THE HYDRO COMPANY, INC.
DBA THE NEVADA HYDRO COMPANY, INC.

June 24, 2010

Mr. James Avery
San Diego Gas and Electric
8330 Century Park Court
San Diego, CA 92123-1548

RE: **NHC Protest: Phase 3 CTPG Draft Report Issued June 8, 2010**
Under FERC Order 890 and FERC NOPR RM10-23-000
Critical FERC 1221(a) Listed Project and CEC Transmission Project

Talega–Escondido/Valley–Serrano 500 kV Interconnect
FERC Dockets ER06-278 and ER08-654

Dear Mr. Avery.

The Nevada Hydro Company (NHC) has reviewed the CTPG Phase 3 Draft Report (Draft Report) issued June 8, 2010. NHC Engineers ran the TE/VS power flows on the cases contained in your report, with the proper base case data, as set forth in FERC Dockets ER06-278, ER08-654, and our approved studies. NHC also relied upon the following:

1. Reports from the CAISO, including CSRTP, STEP and the Kiel report.
2. WECC reports and analyses.
3. The CPUC's Valley Rainbow Alternatives Report.
4. The FERC FEIS for LEAPS in FERC Docket P-11858-002
5. The CPUC FEIR issued for the Sunrise Project.

NHC has found CTPG Phase 3 Studies and Draft Report on the TE/VS Project to be, at best, disingenuous, fictitious, discriminatory, non-compliant with FERC Order 890, and with FERC NOPR RM10-23-000. This Report is also inconsistent with findings contained in the above studies and FERC's 1221a Critical Congestion Area study, CEC Transmission Reports, CREZ Planning, and RETI Planning.

In addition, because no Independent Project was evaluated fairly in your Draft Report, and all Utility Projects were given good results, it is my personal belief; this is just another attempt of SDGE/CAISO to use its position of power and reputed independence, to create an unfair advantage, thereby picking winners and losers for transmission development in California. SDG&E and the CAISO are discriminating against the Independent Transmission Developers, plain and simple. This is proven statistically, if by no other means: how many independent projects have been approved (zero) and how many utility sponsored projects have been approved (all).

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As it applies to the Independent Transmission Developer–sponsored projects, I wonder:

- Where is CAISO Tariff Section 24?
- Where is FERC Order 890 and RM10-23-000?
- Who empowered CTPG to pick winners and losers under the current CAISO Tariffs?
- Where was the transparency or impartial third party to protect our interests?
- Where is our "Safe Harbor" under RM-23-000?
- Why was a fictitious ROFR applied to the Independent Projects?

Attached is our technical report that proves up points made in this letter. We were never contacted by TANK, or requested to give information that would be required to properly analyze our project. Also, a call this week never happened to find out why your power flow modeling was not properly done. Further, you canceled a meeting to discuss comments on the CTPG Phase 3 results.

We look forwarded to a spirited and professional debate. I am personally looking forward to taking apart your CTPG Phase 3 Report results, case by case, publically.

Sincerely

Rexford J Wait
Vice President

Attachments: NHC CTPG Report

Comments in Response to

California Transmission Planning Group
Phase 3 Draft Study Report

Prepared by The Nevada Hydro Company

These comments are prepared by the Nevada Hydro Company (NHC) of its technical review of Sections 8.1 and 8.2 of the California Transmission Planning Group (CTPG) Phase 3 Draft Study Report (Report). These comments draw additional information from other parts of this report and other materials previously prepared by CTPG, the California Independent System Operator (CAISO) and other documents that will be referenced when used.

The Talega-Escondido/Valley-Serrano 500 kV Interconnection Project (TE/VS) analysis in the Report (Section 8.1) is the first of the sections dealing with alternative transmission choices that may relieve perceived transmission needs not met by projects proposed by CTPG members. NHC has identified serious flaws in the analysis. Each is described in this report.

1. Flaw: Inaccurate Project Configuration

The project configuration used by the CTPG analysis team is shown in Report subsection 8.1.1.1.

This configuration is highly inaccurate, primarily with regard to the configuration and equipment for the Case Springs Substation and the reconfiguration of the existing Talega-Escondido 230 kV line. This section of the Report assumed that the Talega-Escondido 230 kV line is merely looped into the Case Springs Substation.

1.1. Correction: 2nd Circuit added to TE Line

In fact, and as is widely known, the plan of service for TE/VS is to add the second circuit from Talega to Case Springs to Escondido, with at least the section from Talega to Case Springs having double bundled conductor with a rating of 912 MVA per circuit.

1.2. Correction: double bundled circuits from Case Springs to Escondido

The double circuit line sections from Case Springs to Escondido will either be double bundled or composite, depending on the decision of the CPUC.

1.3. Correction: Case Spring transformers and phase shifters

The configuration of Case Springs Substation is incorrect in that the plan of service here is for three 500/620 MVA 500/230 kV transformers and three 500/620 MVA 230 kV phase shifting transformers. The transformers will be connected in three strings with no cross-connection bus between the 500/230 kV transformers and the phase shifters. Thus, no operation with the phase shifters bypassed is possible, since such a bus and mode of operation has not been found useful.

2. Flaw: Intentional use of antiquated information

TNHC has provided the data for the TE/VS Project as noted above to groups within California and the Western Electricity Coordinating Council over a period of at least two years. This has included the attached Excel spreadsheet and copies of “add-in” files in both PSLF and PSS®E format. Also, SDGE has itself required in its Interconnection Agreement drafts that the Talega-Escondido line be upgraded as noted. Thus, to revert to a form of the Project for use in this study that was proposed over five years ago and has been outdated for at least two years indicates a willful ignorance of readily available information on the Project.

3. Flaw: Faulty Operating Scenarios

Section 8.1.1.3 of the Draft Report addresses operating scenarios for the TE/VS Project. Three operating scenarios were studied. They were:

- Case 1 – With the phase shifting transformers at Case Springs bypassed.
- Case 2 – With the phase shifters set to cause flow of 1000 MW from the SDGE end of the Project to the Southern California Edison (SCE) end
- Case 3 – With the phase shifters set to cause flow of 1000 MW from the SCE end of the Project to the SDGE end.

3.1. Corrections to Case 1

As noted, there is no bypass option as proposed in Case 1. However the phase shifters can be set to zero degrees or could be set to provide zero power flow. This will produce essentially the same results as bypassing the phase shifters but with greater control of flow induced by loop flows. Also, the fact of having three instead of two phase shifters will have an impact on performance in general.

3.2. Case 2 is seriously flawed and should not be considered

The Case 2 operating scenario has never been considered by TNHC or any of the “groups” that have studied the effects of TE/VS without the Lake Elsinore Advanced Pumped Storage (LEAPS) Project in service (such as the Southern California Regional Transmission Planning [CSRTP] Group) as a realistic option, especially for high load conditions. The Case 2 scenario is akin to a plan to operate the Palo Verde-Devers 500 kV line with flow toward Palo Verde under high load conditions. This scenario should not be countenanced.

3.3. Case 3 reasonable as is

The Case 3 operating scenario is considered as reasonable by TNHC.

The issue of not including the LEAPS Project will be addressed later.

4. Flaw: Findings

Section 8.1.1.5 deals with the results found from the analysis conducted by the CTPG study team. The first portion of this section provides a summary of findings. The logical process of reporting would be that Tables 8.1.4 and 8.1.5 provide the support to uphold the summary presented. They do not. Indeed, there seems to be little connection between the summary and the support provided by the tables. Also, while being quite specific about selected violations within or near the SDGE service area, the summary is vague about other findings.

As noted, the Case 2 scenario should not be considered. So, the following tables present the same data without Case 2 being considered.

4.1. Revised Tables

Table 8.1.4 Normal Conditions (N-0) (Revised by NHC)

TE/VS Case	Overloaded Facility	Area	Rating(Amps)	Loading (%)	
				Phase 2 w/o Mitigation	With TE/VS Project
Case 3	TALEGA- CAMP PENDLETON 230 kV #1	22	1,145	N/A	148.6%

Table 8.1.5 Emergency Conditions (N-1 & N-2) (Revised by NHC)

TE/VS Case	Overloaded Facility	Contingency	Area	Rating (Amps)	Loading (%)	
					Phase 2 w/o Mitigation	With TE/VS Project
Case 3 (N-1)	ESCONDIDO- CAMP PENDLETON 230 kV #1	TALEGA-CAMP PENDLETON	22	1,144	N/A	148.6%
Case 1 (N-1)	MLMS3TAP-OTAY MESA 230 kV #1	MIGUEL-WNDFARMS	22	3,150	<100%	101.3%
Case 3 (N-1)	MLMS3TAP-OTAY MESA 230 kV #1	MIGUEL-WNDFARMS	22	3,150	<100%	104.5%
Case 3 (N-1)	PENASQUITOS-ENCINA TAP 230 kV #1	CAMP PENDLETON-TALEGA	22	2,289	<100%	106.8%
Case 1 (N-1)	TALEGA-CAMP PENDLETON 230 kV #1	MIGUEL-WNDFARMS	22	1,145	N/A	102.2%
Case 3 (N-1)	TALEGA-CAMP PENDLETON 230 kV #1	CAMP PENDLETON-ESCONDIDO	22	1,145	N/A	224.6%
Case 3 (N-2)	DEVERS-SANBRDNO 230 Kv #1	DEVERS-VALLEYSC #1 & #2	24	796	125.9%	131.3%
Case 3 (N-2)	EL CASCO-DEVERS 230 Kv #1	DEVERS-VALLEYSC #1 &#2	24	1,150	128.0%	132.2%
Case 3 (N-2)	PASGAH-EL DORADO 500 Kv#1	LUGO-VICTORVL; LUGO-MOHAVE	24	1,600	116.2%	117.6%
Case 3 (N-2)	SAN ONOFRE-SANTIAGO 230 Kv #1	VIEJOSC-SAN ONOFRE; SAN ONOFRE-SANTIAGO	24	3,301	<100%	107.9%
Case 3 (N-2)	ESCONDIDO –CAMP PENDLETON 230 Kv #1	ENCINA-SANLUSRY-PEN 230Kv & BATIQTOS-SHADOWR 138Kv	22	1,145	N/A	113.2%
Case 1 (N-2)	IMPRLVLY-ROA 230 Kv#1	IMPRVLY-CENTRAL S; IMPRLVLY-WNDFARMS	22	2,133	Diverged	171.8%
Case 3 (N-2)	IMPRLVLY-ROA 230 Kv#1	IMPRVLY-CENTRAL S; IMPRLVLY-	22	2,133	Diverged	170.8%

		WNDFARMS				
Case 1 (N-2)	OTAY MESA- TJI 230Kv #1	IMPRVLY-CENTRAL S; IMPRLVLY-WNDFARMS	22	2,071	<100%	159.4%
Case 3 (N-2)	OTAY MESA- TJI 230Kv #1	IMPRVLY-CENTRAL S; IMPRLVLY-WNDFARMS	22	2,071	<100%	158.9%
Case 1 (N-2)	TALEGA-CAMP PENDLETON 230Kv #1	IMPRVLY-CENTRAL S; IMPRLVLY-WNDFARMS	22	1,145	N/A	138.4%
Case 3 (N-2)	TALEGA-CAMP PENDLETON 230Kv #1	IMPRVLY-CENTRAL S; IMPRLVLY-WNDFARMS	22	1,145	N/A	142.2%

4.2. Corrected Contingency Analysis

As noted in the description of the plan of service, the proper 230 kV line configurations will affect the performance of the Project. By including the second circuits, including the bundling between Talega and Case Springs, many of the overloads reported in the tables for Cases 1 and 3 are eliminated. There are no overloads to report under normal conditions. The contingency report table would now be as follows.

Table 8.1.5 Emergency Conditions (N-1 & N-2) with Correct 230 kV lines from Case Springs (Revised by NHC)

TE/VS Case	Overloaded Facility	Contingency	Area	Rating (Amps)	Loading (%)	
					Phase 2 w/o Mitigation	With TE/VS Project
Case 1 (N-1)	MLMS3TAP-OTAY MESA 230 kV #1	MIGUEL-WNDFARMS	22	3,150	<100%	101.3%
Case 3 (N-1)	MLMS3TAP-OTAY MESA 230 kV #1	MIGUEL-WNDFARMS	22	3,150	<100%	104.5%
Case 3 (N-2)	DEVERS-SANBRDNO 230 Kv #1	DEVERS-VALLEYSC #1 & #2	24	796	125.9%	131.3%
Case 3 (N-2)	EL CASCO-DEVERS 230 Kv #1	DEVERS-VALLEYSC #1 &#2	24	1,150	128.0%	132.2%
Case 3 (N-2)	PASGAH-EL DORADO 500 Kv#1	LUGO-VICTORVL; LUGO-MOHAVE	24	1,600	116.2%	117.6%
Case 3 (N-2)	SAN ONOFRE-SANTIAGO 230 Kv #1	VIEJOSC-SAN ONOFRE; SAN ONOFRE-SANTIAGO	24	3,301	<100%	107.9%
Case 1 (N-2)	IMPRLVLY-ROA 230 Kv#1	IMPRVLY-CENTRAL S; IMPRLVLY-WNDFARMS	22	2,133	Diverged	171.8%
Case 3	IMPRLVLY-ROA 230	IMPRVLY-	22	2,133	Diverged	170.8%

(N-2)	Kv#1	CENTRAL S; IMPRLVLY-WNDFARMS				
Case 1 (N-2)	OTAY MESA- TJI 230Kv #1	IMPRVLY-CENTRAL S; IMPRLVLY-WNDFARMS	22	2,071	<100%	159.4%
Case 3 (N-2)	OTAY MESA- TJI 230Kv #1	IMPRVLY-CENTRAL S; IMPRLVLY-WNDFARMS	22	2,071	<100%	158.9%

Regarding the two remaining N-1 contingency overloads noted, the Case 1 situation can be managed by proper operation of the phase shifters.

The Case 3 situation is counter-intuitive. The flow is from OTAY MESA 230 kV to MLMS3TAP rather than as listed in the table. Thus, a greater input through TE/VS should lower the flow from OTAY MESA, not increase it. Without benefit of the actual load flow case used to derive this result (NHC requested cases from G. DeShazo on June 18 with no response to date), NHC used the 2019 base case with TE/VS added and LEAPS out of service.

4.3. Omission of N-1-1 Test

NHC notes that CTPG failed to test contingencies known as N-1-1, in which there is opportunity for adjustments to the system after the first contingency in anticipation of the second event.

The first four of the N-2 are likely to be true representations of the results if the contingencies are, in fact, true N-2 events. They are outages of two lines near each other. If they are actually N-1-1 events, then the opportunity to mitigate the effects of these events by use of the TE/VS phase shifters is available.

NHC notes again CTPG's inept analysis: The phase shifters offer the fastest available means of controlling these flows, faster and larger than almost all generation with available capability at peak times. It should be noted that all four of these events involve the Case 3 scenario, so ability to reduce flow, or even reverse it, over TE/VS would mitigate the effect, and quickly .

Further, NHC suggests a way to mitigate these four contingency issues is to build a 500 kV connection from Case Springs to Central. This line would provide value in at least three ways.

1. It would relieve the flow problems on the SCE 230 kV lines around Devers for the loss of the two Devers-Valley 500 kV lines.

2. Also, it would provide the first and, so far only, 500 kV connection between the northern 500kV fork out of Palo Verde/Hassayampa (PV-Devers-Valley-Serrano) and the southern fork (Hassayampa-North Gila-Imperial Valley-Miguel and Central).

3. It would also mitigate the problem of the loss of the 500 kV line between the proposed wind farms in Mexico and Miguel by providing SDGE with two 500/230kV source points under this contingency.

There is adequate time for this 500 kV line to be developed and put in service before the time period being tested.

4.4. Reporting Flaws

The last four contingency cases appear to have a logical consistency problem in how they are reported.

Of the four, the first two situations without mitigation don't achieve a solution. This is usually a sign of a system that is stressed beyond its ability to maintain stable operation. However, with TE/VS in operation, the CTPG study team identified a converged solution, even if there were significant overloads. The question arises as to how, for the same contingency set without mitigation, two of the cases diverge but the other two are reported to have flows over the reported line of less than 100% of rating? Is that because the system has collapsed in these latter two cases? NHC has concluded that use of TE/VS offers the system a period to deal with the problem, including use of TE/VS itself.

5. Conclusions

In reading this report, which is supposed to "assess how the need for the previously-identified upgrades might change with the TE/VS, and assess whether the addition of the TE/VS project would result in the need for additional system upgrades" (Subsection 8.1.1.1), it shows absolutely no benefit for TE/VS. This is an astonishing result. It is hard to find a 500 kV project without some redeeming merit. This is especially true when viewing the potential consequences of the N-2 contingency event that could lead to a blackout in San Diego. Thus, one must conclude that the analysis contained in the Report, and conclusions drawn therefrom, were not performed in compliance with FERC and WECC mandates, particularly FERC Order 890.

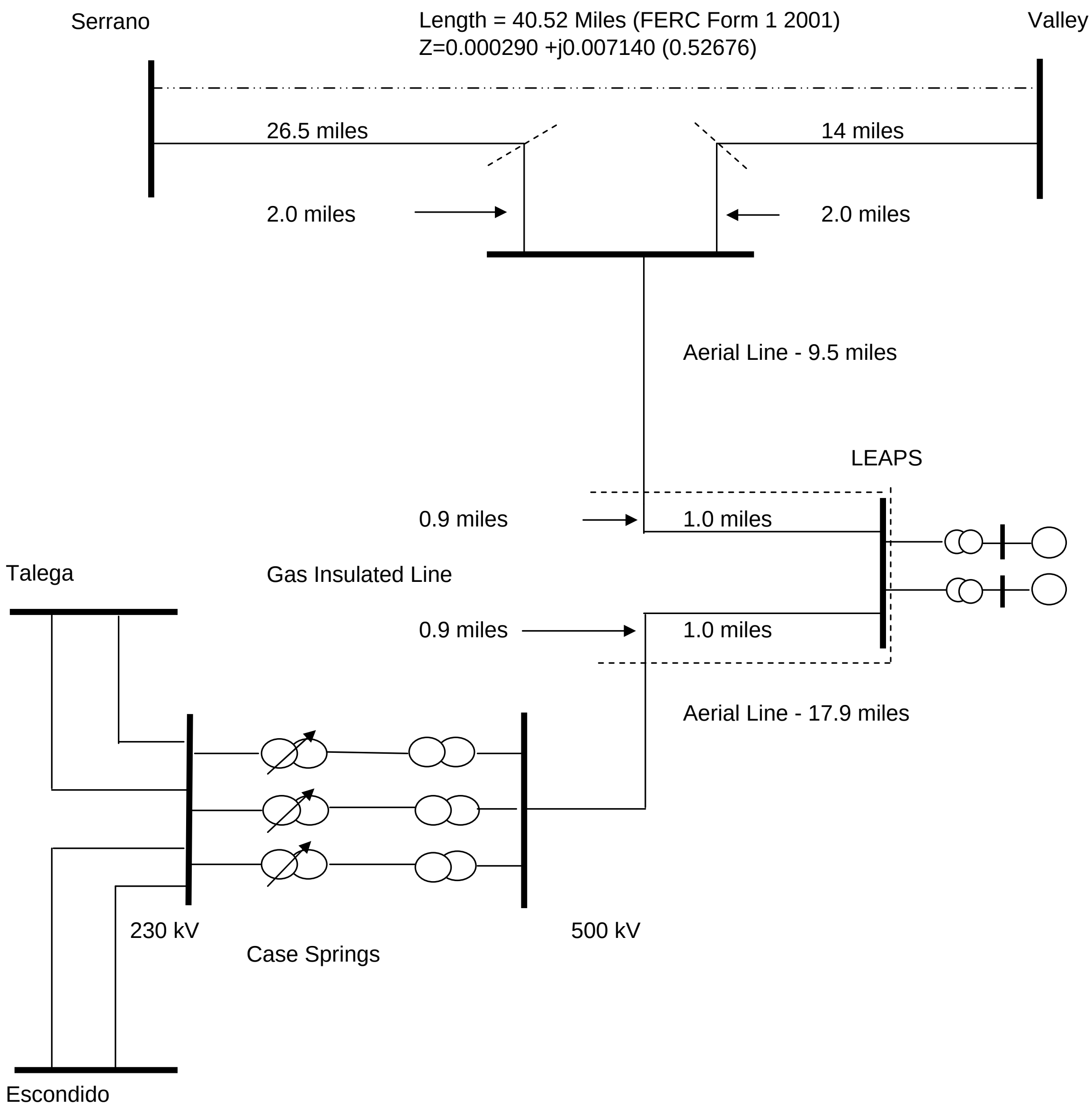
NHC notes that the Renewable Portfolio Standard for California in 2020 is an energy requirement, as differentiated from a capacity requirement. While it is true that there is a statistical probability of the occurrence of a level of output from the various renewable energy resources, and they all have an installed capacity limit beyond which each one cannot produce, none are "dispatchable" resources. One cannot demand that the wind blow or the sun shine just because CTPG wishes it so. Therefore, it is critical to have energy storage which is "dispatchable", especially if it can be made to act quickly. This, of course, is the fundamental basis of the LEAPS Project.

The lack of consideration of the performance and inherent reliability value of LEAPS is a major oversight in the analysis for this Phase 3 study. It ignores the inter-relationship between renewable energy, which produces energy when available, and the ability of LEAPS to turn that energy to a "dispatchable" resource that improves the reliability of the system. Also, LEAPS makes it possible to move energy from more remote locations to a point near to the point of consumption at lower load periods, thus reducing the need for transmission resources at peak times.

LEAPS is planned to be in service more than half a decade before the time of the study period for the CTPG Phase 3 study. To ignore this valuable resource, with its inherent reliability value and synergy with renewable energy sources is a clear oversight that should be corrected if this study is to have any integrity within the planning community.

TE/VS-LEAPS Transmission System Upgrades
Parameters as of June 9, 2008

For WECC Phase 2 Study



Line Component	Impedance (Per Unit) (line voltage,100 MVA Base) R	X	B	Length (Miles)	Ratings (MVA) A	B	
Valley-Serrano	0.0002900	0.0071400	0.52676	40.52	2598	2598	3000Amps
Serrano-Lake	0.0002040	0.0050220	0.37050	28.5	2598	2598	3000Amps
Valley-Lake	0.0001145	0.0028193	0.20800	16.0	2598	2598	3000Amps
Lake-LEAPS (Aerial)	0.0000680	0.0016740	0.12350	9.5	2598	2598	3000Amps
Lake-LEAPS (GIL)	0.0000055	0.0000470	0.07447	0.9	3464	3464	4000 Amps
LEAPS (Aerial) - North	0.0000072	0.0001762	0.01300	1.0	2598	2598	3000Amps
Lake-LEAPS (Total)	0.0000806	0.0018972	0.21097	11.4	2598	2598	3000Amps
Case Springs-LEAPS (Aerial)	0.0001281	0.0031541	0.23270	17.9	2598	2598	3000Amps
Case Springs-LEAPS (GIL)	0.0000055	0.0000470	0.07447	0.9	3464	3464	4000 Amps
LEAPS (Aerial) - South	0.0000072	0.0001762	0.01300	1.0	2598	2598	3000Amps
Case Springs-LEAPS (Total)	0.0001407	0.0033773	0.32017	19.8	2598	2598	3000Amps
Escondido-Talega	0.0094500	0.0729000	0.15100	51.0	456.1	456.1	1,145
Escondido-Case Springs(each)	0.0034280	0.0528882	0.10955	37.0	912.2	912.2	2,290
Telega-Case Springs(each)	0.0012971	0.0200118	0.04145	14.0	912.2	912.2	2,290
Transformers - Case Springs (3 each)							
500 MVA 500/230kV Auto	0.0003550	0.0270650	33 tap positions, +/-10%		500	620	
500 MVA 230 kV phase shifter	0.0007100	0.0266300	33 tap positions, +/-32º		500	620	

Phase Shifter Impedance Correction Table

Entry No.	Tap Angle	Correction Factor
1	-32	1.64
2	-24	1.36
3	-16	1.16
4	-8	1.04
5	0	1.00
6	8	1.04
7	16	1.16
8	24	1.36
9	32	1.64

2 degrees per tap step

LEAPS Generation Parameters (Two units)

Generator Voltage = 20.0 kV
Pmax = 251.3 MW Pmin= -300.0 MW
Qmax= 122 MVAr Qmin = -122 MVAr
Mbase = 360.0 MVA
Zsorce (X'd) = 0.0+j0.22 Per Unit on Mbase
Auxiliary Load per Unit = 1.166MW, 0.723 MVAr

Generator stepup Transformers
one transformer per unit rated 375 MVA
Impedance = 0.00541+j0.1300 on 100 MVA base
Fixed tap positions - 17 points between +5.0% to -5.0%

LEAPS Dynamics models (parameters and values to be supplied later)

Generator	GENSAL
Exciter	Static Exciter with controlled (thyristor) rectifiers
Governor	Digital Electro-hydraulic
Power System Stabilizer	Integral to static exciter