Customer Project Development Services

Customer Project Application for Services of 34.5 kV and Above

Coachella Valley
Mail/Physical Address: 81-600 Avenue 58, La Quinta, CA 92253
Office Hours: 7:00 a.m. - 5:00 p.m. (closed every other Friday) 760-398-5841

Imperial Valley
333 S. Waterman Ave., El Centro, CA
Mail: Customer Project Dev., PO Box 937, Imperial, CA 92251
Office Hours: 7:30 a.m. - 5:30 p.m. (closed every other Friday) 760-482-3300

Submit completed form to the above corresponding addresses.
EMAIL: Submit completed and signed form or address any questions or concerns to: TCSP@iid.com

Developer Customer Account Application
Customer Development Operations
333 SouthWaterman • El Centro, CA 92243 • (800) 303-7756
Electrical Services

☒ New Account ☐ Account Transfer/Change of Name ☐ Existing Account

Project Information			
Name:			
Service Address:			
City:	State:	Zip Code:	
Valley (Imperial or Coachella):			

Applicant Information		
Name:		
Doing Business As (DBA):		
Street Address:		
Mailing Address (if different):		
Phone:	E-mail:	Fax:
City:	State:	Zip Code:
Affiliation to Project:		

Account Information			
Contract Account No:		Business Partner No:	
Mail Bill Attention To:		Address:	
City:	State:	Zip Code:	Phone:
Affiliation to Project:			
If Account was Previously Under Another Name, please list here:			
Is there Proof of Dissolution for Previous Account Holder : ☒ Yes ☐ No If Yes, please attach:			

Commercial Information	
Is this Business A Sole Proprietorship? (If Yes, please include name):	
Is this Business a Corporation: ☒ Yes ☐ No	
If Yes, Please indicate State of Incorporation:	
If No, Business Entity Type:	
President/Member:	Signature:
Vice-President :	Signature:
Secretary:	Signature:
☐ Articles of Incorporation/Entity Formation Docs.: (please attach):	
Place of Business:	Type of Business:
Federal Tax ID No.	☐ Letter of Authorization (please attach):

Authorized Signature	Print Name	Date

SYSTEM PLANNING

IID SYSTEM IMPACT STUDY DATA REQUIREMENTS

A typical System Impact Study includes Power Flow, Transient Stability, Post-Transient Stability, and Short Circuit Analysis. Depending on project characteristics IID System Planning may recommend expanding or reducing the scope of the study.

IID uses the last version of **G.E. PSLF** software approved by WECC to perform Power Flow, Transient Stability and Post-Transient Stability analyses. For the Short Circuit analysis the latest version of **ASPEN** software will be used.

Power Flow (project's data)

Please provide the following information. (Additional sheets or documents can be added)

1. Project Name: ____
   What is the name of the project? (please provide three different alternative names)

   a. Alternative 1: ____

   b. Alternative 2: ____

   c. Alternative 3: ____

   Note: If the name of the project represents a potential conflict for IID's staff, IID will suggest/request a new name for your project to prevent the potential concern. This is not intended to create any legal or commercial issues on the development of your project.

2. Project One-Line Diagram and Project Site Plan
   Please provide a simplified one-line diagram and site plan in (PDF) of the facility(ies) to be studied.

3. Provide a Google Earth map (.kmz file) with geographical location of the new project requiring IID service.

4. Will this project be completed in phase? Yes ☒ No ☐
   If Yes, provide a description and estimate timelines for each phase.

5. Provide proof of site control.

6. Provide the in-service date for the total completion of the project or per phase.

   Date: ____________

7. The System Planning group usually studies the Heavy Summer (PEAK) and Light Winter (OFF-PEAK) conditions to determine the most critical operating conditions for the IID System. Do you consider the need for studying another season or year for your project?

   Yes ☒ No ☐

   Which season or year?: ______________________________

   Reason?: ______________________________

   Note: Notice that any additional season or year to be studied for a new generation project would potentially represent additional costs for the study.

8. Propose Point of Interconnection (POI) to the IID System. The POI is the electrical point where you propose to connect your project to the existing IID grid. Provide the Station's Name or Line's Name and kV. IID may provide/propose a different POI if the orginal location is deemed problematic for project development.

   Station name or line's name: ____________________ kV: __________

   Include APN# ______________________________

9. Is your project load conforming or non-conforming? If non-conforming, please provide a description of planned operation.

   ____

10. Provide the company owner's name:

    ____

11. Total MW input/service required of your project? ____________________

12. System Step-Down Transformer

Low Side Voltage (kV)		High Side Voltage (kV)	
MVA Base (MVA)		Reactance (p.u.) or %	
Continuous Normal Rating (MVA)		Emergency Rating (MVA)	
Number of Tranformers		Winding Config. (Delta, Y, etc.)	

13. Please provide project models in .epc format (PSLF) that accurately represents the electical configuration of your project. Models must include, but not limited to the following:
    a. Bus data
    b. Transformer data
    c. Load data
    d. Generator data, if applicable (behind the meter)

14. Please provide dynamic model representation via a WECC approved composite load model that accurately represents the dynamic behavior of your project. Projects must use the WECC composite load model (cmpldw). ***See Attachment A for instructions.***

15. Provide the contact person name, telephone number and email address for questions on the Power Flow analysis data provided.

    a. Name: ______________________________

    b. Title: ______________________________

    c. Company: ______________________________

    d. Address: ______________________________

    e. Telephone: ______________________________

    f. Email: ______________________________

A hard copy or scanned document of the completed template should be provided back to IID including data, and signed by the person(s) responsible for the data provided.

Responsible Person Signature: ______________________________

Responsible Person Name: ______________________________

Responsible Person Title: ______________________________ Date: ______________

If you have any questions regarding the data requested, please contact Jesus Martinez, Imperial Irrigation District System at (760) 339-0574.

CUSTOMER PROJECT DEVELOPMENT SERVICES

REGULATIONS GOVERNING SALE AND USE OF ELECTRIC ENERGY

Excerpts from Regulation No. 6

The customer shall, at his own risk and expense, furnish, install and keep in good and safe condition all electric wires, lines, machinery and apparatus of any sort which may be required for receiving electric energy from the District, and for applying and utilizing such energy, including all necessary protective appliances and suitable housing therefor. The District shall not be responsible for any loss or damage occasioned or caused by the negligence or want of proper care or wrongful act of the customer or any of his agents, employees or licensees on the part of the customer in installing, maintaining, using, operating or interfering with any such wires, lines, machinery or apparatus.

Excerpts from Regulation No. 11

The district shall, at its option, have the right to disconnect its services until the customer has complied with all the terms of the agreement and of the District's regulation.

Excerpts from Regulation No. 15

The District will construct, own, operate and maintain lines only along public streets, roads and highways which the District has the legal right to occupy and on public lands and private property across which rights-of-way satisfactory to the District may be obtained without cost or condemnation by the District.

All Imperial Irrigation District Regulations Governing the Sale and Use of Electric Energy are available for viewing at all IID Division Offices, Imperial Operating Headquarters and online at www.iid.com.

☐ I have read and agree to the Regulations listed above.

Signature:____________________________________ Title:___________________________

Print Name: __________________________________ Date:__________________________

CONTRACTOR INFORMATION SHEET

If applicable, please select the level of authorization for communication with your contractor.

Contractor Name:
Contractor Address:
Contact person:
Contractor Contact Phone:
Contractor Email Address:

☐ Attend meetings and/or respond to correspondence regarding this project.
☐ Receive electronic files for this project, including energy account information.
☐ Obtain approvals, to complete this project.

Signature: ____________________________ Title: ____________________________________

Print Name: ___________________________ Date: ___________________________________

PROJECT DEVELOPMENT SERVICES

TERMS & CONDITIONS

Indemnification Agreement

In consideration for the provision of electrical utility service by IID for the development project identified in the Standards Specifications and Contractor Information Sheet, Applicant and IID agree as follows: The provision of electric utility service to Applicant is conditioned on compliance by Applicant with all applicable laws including the Imperial Irrigation District Regulations Governing the Sale and Use of Electric Energy and Rate Schedules.

Applicant shall defend and indemnify IID, from any: liability, claims, suite or actions; losses, expenses, fees, or costs of any kind, so long as such things are in relation to, as a consequence of, arising out of, or in any way attributable actually, allegedly or impliedly, in whole or in part, to the provision of electrical service by IID to Applicant for the development project identified in the Standards Specifications and Contractor Information Sheet; however, Applicant shall not be required to indemnify and hold harmless IID as set forth above for liability attributable to the sole fault of IID.

Customer Initials ____________

Environmental Impact Information

The work IID has to undertake to provide the electric service requested may cause impacts to the environment. Since the work is customer-driven and not a system upgrade, it is IID's policy that any environmental impacts created by new, relocated, modified or reconstructed IID facilities (which can include, but are not limited to, substations, transmission and distribution lines, IID-owned canals and drains, etc.) required to provide electric service to the customer need to be assessed in accordance with the California Environmental Quality Act and National Environmental Policy Act, if applicable, and, if required, mitigated. Failure to comply with such requirements will result in the postponement of the service requested until the appropriate environmental documentation is obtained by the customer from the lead agency having jurisdiction to permit the customer's project and the environmental impacts are fully assessed and mitigated. Any and all mitigation necessary as a result of the impacts on the environment caused by the construction, relocation and/or update of the IID facilities is the responsibility of the customer.At its discretion IID will verify, via its field crews and project inspectors, if impacts are being mitigated per customer's environmental document and if customer is providing on-site mitigation monitoring. If not, customer will be advised of this and IID work will be halted until the appropriate mitigation measures and monitoring are in place.

Customer Initials ____________

Engineering Fee

I acknowledge that failure to complete and return all pertinent forms to IID could cause a delay in electric service. I agree and understand that the Engineering Fee will be paid to begin engineering a project and will be applied as a credit toward the construction cost of the project. The Engineering Fee is non-refundable. Any design changes that result in the redesign of the project, and therefore alters prior schedule IID commitments will require an additional non- refundable Engineering Fee and may cause delays in construction schedules(s).

Customer Initials ____________

Signature: ________________________________ Title: ______________________________

Print Name: _______________________________ Date: ______________________________

IID A century of service

SYSTEM PLANNING
WECC COMPOSITE LOAD MODEL EXAMPLE
(ATTACHMENT A)

Model Name:	cmpldw
Description	WECC Composite load model
Prerequisites:	Load in load flow solved case
Inputs:	Voltage at bus to which the composite load is connected
Invocation:	cmpldw [<n>] {<name> <kv>} <id> : #r mva=<mvabase>

Parameters:

EPCL Variable **(see Note b)**	***Default Data***	***Description***
Bss	0.0	Substation shunt capacitor susceptance, p.u.
Rfdr	0.0	Feeder equivalent resistance, p.u.
Xfdr	0.0	Feeder equivalent reactance, p.u.
Fb	0.0	Fraction of feeder shunt capacitance at substation bus end
Xxf	0.0	Substation transformer reactance, p.u.
Tfixhs	1.	Transformer high side fixed tap, p.u.
Tfixls	1.	Transformer low side fixed tap, p.u.
LTC	0	= 1 for automatic tap adjustment (low side variable tap)
Tmin	0.9	Minimum variable tap, p.u.
Tmax	1.1	Maximum variable tap, p.u.
step	0.00625	Variable tap step size, p.u.
Vmin	1.02	Minimum low-side voltage, p.u.
Vmax	1.04	Maximum low-side voltage, p.u.
Tdel	30.	Time delay to initiate tap adjustment, sec.
Ttap	5.	Time delay between tap steps, sec.
Rcmp	0.0	Transformer LTC compensating resistance, p.u.
Xcmp	0.0	Transformer LTC compensating reactance, p.u.
FmA	0.0	Motor A fraction of load P
FmB	0.0	Motor B fraction of load P
FmC	0.0	Motor C fraction of load P
FmD	0.0	Motor D fraction of load P
Fel	0.0	Electronic load fraction of load P
PFel	0.0	Electronic load power factor
Vd1	0.0	Voltage below which electronic load decreases, p.u.
Vd2	0.0	Voltage below which electronic load is zero, p.u.
frcel	0.0	Fraction of electronic load that recovers from low voltage trip **(see note n)**
PFs	0.8	Power factor of static load component
P1e	1.0	Static load – exponent of first P term
P1c	1.0	Static load – coefficient of first P term
P2e	2.0	Static load – exponent of second P term

P2c	0.0	Static load – coefficient of second P term
Pfrq	0.0	Frequency sensitivity factor for P
Q1e	1.0	Static load – exponent of first Q term
Q1c	0.0	Static load – coefficient of first Q term
Q2e	2.0	Static load – exponent of second Q term
Q2c	1.0	Static load – coefficient of second Q term
Qfrq	0.0	Frequency sensitivity factor for Q
Mtypa	0.0	First motor type: = 3 -- three-phase motor
		= 1 -- 1-phase air conditioner
Mtypb	0.0	Second motor type
Mtypc	0.0	Third motor type
Mtypd	0.0	Fourth Motor type

The following motor parameters must be included (**see Note a**) for each motor with Fm > 0.:

For Type 3 motor, the following parameters must be input: (see below for Type 1)

LFm*n*	0.8	Motor g lfoaacdtoinr
Ra*n*	0.02	Stator resistance, p.u.
Ls*n*	2.0	Ssynchronous reactance, p.u.
Lp*n*	0.2	Transient reactance, p.u.
Lpp*n*	0.2	Subtransient reactance, p.u.
Tpo*n*	0.16	Transient open circuit time constant, sec.
Tppo*n*	0.02	Subtransient open circuit time constant, sec.
H*n*	0.3	Inertia constant, sec.
Etrq*n*	2.0	Mechanical torque exponent
Vtr1*n*	0.0	First low ge tvroiplt alevel, p.u. V
Ttr1*n*	9999.	First low gev torlitpa delay time, sec.
Ftr1*n*	0.0	First low ge tvroiplt faraction
Vrc1*n*	9999.	First low gev oreltcaonnection level, p.u. V
Trc1*n*	9999.	First low gev oreltcaonnection delay time, sec.
Vtr2*n*	0.0	Second low voltage trip level, p.u. V
Ttr2*n*	9999.	Second low voltage trip delay time, sec.
Ftr2*n*	0.0	Second low voltage trip fraction
Vrc2*n*	9999.	Second low voltage reconnection level, p.u. V
Trc2*n*	9999.	Second low voltage reconnection delay time, sec.

For Type 1 A/C load, the following parameters must be input:

LFm*n*	1.0	Motor g lfoaacdtoinr
CompPF*n*	0.97	Power rfacto
Vstall*n*	0.6	Stall voltage, p.u.
Rstall*n*	0.124	Stall resistance, p.u.
Xstall*n*	0.114	Stall reactance, p.u.
Tstall*n*	0.033	Stall time delay, sec.
Frst*n*	0.5	Fraction of load that can restart after stalling
Vrst*n*	0.6	Voltage at which restart can occur, p.u.
Trst*n*	0.4	Restart time delay, sec.
Fuvr*n*	0.	Fraction of load with undervoltage relay protection
Vtr1*n*	0.0	First undgeer tvroiplt alevel, p.u.
Ttr1n	0.2	First undervoltage trip delay time, sec.
Vtr2n	0.0	Second undervoltage trip level, p.u.
Ttr2n	5.0	Second undervoltage trip delay time, sec.

Vc1offn	0.5	Contactor voltage at which tripping starts, p.u.
Vc2offn	0.4	Contactor voltage at which tripping is complete p.u.
Vc1onn	0.6	Contactor voltage at which reconnection is complete, p.u.
Vc2onn	0.5	Contactor voltage at which reconnection starts, p.u.
Tthn	20.	Thermal time constant, sec.
Th1tn	0.7	Thermal protection trip start level, p.u. temperature
Th2tn	1.3	Thermal protection trip completion level, p.u. temperature
Tvn	.05	Voltage measurement lag, sec.

Note: Input parameters through **Mtypd** must be included. If, at any point after that, the remaining parameters are omitted, the default values shown in the table will be used.
Note: If a motor is to be omitted, but a motor after it is to be included, the motor fraction, e.g. Fmc, must be set to a non-zero value <= 0.0001. If it is set to zero, data for the later model(s) will not be read.

Notes:

a) The following global (dypar) parameters have been added in V21 of PSLF:

	Default values		**cmpldw** model will not be used if:
dypar.cmp_pmin	0 MW		Pload < dypar.cmp_pmin
dypar.cmp_pqmin	0.0		Pload / Qload < dypar.cmp_pqmin
dypar.cmp_vmin	0.0 p.u.		System bus V < dypar.cmp_vmin

Warning messages are written if any of these conditions occur. The values of these parameters can be changed by entering different values in the javaini.p file.

b) For all motor input parameters, the trailing "*n*" is to be replaced by "a", "b", "c", or "d" corresponding to the motor fractions Fma, Fmb, Fmc, Fmd. If Fm*n* = 0., the data for that motor must be omitted. If it is desired to include motor data for a motor with Fm*n* = 0., Fm*n* must be set to a small positive value (<= 0.0001) – the data will be read, but the motor fraction will be set to zero.

c) To reference the motor parameters in the epcl functions **getmodpar** and **setmodpar**, both names (if different), separated by a underscore, must be used. For example, for the first motor, the following are the parameter names:

LFma
Raa_CompPFa
Lsa_Vstalla
Lpa_Rstalla
Lppa_Xstalla
Tpoa_Tstalla
Tppoa_Frsta
Ha_Vrsta
Etrqa_Trsta
Ftr1a_Fuvra
Vtr1a
Ttr1a
Vtr2a

Ttr2a
Ftr2a_Vc1offa
Vrc1a_Vc2offa
Trc1a_Vc1ona
Vrc2a_Vc2ona
Trc2a_Ttha
Th1ta
Th2ta
Tva

For PSLF version 17.0_07 and later, capitalization is optional (getmodpar/setmodpar are no longer case sensitive). For previous versions, the parameters must be entirely lower case.

d) The composite load model is represented by a load in the load flow solution. After initialization, all the load P and Q are included in the cmpldw model and are shown in the Pmot, Qmot columns of the load table. The original load values are set to zero.

e) During initialization, the low-side bus and far-end bus are added to the system Y matrix and are given numbers equal to the original (high-side) bus plus 800,000 and 900,000, respectively. If more than one load is connected to the same high-side bus, the bus numbers for the second and subsequent loads will have (n-1) * 1,000,000 added. After initialization, the new buses and added transformer, feeder, and shunts can be viewed with SCAN. **Note: A history (sav) file should not be saved after initialization. The load flow program will not recognize the new buses.**

f) The MVA base for the elements (transformer, equivalent feeder, shunt capacitors) in the load model depends on the value entered for "**mva=<mvabase>**" as follows:
   1) If **<mvabase> > 0**., the entered value is used as the MVA base.
   2) If **<mvabase> < 0**., the entered value is used as a "loading factor". The MVA base is set equal to the load P divided by the loading factor.
   3) If **<mvabase> = 0**. or if "mva=<mvabase>" is omitted, a loading factor of 0.8 is assumed. That is, the MVA base is set equal to the load P / 0.8.

Note: The input value of **mvabase** is shown in the edmd table as **MbaseR** and may be modified there prior to initialization. The **Mbase** column in edmd shows the acutal MVA base used for the load, e.g. if a "loading factor" was entered, **Mbase** is the computed value of MVA base. This is set by the model during initialization.

g) The static load model uses the following formulas:

$$\mathbf{P = Po*(P1c*V/Vo^{P1e}+P2c*V/Vo^{P2e}+P3)*(1+Pf*\Delta f)}$$

$$\mathbf{Q = Qo*(Q1c*V/Vo^{Q1e}+Q2c*V/Vo^{Q2e}+Q3)*(1+Qf*\Delta f)}$$

$$\mathbf{Po = Pload(1.-Fma-Fmb-Fmc-Fmd)}$$

$$\mathbf{Qo = Po*tan(acos(PFs)) = Po*sqrt(PFs^{-2}-1.)}$$

$$\mathbf{P3 = 1.-P1c-P2c}$$

$$\mathbf{Q3 = 1.-Q1c-Q2c}$$

h) The electronic load model is constant P, Q with the power factor **Pfel**. The P and Q are decreased linearly to zero between voltages **Vd1** and **Vd2**. If **frcel** is greater than zero, that fraction of the load that was tripped will be reconnected linearly as the voltage recovers.

i) Any of the four motors can be represented by an equivalent of a group of three-phase motors or by an equivalent of a group of single-phase air conditioners:

1) The three-phase motor model uses the same electrical flux model as the **motorw** model in the PSLF dynamic model library. The mechanical torque is computed using the following formula:

   $$\mathbf{Tm = Tmo^{*}\omega^{Etrq}}$$

2) The single-phase air conditioner model in the composite load model uses essentially the same model as the **ld1pac** model in the PSLF dynamic model library. Some of the parameters of that model are hard-wired to the following values:

Tv = 0.02	voltage sensing time constant, sec.
Tf = 0.05	frequency sensing time constant, sec.
Kp1 = 0.	real power coefficient for runing state 1, pu W/ pu V
Np1 = 1.0	real power exponent for runing state 1
Kq1 = 6.0	reactive power coefficient for runing state 1, pu VAr/ pu V
Nq1 = 2.0	reactive power exponent for runing state 1
Kp2 = 12.0	real power coefficient for runing state 2, pu W/ pu V
Np2 = 3.2	real power exponent for runing state 2
Kq2 = 11.0	reactive power coefficient for runing state 2, pu VAr/ pu V
Nq2 = 2.5	reactive power exponent for runing state 2
CmpKpf = 1.0	real power frequency sensitivity, pu W / pu freq.
CmpKqf = -3.3	reactive power frequency sensitivity, pu VAr / pu freq.
Trstrt = 0.4	restart delay time, sec.
Lfadj = 0.	stall voltage sensitivity to loading factor

j) If the transformer reactance (**Xxf**) is less than the jumper threshold, the transformer is omitted. If the transformer is included and **Vmax** > **Vmin** + 2***step**, the (low- side) variable tap will be adjusted to set the low-side voltage at approximately the mid-point of **Vmin** -- **Vmax** unless **Tmin** or **Tmax** is exceeded. If **LTC** = 1, The transformer tap moves in discrete steps during the dynamic simulation to control the low-side voltage. If the voltage is less than **Vmin** or greater than **Vmax** for a time period greater than **Tdel**, the transformer tap moves in steps until the voltage is within range. **Ttap** is the delay time between successive tap step movements.

k) If **Xfdr** is less than the jumper threshold, the feeder equivalent is omitted.

l) If, during initialization, the far end voltage is computed to be less than 0.95 p.u., **Rfdr** and **Xfdr** are reduced to bring it above 0.95.

m) After the load components are initialized to determine their reactive power consumption, shunt capacitance is added to make the Q at the original load bus equal the value from the load flow solution. If **Fb** = 0., all of this capacitance is added at the far end of the feeder (**Bf2**). If this capacitance is negative (inductive), the substation capacitor (**Bss**) is reduced to make **Bf2** zero or slightly positive.

n) **Cmpldw** responds to the **load[ ].shed** signal from any of the load sheddding relay models as follows:
   1) Static and electronic load P and Q values are multiplied by **load[ ].shed**.
   2) Motor (Type 1 and 3) MVA bases are multiplied by **load[ ].shed** to reduce the motor MW without changing the internal variables.
   3) Feeder R and X values are increased by 1. / **load[ ].shed** and feeder B values decreased by **load[ ].shed** to simulate tripping of an equivalent fraction of the feeders from the substation.
   4) Transformer and substation shunt B values are not changed.
   5) The change in MW at the substation high side bus due to the load shedding action is recorded

in the variable **load[ ].pshed** for use by the **lsmon** model in accumlating MW shed for the system and by area.

o) The parameter **frcel** was added in Version 17.0_07. Earlier data sets must be updated to include this parameter in the specified location.

p) The output channels have been modified in V19 to include load trip MW values, which may be summed for areas, zones, etc. using the LDTRPMON model. See manual page for LDTRMON for definition of these outputs.

Output Channels:

Record Level	Name	Description
1	Pld	Total load active power at high side bus, MW
1	Qld	Total load reactive power at high side bus, MVAr
2	Vls	Voltage magnitude at substation low-side bus, p.u.
2	Vld	Voltage magnitude at far end bus, p.u.
2	xshn	Nominal value load shed, MW
2	xton	Nominal total load tripped, MW
2	xtoi	Instantaneous total load tripped, MW
2	Pst	Static load P, MW
2	Pel	Electronic load P, MW
2	xeln	Nominal electronic load tripped, MW
2	xeli	Instantaneous electronic load tripped, MW
For each motor in use:		
2	Pm*n*	Motor *n* P, MW
2	xm*n*n	Nominal motor *n* load tripped, MW
2	xm*n*i	Instantaneous motor *n* load tripped, MW
3	tap	transformer tap ratio
3	Qst	Static load Q, MVAr
3	Qel	Electronic load Q, MVAr
For each motor in use:		
3	Qm*n*	Motor Q, MVAr
For each Type 3 motor in use:		
4	spd*n*	Motor speed, p.u.
4	Tm*n*	Motor mechanical torque, p.u.
4	Te*n*	Motor electrical torque, p.u.
4	fuv*n*	Fraction of motor not tripped by UV relay
4	fsh*n*	Fraction of motor not tripped by load shedding relays
For each Type 1 motor in use:		
4	fuv*n*	Fraction of motor not tripped by UV relay
4	fcn*n*	Fraction of motor not tripped by contactor
4	crA*n*	Current in non-restarting part of load, p.u.
4	crB*n*	Current in restarting part of load, p.u.
4	fsh*n*	Fraction of motor not tripped by load shedding relays
9	tmpA	"Temperature" in non-restarting part of load, p.u.

9	fthA	Fraction of non-restarting part of load not tripped by thermal prot.
9	tmpB	“Temperature” in restarting part of load, p.u.
9	fthB	Fraction of restarting part of load not tripped by thermal prot.

Note: Most motor channel names have “a”, “b”, “c”, or “d” added in place of “*n*” to indicate which of the four motors they are associated with.

Sample data record:

```
cmpldw 1234 "XXXX" 115.00 "1": #1 mva=1.1 /
    "Bss"    0 "Rfdr" 0.04 "Xfdr" 0.04 "Fb" 0.75/
    "Xxf" 0.08 "TfixHS" 1 "TfixLS" 1 "LTC" 0  "Tmin"    0.9 "Tmax" 1.1 "step" 0.00625 /
    "Vmin"    1.025 "Vmax" 1.04 "Tdel" 30  "Ttap"    5 "Rcomp" 0 "Xcomp" 0 /
    "Fma"    0.146246 "Fmb" 0.147222 "Fmc" 0.036521 "Fmd"0.367004 "Fel" 0.106286  /
    "PFel" 1 "Vd1" 0.7 "Vd2" 0.5 "Frcel" 0.8 /
    "Pfs"    -0.99771 "P1e" 2 "P1c" 0.557361 "P2e" 1 "P2c"    0.442639 "Pfreq" 0 /
                    "Q1e" 2 "Q1c" -0.5 "Q2e" 1 "Q2c"        1.5 "Qfreq" -1 /
"MtpA" 3 "MtpB" 3 "MtpC" 3 "MtpD" 1 /
"LfmA" 0.75 "RsA" 0.04 "LsA" 1.8 "LpA" 0.12 "LppA"      0.104 /
    "TpoA" 0.095 "TppoA" 0.0021 "HA"     0.1 "etrqA" 0 /
    "Vtr1A" 0.7 "Ttr1A" 0.02 "Ftr1A" 0.2 "Vrc1A" 1 "Trc1A" 99999 /
    "Vtr2A" 0.5 "Ttr2A" 0.02 "Ftr2A" 0.7 "Vrc2A" 0.7 "Trc2A" 0.1 /
"LfmB" 0.75 "RsB" 0.03 "LsB" 1.8 "LpB" 0.19 "LppB"      0.14 /
    "TpoB" 0.2 "TppoB" 0.0026 "HB"      0.5 "etrqB" 2 /
    "Vtr1B" 0.6 "Ttr1B" 0.02 "Ftr1B" 0.2 "Vrc1B" 0.75 "Trc1B" 0.05 /
    "Vtr2B" 0.5 "Ttr2B" 0.02 "Ftr2B" 0.3 "Vrc2B" 0.65 "Trc2B" 0.05 /
"LfmC" 0.75 "RsC" 0.03 "LsC" 1.8 "LpC" 0.19 "LppC"      0.14 /
    "TpoC" 0.2 "TppoC" 0.0026 "HC"      0.1 "etrqc" 2 /
    "Vtr1C" 0.65 "Ttr1C" 0.02 "Ftr1C" 0.2 "Vrc1C" 1 "Trc1C" 9999 /
    "Vtr2C" 0.5 "Ttr2C" 0.02 "Ftr2C" 0.3 "Vrc2C" 0.65 "Trc2C" 0.1 /
"LfmD" 1 "CompPF" 0.98 /
    "Vstall" 0.56 "Rstall" 0.1 "Xstall" 0.1 "Tstall" 0.03  /
    "Frst" 0.2 "Vrst" 0.95 "Trst" 0.3 /
    "fuvr" 0.1 "vtr1" 0.6 "ttr1" 0.02 "vtr2" 1 "ttr2" 9999 /
    "Vc1off" 0.5 "Vc2off" 0.4 "Vc1on" 0.6 "Vc2on" 0.5 /
   "Tth" 15 "Th1t" 0.7 "Th2t" 1.9 "tv" 0.025
```

Schematic Diagram: