

NAME OF COMPANY : APGENCO

NAME OF POWER STATION : SRISAILAM LEFT BANK POWER STATION

SALIENT FEATURES OF HYDROELECTRIC PROJECT

I. GENERAL

1. Location : **Srisailam Dam West, Kurnool/MBNR Dist. A.P.**
2. Category : **Underground Hydrel Power House, Pumped Storage Scheme**
3. Capacity : **6 x 150 MW = 900 MW**
4. Designed capacity : **6 x 153 MW = 918 MW**
5. River : **KRISHNA**
6. Dam : **Srisailam Dam, across Krishna River in Nandi Kotkur, Kurnool District, Andhra Pradesh.**
7. No. of Units : **SIX**
8. Design Energy (in Mu) : **1200 MU**

II. HYDROLOGY:

1. Reservoir : **Srisailam**
2. Catchment Area : **2,03,597 Sq. K.M (79,530 Sq. Miles)**
3. Max. flood discharge : **30,316 Cumecs**
4. Live Storage : **247.79 TMC Ft.**
5. Gross Storage : **308.06 TMC Ft.**
(Between FRL: 885 Ft. and MDDL: 805 Ft)
6. Dead Storage : **60.3 TMC Ft. (2122 MCM) at 805 Ft.**
7. Generation per TMC : **5.5 MU**
8. Design Head : **91 M (Turbine Mode)**
95 M (Pump Mode)
9. Max. gross head : **375 Ft. (114.3 M) Turbine Mode**
10. Design Net Head : **82.8 M (153 MW)**
11. Net Head Max/Min : **107.1 M (176 MW) / 65.3 M (106 MW) (Turbine Mode)**
12. Full Reservoir level (FRL): **885 Ft. (269.75 M)**
13. Min. Draw Down Level (MDDL) : **805 Ft. (245.37 M)**
14. Tail Race water level for
 - a) Max. Discharge : **590 Ft.**

- b) Min. Discharge : 535 Ft.
15. Design Disch. through Machine : 7484 Cusecs (211.9 Cumecs)

III. COMMISSIONING DETAILS

- Unit – 1** : 26th April' 2001
Unit – 2 : 12th November' 2001
Unit – 3 : 19th April' 2002
Unit – 4 : 29th November' 2002
Unit – 5 : 28th March' 2003
Unit – 6 : 4th September'2003

IV. TECHNICAL:

1. TURBINE

- a) Type : Vertical Shaft, Francis Reversing
b) Make : M/s. Hitachi, Japan
c) Net Head Max./Min : 107.1 M /65.3 M
d) Design Net Head : 82.8 M
e) Rated Output : 153 MW
f) Output Max./ Min : 176 MW / 106 MW
g) Normal Speed : 136.4 RPM
h) Runway speed : 231 RPM
i) Disc. Through Machine : 6467 Cusecs (183.1 Cumecs)

1. GENERATOR - MOTOR

- a) Type : Synchronous Generator, Semi Umbrella
b) Make : M/s. Mitsubishi Electric Corporation (MELCO), Japan
c) Rated Voltage : 13.8 KV
d) Rated Out put : 150 MW/ 190 MVA (Generating Mode)
175 MW (Motoring Mode)
e) Current : 8,500 A
f) Speed : 136.4 RPM
g) Power Factor : 0.9 Lagging (Generator Mode)
0.95 Leading (Motoring Mode)

3. GENERATOR TRANSFORMER

- a) Make : M/s. TELK, Kerala
b) Capacity : 190 MVA, 3 – Phase

c) Voltage Ratio : **13.8 KV/ 400 KV**

4. TRANSMISSION LINE:

- a) No. of Feeders : **5 Nos., 400 KV**
b) Name of the Feeders : **Vijayawada I & II (2 Nos.)
Hyderabad I &II (2Nos.)
Kurnool – I (1 No.)**

5. 400 KV GAS INSULATED SWITCH GEAR

- a) No. of Feeders : **5 Nos.**
b) No. of generator Transformers : **6 Nos.**
c) No. of Station Transformers : **2 Nos.**
d) Bus coupler : **1 No.**
e) No. of Busses : **2 Nos.**

GENERAL

- Normal Voltage : **400kV**
Lightening impulse withstand voltage : **1425 kVp**
Power frequency withstand voltage : **520 kV(50Hz)**
Rated normal current : **2000A**
Short time current rating for 1sec : **40kA**
Frequency : **50 Hz**
Standards : **IEC**

6. 400 KV XLPE POWER CABLE

- a) Type : **400kV, 1000Sq. mm**
b) Make : **M/s. Hitachi cable Limited, Japan**
c) Rated Voltage : **400 kV**
d) Max. working voltage : **440 kV**
e) Basic impulse insulation level: **1425 kV**
f) Max. Permissible operating : **90⁰ C**
Temperature
g) Max. Permissible Temp. : **105⁰ C**
during emergency
h) Max. Permissible Temp. : **230⁰ C**
during short circuit
i) No. of Conductors : **1 No.**
j) Standards : **IEC-840**