

SJVN Arun-3 Power Development Company

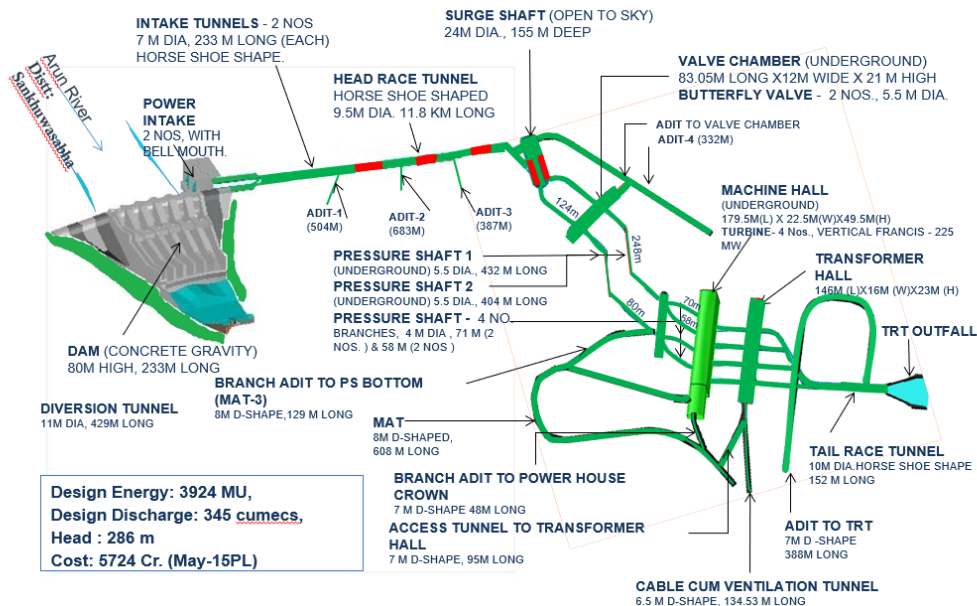
(A company promoted by SJVN Limited,
joint venture of Govt. of India and Govt. of H.P)

Regd. No.: 111808/69/070



Monthly Progress Report Upto 31st January 2023

ARUN-3 HEP (900 MW)



OUR SHARED VISION

[5000MW BY 2023, 25000MW BY 2030, 50000 MW BY 2040]

A. GENERATION COMPONENT

1. MAJOR CIVIL WORKS -PACKAGE-C1

- i) **Manpower** : 1439 Nos.
Covid 19 Positive cases: - 0 no.
- ii) **Machinery** : Major equipment such as 5 boomers, 9 RoC's, 5 shotcrete machine, 2 Batching plant (30 Cum/H), 1 Batching & Mixing Plant (240 cum./ hr.) 1 Crusher plant of 300TPH, 1 of 50 TPH & 2 of 10 TPH, 12 DG Sets, 6 concrete pumps, 9 grout pump, 10 compressor, 17 excavator, 3 JCB Excavator, 46 dumpers, 8 dozers, 4-wheel loaders, 10 crane etc. available at site.
- iii) **Progress** :

Description	Total Qty.	Unit	Cumm. Progress up to December, 2022	Progress during January, 2023	Cumm. Progress up to January, 2023	Balance Qty.
Adit-1 HRT D/s Heading Exc.	2310	m	Activity completed on 12.01.2022.			
Adit-1 HRT D/s Benching Exc.	2310	m	1250	--	1250	1060
Adit-1 HRT D/s Kerb Concrete	2310	m	1203	--	1203	1107
Adit-1 HRT U/s Benching Exc.	790	m	Activity completed on 02.02.2022.			
Kerb Concrete- Left Side	790	m	744	--	744	46
Kerb Concrete – Right Side	790	m	744	--	744	46
Adit-1 HRT U/s Overt Lining.	790	m	762	--	762	28
Adit-1 HRT U/s Invert Lining.	790	m	680	--	680	110
Adit-1 HRT D/s Overt Lining.	2310	m	405	135	540	1770
Adit 2 U/s heading excavation from Adit 1 D/s side	650	m	445	78	523	127
Power Intake Tunnel-1 Overt lining	231	m	Activity completed on 12.11.2021.			
Power Intake Tunnel-2 Overt lining	231	m	Activity completed on 30.12.2021.			
Power Intake Tunnel-1 Invert lining	231	m	Activity completed on 01.04.2022.			
Power Intake Tunnel-2 Invert lining	231	m	Activity completed.			
Dam Body excavation (Right Bank, Left Bank)						
upto river bed level and dam pit upto Deepest Foundation level i.e., EL 769m	2542000	Cum	2490070	7650	2497720	44280

Dam Concreting						
Block no-2 concrete up to El 795.00	18546	Cum	6991.5	3285	10276.5	8270
Block no- 3 concrete up to El 795.00	49159	Cum	21275	12212	33487	15672
Block no- 4 concrete upto EL795.00	49159	Cum	18872	10769	29641	19518
Block no- 5 Dental concrete	49159	Cum	7393	2144	9537	39622
Block no- 6 Dental concrete		Cum	3576	--	3576	
Miscellaneous						
Plunge Pool, Power Intake structure, Approach Channel & Apron etc.	294000	Cum	147200	5600	152800	141200

Remarks:

- **Coffer Dam:** U/s Coffer Dam (Completed El 818.00m) on 17.05.2022.
- **Dam works:**
Dam Body excavation (RIGHT BANK, LEFT BANK): Excavation between ch D/s 75 to D/s 110 EL 815.00 to 810.00 is in progress. Cable Anchor work at EL 804.00 is in progress.
Dam Concreting: Concreting of block -2 is in progress from El 776.50m / 778.00. Block no- 3 concreting El 776.50 to 777.50 is completed. Block no -4 concrete El 775.50 to 776.50 is completed. Consolidation Grouting in Block -5 is in progress. Pocket filling around sump well & sump well concrete Block no-6 is in progress.
Miscellaneous: Plunge Pool, Power Intake structure, Approach Channel & Apron etc.: Excavation work below EL 820.00 is in progress. Cable Anchor work at EL 821.00 is in progress. Concrete work in progress from EL 847 to 849 m in intake structure.
Power intake tunnel 1: Consolidation grouting work is in progress.

2. MAJOR CIVIL WORKS -PACKAGE-C2

- i) **Manpower** : **1860 Nos.**
Covid-19 positive cases: - 0 no.
- ii) **Machinery** : Major equipment such as 9 boomers, 7 ROC's, 3 raise climber, 2 Gantry Crane 15T & 25T, 14 concrete pump, 9 shotcrete machine, 10678 kVA DG sets, 10 compressor, 22 excavator, 7 JCB excavator, 7 batching plant (30 cum./ hr.), 3 crusher plant (30-150 TPH), 14 grout pumps, 2 loader, 5 wheel loader, 70 dumpers etc. available at site.
- iii) **Progress** :

Description	Total Qty.	Unit	Cumm. Progress up to December, 2022	Progress during January, 2023	Cumm. Progress up to January, 2023	Balance Qty.
Adit-2 U/s HRT Heading exc.	1406	M	1327	37	1364	42
Adit-2 D/s HRT Heading exc.	1558	M	1198	--	1198	360
Adit-2 D/s Benching	1558	M	625	78	703	855

Adit-2 D/s Overt Lining	1558	M	536	72	608	950
Adit-3 U/s HRT Heading exc.	1558	M	1057	46.5	1103.5	454.5
Adit-3 U/s HRT Benching exc.	1558	M	265	--	265	1293
Adit-3 U/s HRT Overt Lining	1558	M	105	63	168	1390
Adit-3 D/s HRT Heading exc.	1757	M	1465	50	1515	242
Adit-3 D/s HRT Benching exc.	1757	M	193	27	220	1537
Adit-4 U/s HRT Heading	1757	M	1341	62	1403	354
Adit-4 U/s HRT Benching	1757	M	486	45	531	1226
Adit-4 U/s HRT Overt Lining	1757	M	364	44	408	1349
Kerb concrete Left Side	1757	M	318	--	318	1439
Kerb concrete Right Side	1757	M	360	--	360	1397
Vertical Pressure Shaft-1 – Pilot Exc.	250	M	Activity completed on 10.06.2022.			
Vertical Pressure Shaft-2 – Pilot Exc.	250	M	Activity completed on 15.06.2022.			
Vertical Pressure Shaft-1 – Widening	250	M	38	12	50	200
Vertical Pressure Shaft-2 – Widening	250	M	56	3	59	191
Bus Duct No-1	50	M	39	--	39	11
Escape Tunnel -2	102	M	Activity completed on 16.08.2022.			
Escape Tunnel -1	50	M	4	--	4	46
Machine Hall Benching	1,45,000	Cum.	Activity completed on 20.03.2022.			
Drainage/ Draft Tube Pit Quantity	13,100	Cum	Activity completed on 31.05.2022.			
1 st stage PH Unit 1 Concreting	1830	Cum	Activity completed on 13.01.2023.			
1 st stage PH Unit 2 Concreting	922	Cum	Activity completed on 29.12.2022			
1 st stage PH Unit 3 Concreting	1272	Cum	Activity completed on 27.01.2023.			
1 st stage PH Unit 4 Concreting	949.5	Cum	540	409.5	949.5	Nil
PH MIV Floor Raft	1882	Cum	0	602.5	602.5	1279.5
EOT Frame Work (Column Beams)	3360	Cum	0	69.6	69.6	3290.4
Service Bay	1614	Cum	Activity completed on 20.09.2022.			
Dewatering Sump	1252	Cum	825	427	1252	Nil
Control Building	1858	Cum	769	82	851	1007

TRT Heading	399	M	359	--	359	40
TRT Benching	399	M	0	228	228	171
GIS/CRP BUILDING – Switch Yard	961	Cum	651.5	671.7	1323.2	616.8
Transformer Hall concreting	3980	Cum	771	854	1625	2355
Gate Shaft 1	34	M	11	10	21	13
Gate Shaft 2	34	M	10.5	3	13.5	20.5
Gate Shaft 3	34	M	Activity completed on 11.12.2022.			
Gate Shaft 4	34	M	Activity completed on 27.12.2022.			
Draft Tube-1	123	M	Activity completed on 30.01.2022.			
Draft Tube-2	107.754	M	Activity completed on 23.12.2021.			
Draft Tube-3	95	M	Activity completed on 04.04.2022.			
Draft Tube-4	92	M	Activity completed on 22.03.2022.			
Surge Shaft full face Excavation with support system (Depth 155m, EL 946 m)	85100	Cum	48700	2400	51100	34000

Remarks:

- **Adit-2 D/s HRT:** Rib erection is in progress from Rd-1161.0m to 1163.0m.
- **Surge full face Exc.:** Mucking & Backfill concrete is in progress. Exc. from EL 845 to 843 is in progress. Mucking from bottom in progress. Excavation depth completed = 101 m
- **Butterfly Valve House:** Ladder to access EOT crane beam in BVC is completed & handed over on 29.06.22 to EM contractor for erection of rail line & further other activities.
- **1st stage concreting at Units (I/C Drainage Gallery):** Unit-1: Ist stage concreting upto EL 519.5 has completed & handed over to EM Contractor for erection of DT liner on 24/11/22. Unit pit -1 handed over back to civil Contractor on 13.01.23., Unit pit -2 handed over back to civil Contractor on 29.12.22., Unit -3 Ist stage concreting upto EL 519.5 has completed & handed over to EM Contractor for erection of DT liner on 24/11/22., Unit -4 Rebar cutting & bending for next lift is in progress.Total quantity of concrete exceeded due to overbreak.
- **Units 2nd stage concreting (I/C Drainage Gallery):** Unit-2 Rebar placing & binding is in progress.
- **Service Bay:** Service Bay crane beam handed over to EM Contractor on 20.09.22.
- **Control Building:** Scaffolding & shuttering for the second-floor beam is in progress.
- **EOT Frame Work (Column Beams):** Column ties binding along with shuttering & column concreting is in progress.
- **Dewatering Sump:** Now sump side wall concreting is in progress. Total quantity of concrete exceeded due to overbreak.
- **GIS/CRP BUILDING – Switch Yard:** Raft concreting of GIS Building, Ties Binding of column of GIS Building & shuttering of cable trench side wall is in progress.

Cumulative HRT Heading Excavation (PKG C-1 & PKG C-2)

Description	Total Qty.	Unit	Cumm. Progress up to December, 2022	Progress during January, 2023	Cumm. Progress up to January, 2023	Balance Qty.
Heading Excavation						
Package C-1	3100	m	3100	--	3100	Nil
Face-3 Heading excavation from Face 2 side	650	m	455	78	523	127
Package C-2	8087	m	6443	195.5	6638.5	1448.5
Total Heading	11837	m	9988	273.5	10261.5	1575.5
Benching Excavation						
Package C-1	3100	m	2040	--	2040	1060
Face-3 Heading excavation from Face 2 side	650	m	0	--	0	650
Package C-2	8087	m	1569	150	1719	6368
Total Benching	11837	m	3609	150	3759	8078
HRT Overt Lining						
Package C-1	3100	m	1167	135	1302	1798
Face-3 Heading excavation from Face 2 side	650	m	0	--	0	650
Package C-2	8087	m	1005	179	1184	6903
Total Overt Lining	11837	m	2172	314	2486	9351
HRT Invert Lining						
Package C-1	3100	m	680	--	680	2420
Face-3 Heading excavation from Face 2 side	650	m	0	--	0	650
Package C-2	8087	m	0	--	0	8087
Total Invert Lining	11837	m	680	0	680	11157

3. HYDRO-MECHANICAL WORKS:

S.No.	Description of Work	Progress Till date
1	Design and Drawings Approved	Stoplogs for Spillway Flap Gate, Spill way Flap Gate, Bulkhead for Main Intake Gate, Main Intake Gate, Trash Rack Panel, Draft tube gate, Adit gate for HRT, Pressure Shaft Steel liner, TRT outfall Gate, Surge Shaft Gate. Sluice Radial Gate, Stoplog for Sluice Radial Gate, Thrust collar of PSSS. Mechanical Component for RDH of Draft tube Gate, RDH of Main Intake Gate, Gantry crane for Bulkhead for Main Intake Gate. Hydraulic Hoist Cylinder of Spillway Flap Gate and Sluice Radial Gate.
2	Design and Drawings under Approval	RDH of Surge Shaft Gate, Balanced drawings for Spillway Flap Gate, Stoplog for Sluice Radial Gate.
3	Fabrication	<u>Completed and item reached Ithari, Nepal (intermediate store):</u> 1. 1st stage Embedded parts: Draft tube Gate, Stoplog for Spillway Flap Gate, Intake Bulkhead gate, Main Intake Gate, Adit Gate & Trash rack panels, Surge Shaft gate, Spill way Flap Gate, Tail race Outfall gate.

		<p>2. 2nd stage Embedded Parts: Main Intake Gate & Stoplog for spillway flap gate, Bulkhead for Main Intake Gate, Draft tube gate, Surge Shaft Gate, TRT Gate, Spill way Flap Gate, Adit Gate,</p> <p>3. Gate Assembly: Trash Rack Panels-64 no's, Main Intake Gate, Bulkhead for Main Intake, Stoplog for spill way Flap Gate, Surge Shaft gate & Tail race Outfall gate, Spill way Flap Gate, Adit Gate, Draft Tube Gate,</p> <p>4. Steel Liner: Surge Shaft gate & Main Intake gate</p> <p>5. Air vent pipe for Draft tube Gate</p> <p>6. Instrumentation pipe for Draft Tube gate.</p> <p>7. Rope Drum Hoist: Main Intake Gate</p> <p>Under Progress: Rope Drum Hoist assembly: Mechanical components for Bulkhead of Main Intake Gate & Draft Tube Gate. Inspection for RDH of DT Gates conducted w.e.f 13th to 15th Dec, 22 and MDCC issued.</p> <p>Sluice Radial Gate: Sluice Radial Gate: Change order has been issued on 28/02/2022. Fabrication works of Sluice Radial Gate started and is under progress. (28 % fabrication completed) Inspection of some fabricated components of Sluice Radial Gates conducted in August,22 and October, 22 & MDCC issued on 23.09.2022 and 30.10.22 respectively and fabricated components reached at Itahari, Nepal. Further, inspection conducted w.e.f 13th to 15th Dec, 22 at Kota and MDCC issued Order for Hydraulic Cylinder and power pack etc also placed to M/s Van Halteren Technologies, fabrication under progress</p>
4	Pressure Shaft Steel Liner	<p>Rolling completed by M/s OM INFRA LIMITED at M/s Utkal Engineers Pvt Ltd, Rourkela for 400 MT (ASTM A 537 Cl-II & ASTM A 517-Gr-F), ferrule segments transported and reached Itahari, Nepal</p> <p>WPS/PQR approved for ASTM A 537 Cl.-II & ASTM A 517 Gr.-F material.</p> <p>Welding works under progress at Itahari workshop. Ultrasonic testing has been done for fabricated ferrule (ASTM A 537 Cl-II). Hydro static testing under progress for fabricated ferrules.</p> <p>Erection of EOT Crane in VPS-1 completed. Rail line in PS 1&2 (Horizontal portion) has been laid for erection of ferrules. Transportation of Dummy ferrule is being planned shortly.</p> <p>Finalization of New Tender document for PSSSL is under progress.</p>
5	Embedded parts for Trash Rack and Power Intake:	<p>Work of erection, alignment, and welding of embedded parts of trash rack and intake is in progress.</p>
6	Approval of Manufacturer/vendors	<p>Steel plates (MS & SS), Angle, Channels & Beams (Joist) & H-Beam, Electrodes, Casting, Fasteners, ASTM A 537 class 2 & ASTM A517 Gr. F Steel Plates, Aluminum Bronze Bush, Rubber seal, Rubber Item and Paints.</p>
7	Approval of Agency for Movement with Radiographic Exposure Device	<p>Letter sent to IBN for approval of Agency for movement with Radiographic exposure Device for Radiographic testing of Pressure Shaft Steel Liner.</p>

4. ELECTRO-MECHANICAL WORKS:

1	Supply Status:	
	Material Received	Spiral casing for two (02) units and stay ring for one (01) unit, EOT cranes PH and T Hall, Sole plates for BVH EOT, Complete stator material except punching for two (02) units and rotor except spider assembly for one (01) unit. Crab assembly for one crane reached powerhouse
	Under transit	Stay ring for 2nd unit, 2nd stage pipe embedment.
2	Erection Status:	
	Completed Works	DT unit #3, #2 & #1 handed over for concreting on 27.01.2023,29.12.2022 and 13.01.2023 respectively.
	Unit#1	Handed over to Civil group on 13.01.2023.
	Unit#2	Handed over to Civil group on 29.12.2022
	Unit#3	Handover to Civil group on 27.01.2023.
	Unit#4	Unit handed over to C2 on 24.01.2023 for concreting upto 517.0m
3	D&D	Flange installation on common Header u/p
4	PH EOT	Assembly of girder under progress Rail alignment and installation work u/p
5	GIS	Front handed over to civil group for concreting on 23.01.23.
6	Transformer Hall	Installation of oil-water drain pipeline upto reinforced area completed. Front handed over to civil group for concreting upto GT-3 area.
7	Hindrance	Approval of T&P Master List from IBN.

5. PROGRESS RELATED TO BRIDGES, INFRA & OTHER MISC. WORKS

➤ **Status of bridges:**

- i. At Diding on Arun River: Vetted Drawing for construction purpose issued to M/s PEL. Fabrication yard for bridge sections has been constructed at site, all 665 MT bridge sections have been fabricated. Excavation of both abutment of right bank and left bank has been completed. Left abutment has been completed. Preparation for raft in Right abutment is under progress, now rope had been fixed & transportation of sections at right bank is in progress.

➤ **Infrastructure Development:**

- i. At Powerhouse site:
Type-A Accommodation (4 blocks, 24 sets):
All major work in all 04-block completed on 30.11.22 as whole work.

➤ **Construction power (33kV line):**

Line is commissioned for providing construction power at sites.

B. TRANSMISSION COMPONENT (400 kV TL)

1. Tower Packages TW01 & TW02

TW01(95.36 Km)		
a)	Detailed survey	95.36 Km done (completed)
b)	Check Survey	95.36 Km done (completed)
c)	Soil Investigation	45 locations (completed)
d)	Handed over to contractor	107 locations
e)	Tower Foundation work	Completed 54 locations. (8 locations during month)
f)	Tower Erection work	Completed 24 locations. (7 locations during month)
TW02(124 Km)		
a)	Detailed survey	118.6 Km done
b)	Check Survey	81 Km done
c)	Normal Soil Investigation	46 locations done
d)	Handed over to contractor	217 locations
e)	Tower Foundation work	Completed 208 locations (5 locations during month)
f)	Tower Erection work	Completed 184 locations. (4 locations during month).
g)	Tower Stringing work	Completed 14.038 Km (6.381 Km during month)

2) Transmission Line Packages

- i)
Sub-station Package SS01
-

Road work: 80%

Retaining wall & Boundary wall: 99%

Equipment foundation: 90%

Equipment structures: 85%

Equipment Installation: 75%

Equipment Commissioning: 2%

Panel room: 95%
- ii)
Conductor Package CD01 & CD02
-

2255 Km out of 2255 Km conductor has been supplied by M/s Apar against CD01 Pkg & 207 Km out of 3006 Km conductor supplied by M/s Neecon against CD02 Pkg. However, Termination letter issued to M/s NECCON on 14.12.2022. Bid Document preparation for fresh case of balance Conductor Package is under progress by M/s PGCIL.

3) Land acquisition

- i)
Pvt Land
-

CDC held for 107 towers out of 274 Towers (39.05%) in TW01 Pkg.

CDC held for 231 towers out of 323 Towers (71.51 %) in TW02 Pkg.

Verification of land parcel work by KEC in progress in both pkg.
- ii)
IEE updation
-

Final Revised IEE report submitted to IBN on 19.01. 2023.
- iii)
Resettlement Action Plan (RAP)
-

RAP disclosure: Disclosure preparation is going on.

RoW Constrains: -

- a) Temkemayum in Bhojpur district.
 - b) Dipurung in Khotang district.
- Meeting with concerns local and CDOs is being done regularly.

Image Gallery



Dam Site overview



Dam Pit concreting



Intake Structure



Right Bank Dam Stripping



Left Bank Dam Stripping



HRT Face 2 Overt Lining



HRT Face-3 heading form face 2 side



HRT Face-3 Heading



HRT Face-4 Heading



HRT Face-4 Benching



HRT Face-4 Overt Lining



HRT Face-5 Heading



HRT Face-6 Heading



HRT Face-6 Benching



HRT Face-7 Heading



Face-7 Overt lining



SS Exc. From Top



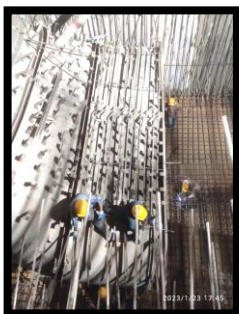
Vertical PS 1



Vertical PS- 2



2nd stage conc. of Unit#2



2nd stage conc. of Unit#2



Control Building



EOT Column MIV Floor



Dewatering Pump Conc.



Powerhouse Machine Hall



Transformer Hall Raft concrete work in progress



TRT Benching



GIS Raft A Portion



Radial Gate Inspection at Kota



HM works at workshop



HM works at workshop



HM works at workshop



Tower Erection Work



Tower Erection Work



Tower Stringing Work



Substation work at Dhalkebar



Substation work at Dhalkebar



Substation work at Dhalkebar



Substation work at Dhalkebar