

NAME OF COMPANY : APGENCO

NAME OF POWER STATION : SILERU COMPLEX

SALIENT FEATURES OF HYDROELECTRIC PROJECT

1. LOWER SILERU HYDRO ELECTRIC SCHEME

I. GENERAL

- | | |
|----------------------------|---|
| 1. Location | : Pollur Camp, Mothugudem in Khammam dist.,
(about 100 KM from Bhadracalam Road) |
| 2. Category | : Hydro Electric Project |
| 3. Capacity | : 4 x 115 MW = 460 MW |
| 4. River | : Sileru |
| 5. Dam | : Donkarayi / Forebay |
| 6. No. of Units | : 4 |
| 7. Design Energy (in Mu) | : 1050 MU |

II. HYDROLOGY:

- | | |
|-----------------------------------|--------------------|
| 1. Reservoir | : Donkarayi |
| 2. Catchment Area | : 4908 Sq. KM |
| 3. Max. flood discharge | : 2,75, 500 Cusecs |
| 4. Live Storage | : 13.257 TMC Ft |
| 5. Gross Storage | : 16.5 TMC Ft |
| 6. Dead Storage | : 3.243 TMC Ft. |
| 7. Generation per TMC | : 11.905 MU |
| 8. Design Head | : |
| 9. Net head Max. | : 620 Ft. |
| 10. Net Head Average | : |
| 11. Full Reservoir level (FRL) | : 1037 Ft. |
| 12. Min. Draw Down Level (MDDL) | : 955 Ft. |
| 13. Tail Race water level | : 255 Ft. |
| 14. Design Disch. through Machine | : 72 Cumecs |

III. FOREBAY:

- | | |
|--------------------------|----------------|
| 1. FRL | : EL 930 Ft |
| 2. MDDL | : EL 920 Ft. |
| 3. Live Storage | : 2176 A. CFt. |
| 4. Free Board | : 10 Ft. |
| 5. Top of Dam | : 940 Ft. |
| 6. Bed level of Stream | : EL 770 Ft. |
| 7. Average Height of Dam | : 50 Ft. |
| 8. Length at Top | : 4450 Ft. |
| 9. Width | : 30 Ft. |

IV. COMMISSIONING DETAILS

Unit – 1	: 28th March' 1976
Unit – 2	: 6th October' 1976
Unit – 3	: 8th November' 1977
Unit – 4	: 13th August' 1978

V. TECHNICAL:

1. Turbine	Unit - 1 & 2	Unit – 3 & 4
a) Type	: Francis Vertical	Francis Vertical
b) Make	: LMW, Russia	BHEL
c) Net Head	: 193.5 Mts.	193.5 Mts.
d) Rated Output	: 119 MW	119 MW
e) Normal Speed	: 300 RPM	300 RPM
f) Runway speed	: 580 RPM	580 RPM
g) Disc. Through Machine	: 72 Cumecs	
1. Generator		
a) Type	:	
b) Make	: Russian	BHEL, Hardwar
c) Rated Voltage	: 11 KV	11 KV
d) Rated Out put	: 127.7 MVA	127.7 MVA
e) Current	: 6700 A	6700 A
f) Speed	: 300 RPM	300 RPM
g) Power Factor	: 0.9 Lagging	0.9 Lagging
2. Generator Transformer		
a) Make	:	
b) Capacity	: 42.5 MVA single Phase	
c) Voltage Ratio	: 11/ 220 KV	
3. Transmission Line	: 220 KV	: 6 Nos.
		2 Nos. to Upper Sileru
		2 Nos. to Kothagudem
		1 No. to Bommuru
		1 No. to Barsur

2. UPPER SILERU HYDRO ELECTRIC SCHEME

I. GENERAL

1. Location	: Upper Sileru in Midst of Chintal pally Agency, 200 KM from Visakhapatnam
2. Category	: Hydro Electric Project
3. Capacity	: 4 x 60 MW = 240 MW
4. Designed capacity	:

- 5. River : **Sileru**
- 6. Dam : **Forebay Dam**
- 7. No. of Units : **4 Nos.**
- 8. Annual Energy Potential : **575 MU**

II. HYDROLOGY:

- 1. Reservoir : **Guntawada Reservoir**
- 2. Catchment Area : **1994 Sq. Miles**
- 3. Max. flood discharge : **2,50,000 Cusecs**
- 4. Live Storage : **3.108 TMC Ft. (88 M.Cum)**
- 5. Gross Storage :
- 6. Dead Storage : **0.712 TMC**
- 7. Generation per TMC : **7 MU**
- 8. Design Head : **290 Ft.**
- 9. Net head Max./Min : **310 / 290 Ft**
- 10. Net Head Average : **304 Ft.**
- 11. Full Reservoir level (FRL) : **1360.00 Ft**
- 12. Min. Draw Down Level (MDDL) : **1333.50 Ft.**
- 13. Tail Race water level : **1045 Ft**
- 14. Design Disch. through Machine : **1800 Cusecs**

III. COMMISSIONING DETAILS

- Unit – 1** : **14th October' 1967**
- Unit – 2** : **31st March' 1968**
- Unit – 3** : **31st March' 1994**
- Unit – 4** : **21st March' 1995**

IV. TECHNICAL:

- 1. Turbine
 - a) Type : **Francis Vertical**
 - b) Make : **Excherwyss, Charmilies Switzerland (Stage – I)**
BHEL (Stage – II)
 - c) Net Head : **90 M**
 - d) Rated Output : **9500 BHP**
 - e) Normal Speed : **187.5 RPM**
 - f) Runway speed : **350 RPM**
 - g) Disc. Through Machine :
- 2. Generator
 - a) Type : **Synchronous**
 - b) Make : **Oerlikon, Switzerland (Stage – I)**
BHEL (Stage – II)
 - c) Rated Voltage : **11 KV**
 - d) Rated Out put : **60 MW / 66.67 MVA**
 - e) Current : **3500 A**
 - f) Speed : **300RPM**
 - g) Power Factor : **0.9 Lag**

3. Generator Transformer
 - a) Make : **TELK, Angamally, Kerela**
 - b) Capacity : **25 MVA, Single Phase (Out Door Type)**
 - c) Voltage Ratio : **11 KV/ 220 KV**
4. Transmission Line : **220 KV, 3 Nos. (Stage – I)**
220 KV, 2 Nos. (Stage – II)

3. DONKARAYI DAM CANAL POWER HOUSE

I. GENERAL

1. Location : **Donkarayi Camp, East Godavari dist.,**
2. Category : **Hydro Electric Project, Canal Power House**
3. Capacity : **1 x 25 MW = 25 MW**
4. Designed capacity :
5. River : **Sileru**
6. Dam : **Donkarayi Dam**
7. No. of Units : **1**
8. Annual Energy Potential : **153 MU**

II. HYDROLOGY:

1. Reservoir : **Donkarayi**
2. Catchment Area : **4908 Sq. KM**
3. Max. flood discharge : **2,75, 500 Cusecs**
4. Live Storage : **13.257 TMC Ft**
5. Gross Storage : **16.5 TMC Ft**
6. Dead Storage : **3.243 TMC Ft.**
7. Generation per TMC : **11.905 MU**
8. Design Head : **25 Mts.**
9. Net head : **21 Mts.**
10. Net Head Average :
11. Full Reservoir level (FRL) : **1037 Ft.**
12. Min. Draw Down Level (MDDL) : **955 Ft.**
13. Design Disch. through Machine : **123.15 Cumecs**

III. COMMISSIONING DETAILS

Unit : **4th October' 1983**

IV. TECHNICAL:

1. Turbine
 - a) Type : **Vertical Kaplan**
 - b) Make : **BHEL**
 - c) Net Head : **21.0 Mts.**
 - d) Rated Output : **26100 KW**
 - e) Normal Speed : **136.6 RPM**

2. Generator
 - a) Type :
 - b) Make : **BHEL, Hardwar**
 - c) Rated Voltage : **11 KV**
 - d) Rated Out put : **25300 KW/ 29760 KVA**
 - e) Current : **1560 A**
 - f) Speed :
 - g) Power Factor : **0.85 Lagging**

3. Generator Transformer
 - a) Make : **NGEF**
 - b) Capacity : **31.5 MVA (3 – Phase)**
 - c) Voltage Ratio : **11 KV / 220 KV**

4. Transmission Line : **2 Nos. 220 KV**