tocopilla-U15 Fuel Oil	-	0.0	-	
Lircay	240.0	248.7	+3.62 %		Tocopilla-U16 Diésel	0.0	0.0	-	
Llauquereo	41.5	42.9	+3.40 %	PMG	Tocopilla-U16 GNL	3694.3	4678.9	+26.65 %	RO
Loma Alta	328.5	207.7	-36.77 %		Tocopilla-U16 Gas Arg	0.0	-	-	
Loma Los Colorados 1	0.0	0.0	-	PMG, DF	Trapén	0.8	26.7	+3047.33 %	LF
Loma Los Colorados 2	0.0	263.7		GNP DF	Trincao	0.0	25.6		GNP MM
Los Guindos TG1 Diésel	0.0	0.0	-		Trongol	-	0.0	-	PMG

Centrales	Prog.	Real	Desv %	Estado
Los Guindos TG2 Diésel	0.0	0.0	-	
Los Hierros	504.0	537.7	+6.68 %	
Los Hierros 2	72.0	98.7	+37.13 %	
Los Lagos Solar	0.0	0.0	-	P
Los Molles	36.3	25.0	-31.03 %	
Los Pinos	0.0	708.0	GNP	
Los Quilos	207.0	233.9	+13.00 %	MM
Los Vientos	0.0	0.0	-	
MALGARIDA	1267.7	898.9	-29.10 %	P
MALGARIDA 1	0.0	-	-	P
MALGARIDA 2	0.0	-	-	P
MALLECO NORTE	483.0	227.4	-52.91 %	P
MALLECO SUR	630.9	989.3	+56.81 %	P
MECO CHILLAN	6.4	41.1	+545.55 %	P
Machicura	312.0	315.0	+0.96 %	LF
Maitenes	134.0	130.4	-2.69 %	DF, RO
Malalcahuello	72.0	70.3	-2.43 %	
Mampil	782.7	756.7	-3.33 %	
Mantos Blancos-MIMB	0.0	0.0	-	
Mariposas	72.0	75.8	+5.28 %	PMG

Centrales	Prog.	Real	Desv %	Estado
Ujina-1	0.0	0.0	-	
Ujina-2	0.0	0.0	-	
Ujina-3	0.0	0.0	-	
Ujina-4	0.0	0.0	-	
Ujina-5	0.0	0.0	-	MM
Ujina-6	0.0	0.0	-	
Ventanas 1	0.0	0.0	-	ERE
Ventanas 2	2685.0	2749.0	+2.38 %	LF
Villa Alegre	18.4	58.7	+218.82 %	
Villa Solar	1.5	0.4	-75.91 %	
Viñales	528.0	712.8	+35.00 %	
Volcán	144.0	148.0	+2.78 %	
Yungay 1 Diésel	0.0	0.0	-	
Yungay 1 GNL	0.0	0.0	-	
Yungay 2 Diésel	0.0	0.0	-	
Yungay 2 GNL	0.0	0.0	-	
Yungay 3 Diésel	0.0	0.0	-	
Yungay 3 GNL	0.0	0.0	-	
Yungay 4	0.0	0.0	-	
Total	230666.0	225829.4	-2.10 %	

1.2. PMGD

Centrales	Prog.	Real	Desv %
Agni	-	0.0	-
Alerce	-	0.0	-
Alicahue	13.4	15.7	+17.41 %
Allipén	50.5	62.3	+23.33 %
Almendrado	-	0.0	-
Ancalí	-	0.0	-
Argomedo	30.8	25.9	-16.02 %
Aromos	-	2.1	-
Arrayán	-	0.0	-
Auxiliar del Maipo	35.4	14.7	-58.54 %
Aviles	0.0	0.0	-
BERRUECO	20.6	26.2	+27.58 %
Bellavista 1	81.1	69.6	-14.20 %
Biocruz	-	21.2	-
Biomar	-	0.0	-
Bluegate	-	0.0	-
Boldos	-	0.0	-
Boquiamargo	0.0	0.0	-
Bureo	26.3	0.0	-100.00 %
CASABERMEJA	7.5	7.2	-4.22 %
Caimi	0.0	0.0	-
Calafate	-	0.0	-
Calfuco	-	0.0	-
Caliboro	17.2	23.4	+35.83 %
Campesina	-	0.0	-
Casablanca 1	-	0.4	-
Casablanca 2	-	0.0	-
Cavanca	41.6	38.4	-7.60 %
Cañete	-	0.0	-
Chacabuco	47.7	41.2	-13.64 %
Chanleufu	0.5	2.6	+445.65 %
Chifin	-	0.0	-
Chile Generación	-	0.0	-
Chorrillos	-	0.0	-
Chufkén (Traiguén)	-	0.0	-
Ciruelillo	-	0.0	-
Cocharcas	5.8	17.4	+198.72 %
Collil	140.0	70.0	-49.99 %
Conchali	-	0.0	-
Contra	-	0.0	-
Contulmo	-	0.0	-
Copiulemu	-	13.4	-
Correntoso	132.6	115.5	-12.95 %
Cortés	-	0.0	-
Cosapilla	10.4	10.3	-1.08 %
Curacautín	-	10.9	-
Curaua	-	0.7	-
Curileufu	-	0.0	-
DON ANDRÓNICO	7.5	0.0	-100.00 %

Centrales	Prog.	Real	Desv %
Rapaco	-	0.0	-
Raso Power	-	0.0	-
Reca	38.4	39.7	+3.39 %
Rey	-	0.0	-
Riñinahue	0.3	0.9	+209.65 %
Roblería	4.5	65.1	+1343.28 %
Río Azul	-	0.0	-
Río Mulchén	7.2	23.7	+229.75 %
SANTA CAROLINA	14.5	11.3	-22.56 %
Salmofood 1	-	0.0	-
Santa Elena	0.0	46.0	-
Santa Ester	0.0	0.0	-
Santa Irene	-	0.0	-
Santa Isabel	5.6	11.7	+107.28 %
Santa Luisa	-	0.0	-
Saturno Norte	10.1	19.1	+88.58 %
Sauce Andes	6.7	6.6	-1.98 %
Sepultura	-	0.0	-
Skretting	-	0.0	-
Skretting Osorno	-	0.0	-
Sol de Septiembre	49.9	48.0	-3.82 %
Solar Alto	0.0	0.0	-
Solar Altos de Til Til	7.9	8.8	+11.84 %
Solar Altos del Paico	0.0	-	-
Solar Alturas de Ovalle	15.0	0.0	-100.00 %
Solar Amparo del Sol	11.7	8.4	-28.38 %
Solar Antonia	17.3	17.8	+3.20 %
Solar Ariztía	0.0	0.0	-
Solar Bellavista	9.3	12.2	+31.71 %
Solar Cabilsol	14.8	17.6	+18.92 %
Solar Cachiyuyo 2	46.5	28.9	-37.71 %
Solar Calama 1	81.9	82.6	+0.90 %
Solar Calle Larga	14.5	12.7	-12.08 %
Solar Canesa 1	20.7	17.7	-14.43 %
Solar Casuto	10.7	9.8	-8.06 %
Solar Catemu	7.7	8.3	+6.83 %
Solar Catán	8.9	11.9	+34.04 %
Solar Cernicalo 1	9.7	10.9	+11.57 %
Solar Cernicalo 2	9.7	10.0	+3.03 %
Solar Chalinga	17.7	13.6	-23.16 %
Solar Chancon	12.9	15.0	+16.36 %
Solar Chimbarongo	15.9	10.1	-36.60 %
Solar Chuchiñi	7.2	15.0	+108.20 %
Solar Citrino	14.4	16.4	+13.64 %
Solar Cordillerilla	8.2	1.0	-88.36 %
Solar Covadonga	75.5	34.2	-54.71 %
Solar Crucero	13.4	15.5	+15.18 %
Solar Cruz	12.7	16.5	+29.77 %
Solar Cuz Cuz	7.5	14.3	+90.16 %

Centrales	Prog.	Real	Desv %
Danisco	-	0.0	-
Darlin	49.3	58.4	+18.57 %
Don Pedro	-	0.0	-
Don Walterio	70.8	74.2	+4.77 %
Dongo	110.6	68.2	-38.37 %
Donguil	4.9	5.3	+7.51 %
Doña Hilda	2.5	5.1	+104.55 %
Doña Javiera	-	2.2	-
Doñihue	43.1	47.1	+9.31 %
EL ROMERAL	53.6	41.3	-22.93 %
ETERSOL	-	0.0	-
Eagon	-	0.0	-
El Agrio	9.0	0.0	-100.00 %
El Arrayán	-	9.9	-
El Campesino 1	-	0.4	-
El Canelo	67.1	71.7	+6.73 %
El Canelo 1	-	0.0	-
El Colorado	43.0	17.5	-59.39 %
El Condor	2.5	4.1	+62.25 %
El Diuto	40.0	58.0	+44.93 %
El Faro	-	0.0	-
El Litre	40.9	51.8	+26.55 %
El Llano	0.0	0.0	-
El Manzano	86.7	90.9	+4.84 %
El Mirador	15.0	61.6	+311.54 %
El Molle	-	34.8	-
El Nogal	-	0.1	-
El Piuquen	0.0	0.0	-
El Queltehue	-	18.4	-
El Resplandor	5.8	17.2	+195.60 %
El Tártaro	0.0	0.0	-
Energía León	-	48.7	-
Ensenada	0.0	0.0	-
Ermitaño	-	0.0	-
Estancilla	-	0.0	-
Estandartes	-	0.0	-
Eyzaguirre	5.0	5.8	+15.81 %
Eólica El Arrebol	6.9	87.3	+1157.49 %
Eólica Huajache	32.6	44.3	+36.14 %
Eólica Las Peñas	43.4	119.3	+174.85 %
Eólica Lebu 3	28.5	1.6	-94.42 %
Eólica Raki	48.8	50.8	+4.07 %
Eólica Ucuquer	22.5	37.2	+65.77 %
Eólico El Nogal	7.5	100.4	+1233.09 %
GR Pitao	0.0	0.0	-
Galpón	23.7	31.7	+33.35 %
Gami	-	0.0	-
Granada	52.5	52.3	-0.27 %
Guanaco Solar	15.2	17.3	+13.38 %
HBS	-	1.6	-
HBS-GNL	-	6.3	-

Centrales	Prog.	Real	Desv %
Solar Don Eugenio	15.8	16.7	+5.86 %
Solar Don Mariano	16.1	17.6	+9.14 %
Solar Eclipse	16.5	3.7	-77.92 %
Solar El Boco	16.3	40.2	+146.56 %
Solar El Chincol	6.3	19.6	+211.68 %
Solar El Chucao	2.1	0.0	-100.00 %
Solar El Divisadero	9.3	11.1	+19.62 %
Solar El Estero	7.8	11.3	+45.24 %
Solar El Laurel	16.8	45.6	+170.63 %
Solar El Picurio	19.1	14.6	-23.51 %
Solar El Pilpen	18.2	18.4	+0.93 %
Solar El Pitio	17.8	17.5	-1.74 %
Solar El Queltehue	21.5	-	-
Solar El Quemado	11.4	21.2	+86.51 %
Solar El Queule	4.3	0.0	-100.00 %
Solar El Roble	15.1	32.0	+111.85 %
Solar El Sauce	15.1	15.1	+0.26 %
Solar Encon	28.2	36.6	+29.78 %
Solar Esperanza	13.0	0.0	-100.00 %
Solar Filomena	7.8	10.0	+28.21 %
Solar Fotovolt	0.0	0.0	-
Solar Francisco	-	0.0	-
Solar GR Lemu	11.4	36.2	+216.76 %
Solar GR Pepa	0.0	0.0	-
Solar GR Santa Rosa	56.2	61.6	+9.64 %
Solar Girasoles	13.9	13.6	-1.81 %
Solar Guadalao	11.9	15.0	+26.72 %
Solar Homero	18.5	-	-
Solar Hormiga	8.4	9.8	+16.86 %
Solar Hornitos	1.2	0.6	-46.45 %
Solar Illapel 5X	20.8	13.7	-34.02 %
Solar Jahuel	17.4	21.7	+24.44 %
Solar Jaururo	13.3	17.3	+29.43 %
Solar José Soler Mallafré	8.1	6.4	-20.95 %
Solar Konda	9.8	10.8	+10.28 %
Solar La Acacia	58.9	44.3	-24.75 %
Solar La Blanquina	54.0	55.2	+2.10 %
Solar La Chapeana	7.0	5.1	-27.43 %
Solar La Chimba Bis	8.8	4.1	-53.67 %
Solar La Esperanza 2	51.4	59.1	+14.99 %
Solar La Estancia	17.0	16.4	-3.21 %
Solar La Frontera	27.4	32.4	+18.19 %
Solar La Lajuela	34.6	34.9	+0.79 %
Solar La Manga	20.0	14.1	-29.57 %
Solar La Quinta	15.8	12.6	-19.84 %
Solar Lagunilla	7.4	5.6	-24.07 %
Solar Las Araucarias	0.0	0.0	-
Solar Las Codornices	12.9	22.0	+70.02 %
Solar Las Mercedes 1	15.7	17.2	+9.63 %
Solar Las Mollacas	7.0	7.5	+6.65 %
Solar Las Palomas	19.4	21.0	+8.30 %

Centrales	Prog.	Real	Desv %	Centrales	Prog.	Real	Desv %
Hidrobonito MC1	158.3	117.3	-25.89 %	Solar Las Perdices	6.6	17.9	+170.18 %
Hidrobonito MC2	75.4	69.4	-8.00 %	Solar Las Rojas	14.3	1.2	-91.87 %
Hidroeléctrica Cumpeo	64.4	67.2	+4.34 %	Solar Las Terrazas	13.0	1.2	-91.00 %
Homero	-	19.7	-	Solar Las Torcazas	-	18.5	-
Huape	8.7	17.0	+94.51 %	Solar Las Turcas	21.9	19.6	-10.32 %
JCE	-	0.0	-	Solar Lipangue	1.4	12.6	+797.27 %
Juncalito	0.0	0.0	-	Solar Llanos de Potroso	0.0	13.1	-
LAS TORTOLAS	0.0	0.0	-	Solar Lo Miranda	32.8	34.2	+4.22 %
LLAY LLAY	46.3	47.4	+2.31 %	Solar Lo Sierra	15.8	17.3	+9.34 %
LUMBRERAS	18.7	21.4	+14.15 %	Solar Loreto	13.2	14.1	+6.92 %
La Arena	0.0	0.0	-	Solar Los Gorriones	15.3	19.5	+27.80 %
La Bifurcada	0.0	1.2	+5614.61 %	Solar Los Libertadores	32.8	23.0	-29.82 %
La Compañía 2	3.8	11.1	+190.32 %	Solar Los Paltos	13.1	16.1	+22.70 %
La Ligua	14.9	18.5	+24.77 %	Solar Los Patos	20.0	20.8	+4.15 %
La Montaña 1	63.0	69.5	+10.35 %	Solar Los Puquios	19.2	8.2	-57.21 %
La Montaña 2	40.5	36.3	-10.45 %	Solar Luce	14.1	14.2	+1.03 %
La Paloma	2.8	15.8	+459.49 %	Solar Luders	16.3	20.6	+26.20 %
La Viña - Alto la Viña	0.8	5.0	+518.51 %	Solar Luna	12.2	14.1	+15.29 %
Las Cabras	0.0	0.0	-	Solar Luna del Norte	8.1	12.5	+54.29 %
Las Chacras	15.7	17.2	+9.53 %	Solar Malaquita 2	57.7	40.3	-30.23 %
Las Flores	33.1	22.9	-30.93 %	Solar Marchigue 2	51.4	52.8	+2.80 %
Las Lechuzas	11.4	21.1	+84.50 %	Solar Marchigue 7	17.1	17.8	+4.16 %
Las Pampas	-	0.0	-	Solar Marin	11.3	13.1	+16.13 %
Las Vertientes	0.0	0.0	-	Solar Montt	15.7	17.0	+8.46 %
Lepanto	-	0.0	-	Solar Norte Chico 1	12.6	13.0	+3.08 %
Linares Solar	0.0	0.0	-	Solar Ocoa	16.6	16.1	-3.31 %
Lingue Solar	0.0	0.0	-	Solar Olivillo	46.5	47.1	+1.37 %
Lipigas Concón	-	0.0	-	Solar Ovejería	39.4	41.0	+3.96 %
Lirio del campo	13.7	15.9	+15.98 %	Solar PFV Mostazal	49.8	60.5	+21.45 %
Lonquimay	-	0.0	-	Solar PMGD Diego de Almagro	0.0	0.0	-
Los Bajos	40.3	12.5	-69.08 %	Solar PSF Lomas Coloradas	6.2	9.4	+52.87 %
Los Colonos	-	0.0	-	Solar Pama	11.0	10.5	-4.34 %
Los Corrales	2.3	8.0	+245.85 %	Solar Panquehue 2	23.9	33.2	+38.55 %
Los Corrales 2	16.0	11.9	-25.62 %	Solar Paraguay	57.6	57.2	-0.70 %
Los Molinos	0.0	0.0	-	Solar Parque Bicentenario	4.7	0.0	-100.00 %
Los Morros	14.3	6.6	-54.10 %	Solar Pedrerros	12.8	16.4	+28.27 %
Los Negros	-	0.0	-	Solar Peralillo	19.4	0.0	-100.00 %
Los Padres	48.3	49.2	+1.83 %	Solar Pica	0.0	0.0	-
Los Perales	3.4	18.4	+434.95 %	Solar Piquero	17.6	19.0	+7.78 %
Los Sauces	-	0.8	-	Solar Pirque	15.7	18.0	+14.65 %
Los Álamos	-	0.0	-	Solar Placilla	12.8	0.0	-100.00 %
Louisiana Pacific	-	0.0	-	Solar Población	16.2	17.9	+10.77 %
Lousiana Pacific 2	-	0.0	-	Solar Portezuelo	17.1	16.3	-4.75 %
MCH-Dosal	-	0.0	-	Solar Pozo Almonte 1	0.0	0.0	-
MSA-1	2.0	3.2	+59.16 %	Solar Pullalli	13.2	17.1	+28.78 %
Maisan	6.4	5.6	-12.82 %	Solar Punta Baja	14.2	4.8	-66.19 %
Malinke	13.5	17.3	+27.77 %	Solar Queltehue	17.2	17.9	+3.87 %
Mallarauco	76.7	80.2	+4.53 %	Solar RLA	14.4	16.1	+11.38 %
María Elena	1.2	0.0	-100.00 %	Solar Ranguil	17.3	17.3	+0.01 %
María Pinto	15.0	13.8	-8.21 %	Solar Rodeo	10.6	10.6	+0.23 %

Centrales	Prog.	Real	Desv %	Centrales	Prog.	Real	Desv %
Melo	34.9	48.0	+37.81 %	Solar Rovián	21.3	24.3	+14.07 %
Membrillo	15.1	11.2	-26.05 %	Solar San Francisco	31.8	13.2	-58.43 %
Mimbre	-	0.0	-	Solar San Isidro	16.2	17.3	+6.99 %
Minihidro Alto Hospicio	21.3	16.5	-22.62 %	Solar San Pedro	18.9	18.7	-1.16 %
Minihidro El Toro	21.7	15.5	-28.50 %	Solar Santa Adriana	15.4	16.7	+8.39 %
Minihidro Santa Rosa	9.8	9.5	-3.03 %	Solar Santa Amelia	17.5	23.0	+30.89 %
Molinería Villarrica	8.0	3.9	-51.17 %	Solar Santa Cecilia	7.7	7.0	-8.70 %
Monte Patria	-	0.0	-	Solar Santa Clara	19.6	14.8	-24.51 %
Moya	0.0	0.0	-	Solar Santa Julia	14.8	18.8	+26.89 %
Muchi	0.0	12.6	-	Solar Santa Laura	11.3	15.1	+33.27 %
Multiexport 1	-	0.0	-	Solar Santuario	12.9	13.3	+2.79 %
Multiexport 2	-	0.0	-	Solar Sol	8.1	12.6	+55.40 %
Munilque 1	0.8	0.0	-100.00 %	Solar Talca	39.3	55.5	+41.21 %
Munilque 2	10.1	0.0	-100.00 %	Solar Talhuén	11.8	9.7	-17.63 %
Mutupin	0.0	0.0	-	Solar Tambo Real	8.0	9.4	+16.84 %
Nahuen	63.2	64.6	+2.14 %	Solar Techos de Altamira	0.8	0.0	-100.00 %
OVALLE NORTE	63.5	28.5	-55.10 %	Solar Til Til	12.0	7.8	-34.82 %
Orafti	-	0.9	-	Solar Trebal	8.7	2.7	-68.60 %
Orion	1.0	18.9	+1847.30 %	Solar Trica-Dos	4.0	14.9	+269.89 %
PENCAHUE ESTE	4.6	6.8	+47.06 %	Solar Tricahue 2	59.8	62.5	+4.58 %
PFV Alcaldesa	0.0	0.0	-	Solar Tucúquere	13.1	12.9	-1.85 %
PFV CANELILLO	18.3	19.0	+3.46 %	Solar UTFSM Valparaíso Valdés	0.4	0.1	-64.29 %
PFV CIPRES	17.1	52.8	+209.53 %	Solar UTFSM Viña del Mar	1.3	1.4	+2.14 %
PFV COCINILLAS	19.6	14.1	-28.04 %	Solar Valle Este 2	66.2	40.1	-39.41 %
PFV PITRA	17.8	18.6	+4.76 %	Solar Valle Oeste 2	69.3	44.0	-36.59 %
PFV PMGD Curacavi	0.0	0.0	-	Solar Valle de la Luna 2	12.9	13.8	+6.74 %
PFV PMGD El Flamenco	-	0.0	-	Solar Victoria	78.0	79.8	+2.29 %
PFV PMGD Pegasus Solar	-	0.0	-	Solar Villa Cruz	6.0	18.6	+209.34 %
PFV PMGD San Camilo	-	0.0	-	Solar Villa Prat	1.6	0.0	-100.00 %
PFV SANTA INES	23.6	30.0	+27.13 %	Solar Villa Seca	5.3	17.4	+224.44 %
PINARES	-	0.0	-	Solar Vituco 2B	17.0	17.8	+4.81 %
PMGD Camping	-	0.0	-	Solar Ñilhue	3.6	4.6	+27.23 %
PMGD PFV La Muralla	-	0.0	-	Solar Ñiquén	11.5	14.8	+27.90 %
PMGD PFV Vicente	-	0.0	-	Southern	-	0.0	-
PRP Las Quemadas	-	0.0	-	Tamarugo	0.0	0.0	-
Paine	0.0	0.0	-	Tamboros	-	0.0	-
Palmar	84.6	71.0	-16.13 %	Tamm	-	0.0	-
Panguipulli	-	0.0	-	Tapihue	-	0.0	-
Pehui	20.7	21.1	+2.20 %	Tirúa	-	0.0	-
Pichilonco	27.8	24.5	-11.80 %	Tomaval	-	10.8	-
Picoltué	-	0.0	-	Trailelfú	54.0	61.2	+13.25 %
Pilpilen	18.1	18.3	+0.97 %	Tranquil	0.0	0.0	-
Pitotoy	15.4	17.1	+10.96 %	Trebal Mapocho	-	0.0	-
Puclaro	26.4	19.1	-27.79 %	Trinidad Solar	0.0	0.0	-
Punitaqui	-	0.0	-	Trueno	116.8	139.0	+19.02 %
Purísima	8.6	4.6	-46.33 %	Truful Truful	14.2	16.1	+13.00 %
QUINANTU	59.2	65.9	+11.36 %	UTSFM Vitacura	0.0	0.0	-
QUITRALMAN	-	0.0	-	Venturada	21.9	62.1	+183.27 %
Quillaileo	4.7	9.6	+106.85 %	Watts 1	-	0.0	-
Quillay	14.2	15.2	+6.52 %	Watts 2	-	0.0	-

Centrales	Prog.	Real	Desv %
RAULI	53.7	54.1	+0.69 %
RINCONADA NORTE	8.6	7.8	-10.10 %
Ramadilla	-	0.0	-

Centrales	Prog.	Real	Desv %
Yumbel	-	0.0	-
Zapallar	-	0.0	-
Zofri	-	0.0	-
Total	6262.5	6832.9	+9.11 %

Abreviaturas:

CSE:Conectada a Sistema Externo

DF:Desconexión Forzada

DLC:Desconectada con Limitación de Combustible

DLF:Desconectada con Limitación Forzada

DLP:Desconectada con Limitación Programada

DRO:Desconectada con Restricción Operativa

ERE:Estado de Reserva Estratégica

FE:Falla Externa

GNP:Generación no programada

LC:Limitación de Combustible

LF:Limitación Forzada

LP:Limitación programada

MM:Mantenimiento Mayor

P:Prueba de Puesta en Servicio

PDO:Prueba DO

PMG:Pequeño Medio de Generación

PMGD:Pequeño Medio de Generación Distribuida

PO:Prueba Operacional

RO:Restricción Operativa

SI:Sin información

JUSTIFICACIÓN DE PRINCIPALES DESVIACIONES (*)

Pehuenche	Menor generación real por costo marginal.
Ralco	Mayor generación real por costo marginal.
Atacama-2 GNL	Menor generación real por costo marginal.
Mejillones-CTM1	Menor generación real por indisponibilidad.
Mejillones-CTM3 GNL	Mayor generación real por costo marginal.

$$(*) \text{ si } \left\{ \begin{array}{l} |E_{real} - E_{programada}| > 12.5\% E_{programada} \\ y \\ |E_{real} - E_{programada}| > 0.5\% E_{total \text{ real}} \end{array} \right\}$$

ESTADO DE LAS CENTRALES

3.1. Desconectada con Limitación de Combustible

CENTRALES (≥100 MW)	Disponibilidad (%)	Observaciones
Taltal 1 Diésel	100.0	Limitada a generar con diésel. Causa informada: Sin combustible para generar, según IL 2021001887.
Taltal 2 Diésel	0.0	Limitada a generar con diésel. Causa informada: Sin combustible para generar, según IL 2021001887.

3.2. Desconectada con Restricción Operativa

CENTRALES (≥100 MW)	Disponibilidad (%)	Observaciones
Cardones	100.0	Limitación de arranques seguidos dentro de 8 horas radica en que el transformador de Servicios Auxiliares tiene potencia nominal de 4 MVA con la capacidad de aumentar a 8 MVA por 1/2 hora cada 8 horas. La capacidad mayor a la nominal es requerida por el SFC (Convertidor Estático de Frecuencia), SEE (Sistema de Excitación) y bomba principal de combustible durante el arranque de la unidad, según IL 2017001231.

3.3. Estado de Reserva Estratégica

CENTRALES (≥100 MW)	Disponibilidad (%)	Observaciones
Ventanas 1	100.0	Ventanas 1 se encuentra en Estado de Reserva Estratégica. Por lo tanto, para solicitar su despacho se debe cumplir lo indicado en el "Reglamento de Potencia" (Decreto 62/2006, modificado por el Decreto 42 del 2020), específicamente lo señalado en el "Art. 25 quinquies"

3.4. Limitación Forzada

CENTRALES (≥100 MW)	Disponibilidad (%)	Observaciones
Andina-CTA	96.0	Limitada en 170 MW por control emisiones NOx, según y IL 2021001939.
Atacama-1 Diésel	100.0	TG1A limitada en 31 MW con combustible líquido por Alta Diferencial de Cámaras en circuito secundario de petróleo, según IL 2021001894.
Campiche	31.0	Control de abastecimiento de carbón.
Eólica Taltal	100.0	Parque eólico sin control de potencia reactiva, error de Scada, según IL 2021001225.
Guacolda 1	81.8	Limitada en 126 MW por máximo control de válvula de turbina, según IL 2021001247.
Guacolda 2	68.6	Limitada en 105 MW. Causa informada: Por parámetros del sistema de circulación, según IL 2021001973.
Guacolda 4	96.0	Limitada en 143 MW. Causa informada: Control de parámetros del sistema de circulación, según IL 2021001619.
Mejillones-CTM1	74.3	Limitada en 140 y 130 MW por presurización del hogar caldera y temperatura en descarga agua de mar, según IL 202102011 e IL 2021001748.
Mejillones IEM	94.1	Limitada en 355 MW. Causa informada: Alta vibración en descanso N°1 TV, según IL 2021001155.
Norgener-NT01	100.0	Límitada en 134 MW en revisión de la unidad se verifica que no está dando la Pmax declarada, según IL 2021000072.
Nueva Ventanas	0.0	Control de abastecimiento de carbón.
Solar PV Conejo	97.0	Limitada en 100 MW, según IL 2021001819.
Termopacífico	60.0	Limitada en 60 MW. Causa informada: Alta temperatura de escape en las unidades generadoras.
Tocopilla-U14	62.5	Limitada en 85 MW por alta temperatura vapor recalentado, según IL 2021000609.
Tocopilla-U15	68.1	Limitada en 90 MW por filtración descarga del desaireador, según IL 2021000376.
Ventanas 2	88.6	Limitada en 195 MW por control de parámetros del sistema de combustión. Según IL 2021001918.

3.5. Mantenimiento Mayor

CENTRALES (≥100 MW)	Disponibilidad (%)	Observaciones
Alfalfal	50.0	Mantenimiento Mayor U-1.
Angamos-ANG1	0.0	Mantenimiento mayor, según SD 2021057694.
La Higuera	50.0	Mantenimiento Mayor U-2.
Mejillones-CTM2	0.0	Mantenimiento mayor, según SD 2021064932.

3.6. Prueba de Puesta en Servicio

CENTRALES (≥100 MW)	Disponibilidad (%)	Observaciones
ATACAMA SOLAR S.A.	0.0	En período de puesta en servicio.
CALAMA	0.0	En período de puesta en servicio.
CAMPOS DEL SOL	0.0	En período de puesta en servicio.
CERRO DOMINADOR CSP	0.0	En período de puesta en servicio.
Chagual	0.0	En período de puesta en servicio.
COMBARBALA	0.0	En período de puesta en servicio.
Domeyko	0.0	En período de puesta en servicio.
LOS OLMOS	0.0	En período de puesta en servicio.
MALGARIDA	0.0	En período de puesta en servicio.
MALGARIDA 2	0.0	En período de puesta en servicio.
MALLECO NORTE	0.0	En período de puesta en servicio.
MALLECO SUR	0.0	En período de puesta en servicio.
PFV Diego de Almagro Sur	0.0	En período de puesta en servicio.
PFV RÍO ESCONDIDO	0.0	En período de puesta en servicio.
PFV SANTA ISABEL	0.0	En período de puesta en servicio.
PFV Sol del Desierto	0.0	En período de puesta en servicio.
PFV SOL DE LILA	0.0	En período de puesta en servicio.
PFV Sol de los Andes	0.0	En período de puesta en servicio.
RENAICO 2	0.0	En período de puesta en servicio.
TAMAYA SOLAR	0.0	En período de puesta en servicio.

3.7. Restricción Operativa

CENTRALES (≥100 MW)	Disponibilidad (%)	Observaciones
Abanico	100.0	Limitada a un mínimo técnico provisorio de 5 MW. Causa informada: Debe quedar una unidad en servicio para alimentar al cliente externo Frontel, que abastece la zona de Antuco, Abanico y Lago Laja,
Angostura	100.0	C. Angostura U1. Por condición de afluente, se requiere restringir la entrada en servicio de la UG1. La unidad está disponible, pero se debe restringir al máximo su operación, por eventuales fallas o demoras en la puesta en servicio, por lo mismo se requiere dar prioridad a la operación de la Unidad 2 y Unidad 3, solo utilizar la unidad en condición de emergencia por control Cota. No presta SSCC
Antuco	100.0	C. Antuco U-1 y 2 con informe de limitación. Causa informada: La tasa de toma de carga de la central se deberá limitar a 40 MW por cada hora, para no afectar con golpes de agua las obras hidráulicas de los canales de regadío (Zañartu, Collao, Ríos - Pinochet y Antuco), que se encuentran inmediatamente aguas abajo de la descarga de la central Antuco. La potencia mínima de operación de la Unidad N ° 2 es de 80 MW. Debido a la instalación de un sistema que permite inyectar aire en la zona del rodete, excepcionalmente, la unidad N ° 2 puede operar en forma extraordinaria y no permanente bajo el mínimo técnico con una carga de 60 MW (no se permite generar en zonas intermedias para evitar la alta vibración en turbina y corte de pernos en tubo intermedio). Para cargas mayores a 80 MW, la Unidad se debe mantener limitada debido al comportamiento anormal en lógica asociada al set-point del controlador SCADA 800M, por lo que en todo su rango de generación (0 a 160 MW) no participa en el control primario ni secundario de frecuencia (AGC), según IL 2021001197 y 2021001198.
Atacama-1 Diésel	100.0	Disponible para generar con combustible diesel bajo los criterios indicados según autonomía, según IL 2021001792.
Atacama-1 GNL	100.0	Control de emisiones diarias, según IL 2021001953.
Atacama-2 Diésel	100.0	Disponible para generar con combustible diesel bajo los criterios indicados según autonomía, según IL 2021001792.

CENTRALES (≥100 MW)	Disponibilidad (%)	Observaciones
Colbún	100.0	Limitada para partida autónoma de forma automática. Causa informada: Falla de medida de potencial de barra N°1 SS/AA 13.8 KV, según IL 2021000818.
El Toro	100.0	C. El Toro limitado para realizar AGC, según IL2021001180.
Quintero 1A Diésel	0.0	Limitada a operar con diésel por restricciones ambientales, según IL 2020000259.
Quintero 1B Diésel	0.0	Limitada a operar con diésel por restricciones ambientales, según IL 2020000260.
Ralco	100.0	U-1 con limitación. Causa informada: Se requiere mantener unidad 1 en servicio siempre que el sistema lo requiera. Dicho requerimiento se debe a una condición técnica de válvula protección turbina la cual se encuentra trabajando en forma deficiente y por recomendación entregada por especialistas técnicos que indican disminuir los movimientos de apertura y cierre de dicha válvula y así evitar la degradación acelerada y una indisponibilidad de la unidad por un tiempo prolongado. Se solicita: En caso de que programa de generación requiera una sola unidad en servicio permanente, priorizar despacho de U-1. En caso de que programa de generación requiera una sola unidad y no de forma permanente, priorizar despacho de U-2. En caso de que programa de generación requiera ambas Unidades en servicio y por condiciones de sistema se deba detener una de las unidades, priorizar detención de U-2, según IL 2021001531.
San Isidro 1 Diésel	100.0	Limitación operación Combustible de Respaldo; Conforme a la Resolución de Calificación Ambiental (RCA) N° 2/97, de la Comisión Regional del Medio Ambiente (COREMA) de Valparaíso, y la RES. EXTA. N° 25/97, del Director Ejecutivo de la Comisión Nacional de Medio Ambiente (CONAMA), que aprueba la operación de la Unidad I de San Isidro, el uso del combustible de respaldo (Diésel) tiene lugar en caso de emergencia, originada en la falla del suministro de gas natural por una causa fortuita o de fuerza mayor que interrumpa el suministro desde los yacimientos de Argentina y que exista una alta demanda que no sea posible abastecer con centrales hidroeléctricas y térmicas a carbón. El Uso del Combustible no exime del cumplimiento de la Norma de emisión contenida en el RCA y en DS N° 13 Norma de emisión de Centrales Térmicas., según IL 2021000298.
San Isidro 2 Diésel	100.0	Limitación operación Combustible de Respaldo; Conforme a la Resolución de Calificación Ambiental (RCA) N° 340/2005, de la Comisión Regional del Medio Ambiente (COREMA) de Valparaíso, que aprueba la Operación de la Unidad II de San Isidro, el uso del combustible de respaldo (Diésel) tiene lugar en caso de emergencia. Las condiciones de emergencia considerarán, las posibles fallas en el sistema de transporte de gas y fallas operacionales. Las situaciones de emergencia producidas por fallas en el transporte de gas se definen como aquellas situaciones en que, estando temporalmente afectada la Central por problemas de abastecimiento de gas, los requerimientos del Coordinador Eléctrico Nacional demanden a la Central el uso de petróleo Diésel, con el objeto de suplir la demanda de energía eléctrica del sistema, por encontrarnos en esta condición. El Uso del Combustible no exime del cumplimiento de la Norma de emisión contenida en el RCA y en DS N° 13 Norma de emisión de Centrales Térmicas, según IL 2021000299.
Santa María	100.0	Tiempo de estabilización de 2 horas (solo para cambios en el sentido de la carga), según IL 20200001130. Control terciario de frecuencia CTF con limitación. Causa informada: No se puede aplicar CTF mientras este vigente la limitación 2020001130, según IL 2020001885.
Solar Luz del Norte	100.0	Indisponible para el AGC. Causa informada: No obedece consiga de bajada, según IL 2020001994.
Taltal 1 Diésel	100.0	Durante el Mantenimiento Mayor de Unidad TG1 se detectan grietas en carcaza, por lo cual se requiere limitar arranques de la misma por parte de especialistas. Por consiguiente, se solicita dar como prioridad de despachos a Unidad TG2. En caso de requerir despacho de ambas unidades, la unidad TG1 podrá operar sin restricciones, según IL 2021001458.
Taltal 1 GNL	100.0	Durante el Mantenimiento Mayor de Unidad TG1 se detectan grietas en carcaza, por lo cual se requiere limitar arranques de la misma por parte de especialistas. Por consiguiente, se solicita dar como prioridad de despachos a Unidad TG2. En caso de requerir despacho de ambas unidades, la unidad TG1 podrá operar sin restricciones, según IL 2021001458.
Tocopilla-U16 GNL	100.0	Con restricción a participar en CPF, según IL 2021001815.

4.1. Observaciones

Hora	Centro de Control	Observación
00:00	CDC	Cs. PFV Loma Los Colorados, PE Lebu (ampliación de 6,5 a 10 MW), Loma Los Colorados 2 (U-15 y 16), Dos Valles, Chagual (Ex Los Cóndores), PFV Azabache, PFV Río Escondido, PFV Campos de Sol, PE Negrete 2, CSP Cerro Dominador, PE Malleco Sur/Norte, Aillín, Combarbalá, PE Calama, PE Alena y PFV Sol del Desierto continúan en período de puesta en servicio.
00:00	Enel Transmisión	SDAC deshabilitado.
00:00	Colbún	C. Colbún se declara en condición de agotamiento con la cota 412.98 m.s.n.m. y un afluente de 314 MWh.
00:05	Hidro Maule	C. Mariposas sincronizada en pruebas.
00:38	Chilquinta	Línea de 220 kV Ciruelos - Cerros de Huichahue 1 y Cerros de Huichahue - Nueva Pichirropulli 1 abierta para regular tensión.
00:38	Transelec	Línea de 220 kV Ralco - Charrúa 1 abierta para regular tensión.
00:56	Transelec	Línea de 220 kV Ciruelos - Valdivia 2 abierta para regular tensión.
00:59	CGE	S/E Chillán interruptor B2 abierto, normalizando la topología.
01:01	Transelec	Línea de 220 kV El Laurel - Nueva Pichirropulli 1 abierta para regular tensión.
01:05	Hidro Maule	C. Mariposas disponible y en servicio.
01:19	Transelec	Línea de 500 kV Ancoa - Entre Ríos 2 abierta para regular tensión.
01:44	Angloamerican	S/E Chagres transfiere sus consumos hacia S/E Esperanza, normalizando la topología.
01:47	Chilquinta	S/E San Felipe y San Rafael transferencia automática de consumos habilitada.
03:27	CGE	SS/EE Nahuelbuta, Angol y Collipulli transferida hacia S/E Los Peumos por control de transferencia de la línea de 66kV Los Ángeles - Buenos Aires.
03:33	Transelec	Línea de 220 kV Canutillar - Puerto Montt 1 abierta para regular tensión.
03:42	Gen. Metropolitana	S/E Santiago Solar 52H2 de línea de 110 kV Cerro Navia - Santiago Solar cerrado.
03:44	Chilquinta	S/E Casablanca transfiere sus consumos hacia S/E Laguna Verde, normalizando la topología.
05:58	AES Andes	S/E Mesamávida interruptor AT1 interrupción forzada por protecciones, según IF 2021002385.
06:55	Transelec	Línea de 500 kV Ancoa - Entre Ríos 2 cerrada.
07:00	Puntilla	C. Itata con solicitud de desconexión de curso forzoso. Causa informada: Microcorte de CGE para normalizar topología en sus instalaciones, según SDCF 2021073678.
07:00	Enel Transmisión	SDAC habilitado.
07:13	Transelec	Línea de 500 kV Ancoa - Jahuel 2 cerrada.
07:18	Puntilla	C. Itata cancelada solicitud de desconexión de curso forzoso, según SDCF 2021073678.
07:38	Transelec	Línea de 220 kV Alto Jahuel - Chena 4 interrupción forzada por protecciones, según IF 2021002382.
07:49	Transelec	Línea de 500 kV Changos - Kimal 1 cerrada.
08:02	Engie Transmisión	Línea de 100 kV Chuquicamata - 10 con solicitud de desconexión de curso forzoso. Causa informada: Lavado de aisladores por alta contaminación, según SICF 2021073667.
08:03	Interchile	S/E Nueva Pan de Azúcar conectada CCSS de línea de 500 KV Nueva Pan de Azúcar - Polpaico 1 y 2.
08:08	Transelec	Línea de 220 kV Ralco - Charrúa 1 cerrada.
08:28	Transelec	Línea de 220 kV Ciruelos - Valdivia 2 cerrada.
08:31	Transelec	Línea de 220 kV Canutillar - Puerto Montt 1 cerrada.
08:32	Transelec	Línea de 220 kV El Laurel - Nueva Pichirropulli 1 cerrada.
09:35	Chilquinta	Línea de 220 kV Ciruelos - Cerros de Huichahue 1 y Cerros de Huichahue - Nueva Pichirropulli 1 cerrada.
09:44	Transelec	Línea de 220 kV Alto Jahuel - Chena 4 cerrada, según IF 2021002382.
10:00	Enel Transmisión	S/E Cerro Navia habilitado trip por contingencia específica del ATR 1 ó 2 de 220/110 kV, 400 MVA sobre líneas de 110 kV El Salto - Cerro Navia 1 y 2.

Centro de Control	Observación
10:33 Transelec	S/E Kimal ATR N°1 de 500/220 kV, 750 MVA cerrado.
10:41 Engie Transmisión	S/E Tocopilla abierto interruptor seccionador de barras JR. U-15 conectada a barra 1 de 220 kV inyectando generación hacia S/E Crucero 220 kV y U-14 conectada a barra 2 de 220 kV inyectando generación hacia 110 kV por medio de transformador Booster.
10:42 Engie Transmisión	Línea de 220 kV Tocopilla - Crucero 6A abierta.
10:42 Engie Generación	C. Mejillones CTM1 sale de servicio en forma intempestiva con 125 MW, según IF 2021002384.
10:54 STS	Línea de 66 kV Purranque - Frutillar 2 interrupción forzada por protecciones. Causa informada: Conductor cortado entre estructuras 366 y 367, según IF 2021002388.
11:11 Codelco Salvador	Línea 110 kV Diego de Almagro - Potrerillos con solicitud de desconexión de curso forzoso. Causa informada: Cambio de aislación dañada en estructura 167, según SDCF 2021073679 y 2021073766.
11:37 RNE	S/E Don Héctor interruptor J12 abierto por control de transferencia línea de 220 kV Punta Colorada - Pan de Azúcar.
11:38 Transelec	S/E Don Héctor interruptores J1, J4 y J9 abiertos por control de transferencia línea de 220 kV Punta Colorada - Pan de Azúcar.
11:42 Transelec	Línea de 220 KV Alto Jahuel - Chena 2, 3 y 4 con solicitud de intervención de curso forzoso. Causa informada: Inspección visual de la línea con trepado de estructuras para investigar causa de falla IF 2021002382, según SICF 2021073774, 2021073776 y 2021073773.
11:42 Transelec	Línea de 220 kV Neptuno - Chena con solicitud de intervención de curso forzoso. Causa informada: Inspección visual de la línea con trepado de estructuras para investigar causa de falla IF 2021002382, según SICF 2021073775.
11:48 CGE	Línea de 110 kV Cóndores - Alto Hospicio - Cerro Dragón interrupción forzada por protecciones con reconexión automática con éxito, según IF 2021002386.
11:52 Enor Chile	S/E Pallata 52J2 y 52J3 interrupción forzada por protecciones. Causa informada: Intervención fortuita relacionada con SI 2021064853.
12:12 Engie Transmisión	Línea de 100 kV Chuquicamata - 10 cancelada solicitud de desconexión de curso forzoso, según SICF 2021073667.
12:50 CGE	Línea de 110 kV Cóndores - Alto Hospicio - Cerro Dragón interrupción forzada por protecciones con reconexión automática con éxito, según IF 2021002387.
13:07 Transelec	S/E Encuentro 52JR que servía a línea de 220 kV Encuentro - Miraje interrupción forzada por protecciones. Causa informada: Intervención fortuita, según IF 2021002389.
13:09 Transelec	Línea de 220 KV Alto Jahuel - Chena 2, 3 y 4 canceladas solicitudes de intervención de curso forzoso, según SICF 2021073774, 2021073776 y 2021073773.
13:09 Transelec	Línea de 220 kV Neptuno - Chena cancelada solicitud de intervención de curso forzoso, según SICF 2021073775.
13:30 Transelec	S/E Encuentro interruptor JR cerrado, según IF 2021002389.
14:13 Enel Generación	C. Sauzalito con solicitud de intervención de curso forzoso. Causa informada: Limpieza de emergencia en hidroyector que se encuentra obstruido, según SICF 2021073841.
14:54 Gen. Metropolitana	S/E Santiago Solar 52H2 de línea de 110 kV Cerro Navia - Santiago Solar abierto por control transferencia línea de 110 kV Quillota - San Pedro.
15:51 Transelec	S/E Encuentro interruptor JR con interrupción forzada por protecciones. Causa informada: Intervención fortuita por trabajos en paño J11, según IF 2021002391.
15:56 Comasa	C. Lautaro 1 sincronizada en pruebas, según SDCF 2021073111.
16:11 Besalco	C. Convento Viejo U-1 sale del servicio en forma intempestiva con 5 MW. Causa informada: Falla en sistema de refrigeración, según IF 2021002392.
16:23 CGE	Línea de 66 kV Andalicán - Horcones 1 con solicitud de intervención de curso forzoso. Causa informada: Retirar corteza de árbol que puede provocar falla, según SICF 2021073889.
16:30 Besalco	C. Convento Viejo U-1 disponible, según IF 2021002392.
16:36 Transelec	S/E Encuentro interruptor JR cerrado, según IF 2021002391.
16:53 Imelsa -Crell	C. Trincao limitada a 9 MW. Causa informada: Unidades N°: 1, 2, 3, 4 y 5 en mantenimiento mayor, según IL 2021002025.
16:55 Engie Generación	C. Hornitos CTH baja a 110 MW con solicitud de intervención de curso forzoso. Causa informada: Normalización por falla en alimentador de carbón N°5, según SICF 2021074013.
17:11 STS	Línea de 66 kV Purranque - Frutillar 2 cerrada, según IF 2021002388.
17:13 CGE	Línea de 66 kV Andalicán - Horcones 1 cancelada solicitud de intervención de curso forzoso, según SICF 2021073889.
17:24 Comasa	C. Lautaro 1 cancelada solicitud de desconexión de curso forzoso SDCF 2021073111.
17:48 Transelec	Línea de 500 kV Changos - Kimal 1 abierta para regular tensión.
17:48 Transelec	S/E Kimal ATR N°1 de 500/220 kV, 750 MVA abierto.
17:50 Engie Transmisión	Línea de 220 kV Tocopilla - Crucero 6A cerrada.
17:51 Engie Transmisión	S/E Tocopilla interruptor seccionador de barras JR normalizado.
18:07 Transelec	S/E Don Héctor interruptores J1, J4 y J9 cerrados.
18:09 RNE	S/E Don Héctor interruptor J12 cerrado.
18:16 AES Andes	C. Angamos ANG2 limitada en 220 MW. Causa informada: Bajo nivel del domo, según IL 2021002026.

Hora	Centro de Control	Observación
18:21	Interchile	S/E Nueva Pan de Azúcar desconectada CCSS de línea de 500 KV Nueva Pan de Azúcar - Polpaico 1 y 2.
18:22	Colbún	C. Hornitos disponible, en servicio, según IF 2021002374.
18:38	CGE	Líneas de 66 kV Duqueco - Faenas Pangue interrupción forzada por protecciones con reconexión automática con éxito, según IF 2021002393.
18:40	Transelec	Línea de 220 kV Canutillar - Puerto Montt 1 y 2 con reconexión automática inhabilitada por nevazón en la zona.
19:18	STS	S/E Frutillar interruptor CT2 general de media tensión interrupción forzada por protecciones y se pierden 5.6 MW de consumos. Causa informada: Sobrecarga, según IF 2021002394.
19:30	Acciona	S/E Frutillar interruptor CT2 cerrado y recuperado los consumos, según IF 2021002394.
19:36	Celeoredes	S/E Charrúa cancelada limitación, según IL 2021002018.
19:50	Colbún	S/E Colbún transformador de 220/66 kV, 25 MVA con solicitud de desconexión de curso forzoso. Causa informada: Normalizar punto caliente agua arriba del interruptor 52CT2 del switchgear, según SDCF 2021074018.
20:28	Transelec	Línea de 220 kV Canutillar - Puerto Montt 2 con solicitud de desconexión de curso forzoso. Causa informada: Por nevadas en la zona se mantendrá en servicio línea 220kV Canutillar - Puerto Montt 1, según SDCF 2021074020.
21:00	Scotta	C. Callao sale de servicio en forma intempestiva con 1.2 MW. Causa informada: Falla interna, según IF 2021002395.
22:45	Transelec	Línea de 110 kV Diego de Almagro - Llanta 2 y Línea de 110 kV Diego de Almagro - Salvador interrupción forzada por protecciones, se pierden 40 MW aprox. de consumos de Minera El Salvador. Causa informada: se investiga, según IF 2021002397 y 2021002396.
23:10	Transelec	Línea de 110 kV Diego de Almagro - El Salvador cerrada.
23:14	Transelec	Línea de 110 kV Diego de Almagro - Llanta 1 interrupción forzada por protecciones, se pierden 26 MW de consumos de Minera El Salvador, según IF 2021002398.
23:23	Chilquinta	Línea de 220 kV Ciruelos - Cerros de Huichahue 2 y Cerros de Huichahue - Nueva Pichirropulli 2 abierta para regular tensión.
23:39	Transelec	Línea de 110 kV Diego de Almagro - El Salvador interrupción forzada por protecciones, según IF 2021002399.

4.2. Otras Observaciones

Hora	Centro de Control	Observación
00:20	CDC	La mayor tasa de disminución de generación Bruta, calculada cada 5 minutos, fue de -25 [MW/m]
01:00	CDC	La mayor disminución de generación Bruta horaria fue de -650.9 [MW]
08:00	CDC	La mayor tasa de aumento de generación Bruta, calculada cada 5 minutos, fue de 28.6 [MW/m]
18:00	CDC	El mayor aumento de generación Bruta horaria fue de 902.4 [MW]

4.3. Primera Energización de Instalaciones

Hora	Control de Control	Empresa	Instalación
11:48	Enor Chile	AR Tchamma SpA	PE Tchamma Primera energización 52F5
11:50	Enor Chile	AR Tchamma SpA	PE Tchamma Primera energización 52F6

INDISPONIBILIDAD SCADA SEN

Centro de Control	Instalación	Fecha F/S	Hora F/S	Fecha E/S	Hora E/S
Cenizas	S/E Cenizas sin datos SCADA.	06/02/2017	18:50		
Elektragen	Cs. Constitución y Maule datos SCADA.	07/11/2017	08:00		
AES Andes	S/E Mantos Blancos sin datos SCADA.	18/11/2017	18:31		
Enel Generación	S/E Pilmaiquén interruptores B1 Osorno1 y B2 Osorno 2 datos SCADA F/S.	06/12/2018	11:59		
Collahuasi	S/E Collahuasi patio 2 sin datos SCADA.	10/12/2019	16:50		
Enor Chile	C. Ujina sin datos Scada	10/12/2019	16:50		
Enlasa	C. El Peñón sin datos SCADA.	18/12/2019	00:41		
Energía Pacífico	C. Energía Pacífico datos SCADA F/S.	23/06/2020	21:30		
Enlasa	S/E Diego de Almagro 220 kV paño J2 y C. San Lorenzo 2 y 3 datos SCADA F/S.	07/08/2020	18:00		
Codelco Ventanas	S/E Tap Off Codelco Ventanas	24/11/2020	11:46		
Engie Transmisión	S/E Tap Off Quiani 52B1 sin cambio de estado.	20/12/2020	00:00		
TEN	S/E Cumbre dato de T° erróneo.	05/01/2021	11:00		
Enel Generación	C. Ralco sin datos cota y temperatura.	04/06/2021	14:00		
Prime Energía	C. Emelda sin cambio de estado en Scada.	05/08/2021	07:30		
STS	S/E Río Tolten paños J4, J5 y J6 sin Telecontrol.	14/08/2021	09:58		
Colbún	S/E Zaldivar sin datos SCADA.	15/08/2021	07:30		
CGE	Datos scada completa.	24/08/2021	17:07		

COMUNICACIONES SEN

Centro de Control	Instalación	Fecha F/S	Hora F/S	Fecha E/S	Hora E/S
Cenizas	Hot line.	07/10/2018	11:50		
Mariposas	Hot line.	23/02/2019	05:00		
ENAP BioBio	Hot line.	31/10/2020	07:30		
SWC	TG Salvador Hot line.	28/02/2021	12:00		
Cenizas	No contestan el teléfono fijo.	06/08/2021	17:09		
STS	Hot line.	22/08/2021	07:45		

ANEXO N°4

Detalle de mantenimientos programados y forzados correspondientes al día 24 de agosto de 2021

Reporte Descomexión/Intervención Subestación

Fecha generación reporte: 07-09-2023 11:34:17
Estado: Ejecución Extensa, Ejecución Extensa
Total registros General: 337
Total registros Subestación: 83

Table with 18 columns: Numero, Tipo, Estado, Empresa, Tipo Subestación, Origen, Tipo Programación, Subestación, Elemento(s), Tipo Trabajo, Potencia, Trabajos a Realizar, Descripción Nudo Ring, Comentarios Adicional, Consumo, Empresas Afectadas, Trabajo Requiere, Estado Operativo, Estado Operativo (Detalle), Fecha Inicio, Fecha Fin, Fecha Fin (Incl), Fecha Fin (Excl). Rows include various substation interventions and decommissions such as '2023072675', '2023072149', '2023072703', etc.

Reporte Desconexión/Intervención Subestación

Fecha generación reporte: 07-09-2023 11:34:17
 Estado: Ejecución Exitosa, Ejecución Exitosa
 Total registros General: 327
 Total registros Subestación: 83

Numero	Tipo	Estado	Empresa	Tipo Subestad	Origen	Tipo Programación	Subestación	Elemento(s)	Tipo Trabajo	Potencia	Trabajos a Realizar	Descripción Nivel Riesgo	Comentarios Adicional	Consumo	Empresas Afectadas	Trabajo Requiere	Estado Operativo	Estado Operativo Efectivo	Fecha Inicio	Fecha Fin	Fecha Efectivo Inicio	Fecha Efectivo Fin	
202073777	Subestación	Ejecución Exitosa	TRANSELEC S.A.	Intervención	Origen Externo	Curso Forosco	S/E DIEGO DE ALMAGRO	S/E DIEGO DE ALMAGRO H2	Otro Tipo de Trabajo	0	A solicitud de CODELCO CHILE DIVISION SALVADOR SODI-672 curso forosco, reubicación paño H2 Línea 1, en S/E Diego de Almagro, por cambio de aislación dañada y faltante en la línea 110 KV Línea 2.	Bajo	S/E Diego de Almagro: Codelco Chile división El Salvador según Sodi-672 curso forosco intervención: Subestación DIEGO DE ALMAGRO- 12H2 con bloqueo a reconexión Instalaciones en Riesgo: Paño Línea LH03, DDA-Línea 1 Temperalidad de los Riesgos: Durante de los trabajos	No tiene consumo afectado	ninguno				24-08-21 11:00	24-08-21 17:00	24-08-21 11:25	24-08-21 15:38	
202073786	Subestación	Ejecución Exitosa	TRANSELEC S.A.	Desconexión	Origen Externo	Curso Forosco	S/E DIEGO DE ALMAGRO	S/E DIEGO DE ALMAGRO H3	Otro Tipo de Trabajo	0	A solicitud de CODELCO CHILE DIVISION SALVADOR SODI-672 de curso forosco desconexión Línea 110 KV -Línea 2, en S/E Diego de Almagro, cambio de aislación dañada y faltante en la línea 110 KV.	Bajo	S/E Diego de Almagro: Codelco Chile división El Salvador según Sodi-672 (CURSO FOROSCO) Desconexión: Subestación DIEGO DE ALMAGRO- Paño Línea LH03,DDA-Línea 2 Instalaciones en Riesgo: Paño Línea LH03,DDA-Línea 2 Temperalidad de los Riesgos: Al inicio y término de las maniobras desconexión del Paño Línea LH03,DDA-Línea 2.	No tiene consumo afectado	ninguno				24-08-21 11:00	24-08-21 17:00	24-08-21 11:22	24-08-21 15:38	
202073785	Subestación	Ejecución Exitosa	TRANSELEC S.A.	Intervención	Origen Interno	Programada	S/E TARAPACA	BA S/E TABANCA 220KV BP1 BA S/E TABANCA 220KV BP2	Otro Tipo de Trabajo	0	S/E Tarapacá: Conexión de conductores de nuevo paño 14 en BU 87H fuera de servicio, la conexión se realizará en gabinete 87H en SGGG	Bajo	Actividades: SE Tarapacá: Conexión de conductores de nuevo paño 14 en BU 87H fuera de servicio, la conexión se realizará en gabinete 87H en SGGG Restricciones: No hay Instalaciones en Riesgo: Barra 230 KV, Sección 3 Tarapacá a Barra 220 KV, Sección 3 Tarapacá Temperalidad de los Riesgos: Durante de los trabajos Nivel de Riesgo: Bajo Bloqueos del jefe de Faena: Bajo Bloqueos del jefe de Faena: No hay Nota: Trabajos se realizarán en horario de baja demanda (madrugada)	No tiene consumo afectado	ninguno				24-08-21 00:00	25-08-21 08:00	24-08-21 00:04	24-08-21 07:46	
202073784	Subestación	Ejecución Exitosa	TRANSELEC S.A.	Intervención	Origen Externo	Programada	S/E QUILLOTA	S/E QUILLOTA H2	Otro Tipo de Trabajo	0	Apoyo a empresa CTNG por trabajos en sus instalaciones en S/E San Pedro.	Bajo	Instalación con riesgo: Línea de 110 KV Quilota - San Pedro. Temperalidad del riesgo: Durante la ejecución de los trabajos. Nivel de riesgo: Bajo.	No tiene consumo afectado	ninguno					24-08-21 08:00	24-08-21 18:00	24-08-21 14:52	24-08-21 17:43
202073780	Subestación	Ejecución Exitosa	TRANSELEC S.A.	Intervención	Origen Interno	Programada	S/E ALTO AHUÉL	S/E ALTO AHUÉL	Otro Tipo de Trabajo	0	S/E Alto Jahuel: Reemplazo de tarjeta de estados en RTU del pato de 220 KV.	Bajo	Actividades: S/E Alto Jahuel: Reemplazo de tarjeta de estados en RTU del pato de 220 KV. Restricciones: Normalización sujeta a coordinación. Instalaciones en Riesgo: S/E Alto Jahuel: Sistema SCADA. Temperalidad de los Riesgos: Durante la ejecución de los trabajos. Nivel de Riesgo: Bajo. Bloqueos del jefe de Faena: S/E Alto Jahuel: El jefe de Faena delimitará la zona de trabajo. Nota: Pérdida de datos SCADA del pato de 220 KV paños B, 7F y 19 mientras dura la intervención.	No tiene consumo afectado	ninguno				24-08-21 09:00	24-08-21 17:00	24-08-21 13:53	24-08-21 16:57	
202073741	Subestación	Ejecución Exitosa	TRANSELEC S.A.	Intervención	Origen Externo	Programada	S/E CARRERA PINTO	BA S/E CARRERA PINTO 220KV SECCION 2	Otro Tipo de Trabajo	0	Sodi-1009563D- Estréban Lavado de aislación de paños 15-16-113-114-115	Bajo	Actividades: S/E Carrera Pinto: A solicitud de Elctran. Lavado de aislación de paños 15-16-113-114-115. Restricciones: Subestación Carrera Pinto, No Reconectar S211-S218-S25-S2R Instalaciones en Riesgo: Barra 220 KV, sección 2 C. Pinto Temperalidad de los Riesgos: Durante de los trabajos Nivel de Riesgo: Bajo Durante de los trabajos Nivel de Riesgo: Bajo Bloqueos del jefe de Faena: No hay	No tiene consumo afectado	ninguno				24-08-21 08:00	24-08-21 18:00	24-08-21 08:00	24-08-21 18:37	
202073738	Subestación	Ejecución Exitosa	TRANSELEC S.A.	Intervención	Origen Externo	Programada	S/E CARRERA PINTO	BA S/E CARRERA PINTO 220KV SECCION 1	Otro Tipo de Trabajo	0	Sodi-1009563D- Estréban Lavado de aislación de paños 15-16-113-114-115	Bajo	Actividades: S/E Carrera Pinto: A solicitud de Elctran. Lavado de aislación de paños 15-16-113-114-115. Restricciones: Subestación Carrera Pinto, No Reconectar S211-S212-S218-S219-S210-S212-S25-S2R Instalaciones en Riesgo: Barra 220 KV, sección 1 C. Pinto Temperalidad de los Riesgos: Durante de los trabajos Nivel de Riesgo: Bajo Durante de los trabajos Nivel de Riesgo: Bajo Bloqueos del jefe de Faena: No hay	No tiene consumo afectado	ninguno				24-08-21 08:00	24-08-21 18:00	24-08-21 08:00	24-08-21 18:37	
202070821	Subestación	Ejecución Exitosa	TRANSELEC S.A.	Intervención	Origen Interno	Programada	S/E DIEGO DE ALMAGRO	S/E DIEGO DE ALMAGRO ETS	Otro Tipo de Trabajo	0	S/E Diego de Almagro: Verificación de las Protecciones de sobrecorriente GE F35 S2, Paño ETS.	Bajo	Actividades: Verificación de Protecciones, S/E Diego de Almagro: Verificación de las Protecciones de sobrecorriente GE F35 S2, Paño ETS. Restricciones: No hay Instalaciones en Riesgo: Barra 23 kv.D. Almagro Temperalidad de los Riesgos: Durante de los trabajos Nivel de Riesgo: Bajo Bloqueos del jefe de Faena: Subestación O. Almagro, Paño ETS, Protecciones S2 Bloquear trip sobre S2ETS. Estréban: aplicación de Bloqueos del anexo 1	No tiene consumo afectado	ninguno				24-08-21 00:00	24-08-21 06:00	23-08-21 23:41	24-08-21 03:28	
202070827	Subestación	Ejecución Exitosa	TRANSELEC S.A.	Intervención	Origen Interno	Programada	S/E MAITENCILLO	BA S/E MAITENCILLO 110KV SECCION1 BA S/E MAITENCILLO 110KV SECCION 2	Otro Tipo de Trabajo	0	S/E Maitencillo: Lavado de aislación de equipos Barra 110 KV, paños HT2, HT1, HS, HR, HQ, HA, HO, HD, H1 incluye equipos primarios, marcos de barra principal y auxiliares marcos de línea, barra de transferencia y desmetalizado pato.	Bajo	Actividades: Lavado de aislación de instalación en servicio (Barra), S/E Maitencillo: Lavado de aislación de equipos Barra 110 KV, paños HT2, HT1, HS, HR, HQ, HA, HO, HD, H1 incluye equipos primarios, marcos de barra principal y auxiliares, marcos de línea, barra de transferencia y desmetalizado pato. Restricciones: Subestación Maitencillo, S2H5 con bloqueo a la reconexión inmovilizado Subestación Maitencillo, S2H6 con bloqueo a la reconexión inmovilizado Subestación Maitencillo, S2H7 con bloqueo a la reconexión inmovilizado Subestación Maitencillo, S2H8 con bloqueo a la reconexión inmovilizado Subestación Maitencillo, S2H9 con bloqueo a la reconexión inmovilizado Subestación Maitencillo, S2H1 con bloqueo a la reconexión inmovilizado Subestación Maitencillo, S2H2 con bloqueo a la reconexión inmovilizado Subestación Maitencillo, S2H3 con bloqueo a la reconexión inmovilizado Subestación Maitencillo, S2H4 con bloqueo a la reconexión inmovilizado Subestación Maitencillo, S2H5 con bloqueo a la reconexión inmovilizado Tercero, S/E las compañías: S2H2 (Tercero) con bloqueo a la reconexión inmovilizado Subestación Husco, S2H1 con bloqueo a la reconexión inmovilizado Subestación Husco, S2H2 con bloqueo a la reconexión inmovilizado Subestación Valmar, S2HT con bloqueo a la reconexión inmovilizado Subestación Carbones, S2H2 con bloqueo a la reconexión inmovilizado Subestación Maitencillo, S2H7 con bloqueo a la reconexión inmovilizado Subestación Maitencillo, S2H7 con bloqueo a la reconexión inmovilizado Subestación Maitencillo, S2H7 con bloqueo a la reconexión inmovilizado Subestación Maitencillo, S2H7 con bloqueo a la reconexión inmovilizado Subestación Castilla, S2H1 con bloqueo a la reconexión inmovilizado Tercero, S/E (E)Edin: S2H1(Tercero) con bloqueo a la reconexión inmovilizado Tercero, S/E Punta de Torres: S2H1 (Tercero,SODI) con bloqueo a la reconexión inmovilizado	No tiene consumo afectado	ninguno				24-08-21 08:00	24-08-21 18:00	24-08-21 05:34	24-08-21 16:57	
202065251	Subestación	Ejecución Exitosa	TRANSEMEL	Desconexión	Origen Interno	Programada	S/E PARNACOTA	S/E PARNACOTA 83	Lavado de Aislación		Se solicita la apertura de la línea por lavado de aislación des energiado en Tap Off Quién.	Bajo	Trabajo con Riesgo Bajo, se trabaja con Procedimientos y App de acuerdo a los niveles asignados.	No tiene consumo afectado	ninguno				24-08-21 08:00	24-08-21 17:00	24-08-21 09:06	24-08-21 13:23	
202070685	Subestación	Ejecución Exitosa	TRANSMISORA ELÉCTRICA DEL NORTE S.A.	Intervención	Origen Interno	Programada	S/E LOS CHANGOS	otros: telecomunicación	Otro Tipo de Trabajo		Se realizará mantenimiento preventivo de la Teleprotección sistema N°2 TPRO-301, 302, este considera recuperación de LQD, revisión de estado y resguardo de la configuración del sistema.	Bajo	Riesgo: Pérdida de configuración o borrado de configuración. Pérdida de servicios de teleprotección o inhabilitación, Envío de TRIP, Medidas de Mitigación: Realizar respaldo Backup, antes de realizar cualquier modificación, Habilitar SWITCH de Bloqueo.	No tiene consumo afectado	ninguno				24-08-21 09:00	24-08-21 18:00	24-08-21 10:53	24-08-21 17:50	
202071638	Subestación	Ejecución Exitosa	TRANSMISORA VALLE ALLIPEN S.A.	Intervención	Origen Interno	Programada	S/E TAP OFF RIO TOLTEN		Mantenimiento preventivo		Mantenimiento preventivo a servidor Scada Siemens que se realizará por especialistas. Trabajo podrá producir pérdida / interferencia en datos ISCP durante la ejecución de los mismos.	Bajo	Possible pérdida de ISCP durante la ejecución de los trabajos.	Mantenimiento preventivo servidor scada	No tiene consumo afectado	ninguno				24-08-21 08:00	24-08-21 18:00	24-08-21 09:16	24-08-21 18:48
202071631	Subestación	Ejecución Exitosa	TRANSMISORA VALLE ALLIPEN S.A.	Intervención	Origen Interno	Programada	S/E MELIPUCO		Mantenimiento preventivo		Mantenimiento preventivo a servidor Scada Siemens que se realizará por especialistas. Trabajo podrá producir pérdida / interferencia en datos ISCP durante la ejecución de los mismos.	Bajo	Possible pérdida de ISCP durante la ejecución de los trabajos.	Mantenimiento preventivo servidor Scada	No tiene consumo afectado	ninguno				24-08-21 08:00	24-08-21 18:00	24-08-21 09:16	24-08-21 18:48
202072285	Subestación	Ejecución Exitosa	TRANSDUQUILITA	Intervención	Origen Externo	Programada	S/E SAN LUIS	BA S/E SAN LUIS 220KV BP1 BA S/E SAN LUIS 220KV BP2	Lavado de Aislación	0	Solicitud de Chilquinta para trabajos en instalaciones de su propiedad.	Bajo	Trabajos con nivel de riesgo bajo	No tiene consumo afectado	ninguno					24-08-21 00:00	24-08-21 18:00	24-08-21 09:57	24-08-21 15:38

Reporte Desconexión/Intervención Central Generadora

Fecha generación reporte: 07-09-2021 11:34:17
 Estado: Ejecución Exitosa, Ejecución Exitosa
 Total registros Generados: 187
 Total registros Central Generadora: 11

Número	Tipo	Estado	Empresa	Tipo Solicitud	Origen	Tipo Programación	Central	Unidad(es)	Tipo Trabajo	Potencia	Trabajos a Realizar	Descripción Nivel Riesgo	Comentario Adicional	Consumo	Empresas Afectadas	Trabajo Requiere	Estado Operativo	Estado Operativo Efectivo	Fecha Inicio	Fecha Fin	Fecha Inicia	Fecha Efectiva Fin
2021074019	Central Generadora	Ejecución Exitosa	ACCIONA ENERGIA CHILE HOLDINGS S.A.	Intervención	Origen Interno	Curso Forzoso	HFV USVA	CENTRAL COMPLETA	Otro Tipo de Trabajo	52.4	Es necesario proceder a cambiar e instalar Firewall secundario (Firewall Principal se encuentra operativo).	Podrían perderse las comunicaciones por algunos minutos. La intervención en principio no deberá generar interrupción de las comunicaciones, para mayor seguridad se realizará en horario no productivo.	Asociado con el N° 20310011992.	No tiene consumo afectado		ringimo	N (Conectada Normal)		24-08-21 19:52	24-08-21 21:00	24-08-21 19:56	24-08-21 21:54
2021072353	Central Generadora	Ejecución Exitosa	ANGAMOS	Intervención	Origen Interno	Programada	TER ANGAMOS	TER ANGAMOS U2	Otro Tipo de Trabajo	200	Prueba de válvulas turbina en ANG2	bajo debido características preventivas	ANG2 opera con CPV activado y AGC desactivado	No tiene consumo afectado		ringimo	PO (Prueba Operacional)		24-08-21 06:00	24-08-21 08:00	24-08-21 08:00	24-08-21 10:45
2021074463	Central Generadora	Ejecución Exitosa	COLIHUES ENERGIA S.A.	Intervención	Origen Interno	Programada	TER COLIHUES	TER COLIHUES U1	Otro Tipo de Trabajo	11	Pruebas (completas) Central Térmica Colihues 1 en configuración HFO. Las pruebas se realizarán a plena carga según programa enviado a DAOP. Condiciones requeridas: TER Colihues 1 a disposición de riego de fauna.	Pruebas sucesivas Central Térmica Colihues 1 en configuración HFO. Las pruebas se realizarán a plena carga según programa enviado a DAOP. Condiciones requeridas: TER Colihues 1 a disposición de riego de fauna.	El riesgo es bajo.		ringimo	PO (Prueba Operacional)		24-08-21 12:00	24-08-21 20:00	24-08-21 11:10	24-08-21 16:43	
2021073378	Central Generadora	Ejecución Exitosa	ELECTRICA CENZAS	Desconexión	Origen Interno	Programada	TER CENZAS	TER CENZAS U2	Verificación medidor de energía	5	La empresa Tecmet realizará verificación de transformadores de medida (tensión y corriente) en Switchgear de media tensión (11kV) de la unidad generadora n°2. Con respecto a la indisponibilidad se estima día Martes 24, certificación de transformadores de medida, cuatro horas.	Certificación de transformadores de medida (tensión y corriente) de la unidad generadora n°2, preparativos para futura prueba de "Consumo Específico" solicitada por CEN. Se anulará cualquier riesgo de descarga eléctrica por contacto o proximidad. Por lo anterior se realizará apertura de interruptor local de barra de 110kV al interior de la Sala de Switchgear de Eléctrica Cenzas.	Se realizarán inyecciones de corriente o voltaje con mesa de prueba para verificación de transformadores de medida.	No tiene consumo afectado	ringimo	DP (Desconexión Programada)		24-08-21 08:30	24-08-21 16:00	24-08-21 10:32	24-08-21 08:37	
2021073676	Central Generadora	Ejecución Exitosa	ELÉCTRICA PUNTLA S.A.	Desconexión	Origen Externo	Curso Forzoso	HP ITATA	CENTRAL COMPLETA	Otro Tipo de Trabajo		Cambio de topología (Normalización de línea Charrúa-Chilten)	Riesgo bajo. Maniobras coordinadas con COT CGE, según SODI N°236/2021	Desconexión de central completa, por micro corte para Normalización de Línea 66kV Charrúa-Chilten... Maniobras en línea 66kV Charrúa-Chilten... cost falló del 21/08/2021	No tiene consumo afectado		ringimo	DF (Desconexión Forzada)		24-08-21 07:00	24-08-21 07:18	24-08-21 07:00	24-08-21 07:18
2021071889	Central Generadora	Ejecución Exitosa	EMPRESA ELÉCTRICA ANGAMOS S.A.	Intervención	Origen Interno	Programada	TER ANGAMOS	TER ANGAMOS U2	Otro Tipo de Trabajo		Pruebas de modulación de carga por sintonía de caldera. Al activar la solicitud se realizarán cambios de carga de 40 Mw de salida y Rápido, esto para exploración de nueva tasa de carga a la actual (25 Mw/Mín.). Pruebas relacionadas a ensayos de verificación de SSCC. Todo esto coordinado con Centro de control y CEN.	Riesgo controlado, maniobra operacional con supervisión presente	Sin SSCC, unidad queda disponible a programa diario de generación	No tiene consumo afectado		ringimo	PO (Prueba Operacional)		24-08-21 08:00	24-08-21 20:00	24-08-21 12:13	24-08-21 17:52
2021073841	Central Generadora	Ejecución Exitosa	ENEL GENERACIÓN CHILE S.A.	Intervención	Origen Interno	Curso Forzoso	HP SALZALITO	CENTRAL COMPLETA	Otro Tipo de Trabajo	12	Realizar limpieza de emergencia en Hidrovector que se encuentra obstruido, se procesó desde Sala de operación. Debido a desconexión.	Trabajo supervisado en terreno, riesgo bajo.	Sin comentarios adicionales.	No tiene consumo afectado		ringimo	N (Conectada Normal)		24-08-21 14:00	24-08-21 18:00	24-08-21 14:13	25-08-21 15:29
2021070989	Central Generadora	Ejecución Exitosa	ENGIE	Intervención	Origen Interno	Programada	PE CALAMA (EN REVISION)	CENTRAL COMPLETA	Prueba en servicio de nueva instalación	150	Comisionamiento de generadores de acuerdo a perfil de carga de las pruebas, según referencia de potencia de acuerdo a pronóstico enviado al CEN	El riesgo será de acuerdo con la etapa de comisionamiento del proyecto. Estará controlados por los especialistas a cargo del trabajo. Inyección de energía a la red y validación de los parámetros operacionales de los WTG, de acuerdo con el perfil de carga del pronóstico enviado con anterioridad al CEN.	No tiene consumo afectado		ringimo	P (Prueba de Puesta en Servicio)		24-08-21 00:00	24-08-21 23:59	24-08-21 00:00	24-08-21 23:59	
202107458	Central Generadora	Ejecución Exitosa	ESPINOS S.A.	Desconexión	Origen Interno	Curso Forzoso	HP RENAICO	CENTRAL COMPLETA	Otro Tipo de Trabajo		limpieza camara de carga por ramas debido a temporal.	el riesgo es bajo central (E)	limpieza camara de carga por ramas debido a temporal.	No tiene consumo afectado		ringimo	DF (Desconexión Forzada)		24-08-21 12:12	24-08-21 13:47	19-08-21 12:12	19-08-21 13:47
202107223	Central Generadora	Ejecución Exitosa	GENERADORA METROPOLITANA SPA	Intervención	Origen Interno	Programada	TER NUEVA RENCA	CENTRAL COMPLETA	Otro Tipo de Trabajo		Calibración de equipo medidor de flujo (emisiones)	Bajo. No afecta al Sistema Eléctrico Nacional	Se requiere la central con carga alrededor de 200 MW por 2 horas y a mínimo técnico por 2 horas durante las pruebas	No tiene consumo afectado		ringimo	PO (Prueba Operacional)		24-08-21 08:00	24-08-21 12:00	24-08-21 11:37	24-08-21 16:30
2021074013	Central Generadora	Ejecución Exitosa	INVERSIONES HORNITOS SPA	Intervención	Origen Interno	Curso Forzoso	TER HORNITOS	CENTRAL COMPLETA	Servicios Auxiliares	110	Normalización por Falla Alimentador de carbón N°5	Bajo, se toman todos los requeridos de acuerdo a estándar de seguridad ENGIE energía Chile	Unidad Limitada en 110 MW, por falla en alimentador N°5	No tiene consumo afectado		ringimo	LF (Unidad con limitación forzada)		24-08-21 16:55	25-08-21 02:00	24-08-21 16:55	25-08-21 02:30

Reporte Desconexión/Intervención Línea

Fecha generación reporte: 07-09-2021 11:34:17

Estado: Ejecución Extensa, Ejecución Extensa

Total registros General: 337

Total registros Línea: 93

Numero	Tipo	Estado	Empresa	Tipo Sociedad	Origen	Tipo Programada	Línea	Tramo(s)	Tipo Trabajo	Potencia	Trabajos a Realizar	Descripción Nivel Riesgo	Comentarios Adicional	Consumo	Empresas Afectadas	Trabajo Response	Estado Operativo	Estado Operativo (Ejecu)	Fecha Inicio	Fecha Fin	Fecha Efectivo Inicio	Fecha Efectivo Fin
2021070621	Línea	Ejecución Extensa	TRANSELEC S.A.	Intervención	Origen Interno	Programada	ALTO JAHUEL - CHENA 220KV	ALTO JAHUEL - EL BODICO 220KV C1 EL BODICO - CHENA 220KV C1	Otro Tipo de Trabajo	0	Lavado de aislación en estructuras. Coordinado con C. Santa Marta.	Bajo	Actividades: Lavado de aislación en estructuras. Restricciones: No reconectar interruptores asociados a la línea de 220 KV Alto Jahuel - Chena circuito 1 y 2. Instalaciones en Riesgo: Línea de 220 KV Alto Jahuel - Chena circuito 1 o 2. Temporalidad de los Riesgos: Durante la ejecución de los trabajos. Nivel de Riesgo: Bajo. Bloqueo del jefe de Faena: No hay.	No tiene consumo afectado	ninguno			24-08-21 08:00	24-08-21 18:00	24-08-21 05:34	24-08-21 18:37	
2021070630	Línea	Ejecución Extensa	TRANSELEC S.A.	Intervención	Origen Interno	Programada	NOGALES - POLPAKCO 220KV	NOGALES - POLPAKCO 220KV C2	Otro Tipo de Trabajo	0	Instalación de pintas y placas de polycarbonato en estructuras.	Bajo	Actividades: Instalación de pintas y placas de polycarbonato en estructuras. Restricciones: No reconectar interruptores asociados a la línea de 220 KV Nogales - Polpaaco circuito 1 y 2. Instalaciones en Riesgo: Línea de 220 KV Nogales - Polpaaco circuito 1 o 2. Temporalidad de los Riesgos: Durante ejecución de los trabajos. Nivel de Riesgo: Bajo. Bloqueo del jefe de Faena: No hay.	No tiene consumo afectado	ninguno			24-08-21 08:00	24-08-21 18:00	24-08-21 05:34	24-08-21 18:37	
2021070609	Línea	Ejecución Extensa	TRANSELEC S.A.	Intervención	Origen Interno	Programada	NOGALES - POLPAKCO 220KV	NOGALES - POLPAKCO 220KV C1	Otro Tipo de Trabajo	0	Instalación de pintas y placas de polycarbonato en estructuras.	Bajo	Actividades: Instalación de pintas y placas de polycarbonato en estructuras. Restricciones: No reconectar interruptores asociados a la línea de 220 KV Nogales - Polpaaco circuito 1 y 2. Instalaciones en Riesgo: Línea de 220 KV Nogales - Polpaaco circuito 1 o 2. Temporalidad de los Riesgos: Durante ejecución de los trabajos. Nivel de Riesgo: Bajo. Bloqueo del jefe de Faena: No hay.	No tiene consumo afectado	ninguno			24-08-21 08:00	24-08-21 18:00	24-08-21 05:34	24-08-21 18:37	
2021070487	Línea	Ejecución Extensa	TRANSELEC S.A.	Intervención	Origen Externo	Programada	PUNTA COLORADA - DON HECTOR 220KV	PUNTA COLORADA - DON HECTOR 220KV C1	Otro Tipo de Trabajo	0	S/E P. Colorado: Medición de barrido de frecuencias en OPLAT 1 Dir. S/E Don Hector para identificar frecuencias libres en el espectro para los nuevos sistemas OPLAT.	Bajo	Actividades: Intervención en sistemas OPLAT con Telergotaciones, S/E P. Colorado: Medición de barrido de frecuencias en OPLAT 1 Dir. S/E Don Hector para identificar frecuencias libres en el espectro para los nuevos sistemas OPLAT. Restricciones: No hay. Instalaciones en Riesgo: L 220KV Punta Colorado Don Hector, C1. Temporalidad de los Riesgos: Alínicia. Durante de los trabajos. Nivel de Riesgo: Bajo. Bloqueo del jefe de Faena: Subestación P. Colorado, Conos y cadenas Delimitación de la zona de trabajo Delimitación de la zona de trabajo. Área restringida. Uso personal autorizado.	No tiene consumo afectado	ninguno			24-08-21 08:00	24-08-21 12:00	24-08-21 09:52	24-08-21 15:53	
2021070631	Línea	Ejecución Extensa	TRANSELEC S.A.	Intervención	Origen Interno	Programada	HUASCO - MANTENCILLO 110KV	HUASCO - MANTENCILLO 110KV L2 C2	Otro Tipo de Trabajo	0	Lavado de aislación, en instalación energizada (Simple Circuito), LAVADO DE AISLACION ESTR. 10 a 121.	Bajo	Actividades: Lavado de aislación, en instalación energizada (Simple Circuito), LAVADO DE AISLACION ESTR. 10 a 121. Restricciones: Subestación Huasco, S2H2 con bloqueo a la reconexión inmovilizado Subestación Matencillo, S2H2 con bloqueo a la reconexión inmovilizado Instalaciones en Riesgo: L 110KV Huasco-Matencillo, C2. Temporalidad de los Riesgos: Durante de los trabajos. Nivel de Riesgo: Bajo. Bloqueo del jefe de Faena:	No tiene consumo afectado	ninguno			24-08-21 08:00	24-08-21 18:00	24-08-21 05:34	24-08-21 16:57	
2021070611	Línea	Ejecución Extensa	TRANSELEC S.A.	Intervención	Origen Interno	Programada	DON HECTOR - MANTENCILLO 220KV	DON HECTOR - MANTENCILLO 220KV C2	Otro Tipo de Trabajo	0	Lavado de aislación, en instalación energizada (Doble Circuito), LAVADO DE AISLACION ESTR. 424 - 425 - 430 a 464.	Bajo	Actividades: Lavado de aislación, en instalación energizada (Doble Circuito), LAVADO DE AISLACION ESTR. 424 - 425 - 430 a 464. Restricciones: Subestación Don Hector, S2H2 con bloqueo a la reconexión inmovilizado Subestación Don Hector, S2H2 con bloqueo a la reconexión inmovilizado Subestación Don Hector, S2H2 con bloqueo a la reconexión inmovilizado Subestación Matencillo, S2H2 con bloqueo a la reconexión inmovilizado Instalaciones en Riesgo: L 220KV Don Hector Matencillo, C1 o L 220KV Don Hector Matencillo, C2. Temporalidad de los Riesgos: Durante de los trabajos. Nivel de Riesgo: Bajo. Bloqueo del jefe de Faena:	No tiene consumo afectado	ninguno			24-08-21 08:00	24-08-21 18:00	24-08-21 05:34	24-08-21 17:43	
2021070630	Línea	Ejecución Extensa	TRANSELEC S.A.	Intervención	Origen Interno	Programada	DON HECTOR - MANTENCILLO 220KV	DON HECTOR - MANTENCILLO 220KV C1	Otro Tipo de Trabajo	0	Lavado de aislación, en instalación energizada (Doble Circuito), LAVADO DE AISLACION ESTR. 424 - 425 - 430 a 464.	Bajo	Actividades: Lavado de aislación, en instalación energizada (Doble Circuito), LAVADO DE AISLACION ESTR. 424 - 425 - 430 a 464. Restricciones: Subestación Don Hector, S2H2 con bloqueo a la reconexión inmovilizado Subestación Don Hector, S2H2 con bloqueo a la reconexión inmovilizado Subestación Don Hector, S2H2 con bloqueo a la reconexión inmovilizado Subestación Matencillo, S2H2 con bloqueo a la reconexión inmovilizado Instalaciones en Riesgo: L 220KV Don Hector Matencillo, C1 o L 220KV Don Hector Matencillo, C2. Temporalidad de los Riesgos: Durante de los trabajos. Nivel de Riesgo: Bajo. Bloqueo del jefe de Faena:	No tiene consumo afectado	ninguno			24-08-21 08:00	24-08-21 18:00	24-08-21 05:34	24-08-21 17:43	
2021069985	Línea	Ejecución Extensa	TRANSELEC S.A.	Intervención	Origen Interno	Programada	LOS MOLLES - OVALLE 66KV	ESTRUCTURA 128 - ESTRUCTURA 129 66KV C2 LOS MOLLES - ESTRUCTURA 128 66KV C2 ESTRUCTURA 129 - MONTE PATRIA 66KV C2 MONTE PATRIA - OVALLE 66KV C2	Otro Tipo de Trabajo	0	desmontamiento de línea, incluye conductor, postes y ferreteria. Desmovilización y retiro de línea auxiliar Tramos 1y2.	Bajo	Actividades: desmontamiento de línea, incluye conductor, postes y ferreteria. Desmovilización y retiro de línea auxiliar Tramos 1y2. Restricciones: Subestación Los Molles, S2H2 con bloqueo a la reconexión inmovilizado Subestación Los Molles, S2H2 con bloqueo a la reconexión inmovilizado Subestación Ovalle, S2H2 con bloqueo a la reconexión inmovilizado Subestación Ovalle, S2H2 con bloqueo a la reconexión inmovilizado Subestación Monte Patria, S2CT1 (Se requiere SODI) con bloqueo a la reconexión inmovilizado Subestación Monte Patria, S2ET2 (Se requiere SODI) con bloqueo a la reconexión inmovilizado Instalaciones en Riesgo: L 066KV Los Molles-Ovalle, C1 o L 066KV Los Molles-Ovalle, C2. Temporalidad de los Riesgos: Durante de los trabajos. Nivel de Riesgo: Bajo. Bloqueo del jefe de Faena:	No tiene consumo afectado	ninguno			24-08-21 08:00	24-08-21 18:00	24-08-21 05:34	24-08-21 18:37	
2021069984	Línea	Ejecución Extensa	TRANSELEC S.A.	Intervención	Origen Interno	Programada	LOS MOLLES - OVALLE 66KV	LOS MOLLES - ESTRUCTURA 128 66KV C1 ESTRUCTURA 128 - ESTRUCTURA 129 66KV C2 ESTRUCTURA 129 - MONTE PATRIA 66KV C2 MONTE PATRIA - OVALLE 66KV C1	Otro Tipo de Trabajo	0	desmontamiento de línea, incluye conductor, postes y ferreteria. Desmovilización y retiro de línea auxiliar Tramos 1y2.	Bajo	Actividades: desmontamiento de línea, incluye conductor, postes y ferreteria. Desmovilización y retiro de línea auxiliar Tramos 1y2. Restricciones: Subestación Los Molles, S2H2 con bloqueo a la reconexión inmovilizado Subestación Los Molles, S2H2 con bloqueo a la reconexión inmovilizado Subestación Ovalle, S2H2 con bloqueo a la reconexión inmovilizado Subestación Ovalle, S2H2 con bloqueo a la reconexión inmovilizado Subestación Monte Patria, S2CT1 (Se requiere SODI) con bloqueo a la reconexión inmovilizado Subestación Monte Patria, S2ET2 (Se requiere SODI) con bloqueo a la reconexión inmovilizado Instalaciones en Riesgo: L 066KV Los Molles-Ovalle, C1 o L 066KV Los Molles-Ovalle, C2. Temporalidad de los Riesgos: Durante de los trabajos. Nivel de Riesgo: Bajo. Bloqueo del jefe de Faena:	No tiene consumo afectado	ninguno			24-08-21 08:00	24-08-21 18:00	24-08-21 05:34	24-08-21 18:37	
2021069975	Línea	Ejecución Extensa	TRANSELEC S.A.	Intervención	Origen Externo	Programada	DON GOYO - LA CEBADA 220KV	DON GOYO - TAP TALINAY 220KV C2 TAP TALINAY - LA CEBADA 220KV C2	Otro Tipo de Trabajo	0	Bajar mufas de cable OPGW e instalación y Retiro de By-pass. Bajada de mufas para efectuar mediciones en el tramo La Cebada-Don Goyo y tender bypass a piso, específicamente entre las estructuras 316 a 326.	Alto	Actividades: Bajar mufas de cable OPGW e instalación y Retiro de By-pass. Bajada de mufas para efectuar mediciones en el tramo La Cebada-Don Goyo y tender bypass a piso, específicamente entre las estructuras 316 a 326. Restricciones: Tercoera, S/E La Cebada S2H2 con bloqueo a la reconexión inmovilizado Tercoera, S/E La Cebada S2H4 con bloqueo a la reconexión inmovilizado Tercoera, S/E Don Goyo S2H3 con bloqueo a la reconexión inmovilizado Tercoera, S/E Don Goyo S2H5 con bloqueo a la reconexión inmovilizado Instalaciones en Riesgo: L 220KV La Cebada - Don Goyo C1 o L 220KV La Cebada-Tap Talinay- D.Goyo C2. Temporalidad de los Riesgos: Durante de los trabajos. Nivel de Riesgo: Bajo. Bloqueo del jefe de Faena:	No tiene consumo afectado	ninguno			24-08-21 08:00	24-08-21 18:00	24-08-21 05:34	24-08-21 18:37	
2021069974	Línea	Ejecución Extensa	TRANSELEC S.A.	Intervención	Origen Externo	Programada	DON GOYO - LA CEBADA 220KV	DON GOYO - LA CEBADA 220KV C1	Otro Tipo de Trabajo	0	Bajar mufas de cable OPGW e instalación y Retiro de By-pass. Bajada de mufas para efectuar mediciones en el tramo La Cebada-Don Goyo y tender bypass a piso, específicamente entre las estructuras 316 a 326.	Alto	Actividades: Bajar mufas de cable OPGW e instalación y Retiro de By-pass. Bajada de mufas para efectuar mediciones en el tramo La Cebada-Don Goyo y tender bypass a piso, específicamente entre las estructuras 316 a 326. Restricciones: Tercoera, S/E La Cebada S2H2 con bloqueo a la reconexión inmovilizado Tercoera, S/E La Cebada S2H4 con bloqueo a la reconexión inmovilizado Tercoera, S/E Don Goyo S2H3 con bloqueo a la reconexión inmovilizado Tercoera, S/E Don Goyo S2H5 con bloqueo a la reconexión inmovilizado Instalaciones en Riesgo: L 220KV La Cebada - Don Goyo C1 o L 220KV La Cebada-Tap Talinay- D.Goyo C2. Temporalidad de los Riesgos: Durante de los trabajos. Nivel de Riesgo: Bajo. Bloqueo del jefe de Faena:	No tiene consumo afectado	ninguno			24-08-21 08:00	24-08-21 18:00	24-08-21 05:34	24-08-21 18:37	

ANEXO N°5

Informes de trabajos y fallas de instalaciones ingresados en el Sistema del Coordinador Eléctrico Nacional por Sistema de Transmisión del Sur S.A.

 **Resumen**

Fecha de envío al Coordinador Eléctrico : 24-08-2021 21:36

Finalizado

Número:

2021002394

Solicitante:

Juan Miranda

Empresa:

SISTEMA DE TRANSMISIÓN DEL SUR S.A.

Tipo de Origen:

Interno

SubEstación:

S/E FRUTILLAR

Falla Sobre:

pañó

Elementos

Tipo: panos - S/E FRUTILLAR CT2

Nombre : S/E FRUTILLAR CT2

Fecha Perturbacion : 24-08-2021 19:18

Fecha Normaliza : 24-08-2021 19:30

Protección : Interrupción 52CT2

Interruptor : 52CT2

Consumo : 5.6

Comentario : No hay

¿Produce otra indisponibilidad?

No

Zona Afectada

Los Lagos

Comuna

Frutillar

Tipo Causa

Causa Presunta

Causa Principal

Se investiga

Comentarios Tipo Causa:

Sobrecarga

Causas**-Fenómeno Físico:** Sobrecarga.**-Elemento:** Sistema protecciones

-Fenómeno Eléctrico: Desequilibrio de cargas

-Operación de los interruptores: Varios

Comentarios Causas:

-Fenómeno Físico:

-Elemento:

-Fenómeno Eléctrico:

-Operación de los interruptores:

Observaciones:

-Observaciones: Interrupción 52CT2 en S/E Frutillar

-Acciones Inmediatas: Aviso al coordinador Aviso a distribuidora SAESA Aviso personal mantenimiento Revisión de protecciones

-Hechos Sucuididos: 19:18 Se recibe alarma SCADA de interrupción del 52CT2 en S/E Frutillar, se pierden 5,6 MW y se ven afectados 7374 clientes; Se da aviso al Coordinador; Se da aviso a distribuidora de SAESA; Se da aviso a personal de mantenimiento; Se revisan protecciones; Según análisis de protecciones se presume preliminarmente operación del 52CT2 por sobrecarga por lo que se solicitar probar barra de 13.2 kV en vacío; 19:26 Se abren alimentadores de distribución; 19:30 cierre con éxito del 52CT2 en vacío; 19:32 Se cierran con éxito alimentadores de distribución recuperando 100% de los consumos.

-Acciones Correctivas a Corto Plazo: Análisis y revisión

-Acciones Correctivas a Largo Plazo: No hay

Afecta SSCC:

No

Afecta Medidores:

No

Afecta Protecciones:

No

Consumo:

Consumo Regulado

Distribuidoras Afectadas

SOCIEDAD AUSTRAL DE ELECTRICIDAD S.A. / Perd. Estm. de Potencia: 5.6 / Región : Los Lagos / Clientes Afectados: 7374

Retorno Automatico:

No Tiene Retorno Automático

Fecha / Hora Perturbación de la Solicitud:

24-08-2021 19:18




Fecha / Hora Estimada Retorno:

24-08-2021 19:30

Fecha / Hora Efectiva Retorno:

24-08-2021 19:30

 Archivos Subidos

Archivo	Fecha Subida
 2021002394_Frutillar.pdf (/informe_fallas/download_file/61259553ad651f2767ef2240/2021002394_Frutillar.pdf)	31/08/2021 18:36:49
 Data.zip (/informe_fallas/download_file/61259553ad651f2767ef2240/Data.zip)	31/08/2021 18:37:01
 Anexo 1.zip (/informe_fallas/download_file/61259553ad651f2767ef2240/Anexo 1.zip)	31/08/2021 18:37:15

ANEXO N°6

Otros antecedentes aportados por Sistema de Transmisión del Sur S.A.



INFORME DE FALLA
INTERRUPCIÓN DEL 52CT2 EN SE FRUTILLAR
24 de agosto de 2021

Fecha de envío:	31 de agosto de 2021.
Hora:	18:40 horas.
Realizó:	Luis Moreira – Miguel Rodriguez – Juan Miranda.
Revisó:	Mauro Vicente Cedeño Gómez. Alexis Gabriel Aedo Sanhueza.
Aprobó:	Juan Pablo Antriao Molina.

1. Antecedentes generales:

Evento – Inst. Afectada	Operación 52CT2 en SE Frutillar.
Propietario	Sistema de Transmisión del Sur S. A.
RUT Propietario	77.683.400-9.
Representante legal	Francisco Alliende.
Dirección legal	Bulnes 441, Osorno.
Ubicación	Frutillar, Región de Los Lagos.
Fecha – Hora Inicio	24 de agosto de 2021, 19:18 horas.
Fecha – Hora Término	24 de agosto de 2021, 19:30 horas.
Duración	12 minutos
N° Correlativo IF CDC	2021002394.
Proposición del origen de la falla	Interna.

2. Información SEC:

Comuna ID	10105	Frutillar.
Fenómeno Físico	DIS2	Sobrecarga.
Elemento	PR6	Interruptores.
Fenómeno Eléctrico	PR51	Protección de sobrecorriente temporizada de fase
Modo	13	Opera según lo esperado.
Causa de Falla	Interrupción forzada por protecciones de interruptor 52CT2, por sobrecorriente registrada en una de sus fases, debido al crecimiento de la demanda.	
Evidencia fotográfica	No aplica.	

3. Consumos afectados:

Subestación	Alimentador	Pérdida de Consumo [MW]	H. Desc.	H. Norm.	Comunas afectadas	Clientes Afectados	Empresa
Frutillar	52C2 Frutillar Bajo	0.11	19:18	19:28	Frutillar y Llanquihue	145	SAESA
	52C2 Frutillar Bajo	4.59	19:18	19:32	Frutillar y Llanquihue	6107	SAESA
	52C3 Quilanto	0.19	19:18	19:25	Frutillar, Pto Octay y Purranque	220	SAESA
	52C3 Quilanto	0.71	19:18	19:32	Frutillar, Pto Octay y Purranque	850	SAESA
Total		5.60				7322	

3.1 Estimación de la energía no suministrada:

Subestación	Alimentador	Empresa	Tipo de cliente	Pérdida de Consumo [MW]	Tiempo desconexión (h)	ENS (MWh)
Frutillar	52C2 Frutillar Bajo	SAESA	Regulado	0.11	0.17	0.02
	52C2 Frutillar Bajo	SAESA	Regulado	4.59	0.23	1.07
	52C3 Quilanto	SAESA	Regulado	0.19	0.12	0.02
	52C3 Quilanto	SAESA	Regulado	0.71	0.23	0.17
					Total	1.28

3.2 Calificación de la ubicación de los alimentadores afectados por la falla, de acuerdo con lo indicado en el Decreto 327 del año 1997 del Ministerio de Minería, Título IX, Artículo 25.

Subestación	Alimentador	Comuna	Densidad	Descripción
Frutillar	52C2 Frutillar Bajo	Frutillar	D2	BAJA
	52C2 Frutillar Bajo	Llanquihue	D2	BAJA
	52C3 Quilanto	Frutillar	D2	BAJA
	52C3 Quilanto	Puerto Octay	D1	MUY BAJA
	52C3 Quilanto	Purranque	D2	BAJA

4. Generación afectada:

No hay.

5. Sistema de Transmisión:

Elemento Afectado	Tramo	Hora Desc.	Hora Norm.
52CT2	Barra 13.2 kV	19:18	19:30

5.1 Protecciones operadas:

Función activada	SSEE	Interruptor	Protección asociada
51	Frutillar	52CT2	SEL 651RA

6. Cronología de eventos y maniobras de normalización:

Hora	Evento
19:18	interrupción del 52CT2 general de barra 13.2 kV de SE Frutillar. Dejando Sin energía alimentadores de 13.2kV.
19:19	Se da aviso al CDC del Coordinador Eléctrico Nacional, distribuidora SAESA, personal de Mantenimiento de Transmisión.
19:20	Se revisan protecciones alarmadas.
19:25	Recuperado 220 clientes del alimentador 52C3 Quilanto, por maniobras en red MT desde alimentador 52ET2 Río Negro de SE Purranque.
19:26	Apertura de alimentadores 52C2 Frutillar Bajo y 52C3 Quilanto en barra 13,2kV, por maniobras de recuperación.
19:28	Análisis de protecciones arroja que operación del 52CT2 en S/E Frutillar se habría producido por sobrecarga.
19:28	Recuperado 145 clientes del alimentador 52C2 Frutillar Bajo, por maniobras en red MT desde alimentador 52ET2 Río Negro de SE Purranque.
19:27	Se solicita autorización al CDC del Coordinador Eléctrico Nacional, para realizar un intento de cierre del 52CT2 en vacío.
19:30	Cierre con éxito 52CT2 en S/E Frutillar.
19:32	Cierre con éxito alimentadores 52C2 Frutillar Bajo y 52C3 Quilanto, recuperando 100% de los consumos.

7. Esquema de las instalaciones previo a la falla:

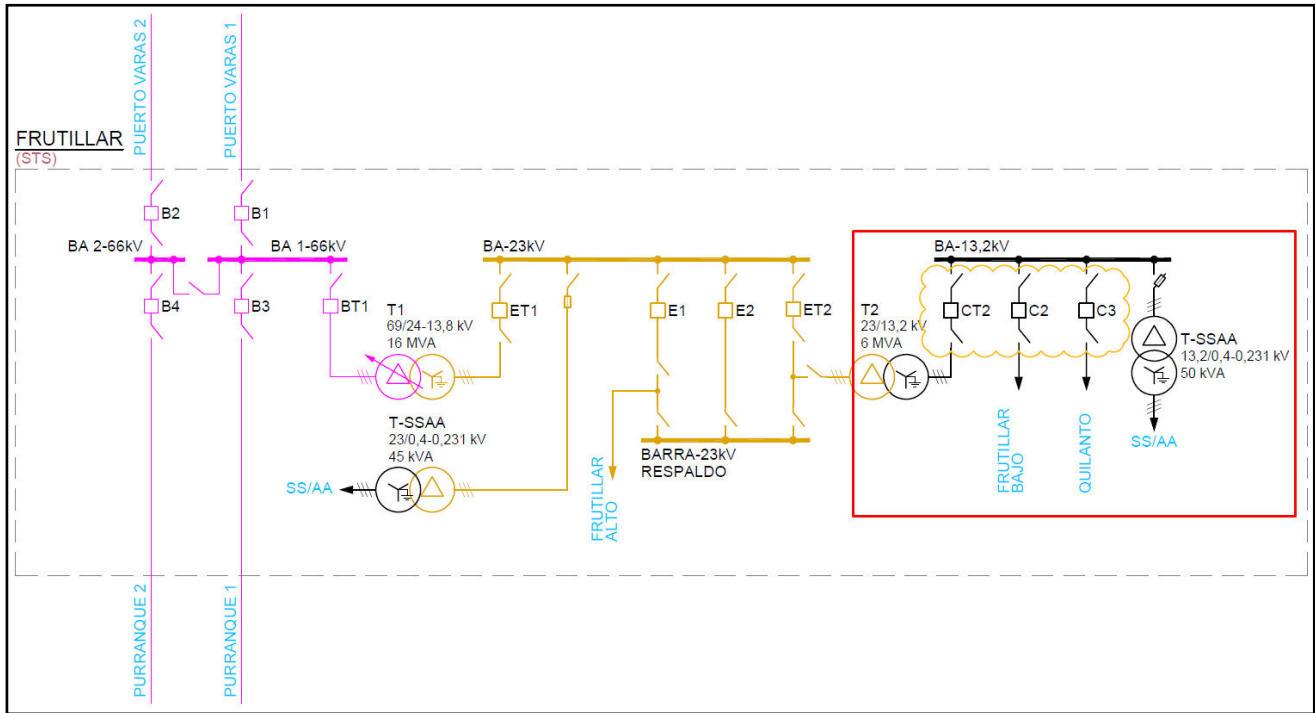


Figura N°1. Unilínea simplificado con la disposición de las instalaciones.

8. Listado de eventos generados y registrados en SCADA.

HIST_TIMESTAMP	LOCATION	COMPID	TEXT
24/08/2021 19:18:38d	FRUTILLA	FRUTILLA.C_T02.52CT2.EST	INTERRUPTOR 52CT2 ABIERTO/CERRADO ABIERTO
24/08/2021 19:26:46d	FRUTILLA	FRUTILLA.C_B02.52C2.EST	INTERRUPTOR 52C2 ABIERTO/CERRADO ABIERTO By JCHAVEZ
24/08/2021 19:26:54d	FRUTILLA	FRUTILLA.C_B03.52C3.EST	INTERRUPTOR 52C3 ABIERTO/CERRADO ABIERTO By JCHAVEZ
24/08/2021 19:30:01d	FRUTILLA	FRUTILLA.C_T02.52CT2.EST	INTERRUPTOR 52CT2 ABIERTO/CERRADO CERRADO By JCHAVEZ
24/08/2021 19:32:07d	FRUTILLA	FRUTILLA.C_B02.52C2.EST	INTERRUPTOR 52C2 ABIERTO/CERRADO CERRADO By JCHAVEZ
24/08/2021 19:32:44d	FRUTILLA	FRUTILLA.C_B03.52C3.EST	INTERRUPTOR 52C3 ABIERTO/CERRADO CERRADO By JCHAVEZ

9. Análisis de la actuación de protecciones y control.

1.1. Comportamiento unidad de control y protección 52CT2 SEL-651RA.

Registro eventos N°1 – Unidad de control 52CT2.

#	Date	Time	Element	State
1000	08/24/2021	22:56:31.440	OUT106	Asserted
999	08/24/2021	22:56:31.440	51P1	Asserted
998	08/24/2021	22:56:31.540	OUT106	Deasserted
997	08/24/2021	22:56:31.540	51P1	Deasserted
996	08/24/2021	22:56:31.610	OUT106	Asserted
995	08/24/2021	22:56:31.610	51P1	Asserted
994	08/24/2021	22:56:31.711	OUT106	Deasserted
993	08/24/2021	22:56:31.711	51P1	Deasserted
992	08/24/2021	22:56:31.751	OUT106	Asserted
991	08/24/2021	22:56:31.751	51P1	Asserted
990	08/24/2021	22:56:31.931	OUT106	Deasserted
989	08/24/2021	22:56:31.931	51P1	Deasserted
988	08/24/2021	22:56:31.951	OUT106	Asserted
987	08/24/2021	22:56:31.951	51P1	Asserted
986	08/24/2021	22:56:32.031	OUT106	Deasserted
985	08/24/2021	22:56:32.031	51P1	Deasserted
984	08/24/2021	22:56:32.161	OUT106	Asserted
983	08/24/2021	22:56:32.161	51P1	Asserted
982	08/24/2021	22:56:32.271	OUT106	Deasserted
981	08/24/2021	22:56:32.271	51P1	Deasserted
980	08/24/2021	22:56:32.291	OUT106	Asserted
979	08/24/2021	22:56:32.291	51P1	Asserted
978	08/24/2021	22:56:32.351	OUT106	Deasserted
977	08/24/2021	22:56:32.351	51P1	Deasserted
976	08/24/2021	22:56:32.371	OUT106	Asserted
975	08/24/2021	22:56:32.371	51P1	Asserted
974	08/24/2021	22:56:32.381	OUT106	Deasserted
973	08/24/2021	22:56:32.381	51P1	Deasserted
972	08/24/2021	22:56:33.902	OUT106	Asserted
971	08/24/2021	22:56:33.902	51P1	Asserted
970	08/24/2021	22:56:33.932	OUT106	Deasserted
969	08/24/2021	22:56:33.932	51P1	Deasserted
968	08/24/2021	22:56:33.942	OUT106	Asserted
967	08/24/2021	22:56:33.942	51P1	Asserted
966	08/24/2021	22:56:33.982	OUT106	Deasserted
965	08/24/2021	22:56:33.982	51P1	Deasserted
964	08/24/2021	22:56:34.032	OUT106	Asserted
963	08/24/2021	22:56:34.032	51P1	Asserted
962	08/24/2021	22:56:34.142	OUT106	Deasserted
961	08/24/2021	22:56:34.142	51P1	Deasserted
960	08/24/2021	22:56:34.172	OUT106	Asserted
959	08/24/2021	22:56:34.172	51P1	Asserted

#	Date	Time	Element	State
958	08/24/2021	22:56:34.332	OUT106	Deasserted
957	08/24/2021	22:56:34.332	51P1	Deasserted
956	08/24/2021	22:56:34.382	OUT106	Asserted
955	08/24/2021	22:56:34.382	51P1	Asserted
954	08/24/2021	22:56:34.492	OUT106	Deasserted
953	08/24/2021	22:56:34.492	51P1	Deasserted
952	08/24/2021	22:56:34.562	OUT106	Asserted
951	08/24/2021	22:56:34.562	51P1	Asserted
950	08/24/2021	22:56:34.632	OUT106	Deasserted
949	08/24/2021	22:56:34.632	51P1	Deasserted
948	08/24/2021	22:56:34.712	OUT106	Asserted
947	08/24/2021	22:56:34.712	51P1	Asserted
946	08/24/2021	22:56:34.812	OUT106	Deasserted
945	08/24/2021	22:56:34.812	51P1	Deasserted
944	08/24/2021	22:56:34.872	OUT106	Asserted
943	08/24/2021	22:56:34.872	51P1	Asserted
942	08/24/2021	22:56:34.892	OUT106	Deasserted
941	08/24/2021	22:56:34.892	51P1	Deasserted
940	08/24/2021	22:56:34.912	OUT106	Asserted
939	08/24/2021	22:56:34.912	51P1	Asserted
938	08/24/2021	22:56:34.922	OUT106	Deasserted
937	08/24/2021	22:56:34.922	51P1	Deasserted
936	08/24/2021	22:56:34.932	OUT106	Asserted
935	08/24/2021	22:56:34.932	51P1	Asserted
934	08/24/2021	22:56:35.002	OUT106	Deasserted
933	08/24/2021	22:56:35.002	51P1	Deasserted
932	08/24/2021	22:56:35.072	OUT106	Asserted
931	08/24/2021	22:56:35.072	51P1	Asserted
930	08/24/2021	22:56:35.212	OUT106	Deasserted
929	08/24/2021	22:56:35.212	51P1	Deasserted
928	08/24/2021	22:56:35.242	OUT106	Asserted
927	08/24/2021	22:56:35.242	51P1	Asserted
926	08/24/2021	22:56:35.352	OUT106	Deasserted
925	08/24/2021	22:56:35.352	51P1	Deasserted
924	08/24/2021	22:56:35.392	OUT106	Asserted
923	08/24/2021	22:56:35.392	51P1	Asserted
922	08/24/2021	22:56:35.422	OUT106	Deasserted
921	08/24/2021	22:56:35.422	51P1	Deasserted
920	08/24/2021	22:56:35.632	OUT106	Asserted
919	08/24/2021	22:56:35.632	51P1	Asserted
918	08/24/2021	22:56:35.692	OUT106	Deasserted
917	08/24/2021	22:56:35.692	51P1	Deasserted
916	08/24/2021	22:56:35.722	OUT106	Asserted
915	08/24/2021	22:56:35.722	51P1	Asserted
914	08/24/2021	22:56:35.862	OUT106	Deasserted
913	08/24/2021	22:56:35.862	51P1	Deasserted
912	08/24/2021	22:56:35.932	OUT106	Asserted
911	08/24/2021	22:56:35.932	51P1	Asserted

#	Date	Time	Element	State
910	08/24/2021	22:56:35.942	OUT106	Deasserted
909	08/24/2021	22:56:35.942	51P1	Deasserted
908	08/24/2021	22:56:35.982	OUT106	Asserted
907	08/24/2021	22:56:35.982	51P1	Asserted
906	08/24/2021	22:56:36.042	OUT106	Deasserted
905	08/24/2021	22:56:36.042	51P1	Deasserted
904	08/24/2021	22:56:36.072	OUT106	Asserted
903	08/24/2021	22:56:36.072	51P1	Asserted
902	08/24/2021	22:56:36.752	OUT106	Deasserted
901	08/24/2021	22:56:36.752	51P1	Deasserted
900	08/24/2021	22:56:36.772	OUT106	Asserted
899	08/24/2021	22:56:36.772	51P1	Asserted
898	08/24/2021	22:56:37.762	OUT106	Deasserted
897	08/24/2021	22:56:37.762	51P1	Deasserted
896	08/24/2021	22:56:37.802	OUT106	Asserted
895	08/24/2021	22:56:37.802	51P1	Asserted
894	08/24/2021	22:56:37.852	OUT106	Deasserted
893	08/24/2021	22:56:37.852	51P1	Deasserted
892	08/24/2021	22:56:37.872	OUT106	Asserted
891	08/24/2021	22:56:37.872	51P1	Asserted
890	08/24/2021	22:56:37.882	OUT106	Deasserted
889	08/24/2021	22:56:37.882	51P1	Deasserted
888	08/24/2021	22:56:37.942	OUT106	Asserted
887	08/24/2021	22:56:37.942	51P1	Asserted
886	08/24/2021	22:56:37.962	OUT106	Deasserted
885	08/24/2021	22:56:37.962	51P1	Deasserted
884	08/24/2021	22:56:38.002	OUT106	Asserted
883	08/24/2021	22:56:38.002	51P1	Asserted
882	08/24/2021	22:56:38.042	OUT106	Deasserted
881	08/24/2021	22:56:38.042	51P1	Deasserted
880	08/24/2021	22:56:38.343	OUT106	Asserted
879	08/24/2021	22:56:38.343	51P1	Asserted
878	08/24/2021	22:56:38.363	OUT106	Deasserted
877	08/24/2021	22:56:38.363	51P1	Deasserted
876	08/24/2021	22:56:38.383	OUT106	Asserted
875	08/24/2021	22:56:38.383	51P1	Asserted
874	08/24/2021	22:56:38.413	OUT106	Deasserted
873	08/24/2021	22:56:38.413	51P1	Deasserted
872	08/24/2021	22:56:38.523	OUT106	Asserted
871	08/24/2021	22:56:38.523	51P1	Asserted
870	08/24/2021	22:56:38.613	OUT106	Deasserted
869	08/24/2021	22:56:38.613	51P1	Deasserted
868	08/24/2021	22:56:38.663	OUT106	Asserted
867	08/24/2021	22:56:38.663	51P1	Asserted
866	08/24/2021	22:56:39.973	OUT106	Deasserted
865	08/24/2021	22:56:39.973	51P1	Deasserted
864	08/24/2021	22:56:40.083	OUT106	Asserted
863	08/24/2021	22:56:40.083	51P1	Asserted

#	Date	Time	Element	State
862	08/24/2021	22:56:40.123	OUT106	Deasserted
861	08/24/2021	22:56:40.123	51P1	Deasserted
860	08/24/2021	22:56:40.143	OUT106	Asserted
859	08/24/2021	22:56:40.143	51P1	Asserted
858	08/24/2021	22:56:40.173	OUT106	Deasserted
857	08/24/2021	22:56:40.173	51P1	Deasserted
856	08/24/2021	22:56:40.283	OUT106	Asserted
855	08/24/2021	22:56:40.283	51P1	Asserted
854	08/24/2021	22:56:40.323	OUT106	Deasserted
853	08/24/2021	22:56:40.323	51P1	Deasserted
852	08/24/2021	22:56:40.373	OUT106	Asserted
851	08/24/2021	22:56:40.373	51P1	Asserted
850	08/24/2021	22:56:40.463	OUT106	Deasserted
849	08/24/2021	22:56:40.463	51P1	Deasserted
848	08/24/2021	22:56:40.613	OUT106	Asserted
847	08/24/2021	22:56:40.613	51P1	Asserted
846	08/24/2021	22:56:40.633	OUT106	Deasserted
845	08/24/2021	22:56:40.633	51P1	Deasserted
844	08/24/2021	22:56:49.221	OUT106	Asserted
843	08/24/2021	22:56:49.221	51P1	Asserted
842	08/24/2021	22:56:49.231	OUT106	Deasserted
841	08/24/2021	22:56:49.231	51P1	Deasserted
840	08/24/2021	22:56:49.271	OUT106	Asserted
839	08/24/2021	22:56:49.271	51P1	Asserted
838	08/24/2021	22:56:49.301	OUT106	Deasserted
837	08/24/2021	22:56:49.301	51P1	Deasserted
836	08/24/2021	22:56:51.234	OUT106	Asserted
835	08/24/2021	22:56:51.234	51P1	Asserted
834	08/24/2021	22:56:51.264	OUT106	Deasserted
833	08/24/2021	22:56:51.264	51P1	Deasserted
832	08/24/2021	22:56:52.306	OUT106	Asserted
831	08/24/2021	22:56:52.306	51P1	Asserted
830	08/24/2021	22:56:52.326	OUT106	Deasserted
829	08/24/2021	22:56:52.326	51P1	Deasserted
828	08/24/2021	22:56:52.466	OUT106	Asserted
827	08/24/2021	22:56:52.466	51P1	Asserted
826	08/24/2021	22:56:52.687	OUT106	Deasserted
825	08/24/2021	22:56:52.687	51P1	Deasserted
824	08/24/2021	22:56:52.717	OUT106	Asserted
823	08/24/2021	22:56:52.717	51P1	Asserted
822	08/24/2021	22:56:52.727	OUT106	Deasserted
821	08/24/2021	22:56:52.727	51P1	Deasserted
820	08/24/2021	22:56:52.917	OUT106	Asserted
819	08/24/2021	22:56:52.917	51P1	Asserted
818	08/24/2021	22:56:54.510	OUT106	Deasserted
817	08/24/2021	22:56:54.510	51P1	Deasserted
816	08/24/2021	22:56:54.520	OUT106	Asserted
815	08/24/2021	22:56:54.520	51P1	Asserted

#	Date	Time	Element	State
814	08/24/2021	22:56:54.560	OUT106	Deasserted
813	08/24/2021	22:56:54.560	51P1	Deasserted
812	08/24/2021	22:56:54.670	OUT106	Asserted
811	08/24/2021	22:56:54.670	51P1	Asserted
810	08/24/2021	22:56:54.760	OUT106	Deasserted
809	08/24/2021	22:56:54.760	51P1	Deasserted
808	08/24/2021	22:56:54.770	OUT106	Asserted
807	08/24/2021	22:56:54.770	51P1	Asserted
806	08/24/2021	22:56:55.671	OUT106	Deasserted
805	08/24/2021	22:56:55.671	51P1	Deasserted
804	08/24/2021	22:56:55.731	OUT106	Asserted
803	08/24/2021	22:56:55.731	51P1	Asserted
802	08/24/2021	22:56:55.812	OUT106	Deasserted
801	08/24/2021	22:56:55.812	51P1	Deasserted
800	08/24/2021	22:56:55.822	OUT106	Asserted
799	08/24/2021	22:56:55.822	51P1	Asserted
798	08/24/2021	22:56:55.832	OUT106	Deasserted
797	08/24/2021	22:56:55.832	51P1	Deasserted
796	08/24/2021	22:56:57.474	OUT106	Asserted
795	08/24/2021	22:56:57.474	51P1	Asserted
794	08/24/2021	22:56:57.564	OUT106	Deasserted
793	08/24/2021	22:56:57.564	51P1	Deasserted
792	08/24/2021	22:56:57.594	OUT106	Asserted
791	08/24/2021	22:56:57.594	51P1	Asserted
790	08/24/2021	22:56:57.724	OUT106	Deasserted
789	08/24/2021	22:56:57.724	51P1	Deasserted
788	08/24/2021	22:56:57.824	OUT106	Asserted
787	08/24/2021	22:56:57.824	51P1	Asserted
786	08/24/2021	22:56:57.844	OUT106	Deasserted
785	08/24/2021	22:56:57.844	51P1	Deasserted
784	08/24/2021	22:56:58.285	OUT106	Asserted
783	08/24/2021	22:56:58.285	51P1	Asserted
782	08/24/2021	22:56:58.315	OUT106	Deasserted
781	08/24/2021	22:56:58.315	51P1	Deasserted
780	08/24/2021	22:56:58.335	OUT106	Asserted
779	08/24/2021	22:56:58.335	51P1	Asserted
778	08/24/2021	22:56:58.385	OUT106	Deasserted
777	08/24/2021	22:56:58.385	51P1	Deasserted
776	08/24/2021	22:56:58.455	OUT106	Asserted
775	08/24/2021	22:56:58.455	51P1	Asserted
774	08/24/2021	22:56:58.465	OUT106	Deasserted
773	08/24/2021	22:56:58.465	51P1	Deasserted
772	08/24/2021	22:56:58.495	OUT106	Asserted
771	08/24/2021	22:56:58.495	51P1	Asserted
770	08/24/2021	22:56:58.505	OUT106	Deasserted
769	08/24/2021	22:56:58.505	51P1	Deasserted
768	08/24/2021	22:56:58.846	OUT106	Asserted
767	08/24/2021	22:56:58.846	51P1	Asserted

#	Date	Time	Element	State
766	08/24/2021	22:56:58.916	OUT106	Deasserted
765	08/24/2021	22:56:58.916	51P1	Deasserted
764	08/24/2021	22:56:59.006	OUT106	Asserted
763	08/24/2021	22:56:59.006	51P1	Asserted
762	08/24/2021	22:56:59.066	OUT106	Deasserted
761	08/24/2021	22:56:59.066	51P1	Deasserted
760	08/24/2021	22:56:59.096	OUT106	Asserted
759	08/24/2021	22:56:59.096	51P1	Asserted
758	08/24/2021	22:56:59.126	OUT106	Deasserted
757	08/24/2021	22:56:59.126	51P1	Deasserted
756	08/24/2021	22:56:59.136	OUT106	Asserted
755	08/24/2021	22:56:59.136	51P1	Asserted
754	08/24/2021	22:56:59.146	OUT106	Deasserted
753	08/24/2021	22:56:59.146	51P1	Deasserted
752	08/24/2021	22:56:59.166	OUT106	Asserted
751	08/24/2021	22:56:59.166	51P1	Asserted
750	08/24/2021	22:56:59.246	OUT106	Deasserted
749	08/24/2021	22:56:59.246	51P1	Deasserted
748	08/24/2021	22:56:59.336	OUT106	Asserted
747	08/24/2021	22:56:59.336	51P1	Asserted
746	08/24/2021	22:56:59.446	OUT106	Deasserted
745	08/24/2021	22:56:59.446	51P1	Deasserted
744	08/24/2021	22:57:01.048	OUT106	Asserted
743	08/24/2021	22:57:01.048	51P1	Asserted
742	08/24/2021	22:57:01.058	OUT106	Deasserted
741	08/24/2021	22:57:01.058	51P1	Deasserted
740	08/24/2021	22:57:01.409	OUT106	Asserted
739	08/24/2021	22:57:01.409	51P1	Asserted
738	08/24/2021	22:57:01.419	OUT106	Deasserted
737	08/24/2021	22:57:01.419	51P1	Deasserted
736	08/24/2021	22:57:01.439	OUT106	Asserted
735	08/24/2021	22:57:01.439	51P1	Asserted
734	08/24/2021	22:57:01.459	OUT106	Deasserted
733	08/24/2021	22:57:01.459	51P1	Deasserted
732	08/24/2021	22:57:01.960	OUT106	Asserted
731	08/24/2021	22:57:01.960	51P1	Asserted
730	08/24/2021	22:57:02.000	OUT106	Deasserted
729	08/24/2021	22:57:02.000	51P1	Deasserted
728	08/24/2021	22:57:02.120	OUT106	Asserted
727	08/24/2021	22:57:02.120	51P1	Asserted
726	08/24/2021	22:57:02.140	OUT106	Deasserted
725	08/24/2021	22:57:02.140	51P1	Deasserted
724	08/24/2021	22:57:02.320	OUT106	Asserted
723	08/24/2021	22:57:02.320	51P1	Asserted
722	08/24/2021	22:57:02.340	OUT106	Deasserted
721	08/24/2021	22:57:02.340	51P1	Deasserted
720	08/24/2021	22:57:02.410	OUT106	Asserted
719	08/24/2021	22:57:02.410	51P1	Asserted

#	Date	Time	Element	State
718	08/24/2021	22:57:02.480	OUT106	Deasserted
717	08/24/2021	22:57:02.480	51P1	Deasserted
716	08/24/2021	22:57:02.821	OUT106	Asserted
715	08/24/2021	22:57:02.821	51P1	Asserted
714	08/24/2021	22:57:02.891	OUT106	Deasserted
713	08/24/2021	22:57:02.891	51P1	Deasserted
712	08/24/2021	22:57:02.941	OUT106	Asserted
711	08/24/2021	22:57:02.941	51P1	Asserted
710	08/24/2021	22:57:03.001	OUT106	Deasserted
709	08/24/2021	22:57:03.001	51P1	Deasserted
708	08/24/2021	22:57:03.081	OUT106	Asserted
707	08/24/2021	22:57:03.081	51P1	Asserted
706	08/24/2021	22:57:03.412	OUT106	Deasserted
705	08/24/2021	22:57:03.412	51P1	Deasserted
704	08/24/2021	22:57:03.432	OUT106	Asserted
703	08/24/2021	22:57:03.432	51P1	Asserted
702	08/24/2021	22:57:03.632	OUT106	Deasserted
701	08/24/2021	22:57:03.632	51P1	Deasserted
700	08/24/2021	22:57:03.652	OUT106	Asserted
699	08/24/2021	22:57:03.652	51P1	Asserted
698	08/24/2021	22:57:04.453	OUT106	Deasserted
697	08/24/2021	22:57:04.453	51P1	Deasserted
696	08/24/2021	22:57:04.463	OUT106	Asserted
695	08/24/2021	22:57:04.463	51P1	Asserted
694	08/24/2021	22:57:04.784	OUT106	Deasserted
693	08/24/2021	22:57:04.784	51P1	Deasserted
692	08/24/2021	22:57:04.794	OUT106	Asserted
691	08/24/2021	22:57:04.794	51P1	Asserted
690	08/24/2021	22:57:05.986	OUT106	Deasserted
689	08/24/2021	22:57:05.986	51P1	Deasserted
688	08/24/2021	22:57:05.996	OUT106	Asserted
687	08/24/2021	22:57:05.996	51P1	Asserted
686	08/24/2021	22:57:06.847	OUT106	Deasserted
685	08/24/2021	22:57:06.847	51P1	Deasserted
684	08/24/2021	22:57:06.937	OUT106	Asserted
683	08/24/2021	22:57:06.937	51P1	Asserted
682	08/24/2021	22:57:06.987	OUT106	Deasserted
681	08/24/2021	22:57:06.987	51P1	Deasserted
680	08/24/2021	22:57:06.997	OUT106	Asserted
679	08/24/2021	22:57:06.997	51P1	Asserted
678	08/24/2021	22:57:07.037	OUT106	Deasserted
677	08/24/2021	22:57:07.037	51P1	Deasserted
676	08/24/2021	22:57:07.047	OUT106	Asserted
675	08/24/2021	22:57:07.047	51P1	Asserted
674	08/24/2021	22:57:07.198	OUT106	Deasserted
673	08/24/2021	22:57:07.198	51P1	Deasserted
672	08/24/2021	22:57:07.218	OUT106	Asserted
671	08/24/2021	22:57:07.218	51P1	Asserted

#	Date	Time	Element	State
670	08/24/2021	22:57:07.528	OUT106	Deasserted
669	08/24/2021	22:57:07.528	51P1	Deasserted
668	08/24/2021	22:57:08.099	OUT106	Asserted
667	08/24/2021	22:57:08.099	51P1	Asserted
666	08/24/2021	22:57:08.119	OUT106	Deasserted
665	08/24/2021	22:57:08.119	51P1	Deasserted
664	08/24/2021	22:57:08.139	OUT106	Asserted
663	08/24/2021	22:57:08.139	51P1	Asserted
662	08/24/2021	22:57:08.219	OUT106	Deasserted
661	08/24/2021	22:57:08.219	51P1	Deasserted
660	08/24/2021	22:57:08.300	OUT106	Asserted
659	08/24/2021	22:57:08.300	51P1	Asserted
658	08/24/2021	22:57:08.410	OUT106	Deasserted
657	08/24/2021	22:57:08.410	51P1	Deasserted
656	08/24/2021	22:57:08.430	OUT106	Asserted
655	08/24/2021	22:57:08.430	51P1	Asserted
654	08/24/2021	22:57:08.530	OUT106	Deasserted
653	08/24/2021	22:57:08.530	51P1	Deasserted
652	08/24/2021	22:57:08.700	OUT106	Asserted
651	08/24/2021	22:57:08.700	51P1	Asserted
650	08/24/2021	22:57:08.720	OUT106	Deasserted
649	08/24/2021	22:57:08.720	51P1	Deasserted
648	08/24/2021	22:57:08.790	OUT106	Asserted
647	08/24/2021	22:57:08.790	51P1	Asserted
646	08/24/2021	22:57:08.891	OUT106	Deasserted
645	08/24/2021	22:57:08.891	51P1	Deasserted
644	08/24/2021	22:57:08.901	OUT106	Asserted
643	08/24/2021	22:57:08.901	51P1	Asserted
642	08/24/2021	22:57:08.931	OUT106	Deasserted
641	08/24/2021	22:57:08.931	51P1	Deasserted
640	08/24/2021	22:57:08.971	OUT106	Asserted
639	08/24/2021	22:57:08.971	51P1	Asserted
638	08/24/2021	22:57:09.081	OUT106	Deasserted
637	08/24/2021	22:57:09.081	51P1	Deasserted
636	08/24/2021	22:57:09.111	OUT106	Asserted
635	08/24/2021	22:57:09.111	51P1	Asserted
634	08/24/2021	22:57:23.911	OUT106	Deasserted
633	08/24/2021	22:57:23.911	51P1	Deasserted
632	08/24/2021	22:57:23.921	OUT106	Asserted
631	08/24/2021	22:57:23.921	51P1	Asserted
630	08/24/2021	22:57:24.051	OUT106	Deasserted
629	08/24/2021	22:57:24.051	51P1	Deasserted
628	08/24/2021	22:57:24.141	OUT106	Asserted
627	08/24/2021	22:57:24.141	51P1	Asserted
626	08/24/2021	22:57:24.191	OUT106	Deasserted
625	08/24/2021	22:57:24.191	51P1	Deasserted
624	08/24/2021	22:57:24.281	OUT106	Asserted
623	08/24/2021	22:57:24.281	51P1	Asserted

#	Date	Time	Element	State
622	08/24/2021	22:57:24.602	OUT106	Deasserted
621	08/24/2021	22:57:24.602	51P1	Deasserted
620	08/24/2021	22:57:24.632	OUT106	Asserted
619	08/24/2021	22:57:24.632	51P1	Asserted
618	08/24/2021	22:57:24.752	OUT106	Deasserted
617	08/24/2021	22:57:24.752	51P1	Deasserted
616	08/24/2021	22:57:24.782	OUT106	Asserted
615	08/24/2021	22:57:24.782	51P1	Asserted
614	08/24/2021	22:57:24.932	OUT106	Deasserted
613	08/24/2021	22:57:24.932	51P1	Deasserted
612	08/24/2021	22:57:24.942	OUT106	Asserted
611	08/24/2021	22:57:24.942	51P1	Asserted
610	08/24/2021	22:57:25.052	OUT106	Deasserted
609	08/24/2021	22:57:25.052	51P1	Deasserted
608	08/24/2021	22:57:25.232	OUT106	Asserted
607	08/24/2021	22:57:25.232	51P1	Asserted
606	08/24/2021	22:57:25.242	OUT106	Deasserted
605	08/24/2021	22:57:25.242	51P1	Deasserted
604	08/24/2021	22:57:25.292	OUT106	Asserted
603	08/24/2021	22:57:25.292	51P1	Asserted
602	08/24/2021	22:57:25.452	OUT106	Deasserted
601	08/24/2021	22:57:25.452	51P1	Deasserted
600	08/24/2021	22:57:25.482	OUT106	Asserted
599	08/24/2021	22:57:25.482	51P1	Asserted
598	08/24/2021	22:57:25.582	OUT106	Deasserted
597	08/24/2021	22:57:25.582	51P1	Deasserted
596	08/24/2021	22:57:25.833	OUT106	Asserted
595	08/24/2021	22:57:25.833	51P1	Asserted
594	08/24/2021	22:57:25.933	OUT106	Deasserted
593	08/24/2021	22:57:25.933	51P1	Deasserted
592	08/24/2021	22:57:26.023	OUT106	Asserted
591	08/24/2021	22:57:26.023	51P1	Asserted
590	08/24/2021	22:57:27.154	OUT106	Deasserted
589	08/24/2021	22:57:27.154	51P1	Deasserted
588	08/24/2021	22:57:27.174	OUT106	Asserted
587	08/24/2021	22:57:27.174	51P1	Asserted
586	08/24/2021	22:57:27.304	OUT106	Deasserted
585	08/24/2021	22:57:27.304	51P1	Deasserted
584	08/24/2021	22:57:27.374	OUT106	Asserted
583	08/24/2021	22:57:27.374	51P1	Asserted
582	08/24/2021	22:57:27.464	OUT106	Deasserted
581	08/24/2021	22:57:27.464	51P1	Deasserted
580	08/24/2021	22:57:27.524	OUT106	Asserted
579	08/24/2021	22:57:27.524	51P1	Asserted
578	08/24/2021	22:57:27.584	OUT106	Deasserted
577	08/24/2021	22:57:27.584	51P1	Deasserted
576	08/24/2021	22:57:27.805	OUT106	Asserted
575	08/24/2021	22:57:27.805	51P1	Asserted

#	Date	Time	Element	State
574	08/24/2021	22:57:27.825	OUT106	Deasserted
573	08/24/2021	22:57:27.825	51P1	Deasserted
572	08/24/2021	22:57:27.925	OUT106	Asserted
571	08/24/2021	22:57:27.925	51P1	Asserted
570	08/24/2021	22:57:28.025	OUT106	Deasserted
569	08/24/2021	22:57:28.025	51P1	Deasserted
568	08/24/2021	22:57:28.055	OUT106	Asserted
567	08/24/2021	22:57:28.055	51P1	Asserted
566	08/24/2021	22:57:28.085	OUT106	Deasserted
565	08/24/2021	22:57:28.085	51P1	Deasserted
564	08/24/2021	22:57:28.095	OUT106	Asserted
563	08/24/2021	22:57:28.095	51P1	Asserted
562	08/24/2021	22:57:28.375	OUT106	Deasserted
561	08/24/2021	22:57:28.375	51P1	Deasserted
560	08/24/2021	22:57:28.415	OUT106	Asserted
559	08/24/2021	22:57:28.415	51P1	Asserted
558	08/24/2021	22:57:28.435	OUT106	Deasserted
557	08/24/2021	22:57:28.435	51P1	Deasserted
556	08/24/2021	22:57:28.455	OUT106	Asserted
555	08/24/2021	22:57:28.455	51P1	Asserted
554	08/24/2021	22:57:28.465	OUT106	Deasserted
553	08/24/2021	22:57:28.465	51P1	Deasserted
552	08/24/2021	22:57:28.655	OUT106	Asserted
551	08/24/2021	22:57:28.655	51P1	Asserted
550	08/24/2021	22:57:28.685	OUT106	Deasserted
549	08/24/2021	22:57:28.685	51P1	Deasserted
548	08/24/2021	22:57:28.776	OUT106	Asserted
547	08/24/2021	22:57:28.776	51P1	Asserted
546	08/24/2021	22:57:28.886	OUT106	Deasserted
545	08/24/2021	22:57:28.886	51P1	Deasserted
544	08/24/2021	22:57:28.906	OUT106	Asserted
543	08/24/2021	22:57:28.906	51P1	Asserted
542	08/24/2021	22:57:29.226	OUT106	Deasserted
541	08/24/2021	22:57:29.226	51P1	Deasserted
540	08/24/2021	22:57:29.266	OUT106	Asserted
539	08/24/2021	22:57:29.266	51P1	Asserted
538	08/24/2021	22:57:29.296	OUT106	Deasserted
537	08/24/2021	22:57:29.296	51P1	Deasserted
536	08/24/2021	22:57:29.316	OUT106	Asserted
535	08/24/2021	22:57:29.316	51P1	Asserted
534	08/24/2021	22:57:29.576	OUT106	Deasserted
533	08/24/2021	22:57:29.576	51P1	Deasserted
532	08/24/2021	22:57:29.586	OUT106	Asserted
531	08/24/2021	22:57:29.586	51P1	Asserted
530	08/24/2021	22:57:29.917	OUT106	Deasserted
529	08/24/2021	22:57:29.917	51P1	Deasserted
528	08/24/2021	22:57:29.947	OUT106	Asserted
527	08/24/2021	22:57:29.947	51P1	Asserted

#	Date	Time	Element	State
526	08/24/2021	22:57:30.427	OUT106	Deasserted
525	08/24/2021	22:57:30.427	51P1	Deasserted
524	08/24/2021	22:57:30.467	OUT106	Asserted
523	08/24/2021	22:57:30.467	51P1	Asserted
522	08/24/2021	22:57:30.497	OUT106	Deasserted
521	08/24/2021	22:57:30.497	51P1	Deasserted
520	08/24/2021	22:57:30.527	OUT106	Asserted
519	08/24/2021	22:57:30.527	51P1	Asserted
518	08/24/2021	22:57:30.557	OUT106	Deasserted
517	08/24/2021	22:57:30.557	51P1	Deasserted
516	08/24/2021	22:57:30.657	OUT106	Asserted
515	08/24/2021	22:57:30.657	51P1	Asserted
514	08/24/2021	22:57:30.707	OUT106	Deasserted
513	08/24/2021	22:57:30.707	51P1	Deasserted
512	08/24/2021	22:57:31.218	OUT106	Asserted
511	08/24/2021	22:57:31.218	51P1	Asserted
510	08/24/2021	22:57:31.228	OUT106	Deasserted
509	08/24/2021	22:57:31.228	51P1	Deasserted
508	08/24/2021	22:57:31.398	OUT106	Asserted
507	08/24/2021	22:57:31.398	51P1	Asserted
506	08/24/2021	22:57:31.428	OUT106	Deasserted
505	08/24/2021	22:57:31.428	51P1	Deasserted
504	08/24/2021	22:57:31.478	OUT106	Asserted
503	08/24/2021	22:57:31.478	51P1	Asserted
502	08/24/2021	22:57:31.628	OUT106	Deasserted
501	08/24/2021	22:57:31.628	51P1	Deasserted
500	08/24/2021	22:57:31.668	OUT106	Asserted
499	08/24/2021	22:57:31.668	51P1	Asserted
498	08/24/2021	22:57:31.698	OUT106	Deasserted
497	08/24/2021	22:57:31.698	51P1	Deasserted
496	08/24/2021	22:57:31.738	OUT106	Asserted
495	08/24/2021	22:57:31.738	51P1	Asserted
494	08/24/2021	22:57:31.748	OUT106	Deasserted
493	08/24/2021	22:57:31.748	51P1	Deasserted
492	08/24/2021	22:57:31.888	OUT106	Asserted
491	08/24/2021	22:57:31.888	51P1	Asserted
490	08/24/2021	22:57:31.988	OUT106	Deasserted
489	08/24/2021	22:57:31.988	51P1	Deasserted
488	08/24/2021	22:57:32.019	OUT106	Asserted
487	08/24/2021	22:57:32.019	51P1	Asserted
486	08/24/2021	22:57:32.059	OUT106	Deasserted
485	08/24/2021	22:57:32.059	51P1	Deasserted
484	08/24/2021	22:57:32.069	OUT106	Asserted
483	08/24/2021	22:57:32.069	51P1	Asserted
482	08/24/2021	22:57:32.269	OUT106	Deasserted
481	08/24/2021	22:57:32.269	51P1	Deasserted
480	08/24/2021	22:57:32.389	OUT106	Asserted
479	08/24/2021	22:57:32.389	51P1	Asserted

#	Date	Time	Element	State
478	08/24/2021	22:57:32.479	OUT106	Deasserted
477	08/24/2021	22:57:32.479	51P1	Deasserted
476	08/24/2021	22:57:32.519	OUT106	Asserted
475	08/24/2021	22:57:32.519	51P1	Asserted
474	08/24/2021	22:57:32.639	OUT106	Deasserted
473	08/24/2021	22:57:32.639	51P1	Deasserted
472	08/24/2021	22:57:35.362	OUT106	Asserted
471	08/24/2021	22:57:35.362	51P1	Asserted
470	08/24/2021	22:57:35.392	OUT106	Deasserted
469	08/24/2021	22:57:35.392	51P1	Deasserted
468	08/24/2021	22:57:35.442	OUT106	Asserted
467	08/24/2021	22:57:35.442	51P1	Asserted
466	08/24/2021	22:57:35.482	OUT106	Deasserted
465	08/24/2021	22:57:35.482	51P1	Deasserted
464	08/24/2021	22:57:35.492	OUT106	Asserted
463	08/24/2021	22:57:35.492	51P1	Asserted
462	08/24/2021	22:57:35.592	OUT106	Deasserted
461	08/24/2021	22:57:35.592	51P1	Deasserted
460	08/24/2021	22:57:35.652	OUT106	Asserted
459	08/24/2021	22:57:35.652	51P1	Asserted
458	08/24/2021	22:57:35.662	OUT106	Deasserted
457	08/24/2021	22:57:35.662	51P1	Deasserted
456	08/24/2021	22:57:37.044	OUT106	Asserted
455	08/24/2021	22:57:37.044	51P1	Asserted
454	08/24/2021	22:57:37.074	OUT106	Deasserted
453	08/24/2021	22:57:37.074	51P1	Deasserted
452	08/24/2021	22:57:46.658	OUT106	Asserted
451	08/24/2021	22:57:46.658	51P1	Asserted
450	08/24/2021	22:57:46.778	OUT106	Deasserted
449	08/24/2021	22:57:46.778	51P1	Deasserted
448	08/24/2021	22:57:46.818	OUT106	Asserted
447	08/24/2021	22:57:46.818	51P1	Asserted
446	08/24/2021	22:57:46.968	OUT106	Deasserted
445	08/24/2021	22:57:46.968	51P1	Deasserted
444	08/24/2021	22:57:46.978	OUT106	Asserted
443	08/24/2021	22:57:46.978	51P1	Asserted
442	08/24/2021	22:58:18.101	OUT106	Deasserted
441	08/24/2021	22:58:18.101	51P1	Deasserted
440	08/24/2021	22:58:18.131	OUT106	Asserted
439	08/24/2021	22:58:18.131	51P1	Asserted
438	08/24/2021	22:58:18.191	OUT106	Deasserted
437	08/24/2021	22:58:18.191	51P1	Deasserted
436	08/24/2021	22:58:18.201	OUT106	Asserted
435	08/24/2021	22:58:18.201	51P1	Asserted
434	08/24/2021	22:58:18.441	OUT106	Deasserted
433	08/24/2021	22:58:18.441	51P1	Deasserted
432	08/24/2021	22:58:18.461	OUT106	Asserted
431	08/24/2021	22:58:18.461	51P1	Asserted

#	Date	Time	Element	State
430	08/24/2021	22:58:18.641	OUT106	Deasserted
429	08/24/2021	22:58:18.641	51P1	Deasserted
428	08/24/2021	22:58:18.651	OUT106	Asserted
427	08/24/2021	22:58:18.651	51P1	Asserted
426	08/24/2021	22:58:18.962	OUT106	Deasserted
425	08/24/2021	22:58:18.962	51P1	Deasserted
424	08/24/2021	22:58:18.982	OUT106	Asserted
423	08/24/2021	22:58:18.982	51P1	Asserted
422	08/24/2021	23:07:43.582	OUT106	Deasserted
421	08/24/2021	23:07:43.582	51P1	Deasserted
420	08/24/2021	23:07:43.602	OUT106	Asserted
419	08/24/2021	23:07:43.602	51P1	Asserted
418	08/24/2021	23:07:43.662	OUT106	Deasserted
417	08/24/2021	23:07:43.662	51P1	Deasserted
416	08/24/2021	23:07:43.682	OUT106	Asserted
415	08/24/2021	23:07:43.682	51P1	Asserted
414	08/24/2021	23:07:43.733	OUT106	Deasserted
413	08/24/2021	23:07:43.733	51P1	Deasserted
412	08/24/2021	23:07:43.793	OUT106	Asserted
411	08/24/2021	23:07:43.793	51P1	Asserted
410	08/24/2021	23:07:43.933	OUT106	Deasserted
409	08/24/2021	23:07:43.933	51P1	Deasserted
408	08/24/2021	23:07:43.953	OUT106	Asserted
407	08/24/2021	23:07:43.953	51P1	Asserted
406	08/24/2021	23:07:44.063	OUT106	Deasserted
405	08/24/2021	23:07:44.063	51P1	Deasserted
404	08/24/2021	23:07:44.183	OUT106	Asserted
403	08/24/2021	23:07:44.183	51P1	Asserted
402	08/24/2021	23:07:44.234	OUT106	Deasserted
401	08/24/2021	23:07:44.234	51P1	Deasserted
400	08/24/2021	23:07:44.294	OUT106	Asserted
399	08/24/2021	23:07:44.294	51P1	Asserted
398	08/24/2021	23:07:45.606	OUT106	Deasserted
397	08/24/2021	23:07:45.606	51P1	Deasserted
396	08/24/2021	23:07:45.967	OUT106	Asserted
395	08/24/2021	23:07:45.967	51P1	Asserted
394	08/24/2021	23:07:45.997	OUT106	Deasserted
393	08/24/2021	23:07:45.997	51P1	Deasserted
392	08/24/2021	23:07:46.027	OUT106	Asserted
391	08/24/2021	23:07:46.027	51P1	Asserted
390	08/24/2021	23:07:46.147	OUT106	Deasserted
389	08/24/2021	23:07:46.147	51P1	Deasserted
388	08/24/2021	23:07:46.177	OUT106	Asserted
387	08/24/2021	23:07:46.177	51P1	Asserted
386	08/24/2021	23:07:46.287	OUT106	Deasserted
385	08/24/2021	23:07:46.287	51P1	Deasserted
384	08/24/2021	23:07:46.297	OUT106	Asserted
383	08/24/2021	23:07:46.297	51P1	Asserted

#	Date	Time	Element	State
382	08/24/2021	23:07:46.318	OUT106	Deasserted
381	08/24/2021	23:07:46.318	51P1	Deasserted
380	08/24/2021	23:07:46.368	OUT106	Asserted
379	08/24/2021	23:07:46.368	51P1	Asserted
378	08/24/2021	23:07:46.488	OUT106	Deasserted
377	08/24/2021	23:07:46.488	51P1	Deasserted
376	08/24/2021	23:07:46.548	OUT106	Asserted
375	08/24/2021	23:07:46.548	51P1	Asserted
374	08/24/2021	23:07:46.568	OUT106	Deasserted
373	08/24/2021	23:07:46.568	51P1	Deasserted
372	08/24/2021	23:07:46.578	OUT106	Asserted
371	08/24/2021	23:07:46.578	51P1	Asserted
370	08/24/2021	23:07:46.678	OUT106	Deasserted
369	08/24/2021	23:07:46.678	51P1	Deasserted
368	08/24/2021	23:07:46.718	OUT106	Asserted
367	08/24/2021	23:07:46.718	51P1	Asserted
366	08/24/2021	23:07:46.818	OUT106	Deasserted
365	08/24/2021	23:07:46.818	51P1	Deasserted
364	08/24/2021	23:07:46.969	OUT106	Asserted
363	08/24/2021	23:07:46.969	51P1	Asserted
362	08/24/2021	23:07:46.999	OUT106	Deasserted
361	08/24/2021	23:07:46.999	51P1	Deasserted
360	08/24/2021	23:07:47.099	OUT106	Asserted
359	08/24/2021	23:07:47.099	51P1	Asserted
358	08/24/2021	23:07:47.119	OUT106	Deasserted
357	08/24/2021	23:07:47.119	51P1	Deasserted
356	08/24/2021	23:07:47.389	OUT106	Asserted
355	08/24/2021	23:07:47.389	51P1	Asserted
354	08/24/2021	23:07:47.490	OUT106	Deasserted
353	08/24/2021	23:07:47.490	51P1	Deasserted
352	08/24/2021	23:07:47.930	OUT106	Asserted
351	08/24/2021	23:07:47.930	51P1	Asserted
350	08/24/2021	23:07:48.051	OUT106	Deasserted
349	08/24/2021	23:07:48.051	51P1	Deasserted
348	08/24/2021	23:07:48.091	OUT106	Asserted
347	08/24/2021	23:07:48.091	51P1	Asserted
346	08/24/2021	23:07:48.101	OUT106	Deasserted
345	08/24/2021	23:07:48.101	51P1	Deasserted
344	08/24/2021	23:07:48.111	OUT106	Asserted
343	08/24/2021	23:07:48.111	51P1	Asserted
342	08/24/2021	23:07:48.151	OUT106	Deasserted
341	08/24/2021	23:07:48.151	51P1	Deasserted
340	08/24/2021	23:07:48.271	OUT106	Asserted
339	08/24/2021	23:07:48.271	51P1	Asserted
338	08/24/2021	23:07:48.291	OUT106	Deasserted
337	08/24/2021	23:07:48.291	51P1	Deasserted
336	08/24/2021	23:07:48.321	OUT106	Asserted
335	08/24/2021	23:07:48.321	51P1	Asserted

#	Date	Time	Element	State
334	08/24/2021	23:07:48.351	OUT106	Deasserted
333	08/24/2021	23:07:48.351	51P1	Deasserted
332	08/24/2021	23:07:48.672	OUT106	Asserted
331	08/24/2021	23:07:48.672	51P1	Asserted
330	08/24/2021	23:07:48.682	OUT106	Deasserted
329	08/24/2021	23:07:48.682	51P1	Deasserted
328	08/24/2021	23:07:48.802	OUT106	Asserted
327	08/24/2021	23:07:48.802	51P1	Asserted
326	08/24/2021	23:07:48.812	OUT106	Deasserted
325	08/24/2021	23:07:48.812	51P1	Deasserted
324	08/24/2021	23:07:49.133	OUT106	Asserted
323	08/24/2021	23:07:49.133	51P1	Asserted
322	08/24/2021	23:07:49.173	OUT106	Deasserted
321	08/24/2021	23:07:49.173	51P1	Deasserted
320	08/24/2021	23:07:49.213	OUT106	Asserted
319	08/24/2021	23:07:49.213	51P1	Asserted
318	08/24/2021	23:07:49.243	OUT106	Deasserted
317	08/24/2021	23:07:49.243	51P1	Deasserted
316	08/24/2021	23:07:49.253	OUT106	Asserted
315	08/24/2021	23:07:49.253	51P1	Asserted
314	08/24/2021	23:07:49.273	OUT106	Deasserted
313	08/24/2021	23:07:49.273	51P1	Deasserted
312	08/24/2021	23:07:49.313	OUT106	Asserted
311	08/24/2021	23:07:49.313	51P1	Asserted
310	08/24/2021	23:07:49.383	OUT106	Deasserted
309	08/24/2021	23:07:49.383	51P1	Deasserted
308	08/24/2021	23:07:49.463	OUT106	Asserted
307	08/24/2021	23:07:49.463	51P1	Asserted
306	08/24/2021	23:07:49.483	OUT106	Deasserted
305	08/24/2021	23:07:49.483	51P1	Deasserted
304	08/24/2021	23:07:49.523	OUT106	Asserted
303	08/24/2021	23:07:49.523	51P1	Asserted
302	08/24/2021	23:07:49.584	OUT106	Deasserted
301	08/24/2021	23:07:49.584	51P1	Deasserted
300	08/24/2021	23:07:49.664	OUT106	Asserted
299	08/24/2021	23:07:49.664	51P1	Asserted
298	08/24/2021	23:07:49.704	OUT106	Deasserted
297	08/24/2021	23:07:49.704	51P1	Deasserted
296	08/24/2021	23:07:49.734	OUT106	Asserted
295	08/24/2021	23:07:49.734	51P1	Asserted
294	08/24/2021	23:07:49.744	OUT106	Deasserted
293	08/24/2021	23:07:49.744	51P1	Deasserted
292	08/24/2021	23:07:49.814	OUT106	Asserted
291	08/24/2021	23:07:49.814	51P1	Asserted
290	08/24/2021	23:07:49.914	OUT106	Deasserted
289	08/24/2021	23:07:49.914	51P1	Deasserted
288	08/24/2021	23:07:49.944	OUT106	Asserted
287	08/24/2021	23:07:49.944	51P1	Asserted

#	Date	Time	Element	State
286	08/24/2021	23:07:50.095	OUT106	Deasserted
285	08/24/2021	23:07:50.095	51P1	Deasserted
284	08/24/2021	23:07:50.155	OUT106	Asserted
283	08/24/2021	23:07:50.155	51P1	Asserted
282	08/24/2021	23:07:50.175	OUT106	Deasserted
281	08/24/2021	23:07:50.175	51P1	Deasserted
280	08/24/2021	23:07:50.205	OUT106	Asserted
279	08/24/2021	23:07:50.205	51P1	Asserted
278	08/24/2021	23:07:50.215	OUT106	Deasserted
277	08/24/2021	23:07:50.215	51P1	Deasserted
276	08/24/2021	23:07:50.235	OUT106	Asserted
275	08/24/2021	23:07:50.235	51P1	Asserted
274	08/24/2021	23:07:50.295	OUT106	Deasserted
273	08/24/2021	23:07:50.295	51P1	Deasserted
272	08/24/2021	23:07:50.335	OUT106	Asserted
271	08/24/2021	23:07:50.335	51P1	Asserted
270	08/24/2021	23:07:50.385	OUT106	Deasserted
269	08/24/2021	23:07:50.385	51P1	Deasserted
268	08/24/2021	23:07:50.395	OUT106	Asserted
267	08/24/2021	23:07:50.395	51P1	Asserted
266	08/24/2021	23:07:50.626	OUT106	Deasserted
265	08/24/2021	23:07:50.626	51P1	Deasserted
264	08/24/2021	23:07:50.666	OUT106	Asserted
263	08/24/2021	23:07:50.666	51P1	Asserted
262	08/24/2021	23:07:50.786	OUT106	Deasserted
261	08/24/2021	23:07:50.786	51P1	Deasserted
260	08/24/2021	23:07:50.806	OUT106	Asserted
259	08/24/2021	23:07:50.806	51P1	Asserted
258	08/24/2021	23:07:51.167	OUT106	Deasserted
257	08/24/2021	23:07:51.167	51P1	Deasserted
256	08/24/2021	23:07:51.217	OUT106	Asserted
255	08/24/2021	23:07:51.217	51P1	Asserted
254	08/24/2021	23:07:51.307	OUT106	Deasserted
253	08/24/2021	23:07:51.307	51P1	Deasserted
252	08/24/2021	23:07:51.357	OUT106	Asserted
251	08/24/2021	23:07:51.357	51P1	Asserted
250	08/24/2021	23:07:51.658	OUT106	Deasserted
249	08/24/2021	23:07:51.658	51P1	Deasserted
248	08/24/2021	23:07:51.698	OUT106	Asserted
247	08/24/2021	23:07:51.698	51P1	Asserted
246	08/24/2021	23:07:51.718	OUT106	Deasserted
245	08/24/2021	23:07:51.718	51P1	Deasserted
244	08/24/2021	23:07:51.798	OUT106	Asserted
243	08/24/2021	23:07:51.798	51P1	Asserted
242	08/24/2021	23:07:51.838	OUT106	Deasserted
241	08/24/2021	23:07:51.838	51P1	Deasserted
240	08/24/2021	23:07:51.898	OUT106	Asserted
239	08/24/2021	23:07:51.898	51P1	Asserted

#	Date	Time	Element	State
238	08/24/2021	23:07:51.918	OUT106	Deasserted
237	08/24/2021	23:07:51.918	51P1	Deasserted
236	08/24/2021	23:07:53.652	OUT106	Asserted
235	08/24/2021	23:07:53.652	51P1	Asserted
234	08/24/2021	23:07:53.682	OUT106	Deasserted
233	08/24/2021	23:07:53.682	51P1	Deasserted
232	08/24/2021	23:07:53.773	OUT106	Asserted
231	08/24/2021	23:07:53.773	51P1	Asserted
230	08/24/2021	23:07:53.903	OUT106	Deasserted
229	08/24/2021	23:07:53.903	51P1	Deasserted
228	08/24/2021	23:07:54.705	OUT106	Asserted
227	08/24/2021	23:07:54.705	51P1	Asserted
226	08/24/2021	23:07:54.735	OUT106	Deasserted
225	08/24/2021	23:07:54.735	51P1	Deasserted
224	08/24/2021	23:07:55.186	OUT106	Asserted
223	08/24/2021	23:07:55.186	51P1	Asserted
222	08/24/2021	23:07:55.206	OUT106	Deasserted
221	08/24/2021	23:07:55.206	51P1	Deasserted
220	08/24/2021	23:07:55.397	OUT106	Asserted
219	08/24/2021	23:07:55.397	51P1	Asserted
218	08/24/2021	23:07:55.407	OUT106	Deasserted
217	08/24/2021	23:07:55.407	51P1	Deasserted
216	08/24/2021	23:07:55.517	OUT106	Asserted
215	08/24/2021	23:07:55.517	51P1	Asserted
214	08/24/2021	23:07:55.527	OUT106	Deasserted
213	08/24/2021	23:07:55.527	51P1	Deasserted
212	08/24/2021	23:07:55.707	OUT106	Asserted
211	08/24/2021	23:07:55.707	51P1	Asserted
210	08/24/2021	23:07:55.738	OUT106	Deasserted
209	08/24/2021	23:07:55.738	51P1	Deasserted
208	08/24/2021	23:07:56.058	OUT106	Asserted
207	08/24/2021	23:07:56.058	51P1	Asserted
206	08/24/2021	23:07:56.088	OUT106	Deasserted
205	08/24/2021	23:07:56.088	51P1	Deasserted
204	08/24/2021	23:07:56.119	OUT106	Asserted
203	08/24/2021	23:07:56.119	51P1	Asserted
202	08/24/2021	23:07:56.199	OUT106	Deasserted
201	08/24/2021	23:07:56.199	51P1	Deasserted
200	08/24/2021	23:07:56.259	OUT106	Asserted
199	08/24/2021	23:07:56.259	51P1	Asserted
198	08/24/2021	23:07:56.279	OUT106	Deasserted
197	08/24/2021	23:07:56.279	51P1	Deasserted
196	08/24/2021	23:07:56.409	OUT106	Asserted
195	08/24/2021	23:07:56.409	51P1	Asserted
194	08/24/2021	23:07:56.439	OUT106	Deasserted
193	08/24/2021	23:07:56.439	51P1	Deasserted
192	08/24/2021	23:07:57.141	OUT106	Asserted
191	08/24/2021	23:07:57.141	51P1	Asserted

#	Date	Time	Element	State
190	08/24/2021	23:07:57.272	OUT106	Deasserted
189	08/24/2021	23:07:57.272	51P1	Deasserted
188	08/24/2021	23:07:57.622	OUT106	Asserted
187	08/24/2021	23:07:57.622	51P1	Asserted
186	08/24/2021	23:07:57.643	OUT106	Deasserted
185	08/24/2021	23:07:57.643	51P1	Deasserted
184	08/24/2021	23:07:59.668	OUT106	Asserted
183	08/24/2021	23:07:59.668	51P1	Asserted
182	08/24/2021	23:07:59.678	OUT106	Deasserted
181	08/24/2021	23:07:59.678	51P1	Deasserted
180	08/24/2021	23:08:07.824	OUT106	Asserted
179	08/24/2021	23:08:07.824	51P1	Asserted
178	08/24/2021	23:08:07.935	OUT106	Deasserted
177	08/24/2021	23:08:07.935	51P1	Deasserted
176	08/24/2021	23:08:07.945	OUT106	Asserted
175	08/24/2021	23:08:07.945	51P1	Asserted
174	08/24/2021	23:08:07.985	OUT106	Deasserted
173	08/24/2021	23:08:07.985	51P1	Deasserted
172	08/24/2021	23:08:08.125	OUT106	Asserted
171	08/24/2021	23:08:08.125	51P1	Asserted
170	08/24/2021	23:08:08.175	OUT106	Deasserted
169	08/24/2021	23:08:08.175	51P1	Deasserted
168	08/24/2021	23:08:08.976	OUT106	Asserted
167	08/24/2021	23:08:08.976	51P1	Asserted
166	08/24/2021	23:08:09.036	OUT106	Deasserted
165	08/24/2021	23:08:09.036	51P1	Deasserted
164	08/24/2021	23:08:09.097	OUT106	Asserted
163	08/24/2021	23:08:09.097	51P1	Asserted
162	08/24/2021	23:08:09.117	OUT106	Deasserted
161	08/24/2021	23:08:09.117	51P1	Deasserted
160	08/24/2021	23:08:09.157	OUT106	Asserted
159	08/24/2021	23:08:09.157	51P1	Asserted
158	08/24/2021	23:08:09.237	OUT106	Deasserted
157	08/24/2021	23:08:09.237	51P1	Deasserted
156	08/24/2021	23:08:09.297	OUT106	Asserted
155	08/24/2021	23:08:09.297	51P1	Asserted
154	08/24/2021	23:08:09.327	OUT106	Deasserted
153	08/24/2021	23:08:09.327	51P1	Deasserted
152	08/24/2021	23:08:09.357	OUT106	Asserted
151	08/24/2021	23:08:09.357	51P1	Asserted
150	08/24/2021	23:08:09.397	OUT106	Deasserted
149	08/24/2021	23:08:09.397	51P1	Deasserted
148	08/24/2021	23:08:09.497	OUT106	Asserted
147	08/24/2021	23:08:09.497	51P1	Asserted
146	08/24/2021	23:08:09.537	OUT106	Deasserted
145	08/24/2021	23:08:09.537	51P1	Deasserted
144	08/24/2021	23:08:09.627	OUT106	Asserted
143	08/24/2021	23:08:09.627	51P1	Asserted

#	Date	Time	Element	State
142	08/24/2021	23:08:09.678	OUT106	Deasserted
141	08/24/2021	23:08:09.678	51P1	Deasserted
140	08/24/2021	23:08:09.698	OUT106	Asserted
139	08/24/2021	23:08:09.698	51P1	Asserted
138	08/24/2021	23:08:09.718	OUT106	Deasserted
137	08/24/2021	23:08:09.718	51P1	Deasserted
136	08/24/2021	23:08:09.818	OUT106	Asserted
135	08/24/2021	23:08:09.818	51P1	Asserted
134	08/24/2021	23:08:09.878	OUT106	Deasserted
133	08/24/2021	23:08:09.878	51P1	Deasserted
132	08/24/2021	23:08:09.898	OUT106	Asserted
131	08/24/2021	23:08:09.898	51P1	Asserted
130	08/24/2021	23:08:09.918	OUT106	Deasserted
129	08/24/2021	23:08:09.918	51P1	Deasserted
128	08/24/2021	23:08:09.978	OUT106	Asserted
127	08/24/2021	23:08:09.978	51P1	Asserted
126	08/24/2021	23:08:10.008	OUT106	Deasserted
125	08/24/2021	23:08:10.008	51P1	Deasserted
124	08/24/2021	23:08:10.028	OUT106	Asserted
123	08/24/2021	23:08:10.028	51P1	Asserted
122	08/24/2021	23:08:10.038	OUT106	Deasserted
121	08/24/2021	23:08:10.038	51P1	Deasserted
120	08/24/2021	23:08:10.509	OUT106	Asserted
119	08/24/2021	23:08:10.509	51P1	Asserted
118	08/24/2021	23:08:10.589	OUT106	Deasserted
117	08/24/2021	23:08:10.589	51P1	Deasserted
116	08/24/2021	23:08:10.809	OUT106	Asserted
115	08/24/2021	23:08:10.809	51P1	Asserted
114	08/24/2021	23:08:11.120	OUT106	Deasserted
113	08/24/2021	23:08:11.120	51P1	Deasserted
112	08/24/2021	23:08:11.220	OUT106	Asserted
111	08/24/2021	23:08:11.220	51P1	Asserted
110	08/24/2021	23:08:11.310	OUT106	Deasserted
109	08/24/2021	23:08:11.310	51P1	Deasserted
108	08/24/2021	23:08:11.320	OUT106	Asserted
107	08/24/2021	23:08:11.320	51P1	Asserted
106	08/24/2021	23:08:11.481	OUT106	Deasserted
105	08/24/2021	23:08:11.481	51P1	Deasserted
104	08/24/2021	23:08:11.511	OUT106	Asserted
103	08/24/2021	23:08:11.511	51P1	Asserted
102	08/24/2021	23:08:11.551	OUT106	Deasserted
101	08/24/2021	23:08:11.551	51P1	Deasserted
100	08/24/2021	23:08:11.561	OUT106	Asserted
99	08/24/2021	23:08:11.561	51P1	Asserted
98	08/24/2021	23:08:11.631	OUT106	Deasserted
97	08/24/2021	23:08:11.631	51P1	Deasserted
96	08/24/2021	23:08:11.701	OUT106	Asserted
95	08/24/2021	23:08:11.701	51P1	Asserted

#	Date	Time	Element	State
94	08/24/2021	23:08:11.821	OUT106	Deasserted
93	08/24/2021	23:08:11.821	51P1	Deasserted
92	08/24/2021	23:08:11.851	OUT106	Asserted
91	08/24/2021	23:08:11.851	51P1	Asserted
90	08/24/2021	23:08:12.172	OUT106	Deasserted
89	08/24/2021	23:08:12.172	51P1	Deasserted
88	08/24/2021	23:08:12.182	OUT106	Asserted
87	08/24/2021	23:08:12.182	51P1	Asserted
86	08/24/2021	23:08:12.492	OUT106	Deasserted
85	08/24/2021	23:08:12.492	51P1	Deasserted
84	08/24/2021	23:08:12.502	OUT106	Asserted
83	08/24/2021	23:08:12.502	51P1	Asserted
82	08/24/2021	23:08:13.033	OUT106	Deasserted
81	08/24/2021	23:08:13.033	51P1	Deasserted
80	08/24/2021	23:08:13.043	OUT106	Asserted
79	08/24/2021	23:08:13.043	51P1	Asserted
78	08/24/2021	23:08:14.576	OUT106	Deasserted
77	08/24/2021	23:08:14.576	51P1	Deasserted
76	08/24/2021	23:08:14.596	OUT106	Asserted
75	08/24/2021	23:08:14.596	51P1	Asserted
74	08/24/2021	23:08:14.766	OUT106	Deasserted
73	08/24/2021	23:08:14.766	51P1	Deasserted
72	08/24/2021	23:08:14.776	OUT106	Asserted
71	08/24/2021	23:08:14.776	51P1	Asserted
70	08/24/2021	23:08:16.128	OUT106	Deasserted
69	08/24/2021	23:08:16.128	51P1	Deasserted
68	08/24/2021	23:08:16.148	OUT106	Asserted
67	08/24/2021	23:08:16.148	51P1	Asserted
66	08/24/2021	23:08:16.259	OUT106	Deasserted
65	08/24/2021	23:08:16.259	51P1	Deasserted
64	08/24/2021	23:08:16.269	OUT106	Asserted
63	08/24/2021	23:08:16.269	51P1	Asserted
62	08/24/2021	23:08:16.299	OUT106	Deasserted
61	08/24/2021	23:08:16.299	51P1	Deasserted
60	08/24/2021	23:08:16.349	OUT106	Asserted
59	08/24/2021	23:08:16.349	51P1	Asserted
58	08/24/2021	23:08:16.379	OUT106	Deasserted
57	08/24/2021	23:08:16.379	51P1	Deasserted
56	08/24/2021	23:08:16.399	OUT106	Asserted
55	08/24/2021	23:08:16.399	51P1	Asserted
54	08/24/2021	23:08:16.459	OUT106	Deasserted
53	08/24/2021	23:08:16.459	51P1	Deasserted
52	08/24/2021	23:08:16.519	OUT106	Asserted
51	08/24/2021	23:08:16.519	51P1	Asserted
50	08/24/2021	23:08:16.529	OUT106	Deasserted
49	08/24/2021	23:08:16.529	51P1	Deasserted
48	08/24/2021	23:08:16.549	OUT106	Asserted
47	08/24/2021	23:08:16.549	51P1	Asserted

#	Date	Time	Element	State
46	08/24/2021	23:08:16.990	OUT106	Deasserted
45	08/24/2021	23:08:16.990	51P1	Deasserted
44	08/24/2021	23:08:17.020	OUT106	Asserted
43	08/24/2021	23:08:17.020	51P1	Asserted
42	08/24/2021	23:08:17.511	OUT106	Deasserted
41	08/24/2021	23:08:17.511	51P1	Deasserted
40	08/24/2021	23:08:17.541	OUT106	Asserted
39	08/24/2021	23:08:17.541	51P1	Asserted
38	08/24/2021	23:08:17.671	OUT106	Deasserted
37	08/24/2021	23:08:17.671	51P1	Deasserted
36	08/24/2021	23:08:17.691	OUT106	Asserted
35	08/24/2021	23:08:17.691	51P1	Asserted
34	08/24/2021	23:08:20.166	OUT106	Deasserted
33	08/24/2021	23:08:20.166	51P1	Deasserted
32	08/24/2021	23:08:20.176	OUT106	Asserted
31	08/24/2021	23:08:20.176	51P1	Asserted
30	08/24/2021	23:08:20.206	OUT106	Deasserted
29	08/24/2021	23:08:20.206	51P1	Deasserted
28	08/24/2021	23:08:20.306	OUT106	Asserted
27	08/24/2021	23:08:20.306	51P1	Asserted
26	08/24/2021	23:18:35.758	TRIP3P	Asserted
25	08/24/2021	23:18:35.758	OUT105	Asserted
24	08/24/2021	23:18:35.758	51P1T	Asserted
23	08/24/2021	23:18:35.778	PINC	Deasserted
22	08/24/2021	23:18:35.788	OUT106	Deasserted
21	08/24/2021	23:18:35.788	51P1	Deasserted
20	08/24/2021	23:18:35.793	52A3P	Deasserted
19	08/24/2021	23:18:35.793	SV30	Asserted
18	08/24/2021	23:18:35.808	OUT105	Deasserted
17	08/24/2021	23:18:35.808	51P1T	Deasserted
16	08/24/2021	23:18:36.560	TRIP3P	Deasserted
15	08/24/2021	23:29:58.682	IN102	Asserted
14	08/24/2021	23:29:58.687	CLOSE3P	Asserted
13	08/24/2021	23:29:58.737	PINC	Asserted
12	08/24/2021	23:29:58.737	CLOSE3P	Deasserted
11	08/24/2021	23:29:58.742	52A3P	Asserted

Oscilografía N°1 – Unidad de control 52CT2



```

1
FRUTILLAR - 52CT2
Time: 8/24/2021 11:08:20.181000 PM
File: 1246908_24_2021 23_08_20_181 ABC.CEV
FID=SEL-651RA-R101-V0-Z001001-D20160212
Event: ABC
Frequency: 49.9 Hz Sample Rate: 32 Samples/Cycle
Targets: 10 100000000000 000100111000
Currents: IA:261 IB:249 IC:220 IG:1 3I2:70
    
```

Oscilografía N°1 – Unidad de control 52CT2.



```

1
FRUTILLAR - 52CT2
Time: 8/24/2021 11:18:35.758000 PM
File: 1247008_24_2021 23_18_35_758 ABC T.CEV
FID=SEL-651RA-R101-V0-Z001001-D20160212
Event: ABC T
Frequency: 49.88 Hz Sample Rate: 32 Samples/Cycle
Targets: 11 101110010000 000000000000
Currents: IA:263 IB:249 IC:218 IG:2 3I2:76
    
```

De acuerdo con registro evento N°1 y oscilografías N°1 y N°2, en unidad de control y protección 52CT2, SEL-651RA de S/E Frutillar, a partir de las 22:56:31.440 UTC-0 de fecha martes 24 de agosto de 2021, relé incursiona en forma intermitente en pick up de elemento de sobrecorriente de fase de tiempo inverso, 51P1, cuyo ajuste de pick up corresponde a 260 [A], para incursionar de forma definitiva a las 23:08:20.306 UTC-0, numeral 27, con una corriente en fase A de 260.43 [A]. Luego, 15.45 segundos después, se produce disparo de elemento sobrecorriente de fase de tiempo inverso 51P1T, numeral 24, con una corriente fase A de 263.44 [A], junto con TRIP del relé de protección, y envío de orden de desenganche sobre interruptor de paño 52CT2, 35 milisegundo después, relé registra apertura efectiva de 52CT2 a través de la desactivación de elemento digital 52A3P.

Otros antecedentes.

- Ajustes elemento sobrecorriente de fase 51P1.
PU: 260 [A]; Curva: C2; TD: 0.68

Acciones correctivas.

- El día 26 de agosto de 2021, bajo PT N° 2021-1374 y SODI NEOMANTE N° 2021074692, se aumentan los pick up de elementos de sobrecorriente de fase de tiempo inverso de:
 - Unidad de control y protección 52ET2 SEL-351S.
 - Relé protección 87-T2 SEL-787.
 - Unidad de control 52CT2 SEL-651RA.Las modificaciones propuestas se desprenden del ECAP “ESTUDIO DE MODIFICACION DE AJUSTE EN SE FRUTILLAR T2 23-13,2”

Conclusiones.

- Unidad de control y protección 52CT2 de S/E Frutillar opera en su elemento sobrecorriente de fase de tiempo inverso 52P1T, debido al aumento de la carga en fase A de paño CT2.
- Elemento sobrecorriente de fase de tiempo inverso opera en correctamente.
- Unidad de control y protección 52CT2 de S/E Frutillar opera en 15.45 segundos.
- Interruptor 52CT2 opera en 35 milisegundos.
- Unidad de control y protección 52CT2 de S/E Frutillar opera correctamente.
- Con las modificaciones ejecutadas en 52ET2, 87T2 y 52CT2, se asegura que el evento de operación de 52CT2 por sobrecarga no vuelva a ocurrir.

10. Medidas a corto plazo.

El día 26 de agosto de 2021, bajo solicitud de curso forzoso N° 2021074692 ingresada en plataforma Neomante, se realizan aumentos en los pick up de los elementos de sobrecorriente de fase de tiempo inverso de la unidad de control y protección 52ET2 SEL-351S, Relé protección 87-T2 SEL-787 y Unidad de control 52CT2 SEL-651RA.

Dichas modificaciones, se adjuntan en Anexo 1 “ECAP “ESTUDIO DE MODIFICACION DE AJUSTE EN SE FRUTILLAR T2 23-13,2”.

HIS

52CT2
FRUTILLAR

Date: 08/25/2021 Time: 00:02:38.933
Time Source: external

#	DATE	TIME	EVENT	LOCAT	CURR	FREQ	GST	TARGETS	
								RHR	COLUMN 1
1	08/24/2021	23:32:42.932	AB	\$\$\$\$	311	49.9	1 0	100000000000	000000111000
2	08/24/2021	23:32:05.309	ABC	\$\$\$\$	624	50.0	1 0	100000000000	000000111000
3	08/24/2021	23:18:35.758	ABC T	\$\$\$\$	263	49.9	1 1	101110010000	000000000000
4	08/24/2021	23:08:20.181	ABC	\$\$\$\$	261	49.9	1 0	100000000000	000100111000
5	08/24/2021	23:08:16.274	ABC	\$\$\$\$	261	49.9	1 0	100000000000	000100111000
6	08/24/2021	23:08:12.507	ABC	\$\$\$\$	261	49.9	1 0	100000000000	000100111000
7	08/24/2021	23:08:11.225	ABC	\$\$\$\$	260	49.9	1 0	100000000000	000100111000
8	08/24/2021	23:08:09.983	ABC	\$\$\$\$	260	49.9	1 0	100000000000	000100111000
9	08/24/2021	23:08:08.981	ABC	\$\$\$\$	260	49.9	1 0	100000000000	000100111000
10	08/24/2021	23:08:07.829	ABC	\$\$\$\$	261	49.9	1 0	100000000000	000100111000
11	08/24/2021	23:07:59.673	ER	\$\$\$\$	259	49.9	1 0	100000000000	000100111000
12	08/24/2021	23:07:57.146	ABC	\$\$\$\$	261	49.9	1 0	100000000000	000100111000
13	08/24/2021	23:07:56.063	ABC	\$\$\$\$	260	49.9	1 0	100000000000	000100111000
14	08/24/2021	23:07:54.710	ABC	\$\$\$\$	260	49.9	1 0	100000000000	000100111000
15	08/24/2021	23:07:53.657	ABC	\$\$\$\$	260	49.9	1 0	100000000000	000100111000

=>SER 1000

52CT2
FRUTILLAR

Date: 08/25/2021 Time: 00:02:46.210
Time Source: external

FID=SEL-651RA-R101-V0-Z001001-D20160212 CID=6A2B

#	Date	Time	Element	State
1000	08/24/2021	22:56:31.440	OUT106	Asserted
999	08/24/2021	22:56:31.440	51P1	Asserted
998	08/24/2021	22:56:31.540	OUT106	Deasserted
997	08/24/2021	22:56:31.540	51P1	Deasserted
996	08/24/2021	22:56:31.610	OUT106	Asserted
995	08/24/2021	22:56:31.610	51P1	Asserted
994	08/24/2021	22:56:31.711	OUT106	Deasserted
993	08/24/2021	22:56:31.711	51P1	Deasserted
992	08/24/2021	22:56:31.751	OUT106	Asserted
991	08/24/2021	22:56:31.751	51P1	Asserted
990	08/24/2021	22:56:31.931	OUT106	Deasserted
989	08/24/2021	22:56:31.931	51P1	Deasserted
988	08/24/2021	22:56:31.951	OUT106	Asserted
987	08/24/2021	22:56:31.951	51P1	Asserted
986	08/24/2021	22:56:32.031	OUT106	Deasserted
985	08/24/2021	22:56:32.031	51P1	Deasserted
984	08/24/2021	22:56:32.161	OUT106	Asserted
983	08/24/2021	22:56:32.161	51P1	Asserted

982	08/24/2021	22:56:32.271	OUT106	Deasserted
981	08/24/2021	22:56:32.271	51P1	Deasserted
980	08/24/2021	22:56:32.291	OUT106	Asserted
979	08/24/2021	22:56:32.291	51P1	Asserted
978	08/24/2021	22:56:32.351	OUT106	Deasserted
977	08/24/2021	22:56:32.351	51P1	Deasserted
976	08/24/2021	22:56:32.371	OUT106	Asserted
975	08/24/2021	22:56:32.371	51P1	Asserted
974	08/24/2021	22:56:32.381	OUT106	Deasserted
973	08/24/2021	22:56:32.381	51P1	Deasserted
972	08/24/2021	22:56:33.902	OUT106	Asserted
971	08/24/2021	22:56:33.902	51P1	Asserted
970	08/24/2021	22:56:33.932	OUT106	Deasserted
969	08/24/2021	22:56:33.932	51P1	Deasserted
968	08/24/2021	22:56:33.942	OUT106	Asserted
967	08/24/2021	22:56:33.942	51P1	Asserted
966	08/24/2021	22:56:33.982	OUT106	Deasserted
965	08/24/2021	22:56:33.982	51P1	Deasserted
964	08/24/2021	22:56:34.032	OUT106	Asserted
963	08/24/2021	22:56:34.032	51P1	Asserted
962	08/24/2021	22:56:34.142	OUT106	Deasserted
961	08/24/2021	22:56:34.142	51P1	Deasserted
960	08/24/2021	22:56:34.172	OUT106	Asserted
959	08/24/2021	22:56:34.172	51P1	Asserted
958	08/24/2021	22:56:34.332	OUT106	Deasserted
957	08/24/2021	22:56:34.332	51P1	Deasserted
956	08/24/2021	22:56:34.382	OUT106	Asserted
955	08/24/2021	22:56:34.382	51P1	Asserted
954	08/24/2021	22:56:34.492	OUT106	Deasserted
953	08/24/2021	22:56:34.492	51P1	Deasserted
952	08/24/2021	22:56:34.562	OUT106	Asserted
951	08/24/2021	22:56:34.562	51P1	Asserted
950	08/24/2021	22:56:34.632	OUT106	Deasserted
949	08/24/2021	22:56:34.632	51P1	Deasserted
948	08/24/2021	22:56:34.712	OUT106	Asserted
947	08/24/2021	22:56:34.712	51P1	Asserted
946	08/24/2021	22:56:34.812	OUT106	Deasserted
945	08/24/2021	22:56:34.812	51P1	Deasserted
944	08/24/2021	22:56:34.872	OUT106	Asserted
943	08/24/2021	22:56:34.872	51P1	Asserted
942	08/24/2021	22:56:34.892	OUT106	Deasserted
941	08/24/2021	22:56:34.892	51P1	Deasserted
940	08/24/2021	22:56:34.912	OUT106	Asserted
939	08/24/2021	22:56:34.912	51P1	Asserted
938	08/24/2021	22:56:34.922	OUT106	Deasserted
937	08/24/2021	22:56:34.922	51P1	Deasserted
936	08/24/2021	22:56:34.932	OUT106	Asserted
935	08/24/2021	22:56:34.932	51P1	Asserted
934	08/24/2021	22:56:35.002	OUT106	Deasserted
933	08/24/2021	22:56:35.002	51P1	Deasserted

932	08/24/2021	22:56:35.072	OUT106	Asserted
931	08/24/2021	22:56:35.072	51P1	Asserted
930	08/24/2021	22:56:35.212	OUT106	Deasserted
929	08/24/2021	22:56:35.212	51P1	Deasserted
928	08/24/2021	22:56:35.242	OUT106	Asserted
927	08/24/2021	22:56:35.242	51P1	Asserted
926	08/24/2021	22:56:35.352	OUT106	Deasserted
925	08/24/2021	22:56:35.352	51P1	Deasserted
924	08/24/2021	22:56:35.392	OUT106	Asserted
923	08/24/2021	22:56:35.392	51P1	Asserted
922	08/24/2021	22:56:35.422	OUT106	Deasserted
921	08/24/2021	22:56:35.422	51P1	Deasserted
920	08/24/2021	22:56:35.632	OUT106	Asserted
919	08/24/2021	22:56:35.632	51P1	Asserted
918	08/24/2021	22:56:35.692	OUT106	Deasserted
917	08/24/2021	22:56:35.692	51P1	Deasserted
916	08/24/2021	22:56:35.722	OUT106	Asserted
915	08/24/2021	22:56:35.722	51P1	Asserted
914	08/24/2021	22:56:35.862	OUT106	Deasserted
913	08/24/2021	22:56:35.862	51P1	Deasserted
912	08/24/2021	22:56:35.932	OUT106	Asserted
911	08/24/2021	22:56:35.932	51P1	Asserted
910	08/24/2021	22:56:35.942	OUT106	Deasserted
909	08/24/2021	22:56:35.942	51P1	Deasserted
908	08/24/2021	22:56:35.982	OUT106	Asserted
907	08/24/2021	22:56:35.982	51P1	Asserted
906	08/24/2021	22:56:36.042	OUT106	Deasserted
905	08/24/2021	22:56:36.042	51P1	Deasserted
904	08/24/2021	22:56:36.072	OUT106	Asserted
903	08/24/2021	22:56:36.072	51P1	Asserted
902	08/24/2021	22:56:36.752	OUT106	Deasserted
901	08/24/2021	22:56:36.752	51P1	Deasserted
900	08/24/2021	22:56:36.772	OUT106	Asserted
899	08/24/2021	22:56:36.772	51P1	Asserted
898	08/24/2021	22:56:37.762	OUT106	Deasserted
897	08/24/2021	22:56:37.762	51P1	Deasserted
896	08/24/2021	22:56:37.802	OUT106	Asserted
895	08/24/2021	22:56:37.802	51P1	Asserted
894	08/24/2021	22:56:37.852	OUT106	Deasserted
893	08/24/2021	22:56:37.852	51P1	Deasserted
892	08/24/2021	22:56:37.872	OUT106	Asserted
891	08/24/2021	22:56:37.872	51P1	Asserted
890	08/24/2021	22:56:37.882	OUT106	Deasserted
889	08/24/2021	22:56:37.882	51P1	Deasserted
888	08/24/2021	22:56:37.942	OUT106	Asserted
887	08/24/2021	22:56:37.942	51P1	Asserted
886	08/24/2021	22:56:37.962	OUT106	Deasserted
885	08/24/2021	22:56:37.962	51P1	Deasserted
884	08/24/2021	22:56:38.002	OUT106	Asserted
883	08/24/2021	22:56:38.002	51P1	Asserted

882	08/24/2021	22:56:38.042	OUT106	Deasserted
881	08/24/2021	22:56:38.042	51P1	Deasserted
880	08/24/2021	22:56:38.343	OUT106	Asserted
879	08/24/2021	22:56:38.343	51P1	Asserted
878	08/24/2021	22:56:38.363	OUT106	Deasserted
877	08/24/2021	22:56:38.363	51P1	Deasserted
876	08/24/2021	22:56:38.383	OUT106	Asserted
875	08/24/2021	22:56:38.383	51P1	Asserted
874	08/24/2021	22:56:38.413	OUT106	Deasserted
873	08/24/2021	22:56:38.413	51P1	Deasserted
872	08/24/2021	22:56:38.523	OUT106	Asserted
871	08/24/2021	22:56:38.523	51P1	Asserted
870	08/24/2021	22:56:38.613	OUT106	Deasserted
869	08/24/2021	22:56:38.613	51P1	Deasserted
868	08/24/2021	22:56:38.663	OUT106	Asserted
867	08/24/2021	22:56:38.663	51P1	Asserted
866	08/24/2021	22:56:39.973	OUT106	Deasserted
865	08/24/2021	22:56:39.973	51P1	Deasserted
864	08/24/2021	22:56:40.083	OUT106	Asserted
863	08/24/2021	22:56:40.083	51P1	Asserted
862	08/24/2021	22:56:40.123	OUT106	Deasserted
861	08/24/2021	22:56:40.123	51P1	Deasserted
860	08/24/2021	22:56:40.143	OUT106	Asserted
859	08/24/2021	22:56:40.143	51P1	Asserted
858	08/24/2021	22:56:40.173	OUT106	Deasserted
857	08/24/2021	22:56:40.173	51P1	Deasserted
856	08/24/2021	22:56:40.283	OUT106	Asserted
855	08/24/2021	22:56:40.283	51P1	Asserted
854	08/24/2021	22:56:40.323	OUT106	Deasserted
853	08/24/2021	22:56:40.323	51P1	Deasserted
852	08/24/2021	22:56:40.373	OUT106	Asserted
851	08/24/2021	22:56:40.373	51P1	Asserted
850	08/24/2021	22:56:40.463	OUT106	Deasserted
849	08/24/2021	22:56:40.463	51P1	Deasserted
848	08/24/2021	22:56:40.613	OUT106	Asserted
847	08/24/2021	22:56:40.613	51P1	Asserted
846	08/24/2021	22:56:40.633	OUT106	Deasserted
845	08/24/2021	22:56:40.633	51P1	Deasserted
844	08/24/2021	22:56:49.221	OUT106	Asserted
843	08/24/2021	22:56:49.221	51P1	Asserted
842	08/24/2021	22:56:49.231	OUT106	Deasserted
841	08/24/2021	22:56:49.231	51P1	Deasserted
840	08/24/2021	22:56:49.271	OUT106	Asserted
839	08/24/2021	22:56:49.271	51P1	Asserted
838	08/24/2021	22:56:49.301	OUT106	Deasserted
837	08/24/2021	22:56:49.301	51P1	Deasserted
836	08/24/2021	22:56:51.234	OUT106	Asserted
835	08/24/2021	22:56:51.234	51P1	Asserted
834	08/24/2021	22:56:51.264	OUT106	Deasserted
833	08/24/2021	22:56:51.264	51P1	Deasserted

832	08/24/2021	22:56:52.306	OUT106	Asserted
831	08/24/2021	22:56:52.306	51P1	Asserted
830	08/24/2021	22:56:52.326	OUT106	Deasserted
829	08/24/2021	22:56:52.326	51P1	Deasserted
828	08/24/2021	22:56:52.466	OUT106	Asserted
827	08/24/2021	22:56:52.466	51P1	Asserted
826	08/24/2021	22:56:52.687	OUT106	Deasserted
825	08/24/2021	22:56:52.687	51P1	Deasserted
824	08/24/2021	22:56:52.717	OUT106	Asserted
823	08/24/2021	22:56:52.717	51P1	Asserted
822	08/24/2021	22:56:52.727	OUT106	Deasserted
821	08/24/2021	22:56:52.727	51P1	Deasserted
820	08/24/2021	22:56:52.917	OUT106	Asserted
819	08/24/2021	22:56:52.917	51P1	Asserted
818	08/24/2021	22:56:54.510	OUT106	Deasserted
817	08/24/2021	22:56:54.510	51P1	Deasserted
816	08/24/2021	22:56:54.520	OUT106	Asserted
815	08/24/2021	22:56:54.520	51P1	Asserted
814	08/24/2021	22:56:54.560	OUT106	Deasserted
813	08/24/2021	22:56:54.560	51P1	Deasserted
812	08/24/2021	22:56:54.670	OUT106	Asserted
811	08/24/2021	22:56:54.670	51P1	Asserted
810	08/24/2021	22:56:54.760	OUT106	Deasserted
809	08/24/2021	22:56:54.760	51P1	Deasserted
808	08/24/2021	22:56:54.770	OUT106	Asserted
807	08/24/2021	22:56:54.770	51P1	Asserted
806	08/24/2021	22:56:55.671	OUT106	Deasserted
805	08/24/2021	22:56:55.671	51P1	Deasserted
804	08/24/2021	22:56:55.731	OUT106	Asserted
803	08/24/2021	22:56:55.731	51P1	Asserted
802	08/24/2021	22:56:55.812	OUT106	Deasserted
801	08/24/2021	22:56:55.812	51P1	Deasserted
800	08/24/2021	22:56:55.822	OUT106	Asserted
799	08/24/2021	22:56:55.822	51P1	Asserted
798	08/24/2021	22:56:55.832	OUT106	Deasserted
797	08/24/2021	22:56:55.832	51P1	Deasserted
796	08/24/2021	22:56:57.474	OUT106	Asserted
795	08/24/2021	22:56:57.474	51P1	Asserted
794	08/24/2021	22:56:57.564	OUT106	Deasserted
793	08/24/2021	22:56:57.564	51P1	Deasserted
792	08/24/2021	22:56:57.594	OUT106	Asserted
791	08/24/2021	22:56:57.594	51P1	Asserted
790	08/24/2021	22:56:57.724	OUT106	Deasserted
789	08/24/2021	22:56:57.724	51P1	Deasserted
788	08/24/2021	22:56:57.824	OUT106	Asserted
787	08/24/2021	22:56:57.824	51P1	Asserted
786	08/24/2021	22:56:57.844	OUT106	Deasserted
785	08/24/2021	22:56:57.844	51P1	Deasserted
784	08/24/2021	22:56:58.285	OUT106	Asserted
783	08/24/2021	22:56:58.285	51P1	Asserted

782	08/24/2021	22:56:58.315	OUT106	Deasserted
781	08/24/2021	22:56:58.315	51P1	Deasserted
780	08/24/2021	22:56:58.335	OUT106	Asserted
779	08/24/2021	22:56:58.335	51P1	Asserted
778	08/24/2021	22:56:58.385	OUT106	Deasserted
777	08/24/2021	22:56:58.385	51P1	Deasserted
776	08/24/2021	22:56:58.455	OUT106	Asserted
775	08/24/2021	22:56:58.455	51P1	Asserted
774	08/24/2021	22:56:58.465	OUT106	Deasserted
773	08/24/2021	22:56:58.465	51P1	Deasserted
772	08/24/2021	22:56:58.495	OUT106	Asserted
771	08/24/2021	22:56:58.495	51P1	Asserted
770	08/24/2021	22:56:58.505	OUT106	Deasserted
769	08/24/2021	22:56:58.505	51P1	Deasserted
768	08/24/2021	22:56:58.846	OUT106	Asserted
767	08/24/2021	22:56:58.846	51P1	Asserted
766	08/24/2021	22:56:58.916	OUT106	Deasserted
765	08/24/2021	22:56:58.916	51P1	Deasserted
764	08/24/2021	22:56:59.006	OUT106	Asserted
763	08/24/2021	22:56:59.006	51P1	Asserted
762	08/24/2021	22:56:59.066	OUT106	Deasserted
761	08/24/2021	22:56:59.066	51P1	Deasserted
760	08/24/2021	22:56:59.096	OUT106	Asserted
759	08/24/2021	22:56:59.096	51P1	Asserted
758	08/24/2021	22:56:59.126	OUT106	Deasserted
757	08/24/2021	22:56:59.126	51P1	Deasserted
756	08/24/2021	22:56:59.136	OUT106	Asserted
755	08/24/2021	22:56:59.136	51P1	Asserted
754	08/24/2021	22:56:59.146	OUT106	Deasserted
753	08/24/2021	22:56:59.146	51P1	Deasserted
752	08/24/2021	22:56:59.166	OUT106	Asserted
751	08/24/2021	22:56:59.166	51P1	Asserted
750	08/24/2021	22:56:59.246	OUT106	Deasserted
749	08/24/2021	22:56:59.246	51P1	Deasserted
748	08/24/2021	22:56:59.336	OUT106	Asserted
747	08/24/2021	22:56:59.336	51P1	Asserted
746	08/24/2021	22:56:59.446	OUT106	Deasserted
745	08/24/2021	22:56:59.446	51P1	Deasserted
744	08/24/2021	22:57:01.048	OUT106	Asserted
743	08/24/2021	22:57:01.048	51P1	Asserted
742	08/24/2021	22:57:01.058	OUT106	Deasserted
741	08/24/2021	22:57:01.058	51P1	Deasserted
740	08/24/2021	22:57:01.409	OUT106	Asserted
739	08/24/2021	22:57:01.409	51P1	Asserted
738	08/24/2021	22:57:01.419	OUT106	Deasserted
737	08/24/2021	22:57:01.419	51P1	Deasserted
736	08/24/2021	22:57:01.439	OUT106	Asserted
735	08/24/2021	22:57:01.439	51P1	Asserted
734	08/24/2021	22:57:01.459	OUT106	Deasserted
733	08/24/2021	22:57:01.459	51P1	Deasserted

732	08/24/2021	22:57:01.960	OUT106	Asserted
731	08/24/2021	22:57:01.960	51P1	Asserted
730	08/24/2021	22:57:02.000	OUT106	Deasserted
729	08/24/2021	22:57:02.000	51P1	Deasserted
728	08/24/2021	22:57:02.120	OUT106	Asserted
727	08/24/2021	22:57:02.120	51P1	Asserted
726	08/24/2021	22:57:02.140	OUT106	Deasserted
725	08/24/2021	22:57:02.140	51P1	Deasserted
724	08/24/2021	22:57:02.320	OUT106	Asserted
723	08/24/2021	22:57:02.320	51P1	Asserted
722	08/24/2021	22:57:02.340	OUT106	Deasserted
721	08/24/2021	22:57:02.340	51P1	Deasserted
720	08/24/2021	22:57:02.410	OUT106	Asserted
719	08/24/2021	22:57:02.410	51P1	Asserted
718	08/24/2021	22:57:02.480	OUT106	Deasserted
717	08/24/2021	22:57:02.480	51P1	Deasserted
716	08/24/2021	22:57:02.821	OUT106	Asserted
715	08/24/2021	22:57:02.821	51P1	Asserted
714	08/24/2021	22:57:02.891	OUT106	Deasserted
713	08/24/2021	22:57:02.891	51P1	Deasserted
712	08/24/2021	22:57:02.941	OUT106	Asserted
711	08/24/2021	22:57:02.941	51P1	Asserted
710	08/24/2021	22:57:03.001	OUT106	Deasserted
709	08/24/2021	22:57:03.001	51P1	Deasserted
708	08/24/2021	22:57:03.081	OUT106	Asserted
707	08/24/2021	22:57:03.081	51P1	Asserted
706	08/24/2021	22:57:03.412	OUT106	Deasserted
705	08/24/2021	22:57:03.412	51P1	Deasserted
704	08/24/2021	22:57:03.432	OUT106	Asserted
703	08/24/2021	22:57:03.432	51P1	Asserted
702	08/24/2021	22:57:03.632	OUT106	Deasserted
701	08/24/2021	22:57:03.632	51P1	Deasserted
700	08/24/2021	22:57:03.652	OUT106	Asserted
699	08/24/2021	22:57:03.652	51P1	Asserted
698	08/24/2021	22:57:04.453	OUT106	Deasserted
697	08/24/2021	22:57:04.453	51P1	Deasserted
696	08/24/2021	22:57:04.463	OUT106	Asserted
695	08/24/2021	22:57:04.463	51P1	Asserted
694	08/24/2021	22:57:04.784	OUT106	Deasserted
693	08/24/2021	22:57:04.784	51P1	Deasserted
692	08/24/2021	22:57:04.794	OUT106	Asserted
691	08/24/2021	22:57:04.794	51P1	Asserted
690	08/24/2021	22:57:05.986	OUT106	Deasserted
689	08/24/2021	22:57:05.986	51P1	Deasserted
688	08/24/2021	22:57:05.996	OUT106	Asserted
687	08/24/2021	22:57:05.996	51P1	Asserted
686	08/24/2021	22:57:06.847	OUT106	Deasserted
685	08/24/2021	22:57:06.847	51P1	Deasserted
684	08/24/2021	22:57:06.937	OUT106	Asserted
683	08/24/2021	22:57:06.937	51P1	Asserted

682	08/24/2021	22:57:06.987	OUT106	Deasserted
681	08/24/2021	22:57:06.987	51P1	Deasserted
680	08/24/2021	22:57:06.997	OUT106	Asserted
679	08/24/2021	22:57:06.997	51P1	Asserted
678	08/24/2021	22:57:07.037	OUT106	Deasserted
677	08/24/2021	22:57:07.037	51P1	Deasserted
676	08/24/2021	22:57:07.047	OUT106	Asserted
675	08/24/2021	22:57:07.047	51P1	Asserted
674	08/24/2021	22:57:07.198	OUT106	Deasserted
673	08/24/2021	22:57:07.198	51P1	Deasserted
672	08/24/2021	22:57:07.218	OUT106	Asserted
671	08/24/2021	22:57:07.218	51P1	Asserted
670	08/24/2021	22:57:07.528	OUT106	Deasserted
669	08/24/2021	22:57:07.528	51P1	Deasserted
668	08/24/2021	22:57:08.099	OUT106	Asserted
667	08/24/2021	22:57:08.099	51P1	Asserted
666	08/24/2021	22:57:08.119	OUT106	Deasserted
665	08/24/2021	22:57:08.119	51P1	Deasserted
664	08/24/2021	22:57:08.139	OUT106	Asserted
663	08/24/2021	22:57:08.139	51P1	Asserted
662	08/24/2021	22:57:08.219	OUT106	Deasserted
661	08/24/2021	22:57:08.219	51P1	Deasserted
660	08/24/2021	22:57:08.300	OUT106	Asserted
659	08/24/2021	22:57:08.300	51P1	Asserted
658	08/24/2021	22:57:08.410	OUT106	Deasserted
657	08/24/2021	22:57:08.410	51P1	Deasserted
656	08/24/2021	22:57:08.430	OUT106	Asserted
655	08/24/2021	22:57:08.430	51P1	Asserted
654	08/24/2021	22:57:08.530	OUT106	Deasserted
653	08/24/2021	22:57:08.530	51P1	Deasserted
652	08/24/2021	22:57:08.700	OUT106	Asserted
651	08/24/2021	22:57:08.700	51P1	Asserted
650	08/24/2021	22:57:08.720	OUT106	Deasserted
649	08/24/2021	22:57:08.720	51P1	Deasserted
648	08/24/2021	22:57:08.790	OUT106	Asserted
647	08/24/2021	22:57:08.790	51P1	Asserted
646	08/24/2021	22:57:08.891	OUT106	Deasserted
645	08/24/2021	22:57:08.891	51P1	Deasserted
644	08/24/2021	22:57:08.901	OUT106	Asserted
643	08/24/2021	22:57:08.901	51P1	Asserted
642	08/24/2021	22:57:08.931	OUT106	Deasserted
641	08/24/2021	22:57:08.931	51P1	Deasserted
640	08/24/2021	22:57:08.971	OUT106	Asserted
639	08/24/2021	22:57:08.971	51P1	Asserted
638	08/24/2021	22:57:09.081	OUT106	Deasserted
637	08/24/2021	22:57:09.081	51P1	Deasserted
636	08/24/2021	22:57:09.111	OUT106	Asserted
635	08/24/2021	22:57:09.111	51P1	Asserted
634	08/24/2021	22:57:23.911	OUT106	Deasserted
633	08/24/2021	22:57:23.911	51P1	Deasserted

632	08/24/2021	22:57:23.921	OUT106	Asserted
631	08/24/2021	22:57:23.921	51P1	Asserted
630	08/24/2021	22:57:24.051	OUT106	Deasserted
629	08/24/2021	22:57:24.051	51P1	Deasserted
628	08/24/2021	22:57:24.141	OUT106	Asserted
627	08/24/2021	22:57:24.141	51P1	Asserted
626	08/24/2021	22:57:24.191	OUT106	Deasserted
625	08/24/2021	22:57:24.191	51P1	Deasserted
624	08/24/2021	22:57:24.281	OUT106	Asserted
623	08/24/2021	22:57:24.281	51P1	Asserted
622	08/24/2021	22:57:24.602	OUT106	Deasserted
621	08/24/2021	22:57:24.602	51P1	Deasserted
620	08/24/2021	22:57:24.632	OUT106	Asserted
619	08/24/2021	22:57:24.632	51P1	Asserted
618	08/24/2021	22:57:24.752	OUT106	Deasserted
617	08/24/2021	22:57:24.752	51P1	Deasserted
616	08/24/2021	22:57:24.782	OUT106	Asserted
615	08/24/2021	22:57:24.782	51P1	Asserted
614	08/24/2021	22:57:24.932	OUT106	Deasserted
613	08/24/2021	22:57:24.932	51P1	Deasserted
612	08/24/2021	22:57:24.942	OUT106	Asserted
611	08/24/2021	22:57:24.942	51P1	Asserted
610	08/24/2021	22:57:25.052	OUT106	Deasserted
609	08/24/2021	22:57:25.052	51P1	Deasserted
608	08/24/2021	22:57:25.232	OUT106	Asserted
607	08/24/2021	22:57:25.232	51P1	Asserted
606	08/24/2021	22:57:25.242	OUT106	Deasserted
605	08/24/2021	22:57:25.242	51P1	Deasserted
604	08/24/2021	22:57:25.292	OUT106	Asserted
603	08/24/2021	22:57:25.292	51P1	Asserted
602	08/24/2021	22:57:25.452	OUT106	Deasserted
601	08/24/2021	22:57:25.452	51P1	Deasserted
600	08/24/2021	22:57:25.482	OUT106	Asserted
599	08/24/2021	22:57:25.482	51P1	Asserted
598	08/24/2021	22:57:25.582	OUT106	Deasserted
597	08/24/2021	22:57:25.582	51P1	Deasserted
596	08/24/2021	22:57:25.833	OUT106	Asserted
595	08/24/2021	22:57:25.833	51P1	Asserted
594	08/24/2021	22:57:25.933	OUT106	Deasserted
593	08/24/2021	22:57:25.933	51P1	Deasserted
592	08/24/2021	22:57:26.023	OUT106	Asserted
591	08/24/2021	22:57:26.023	51P1	Asserted
590	08/24/2021	22:57:27.154	OUT106	Deasserted
589	08/24/2021	22:57:27.154	51P1	Deasserted
588	08/24/2021	22:57:27.174	OUT106	Asserted
587	08/24/2021	22:57:27.174	51P1	Asserted
586	08/24/2021	22:57:27.304	OUT106	Deasserted
585	08/24/2021	22:57:27.304	51P1	Deasserted
584	08/24/2021	22:57:27.374	OUT106	Asserted
583	08/24/2021	22:57:27.374	51P1	Asserted

582	08/24/2021	22:57:27.464	OUT106	Deasserted
581	08/24/2021	22:57:27.464	51P1	Deasserted
580	08/24/2021	22:57:27.524	OUT106	Asserted
579	08/24/2021	22:57:27.524	51P1	Asserted
578	08/24/2021	22:57:27.584	OUT106	Deasserted
577	08/24/2021	22:57:27.584	51P1	Deasserted
576	08/24/2021	22:57:27.805	OUT106	Asserted
575	08/24/2021	22:57:27.805	51P1	Asserted
574	08/24/2021	22:57:27.825	OUT106	Deasserted
573	08/24/2021	22:57:27.825	51P1	Deasserted
572	08/24/2021	22:57:27.925	OUT106	Asserted
571	08/24/2021	22:57:27.925	51P1	Asserted
570	08/24/2021	22:57:28.025	OUT106	Deasserted
569	08/24/2021	22:57:28.025	51P1	Deasserted
568	08/24/2021	22:57:28.055	OUT106	Asserted
567	08/24/2021	22:57:28.055	51P1	Asserted
566	08/24/2021	22:57:28.085	OUT106	Deasserted
565	08/24/2021	22:57:28.085	51P1	Deasserted
564	08/24/2021	22:57:28.095	OUT106	Asserted
563	08/24/2021	22:57:28.095	51P1	Asserted
562	08/24/2021	22:57:28.375	OUT106	Deasserted
561	08/24/2021	22:57:28.375	51P1	Deasserted
560	08/24/2021	22:57:28.415	OUT106	Asserted
559	08/24/2021	22:57:28.415	51P1	Asserted
558	08/24/2021	22:57:28.435	OUT106	Deasserted
557	08/24/2021	22:57:28.435	51P1	Deasserted
556	08/24/2021	22:57:28.455	OUT106	Asserted
555	08/24/2021	22:57:28.455	51P1	Asserted
554	08/24/2021	22:57:28.465	OUT106	Deasserted
553	08/24/2021	22:57:28.465	51P1	Deasserted
552	08/24/2021	22:57:28.655	OUT106	Asserted
551	08/24/2021	22:57:28.655	51P1	Asserted
550	08/24/2021	22:57:28.685	OUT106	Deasserted
549	08/24/2021	22:57:28.685	51P1	Deasserted
548	08/24/2021	22:57:28.776	OUT106	Asserted
547	08/24/2021	22:57:28.776	51P1	Asserted
546	08/24/2021	22:57:28.886	OUT106	Deasserted
545	08/24/2021	22:57:28.886	51P1	Deasserted
544	08/24/2021	22:57:28.906	OUT106	Asserted
543	08/24/2021	22:57:28.906	51P1	Asserted
542	08/24/2021	22:57:29.226	OUT106	Deasserted
541	08/24/2021	22:57:29.226	51P1	Deasserted
540	08/24/2021	22:57:29.266	OUT106	Asserted
539	08/24/2021	22:57:29.266	51P1	Asserted
538	08/24/2021	22:57:29.296	OUT106	Deasserted
537	08/24/2021	22:57:29.296	51P1	Deasserted
536	08/24/2021	22:57:29.316	OUT106	Asserted
535	08/24/2021	22:57:29.316	51P1	Asserted
534	08/24/2021	22:57:29.576	OUT106	Deasserted
533	08/24/2021	22:57:29.576	51P1	Deasserted

532	08/24/2021	22:57:29.586	OUT106	Asserted
531	08/24/2021	22:57:29.586	51P1	Asserted
530	08/24/2021	22:57:29.917	OUT106	Deasserted
529	08/24/2021	22:57:29.917	51P1	Deasserted
528	08/24/2021	22:57:29.947	OUT106	Asserted
527	08/24/2021	22:57:29.947	51P1	Asserted
526	08/24/2021	22:57:30.427	OUT106	Deasserted
525	08/24/2021	22:57:30.427	51P1	Deasserted
524	08/24/2021	22:57:30.467	OUT106	Asserted
523	08/24/2021	22:57:30.467	51P1	Asserted
522	08/24/2021	22:57:30.497	OUT106	Deasserted
521	08/24/2021	22:57:30.497	51P1	Deasserted
520	08/24/2021	22:57:30.527	OUT106	Asserted
519	08/24/2021	22:57:30.527	51P1	Asserted
518	08/24/2021	22:57:30.557	OUT106	Deasserted
517	08/24/2021	22:57:30.557	51P1	Deasserted
516	08/24/2021	22:57:30.657	OUT106	Asserted
515	08/24/2021	22:57:30.657	51P1	Asserted
514	08/24/2021	22:57:30.707	OUT106	Deasserted
513	08/24/2021	22:57:30.707	51P1	Deasserted
512	08/24/2021	22:57:31.218	OUT106	Asserted
511	08/24/2021	22:57:31.218	51P1	Asserted
510	08/24/2021	22:57:31.228	OUT106	Deasserted
509	08/24/2021	22:57:31.228	51P1	Deasserted
508	08/24/2021	22:57:31.398	OUT106	Asserted
507	08/24/2021	22:57:31.398	51P1	Asserted
506	08/24/2021	22:57:31.428	OUT106	Deasserted
505	08/24/2021	22:57:31.428	51P1	Deasserted
504	08/24/2021	22:57:31.478	OUT106	Asserted
503	08/24/2021	22:57:31.478	51P1	Asserted
502	08/24/2021	22:57:31.628	OUT106	Deasserted
501	08/24/2021	22:57:31.628	51P1	Deasserted
500	08/24/2021	22:57:31.668	OUT106	Asserted
499	08/24/2021	22:57:31.668	51P1	Asserted
498	08/24/2021	22:57:31.698	OUT106	Deasserted
497	08/24/2021	22:57:31.698	51P1	Deasserted
496	08/24/2021	22:57:31.738	OUT106	Asserted
495	08/24/2021	22:57:31.738	51P1	Asserted
494	08/24/2021	22:57:31.748	OUT106	Deasserted
493	08/24/2021	22:57:31.748	51P1	Deasserted
492	08/24/2021	22:57:31.888	OUT106	Asserted
491	08/24/2021	22:57:31.888	51P1	Asserted
490	08/24/2021	22:57:31.988	OUT106	Deasserted
489	08/24/2021	22:57:31.988	51P1	Deasserted
488	08/24/2021	22:57:32.019	OUT106	Asserted
487	08/24/2021	22:57:32.019	51P1	Asserted
486	08/24/2021	22:57:32.059	OUT106	Deasserted
485	08/24/2021	22:57:32.059	51P1	Deasserted
484	08/24/2021	22:57:32.069	OUT106	Asserted
483	08/24/2021	22:57:32.069	51P1	Asserted

482	08/24/2021	22:57:32.269	OUT106	Deasserted
481	08/24/2021	22:57:32.269	51P1	Deasserted
480	08/24/2021	22:57:32.389	OUT106	Asserted
479	08/24/2021	22:57:32.389	51P1	Asserted
478	08/24/2021	22:57:32.479	OUT106	Deasserted
477	08/24/2021	22:57:32.479	51P1	Deasserted
476	08/24/2021	22:57:32.519	OUT106	Asserted
475	08/24/2021	22:57:32.519	51P1	Asserted
474	08/24/2021	22:57:32.639	OUT106	Deasserted
473	08/24/2021	22:57:32.639	51P1	Deasserted
472	08/24/2021	22:57:35.362	OUT106	Asserted
471	08/24/2021	22:57:35.362	51P1	Asserted
470	08/24/2021	22:57:35.392	OUT106	Deasserted
469	08/24/2021	22:57:35.392	51P1	Deasserted
468	08/24/2021	22:57:35.442	OUT106	Asserted
467	08/24/2021	22:57:35.442	51P1	Asserted
466	08/24/2021	22:57:35.482	OUT106	Deasserted
465	08/24/2021	22:57:35.482	51P1	Deasserted
464	08/24/2021	22:57:35.492	OUT106	Asserted
463	08/24/2021	22:57:35.492	51P1	Asserted
462	08/24/2021	22:57:35.592	OUT106	Deasserted
461	08/24/2021	22:57:35.592	51P1	Deasserted
460	08/24/2021	22:57:35.652	OUT106	Asserted
459	08/24/2021	22:57:35.652	51P1	Asserted
458	08/24/2021	22:57:35.662	OUT106	Deasserted
457	08/24/2021	22:57:35.662	51P1	Deasserted
456	08/24/2021	22:57:37.044	OUT106	Asserted
455	08/24/2021	22:57:37.044	51P1	Asserted
454	08/24/2021	22:57:37.074	OUT106	Deasserted
453	08/24/2021	22:57:37.074	51P1	Deasserted
452	08/24/2021	22:57:46.658	OUT106	Asserted
451	08/24/2021	22:57:46.658	51P1	Asserted
450	08/24/2021	22:57:46.778	OUT106	Deasserted
449	08/24/2021	22:57:46.778	51P1	Deasserted
448	08/24/2021	22:57:46.818	OUT106	Asserted
447	08/24/2021	22:57:46.818	51P1	Asserted
446	08/24/2021	22:57:46.968	OUT106	Deasserted
445	08/24/2021	22:57:46.968	51P1	Deasserted
444	08/24/2021	22:57:46.978	OUT106	Asserted
443	08/24/2021	22:57:46.978	51P1	Asserted
442	08/24/2021	22:58:18.101	OUT106	Deasserted
441	08/24/2021	22:58:18.101	51P1	Deasserted
440	08/24/2021	22:58:18.131	OUT106	Asserted
439	08/24/2021	22:58:18.131	51P1	Asserted
438	08/24/2021	22:58:18.191	OUT106	Deasserted
437	08/24/2021	22:58:18.191	51P1	Deasserted
436	08/24/2021	22:58:18.201	OUT106	Asserted
435	08/24/2021	22:58:18.201	51P1	Asserted
434	08/24/2021	22:58:18.441	OUT106	Deasserted
433	08/24/2021	22:58:18.441	51P1	Deasserted

432	08/24/2021	22:58:18.461	OUT106	Asserted
431	08/24/2021	22:58:18.461	51P1	Asserted
430	08/24/2021	22:58:18.641	OUT106	Deasserted
429	08/24/2021	22:58:18.641	51P1	Deasserted
428	08/24/2021	22:58:18.651	OUT106	Asserted
427	08/24/2021	22:58:18.651	51P1	Asserted
426	08/24/2021	22:58:18.962	OUT106	Deasserted
425	08/24/2021	22:58:18.962	51P1	Deasserted
424	08/24/2021	22:58:18.982	OUT106	Asserted
423	08/24/2021	22:58:18.982	51P1	Asserted
422	08/24/2021	23:07:43.582	OUT106	Deasserted
421	08/24/2021	23:07:43.582	51P1	Deasserted
420	08/24/2021	23:07:43.602	OUT106	Asserted
419	08/24/2021	23:07:43.602	51P1	Asserted
418	08/24/2021	23:07:43.662	OUT106	Deasserted
417	08/24/2021	23:07:43.662	51P1	Deasserted
416	08/24/2021	23:07:43.682	OUT106	Asserted
415	08/24/2021	23:07:43.682	51P1	Asserted
414	08/24/2021	23:07:43.733	OUT106	Deasserted
413	08/24/2021	23:07:43.733	51P1	Deasserted
412	08/24/2021	23:07:43.793	OUT106	Asserted
411	08/24/2021	23:07:43.793	51P1	Asserted
410	08/24/2021	23:07:43.933	OUT106	Deasserted
409	08/24/2021	23:07:43.933	51P1	Deasserted
408	08/24/2021	23:07:43.953	OUT106	Asserted
407	08/24/2021	23:07:43.953	51P1	Asserted
406	08/24/2021	23:07:44.063	OUT106	Deasserted
405	08/24/2021	23:07:44.063	51P1	Deasserted
404	08/24/2021	23:07:44.183	OUT106	Asserted
403	08/24/2021	23:07:44.183	51P1	Asserted
402	08/24/2021	23:07:44.234	OUT106	Deasserted
401	08/24/2021	23:07:44.234	51P1	Deasserted
400	08/24/2021	23:07:44.294	OUT106	Asserted
399	08/24/2021	23:07:44.294	51P1	Asserted
398	08/24/2021	23:07:45.606	OUT106	Deasserted
397	08/24/2021	23:07:45.606	51P1	Deasserted
396	08/24/2021	23:07:45.967	OUT106	Asserted
395	08/24/2021	23:07:45.967	51P1	Asserted
394	08/24/2021	23:07:45.997	OUT106	Deasserted
393	08/24/2021	23:07:45.997	51P1	Deasserted
392	08/24/2021	23:07:46.027	OUT106	Asserted
391	08/24/2021	23:07:46.027	51P1	Asserted
390	08/24/2021	23:07:46.147	OUT106	Deasserted
389	08/24/2021	23:07:46.147	51P1	Deasserted
388	08/24/2021	23:07:46.177	OUT106	Asserted
387	08/24/2021	23:07:46.177	51P1	Asserted
386	08/24/2021	23:07:46.287	OUT106	Deasserted
385	08/24/2021	23:07:46.287	51P1	Deasserted
384	08/24/2021	23:07:46.297	OUT106	Asserted
383	08/24/2021	23:07:46.297	51P1	Asserted

382	08/24/2021	23:07:46.318	OUT106	Deasserted
381	08/24/2021	23:07:46.318	51P1	Deasserted
380	08/24/2021	23:07:46.368	OUT106	Asserted
379	08/24/2021	23:07:46.368	51P1	Asserted
378	08/24/2021	23:07:46.488	OUT106	Deasserted
377	08/24/2021	23:07:46.488	51P1	Deasserted
376	08/24/2021	23:07:46.548	OUT106	Asserted
375	08/24/2021	23:07:46.548	51P1	Asserted
374	08/24/2021	23:07:46.568	OUT106	Deasserted
373	08/24/2021	23:07:46.568	51P1	Deasserted
372	08/24/2021	23:07:46.578	OUT106	Asserted
371	08/24/2021	23:07:46.578	51P1	Asserted
370	08/24/2021	23:07:46.678	OUT106	Deasserted
369	08/24/2021	23:07:46.678	51P1	Deasserted
368	08/24/2021	23:07:46.718	OUT106	Asserted
367	08/24/2021	23:07:46.718	51P1	Asserted
366	08/24/2021	23:07:46.818	OUT106	Deasserted
365	08/24/2021	23:07:46.818	51P1	Deasserted
364	08/24/2021	23:07:46.969	OUT106	Asserted
363	08/24/2021	23:07:46.969	51P1	Asserted
362	08/24/2021	23:07:46.999	OUT106	Deasserted
361	08/24/2021	23:07:46.999	51P1	Deasserted
360	08/24/2021	23:07:47.099	OUT106	Asserted
359	08/24/2021	23:07:47.099	51P1	Asserted
358	08/24/2021	23:07:47.119	OUT106	Deasserted
357	08/24/2021	23:07:47.119	51P1	Deasserted
356	08/24/2021	23:07:47.389	OUT106	Asserted
355	08/24/2021	23:07:47.389	51P1	Asserted
354	08/24/2021	23:07:47.490	OUT106	Deasserted
353	08/24/2021	23:07:47.490	51P1	Deasserted
352	08/24/2021	23:07:47.930	OUT106	Asserted
351	08/24/2021	23:07:47.930	51P1	Asserted
350	08/24/2021	23:07:48.051	OUT106	Deasserted
349	08/24/2021	23:07:48.051	51P1	Deasserted
348	08/24/2021	23:07:48.091	OUT106	Asserted
347	08/24/2021	23:07:48.091	51P1	Asserted
346	08/24/2021	23:07:48.101	OUT106	Deasserted
345	08/24/2021	23:07:48.101	51P1	Deasserted
344	08/24/2021	23:07:48.111	OUT106	Asserted
343	08/24/2021	23:07:48.111	51P1	Asserted
342	08/24/2021	23:07:48.151	OUT106	Deasserted
341	08/24/2021	23:07:48.151	51P1	Deasserted
340	08/24/2021	23:07:48.271	OUT106	Asserted
339	08/24/2021	23:07:48.271	51P1	Asserted
338	08/24/2021	23:07:48.291	OUT106	Deasserted
337	08/24/2021	23:07:48.291	51P1	Deasserted
336	08/24/2021	23:07:48.321	OUT106	Asserted
335	08/24/2021	23:07:48.321	51P1	Asserted
334	08/24/2021	23:07:48.351	OUT106	Deasserted
333	08/24/2021	23:07:48.351	51P1	Deasserted

332	08/24/2021	23:07:48.672	OUT106	Asserted
331	08/24/2021	23:07:48.672	51P1	Asserted
330	08/24/2021	23:07:48.682	OUT106	Deasserted
329	08/24/2021	23:07:48.682	51P1	Deasserted
328	08/24/2021	23:07:48.802	OUT106	Asserted
327	08/24/2021	23:07:48.802	51P1	Asserted
326	08/24/2021	23:07:48.812	OUT106	Deasserted
325	08/24/2021	23:07:48.812	51P1	Deasserted
324	08/24/2021	23:07:49.133	OUT106	Asserted
323	08/24/2021	23:07:49.133	51P1	Asserted
322	08/24/2021	23:07:49.173	OUT106	Deasserted
321	08/24/2021	23:07:49.173	51P1	Deasserted
320	08/24/2021	23:07:49.213	OUT106	Asserted
319	08/24/2021	23:07:49.213	51P1	Asserted
318	08/24/2021	23:07:49.243	OUT106	Deasserted
317	08/24/2021	23:07:49.243	51P1	Deasserted
316	08/24/2021	23:07:49.253	OUT106	Asserted
315	08/24/2021	23:07:49.253	51P1	Asserted
314	08/24/2021	23:07:49.273	OUT106	Deasserted
313	08/24/2021	23:07:49.273	51P1	Deasserted
312	08/24/2021	23:07:49.313	OUT106	Asserted
311	08/24/2021	23:07:49.313	51P1	Asserted
310	08/24/2021	23:07:49.383	OUT106	Deasserted
309	08/24/2021	23:07:49.383	51P1	Deasserted
308	08/24/2021	23:07:49.463	OUT106	Asserted
307	08/24/2021	23:07:49.463	51P1	Asserted
306	08/24/2021	23:07:49.483	OUT106	Deasserted
305	08/24/2021	23:07:49.483	51P1	Deasserted
304	08/24/2021	23:07:49.523	OUT106	Asserted
303	08/24/2021	23:07:49.523	51P1	Asserted
302	08/24/2021	23:07:49.584	OUT106	Deasserted
301	08/24/2021	23:07:49.584	51P1	Deasserted
300	08/24/2021	23:07:49.664	OUT106	Asserted
299	08/24/2021	23:07:49.664	51P1	Asserted
298	08/24/2021	23:07:49.704	OUT106	Deasserted
297	08/24/2021	23:07:49.704	51P1	Deasserted
296	08/24/2021	23:07:49.734	OUT106	Asserted
295	08/24/2021	23:07:49.734	51P1	Asserted
294	08/24/2021	23:07:49.744	OUT106	Deasserted
293	08/24/2021	23:07:49.744	51P1	Deasserted
292	08/24/2021	23:07:49.814	OUT106	Asserted
291	08/24/2021	23:07:49.814	51P1	Asserted
290	08/24/2021	23:07:49.914	OUT106	Deasserted
289	08/24/2021	23:07:49.914	51P1	Deasserted
288	08/24/2021	23:07:49.944	OUT106	Asserted
287	08/24/2021	23:07:49.944	51P1	Asserted
286	08/24/2021	23:07:50.095	OUT106	Deasserted
285	08/24/2021	23:07:50.095	51P1	Deasserted
284	08/24/2021	23:07:50.155	OUT106	Asserted
283	08/24/2021	23:07:50.155	51P1	Asserted

282	08/24/2021	23:07:50.175	OUT106	Deasserted
281	08/24/2021	23:07:50.175	51P1	Deasserted
280	08/24/2021	23:07:50.205	OUT106	Asserted
279	08/24/2021	23:07:50.205	51P1	Asserted
278	08/24/2021	23:07:50.215	OUT106	Deasserted
277	08/24/2021	23:07:50.215	51P1	Deasserted
276	08/24/2021	23:07:50.235	OUT106	Asserted
275	08/24/2021	23:07:50.235	51P1	Asserted
274	08/24/2021	23:07:50.295	OUT106	Deasserted
273	08/24/2021	23:07:50.295	51P1	Deasserted
272	08/24/2021	23:07:50.335	OUT106	Asserted
271	08/24/2021	23:07:50.335	51P1	Asserted
270	08/24/2021	23:07:50.385	OUT106	Deasserted
269	08/24/2021	23:07:50.385	51P1	Deasserted
268	08/24/2021	23:07:50.395	OUT106	Asserted
267	08/24/2021	23:07:50.395	51P1	Asserted
266	08/24/2021	23:07:50.626	OUT106	Deasserted
265	08/24/2021	23:07:50.626	51P1	Deasserted
264	08/24/2021	23:07:50.666	OUT106	Asserted
263	08/24/2021	23:07:50.666	51P1	Asserted
262	08/24/2021	23:07:50.786	OUT106	Deasserted
261	08/24/2021	23:07:50.786	51P1	Deasserted
260	08/24/2021	23:07:50.806	OUT106	Asserted
259	08/24/2021	23:07:50.806	51P1	Asserted
258	08/24/2021	23:07:51.167	OUT106	Deasserted
257	08/24/2021	23:07:51.167	51P1	Deasserted
256	08/24/2021	23:07:51.217	OUT106	Asserted
255	08/24/2021	23:07:51.217	51P1	Asserted
254	08/24/2021	23:07:51.307	OUT106	Deasserted
253	08/24/2021	23:07:51.307	51P1	Deasserted
252	08/24/2021	23:07:51.357	OUT106	Asserted
251	08/24/2021	23:07:51.357	51P1	Asserted
250	08/24/2021	23:07:51.658	OUT106	Deasserted
249	08/24/2021	23:07:51.658	51P1	Deasserted
248	08/24/2021	23:07:51.698	OUT106	Asserted
247	08/24/2021	23:07:51.698	51P1	Asserted
246	08/24/2021	23:07:51.718	OUT106	Deasserted
245	08/24/2021	23:07:51.718	51P1	Deasserted
244	08/24/2021	23:07:51.798	OUT106	Asserted
243	08/24/2021	23:07:51.798	51P1	Asserted
242	08/24/2021	23:07:51.838	OUT106	Deasserted
241	08/24/2021	23:07:51.838	51P1	Deasserted
240	08/24/2021	23:07:51.898	OUT106	Asserted
239	08/24/2021	23:07:51.898	51P1	Asserted
238	08/24/2021	23:07:51.918	OUT106	Deasserted
237	08/24/2021	23:07:51.918	51P1	Deasserted
236	08/24/2021	23:07:53.652	OUT106	Asserted
235	08/24/2021	23:07:53.652	51P1	Asserted
234	08/24/2021	23:07:53.682	OUT106	Deasserted
233	08/24/2021	23:07:53.682	51P1	Deasserted

232	08/24/2021	23:07:53.773	OUT106	Asserted
231	08/24/2021	23:07:53.773	51P1	Asserted
230	08/24/2021	23:07:53.903	OUT106	Deasserted
229	08/24/2021	23:07:53.903	51P1	Deasserted
228	08/24/2021	23:07:54.705	OUT106	Asserted
227	08/24/2021	23:07:54.705	51P1	Asserted
226	08/24/2021	23:07:54.735	OUT106	Deasserted
225	08/24/2021	23:07:54.735	51P1	Deasserted
224	08/24/2021	23:07:55.186	OUT106	Asserted
223	08/24/2021	23:07:55.186	51P1	Asserted
222	08/24/2021	23:07:55.206	OUT106	Deasserted
221	08/24/2021	23:07:55.206	51P1	Deasserted
220	08/24/2021	23:07:55.397	OUT106	Asserted
219	08/24/2021	23:07:55.397	51P1	Asserted
218	08/24/2021	23:07:55.407	OUT106	Deasserted
217	08/24/2021	23:07:55.407	51P1	Deasserted
216	08/24/2021	23:07:55.517	OUT106	Asserted
215	08/24/2021	23:07:55.517	51P1	Asserted
214	08/24/2021	23:07:55.527	OUT106	Deasserted
213	08/24/2021	23:07:55.527	51P1	Deasserted
212	08/24/2021	23:07:55.707	OUT106	Asserted
211	08/24/2021	23:07:55.707	51P1	Asserted
210	08/24/2021	23:07:55.738	OUT106	Deasserted
209	08/24/2021	23:07:55.738	51P1	Deasserted
208	08/24/2021	23:07:56.058	OUT106	Asserted
207	08/24/2021	23:07:56.058	51P1	Asserted
206	08/24/2021	23:07:56.088	OUT106	Deasserted
205	08/24/2021	23:07:56.088	51P1	Deasserted
204	08/24/2021	23:07:56.119	OUT106	Asserted
203	08/24/2021	23:07:56.119	51P1	Asserted
202	08/24/2021	23:07:56.199	OUT106	Deasserted
201	08/24/2021	23:07:56.199	51P1	Deasserted
200	08/24/2021	23:07:56.259	OUT106	Asserted
199	08/24/2021	23:07:56.259	51P1	Asserted
198	08/24/2021	23:07:56.279	OUT106	Deasserted
197	08/24/2021	23:07:56.279	51P1	Deasserted
196	08/24/2021	23:07:56.409	OUT106	Asserted
195	08/24/2021	23:07:56.409	51P1	Asserted
194	08/24/2021	23:07:56.439	OUT106	Deasserted
193	08/24/2021	23:07:56.439	51P1	Deasserted
192	08/24/2021	23:07:57.141	OUT106	Asserted
191	08/24/2021	23:07:57.141	51P1	Asserted
190	08/24/2021	23:07:57.272	OUT106	Deasserted
189	08/24/2021	23:07:57.272	51P1	Deasserted
188	08/24/2021	23:07:57.622	OUT106	Asserted
187	08/24/2021	23:07:57.622	51P1	Asserted
186	08/24/2021	23:07:57.643	OUT106	Deasserted
185	08/24/2021	23:07:57.643	51P1	Deasserted
184	08/24/2021	23:07:59.668	OUT106	Asserted
183	08/24/2021	23:07:59.668	51P1	Asserted

182	08/24/2021	23:07:59.678	OUT106	Deasserted
181	08/24/2021	23:07:59.678	51P1	Deasserted
180	08/24/2021	23:08:07.824	OUT106	Asserted
179	08/24/2021	23:08:07.824	51P1	Asserted
178	08/24/2021	23:08:07.935	OUT106	Deasserted
177	08/24/2021	23:08:07.935	51P1	Deasserted
176	08/24/2021	23:08:07.945	OUT106	Asserted
175	08/24/2021	23:08:07.945	51P1	Asserted
174	08/24/2021	23:08:07.985	OUT106	Deasserted
173	08/24/2021	23:08:07.985	51P1	Deasserted
172	08/24/2021	23:08:08.125	OUT106	Asserted
171	08/24/2021	23:08:08.125	51P1	Asserted
170	08/24/2021	23:08:08.175	OUT106	Deasserted
169	08/24/2021	23:08:08.175	51P1	Deasserted
168	08/24/2021	23:08:08.976	OUT106	Asserted
167	08/24/2021	23:08:08.976	51P1	Asserted
166	08/24/2021	23:08:09.036	OUT106	Deasserted
165	08/24/2021	23:08:09.036	51P1	Deasserted
164	08/24/2021	23:08:09.097	OUT106	Asserted
163	08/24/2021	23:08:09.097	51P1	Asserted
162	08/24/2021	23:08:09.117	OUT106	Deasserted
161	08/24/2021	23:08:09.117	51P1	Deasserted
160	08/24/2021	23:08:09.157	OUT106	Asserted
159	08/24/2021	23:08:09.157	51P1	Asserted
158	08/24/2021	23:08:09.237	OUT106	Deasserted
157	08/24/2021	23:08:09.237	51P1	Deasserted
156	08/24/2021	23:08:09.297	OUT106	Asserted
155	08/24/2021	23:08:09.297	51P1	Asserted
154	08/24/2021	23:08:09.327	OUT106	Deasserted
153	08/24/2021	23:08:09.327	51P1	Deasserted
152	08/24/2021	23:08:09.357	OUT106	Asserted
151	08/24/2021	23:08:09.357	51P1	Asserted
150	08/24/2021	23:08:09.397	OUT106	Deasserted
149	08/24/2021	23:08:09.397	51P1	Deasserted
148	08/24/2021	23:08:09.497	OUT106	Asserted
147	08/24/2021	23:08:09.497	51P1	Asserted
146	08/24/2021	23:08:09.537	OUT106	Deasserted
145	08/24/2021	23:08:09.537	51P1	Deasserted
144	08/24/2021	23:08:09.627	OUT106	Asserted
143	08/24/2021	23:08:09.627	51P1	Asserted
142	08/24/2021	23:08:09.678	OUT106	Deasserted
141	08/24/2021	23:08:09.678	51P1	Deasserted
140	08/24/2021	23:08:09.698	OUT106	Asserted
139	08/24/2021	23:08:09.698	51P1	Asserted
138	08/24/2021	23:08:09.718	OUT106	Deasserted
137	08/24/2021	23:08:09.718	51P1	Deasserted
136	08/24/2021	23:08:09.818	OUT106	Asserted
135	08/24/2021	23:08:09.818	51P1	Asserted
134	08/24/2021	23:08:09.878	OUT106	Deasserted
133	08/24/2021	23:08:09.878	51P1	Deasserted

132	08/24/2021	23:08:09.898	OUT106	Asserted
131	08/24/2021	23:08:09.898	51P1	Asserted
130	08/24/2021	23:08:09.918	OUT106	Deasserted
129	08/24/2021	23:08:09.918	51P1	Deasserted
128	08/24/2021	23:08:09.978	OUT106	Asserted
127	08/24/2021	23:08:09.978	51P1	Asserted
126	08/24/2021	23:08:10.008	OUT106	Deasserted
125	08/24/2021	23:08:10.008	51P1	Deasserted
124	08/24/2021	23:08:10.028	OUT106	Asserted
123	08/24/2021	23:08:10.028	51P1	Asserted
122	08/24/2021	23:08:10.038	OUT106	Deasserted
121	08/24/2021	23:08:10.038	51P1	Deasserted
120	08/24/2021	23:08:10.509	OUT106	Asserted
119	08/24/2021	23:08:10.509	51P1	Asserted
118	08/24/2021	23:08:10.589	OUT106	Deasserted
117	08/24/2021	23:08:10.589	51P1	Deasserted
116	08/24/2021	23:08:10.809	OUT106	Asserted
115	08/24/2021	23:08:10.809	51P1	Asserted
114	08/24/2021	23:08:11.120	OUT106	Deasserted
113	08/24/2021	23:08:11.120	51P1	Deasserted
112	08/24/2021	23:08:11.220	OUT106	Asserted
111	08/24/2021	23:08:11.220	51P1	Asserted
110	08/24/2021	23:08:11.310	OUT106	Deasserted
109	08/24/2021	23:08:11.310	51P1	Deasserted
108	08/24/2021	23:08:11.320	OUT106	Asserted
107	08/24/2021	23:08:11.320	51P1	Asserted
106	08/24/2021	23:08:11.481	OUT106	Deasserted
105	08/24/2021	23:08:11.481	51P1	Deasserted
104	08/24/2021	23:08:11.511	OUT106	Asserted
103	08/24/2021	23:08:11.511	51P1	Asserted
102	08/24/2021	23:08:11.551	OUT106	Deasserted
101	08/24/2021	23:08:11.551	51P1	Deasserted
100	08/24/2021	23:08:11.561	OUT106	Asserted
99	08/24/2021	23:08:11.561	51P1	Asserted
98	08/24/2021	23:08:11.631	OUT106	Deasserted
97	08/24/2021	23:08:11.631	51P1	Deasserted
96	08/24/2021	23:08:11.701	OUT106	Asserted
95	08/24/2021	23:08:11.701	51P1	Asserted
94	08/24/2021	23:08:11.821	OUT106	Deasserted
93	08/24/2021	23:08:11.821	51P1	Deasserted
92	08/24/2021	23:08:11.851	OUT106	Asserted
91	08/24/2021	23:08:11.851	51P1	Asserted
90	08/24/2021	23:08:12.172	OUT106	Deasserted
89	08/24/2021	23:08:12.172	51P1	Deasserted
88	08/24/2021	23:08:12.182	OUT106	Asserted
87	08/24/2021	23:08:12.182	51P1	Asserted
86	08/24/2021	23:08:12.492	OUT106	Deasserted
85	08/24/2021	23:08:12.492	51P1	Deasserted
84	08/24/2021	23:08:12.502	OUT106	Asserted
83	08/24/2021	23:08:12.502	51P1	Asserted

82	08/24/2021	23:08:13.033	OUT106	Deasserted
81	08/24/2021	23:08:13.033	51P1	Deasserted
80	08/24/2021	23:08:13.043	OUT106	Asserted
79	08/24/2021	23:08:13.043	51P1	Asserted
78	08/24/2021	23:08:14.576	OUT106	Deasserted
77	08/24/2021	23:08:14.576	51P1	Deasserted
76	08/24/2021	23:08:14.596	OUT106	Asserted
75	08/24/2021	23:08:14.596	51P1	Asserted
74	08/24/2021	23:08:14.766	OUT106	Deasserted
73	08/24/2021	23:08:14.766	51P1	Deasserted
72	08/24/2021	23:08:14.776	OUT106	Asserted
71	08/24/2021	23:08:14.776	51P1	Asserted
70	08/24/2021	23:08:16.128	OUT106	Deasserted
69	08/24/2021	23:08:16.128	51P1	Deasserted
68	08/24/2021	23:08:16.148	OUT106	Asserted
67	08/24/2021	23:08:16.148	51P1	Asserted
66	08/24/2021	23:08:16.259	OUT106	Deasserted
65	08/24/2021	23:08:16.259	51P1	Deasserted
64	08/24/2021	23:08:16.269	OUT106	Asserted
63	08/24/2021	23:08:16.269	51P1	Asserted
62	08/24/2021	23:08:16.299	OUT106	Deasserted
61	08/24/2021	23:08:16.299	51P1	Deasserted
60	08/24/2021	23:08:16.349	OUT106	Asserted
59	08/24/2021	23:08:16.349	51P1	Asserted
58	08/24/2021	23:08:16.379	OUT106	Deasserted
57	08/24/2021	23:08:16.379	51P1	Deasserted
56	08/24/2021	23:08:16.399	OUT106	Asserted
55	08/24/2021	23:08:16.399	51P1	Asserted
54	08/24/2021	23:08:16.459	OUT106	Deasserted
53	08/24/2021	23:08:16.459	51P1	Deasserted
52	08/24/2021	23:08:16.519	OUT106	Asserted
51	08/24/2021	23:08:16.519	51P1	Asserted
50	08/24/2021	23:08:16.529	OUT106	Deasserted
49	08/24/2021	23:08:16.529	51P1	Deasserted
48	08/24/2021	23:08:16.549	OUT106	Asserted
47	08/24/2021	23:08:16.549	51P1	Asserted
46	08/24/2021	23:08:16.990	OUT106	Deasserted
45	08/24/2021	23:08:16.990	51P1	Deasserted
44	08/24/2021	23:08:17.020	OUT106	Asserted
43	08/24/2021	23:08:17.020	51P1	Asserted
42	08/24/2021	23:08:17.511	OUT106	Deasserted
41	08/24/2021	23:08:17.511	51P1	Deasserted
40	08/24/2021	23:08:17.541	OUT106	Asserted
39	08/24/2021	23:08:17.541	51P1	Asserted
38	08/24/2021	23:08:17.671	OUT106	Deasserted
37	08/24/2021	23:08:17.671	51P1	Deasserted
36	08/24/2021	23:08:17.691	OUT106	Asserted
35	08/24/2021	23:08:17.691	51P1	Asserted
34	08/24/2021	23:08:20.166	OUT106	Deasserted
33	08/24/2021	23:08:20.166	51P1	Deasserted

32	08/24/2021	23:08:20.176	OUT106	Asserted
31	08/24/2021	23:08:20.176	51P1	Asserted
30	08/24/2021	23:08:20.206	OUT106	Deasserted
29	08/24/2021	23:08:20.206	51P1	Deasserted
28	08/24/2021	23:08:20.306	OUT106	Asserted
27	08/24/2021	23:08:20.306	51P1	Asserted
26	08/24/2021	23:18:35.758	TRIP3P	Asserted
25	08/24/2021	23:18:35.758	OUT105	Asserted
24	08/24/2021	23:18:35.758	51P1T	Asserted
23	08/24/2021	23:18:35.778	PINC	Deasserted
22	08/24/2021	23:18:35.788	OUT106	Deasserted
21	08/24/2021	23:18:35.788	51P1	Deasserted
20	08/24/2021	23:18:35.793	52A3P	Deasserted
19	08/24/2021	23:18:35.793	SV30	Asserted
18	08/24/2021	23:18:35.808	OUT105	Deasserted
17	08/24/2021	23:18:35.808	51P1T	Deasserted
16	08/24/2021	23:18:36.560	TRIP3P	Deasserted
15	08/24/2021	23:29:58.682	IN102	Asserted
14	08/24/2021	23:29:58.687	CLOSE3P	Asserted
13	08/24/2021	23:29:58.737	PINC	Asserted
12	08/24/2021	23:29:58.737	CLOSE3P	Deasserted
11	08/24/2021	23:29:58.742	52A3P	Asserted
10	08/24/2021	23:29:58.742	SV30	Deasserted
9	08/24/2021	23:30:03.186	IN102	Deasserted
8	08/24/2021	23:32:05.304	OUT106	Asserted
7	08/24/2021	23:32:05.304	51P1	Asserted
6	08/24/2021	23:32:05.773	OUT106	Deasserted
5	08/24/2021	23:32:05.773	51P1	Deasserted
4	08/24/2021	23:32:42.927	OUT106	Asserted
3	08/24/2021	23:32:42.927	51P1	Asserted
2	08/24/2021	23:32:42.947	OUT106	Deasserted
1	08/24/2021	23:32:42.947	51P1	Deasserted

=>



MODIFICACION DE AJUSTES DE LOS PAÑOS 52ET2 Y 52CT2

SE FRUTILLAR

REVISIÓN	ELABORÓ	REVISÓ	APROBÓ	FECHA
REV1	CMP			25-08-2021

AGOSTO 2021

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1 INTRODUCCIÓN

El presente estudio tiene como objetivo la modificación de ajuste de las protecciones en la barra de 23 y 13,2kV (Paño 52ET2 y 52CT2), existente en S/E FRUTILLAR, para así brindar mayor seguridad al sistema eléctrico.

La modificación se enmarca en el proyecto de mejoramiento del sistema de protecciones que el grupo SAESA realiza en forma continua para cumplir con los requerimientos que la norma técnica impone a las instalaciones nuevas y existentes.

A continuación, se describen las protecciones modificadas.

Tabla 1: Protecciones analizadas en el presente Estudio.

SE Primaria	Paño	Relé Actual	Tipo	Tensión
FRUTILLAR	52ET2	SEL 351S	Propuesto	23kV
FRUTILLAR	52CT2 87T	SEL 787	Propuesto	13,2KV
FRUTILLAR	52CT2	SEL 651RA	Propuesto	13,2kV

2 ANTECEDENTES.

Para realizar este estudio se utilizó la información existente, que consistió básicamente en lo siguiente:

- Modelo DIGSILENT “ECAP SE FRUTILLAR 13.2kV”.
- Datos ajustes protecciones de Transmisión 2021.
- Anexo 1. DU-Funcional-Frutillar-66kV

3 DIAGRAMAS UNILINEALES SIMPLIFICADO DE S/E FRUTILLAR.

3.1 Diagrama unilineal simplificado con relés Actual.

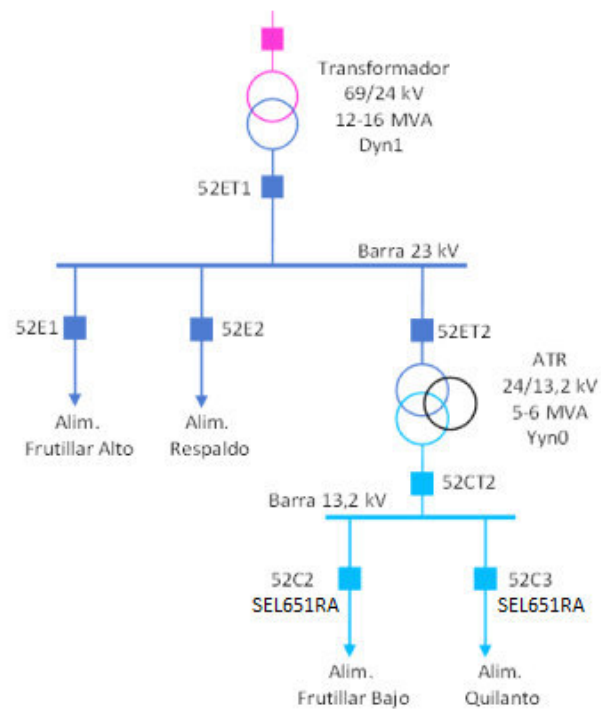


Ilustración 1: Unilineal simplificado del sistema actual.

4 AJUSTES DE PROTECCIONES

4.1 Protección de sobrecorriente 52ET2.

Tabla 2: Protección de sobrecorriente fase y residual, ET2.

Protección de Sobrecorriente de Fase de Tiempo Inverso		
	Ajuste Relé SEL351S	
	Actual	Propuesto
TT/CC	400/1	400/1
Tipo de Curva (51P1C)	IEC Very Inverse (C2)	IEC Very Inverse (C2)
Mínimo de operación (51P1P)	152 APRI; 0,38 ASEC .	184 APRI; 0,46 ASEC .
Dial Time (51P1TD)	0,68	0,54
Sumador (51P1CT) [Cyc]	--	1
T. Mínimo de Resp. (51P1MR) [Cyc]	--	--
Protección de Sobrecorriente Residual de Tiempo Inverso		
	Ajuste Relé SEL351S	
TT/CC	400/1	400/1
Tipo de Curva (51G1C)	IEC Standard Inverse (C1)	IEC Standard Inverse (C1)
Mínimo de operación (51G1P)	80 APRI; 0,20 ASEC	80 APRI; 0,20 ASEC
Dial Time (51G1TD)	0,40	0,40
Sumador (51G1CT) [Cyc]	--	--
T. Mínimo de Resp. (51G1MR) [Cyc]	--	--
Protección de Sobrecorriente de Fase de Tiempo Definido		
	Ajuste Relé SEL351S	
Mínimo de operación [50P1P]	--	--
Temporización [Cyc] [50P1D]	--	--
Protección de Sobrecorriente Residual de Tiempo Definido		
	Ajuste Relé SEL351S	
Mínimo de operación [50N1P]	--	--
Temporización [Cyc] [50N1D]	--	--

4.1.1 Curvas de cortocircuito protección paño ET2 S/E FRUTILLAR.

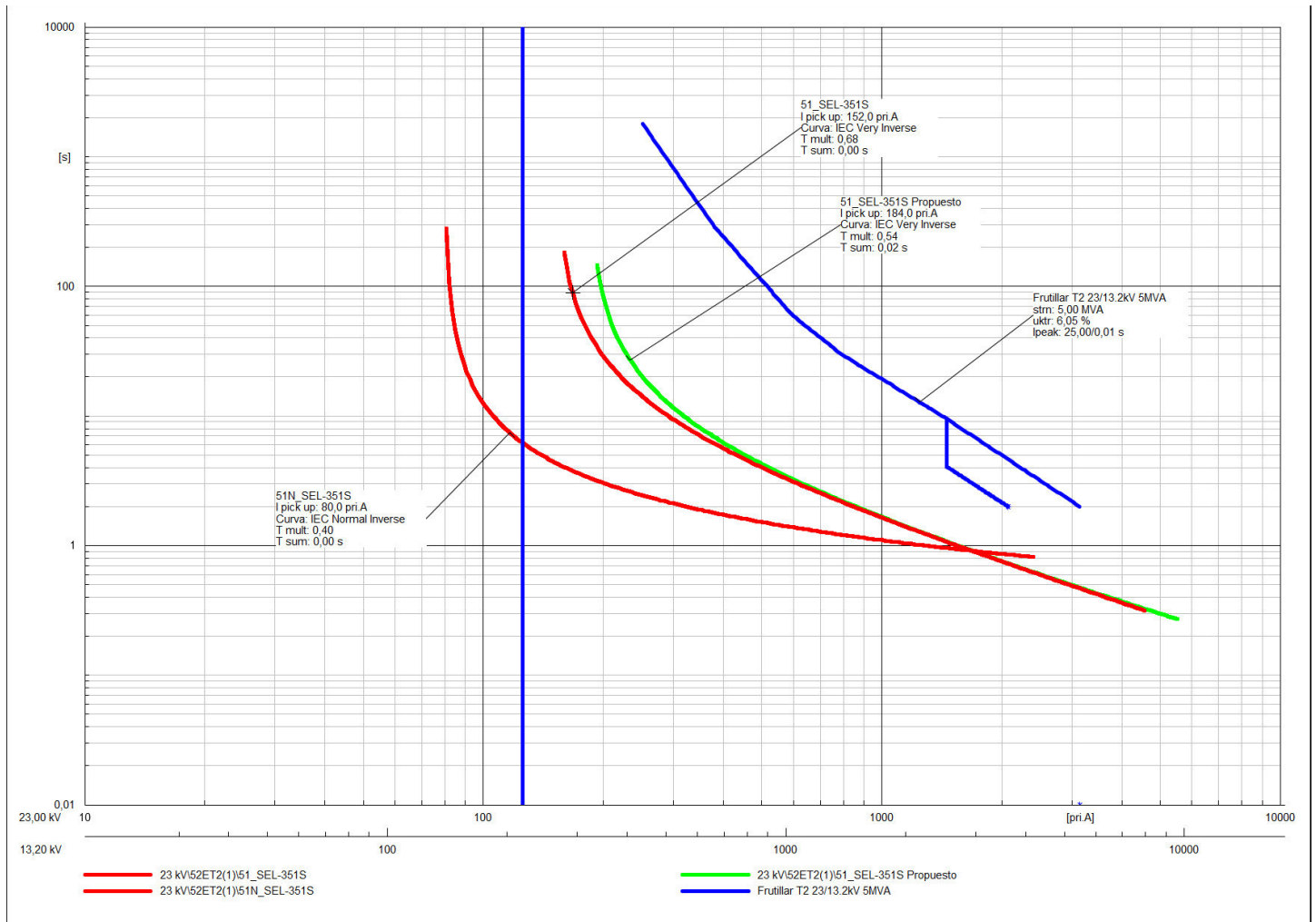


Ilustración 2: Elementos de sobrecorriente de fase y residual, paño 52ET2

4.1 Protección Diferencial.

Tabla 3: Protección de sobrecorriente fase y residual, CT2, 87T.

Protección de Sobrecorriente de Fase de Tiempo Inverso		
	Ajuste Relé SEL787	
	Actual	Propuesto
TT/CC	400/1	400/1
Tipo de Curva (51P2C)	IEC Very Inverse (C2)	IEC Very Inverse (C2)
Mínimo de operación (51P2P)	264 APRI; 0,66 ASEC .	316 APRI; 0,79 ASEC .
Dial Time (51P2TD)	0,68	0,55
Sumador (51P2CT) [Cyc]	--	1
T. Minimo de Resp. (51P2MR) [Cyc]	--	
Protección de Sobrecorriente Residual de Tiempo Inverso		
	Ajuste Relé SEL787	
TT/CC	400/1	400/1
Tipo de Curva (51G2C)	IEC Standard Inverse (C1)	IEC Standard Inverse (C1)
Mínimo de operación (51G2P)	140 APRI; 0,35 ASEC	140 APRI; 0,35 ASEC
Dial Time (51G2TD)	0,40	0,40
Sumador (51G2CT) [Cyc]	--	--
T. Minimo de Resp. (51G2MR) [Cyc]	--	--
Protección de Sobrecorriente de Fase de Tiempo Definido		
	Ajuste Relé SEL787	
Mínimo de operación [50P2P]	--	--
Temporización [Cyc] [50P2D]	--	--
Protección de Sobrecorriente Residual de Tiempo Definido		
	Ajuste Relé SEL787	
Mínimo de operación [50G2P]	--	--
Temporización [Cyc] [50G2D]	--	--

4.1.1 Curvas de cortocircuito protección paño CT2, 87T, S/E FRUTILLAR.

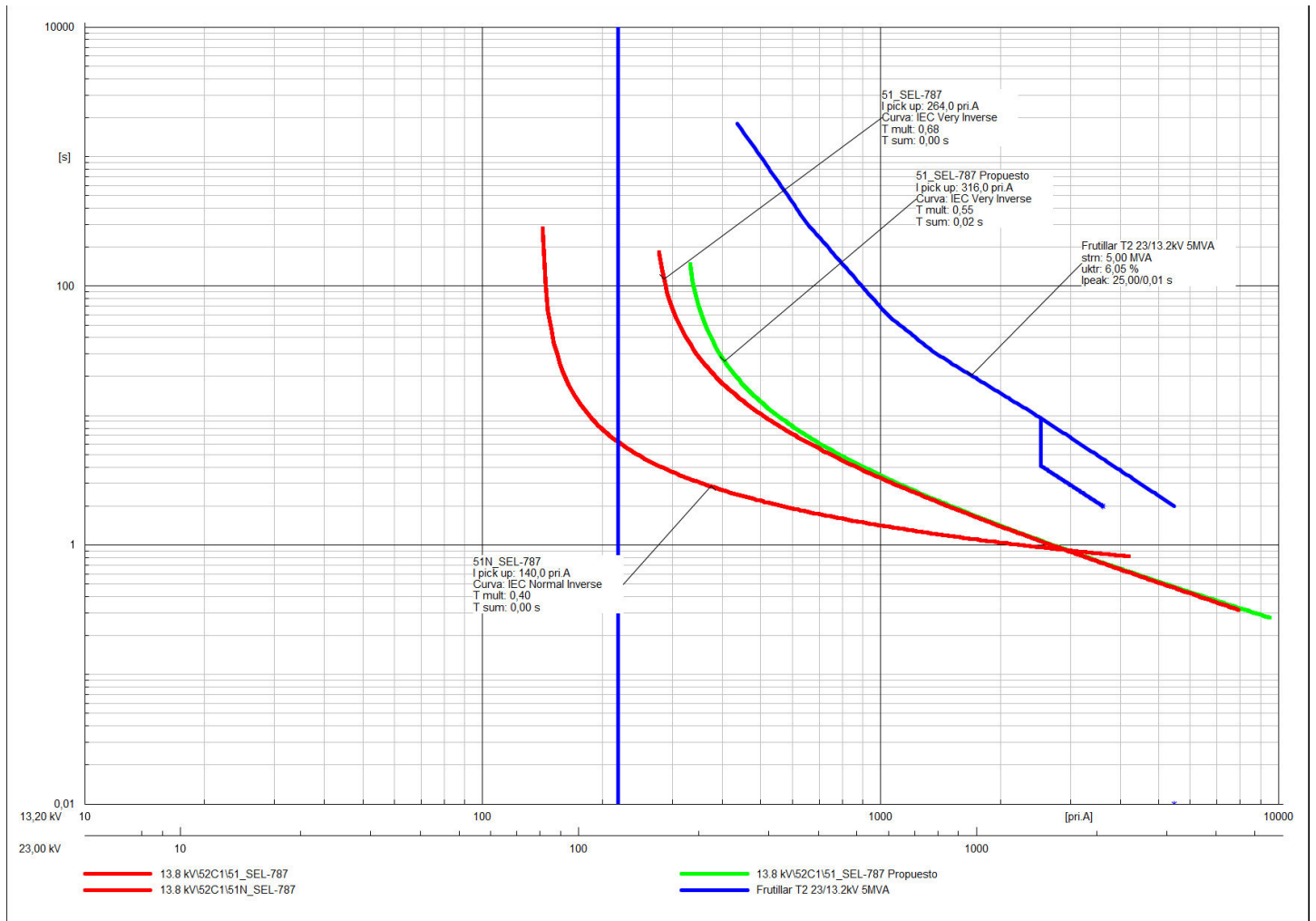


Ilustración 3: Elementos de sobrecorriente de fase y residual, paño 52CT2 87T

4.2 Protección de sobrecorriente 52CT2.

Tabla 4: Protección de sobrecorriente fase y residual, CT2.

Protección de Sobrecorriente de Fase de Tiempo Inverso		
	Ajuste Relé SEL651RA	
	Actual	Propuesto
TT/CC	1000/1	1000/1
Tipo de Curva (51P1JC)	IEC Very Inverse (C2)	IEC Very Inverse (C2)
Mínimo de operación (51P1JP)	260 APRI ; 0,26 ASEC .	310 APRI ; 0,31 ASEC .
Dial Time (51P1JTD)	0,68	0,55
Sumador (51P1JCT) [Cyc]	--	1
T. Mínimo de Resp. (51P1JMR) [Cyc]	--	
Protección de Sobrecorriente Residual de Tiempo Inverso		
	Ajuste Relé SEL651RA	
TT/CC	1000/1	1000/1
Tipo de Curva (51G1JC)	IEC Standard Inverse (C1)	IEC Standard Inverse (C1)
Mínimo de operación (51G1JP)	140 APRI ; 0,14 ASEC	140 APRI ; 0,14 ASEC
Dial Time (51G1JTD)	0,40	0,40
Sumador (51G1JCT) [Cyc]	--	--
T. Mínimo de Resp. (51G1JMR) [Cyc]	--	--
Protección de Sobrecorriente de Fase de Tiempo Definido		
	Ajuste Relé SEL651RA	
Mínimo de operación [50P1P]	--	--
Temporización [Cyc] [50P1D]	--	--
Protección de Sobrecorriente Residual de Tiempo Definido		
	Ajuste Relé SEL651RA	
Mínimo de operación [50N1P]	--	--
Temporización [Cyc] [50N1D]	--	--

4.2.1 Curvas de cortocircuito protección paño CT2 S/E FRUTILLAR.

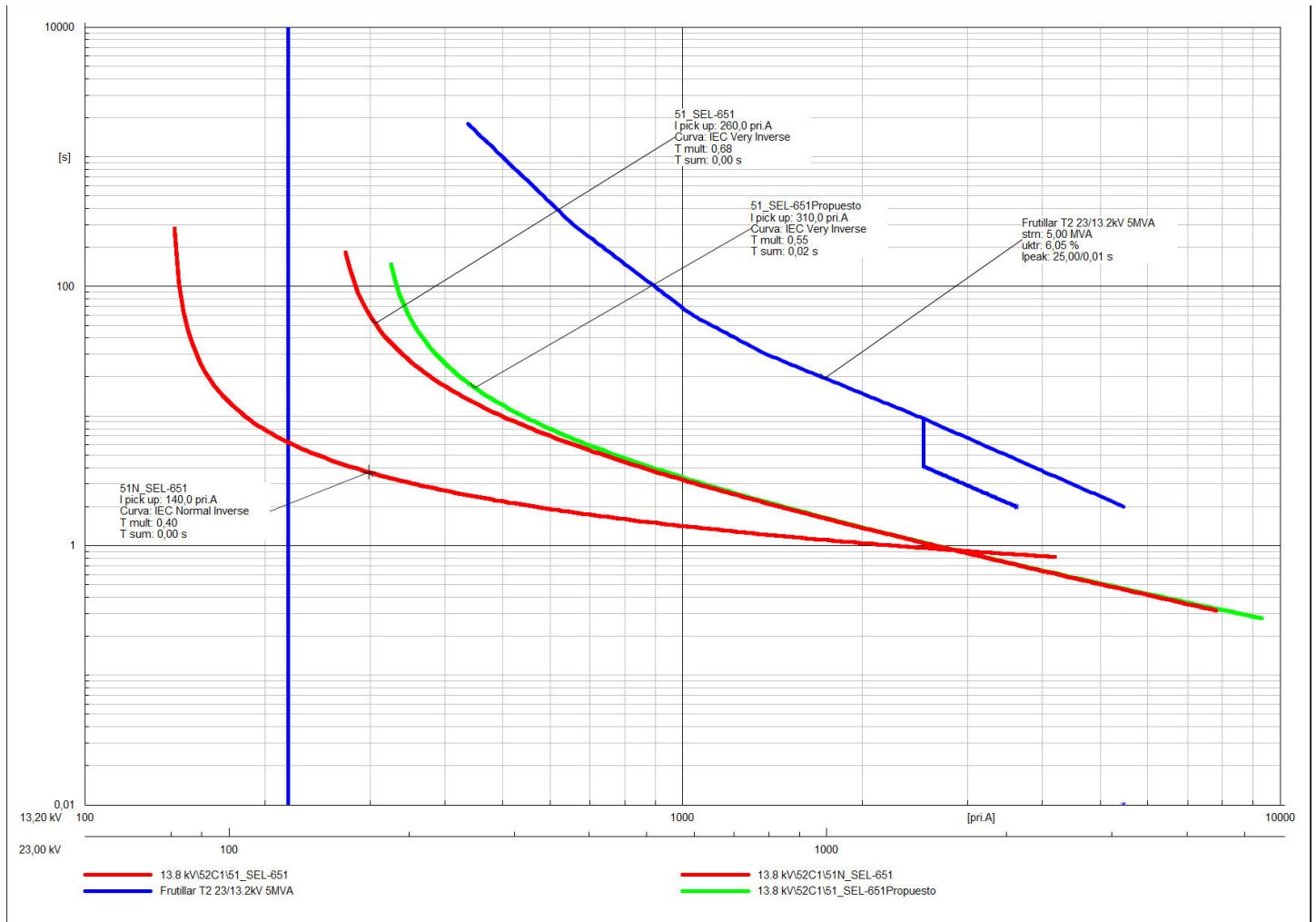


Ilustración 4: Elementos de sobrecorriente de fase y residual, paño 52CT2

5 CONCLUSIONES

El presente estudio se realizó la modificación de las protecciones de los paños 52ET2 y 52CT2 en las barras de 23 y 13,2 kV en S/E FRUTILLAR.

Tabla 5: Protecciones analizadas en estudio

SE Primaria	Paño	Relé Actual	Tipo	Tensión
FRUTILLAR	52ET2	SEL 351S	Propuesto	23kV
FRUTILLAR	52CT2 87T	SEL 787	Propuesto	13,2KV
FRUTILLAR	52CT2	SEL 651RA	Propuesto	13,2kV

Se destacan los siguientes puntos:

- Se realiza modificación de ajustes aumentando un 20% del pickup de fase en el paño 52ET2 en 23kV.
- Se realiza modificación de ajustes aumentando un 20% del pickup de fase en el paño 52CT2 en 13,2kV.

SEL -651RA Settings Report

Overview Information

File Name	52CT2 Dejado GRO1 ACTIVO
RDB	Frutillar T2 26-08-2021.rdb
Device	SEL-651RA
Setting Version Number	001
Part Number	0651RA01XAGAAD1A22X4XXXX
Firmware ID	SEL-651RA-R101-V0-Z001001-D20160212
SEL Boot Firmware ID	SLBT-3CF1-R300-V0-Z100100-D20150729

Settings

[Global EZ](#)

[Global](#)

[Group 1](#)

[Logic 1](#)

[Report](#)

Settings Legend

Visible Setting

Hidden Setting

Invalid Setting

Global EZ Top			
Setting	Description	Range	Value
EZGRPS	# of EZ settings groups enabled	Select: (0-8)	0
Global EZ Top			

Global Top			
Setting	Description	Range	Value
NFREQ	Nominal Frequency (Hz)	Select: 50, 60	50
PHROT	Phase Rotation	Select: ABC, ACB	ABC
DATE_F	Date Format	Select: MDY, YMD, DMY	MDY
PWRDN_AC	Power-off Delay After AC Loss (mins)	Range = 1 to 1440, OFF	180
PWRDN_WU	Power-off Delay After Wake Up (mins)	Range = 1 to 1440, OFF	20
TESTBATT	Request Battery Test Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB08_PUL
FAULT	Fault Condition Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	51P1 OR 51G1 OR 50G3 OR 50P6 OR 50G6
IPCONN	I123 Terminal Conn.	Select: ABC, ACB, BAC, BCA, CAB, CBA	CBA
EGNSDW	Enable Ground Current Switch	Select: Y, N	Y
CTPOL	CT Polarity	Select: POS, NEG	POS
VYCONN	VY Terminal Connections	Select: OFF, ABC, ACB, BAC, BCA, CAB, CBA, A, B, C, AB, BC, CA	ABC
VZCONN	VZ Terminal Connections	Select: OFF, ABC, ACB, BAC, BCA, CAB, CBA, A, B, C, AB, BC, CA	OFF
VSELECT	Voltage Source Selection	Select: OFF, VY	VY
FSELECT	Frequency Source Selection	Select: OFF, VY	VY
METHRES	Meter Cutoff Threshold	Select: Y, N, E	N
EICIS	Independent Control Input Settings	Select: Y, N	N
EBMON	Breaker Monitor	Select: Y, N	N
SALARM	Alarm Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	BADPASS OR CHGPASS OR SETCHG OR GRPSW OR ACCESSP OR PASNVAL
TGR	Group Change Delay (cyc)	Range = 0 to 54000	0
SS1	Setting Group 1 Selection Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT LT10
SS2	Setting Group 2 Selection Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	LT10
SS3	Setting Group 3 Selection Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SS4	Setting Group 4 Selection Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0

SS5	Setting Group 5 Selection Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SS6	Setting Group 6 Selection Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SS7	Setting Group 7 Selection Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SS8	Setting Group 8 Selection Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
RSTTRGT	Target Reset Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
RST_DEM	Reset Demand Metering Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
RST_PDM	Reset Peak Demand Metering Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
RST_BK	Reset Breaker Monitoring Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
RST_HIS	Reset History Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
RST_ENE	Reset Energy Metering Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
RST_MML	Reset Max/Min Metering Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
RST_HAL	Reset Warning Alarm Pulsing Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
RSTDNPE	Reset DNP Event Buffer Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
EPMU	Synchronized Phasor Measurement	Select: Y, N	N
EVELOCK	Event Summary Lock Period in Seconds (seconds)	Range = 0 to 1000	0
DNPSRC	DNP Session Time Base	Select: LOCAL, UTC	UTC
IRIGC	IRIG-B Control Bits Definition	Select: NONE, C37.118	C37.118
UTC_OFF	Offset from UTC (hr)	Range = -24,00 to 24,00	0,00
DST_BEGM	Month To Begin DST	Range = 1 to 12, NA	NA
Global			

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Setting	Description	Range	Value
RID	Relay Identifier (30 chars)	Range = ASCII string with a maximum length of 30.	52CT2
TID	Terminal Identifier (30 chars)	Range = ASCII string with a maximum length of 30.	FRUTILLAR
CTR	Phase (IA,IB,IC) CT Ratio	Range = 1,0 to 6000,0	1000,0
CTRN	Neutral (IN) CT Ratio	Range = 1,0 to 6000,0	1000,0
PTRY	Y-side PT ratio (300 V base)	Range = 1,00 to 10000,00	120,00
PTRZ	Z-side PT ratio (300 V base)	Range = 1,00 to 10000,00	120,00
VNOM	Nominal L-N V olt, V SELECT side (V, sec)	Range = 25,00 to 300,00	69,20
E50P	Phase	Select: N, 1-6	6
E50G	Ground	Select: N, 1-6	6
E50Q	Negative-Sequence	Select: N, 1-6	N
E51P1	Maximum-Phase 1	Select: N, 1, 2	1
E51P2	Maximum-Phase 2	Select: N, 1, 2	N
E51G1	Ground 1	Select: N, 1, 2	1
E51G2	Ground 2	Select: N, 1, 2	N
E51Q	Negative-Sequence	Select: N, 1, 2	N
ELOAD	Load Encroachment	Select: Y, N	N
E32	Directional Control	Select: Y, AUTO, N	N
EVOLT	Voltage Element Enable	Select: N, VY, VZ, BOTH	VY
E81	Frequency Elements	Select: N, 1-6	N
E81R	Rate-of-Change-of-Frequency Elements	Select: N, 1-4	N
EFLOC	Fault Location	Select: Y, N	N
ELOP	Loss-Of-Potential	Select: Y, Y 1, N	Y
EPWR	Power Elements	Select: N, 3P1, 3P2, 3P3, 3P4	N
E25	Synchronism Check	Select: Y, N	N
E79	Reclosures	Select: N, 1-4	N
ESOTF	Switch-Onto-Fault	Select: Y, N	N
EDEM	Demand Metering	Select: THM, ROL	THM
ESSI	Voltage Sag/Swell/Interruption	Select: Y, N	N
EHIF	High-Impedance Fault Detection	Select: Y, N, T	N
EHBL2	Second Harmonic Blocking	Select: Y, N	N
EMV	Math Variable Settings	Range = 1 to 64, N	21
Z1MAG	Pos-Seq Line Impedance Mag. (Ohm,sec)	Range = 0,50 to 2550,00	10,00
Z1ANG	Pos-Seq Line Impedance Angle (deg)	Range = 5,00 to 90,00	80,00
Z0MAG	Zero-Seq Line Impedance Mag. (Ohm,sec)	Range = 0,50 to 2550,00	10,00
Z0ANG	Zero-Seq Line Impedance Angle (deg)	Range = 5,00 to 90,00	80,00
LL	Line Length - Unitless	Range = 0,10 to 999,00	100,00

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50P1P	Level 1 (A mp, sec)	Range = 0,05 to 20,00, OFF	OFF
50P2P	Level 2 (A mp, sec)	Range = 0,05 to 20,00, OFF	OFF
50P3P	Level 3 (A mp, sec)	Range = 0,05 to 20,00, OFF	OFF
50P4P	Level 4 (A mp, sec)	Range = 0,05 to 20,00, OFF	OFF
50P5P	Level 5 (A mp, sec)	Range = 0,05 to 20,00, OFF	OFF
50P6P	Level 6 (A mp, sec)	Range = 0,05 to 20,00, OFF	0,31
50P1D	Level 1 (cycle)	Range = 0,00 to 16000,00	0,00
50P2D	Level 2 (cycle)	Range = 0,00 to 16000,00	0,00
50P3D	Level 3 (cycle)	Range = 0,00 to 16000,00	0,00
50P4D	Level 4 (cycle)	Range = 0,00 to 16000,00	0,00
50P1TC	Level 1 Torque Control Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50A1TC	Level 1 A-phase Torque Control Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50B1TC	Level 1 B-phase Torque Control Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50C1TC	Level 1 C-phase Torque Control Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P2TC	Level 2 Torque Control Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50A2TC	Level 2 A-phase Torque Control Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50B2TC	Level 2 B-phase Torque Control Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50C2TC	Level 2 C-phase Torque Control Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P3TC	Level 3 Torque Control Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50A3TC	Level 3 A-phase Torque Control Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50B3TC	Level 3 B-phase Torque Control Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50C3TC	Level 3 C-phase Torque Control Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1

50P4TC	Level 4 Torque Control Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50A4TC	Level 4 A-phase Torque Control Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50B4TC	Level 4 B-phase Torque Control Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50C4TC	Level 4 C-phase Torque Control Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50G1P	Level 1, IN Base (Amp, sec)	Range = 0,005 to 20,000, OFF	OFF
50G2P	Level 2, IN Base (Amp, sec)	Range = 0,005 to 20,000, OFF	OFF
50G3P	Level 3, IN Base (Amp, sec)	Range = 0,005 to 20,000, OFF	OFF
50G4P	Level 4, IN Base (Amp, sec)	Range = 0,005 to 20,000, OFF	OFF
50G5P	Level 5, IN Base (Amp, sec)	Range = 0,005 to 20,000, OFF	OFF
50G6P	Level 6, IN Base (Amp, sec)	Range = 0,005 to 20,000, OFF	0,140
50G1D	Level 1 (cycle)	Range = 0,00 to 16000,00	0,00
50G2D	Level 2 (cycle)	Range = 0,00 to 16000,00	0,00
50G3D	Level 3 (cycle)	Range = 0,00 to 16000,00	0,00
50G4D	Level 4 (cycle)	Range = 0,00 to 16000,00	0,00
50G1TC	Level 1 Torque Control Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	MV09 <= 79SH3P AND MV09 >= 0.00 AND LT01 # HLG AND GROUND ENABLED
50G2TC	Level 2 Torque Control Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	((MV07 <= 79SH3P OR 79SH3P < 0.00) AND MV07 >= 0.00) AND LT01 # HTG AND GROUND ENABLED
50G3TC	Level 3 Torque Control Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	MV05 >= 0.00 AND LT01 AND NOT (51P1 OR 51G1) AND (NOT SV12 OR 50G5)
50G4TC	Level 4 Torque Control Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P1JP	Pickup (Amp, sec)	Range = 0,05 to 3,20, OFF	0,31
51P1JC	Curve	Select: U1-U5, C1-C5, Recloser-Curves	C2

51P1JTD	Time Dial	Range = 0,05 to 1,00	0,55
51P1JRS	EM Reset Delay	Select: Y , N	N
51P1JCT	Constant Time Adder (cycle)	Range = 0,00 to 60,00	1,00
51P1JMR	Minimum Response (cycle)	Range = 0,00 to 60,00	0,00
51P1TC	51P1 Torque Control Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51G1JP	Pickup, IN Base (A mp, sec)	Range = 0,005 to 3,200, OFF	0,140
51G1JC	Curve	Select: U1-U5, C1-C5, Recloser-Curves	C1
51G1JTD	Time Dial	Range = 0,05 to 1,00	0,40
51G1JRS	EM Reset Delay	Select: Y , N	N
51G1JCT	Constant Time Adder (cycle)	Range = 0,00 to 60,00	0,00
51G1JMR	Minimum Response (cycle)	Range = 0,00 to 60,00	0,00
51G1TC	51G1 Torque Control Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	LT01
27Y P1P	Phase Undervoltage Pickup (V , sec)	Range = 1,00 to 300,00, OFF	OFF
27Y P2P	Phase Undervoltage Pickup (V , sec)	Range = 1,00 to 300,00, OFF	OFF
27Y PP1P	Phase-Phase Undervolt. PU (V , sec)	Range = 1,76 to 520,00, OFF	OFF
59Y P1P	Phase Overvoltage Pickup (V , sec)	Range = 1,00 to 300,00, OFF	OFF
59Y P2P	Phase Overvoltage Pickup (V , sec)	Range = 1,00 to 300,00, OFF	55,00
59Y PP1P	Phase-Phase Overvoltage PU (V , sec)	Range = 1,76 to 520,00, OFF	OFF
59Y N1P	Zero-Seq(3V0) Overvolt. PU (V , sec)	Range = 2,00 to 300,00, OFF	OFF
59Y N2P	Zero-Seq(3V0) Overvolt. PU (V , sec)	Range = 2,00 to 300,00, OFF	OFF
59Y Q1P	Neg-Seq(V2) Overvoltage PU (V , sec)	Range = 2,00 to 300,00, OFF	OFF
59Y V1P	Pos-Seq(V1) Overvoltage PU (V , sec)	Range = 2,00 to 300,00, OFF	OFF
3POD	Three-Pole Open Time Delay (cycle)	Range = 0,00 to 60,00	0,50
50LP	Load Detection Phase PU (A mp, sec)	Range = 0,05 to 1,00	0,05
DMTC	Time Constant (mins)	Select: 5, 10, 15, 30, 60	5
PDEMP	Phase Pickup (A mp, sec)	Range = 0,10 to 3,20, OFF	OFF
GDEMP	Ground, IN Base (A mp, sec)	Range = 0,005 to 3,200, OFF	OFF
QDEMP	Negative-Sequence Pickup (A mp, sec)	Range = 0,10 to 3,20, OFF	OFF
50GHIZP	50G HIZ Overcurrent Pickup, IN Base (A mp, sec)	Range = 0,005 to 20,000, OFF	OFF
MV01	Math Variable	Range = -16000,00 to 16000,00	2,00

MV 02	Math Variable	Range = -16000,00 to 16000,00	2,00
MV 03	Math Variable	Range = -16000,00 to 16000,00	3,00
MV 04	Math Variable	Range = -16000,00 to 16000,00	3,00
MV 05	Math Variable	Range = -16000,00 to 16000,00	-1,00
MV 06	Math Variable	Range = -16000,00 to 16000,00	-1,00
MV 07	Math Variable	Range = -16000,00 to 16000,00	-1,00
MV 08	Math Variable	Range = -16000,00 to 16000,00	-1,00
MV 09	Math Variable	Range = -16000,00 to 16000,00	-1,00
MV 10	Math Variable	Range = -16000,00 to 16000,00	0,00
MV 11	Math Variable	Range = -16000,00 to 16000,00	0,00
MV 12	Math Variable	Range = -16000,00 to 16000,00	0,00
MV 13	Math Variable	Range = -16000,00 to 16000,00	0,00
MV 14	Math Variable	Range = -16000,00 to 16000,00	0,00
MV 15	Math Variable	Range = -16000,00 to 16000,00	0,00
MV 16	Math Variable	Range = -16000,00 to 16000,00	0,00
MV 17	Math Variable	Range = -16000,00 to 16000,00	0,00
MV 18	Math Variable	Range = -16000,00 to 16000,00	1,00
MV 19	Math Variable	Range = -16000,00 to 16000,00	0,00
MV 20	Math Variable	Range = -16000,00 to 16000,00	0,00
MV 21	Math Variable	Range = -16000,00 to 16000,00	1,00
TDURD	Minimum Trip Duration Time (cycle)	Range = 4,00 to 16000,00	40,00
TR3P	Three-phase tripping conditions Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	51P1T OR 51G1T OR 50P1T OR 50G1T OR SV 03T AND NOT LT03 OR OC3 OR IN101
TR3X	Three-phase tripping conditions-Extra Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT (LT06) AND (50P6 OR 50G6) AND MV 21 = 1.00
TRQL3P	Three-phase Trip conditions qualified by disturbance detection Equation (SEL logic)	Valid range = The legal operators: AND OR NOT	0

		R_TRIG F_TRIG	
ULTR3P	Unlatch trip conditions Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 52A3P
CFD	Close Failure Time Delay (cycle)	Range = 0,00 to 16000,00, OFF	60,00
52A_3P	Three-phase breaker status Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SW1 AND NOT (RCCL1X)
CL3P	Three-phase close conditions Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(SV02T AND LT05 AND NOT LT03 OR CC3 AND LT03 OR R_TRIG IN102 AND LT03) AND LT06 AND TCCAP
ULCL3P	Three-phase unlatch close conditions Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	TRIP3P OR (NOT IN201 AND SW1) OR NOT (LT06 AND TCCAP OR CLOSE3P) OR NOT (LT05 OR CLOSE3P OR (CC3 AND LT03 OR R_TRIG IN102 AND LT03) OR 79CY3P)
RCTR1	Pole 1 Trip Mapping Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	TRIP3P
RCCL1	Pole 1 Close Mapping Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	CLOSE3P
Group 1			

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Logic 1			
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Setting	Description	Range	Value
ELAT	SEL logic Latches	Range = 1 to 32, N	16
ESV	SEL logic Variables/Timers	Range = 1 to 64, N	36
ESC	SEL logic Counters	Range = 1 to 16, N	1
SET01	Set Latch Bit 01 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB01_PUL AND LT05 OR RB02 AND LT03) AND NOT LT01 # GROUND ENABLED
RST01	Reset Latch Bit 01 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB01_PUL AND LT05 OR RB01 AND LT03) AND LT01
SET02	Set Latch Bit 02 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB02_PUL AND LT05 AND NOT LT03 OR RB04 AND LT03 OR R_TRIG IN107 AND LT03) AND NOT LT02 AND LT06 # RECLOSE ENABLED
RST02	Reset Latch Bit 02 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB02_PUL AND LT05 AND NOT LT03 OR RB03 AND LT03 OR R_TRIG IN107 AND LT03) AND LT02 OR NOT LT06 OR 79SH3P = -1.00 # LAST TERM IS RECLOSING RELAY DEFEATED
SET03	Set Latch Bit 03 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB03_PUL AND NOT (LT03) AND LT05 #REMOTE ENABLED
RST03	Reset Latch Bit 03 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB03_PUL AND LT03 AND LT05
SET04	Set Latch Bit 04 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB05_PUL AND LT05 OR RB08 AND LT03) AND NOT LT04 #FAST CURVE ENABLED
RST04	Reset Latch Bit 04 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB05_PUL AND LT05 OR RB07 AND LT03) AND LT04

SET05	Set Latch Bit 05 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG SC01QU AND NOT (LT05) # LOCK PUSH BUTTONS, MUST PRESS FOR THREE SECONDS (LOCKED WHEN LT05 DEASSERTED)
RST05	Reset Latch Bit 05 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG SC01QU AND LT05
SET06	Set Latch Bit 06 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB07_PUL AND LT05 AND NOT LT03 OR RB10 AND LT03 OR R_TRIG IN106 AND LT03) AND NOT LT06 #HOT LINE TAG (WHEN LT06 DEASSERTED)
RST06	Reset Latch Bit 06 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB07_PUL AND LT05 AND NOT LT03 OR RB09 AND LT03 OR R_TRIG IN106 AND LT03) AND LT06
SET07	Set Latch Bit 07 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST07	Reset Latch Bit 07 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET08	Set Latch Bit 08 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB09_PUL AND NOT (LT08) AND LT05 #AUX 1
RST08	Reset Latch Bit 08 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB09_PUL AND LT08 AND LT05
SET09	Set Latch Bit 09 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB10_PUL AND NOT (LT09) AND LT05 #AUX 2
RST09	Reset Latch Bit 09 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB10_PUL AND LT09 AND LT05
SET10	Set Latch Bit 10 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB04_PUL AND LT05 OR RB11 AND LT03) AND NOT LT10 # ALTERNATIVO HABILITADO
RST10	Reset Latch Bit 10 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB04_PUL AND LT05 OR RB12 AND LT03) AND LT10 # ALTERNATIVO

			HABILITADO
SET11	Set Latch Bit 11 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	TRIP3P
RST11	Reset Latch Bit 11 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	TRGTR
SET12	Set Latch Bit 12 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PHASE_A
RST12	Reset Latch Bit 12 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	TRGTR
SET13	Set Latch Bit 13 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PHASE_B
RST13	Reset Latch Bit 13 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	TRGTR
SET14	Set Latch Bit 14 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PHASE_C
RST14	Reset Latch Bit 14 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	TRGTR
SET15	Set Latch Bit 15 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	51G1T
RST15	Reset Latch Bit 15 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	TRGTR
SET16	Set Latch Bit 16 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	50G3T
RST16	Reset Latch Bit 16 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	TRGTR
SV01PU	SV01 Timer Pickup (cyc)	Range = 0,00 to 999999,00	29,75
SV01DO	SV01 Timer Dropout (cyc)	Range = 0,00 to 999999,00	29,75
SV01	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT (SV01T) AND (PB06 OR SV02 OR SV03) #1 HZ BLINK GENERATOR FOR LOCK PUSH BUTTON
SV02PU	SV02 Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV02DO	SV02 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
			(PB11_PUL AND NOT SV02 OR NOT PB11_PUL AND SV02) AND NOT PB12_PUL AND

SV 02	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT SV02T AND NOT (CLOSE3P OR ULCL3P) AND NOT SV03 AND LT05 AND LT06 # CLOSE PUSHBUTTON DELAY
SV 03PU	SV 03 Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV 03DO	SV 03 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 03	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB12_PUL AND NOT SV03 OR NOT PB12_PUL AND SV03) AND NOT PB11_PUL AND NOT SV03T AND NOT SV02 AND NOT SV04 #TRIP PUSHBUTTON DELAY
SV 04PU	SV 04 Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV 04DO	SV 04 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 04	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SV 02 #DELAY ELEMENT FOR SV03 LOGIC
SV 05PU	SV 05 Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV 05DO	SV 05 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 05	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	52A3P AND (SV08 OR SV10 OR SV12) AND (MV12 <> 0.00 OR MV13 <> 0.00 OR MV14 <> 0.00) # RESTORE MINIMUM TRIPS, LIMIT (COLD-LOAD SCHEME)
SV 06PU	SV 06 Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV 06DO	SV 06 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 06	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 52A3P AND (79L03P OR 79SH3P = -1.00) AND (MV10 <> 0.00 OR MV11 <> 0.00) # LOSS OF LOAD DIVERSITY (COLD-LOAD SCHEME)
SV 07PU	SV 07 Timer Pickup (cyc)	Range = 0,00 to 999999,00	900,00
SV 07DO	SV 07 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 07	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	52A3P AND NOT 50P6 AND SV08 # PHASE CURRENT BELOW MIN. TRIP (COLD-LOAD

			SCHEME)
SV08PU	SV08 Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV08DO	SV08 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV08	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(SV08 OR SV06T) AND NOT (SV07T OR SV05T AND MV12 <> 0.00 OR MV10 = 0.00) # COLD-LOAD ACTIVE - PHASE (COLD-LOAD SCHEME)
SV09PU	SV09 Timer Pickup (cyc)	Range = 0,00 to 999999,00	900,00
SV09DO	SV09 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV09	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	52A3P AND NOT 50G6 AND SV10 # GROUND CURRENT BELOW MIN. TRIP (COLD-LOAD SCHEME)
SV10PU	SV10 Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV10DO	SV10 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV10	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(SV10 OR SV06T) AND NOT (SV09T OR SV05T AND MV13 <> 0.00 OR MV11 = 0.00) # COLD-LOAD ACTIVE - GROUND (COLD-LOAD SCHEME)
SV11PU	SV11 Timer Pickup (cyc)	Range = 0,00 to 999999,00	900,00
SV11DO	SV11 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV11	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	52A3P AND NOT 50G4 AND SV12 # SEF CURRENT BELOW MIN. TRIP (COLD-LOAD SCHEME)
SV12PU	SV12 Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV12DO	SV12 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV12	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(SV12 OR SV06T) AND NOT (SV11T OR SV05T AND MV14 <> 0.00 OR MV11 = 0.00) # COLD-LOAD ACTIVE - SEF (COLD-LOAD SCHEME)
SV13PU	SV13 Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV13DO	SV13 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
			51P1T OR 51G1T

SV 13	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	OR 50P2T OR 50G2T #ANY OVERCURRENT ELEMENT TRIP, EXCEPT SEF (DTL LOGIC)
SV 14PU	SV 14 Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV 14DO	SV 14 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 14	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	81D1T OR 81D2T OR 81D3T
SV 15PU	SV 15 Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV 15DO	SV 15 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 15	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG SV 13 AND (SV 17 AND 50G6 AND (MV 16 <> 0.00 OR NOT 50P6) OR SV 16 AND 50P6 AND (MV 16 = 0.00 OR NOT 50G6)) # INTERMEDIATE (DTL LOGIC)
SV 16PU	SV 16 Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV 16DO	SV 16 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 16	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	MV 03 <= 79SH3P AND MV 03 >= 0.00 # OLP
SV 17PU	SV 17 Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV 17DO	SV 17 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 17	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	MV 04 <= 79SH3P AND MV 04 >= 0.00 # OLG
SV 18PU	SV 18 Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV 18DO	SV 18 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 18	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	25A 1 OR MV 20 = 0.00 #SYNCHRONISM OR SYNCH CHECK DISABLED
SV 19PU	SV 19 Timer Pickup (cyc)	Range = 0,00 to 999999,00	360,00
SV 19DO	SV 19 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 19	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	((27Y A 1 AND 50LA) OR (27Y B 1 AND 50LB) OR (27Y C 1 AND 50LC)) AND (MV 17 >= 1.00) # LEVEL 1 - UNDERVOLTAGE TRIP SOURCE = VY
SV 20PU	SV 20 Timer Pickup (cyc)	Range = 0,00 to 999999,00	360,00
SV 20DO	SV 20 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00

SV 20	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	((27ZA1 AND 50LA) OR (27ZB1 AND 50LB) OR (27ZC1 AND 50LC)) AND (MV 17 <= -1.00) #LEVEL 1 - UNDERVOLTAGE TRIP SOURCE = VZ
SV 21PU	SV 21 Timer Pickup (cyc)	Range = 0,00 to 999999,00	360,00
SV 21DO	SV 21 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 21	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	((27YA2 AND 50LA) OR (27YB2 AND 50LB) OR (27YC2 AND 50LC)) AND (MV 17 = 2.00) #LEVEL 2 - UNDERVOLTAGE TRIP SOURCE = VY
SV 22PU	SV 22 Timer Pickup (cyc)	Range = 0,00 to 999999,00	360,00
SV 22DO	SV 22 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 22	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	((27ZA2 AND 50LA) OR (27ZB2 AND 50LB) OR (27ZC2 AND 50LC)) AND (MV 17 = -2.00) #LEVEL 2 - UNDERVOLTAGE TRIP SOURCE = VZ
SV 23PU	SV 23 Timer Pickup (cyc)	Range = 0,00 to 999999,00	360,00
SV 23DO	SV 23 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 23	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(59YA1 OR 59YB1 OR 59YC1) AND (MV 19 >= 1.00) OR (59ZA1 OR 59ZB1 OR 59ZC1) AND (MV 19 <= -1.00) #LEVEL 1 - OVERVOLTAGE TRIP
SV 24PU	SV 24 Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV 24DO	SV 24 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 24	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SV 19T OR SV 20T OR SV 21T OR SV 22T OR SV 23T
SV 25PU	SV 25 Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV 25DO	SV 25 Timer Dropout (cyc)	Range = 0,00 to 999999,00	180,00
SV 25	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	DISTST # BATTERY DISCHARGE TEST
SV 26PU	SV 26 Timer Pickup (cyc)	Range = 0,00 to 999999,00	29,75
SV 26DO	SV 26 Timer Dropout (cyc)	Range = 0,00 to 999999,00	29,75
			NOT (SV 26T) AND

SV 26	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SV 25T #FLASH FOR BATTERY DISCHARGE TEST IN PROGRESS
SV 27PU	SV 27 Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV 27DO	SV 27 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 27	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT (SV 25T) AND BTFAIL # BATTERY FAILED THE DISCHARGE TEST
SV 28PU	SV 28 Timer Pickup (cyc)	Range = 0,00 to 999999,00	3600,00
SV 28DO	SV 28 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 28	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	((F_TRIG SV 25T AND NOT BTFAIL) OR SV 28) AND NOT (DISTST OR SV 28T) # BATTERY PASSED THE DISCHARGE TEST
SV 29PU	SV 29 Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV 29DO	SV 29 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 29	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT SW1
SV 30PU	SV 30 Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV 30DO	SV 30 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 30	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 52A3P
SV 31PU	SV 31 Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV 31DO	SV 31 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 31	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT LT02
SV 32PU	SV 32 Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV 32DO	SV 32 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 32	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT LT06
SV 33PU	SV 33 Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV 33DO	SV 33 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 33	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT TCCAP
SV 34PU	SV 34 Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV 34DO	SV 34 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 34	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT LT01

SV35PU	SV 35 Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV35DO	SV 35 Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 35	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT LT03
SV36PU	SV 36 Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV36DO	SV 36 Timer Dropout (cyc)	Range = 0,00 to 999999,00	100,00
SV 36	Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SALARM
SC01PV	SC01 Preset Value, unitless	Range = 1 to 65000	3
SC01R	SC01 Reset Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT (PB06)
SC01LD	SC01 Load PV Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SC01CU	SC01 Count-Up Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SV01T #COUNT THE BLINKS FOR LOCK PUSH BUTTONS CONTROL
SC01CD	SC01 Count-Down Input Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT101	Output Contact 101 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	LT03
OUT102	Output Contact 102 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT103	Output Contact 103 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT104	Output Contact 104 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT105	Output Contact 105 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	51P1T OR 51G1T OR 50P1T OR 50G1T
OUT106	Output Contact 106 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	51P1 OR 51G1 # LOGICA ADAPTIVA
OUT107	Output Contact 107 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT LT06
OUT108	Output Contact 108 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	LT02
OUT201	Output Contact 201 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT (SALARM OR HALARM)

OUT202	Output Contact 202 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT (SALARM OR HALARM)
TMB1A	Channel A, transmit bit 1 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
TMB2A	Channel A, transmit bit 2 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
TMB3A	Channel A, transmit bit 3 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
TMB4A	Channel A, transmit bit 4 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
TMB5A	Channel A, transmit bit 5 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
TMB6A	Channel A, transmit bit 6 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
TMB7A	Channel A, transmit bit 7 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
TMB8A	Channel A, transmit bit 8 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
TMB1B	Channel B, transmit bit 1 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
TMB2B	Channel B, transmit bit 2 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
TMB3B	Channel B, transmit bit 3 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
TMB4B	Channel B, transmit bit 4 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
TMB5B	Channel B, transmit bit 5 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
TMB6B	Channel B, transmit bit 6 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
TMB7B	Channel B, transmit bit 7 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
TMB8B	Channel B, transmit bit 8 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
PMTRIG	PMU Trigger Equation (SEL logic)	Valid range = The legal operators: AND OR NOT	0

		R_TRIG F_TRIG	
TREA1	Trigger Reason Bit 1 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
TREA2	Trigger Reason Bit 2 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
TREA3	Trigger Reason Bit 3 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
TREA4	Trigger Reason Bit 4 Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
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Setting	Description	Range	Value
SER1	Sequential Events Recorder 1, 24 Elements Max. (Enter NA to Null)	Valid range = 0, NA or a list of relay elements.	TRIP3P, 51P1T, 51G1T, 51G1, 51P1, 50P1, 50P1T, 50G1, 50G1T, SV 14, SV 03T, SV 26T, PB11, PB12, SV 30, SV 31, SV 32, SV 33, SV 34, SV 36T
SER2	Sequential Events Recorder 2, 24 Elements Max. (Enter NA to Null)	Valid range = 0, NA or a list of relay elements.	52A3P, CF3P, 79RS3P, 79CY 3P, 79L O3P, RCSF3P, SH03P, SH13P, SH23P, SH33P, SH43P, CC3, SV 02T, OC3, RB04, RB09, RB10, RB11, RB12, CLOSE3P
SER3	Sequential Events Recorder 3, 24 Elements Max. (Enter NA to Null)	Valid range = 0, NA or a list of relay elements.	PWR_SRC1, TOSLP, SG1, SG2, LT01, LT02, LT03, LT04, LT06, SV08, SV 10, SV 12, LT05, CC3, OC3, HALARM, SALARM, HALARMA, HALARML, IN106, IN107, RB01, RB02, RB03
SER4	Sequential Events Recorder 4, 24 Elements Max. (Enter NA to Null)	Valid range = 0, NA or a list of relay elements.	OUT 105, OUT 106, OUT 107, OUT 108, OUT 201, OUT 202, OUT 104, IN101, IN102, IN103, IN104, PB01, PB02, PB03, PB05, PB07, PB01_PUL, PB02_PUL, PB03_PUL, PB05_PUL, PB07_PUL, TCCAP, PINBD, PINC
ER	Event Report Trigger Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG 51P1 OR R_TRIG 51G1 OR R_TRIG 50G3 OR 79L O3P
LER	Length of Event Report (cyc)	Select: 15, 30, 60	60
PRE	Cycle Length of Prefault in Event Report	Range = 1 to 59	15

LDLIST	Load Profile List (15 Elements Max., Enter NA to null)	Valid range = 0, NA or a list of relay elements.	IA, IB, IC, IG, 3I0, 3I2, I1
LDAR	LDP Acquisition Rate (mins)	Select: 5, 10, 15, 30, 60	15
HIFLER	Length of HIF Event Report (mins)	Select: 2, 5, 10, 20	10
HIFER	HIF Event Report Trigger Equation (SEL logic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
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SEL -351S-6 Settings Report

Overview Information

File Name	52ET2 Dejado GRO1 ACTIVO
RDB	Frutillar T2 26-08-2021.rdb
Device	SEL-351S-6
Setting Version Number	106
Part Number	0351S6X HB4E 1422
Firmware ID	SEL-351S-6-R516-V 1-Z 106105-D20170818
SEL Boot Firmware ID	SLBT-3CF1-R200-V 0-Z 100100-D20120321

Settings

[Group 1](#)

[Group 3](#)

[Global](#)

[Logic 1](#)

[Logic 3](#)

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[Text](#)

Settings Legend

Visible Setting

Hidden Setting

Invalid Setting

Group 1			
Setting	Description	Range	Value
RID	Relay Identifier (30 chars)	Range = ASCII string with a maximum length of 30.	-F51-ET2
TID	Terminal Identifier (30 chars)	Range = ASCII string with a maximum length of 30.	FRUTILLAR
CTR	Phase (IA,IB,IC) CT Ratio	Range = 1 to 6000	400
CTRN	Neutral (IN) CT Ratio	Range = 1 to 10000	400
PTR	Phase (VA,VB,VC) PT Ratio	Range = 1,00 to 10000,00	200,00
PTRS	Synch. Voltage (VS) PT Ratio	Range = 1,00 to 10000,00	200,00
VNOM	Phase Nominal Voltage L-N (V,sec)	Range = 25,00 to 300,00, OFF	69,28
Z1MAG	Pos-Seq Line Impedance Mag. (Ohm,sec)	Range = 0,50 to 2550,00	10,00
Z1ANG	Pos-Seq Line Impedance Angle (deg)	Range = 5,00 to 90,00	80,00
Z0MAG	Zero-Seq Line Impedance Mag. (Ohm,sec)	Range = 0,50 to 2550,00	10,00
Z0ANG	Zero-Seq Line Impedance Angle (deg)	Range = 5,00 to 90,00	80,00
LL	Line Length - unitless	Range = 0,10 to 999,00	10,00
EFLOC	Fault Location	Select Y, N	N
E50P	Phase	Select: N, 1-6	N
E50N	Neutral Ground(channel IN)	Select: N, 1-6	N
E50G	Residual Ground	Select: N, 1-6	N
E50Q	Negative-Sequence	Select: N, 1-6	N
E51P	Phase	Select: N, 1, 2	1
51P1P	Pickup (A,sec)	Range = 0,05 to 3,20, OFF	0,46
51P1C	Curve	Select: U1-U5, C1-C5, Recloser-Curves	C2
51P1TD	Time Dial	Range = 0,05 to 1,00	0,54
51P1RS	EM Reset Delay	Select: Y, N	N
51P1CT	Constant time adder (cyc)	Range = 0,00 to 60,00	1,00
51P1MR	Minimum response (cyc)	Range = 0,00 to 60,00	0,00
E51N	Neutral Ground(channel IN)	Select: N, 1, 2	N
E51G	Residual Ground	Select: N, 1, 2	1
51G1P	Pickup (A,sec)	Range = 0,02 to 3,20, OFF	0,20
51G1C	Curve	Select: U1-U5, C1-C5, Recloser-Curves	C1
51G1TD	Time Dial	Range = 0,05 to 1,00	0,40
51G1RS	EM Reset Delay	Select: Y, N	N
51G1CT	Constant time adder (cyc)	Range = 0,00 to 60,00	0,00
51G1MR	Minimum response (cyc)	Range = 0,00 to 60,00	0,00
E51Q	Negative-Sequence	Select: Y, N	N
E50BF	Breaker Failure	Select: Y, N	N
EHBL2	Second Harmonic Blocking	Select: Y, N	N

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ELOAD	Load Encroachment	Select Y, N	N
E32	Directional Control	Select: AUTO, Y, N	Y
ELOP	Loss-Of-Potential	Select Y, Y1, N	Y
DIR1	Level 1	Select: F, R, N	N
DIR2	Level 2	Select: F, R, N	N
DIR3	Level 3	Select: F, R, N	N
DIR4	Level 4	Select: F, R, N	N
ORDER	Ground Dir. Priority	Select: I, Q, V, OFF	QV
50P3P	Phase Dir. Element 3-Phase PU (A,sec)	Range = 0,10 to 2,00	0,10
Z2F	Forward Dir. Z2 Threshold (Ohm,sec)	Range = -640,00 to 640,00	1,80
Z2R	Reverse Dir. Z2 Threshold (Ohm,sec)	Range = -640,00 to 640,00	2,80
50QFP	Forward Dir. 3I2 Pickup (A,sec)	Range = 0,05 to 1,00	0,10
50QRP	Reverse Dir. 3I2 Pickup (A,sec)	Range = 0,05 to 1,00	0,05
a2	Pos-Seq Restraint Factor, I2/I1	Range = 0,02 to 0,50	0,10
k2	Zero-Seq Restraint Factor, I2/I0	Range = 0,10 to 1,20	0,20
50GFP	Forward Dir. 3I0 Pickup (A,sec)	Range = 0,01 to 1,00	0,10
50GRP	Reverse Dir. 3I0 Pickup (A,sec)	Range = 0,01 to 1,00	0,05
a0	Pos-Seq Restraint Factor, I0/I1	Range = 0,02 to 0,50	0,10
Z0F	Forward Dir. Z0 Threshold (Ohm,sec)	Range = -640,00 to 640,00	4,40
Z0R	Reverse Dir. Z0 Threshold (Ohm,sec)	Range = -640,00 to 640,00	5,40
Z0MTA	Zero-Seq Max Torque Ang. (deg)	Range = -90,00 to -5,00 or 5,00 to 90,00	65,10
EVOLT	Voltage Elements	Select Y, N	N
E25	Synchronism Check	Select: Y, N	N
E81	Frequency Elements	Select: N, 1-6	N
E81R	Rate-of-Change-of-Frequency Elements	Select: N, 1-4	N
E79	Reclosures	Select: N, 1-4, C1-C4	N
ESOTF	Switch-Onto-Fault	Select: Y, N	N
ECOMM	Comm-Assst Trip Scheme	Select: N, POTT, DCUB1, DCUB2, DCB	N
EDEM	Demand Metering	Select: THM, ROL	THM
DMTC	Time Constant (min)	Select: 5, 10, 15, 30, 60	5
PDEMP	Phase Pickup (A,sec)	Range = 0,10 to 3,20, OFF	1,00
NDEMP	Neutral Ground Pickup (A,sec)	Range = 0,100 to 3,200, OFF	0,300
GDEMP	Residual Ground Pickup (A,sec)	Range = 0,02 to 3,20, OFF	0,30
QDEMP	Negative-Sequence Pickup (A,sec)	Range = 0,10 to 3,20, OFF	0,30
TDURD	Minimum Trip Duration Time (cyc)	Range = 4,00 to 16000,00	9,00
CFD	Close Failure Time Delay (cyc)	Range = 0,00 to 16000,00, OFF	60,00
3POD	Three-Pole Open Time Delay (cyc)	Range = 0,00 to 60,00	1,50
50LP	Load Detection Phase PU (A,sec)	Range = 0,05 to 20,00, OFF	0,05
ESV	SEL logic Variable Timers	Select: N, 1-16	16
SV1PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00

SV 1DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 2PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV 2DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 3PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV 3DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 4PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV 4DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 5PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV 5DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 6PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV 6DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV 7PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 16000,00	0,00
SV 7DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 16000,00	0,00
SV 8PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 16000,00	0,00
SV 8DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 16000,00	0,00
SV 9PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 16000,00	0,00
SV 9DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 16000,00	0,00
SV 10PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 16000,00	0,00
SV 10DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 16000,00	0,00
SV 11PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 16000,00	250,00
SV 11DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 16000,00	0,00
SV 12PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 16000,00	250,00
SV 12DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 16000,00	0,00
SV 13PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 16000,00	0,00
SV 13DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 16000,00	0,00
SV 14PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 16000,00	0,00
SV 14DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 16000,00	0,00
SV 15PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 16000,00	500,00
SV 15DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 16000,00	0,00
SV 16PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 16000,00	500,00
SV 16DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 16000,00	0,00

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Group 3			
Setting	Description	Range	Value
RID	Relay Identifier (30 chars)	Range = ASCII string with a maximum length of 30.	-F51-ET2
TID	Terminal Identifier (30 chars)	Range = ASCII string with a maximum length of 30.	FRUTILLAR
CTR	Phase (IA,IB,IC) CT Ratio	Range = 1 to 6000	400
CTRN	Neutral (IN) CT Ratio	Range = 1 to 10000	400
PTR	Phase (VA,VB,VC) PT Ratio	Range = 1,00 to 10000,00	200,00
PTRS	Synch. Voltage (VS) PT Ratio	Range = 1,00 to 10000,00	200,00
VNOM	Phase Nominal Voltage L-N (V,sec)	Range = 25,00 to 300,00, OFF	69,28
Z1MAG	Pos-Seq Line Impedance Mag. (Ohm,sec)	Range = 0,50 to 2550,00	10,00
Z1ANG	Pos-Seq Line Impedance Angle (deg)	Range = 5,00 to 90,00	80,00
Z0MAG	Zero-Seq Line Impedance Mag. (Ohm,sec)	Range = 0,50 to 2550,00	10,00
Z0ANG	Zero-Seq Line Impedance Angle (deg)	Range = 5,00 to 90,00	80,00
LL	Line Length - unitless	Range = 0,10 to 999,00	10,00
EFLOC	Fault Location	Select Y, N	N
E50P	Phase	Select: N, 1-6	N
E50N	Neutral Ground(channel IN)	Select: N, 1-6	N
E50G	Residual Ground	Select: N, 1-6	N
E50Q	Negative-Sequence	Select: N, 1-6	N
E51P	Phase	Select: N, 1, 2	1
51P1P	Pickup (A,sec)	Range = 0,05 to 3,20, OFF	0,46
51P1C	Curve	Select: U1-U5, C1-C5, Recloser-Curves	101
51P1TD	Time Dial	Range = 0,10 to 2,00	1,00
51P1CT	Constant time adder (cyc)	Range = 0,00 to 60,00	0,00
51P1MR	Minimum response (cyc)	Range = 0,00 to 60,00	0,00
E51N	Neutral Ground(channel IN)	Select: N, 1, 2	N
E51G	Residual Ground	Select: N, 1, 2	1
51G1P	Pickup (A,sec)	Range = 0,02 to 3,20, OFF	0,20
51G1C	Curve	Select: U1-U5, C1-C5, Recloser-Curves	101
51G1TD	Time Dial	Range = 0,10 to 2,00	1,00
51G1CT	Constant time adder (cyc)	Range = 0,00 to 60,00	0,00
51G1MR	Minimum response (cyc)	Range = 0,00 to 60,00	0,00
E51Q	Negative-Sequence	Select: Y, N	N
E50BF	Breaker Failure	Select: Y, N	N
EHBL2	Second Harmonic Blocking	Select: Y, N	N
ELOAD	Load Encroachment	Select: Y, N	N
E32	Directional Control	Select: AUTO, Y, N	N

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ELOP	Loss-Of-Potential	Select Y, Y 1, N	N
EVOLT	Voltage Elements	Select Y, N	N
E25	Synchronism Check	Select Y, N	N
E81	Frequency Elements	Select: N, 1-6	N
E81R	Rate-of-Change-of-Frequency Elements	Select: N, 1-4	N
E79	Reclosures	Select: N, 1-4, C1-C4	N
ESOTF	Switch-Onto-Fault	Select Y, N	N
ECOMM	Comm-Assst Trip Scheme	Select: N, POTT, DCUB1, DCUB2, DCB	N
EDEM	Demand Metering	Select: THM, ROL	THM
DMTC	Time Constant (min)	Select: 5, 10, 15, 30, 60	5
PDEMP	Phase Pickup (A,sec)	Range = 0,10 to 3,20, OFF	1,00
NDEMP	Neutral Ground Pickup (A,sec)	Range = 0,100 to 3,200, OFF	0,300
GDEMP	Residual Ground Pickup (A,sec)	Range = 0,02 to 3,20, OFF	0,30
QDEMP	Negative-Sequence Pickup (A,sec)	Range = 0,10 to 3,20, OFF	0,30
TDURD	Minimum Trip Duration Time (cyc)	Range = 4,00 to 16000,00	9,00
CFD	Close Failure Time Delay (cyc)	Range = 0,00 to 16000,00, OFF	60,00
3POD	Three-Pole Open Time Delay (cyc)	Range = 0,00 to 60,00	1,50
50LP	Load Detection Phase PU (A,sec)	Range = 0,05 to 20,00, OFF	0,05
ESV	SEL logic Variable Timers	Select: N, 1-16	16
SV1PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV1DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV2PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV2DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV3PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV3DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV4PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV4DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV5PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV5DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV6PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 999999,00	0,00
SV6DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 999999,00	0,00
SV7PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 16000,00	0,00
SV7DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 16000,00	0,00
SV8PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 16000,00	0,00
SV8DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 16000,00	0,00
SV9PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 16000,00	0,00
SV9DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 16000,00	0,00
SV10PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 16000,00	0,00
SV10DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 16000,00	0,00
SV11PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 16000,00	250,00

SV 11DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 16000,00	0,00
SV 12PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 16000,00	250,00
SV 12DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 16000,00	0,00
SV 13PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 16000,00	0,00
SV 13DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 16000,00	0,00
SV 14PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 16000,00	0,00
SV 14DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 16000,00	0,00
SV 15PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 16000,00	500,00
SV 15DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 16000,00	0,00
SV 16PU	SV_ Timer Pickup (cyc)	Range = 0,00 to 16000,00	500,00
SV 16DO	SV_ Timer Dropout (cyc)	Range = 0,00 to 16000,00	0,00
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Global Top			
Setting	Description	Range	Value
PTCONN	Phase PT Connection	Select: WYE, DELTA, SINGLE	WYE
VSCONN	VS Channel Input	Select: VS, 3V0	VS
TGR	Group Change Delay (cyc)	Range = 0,00 to 16000,00	0,00
NFREQ	Nominal Frequency (Hz)	Select: 50, 60	50
PHROT	Phase Rotation	Select: ABC, ACB	ABC
DATE_F	Date Format	Select: MDY, YMD	MDY
FP_TO	Front Panel Timeout (mins)	Range = 1 to 30, OFF	15
SCROLLD	Display Update Rate in seconds (seconds)	Range = 1 to 60	2
FPNGD	Front Panel Neutral/Ground Display	Select: OFF, IN, IG	IG
METHRES	Meter Cutoff Threshold	Select: Y, N, E	Y
LER	Length of Event Report (cyc)	Select: 15, 30, 60	60
PRE	Cycle Length of Prefault in Event Report (cyc)	Range = 1 to 59	15
FLTDISP	Fault Current to Display	Select: FL, MAX	MAX
DCLOP	DC Battery LO Voltage Pickup (V dc)	Range = 20,00 to 300,00, OFF	OFF
DCHIP	DC Battery HI Voltage Pickup (V dc)	Range = 20,00 to 300,00, OFF	OFF
IN101D	Input IN_ Debounce cycles (cyc)	Range = 0,00 to 2,00, AC	0,50
IN102D	Input IN_ Debounce cycles (cyc)	Range = 0,00 to 2,00, AC	0,50
IN103D	Input IN_ Debounce cycles (cyc)	Range = 0,00 to 2,00, AC	0,50
IN104D	Input IN_ Debounce cycles (cyc)	Range = 0,00 to 2,00, AC	0,50
IN105D	Input IN_ Debounce cycles (cyc)	Range = 0,00 to 2,00, AC	0,50
IN106D	Input IN_ Debounce cycles (cyc)	Range = 0,00 to 2,00, AC	0,50
IN201D	Input IN_ Debounce cycles (cyc)	Range = 0,00 to 2,00, AC	0,50
IN202D	Input IN_ Debounce cycles (cyc)	Range = 0,00 to 2,00, AC	0,50
IN203D	Input IN_ Debounce cycles (cyc)	Range = 0,00 to 2,00, AC	0,50
IN204D	Input IN_ Debounce cycles (cyc)	Range = 0,00 to 2,00, AC	0,50
IN205D	Input IN_ Debounce cycles (cyc)	Range = 0,00 to 2,00, AC	0,50
IN206D	Input IN_ Debounce cycles (cyc)	Range = 0,00 to 2,00, AC	0,50
IN207D	Input IN_ Debounce cycles (cyc)	Range = 0,00 to 2,00, AC	0,50
IN208D	Input IN_ Debounce cycles (cyc)	Range = 0,00 to 2,00, AC	0,50
EBMON	Breaker Monitor	Select: Y, N	N
LED12L	Trip latch LED 12	Select: Y, N	Y
LED13L	Trip latch LED 13	Select: Y, N	Y
LED14L	Trip latch LED 14	Select: Y, N	Y
LED15L	Trip latch LED 15	Select: Y, N	Y
LED16L	Trip latch LED 16	Select: Y, N	Y
LED17L	Trip latch LED 17	Select: Y, N	Y

LED18L	Trip latch LED 18	Select: Y, N	Y
LED19L	Trip latch LED 19	Select: Y, N	N
LED20L	Trip latch LED 20	Select: Y, N	N
LED21L	Trip latch LED 21	Select: Y, N	N
LED25L	Trip latch LED 25	Select: Y, N	Y
LED26L	Trip latch LED 26	Select: Y, N	Y
RSTLED	Reset trip-latched LEDs on reclose	Select: Y, Y1, N, N1	Y
PB9D	PB9 time delay (cyc)	Range = 0,00 to 3600,00	0,00
PB10D	PB10 time delay (cyc)	Range = 0,00 to 3600,00	0,00
EPMU	Synchronized Phasor Measurement	Select: Y, N	N
EVELOCK	Event Summary Lock Period in Seconds (seconds)	Range = 0 to 1000	0
DNPSRC	DNP Session Time Base	Select: LOCAL, UTC	LOCAL
BOOPTCC	DNP BO Close/Trip Behavior	Select: SET, PULSE	SET
BOOPPUL	DNP BO Pulse On Behavior	Select: SET, PULSE	SET
IRIGC	IRIG-B Control Bits Definition	Select: NONE, C37.118	NONE
UTC_OFF	Offset from UTC (hr)	Range = -24,00 to 24,00	0,00
DST_BEGM	Month To Begin DST	Range = 1 to 12, NA	NA
Global			

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Logic 1 Top			
Setting	Description	Range	Value
TR	Other Trip Conditions	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	51P1T + 51G1T
TRQUAL	Qualified Trip Equation	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TRCOMM	Communications-Assisted Trip Conditions	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TRSOTF	Switch-Onto-Fault Trip Conditions	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DTT	Direct Transfer Trip Conditions	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
ULTR	Unlatch Trip Conditions	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!(51P1 + 51G1)
PT1	Permissive Trip 1 (used for ECOMM = POTT, DCUB1, or DCUB2)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LOG1	Loss-of-Guard 1 (used for ECOMM = DCUB1 or DCUB2)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
PT2	Permissive Trip 2 (used for ECOMM = DCUB2)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LOG2	Loss-of-Guard 2 (used for ECOMM = DCUB2)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
BT	Block Trip (used for ECOMM = DCB)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
52A	Circuit Breaker Status	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	IN102 * !IN101
		Valid range = Boolean	

CL	Close Conditions (other than automatic reclosing or CLOSE command)	equation using word bit elements and the legal operators: !/\() * +	0
ULCL	Unlatch Close Conditions	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	TRIP + 52A + !LT5
79RI	Reclose Initiate	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	TRIP
79RIS	Reclose Initiate Supervision	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	52A + 79CY
79DTL	Drive-to-Lockout	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	OC + !LT2 + LOP * 52A
79DLS	Drive-to-Last Shot	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	79LO
79SKP	Skip Shot	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
79STL	Stall Open Interval Timing	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	TRIP
79BRS	Block Reset Timing	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
79SEQ	Sequence Coordination	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
79CLS	Reclose Supervision	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	1
SET1	Set Latch Bit 1	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	!LT1 * PB1 * LT4
RST1	Reset Latch Bit 1	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	LT1 * PB1 * LT4
SET2	Set Latch Bit 2	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	!LT2 * LT5 * PB2 * LT4 + LT3 * /RB4

RST2	Reset Latch Bit 2	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	$LT2 * PB2 * LT4 + LT3 * /RB5$
SET3	Set Latch Bit 3	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	$!LT3 * PB3$
RST3	Reset Latch Bit 3	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	$LT3 * PB3$
SET4	Set Latch Bit 4	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	$!LT4 * PB5$
RST4	Reset Latch Bit 4	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	$LT4 * PB5$
SET5	Set Latch Bit 5	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	$!LT5 * PB6 * LT4 * !LT3 + LT3 * /RB2$
RST5	Reset Latch Bit 5	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	$LT5 * PB6 * LT4 * !LT3 + LT3 * /RB3$
SET6	Set Latch Bit 6	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	$!LT6 * PB7 * LT4$
RST6	Reset Latch Bit 6	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	$LT6 * PB7 * LT4$
SET7	Set Latch Bit 7	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	$!LT7 * PB8 * LT4$
RST7	Reset Latch Bit 7	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	$LT7 * PB8 * LT4$
SET8	Set Latch Bit 8	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	$!LT8 * /RB2$
RST8	Reset Latch Bit 8	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	$LT8 * /RB3$
SET9	Set Latch Bit 9	Valid range = Boolean equation using word bit elements and the legal	$!LT9 * PB4 * !LT3 + LT3 * /RB7$

		operators: !/\(\) * +	
RST9	Reset Latch Bit 9	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	LT9 * PB4 * !LT3 + LT3 * /RB6
SET10	Set Latch Bit 10	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
RST10	Reset Latch Bit 10	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
SET11	Set Latch Bit 11	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
RST11	Reset Latch Bit 11	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
SET12	Set Latch Bit 12	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
RST12	Reset Latch Bit 12	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
SET13	Set Latch Bit 13	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
RST13	Reset Latch Bit 13	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
SET14	Set Latch Bit 14	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
RST14	Reset Latch Bit 14	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
SET15	Set Latch Bit 15	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
RST15	Reset Latch Bit 15	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
		Valid range = Boolean equation using word bit	

SET16	Set Latch Bit 16	elements and the legal operators: !/\(\) * +	0
RST16	Reset Latch Bit 16	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
67P1TC	Level 1 Phase	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
67P2TC	Level 2 Phase	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
67P3TC	Level 3 Phase	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
67P4TC	Level 4 Phase	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
67N1TC	Level 1 Neutral Ground	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
67N2TC	Level 2 Neutral Ground	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
67N3TC	Level 3 Neutral Ground	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
67N4TC	Level 4 Neutral Ground	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
67G1TC	Level 1 Residual Ground	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
67G2TC	Level 2 Residual Ground	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
67G3TC	Level 3 Residual Ground	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
67G4TC	Level 4 Residual Ground	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
		Valid range = Boolean	

67Q1TC	Level 1 Negative-Sequence	equation using word bit elements and the legal operators: !/\(\) * +	1
67Q2TC	Level 2 Negative-Sequence	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
67Q3TC	Level 3 Negative-Sequence	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
67Q4TC	Level 4 Negative-Sequence	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
51P1TC	Phase	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
51N1TC	Neutral Ground	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
51G1TC	Residual Ground	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	LT 1
51P2TC	Phase	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
51N2TC	Neutral Ground	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
51G2TC	Residual Ground	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
51QTC	Negative-Sequence	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
HBL2TC	Second Harmonic Blocking	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
81RTC	Rate-of-Change-of-Frequency	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!27B81
BFI	Three-Pole Breaker Failure Initiate	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0

BFTR	Breaker Failure Trip	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
BFULTR	Breaker Failure Unlatch Trip	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 1	Logic Variable Equation 1	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	(IN206 * IN101) + (IN205 * IN102)
LV 2	Logic Variable Equation 2	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	(IN208 * IN101) + (IN207 * IN102)
LV 3	Logic Variable Equation 3	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 4	Logic Variable Equation 4	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 5	Logic Variable Equation 5	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 6	Logic Variable Equation 6	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 7	Logic Variable Equation 7	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 8	Logic Variable Equation 8	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 9	Logic Variable Equation 9	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 10	Logic Variable Equation 10	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 11	Logic Variable Equation 11	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 12	Logic Variable Equation 12	Valid range = Boolean equation using word bit elements and the legal	0

		operators: !/\(\) * +	
LV 13	Logic Variable Equation 13	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 14	Logic Variable Equation 14	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 15	Logic Variable Equation 15	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 16	Logic Variable Equation 16	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 17	Logic Variable Equation 17	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 18	Logic Variable Equation 18	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 19	Logic Variable Equation 19	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 20	Logic Variable Equation 20	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 21	Logic Variable Equation 21	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 22	Logic Variable Equation 22	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 23	Logic Variable Equation 23	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 24	Logic Variable Equation 24	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 25	Logic Variable Equation 25	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
		Valid range = Boolean equation using word bit	

LV 26	Logic Variable Equation 26	elements and the legal operators: !/\(\) * +	0
LV 27	Logic Variable Equation 27	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 28	Logic Variable Equation 28	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 29	Logic Variable Equation 29	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 30	Logic Variable Equation 30	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 31	Logic Variable Equation 31	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 32	Logic Variable Equation 32	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
SV 1	SE Logic Control Equation Variable 1	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	RCSF
SV 2	SE Logic Control Equation Variable 2	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	LT 2
SV 3	SE Logic Control Equation Variable 3	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!LT 2
SV 4	SE Logic Control Equation Variable 4	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	CLOSE
SV 5	SE Logic Control Equation Variable 5	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	SV 15T
SV 6	SE Logic Control Equation Variable 6	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	SV 16T
SV 7	SE Logic Control Equation Variable 7	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!LT 5
		Valid range = Boolean	

SV 8	SE Logic Control Equation Variable 8	equation using word bit elements and the legal operators: !/\(\) * +	LT5
SV 9	SE Logic Control Equation Variable 9	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!LT9
SV 10	SE Logic Control Equation Variable 10	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	LT9
SV 11	SE Logic Control Equation Variable 11	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!LV 1
SV 12	SE Logic Control Equation Variable 12	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!LV 2
SV 13	SE Logic Control Equation Variable 13	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
SV 14	SE Logic Control Equation Variable 14	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!TIRIG
SV 15	SE Logic Control Equation Variable 15	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!LV 1
SV 16	SE Logic Control Equation Variable 16	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!LV 2
OUT 101	Output Contact 101	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	TRIP
OUT 102	Output Contact 102	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	TRIP
OUT 103	Output Contact 103	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	TRIP
OUT 104	Output Contact 104	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	51P1 + 51G1 + 51P2 + 51G2
OUT 105	Output Contact 105	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	CLOSE

OUT106	Output Contact 106	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	SV 11T
OUT107	Output Contact 107	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	SV 12T
ALRMOUT	Output Contact ALARM	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!(SALARM + HALARM)
OUT201	Output Contact 201	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	SV 11T
OUT202	Output Contact 202	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	SV 12T
OUT203	Output Contact 203	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	TRIP
OUT204	Output Contact 204	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
OUT205	Output Contact 205	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
OUT206	Output Contact 206	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
OUT207	Output Contact 207	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
OUT208	Output Contact 208	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
OUT209	Output Contact 209	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
OUT210	Output Contact 210	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
OUT211	Output Contact 211	Valid range = Boolean equation using word bit elements and the legal	0

		operators: !/\(\) * +	
OUT212	Output Contact 212	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LED1	(Ground Enabled)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	LT 1
LED2	(Reclose Enabled)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	LT 2
LED3	(Remote Enabled)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	LT 3
LED4	(Alternate Settings)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!SG1 * SG2
LED5	(Lock)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!LT4
LED6	(Hot Line Tag)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!LT5
LED7	(Aux. 1)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LED8	(Aux. 2)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LED9	(Breaker Closed)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LED10	(Breaker Open)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LED12	(Trip)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	TRIP
LED13	(Inst)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	FAULT * !SV 1T
		Valid range = Boolean equation using word bit	

LED14	(Comm)	elements and the legal operators: !/\(\) * +	COMMT
LED15	(SOTF)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	SOTFT
LED16	(50)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	67P1
LED17	(51)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	51P1T + 51G1T
LED18	(81)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	81D1T
LED19	(Reset)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	79RS
LED20	(Cycle)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	79CY
LED21	(Lockout)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	79LO
LED25	(G)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	51G1
LED26	(N)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DP1	Display Point 1	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DP2	Display Point 2	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DP3	Display Point 3	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DP4	Display Point 4	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
		Valid range = Boolean	

DP5	Display Point 5	equation using word bit elements and the legal operators: !/\(\) * +	0
DP6	Display Point 6	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DP7	Display Point 7	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DP8	Display Point 8	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DP9	Display Point 9	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DP10	Display Point 10	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DP11	Display Point 11	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DP12	Display Point 12	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DP13	Display Point 13	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DP14	Display Point 14	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DP15	Display Point 15	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DP16	Display Point 16	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
SS1	Select Setting Group 1	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	LT5 * LT9 * LT4
SS2	Select Setting Group 2	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!LT9 * LT5 * LT4

SS3	Select Setting Group 3	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	!LT5 * LT4
SS4	Select Setting Group 4	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
SS5	Select Setting Group 5	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
SS6	Select Setting Group 6	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
ER	Event Report Trigger Conditions	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	/51P1 + /51G1 + /52A
FAULT	Fault Indication	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	51P1 + 51G1 + 52A
BSYNCH	Block Synchronism Check Elements	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	52A
CLMON	Close Bus Monitor	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
BKMON	Breaker Monitor Initiation	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	TRIP
BKCLS	Breaker Monitor Close Initiation	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	CLOSE
E32IV	Enable for V0 Polarized and IN Polarized Elements	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	1
LOPBLK	Block Loss-of-Potential Conditions	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
SALARM	Software Alarm Conditions	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	BADPASS + CHGPASS + SETCHG + GRPSW + ACCESSP + PASNVAL
		Valid range = Boolean	

TMB1A	Channel A, Transmit Bit 1	equation using word bit elements and the legal operators: !/\(\) * +	0
TMB2A	Channel A, Transmit Bit 2	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TMB3A	Channel A, Transmit Bit 3	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TMB4A	Channel A, Transmit Bit 4	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TMB5A	Channel A, Transmit Bit 5	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TMB6A	Channel A, Transmit Bit 6	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TMB7A	Channel A, Transmit Bit 7	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TMB8A	Channel A, Transmit Bit 8	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TMB1B	Channel B, Transmit Bit 1	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TMB2B	Channel B, Transmit Bit 2	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TMB3B	Channel B, Transmit Bit 3	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TMB4B	Channel B, Transmit Bit 4	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TMB5B	Channel B, Transmit Bit 5	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TMB6B	Channel B, Transmit Bit 6	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0

TMB7B	Channel B, Transmit Bit 7	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
TMB8B	Channel B, Transmit Bit 8	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
RSTTRGT	Target Reset Equation	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	RB1
RST_DEM	Reset Demand Data Equation	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
RST_PDM	Reset Peak Demand Data Equation	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
RST_BK	Reset Breaker Monitor Data Equation	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
RST_HIS	Reset Event History Equation	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
RST_ENE	Reset Energy Data Equation	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
RST_MML	Reset Max/Min Data Equation	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
RST_HAL	Reset Hardware Alarm	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
RSTDNPE	Reset DNP Event Queue	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
PMTRIG	PM Trigger Equation	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
TREA1	Trigger Reason 1 Equation	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
TREA2	Trigger Reason 2 Equation	Valid range = Boolean equation using word bit elements and the legal	0

		operators: !/\(\) * +	
TREA3	Trigger Reason 3 Equation	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TREA4	Trigger Reason 4 Equation	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
Logic 1			
			Top

Logic 3 Top			
Setting	Description	Range	Value
TR	Other Trip Conditions	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	51P1T + 51G1T
TRQUAL	Qualified Trip Equation	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TRCOMM	Communications-Assisted Trip Conditions	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TRSOTF	Switch-Onto-Fault Trip Conditions	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DTT	Direct Transfer Trip Conditions	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
ULTR	Unlatch Trip Conditions	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!(51P1 + 51G1)
PT1	Permissive Trip 1 (used for ECOMM = POTT, DCUB1, or DCUB2)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LOG1	Loss-of-Guard 1 (used for ECOMM = DCUB1 or DCUB2)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
PT2	Permissive Trip 2 (used for ECOMM = DCUB2)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LOG2	Loss-of-Guard 2 (used for ECOMM = DCUB2)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
BT	Block Trip (used for ECOMM = DCB)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
52A	Circuit Breaker Status	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	IN102 * !IN101
		Valid range = Boolean	

CL	Close Conditions (other than automatic reclosing or CLOSE command)	equation using word bit elements and the legal operators: !/\() * +	0
ULCL	Unlatch Close Conditions	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	TRIP + 52A + !LT5
79RI	Reclose Initiate	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
79RIS	Reclose Initiate Supervision	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	1
79DTL	Drive-to-Lockout	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	!LT2 + !LT5
79DLS	Drive-to-Last Shot	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	79LO
79SKP	Skip Shot	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
79STL	Stall Open Interval Timing	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
79BRS	Block Reset Timing	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
79SEQ	Sequence Coordination	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
79CLS	Reclose Supervision	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	1
SET1	Set Latch Bit 1	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	!LT1 * PB1 * LT4
RST1	Reset Latch Bit 1	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	LT1 * PB1 * LT4
SET2	Set Latch Bit 2	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	!LT2 * LT5 * PB2 * LT4 + LT3 * /RB4

RST2	Reset Latch Bit 2	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	$LT2 * PB2 * LT4 + !LT5 + !(79RS + 79CY + 79LO) + LT3 * /RB5$
SET3	Set Latch Bit 3	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	$!LT3 * PB3$
RST3	Reset Latch Bit 3	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	$LT3 * PB3$
SET4	Set Latch Bit 4	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	$!LT4 * PB5$
RST4	Reset Latch Bit 4	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	$LT4 * PB5$
SET5	Set Latch Bit 5	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	$!LT5 * PB6 * LT4 * !LT3 + LT3 * /RB2$
RST5	Reset Latch Bit 5	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	$LT5 * PB6 * LT4 * !LT3 + LT3 * /RB3$
SET6	Set Latch Bit 6	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	$!LT6 * PB7 * LT4$
RST6	Reset Latch Bit 6	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	$LT6 * PB7 * LT4$
SET7	Set Latch Bit 7	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	$!LT7 * PB8 * LT4$
RST7	Reset Latch Bit 7	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	$LT7 * PB8 * LT4$
SET8	Set Latch Bit 8	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	$!LT8 * /RB2$
RST8	Reset Latch Bit 8	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	$LT8 * /RB3$
SET9	Set Latch Bit 9	Valid range = Boolean equation using word bit elements and the legal	$!LT9 * PB4 * !LT3 + LT3 * /RB7$

		operators: !/\(\) * +	
RST9	Reset Latch Bit 9	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	LT9 * PB4 * !LT3 + LT3 * /RB6
SET10	Set Latch Bit 10	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
RST10	Reset Latch Bit 10	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
SET11	Set Latch Bit 11	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
RST11	Reset Latch Bit 11	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
SET12	Set Latch Bit 12	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
RST12	Reset Latch Bit 12	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
SET13	Set Latch Bit 13	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
RST13	Reset Latch Bit 13	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
SET14	Set Latch Bit 14	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
RST14	Reset Latch Bit 14	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
SET15	Set Latch Bit 15	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
RST15	Reset Latch Bit 15	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
		Valid range = Boolean equation using word bit	

SET16	Set Latch Bit 16	elements and the legal operators: !/\(\) * +	0
RST16	Reset Latch Bit 16	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
67P1TC	Level 1 Phase	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
67P2TC	Level 2 Phase	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
67P3TC	Level 3 Phase	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
67P4TC	Level 4 Phase	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
67N1TC	Level 1 Neutral Ground	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
67N2TC	Level 2 Neutral Ground	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
67N3TC	Level 3 Neutral Ground	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
67N4TC	Level 4 Neutral Ground	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
67G1TC	Level 1 Residual Ground	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
67G2TC	Level 2 Residual Ground	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
67G3TC	Level 3 Residual Ground	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
67G4TC	Level 4 Residual Ground	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
		Valid range = Boolean	

67Q1TC	Level 1 Negative-Sequence	equation using word bit elements and the legal operators: !/\(\) * +	1
67Q2TC	Level 2 Negative-Sequence	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
67Q3TC	Level 3 Negative-Sequence	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
67Q4TC	Level 4 Negative-Sequence	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
51P1TC	Phase	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
51N1TC	Neutral Ground	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
51G1TC	Residual Ground	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	LT 1
51P2TC	Phase	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
51N2TC	Neutral Ground	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
51G2TC	Residual Ground	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
51QTC	Negative-Sequence	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
HBL2TC	Second Harmonic Blocking	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	1
81RTC	Rate-of-Change-of-Frequency	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!27B81
BFI	Three-Pole Breaker Failure Initiate	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0

BFTR	Breaker Failure Trip	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
BFULTR	Breaker Failure Unlatch Trip	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 1	Logic Variable Equation 1	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	(IN206 * IN101) + (IN205 * IN102)
LV 2	Logic Variable Equation 2	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	(IN208 * IN101) + (IN207 * IN102)
LV 3	Logic Variable Equation 3	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 4	Logic Variable Equation 4	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 5	Logic Variable Equation 5	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 6	Logic Variable Equation 6	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 7	Logic Variable Equation 7	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 8	Logic Variable Equation 8	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 9	Logic Variable Equation 9	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 10	Logic Variable Equation 10	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 11	Logic Variable Equation 11	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 12	Logic Variable Equation 12	Valid range = Boolean equation using word bit elements and the legal	0

		operators: !/\(\) * +	
LV 13	Logic Variable Equation 13	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 14	Logic Variable Equation 14	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 15	Logic Variable Equation 15	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 16	Logic Variable Equation 16	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 17	Logic Variable Equation 17	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 18	Logic Variable Equation 18	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 19	Logic Variable Equation 19	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 20	Logic Variable Equation 20	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 21	Logic Variable Equation 21	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 22	Logic Variable Equation 22	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 23	Logic Variable Equation 23	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 24	Logic Variable Equation 24	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 25	Logic Variable Equation 25	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
		Valid range = Boolean equation using word bit	

LV 26	Logic Variable Equation 26	elements and the legal operators: !/\(\) * +	0
LV 27	Logic Variable Equation 27	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 28	Logic Variable Equation 28	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 29	Logic Variable Equation 29	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 30	Logic Variable Equation 30	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 31	Logic Variable Equation 31	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LV 32	Logic Variable Equation 32	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
SV 1	SE Logic Control Equation Variable 1	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	RCSF
SV 2	SE Logic Control Equation Variable 2	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	LT 2
SV 3	SE Logic Control Equation Variable 3	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!LT 2
SV 4	SE Logic Control Equation Variable 4	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	CLOSE
SV 5	SE Logic Control Equation Variable 5	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	SV 15T
SV 6	SE Logic Control Equation Variable 6	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	SV 16T
SV 7	SE Logic Control Equation Variable 7	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!LT 5
		Valid range = Boolean	

SV 8	SE Logic Control Equation Variable 8	equation using word bit elements and the legal operators: !/\(\) * +	LT5
SV 9	SE Logic Control Equation Variable 9	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!LT9
SV 10	SE Logic Control Equation Variable 10	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	LT9
SV 11	SE Logic Control Equation Variable 11	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!LV 1
SV 12	SE Logic Control Equation Variable 12	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!LV 2
SV 13	SE Logic Control Equation Variable 13	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
SV 14	SE Logic Control Equation Variable 14	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!TIRIG
SV 15	SE Logic Control Equation Variable 15	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!LV 1
SV 16	SE Logic Control Equation Variable 16	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!LV 2
OUT 101	Output Contact 101	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	TRIP
OUT 102	Output Contact 102	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	TRIP
OUT 103	Output Contact 103	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	TRIP
OUT 104	Output Contact 104	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	51P1 + 51G1
OUT 105	Output Contact 105	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	CLOSE

OUT106	Output Contact 106	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	SV 11T
OUT107	Output Contact 107	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	SV 12T
ALRMOUT	Output Contact ALARM	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!(SALARM + HALARM)
OUT201	Output Contact 201	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	SV 11T
OUT202	Output Contact 202	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	SV 12T
OUT203	Output Contact 203	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	TRIP
OUT204	Output Contact 204	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
OUT205	Output Contact 205	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
OUT206	Output Contact 206	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
OUT207	Output Contact 207	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
OUT208	Output Contact 208	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
OUT209	Output Contact 209	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
OUT210	Output Contact 210	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
OUT211	Output Contact 211	Valid range = Boolean equation using word bit elements and the legal	0

		operators: !/\(\) * +	
OUT212	Output Contact 212	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LED1	(Ground Enabled)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	LT1
LED2	(Reclose Enabled)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	LT2
LED3	(Remote Enabled)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	LT3
LED4	(Alternate Settings)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!SG1 * SG2
LED5	(Lock)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!LT4
LED6	(Hot Line Tag)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!LT5
LED7	(Aux. 1)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LED8	(Aux. 2)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LED9	(Breaker Closed)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LED10	(Breaker Open)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
LED12	(Trip)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	TRIP
LED13	(Inst)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	FAULT * !SV1T
		Valid range = Boolean equation using word bit	

LED14	(Comm)	elements and the legal operators: !/\(\) * +	COMMT
LED15	(SOTF)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	SOTFT
LED16	(50)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	67P1
LED17	(51)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	51P1T + 51G1T
LED18	(81)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	81D1T
LED19	(Reset)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	79RS
LED20	(Cycle)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	79CY
LED21	(Lockout)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	79LO
LED25	(G)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	51G1
LED26	(N)	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DP1	Display Point 1	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DP2	Display Point 2	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DP3	Display Point 3	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DP4	Display Point 4	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
		Valid range = Boolean	

DP5	Display Point 5	equation using word bit elements and the legal operators: !/\(\) * +	0
DP6	Display Point 6	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DP7	Display Point 7	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DP8	Display Point 8	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DP9	Display Point 9	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DP10	Display Point 10	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DP11	Display Point 11	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DP12	Display Point 12	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DP13	Display Point 13	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DP14	Display Point 14	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DP15	Display Point 15	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
DP16	Display Point 16	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
SS1	Select Setting Group 1	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	LT5 * LT9 * LT4
SS2	Select Setting Group 2	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	!LT9 * LT5 * LT4

SS3	Select Setting Group 3	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	!LT5 * LT4
SS4	Select Setting Group 4	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
SS5	Select Setting Group 5	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
SS6	Select Setting Group 6	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
ER	Event Report Trigger Conditions	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	/51P1 + /51G1 + /52A
FAULT	Fault Indication	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	51P1 + 51G1 + 52A
BSYNCH	Block Synchronism Check Elements	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	52A
CLMON	Close Bus Monitor	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
BKMON	Breaker Monitor Initiation	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	TRIP
BKCLS	Breaker Monitor Close Initiation	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	CLOSE
E32IV	Enable for V0 Polarized and IN Polarized Elements	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	1
LOPBLK	Block Loss-of-Potential Conditions	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
SALARM	Software Alarm Conditions	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	BADPASS + CHGPASS + SETCHG + GRPSW + ACCESSP + PASNVAL
		Valid range = Boolean	

TMB1A	Channel A, Transmit Bit 1	equation using word bit elements and the legal operators: !/\(\) * +	0
TMB2A	Channel A, Transmit Bit 2	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TMB3A	Channel A, Transmit Bit 3	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TMB4A	Channel A, Transmit Bit 4	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TMB5A	Channel A, Transmit Bit 5	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TMB6A	Channel A, Transmit Bit 6	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TMB7A	Channel A, Transmit Bit 7	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TMB8A	Channel A, Transmit Bit 8	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TMB1B	Channel B, Transmit Bit 1	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TMB2B	Channel B, Transmit Bit 2	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TMB3B	Channel B, Transmit Bit 3	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TMB4B	Channel B, Transmit Bit 4	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TMB5B	Channel B, Transmit Bit 5	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TMB6B	Channel B, Transmit Bit 6	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0

TMB7B	Channel B, Transmit Bit 7	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
TMB8B	Channel B, Transmit Bit 8	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
RSTTRGT	Target Reset Equation	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	RB1
RST_DEM	Reset Demand Data Equation	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
RST_PDM	Reset Peak Demand Data Equation	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
RST_BK	Reset Breaker Monitor Data Equation	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
RST_HIS	Reset Event History Equation	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
RST_ENE	Reset Energy Data Equation	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
RST_MML	Reset Max/Min Data Equation	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
RST_HAL	Reset Hardware Alarm	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
RSTDNPE	Reset DNP Event Queue	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
PMTRIG	PM Trigger Equation	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
TREA1	Trigger Reason 1 Equation	Valid range = Boolean equation using word bit elements and the legal operators: !/\() * +	0
TREA2	Trigger Reason 2 Equation	Valid range = Boolean equation using word bit elements and the legal	0

		operators: !/\(\) * +	
TREA3	Trigger Reason 3 Equation	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
TREA4	Trigger Reason 4 Equation	Valid range = Boolean equation using word bit elements and the legal operators: !/\(\) * +	0
Logic 3			
			Top

Report Top			
Setting	Description	Range	Value
SER1	Sequential Events Recorder 1 Trigger List, 24 elements max. (enter NA or 0 to null)	Valid range = 0, NA or a list of relay elements.	50P1, 50G1, 51G1, 51P1, 51P1T, 51G1T, TRIP, IN205, IN206, IN207, IN208, OUT101, OUT102, OUT103, OUT104, OUT105, OUT106, OUT107, 67G1T
SER2	Sequential Events Recorder 2 Trigger List, 24 elements max. (enter NA or 0 to null)	Valid range = 0, NA or a list of relay elements.	CLOSE, 52A, CF, 79RS, 79CY, 79LO, SH0, SH1, SH2, SH3, SH4, PB9, CC, OPTMN, RCSE, RSTMN, OUT201, OUT202, OUT203, SG1, SG2, SG3
SER3	Sequential Events Recorder 3 Trigger List, 24 elements max. (enter NA or 0 to null)	Valid range = 0, NA or a list of relay elements.	SV 1, SV 2, SV 3, SV 4, SV 5, SV 6, SV 7, SV 8, SV 9, SV 10, SV 11, SV 12, SV 13, SV 14, SV 15, SV 16, IN104, IN105, IN205, IN206, IN207, IN208
LDLIST	Load Profile List, 15 elements max. (enter NA or 0 to null)	Valid range = 0, NA or a list of relay elements.	VA, VB, VC, IA, IB, IC, IN, I1, 3I0, 3I2
LDAR	Load Profile Acquisition Rate (minutes)	Select: 5, 10, 15, 30, 60	5
Report Top			

Text Top			
Setting	Description	Range	Value
NLB1	Local Bit LB_ Name(14 char; enter NA to null)	Range = ASCII string with a maximum length of 14.	NA
CLB1	Clear Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
SLB1	Set Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
PLB1	Pulse Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
NLB2	Local Bit LB_ Name(14 char; enter NA to null)	Range = ASCII string with a maximum length of 14.	NA
CLB2	Clear Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
SLB2	Set Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
PLB2	Pulse Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
NLB3	Local Bit LB_ Name(14 char; enter NA to null)	Range = ASCII string with a maximum length of 14.	NA
CLB3	Clear Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
SLB3	Set Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
PLB3	Pulse Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
NLB4	Local Bit LB_ Name(14 char; enter NA to null)	Range = ASCII string with a maximum length of 14.	NA
CLB4	Clear Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
SLB4	Set Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
PLB4	Pulse Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
NLB5	Local Bit LB_ Name(14 char; enter NA to null)	Range = ASCII string with a maximum length of 14.	NA
CLB5	Clear Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
SLB5	Set Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
PLB5	Pulse Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
NLB6	Local Bit LB_ Name(14 char; enter NA to null)	Range = ASCII string with a maximum length of 14.	NA
CLB6	Clear Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
		Range = ASCII string with	

SLB6	Set Local Bit LB_ Label(7 char; enter NA to null)	a maximum length of 7.	NA
PLB6	Pulse Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
NLB7	Local Bit LB_ Name(14 char; enter NA to null)	Range = ASCII string with a maximum length of 14.	NA
CLB7	Clear Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
SLB7	Set Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
PLB7	Pulse Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
NLB8	Local Bit LB_ Name(14 char; enter NA to null)	Range = ASCII string with a maximum length of 14.	NA
CLB8	Clear Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
SLB8	Set Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
PLB8	Pulse Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
NLB9	Local Bit LB_ Name(14 char; enter NA to null)	Range = ASCII string with a maximum length of 14.	NA
CLB9	Clear Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
SLB9	Set Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
PLB9	Pulse Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
NLB10	Local Bit LB_ Name(14 char; enter NA to null)	Range = ASCII string with a maximum length of 14.	NA
CLB10	Clear Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
SLB10	Set Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
PLB10	Pulse Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
NLB11	Local Bit LB_ Name(14 char; enter NA to null)	Range = ASCII string with a maximum length of 14.	NA
CLB11	Clear Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
SLB11	Set Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
PLB11	Pulse Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
NLB12	Local Bit LB_ Name(14 char; enter NA to null)	Range = ASCII string with a maximum length of 14.	NA
CLB12	Clear Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
SLB12	Set Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
PLB12	Pulse Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with	NA

		a maximum length of 7.	
NLB13	Local Bit LB_ Name(14 char; enter NA to null)	Range = ASCII string with a maximum length of 14.	NA
CLB13	Clear Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
SLB13	Set Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
PLB13	Pulse Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
NLB14	Local Bit LB_ Name(14 char; enter NA to null)	Range = ASCII string with a maximum length of 14.	NA
CLB14	Clear Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
SLB14	Set Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
PLB14	Pulse Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
NLB15	Local Bit LB_ Name(14 char; enter NA to null)	Range = ASCII string with a maximum length of 14.	NA
CLB15	Clear Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
SLB15	Set Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
PLB15	Pulse Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
NLB16	Local Bit LB_ Name(14 char; enter NA to null)	Range = ASCII string with a maximum length of 14.	NA
CLB16	Clear Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
SLB16	Set Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
PLB16	Pulse Local Bit LB_ Label(7 char; enter NA to null)	Range = ASCII string with a maximum length of 7.	NA
DP1_1	Display Point DP_ Label(displays if DP_ = logical 1; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	NA
DP1_0	Display Point DP_ Label(displays if DP_ = logical 0; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	52ET2
DP2_1	Display Point DP_ Label(displays if DP_ = logical 1; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	NA
DP2_0	Display Point DP_ Label(displays if DP_ = logical 0; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	SE FRUTILLAR
DP3_1	Display Point DP_ Label(displays if DP_ = logical 1; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	NA
DP3_0	Display Point DP_ Label(displays if DP_ = logical 0; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	NA
DP4_1	Display Point DP_ Label(displays if DP_ = logical 1; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	NA
DP4_0	Display Point DP_ Label(displays if DP_ = logical 0; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	NA
DP5_1	Display Point DP_ Label(displays if DP_ = logical 1; 16	Range = ASCII string with	NA

	char; enter NA to null)	a maximum length of 16.	
DP5_0	Display Point DP_ Label(displays if DP_ = logical 0; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	NA
DP6_1	Display Point DP_ Label(displays if DP_ = logical 1; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	NA
DP6_0	Display Point DP_ Label(displays if DP_ = logical 0; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	NA
DP7_1	Display Point DP_ Label(displays if DP_ = logical 1; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	NA
DP7_0	Display Point DP_ Label(displays if DP_ = logical 0; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	NA
DP8_1	Display Point DP_ Label(displays if DP_ = logical 1; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	NA
DP8_0	Display Point DP_ Label(displays if DP_ = logical 0; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	NA
DP9_1	Display Point DP_ Label(displays if DP_ = logical 1; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	NA
DP9_0	Display Point DP_ Label(displays if DP_ = logical 0; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	NA
DP10_1	Display Point DP_ Label(displays if DP_ = logical 1; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	NA
DP10_0	Display Point DP_ Label(displays if DP_ = logical 0; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	NA
DP11_1	Display Point DP_ Label(displays if DP_ = logical 1; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	NA
DP11_0	Display Point DP_ Label(displays if DP_ = logical 0; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	NA
DP12_1	Display Point DP_ Label(displays if DP_ = logical 1; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	NA
DP12_0	Display Point DP_ Label(displays if DP_ = logical 0; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	NA
DP13_1	Display Point DP_ Label(displays if DP_ = logical 1; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	NA
DP13_0	Display Point DP_ Label(displays if DP_ = logical 0; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	NA
DP14_1	Display Point DP_ Label(displays if DP_ = logical 1; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	NA
DP14_0	Display Point DP_ Label(displays if DP_ = logical 0; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	NA
DP15_1	Display Point DP_ Label(displays if DP_ = logical 1; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	NA
DP15_0	Display Point DP_ Label(displays if DP_ = logical 0; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	NA
DP16_1	Display Point DP_ Label(displays if DP_ = logical 1; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	NA
DP16_0	Display Point DP_ Label(displays if DP_ = logical 0; 16 char; enter NA to null)	Range = ASCII string with a maximum length of 16.	NA
79LL	Last Shot Label(14 char; enter NA to null)	Range = ASCII string with a maximum length of 14.	SET RECLOSURES
79SL	Shot Counter Label(14 char; enter NA to null)	Range = ASCII string with	RECLOSE COUNT

	a maximum length of 14.	
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SEL -787 Settings Report

Overview Information

File Name	87T2 Dejado GRO1 ACTIVO
RDB	Frutillar T2 26-08-2021.rdb
Device	SEL-787
Setting Version Number	003
Part Number	07870X 1A 1A 1A 0X 810630
Firmware ID	SEL-787-R209-V 0-Z003001-D20140714
SEL Boot Firmware ID	BOOTLDR-R501-V 0-Z000000-D20140224

Settings

[Global](#)

[Group 1](#)

[Logic 1](#)

[Report](#)

Settings Legend

Visible Setting

Hidden Setting

Invalid Setting

Global			
Setting	Description	Range	Value
PHROT	Phase Rotation	Select: ABC, ACB	ABC
FNOM	Rated Frequency (Hz)	Select: 50, 60	50
DATE_F	Date Format	Select: MDY, YMD, DMY	DMY
FAULT	Fault Condition (SEL logic)		51P1P OR 51P2P OR 51G1P OR 51G2P OR 51N1P OR TRIP
EMP	Messenger Points Enable	Range = N,1-32	N
TGR	Group Change Delay (seconds)	Range = 0-400	1
SS1	Select Settings Group1 (SEL logic)		1
SS2	Select Settings Group2 (SEL logic)		0
SS3	Select Settings Group3 (SEL logic)		0
SS4	Select Settings Group4 (SEL logic)		0
IRIGC	IRIG-B Control Bits Definition	Select: NONE, C37.118	NONE
UTC_OFF	Offset from UTC (hours, in 0.25 hour increments)	Range = -24.00 to 24.00	0,00
DST_BEGM	Month To Begin DST	Range = OFF,1-12	OFF
EPMU	Enable Synchronized Phasor Measurement	Select: Y, N	N
52ABF	52A Interlock in BF Logic	Select: Y, N	N
BFD1	Breaker 1 Failure Delay (seconds)	Range = 0.00-2.00	0,50
BFD2	Breaker 2 Failure Delay (seconds)	Range = 0.00-2.00	0,50
BFI1	Breaker 1 Failure Initiate (SEL logic)		R_TRIG TRIP1 OR R_TRIG TRIPX FMR
BFI2	Breaker 2 Failure Initiate (SEL logic)		R_TRIG TRIP2 OR R_TRIG TRIPX FMR
THFLTD	Select Through-Fault Winding	Select: OFF, 1, 2	OFF
IN101D	IN101 Debounce (milliseconds)	Range = A C,0-65000	10
IN102D	IN102 Debounce (milliseconds)	Range = A C,0-65000	10
IN301D	IN301 Debounce (milliseconds)	Range = A C,0-65000	10
IN302D	IN302 Debounce (milliseconds)	Range = A C,0-65000	10
IN303D	IN303 Debounce (milliseconds)	Range = A C,0-65000	10
IN304D	IN304 Debounce (milliseconds)	Range = A C,0-65000	10
IN401D	IN401 Debounce (milliseconds)	Range = A C,0-65000	10
IN402D	IN402 Debounce (milliseconds)	Range = A C,0-65000	10
IN403D	IN403 Debounce (milliseconds)	Range = A C,0-65000	10
IN404D	IN404 Debounce (milliseconds)	Range = A C,0-65000	10
RSTTRGT	Reset Targets (SEL logic)		0
RSTENRGY	Reset Energy (SEL logic)		0
RSTMX MN	Reset Max/Min (SEL logic)		0

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RSTDDEM	Reset Demand (SEL logic)		0
RSTPKDEM	Reset Peak Demand (SEL logic)		0
DSABLSET	Disable Settings (SEL logic)		0
BLKMBSET	Block Modbus Settings Edit	Select: NONE, R_S, ALL	NONE
TIME_SRC	IRIG Time Source	Select: IRIG1, IRIG2	IRIG1
Global			

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Group 1			
Setting	Description	Range	Value
RID	Relay Identifier (16 characters)		-F87T-S1
TID	Terminal Identifier (16 characters)		=ET2 + W02
MVA	Maximum Transformer Capacity (MVA)	Range = OFF,0.2-5000.0	OFF
ICOM	Define Internal CT Conn. Compensation	Select: Y, N	Y
W1CT	Winding 1 CT Connection	Select: DELTA, WYE	WYE
CTR1	Winding 1 Phase CT Ratio	Range = 1-50000	200
W1CTC	Winding 1 CT Conn. Compensation	Range = 0-12	12
W2CT	Winding 2 CT Connection	Select: DELTA, WYE	WYE
CTR2	Winding 2 Phase CT Ratio	Range = 1-50000	400
W2CTC	Winding 2 CT Conn. Compensation	Range = 0-12	12
E87	Enable Transformer Differential Protection	Select: Y, N	Y
TAP1	Winding 1 Current Tap	Range = 0.10-6.20	0,63
TAP2	Winding 2 Current Tap	Range = 0.10-6.20	0,55
O87P	Restrained Element Operating Current PU (multiple of tap)	Range = 0.10-1.00	0,30
87AP	Differential Current Alarm PU (multiple of tap)	Range = OFF,0.05-1.00	0,30
87AD	Differential Current Alarm Delay (seconds)	Range = 1.0-120.0	5,0
SLP1	Restraint Slope 1 Percentage	Range = 5-90	15
SLP2	Restraint Slope 2 Percentage	Range = 5-90	30
IRS1	Restraint Current Slope 1 Limit	Range = 1.0-20.0	12,0
U87P	Unrestrained Element Current PU	Range = 1.0-20.0	6,0
PCT2	Second-Harmonic Blocking Percentage	Range = OFF,5-100	15
PCT4	Fourth-Harmonic Blocking Percentage	Range = OFF,5-100	15
PCT5	Fifth-Harmonic Blocking Percentage	Range = OFF,5-100	35
TH5P	Fifth-Harmonic Alarm Threshold	Range = OFF,0.02-3.20	OFF
HRSTR	Harmonic Restraint	Select: Y, N	N
HBLK	Harmonic Blocking	Select: Y, N	Y
50P11P	Winding 1 Phase Inst Overcurrent Trip Level (amps)	Range = OFF,0.10-19.20	OFF
50P12P	Winding 1 Phase Inst Overcurrent Trip Level (amps)	Range = OFF,0.10-19.20	OFF
50P13P	Winding 1 Phase Inst Overcurrent Trip Level (amps)	Range = OFF,0.10-19.20	OFF
50P14P	Winding 1 Phase Inst Overcurrent Trip Level (amps)	Range = OFF,0.10-19.20	OFF
50G11P	Winding 1 Residual Overcurrent Trip Level (amps)	Range = OFF,0.10-19.20	OFF
50G12P	Winding 1 Residual Overcurrent Trip Level (amps)	Range = OFF,0.10-19.20	OFF
50Q11P	Winding 1 Negative Sequence Overcurrent Trip Level (amps)	Range = OFF,0.10-19.20	OFF
50Q12P	Winding 1 Negative Sequence Overcurrent Trip Level (amps)	Range = OFF,0.10-19.20	OFF
50P21P	Winding 2 Phase Inst Overcurrent Trip Level (amps)	Range = OFF,0.10-19.20	OFF
50P22P	Winding 2 Phase Inst Overcurrent Trip Level (amps)	Range = OFF,0.10-19.20	OFF

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50P23P	Winding 2 Phase Inst Overcurrent Trip Level (amps)	Range = OFF,0.10-19.20	OFF
50P24P	Winding 2 Phase Inst Overcurrent Trip Level (amps)	Range = OFF,0.10-19.20	OFF
50G21P	Winding 2 Residual Overcurrent Trip Level (amps)	Range = OFF,0.10-19.20	OFF
50G22P	Winding 2 Residual Overcurrent Trip Level (amps)	Range = OFF,0.10-19.20	OFF
50Q21P	Winding 2 Negative Sequence Overcurrent Trip Level (amps)	Range = OFF,0.10-19.20	OFF
50Q22P	Winding 2 Negative Sequence Overcurrent Trip Level (amps)	Range = OFF,0.10-19.20	OFF
51P1AP	Winding 1 Phase A Time Overcurrent Trip Level (amps)	Range = OFF,0.10-3.20	OFF
51P1BP	Winding 1 Phase B Time Overcurrent Trip Level (amps)	Range = OFF,0.10-3.20	OFF
51P1CP	Winding 1 Phase C Time Overcurrent Trip Level (amps)	Range = OFF,0.10-3.20	OFF
51P1P	Winding 1 Max Phase Time Overcurrent Trip Level (amps)	Range = OFF,0.10-3.20	OFF
51G1P	Winding 1 Residual Time Overcurrent Trip Level (amps)	Range = OFF,0.10-3.20	OFF
51Q1P	Winding 1 Negative Seq. Time Overcurrent Trip Level (amps)	Range = OFF,0.10-3.20	OFF
51P2AP	Winding 2 Phase A Time Overcurrent Trip Level (amps)	Range = OFF,0.10-3.20	OFF
51P2BP	Winding 2 Phase B Time Overcurrent Trip Level (amps)	Range = OFF,0.10-3.20	OFF
51P2CP	Winding 2 Phase C Time Overcurrent Trip Level (amps)	Range = OFF,0.10-3.20	OFF
51P2P	Winding 2 Max Phase Time Overcurrent Trip Level (amps)	Range = OFF,0.10-3.20	0,79
51P2C	Winding 2 Max Phase TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	C2
51P2TD	Winding 2 Max Phase TOC Time Dial	Range = 0.05-1.00	0,55
51P2RS	Winding 2 Max Phase EM Reset Delay	Select: Y, N	N
51P2CT	Winding 2 Max Phase Constant Time Adder (seconds)	Range = 0.00-1.00	1,00
51P2MR	Winding 2 Max Phase Minimum Response Time (seconds)	Range = 0.00-1.00	0,00
51P2TC	Winding 2 Phase Time Overcurrent Torque Control (SEL logic)		1
51G2P	Winding 2 Residual Time Overcurrent Trip Level (amps)	Range = OFF,0.10-3.20	0,35
51G2C	Winding 2 Residual TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	C1
51G2TD	Winding 2 Residual TOC Time Dial	Range = 0.05-1.00	0,40
51G2RS	Winding 2 EM Reset Delay	Select: Y, N	N
51G2CT	Winding 2 Constant Time Adder (seconds)	Range = 0.00-1.00	0,00
51G2MR	Winding 2 Minimum Response Time (seconds)	Range = 0.00-1.00	0,00
51G2TC	Winding 2 Residual Time Overcurrent Torque Control (SEL logic)		1
51Q2P	Winding 2 Negative Seq. Time Overcurrent Trip Level (amps)	Range = OFF,0.10-3.20	OFF
E49RTD	RTD Enable	Select: EXT, NONE	NONE
EDEM	Enable Demand Metering	Select: OFF, W1, W2	OFF
TDURD	Minimum Trip Time (seconds)	Range = 0.0-400.0	0,5
			87R OR 87U OR

TRXFMR	Trip X FMR Equation (SEL logic)		IN401 OR IN402 OR IN403 OR IN404 OR IN101
REMTRIP	Remote Trip (SEL logic)		0
ULTRXFMR	Unlatch Trip X FMR (SEL logic)		NOT (87R OR 87U OR IN401 OR IN402 OR IN403 OR IN404 OR IN101)
CFD1	Close 1 Failure Time Delay (seconds)	Range = 0.0-400.0	0,5
TR1	Trip 1 Equation (SEL logic)		0
ULTRIP1	Unlatch Trip 1 (SEL logic)		NOT (51P1T OR 51G1T)
52A1	Breaker 1 Status (SEL logic)		IN301 AND NOT IN302 #POSICION CERRADA- INTERRUPTOR - 52E2
CL1	Close 1 Equation (SEL logic)		SV03T AND NOT LT02 OR CC1
ULCL1	Unlatch Close 1 (SEL logic)		TRIP1 OR TRIPXFMR
CFD2	Close 2 Failure Time Delay (seconds)	Range = 0.0-400.0	0,5
TR2	Trip 2 Equation (SEL logic)		51P2T OR 51G2T
ULTRIP2	Unlatch Trip 2 (SEL logic)		NOT (51P2T OR 51G2T)
52A2	Breaker 2 Status (SEL logic)		IN303 AND NOT IN304 #POSICION CERRADA- INTERRUPTOR - 52C1
CL2	Close 2 Equation (SEL logic)		SV03T AND LT02 OR CC2
ULCL2	Unlatch Close 2 (SEL logic)		TRIP2 OR TRIPXFMR
Group 1			

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Logic 1 Top			
Setting	Description	Range	Value
ELAT	SEL logic Latches	Range = N,1-32	32
ESV	SEL logic Variables/Timers	Range = N,1-32	32
ESC	SEL logic Counters	Range = N,1-32	32
EMV	SEL logic Math Variables	Range = N,1-32	32
SET01	(SEL logic)		R_TRIG SV01T AND NOT LT01
RST01	(SEL logic)		R_TRIG SV01T AND LT01
SET02	(SEL logic)		R_TRIG SV02T AND NOT LT02 AND PB02
RST02	(SEL logic)		R_TRIG SV02T AND LT02 AND PB02
SET03	(SEL logic)		(PB03 AND R_TRIG SV02T) AND LT01 AND NOT (52A1 AND NOT LT02 OR 52A2 AND LT02)
RST03	(SEL logic)		(R_TRIG SV02T OR SV03T) AND LT03
SET04	(SEL logic)		(PB04 AND R_TRIG SV02T) AND (52A1 AND NOT LT02 OR 52A2 AND LT02)
RST04	(SEL logic)		(R_TRIG SV02T OR SV04T) AND LT04
SET05	(SEL logic)		TRIPX FMR AND NOT LT05
RST05	(SEL logic)		NOT VB001 AND NOT VB005
SET06	(SEL logic)		NA
RST06	(SEL logic)		NA
SET07	(SEL logic)		NA
RST07	(SEL logic)		NA
SET08	(SEL logic)		NA
RST08	(SEL logic)		NA
SET09	(SEL logic)		NA
RST09	(SEL logic)		NA
SET10	(SEL logic)		NA
RST10	(SEL logic)		NA
SET11	(SEL logic)		NA
RST11	(SEL logic)		NA

SET12	(SEL logic)		NA
RST12	(SEL logic)		NA
SET13	(SEL logic)		NA
RST13	(SEL logic)		NA
SET14	(SEL logic)		NA
RST14	(SEL logic)		NA
SET15	(SEL logic)		NA
RST15	(SEL logic)		NA
SET16	(SEL logic)		NA
RST16	(SEL logic)		NA
SET17	(SEL logic)		NA
RST17	(SEL logic)		NA
SET18	(SEL logic)		NA
RST18	(SEL logic)		NA
SET19	(SEL logic)		NA
RST19	(SEL logic)		NA
SET20	(SEL logic)		NA
RST20	(SEL logic)		NA
SET21	(SEL logic)		NA
RST21	(SEL logic)		NA
SET22	(SEL logic)		NA
RST22	(SEL logic)		NA
SET23	(SEL logic)		NA
RST23	(SEL logic)		NA
SET24	(SEL logic)		NA
RST24	(SEL logic)		NA
SET25	(SEL logic)		NA
RST25	(SEL logic)		NA
SET26	(SEL logic)		NA
RST26	(SEL logic)		NA
SET27	(SEL logic)		NA
RST27	(SEL logic)		NA
SET28	(SEL logic)		NA
RST28	(SEL logic)		NA
SET29	(SEL logic)		NA
RST29	(SEL logic)		NA
SET30	(SEL logic)		NA
RST30	(SEL logic)		NA
SET31	(SEL logic)		NA
RST31	(SEL logic)		NA
SET32	(SEL logic)		NA
RST32	(SEL logic)		NA
SV 01PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	3,00

SV 01DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 01	SEL logic Variable Input (SEL logic)		PB01
SV 02PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,25
SV 02DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 02	SEL logic Variable Input (SEL logic)		PB01 OR PB02 OR PB03 OR PB04
SV 03PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,00
SV 03DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 03	SEL logic Variable Input (SEL logic)		LT 03
SV 04PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,00
SV 04DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 04	SEL logic Variable Input (SEL logic)		LT 04
SV 05PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,25
SV 05DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,25
SV 05	SEL logic Variable Input (SEL logic)		(PB01 OR PB02 OR LT 03 OR LT 04) AND NOT SV 05T
SV 06PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,00
SV 06DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 06	SEL logic Variable Input (SEL logic)		NA
SV 07PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,00
SV 07DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 07	SEL logic Variable Input (SEL logic)		NA
SV 08PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,00
SV 08DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 08	SEL logic Variable Input (SEL logic)		NA
SV 09PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,00
SV 09DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 09	SEL logic Variable Input (SEL logic)		NA
SV 10PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,00
SV 10DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 10	SEL logic Variable Input (SEL logic)		NA
SV 11PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,00
SV 11DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 11	SEL logic Variable Input (SEL logic)		NA
SV 12PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,00
SV 12DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 12	SEL logic Variable Input (SEL logic)		TRIP1 OR TRIP2 OR TRIPX FMR
SV 13PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,00
SV 13DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 13	SEL logic Variable Input (SEL logic)		87R OR 87U
SV 14PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,00
SV 14DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00

SV 14	SEL logic Variable Input (SEL logic)		NOT IRIGOK
SV 15PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,00
SV 15DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 15	SEL logic Variable Input (SEL logic)		NA
SV 16PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,00
SV 16DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 16	SEL logic Variable Input (SEL logic)		NA
SV 17PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,00
SV 17DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 17	SEL logic Variable Input (SEL logic)		NA
SV 18PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,00
SV 18DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 18	SEL logic Variable Input (SEL logic)		NA
SV 19PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,00
SV 19DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 19	SEL logic Variable Input (SEL logic)		NA
SV 20PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,00
SV 20DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 20	SEL logic Variable Input (SEL logic)		NA
SV 21PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,00
SV 21DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 21	SEL logic Variable Input (SEL logic)		NA
SV 22PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,00
SV 22DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 22	SEL logic Variable Input (SEL logic)		NA
SV 23PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,00
SV 23DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 23	SEL logic Variable Input (SEL logic)		NA
SV 24PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,00
SV 24DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 24	SEL logic Variable Input (SEL logic)		NA
SV 25PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,00
SV 25DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 25	SEL logic Variable Input (SEL logic)		NA
SV 26PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,00
SV 26DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 26	SEL logic Variable Input (SEL logic)		NA
SV 27PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,00
SV 27DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 27	SEL logic Variable Input (SEL logic)		NA
SV 28PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,00
SV 28DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 28	SEL logic Variable Input (SEL logic)		NA

SV 29PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,00
SV 29DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 29	SEL logic Variable Input (SEL logic)		NA
SV 30PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,00
SV 30DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 30	SEL logic Variable Input (SEL logic)		NA
SV 31PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,00
SV 31DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 31	SEL logic Variable Input (SEL logic)		NA
SV 32PU	SEL logic Variable Timer Pickup (seconds)	Range = 0.00-3000.00	0,00
SV 32DO	SEL logic Variable Timer Dropout (seconds)	Range = 0.00-3000.00	0,00
SV 32	SEL logic Variable Input (SEL logic)		NA
SC01PV	Counter Preset V alue	Range = 1-65000	1
SC01R	Counter Reset Input (SEL logic)		NA
SC01LD	Counter Load PV Input (SEL logic)		NA
SC01CU	Count-Up Input (SEL logic)		NA
SC01CD	Count-Down Input (SEL logic)		NA
SC02PV	Counter Preset V alue	Range = 1-65000	1
SC02R	Counter Reset Input (SEL logic)		NA
SC02LD	Counter Load PV Input (SEL logic)		NA
SC02CU	Count-Up Input (SEL logic)		NA
SC02CD	Count-Down Input (SEL logic)		NA
SC03PV	Counter Preset V alue	Range = 1-65000	1
SC03R	Counter Reset Input (SEL logic)		NA
SC03LD	Counter Load PV Input (SEL logic)		NA
SC03CU	Count-Up Input (SEL logic)		NA
SC03CD	Count-Down Input (SEL logic)		NA
SC04PV	Counter Preset V alue	Range = 1-65000	1
SC04R	Counter Reset Input (SEL logic)		NA
SC04LD	Counter Load PV Input (SEL logic)		NA
SC04CU	Count-Up Input (SEL logic)		NA
SC04CD	Count-Down Input (SEL logic)		NA
SC05PV	Counter Preset V alue	Range = 1-65000	1
SC05R	Counter Reset Input (SEL logic)		NA
SC05LD	Counter Load PV Input (SEL logic)		NA
SC05CU	Count-Up Input (SEL logic)		NA
SC05CD	Count-Down Input (SEL logic)		NA
SC06PV	Counter Preset V alue	Range = 1-65000	1
SC06R	Counter Reset Input (SEL logic)		NA
SC06LD	Counter Load PV Input (SEL logic)		NA
SC06CU	Count-Up Input (SEL logic)		NA
SC06CD	Count-Down Input (SEL logic)		NA
SC07PV	Counter Preset V alue	Range = 1-65000	1

SC07R	Counter Reset Input (SEL logic)		NA
SC07LD	Counter Load PV Input (SEL logic)		NA
SC07CU	Count-Up Input (SEL logic)		NA
SC07CD	Count-Down Input (SEL logic)		NA
SC08PV	Counter Preset Value	Range = 1-65000	1
SC08R	Counter Reset Input (SEL logic)		NA
SC08LD	Counter Load PV Input (SEL logic)		NA
SC08CU	Count-Up Input (SEL logic)		NA
SC08CD	Count-Down Input (SEL logic)		NA
SC09PV	Counter Preset Value	Range = 1-65000	1
SC09R	Counter Reset Input (SEL logic)		NA
SC09LD	Counter Load PV Input (SEL logic)		NA
SC09CU	Count-Up Input (SEL logic)		NA
SC09CD	Count-Down Input (SEL logic)		NA
SC10PV	Counter Preset Value	Range = 1-65000	1
SC10R	Counter Reset Input (SEL logic)		NA
SC10LD	Counter Load PV Input (SEL logic)		NA
SC10CU	Count-Up Input (SEL logic)		NA
SC10CD	Count-Down Input (SEL logic)		NA
SC11PV	Counter Preset Value	Range = 1-65000	1
SC11R	Counter Reset Input (SEL logic)		NA
SC11LD	Counter Load PV Input (SEL logic)		NA
SC11CU	Count-Up Input (SEL logic)		NA
SC11CD	Count-Down Input (SEL logic)		NA
SC12PV	Counter Preset Value	Range = 1-65000	1
SC12R	Counter Reset Input (SEL logic)		NA
SC12LD	Counter Load PV Input (SEL logic)		NA
SC12CU	Count-Up Input (SEL logic)		NA
SC12CD	Count-Down Input (SEL logic)		NA
SC13PV	Counter Preset Value	Range = 1-65000	1
SC13R	Counter Reset Input (SEL logic)		NA
SC13LD	Counter Load PV Input (SEL logic)		NA
SC13CU	Count-Up Input (SEL logic)		NA
SC13CD	Count-Down Input (SEL logic)		NA
SC14PV	Counter Preset Value	Range = 1-65000	1
SC14R	Counter Reset Input (SEL logic)		NA
SC14LD	Counter Load PV Input (SEL logic)		NA
SC14CU	Count-Up Input (SEL logic)		NA
SC14CD	Count-Down Input (SEL logic)		NA
SC15PV	Counter Preset Value	Range = 1-65000	1
SC15R	Counter Reset Input (SEL logic)		NA
SC15LD	Counter Load PV Input (SEL logic)		NA
SC15CU	Count-Up Input (SEL logic)		NA

SC15CD	Count-Down Input (SEL logic)		NA
SC16PV	Counter Preset V alue	Range = 1-65000	1
SC16R	Counter R eset Input (SEL ogic)		NA
SC16LD	Counter L oad PV Input (SEL ogic)		NA
SC16CU	Count-Up Input (SEL ogic)		NA
SC16CD	Count-Down Input (SEL ogic)		NA
SC17PV	Counter Preset V alue	Range = 1-65000	1
SC17R	Counter R eset Input (SEL ogic)		NA
SC17LD	Counter L oad PV Input (SEL ogic)		NA
SC17CU	Count-Up Input (SEL ogic)		NA
SC17CD	Count-Down Input (SEL ogic)		NA
SC18PV	Counter Preset V alue	Range = 1-65000	1
SC18R	Counter R eset Input (SEL ogic)		NA
SC18LD	Counter L oad PV Input (SEL ogic)		NA
SC18CU	Count-Up Input (SEL ogic)		NA
SC18CD	Count-Down Input (SEL ogic)		NA
SC19PV	Counter Preset V alue	Range = 1-65000	1
SC19R	Counter R eset Input (SEL ogic)		NA
SC19LD	Counter L oad PV Input (SEL ogic)		NA
SC19CU	Count-Up Input (SEL ogic)		NA
SC19CD	Count-Down Input (SEL ogic)		NA
SC20PV	Counter Preset V alue	Range = 1-65000	1
SC20R	Counter R eset Input (SEL ogic)		NA
SC20LD	Counter L oad PV Input (SEL ogic)		NA
SC20CU	Count-Up Input (SEL ogic)		NA
SC20CD	Count-Down Input (SEL ogic)		NA
SC21PV	Counter Preset V alue	Range = 1-65000	1
SC21R	Counter R eset Input (SEL ogic)		NA
SC21LD	Counter L oad PV Input (SEL ogic)		NA
SC21CU	Count-Up Input (SEL ogic)		NA
SC21CD	Count-Down Input (SEL ogic)		NA
SC22PV	Counter Preset V alue	Range = 1-65000	1
SC22R	Counter R eset Input (SEL ogic)		NA
SC22LD	Counter L oad PV Input (SEL ogic)		NA
SC22CU	Count-Up Input (SEL ogic)		NA
SC22CD	Count-Down Input (SEL ogic)		NA
SC23PV	Counter Preset V alue	Range = 1-65000	1
SC23R	Counter R eset Input (SEL ogic)		NA
SC23LD	Counter L oad PV Input (SEL ogic)		NA
SC23CU	Count-Up Input (SEL ogic)		NA
SC23CD	Count-Down Input (SEL ogic)		NA
SC24PV	Counter Preset V alue	Range = 1-65000	1
SC24R	Counter R eset Input (SEL ogic)		NA

SC24LD	Counter Load PV Input (SEL logic)		NA
SC24CU	Count-Up Input (SEL logic)		NA
SC24CD	Count-Down Input (SEL logic)		NA
SC25PV	Counter Preset Value	Range = 1-65000	1
SC25R	Counter Reset Input (SEL logic)		NA
SC25LD	Counter Load PV Input (SEL logic)		NA
SC25CU	Count-Up Input (SEL logic)		NA
SC25CD	Count-Down Input (SEL logic)		NA
SC26PV	Counter Preset Value	Range = 1-65000	1
SC26R	Counter Reset Input (SEL logic)		NA
SC26LD	Counter Load PV Input (SEL logic)		NA
SC26CU	Count-Up Input (SEL logic)		NA
SC26CD	Count-Down Input (SEL logic)		NA
SC27PV	Counter Preset Value	Range = 1-65000	1
SC27R	Counter Reset Input (SEL logic)		NA
SC27LD	Counter Load PV Input (SEL logic)		NA
SC27CU	Count-Up Input (SEL logic)		NA
SC27CD	Count-Down Input (SEL logic)		NA
SC28PV	Counter Preset Value	Range = 1-65000	1
SC28R	Counter Reset Input (SEL logic)		NA
SC28LD	Counter Load PV Input (SEL logic)		NA
SC28CU	Count-Up Input (SEL logic)		NA
SC28CD	Count-Down Input (SEL logic)		NA
SC29PV	Counter Preset Value	Range = 1-65000	1
SC29R	Counter Reset Input (SEL logic)		NA
SC29LD	Counter Load PV Input (SEL logic)		NA
SC29CU	Count-Up Input (SEL logic)		NA
SC29CD	Count-Down Input (SEL logic)		NA
SC30PV	Counter Preset Value	Range = 1-65000	1
SC30R	Counter Reset Input (SEL logic)		NA
SC30LD	Counter Load PV Input (SEL logic)		NA
SC30CU	Count-Up Input (SEL logic)		NA
SC30CD	Count-Down Input (SEL logic)		NA
SC31PV	Counter Preset Value	Range = 1-65000	1
SC31R	Counter Reset Input (SEL logic)		NA
SC31LD	Counter Load PV Input (SEL logic)		NA
SC31CU	Count-Up Input (SEL logic)		NA
SC31CD	Count-Down Input (SEL logic)		NA
SC32PV	Counter Preset Value	Range = 1-65000	1
SC32R	Counter Reset Input (SEL logic)		NA
SC32LD	Counter Load PV Input (SEL logic)		NA
SC32CU	Count-Up Input (SEL logic)		NA
SC32CD	Count-Down Input (SEL logic)		NA

MV 01	(SEL logic)		NA
MV 02	(SEL logic)		NA
MV 03	(SEL logic)		NA
MV 04	(SEL logic)		NA
MV 05	(SEL logic)		NA
MV 06	(SEL logic)		NA
MV 07	(SEL logic)		NA
MV 08	(SEL logic)		NA
MV 09	(SEL logic)		NA
MV 10	(SEL logic)		NA
MV 11	(SEL logic)		NA
MV 12	(SEL logic)		NA
MV 13	(SEL logic)		NA
MV 14	(SEL logic)		NA
MV 15	(SEL logic)		NA
MV 16	(SEL logic)		NA
MV 17	(SEL logic)		NA
MV 18	(SEL logic)		NA
MV 19	(SEL logic)		NA
MV 20	(SEL logic)		NA
MV 21	(SEL logic)		NA
MV 22	(SEL logic)		NA
MV 23	(SEL logic)		NA
MV 24	(SEL logic)		NA
MV 25	(SEL logic)		NA
MV 26	(SEL logic)		NA
MV 27	(SEL logic)		NA
MV 28	(SEL logic)		NA
MV 29	(SEL logic)		NA
MV 30	(SEL logic)		NA
MV 31	(SEL logic)		NA
MV 32	(SEL logic)		NA
OUT101FS	OUT101 Fail-Safe	Select: Y, N	N
OUT101	(SEL logic)		TR2 OR TRIPX FMR #DISPARO BOBINA 1-INTERRUPTOR - 52ET2
OUT102FS	OUT102 Fail-Safe	Select: Y, N	N
OUT102	(SEL logic)		TR2 OR TRIPX FMR #DISPARO BOBINA 2-INTERRUPTOR - 52ET2
OUT103FS	OUT103 Fail-Safe	Select: Y, N	Y
			SALARM OR HALARM

OUT103	(SEL logic)		#CONTACTO DE ALARMA NORMAL CERRADO
OUT301FS	OUT301 Fail-Safe	Select: Y, N	N
OUT301	(SEL logic)		TR2 OR TRIPX FMR #DISPARO BOBINA 1-INTERRUPTOR - 52C1
OUT302FS	OUT302 Fail-Safe	Select: Y, N	N
OUT302	(SEL logic)		TR2 OR TRIPX FMR #DISPARO BOBINA 2-INTERRUPTOR - 52C1
OUT303FS	OUT303 Fail-Safe	Select: Y, N	N
OUT303	(SEL logic)		TRIPX FMR #TRIP DESDE PROTECCIONES/OPERAR -K 86T
OUT304FS	OUT304 Fail-Safe	Select: Y, N	N
OUT304	(SEL logic)		LT05 #AVISO DE DISPARO - K 86T/PILOTO
OUT401FS	OUT401 Fail-Safe	Select: Y, N	N
OUT401	(SEL logic)		TR2 OR TRIPX FMR #AVISO DE TRIP
OUT402FS	OUT402 Fail-Safe	Select: Y, N	N
OUT402	(SEL logic)		0
OUT403FS	OUT403 Fail-Safe	Select: Y, N	N
OUT403	(SEL logic)		0
OUT404FS	OUT404 Fail-Safe	Select: Y, N	N
OUT404	(SEL logic)		0
Logic 1			

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Setting	Description	Range	Value
ER	Event Report Trigger (SEL logic)		F_TRIG 52A1 OR F_TRIG 52A2 OR R_TRIG 87BL1 OR R_TRIG 87BL2 OR R_TRIG 87BL3 OR R_TRIG 51P2P OR R_TRIG 51G2P
LER	Length of Event Report (cycles)	Select: 15, 64	64
PRE	Prefault Length (cycles)	Range = 1-59	15
ESERDEL	Auto-Removal Enable	Select: Y, N	N
SER1	(24 relay word bits)		IN101 IN102 IN301 IN302 IN303 IN304 IN401 IN402 IN403 IN404 PB01 PB02 PB03 PB04 52A1 52A2 TRIP1 TRIP2 TRIPX FMR
SER2	(24 relay word bits)		ORED51T ORED50T 87U 87R 87BL1 87BL2 87BL3 87U3 87U2 87U1 87R3 87R2 87R1
SER3	(24 relay word bits)		51P2P 51P2T 52A1 52A2 OUT101 OUT102 OUT103 OUT301 OUT302 OUT303 51G2P 51G2T
SER4	(24 relay word bits)		SALARM OUT304 SV12 SV13 SV14 OUT401 OUT303 OUT302 OUT301 OUT103 OUT102 OUT101
EALIAS	Enable ALIAS Settings	Range = N,1-20	4
ALIAS1	(59 characters)		PB01 FP_LOCK PICKUP DROPOUT
ALIAS2	(59 characters)		PB02 FP_BRKR_SELECT PICKUP DROPOUT
ALIAS3	(59 characters)		PB03 FP_CLOSE PICKUP DROPOUT
ALIAS4	(59 characters)		PB04 FP_TRIP PICKUP DROPOUT
LDLIST	Load Profile List (17 Analog Quantities)		NA
LDAR	Load Profile Acquisition Rate (minutes)	Select: 5, 10, 15, 30, 60	15
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