

## **YADAKI CANAL SYSTEM (PABR Stage II)**

### **Material for Website**

#### **1. Preamble**

The TBP HLC scheme was taken up as a joint venture of Karnataka and Andhra Pradesh at a cost of Rs 21.90 crores to utilise 50 TMCft of water from T.B.Reservoir for irrigating 55,239 Ha (1,36,000 acres) in Andhra Pradesh during 1958. As per the agreement reached in the year 1956 between the two states, the distribution of the water is being shared in the ratio of 65:35 between Andhra Pradesh & Karnataka stages respectively.

The Planning Commission, Government of India has approved the scheme in letter No: NB-2(7) dt 2-11-1958 has suggested to the State Government to execute the Project in two stages for financial convenience viz. TBP HLC Stage I and TBP HLC Stage II.

The scheme TBP HLC Stage II in A.P. area was administratively approved in G.O.Ms No: 1777 dt 13-11-1967 for Rs 914.70 Lakhs and it comprises of 8 components.

The Revised estimate for TBP HLC Stage II was initially submitted for Rs. 4060 Lakhs. It was again revised for Rs 111.70 crores. This was also submitted to the C.W.C. by the Government. The revised estimate includes 6 more components in addition to the originally contemplated 8 components.

The TBP HLC Stage II is contemplated to provide irrigation facilities to an extent of 55,614 Ha (1,37,420 acres).

The Yadiki Canal System now called as PABR Stage II is one of the additional components included in the TBP HLC Stage – II scheme.

#### **2. Genesis of the Project:**

Yadiki canal system (P.A.B.R Stage II) a component of T.B.P.H.L.C Stage II is intended to provide Irrigation facilities to an extent of 50,000 acres I.D. in Rabi season by Utilising 5 T.M.C ft of water, out of 10 T.M.C.ft of water proposed to be allocated to P.A.B.R.Dam. 38 villages in 4 mandals i.e Peddavaduguru, Yadiki Peddapappuru and Tadipatri are benefitted under this system. The Government have accorded part administrative approval for Rs.21.00 Crores Vide GO.M.S. No.378 Dated 26.07.1984. Accordingly the work was started in the year 1986. Widening and lining of MPNC and part of left canal

from Krishtipadu Regulator(yadiki canal) were partly taken up and an expenditure of RS 15.16 Crores was incurred.

The Yadiki Canal System is the one among the Projects to be completed with in a time frame of five years. As such the Government have accorded administrative approval for Rs 536 Crores for completion of balance works of Yadiki Canal system vide G.O Rt No: 45 dated 19-1-05 of I&CAD (Major Irrigation V2 ) department. Tenders were floated to take up the balance works of Yadiki canal system in 3 Packages ( Packages 31, 32 & 33) through 'e' Procurement under EPC turn key system ( Category I ) as detailed below.

### 3. Project Components:

- (i) Construction of additional Head Sluice at M.P.R. to accomodate a discharge of 340 cusecs.
- (ii) Widening and lining of balance reaches of M.P.North Canal to an ultimate discharge of 500 cusecs
- (iii) Construction of Kristipadu Regulator
- (iv) Improvements to Lakshumpalli Vanka :-
- (v) Excavation of balance length of Left side canal(Yadiki canal) from Krishtipadu regulator and its branches
- (vi) Excavation of Right side canal from Kristipadu Regulator and it's Branches
- (vii) Constructiuon of Chagallu Barrage across river Pennar and it's canals
- (viii) Construction of Pendekallu Balancing Reservoir and it's canals

### 4. Salient features of Project Components

#### KRISTIPADU REGULATOR( Package 31)

1. District	:	ANANTAPUR
2. Mandal	:	Peddavaduguru
3. Village	:	Kristipadu
4. River / Stream	:	Lakshmipalli vanka
5. Type of Structures	:	Regulator (Pickup anicut)
6. Catchment Area	:	36.50 Sq.Miles
7. Bed Level	:	+ 299.000
8. M.F.D.	:	9000 Cumeecs
9. M.F.L.Before Construction	:	+ 300.000

10. Proposed M.F.L.	:	+ 301.150
11. F.S.L	:	+ 304.150

L/s Canal

1. Sill Level	:	+ 297.750
2. Bed Width	:	5.20 M
3. F.S.D.	:	1.50 M
4. Discharge	:	5.10 Cumecs
5. Ayacut Proposed	:	18,000 Acres

R/s Canal

1. Sill Level	:	+ 299.750
2. Bed Width	:	10.70 M
3. F.S.D.	:	1.50 M
4. Ayacut Proposed	:	9000 Acres
5. Discharge	:	9.10 Cumecs

Sl. NO.	Items	Chagallu Barrage	Pendekallu Reservoir
1	Longitude	77 - 49 - 45 E	78 - 1 - 00
2	Latitude	14 - 55 - 10 N	14 - 58 - 00
3	Location	Near chagallu village of Peddapappur Mandal	Near Pendekallu village of Peddapappur Mandal
4	River / Stream	Pennar River	Rayala Cheruvu Vanka
5	Catchment area	38,170 Sq. miles or 98,991 Sq.km	188 Sq.miles or 487 Sq. km
6	Capacity of Reservoir	1.50 T.M.C	0.65 T.M.C
7	T.B.L	+ 270.000 m	+ 260.530 m
8	M.F.D	3,43,000 Cusecs or 9712.60 Cumecs	30, 858 Cusecs or 873.89 Cumecs
9	Type of Spill way	Ogee spill way	
10	M.W.L	+ 265.930 m	+ 257.030 m
11	F.R.L	+ 265.930 m	+ 257.030 m
12	M.D.D.L	+ 258.430 m	+ 251.030 m
13	Crest level	+ 258.430 m	
14	No. of vents	16	
15	Size of Vents	14.50 m x 7.50 m	
16	Type of Gates	Radial	
17	Tail water level	+ 260.981 m	
18	Length of Earth Dam	1768.50 M	
19	Length of Spill way	291.50 m	
20	Length of N.O.F	85 m	
21	Length of Dyke ( Saddle)	523 m	
22	Ayacut proposed	4,500 acres	18,500 acres

Link Channel from Chagallu to Pendekallu

- |               |                                      |
|---------------|--------------------------------------|
| 1. Length     | : 11 Km to feed Pendekallu Reservoir |
| 2. Sill Level | : + 256.00                           |
| 3. F.S.D.     | : 3.4 M                              |
| 4. Bed Width  | : 20.00 M                            |
| 5. Discharge  | : 2200 C/s                           |
| 6. Ayacut     | : -                                  |

Right Side Canal of Chagallu

- |               |               |
|---------------|---------------|
| 1. Length     | : 16.1 Km     |
| 2. Sill Level | : + 256.00    |
| 3. Bed Width  | : 3.0 M       |
| 4. F.S.D.     | : 1.0 M       |
| 5. Discharge  | : 54 C/s      |
| 6. Ayacut     | : 4,500 Acres |

Irrigation canal of Pendekallu

- |               |                |
|---------------|----------------|
| 1. Length     | : 30.5 Km      |
| 2. Sill Level | : + 251.03     |
| 3. Bed Width  | : 6.0 M        |
| 4. F.S.D.     | : 1.3 M        |
| 5. Discharge  | : 220 C/s      |
| 6. Ayacut     | : 18,500 Acres |
| 7. Duty       | : 100 cusecs   |

**5. Tendering procedure**

<b>Package 31</b>	<b>Package 32</b>	<b>Package 33</b>
The first call invited for tender notice No. 07/2004-05 dated:17-01-2005. In response to M/s.Z.V.Story – G.D.C.L (J.V) have quoted an excess of 22.384% against the I.B.M. value of	The tender for the Package No.32 for called Vide Tender Notice No. 08/2004-05 Dated: 13-01-2005. In response to the 4 Nos have quoted the L-1 M/S KCL-JCCG(JV) have quoted an excess of	The tender for the Package No.33 for called Vide Tender Notice No. 09/2004-05 Dated:18-01-2005. In response to the 3Nos have quoted the L-1 M/S Navayuga Engineer Co. Ltd. have quoted an

<p>Rs.101.32 crores. As this tender is beyond the existing limit of 5% excess, the tender is rejected and the 2nd read call is initiated in this office tender Notice No.4/2005-2006 Dated 4.7.2005 under limited tender with revised IBM value of Rs. 125 Crores. The tender is opened on 2.11.2005 at 11.00 A.M. On observing the result of tender process, no tenderer have quoted their tender.</p>	<p>63.9708% over the IBM value of Rs 100.6277 crores. The tenderer has further quoted final rate of Rs 104.40 crore i.e. 3.749% over the IBM value.</p>	<p>excess of 26.7893% over the IBM value of Rs 235.8244 crores. The tenderer has further quoted final rate of Rs 244.50 crore i.e. 3.68% over the IBM value.</p>
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#### 6. All Bidders list, Bid amount and lowest bidder

Package 31	Package 32	Package 33
<p>In the first call, the tender of the lowest tender M/s.Z.V.Story – G.D.C.L (J.V) for an excess of 22.384% was rejected. In the second call, there was no response.</p>	<p>1.M/S KCL-JCCG(JV) Rs. 165.00 crore.(L-1) and on negotiation reduced to Rs 104.40 crores. 2.B.Seenaiah and Company Rs 169.00 crore(L-2) 3. Nayuga Engineering Ltd. Rs 180.00 crore (L-3) 4. Sabir Dam and Water works company Rs 250.00 crore (L-4)</p>	<p>1.M/S Navayuga Engineer Company Rs. 299.00 crore.(L-1) and on negotiation reduced to Rs 244.50 crores. 2.B.Seenaiah and Company Rs 302.00 crore(L-2) 3. Patel-Soma(JV) Rs 310.00 crore (L-3)</p>

**7. Agreement details:**

Package 31	Package 32	Package 33
Does not arise	Agreement value Rs. 104.40 crore vide Agt. No. 06SEH/2004-05.	Agreement value Rs. 244.50 crore vide Agt. No.07SEH/2004-05.

**Advance details:**

Package	1st Mobilisation (Rs Lakhs)	2 <sup>nd</sup> Mobilisation (Rs Lakhs)	Total Mobilisation (Rs Lakhs)
Package 32	522.00	390.00	912.00
Package 33	1222.50	513.40	1735.90
Total			<b>2647.90</b>

**8. Budget this year (2005-06)**

Works	: 8647.90 Lakhs
Land Acquisition	: 4695.40 Lakhs
<b>Total</b>	<b>:13343.36 Lakhs</b>

**9. Expenditure on various components till date**

Package	Mobilisation Advance	Works	Total
Package 32	912.00	664.83	1576.83
Package 33	1735.90	1256.00	2991.90
Total	2647.90	1920.83	4568.73

**10. Land Acquisition details with expenditure**

Land.	Package-31		Package-32		Package-33	
	Land Acquired in acres	Land to be Acquired in acres	Land Acquired in acres	Land to be Acquired in acres	Land Acquired in acres	Land to be Acquired in acres
Govt. Land	Nil	Nil	77.28	500.03	35.16	1654.84
Patta Land	Nil	Nil	201.52	1309.08	Nil	2288.56
Forest Land	Nil	Nil	Nil	Nil	Nil	Nil
Total			278.8	1803.11	35.16	3943.4

**Expenditure:**

A provision of Rs. 43.00 crore made in the budget booklet for 2005-06 for PABR Stage-II for 3 Packages Rs. 11.74 crore released by the ENC and the same was allotted to SDC, LA, PABR Stage-II, Anantapur.

**11. Rehabilitation & Resettlement (status as on date)**

<b>Package 31</b>	<b>Package 32</b>	<b>Package 33</b>
Under process	198 Structures coming under villages of Pendekallu, Pasalure, Atharla Dinne, Kummetha, Vemalapadu, Thimmapuram were submitted to Special Collector, Srisailam project, Kurnool for DN/DD Publication.	842 Structures coming under villages of Tabjula, Ulikunta palli, Ulikallu, Singana Gutta palli chinnayakkaluru & Peddayakkaluru. About 220 structures (of Tabjula village) were submitted to Special Collector, Srisailam project, Kurnool for DN/DD Publication.

**12. All clearances – total clearances required and their status**

(i)CWC Clearance: The clearance for TBP HLC Stage II was accorded by CWC in lette No 11-2(7) T & P dated 6-1-1967. Yadaki Canal system (PARB State II ) is one of the components under TBP HLC Stage II.

(ii) R & R clearance: Provision is made in the project estimate for Rehabilitation and Resettlement of villages under submersion of Chagallu Barrage and Pendekallu Balancing Reservoir. The R & R under the submerged villages is under process.

(iii) Forest Clearance: As the forest area is not involved in the project, forest clearance is not required.

**13. Mandal – wise ayacut, Villages/Mandals/District benefited**

38 villages in 4 mandals are benefitted benefitted under this system.

The Mandals are (1) Peddavaduguru,(2) Yadiki (3) Peddapappuru and (4) Tadipatri

The villages benefitted are.

Kristipadu , Chandana , Rayalacheruvu , Peddapeta , Yadiki, Thippareddipalli Kothapalli,Kottalapalli,Venkatampalli,Jaganayakapalli, Atterella ,Yenganna Palli Ramavari palli , Bondaladinne , Garladinne ,Saluru , Kottalapalli , Kummetha, Narsapuram,Chinthalapalli,Egururu,Gangadevipalli , Puli proddaturu ,

Chukkaluru Sajjaladinne, Alur, Velamakuru, Bogepalli, Kuderu, Kothapalli, Chinnapalli  
Sunkepalli Nagamallidinne, Yerragudi, Chamaluru, Peddapappur, Chinna Pappur,  
Juturu.

**14. Drinking water facilities if any given in project proposal**

Not applicable to this project

**15. Power Generation/Consumption details**

Not applicable to this project

**16. BC Ratio of project : 1.43**

**17. Mile stones – achievements as on date**

Mile stone	Package-31		Package-32		Package-33	
	As per Mile Stone	As per Achieved	As per Mile Stone	As per Achieved	As per Mile Stone	As per Achieved
Ist Mile stone . 3 Months	Work to be invited		1.5%	1.5%	2.7%	2.7%
2nd Mile stone . 3 Months			1.5%	1.5%	3.05%	3.05%
3rd Mile stone . 3 Months			2.7%	2.76%	1.75%	0.62%

**18. Important events, if any in project implementation**

Nil

**19. Index map of Project (A4 size)**

Enclosed.

**20. Ayacut map (A4 size)**

Enclosed.

**21. Important photos of projects**

Enclosed.

**22. Probable completion (Month/year)**

For Packages 32 & 33, the probable completion is September, 2007.

For Packages 31, the probable completion is September, 2008.



**23. Project cost – Component wise**

<b>Sl. No</b>	<b>Component</b>	<b>Rs. In Crores</b>	<b>Total Cost Rs in Crores</b>
<b>A</b>	Preliminaries including S & L Operations		<b>10.41</b>
<b>B</b>	Land		<b>43.37</b>
<b>C</b>	Works		
	i) Cost of Additional Head sluice and widening & lining of Balance length of M.P.North Canal	<b>41.73</b>	
	ii) Improvements to Lakshmipalli Vanka 9.50 Km. length.	<b>12.46</b>	
	iii) Construction of Pick up Weir and Regulator near Kristipadu (v).	<b>4.52</b>	
	iv) (a) Excavatio of Left side Canal from Kristipadu Regulator 18.755 Km.	<b>24.66</b>	
	(b) Excavation of it's Left side Branch Canal 20.00 Km.		
	(c) Excavation of it's Right side Branch Canal 11.525 Km.		
	v) a) Excavation of Right Side Canal of Kristipadu Regulator 9.301 Km.	<b>18.20</b>	
	b) Excavation of Right Side Branch Canal of Right side Canal 10.30 Km.		
	c) Excavation of Left Side Branch Canal (at 9.301 Km.) of length 8.00 Km.		
	d) Excavation of Supply Channel to Pendekal Reservoir (at 9.301 Km.) of length 9.50 Km.		
	vi) Formation of Pendekallu Reservoir and excavation of Irrigation Canal of length 2.50 Km.	<b>80.72</b>	
	vii) Construction of Chagallu Barrage	277.22	
	viii) a) Excavation of Link Channel to Pendekallu Reservoir of length 11.00 Km.	13.94	
	b) Excavation of Irrigation Channel from Chagallu Barrage of length 16.10 Km.		
	<b>Sub Total :</b>	<b>473.45</b>	<b>473.45</b>
<b>D</b>	Buildings		<b>2.77</b>
<b>E</b>	Plantation, Communication and Others		<b>6.00</b>
	<b>Grand Total :</b>		<b>536.00</b>

## **24. Funding details (resources)**

### **Government of Andhra Pradesh under State plan.**

## **25. Any other information relating to project discussion**

The package 31 comprises of the following components under Yadiki canal system.

- (1) Construction of additional head sluice to a discharge of 340 c/s to M.P.R. Dam and Widening & Lining of M.P. North Canal for 500 c/s (originally designed for 160 c/s) for a length of 58.73Kms (Balance works) including CM & CD works,
- (2) Improvements to Laxmipalli vanka from km 0/0 to km 9/500
- (3) Construction of pick up weir and regulator across Laxmipalli vanka near Kristipadu (V)
- (4) Excavation of left side canal of Kristipadu Regulator (yadiki canal) (balance length) including distributory system to irrigate an ayacut of 18000 acres.
- (5) Excavation of left side branch of Yadiki canal.
- (6) Excavation of right side branch of Yadiki canal
- (7) Excavation of Right side canal from Kristipadu regulator to irrigate an ayacut of 9000 acres.
- (8) Excavation of Right side branch canal of Right side canal
- (9) Excavation of Left side branch canal of Right side canal of Kristipadu regulator
- (10) Excavation of Link Channel for 2200 cusecs from Chagallu Barrage to Pendekallu reservoir.

### **Present status:**

The tender for the above package was first invited in this office Tender notice no 7/2004-05 dated 15-1-05 under EPC limited tender system and in response two firms namely M/s Z.V. Stroy-GDCE Limited, Hyderabad and M/s Madhucan-Sumo-Hydro Limited, Hyderabad. The tender of the lowest tender i.e. M/s Z.V. Stroy-GDCE Limited, Hyderabad who quoted for Rs 123.99 Crores i.e. an excess of 22.384% over the Internal Bench Mark Value of Rs.101.32 Crores, was recommended for rejection to the Government as the excess exceeded the ceiling limit of 5% excess.

Originally, it was proposed to remodel the structure of M.P. North Canal to take up additional discharge of 340 c/s by constructing extra vents abutting the original structures. As the abutments, wings and returns of most of the existing structures were constructed in R.R Masonry way back in 1964 and that it might be difficult to remodel the same by constructing extra vents abutting the original structures in RCC, the design aspects of remodeling the existing structures of M.P.North canal to carry a discharge of 500 cusecs was referred to a committee comprising of Sri K.Satynarayana Sastry, Chief Engineer (Retired), Sri B.Rosaiah, Chief Engineer (Retired) and Sri Routu Satyanarayana, Chief Engineer(Retired).

The committee has recommended the following

- (i) Construction of additional head sluice on the left flank to draw the required 500 cusecs.
- (ii) Replacement of all the structures (including all the O.T. sluices) for the required discharge of 500 cusecs all through the structures constructed in cc/RCC
- (iii) Providing about 11 cross regulators at suitable locations to maintain the required water level in the main canal to enable the off take sluices to draw their designed discharge
- (iv) For lining the bed of canal in the rocky areas and sides eased to 1:1 unlined adopting weighted average 'n' value wherever work is to be taken up.

Incorporating the above recommendations, the IBM of Package 31 is revised to Rs 125 Crores.

## Penna River near Chagallu Barrage





# Flow Diagram of Yadiki Canal System



