



Bharat Heavy Electricals Limited

(A Govt. of India Undertaking)

Transmission Business Group

Materials Management, 5th Floor, Plot No.25,

Sector-16A, Noida, Uttar Pradesh, PIN No: 201301

Phone: 0120-6748543, Email: gaurav.agarwal@bhel.in

CORRIGENDUM - 03 TO NIT NO-99909

Dated 08-06-2026

Subject: Corrigendum-03 to Tender enquiry for Pre-Bid Tie up with the GIS OEM for Supply & Services of 400KV & 220KVGIS for NPCIL's Kundankulam Unit 5&6 Sub-Station Tender / Project.

Project : NPCIL's Kundankulam Unit 5&6
Equipment / Item : Supply & Services of 400kV & 220kV GIS and Its associated equipment
Enquiry No/Date : 61G2700039 Dated 20-05-2026
BHEL NIT NO : 99909
Original Tender due date : 01-06-2026

This Corrigendum is issued by BHEL TBG against above mentioned NIT/ enquiry for the following-
- Issuance of technical corrigendum-02 (enclosed),
- Extension of tender due date upto 15-06-2026.

All other terms and conditions for this tender enquiry shall remain unchanged.

Bidder to ensure submission of offer on or before due date.

Note: Tender ID on CPP Portal is **2026_BHEL_61417_1**.

Thanking you

-----Sd/-----

Gaurav Agarwal
BHEL TBG, NOIDA

Ref. No. Technical Corrigendum No. 02

Project: Pre-Bid Tie up for Pre-Bid Tie up for, 400kV & 230kV GIS & GIBD systems of Nuclear Power Corporation of India Limited for Main Plant Electrical System Package for KKNPP Units-5&6

Package/ Item: GAS INSULATED SWITCHGEAR WITH ITS ACCESSORIES


Technical Specification No. TB-PBTU-KKNPP-400kV GIS, REV-00 & TB-PBTU-KKNPP-230kV GIS, REV-00

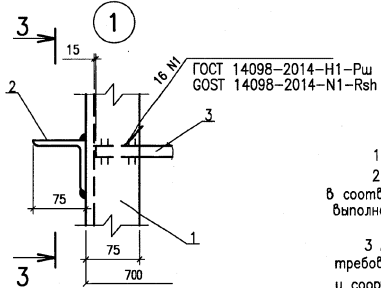
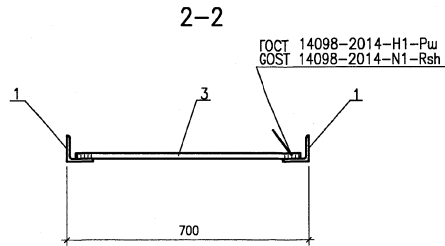
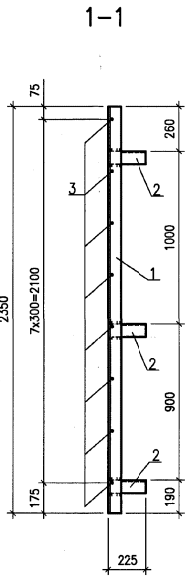
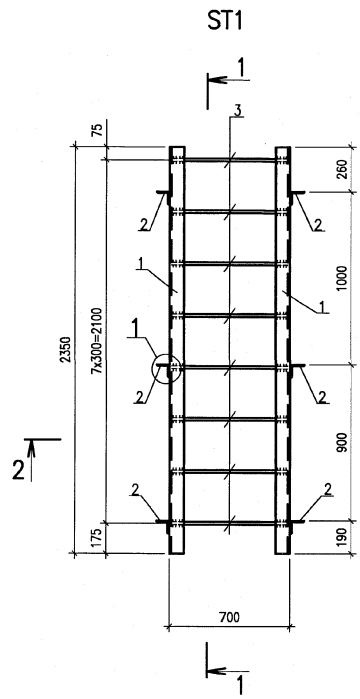
Date: 26.05.2026

Sl. No.	Volume/ Section/ Clause	Volume/ Section/ Clause as Existing	Volume/ Section/ Clause as Amended/ Added in Technical Corrigendum
1	Technical Specification	Section-1	Drawings & documents as Annexure-1 & Annexure-2 are attached.
2	-	-	Pre-Bid Clarification- Response-3 to Tender No. CMM/MEQ/91-26-2-1219 is attached.

Note:

1. The changes/ revision are marked/ highlighted in yellow, if applicable.
2. Amendment/ addendum/ clarification/ corrigendum issued herein shall form part of Technical Specification. Bidders to please note that amendment/ addendum/ clarification/ corrigendum issued shall supersede the respective Volume/ Section/ Clause of Technical Specification Document to the extent for the Volume/ Section/ Clause or part thereof the amendment is issued.


08/06/26



СПЕЦИФИКАЦИЯ ИЗДЕЛИЙ
 SPECIFICATION OF PRODUCTS

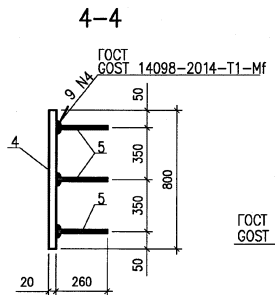
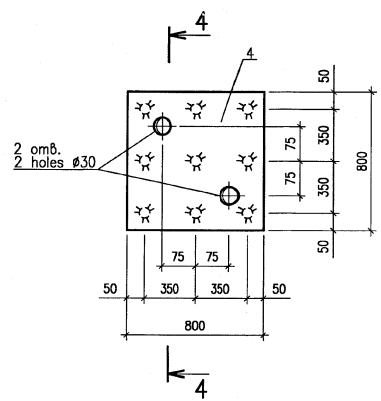
Марка изделия / Mark of article	Поз. дет. / Det. Item	Наименование / Name	Кол. / Quant	Масса / Масса / Weight of part, kg	Масса / Масса / Weight of the article, kg
ST1	1	Детали / Units L=2350	2	21.0	68.0
	2	L=225	6	2.0	
	3	ISRO 20 IS:1732-1961 L=670	8	1.7	
TA670	4	Лист / Sheet 20 IS:1730-1961 C245 ГОСТ 27772-2015	1	100.5	102.6
	5	12 A-III L=260 ГОСТ 5781-82	9	0.23	

1 Electrodes for welding shall be of E42A type as per GOST 9467-75.
 2 The fabrication, quality control and acceptance of embedded parts shall be carried out as per the requirements of R01.KK56.0.0.KZ.TT.WD001 "Technical requirements to performing concrete and reinforced concrete structures of buildings and constructions".
 3 For anticorrosive coating see R01.KK56.0.0.KZ.TT.WD001 "Technical requirements to performing concrete and reinforced concrete structures of buildings and constructions".

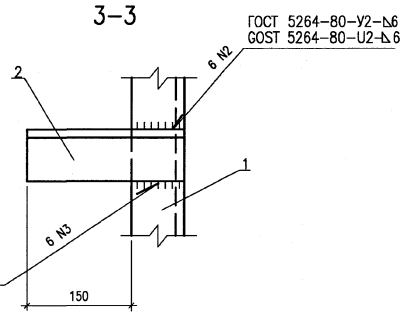
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3 For anticorrosive coating see R01.KK56.0.0.KZ.TT.WD001 "Technical requirements to performing concrete and reinforced concrete structures of buildings and constructions".

TA670



ГОСТ 5264-80-H1-Δ6
 ГОСТ 5264-80-N1-Δ6

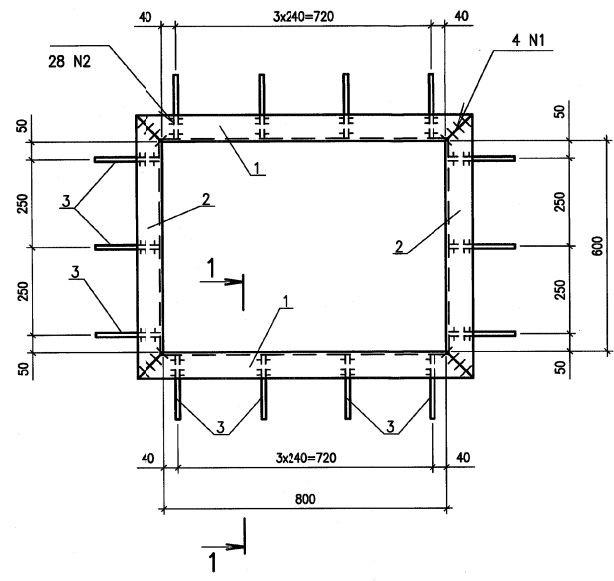


Package Number 5 7 2 76

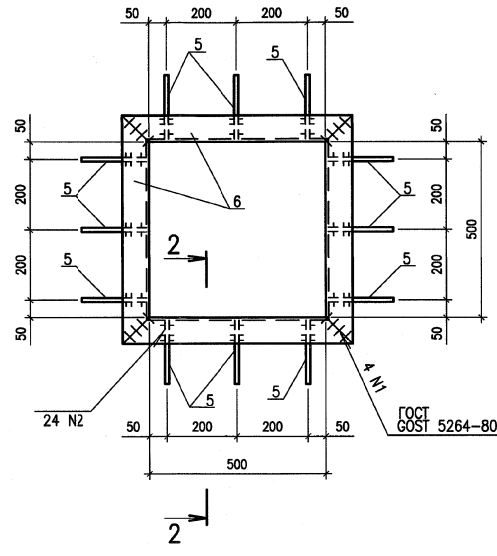
File: R23.KK56.60UBF.0.KZ.OK.WD001_004=0

Данный чертёж не подлежит размножению или передаче другим организациям и лицам без согласия АО "АТОМПРОЕКТ" This drawing is not to be reproduced or transferred to other organizations or private persons without approval of JSC ATOMPPOEKT						R23.KK56.60UBF.0.KZ.OK.WD001					
						АЭС "КУДАНКУЛАМ" БЛОК NPP "KUDANKULAM" UNIT 6					
Изм.	Коп.уч.	Лист	Н док.	Подпись	Дата	60UBF. Сооружения для блочных трансформаторов			Стадия	Лист	Листов
Rev.	Cpy of prt.	Sheet	Doc. No	Signature	Date	Монолитные железобетонные тоннели в пределах светового двора. Геометрия 60UBF. Unit Auxiliary Transformers and Generator Transformers Structures			Phase	Sheet	Sheets
Утвердил / Approved	Pereyaslovets		[Signature]		12.20	Монолитные железобетонные тоннели в пределах светового двора. Геометрия			WD	4	
Н. контр. / Inspector	Soboleva		[Signature]		12.20	Изделие закладное TA670 и стержня ST1			JSC ATOMPPOEKT		
Разраб. / Designed	Gurova		[Signature]		12.20	Embedded part TA670 and step-ladder ST1					

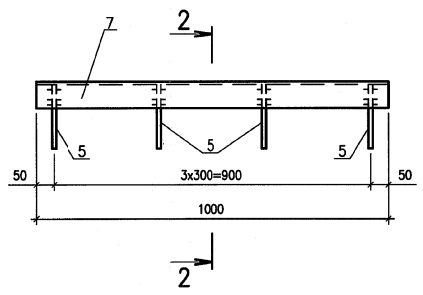
TA671



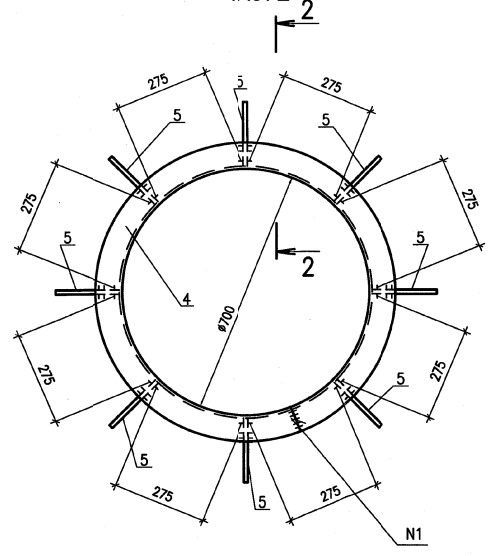
TA673



TA678



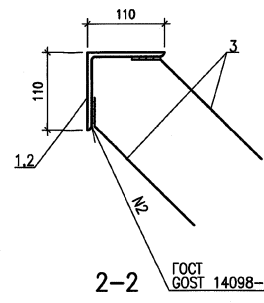
TA672



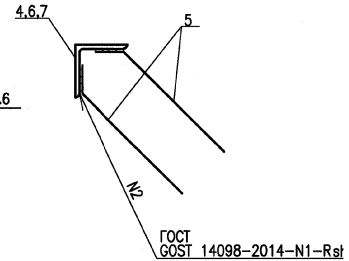
ВЕДОМОСТЬ ДЕТАЛЕЙ
 LIST OF PARTS

Поз. Item	Эскиз Sketch
3	
5	

1-1



2-2



СПЕЦИФИКАЦИЯ ИЗДЕЛИЙ ЗАКЛАДНЫХ
 SPECIFICATION OF EMBEDDED PARTS

Марка изделия Mark of article	Поз. Det. Item	Наименование Name	Кол. Quant	Масса Weight of part, kg	Масса Weight of article, kg
TA671	1	IS110110x10 IS808-1989 С245 ГОСТ 27772-2019 S245 GOST 27772-2019 L=1000	2	16.6	66.0
	2	L=800	2	13.3	
	3*	12 A-III ГОСТ 5781-82 L=250	28	0.22	
TA672	4	IS17575x6 IS808-1989 С245 ГОСТ 27772-2019 S245 GOST 27772-2019 L=2670	1	18.2	21.7
	5*	12 A-III ГОСТ 5781-82 L=250	16	0.22	
TA673	6	IS17575x6 IS808-1989 С245 ГОСТ 27772-2019 S245 GOST 27772-2019 L=650	4	4.4	22.9
	5*	12 A-III ГОСТ 5781-82 L=250	24	0.22	
TA678	7	IS17575x6 IS808-1989 С245 ГОСТ 27772-2019 S245 GOST 27772-2019 L=1000	1	6.8	8.6
	5*	12 A-III ГОСТ 5781-82 L=250	8	0.22	

* - см. Ведомость деталей
 *- see List of parts

- 1 Electrodes for welding shall be of E42A type as per GOST 9467-75.
- 2 The fabrication, quality control and acceptance of embedded parts shall be carried out as per the requirements of R01.KK56.0.0.KZ.TT.WD001 "Technical requirements to performing concrete and reinforced concrete structures of buildings and constructions".
- 3 For anticorrosive coating see R01.KK56.0.0.KZ.TT.WD001 "Technical requirements to performing concrete and reinforced concrete structures of buildings and constructions".
- 4 For better convenience of transportation and erection it is allowed to cut long embedded parts into pieces and than restore them with full strength butt welds as per GOST 5264-80.

Package Number 5 7 2 76

File: R23 KK56 60UBF 0 KZ OK WD001_005=1

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Изм. Rev.	Кол.ч. of prt.	Лист Sheet	Н док. No	Подпись Signature	Дата Date
1	-	Repl. 3383-21			09.21
1					
2					
3					
4					
5					

Утвердил Approved: Paruyaslavets 09.21
 Н. контр. Inspector: Soboleva 09.21
 Разраб. Designed: Gurova 09.21

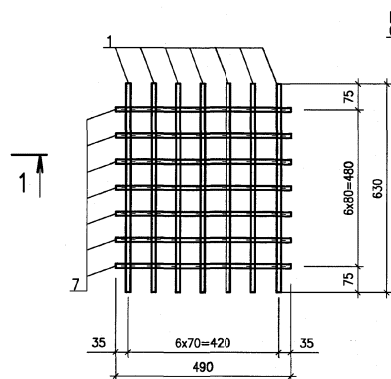
R23.KK56.60UBF.0.KZ.OK.WD001
АЭС "КУДАНКУЛАМ" БЛОК 6
НПП "КУДАНКУЛАМ" UNIT 6

Стадия Phase	Лист Sheet	Листов Sheets
ВД	5	

Изоляция закладные TA671, TA672, TA673, TA678
 Embedded parts TA671, TA672, TA673, TA678

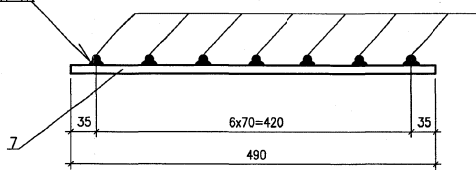
JSC ATOMPROEKT

TA674

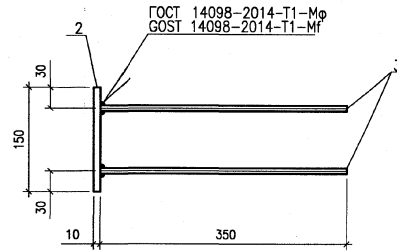


ГОСТ 14098-2014-K1-Km
ГОСТ 14098-2014-K1-Kt

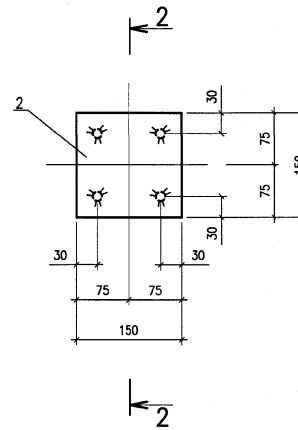
1-1



2-2



TA675



2

2

СПЕЦИФИКАЦИЯ ИЗДЕЛИЙ ЗАКЛАДНЫХ
SPECIFICATION OF EMBEDDED PARTS

Марка изделия / Mark of article	Поз. дет. / Det. item	Наименование / Name	Кол. / Quant.	Масса / Масса / Weight of part, kg	Масса изделия / Масса изделия / Weight of the article, kg
TA674	1	SRO 16 IS:1732-1961, L=630	7	1.0	12.6
	7	L=490	7	0.8	
TA675	2	t10 IS:1730-1961 C25 ГОСТ 27772-2015 C25 ГОСТ 27772-2015	1	1.8	3.0
	3	150x150 ГОСТ 5781-82 L=350	4	0.3	
	4	t10 IS:1730-1961 C25 ГОСТ 27772-2015 C25 ГОСТ 27772-2015	1	15.7	
TA676	5*	12 A-III ГОСТ 5781-82 L=780	10	0.7	22.7
	6	t10 IS:1730-1961 C25 ГОСТ 27772-2015 C25 ГОСТ 27772-2015	1	7.9	
TA677	5*	12 A-III ГОСТ 5781-82 L=780	5	0.7	11.4
	6	100x1000	1	7.9	

* - см. Ведомость деталей
*- see List of parts

ВЕДОМОСТЬ ДЕТАЛЕЙ
LIST OF PARTS

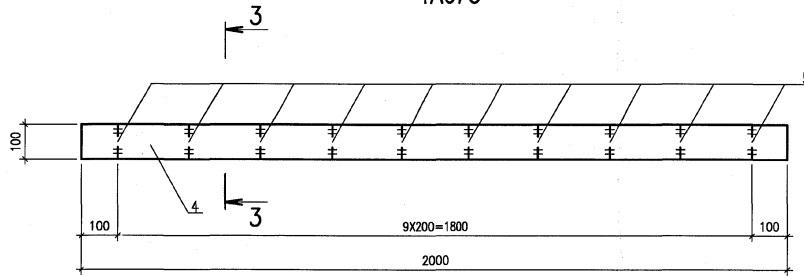
Поз. Item	Эскиз Sketch
5	

- 1 Electrodes for welding shall be of E42A type as per GOST 9467-75.
- 2 The fabrication, quality control and acceptance of embedded parts shall be carried out as per the requirements of R01.KK56.0.0.KZ.TT.WD001 "Technical requirements to performing concrete and reinforced concrete structures of buildings and constructions".
- 3 For anticorrosive coating see R01.KK56.0.0.KZ.TT.WD001 "Technical requirements to performing concrete and reinforced concrete structures of buildings and constructions".
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Package Number 5 7 2 76

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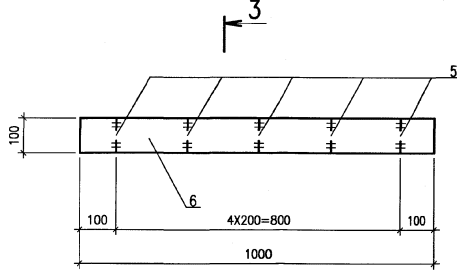
TA676



3

3

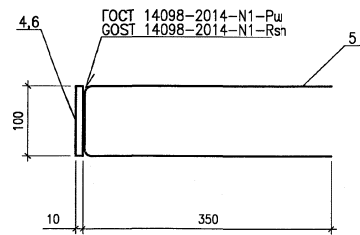
TA677



3

3

3-3



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						АЭС "КУДАНКУЛАМ" БЛОК NPP "KUDANKULAM" UNIT 6			
Изм.	Кол.уч.	Лист	Н.док.	Подписи	Дата	60UBF. Сооружения для блочных трансформаторов Мониторинг железобетонные тоннели в пределах светового двора. Геометрия 60UBF. Unit Auxiliary Transformers and Generator Transformers Structures Monitoring reinforced concrete tunnels within the limits of a light court yard. Geometry	Стадия	Лист	Листов
Rev.	Qty of prt.	Sheet	Doc. No	Signature	Date		Phase	Sheet	Sheets
Утвердил / Approved			Perasyaylavs		12.20		WD	6	
Н. контр. / Inspector			Soboleva		12.20				
Разраб. / Designed			Gurova		12.20	Изделия закладные TA674, TA675, TA676, TA677 Embedded parts TA674, TA675, TA676, TA677	JSC ATOMPROEKT		



न्यूक्लियर पावर कॉर्पोरेशन ऑफ इंडिया लिमिटेड

(भारत सरकार का उद्यम)

NUCLEAR POWER CORPORATION OF INDIA LIMITED

(A Govt. of India Enterprise)

(CIN : U40104MH1987GO1149458)



संविदा एवं सामग्री प्रबंधन निदेशालय
नाभिकीय ऊर्जा भवन,
ए-'O' ब्लॉक, तलमाला,
अणुशक्तिनगर, मुंबई - 400 094.
दुरभाष: 2599 3000 / 2599 1000
फैक्स: 91-22-2558 0741



DIRECTORATE OF CONTRACTS & MATERIALS MANAGEMENT

Nabhikiya Urja Bhavan,
A-'O' Block, Ground Floor,
Anushaktinagar, Mumbai - 400 094.
Tel.: 2599 3000 / 2599 1000
Fax : 91-22-25580741

Pre-Bid Clarifications – Response-3 to Tender No. CMM/MEQ/91-26-2-1219

Ref.: CMM/MEQ/1219

Date: **2 JUN 2026**

To,

All the Concerned Bidders

Dear Sirs,

Sub: Tender No. CMM/MEQ/91-26-2-1219 for **Main Plant Electrical System Package for KKNPP-5&6** (CPPP Tender ID: 2026_NPCIL_269561_1) – reg.

Ref: 1. Pre-Bid Meeting held on 17.03.2026.
2. Pre-Bid Clarifications – Response-1 dated 24.04.2026
3. Pre-Bid Clarifications – Response-2 dated 22.05.2026

This has reference to the subject Tender.

Please find attached herewith “**Pre-Bid Clarifications – Response-3**” to the queries received before/during or after the Pre-bid meeting.

Above shall form a part of the Tender, which may please be taken note of. All the other terms and conditions of the subject Tender remain unchanged.

This is, however, issued without prejudice to our rights under the terms and conditions of the subject Tender.

Thanking You,

Yours faithfully,



Sd/-

Addl. General Manager (C&MM)

For and on behalf of Nuclear Power Corporation of India Limited.

(The Purchaser)

Encl: 1. Pre-Bid Clarifications – Response-3 along with the attachments (Drawings 50UBF Unit Auxiliary tray KK56 RHC 002910 & 60UBF Unit Auxiliary tray KK56 RHC 004088)

NUCLEAR POWER CORPORATION OF INDIA LIMITED

Main Plant Electrical System Package for KKNPP Units - 5 & 6: Detailed Engineering, Manufacture, Procurement, Inspection & Testing, Supply, Erection / Construction, Pre-Commissioning, Commissioning & Testing, Trial Operation, Performance Guarantee (PG), Handing over of Systems and Equipment.

Pre-Bid Clarifications Response-3

NPCIL Sr. No.	Name of the Bidder	QUERY No.	TENDER SECTION	REFERENCE CLAUSE NO.	REFERENCE DRAWING/TECHNICAL SPECIFICATION No/ INSTRUMENTATION SHEET No / DATA SHEET No.	DESCRIPTION OF THE QUERY	RESPONSE FROM NPCIL
1	2	3	4	5	6	7	8
531	MEIL	1		BOQ Sr no.- 1.8	DG 415V,50 Hz,5KVA silent portable generator	DG specifications are currently not available. As per the defined scope of work, the supply, erection, and commissioning of DG sets, along with their auxiliaries, are included under a separate contract. For the portable DG specifications required, please confirm, if it is required technical Specifications need to be provide.	The supply, erection and commissioning of the portable DG is in the scope of this tender. The item description given in Supply BoQ sr. no. 1.8 along with NPCIL response 261 to be referred for detailed specification of the item.
532	MEIL	2	30_I02.KK56.0.0.ET.TS.PR085_R2_TS for battery and load bank		Regenerative Load Bank	Regenerative Load bank Specifications are not mentioned in given specifications. For the regenerative load bank Technical specifications Required.	The specification parameters of regenerative load banks are provided in table 2 of I02.KK56.0.0.ET.TS.PR085_r2. The rated input voltage and current rating are mentioned in the table. The output voltage shall be 400V(±10%), 50Hz. The clauses in the specification I02.KK56.0.0.ET.TS.PR085_r2 regarding load banks are also applicable for regenerative load banks.
533	MEIL	3		BOQ Sr no.- 4.3	Flexible cables	Specifications Not Available	Pls refer description of the relevant item of the Supply BOQ items 4.3.
534	MEIL	4		BOQ Sr no.- 2.2	Switching Devices (Isolator Boxes, Changeover boxes and Interlock boxes, Junction Boxes)	Specifications Not Available	Refer document I02.KK56.0.0.ET.TS.PR083
535	MEIL	5		BOQ Sr no 4.7	Cable termination kits HT, LT, Cable Glands, cable couplers	Specifications Not Available	Pls refer description of the relevant item of the BOQ item. For HT Termination Kit (Supply BoQ item Sr. No. 4.7.1), for LT Termination Kit (Supply BoQ Item Sr.No. 4.7.2); For Cable reducing & Coupler, Refer NPCIL response no. 244 and Cable gland supply BOQ item Sr. No. 4.7.5
536	MEIL	6	I02.KK56.0.0.ET.TS.PR051 Rev 4 Annexure A to C and IQAP,17_I02.KK56.0.0.ET.TS.PR053_R3_TS for 230kV Gas Insulated Switchgear and Gas Insulated Bus Duct,14_I02.KK56.0.0.ET.TS.PR052_R4_TS For 400kV Outdoor Switchyard,15_I02.KK56.0.0.ET.TS.PR054_R4_TS For 230kV Outdoor Switchyard		GA Drawings for GIS and out door switch yard	Drawings Required	<p>Kindly Refer Annexure -1 Layout of 400kV Outdoor Switchyard attached with the tender document I02.KK56.0.0.ET.TS.PR052- Technical Specification for 400kV Outdoor Switchyard and Annexure C Layout & EP location for 400kV GIS building attached along with I02.KK56.0.0.ET.TS.PR051- Technical Specification for 400kV Gas Insulated Switchgear & Gas Insulated Bus duct.</p> <p>The 400kV GIS Bay equipments shall be placed inside GIS building (GIS Bay area). The tentative location of termination points SF6-Air Bushings, Line Reactors and Shunt Reactors are also marked in the above drawings.</p> <p>For 230kV- Annexure A Layout & EP location for 230kV GIS building attached along with I02.KK56.0.0.ET.TS.PR053- Technical Specification for 230kV Gas Insulated Switchgear & Gas Insulated Bus duct and Annexure -1 Layout of 230kV Outdoor Switchyard attached with the tender document I02.KK56.0.0.ET.TS.PR054- Technical Specification for 230kV Outdoor Switchyard.</p> <p>The final layout/GA drawings of GIS equipment shall be developed by the OEM complying with tender specification and drawings.</p>
537	MEIL	7		BOQ Sr no.- 8.1 & 8.2	Copper Flexibles /Busbars	Specifications Not Available	Minimum requirements shall be as per follows. Purity of Copper - 99.90% min ETP grade as per IS-191 and mechanical properties shall be as per IS 1897/ IS 9567
538	MEIL	8	09_I02.KK56.0.0.ET.TS.PR092_R4_TS for CMRP panels of 400kV and 230kV switchyard		CRMP Panels	Datasheets not available	For CMRP panels refer the technical specification No. I02.KK56.0.0.ET.TS.PR092, TS for CMRP panels of 400kV and 230kV switchyard, attached with the tender.
539	MEIL	9	25_I02.KK56.0.0.ET.TS.PR101_R2_TS for cable carrier systems,26_I02.KK56.0.0.ET.TS.PR109_R2_TS for GRP cable trays		Cable trays & Cable carrier systems	Datasheets & Drawings not available	Will be shared with successful bidder during detail Engg.



540	MEIL	10	I02.KK56.0.0.ET.TS.PR104_R5_TECHNICAL SPECIFICATION FOR SCADA		Scada & GPS	Datasheets not available	Refer the NPCIL response (to Query) Sr. No. 460
541	MEIL	11			Generator Transformer location and the busduct tunnel routing for GT	Drawings Required	Refer the NPCIL response (to Query) Sr. No. 461
542	MEIL	13	SPECIFICATION NO: I02.KK56.0.0.ET.TS.PR051 Rev5	4.33.8	The bellows shall be metallic (of stainless steel 316 L grade as a minimum taking into account the highly corrosive atmosphere prevailing at KKNPP site) of following types or other suitable equivalent arrangement shall be provided wherever necessary. Additionally, appropriate protective coating shall also be provided on the bellows	Wall sealings shall be excluded from GIS OEM scope. Also please note that the material of the bellows shall be SS 321 (1.4541) as per past supplies to NPCIL, request your kind acceptance.	Refer the NPCIL response (to Query) Sr. No. 466
543	MEIL	14	SPECIFICATION NO: I02.KK56.0.0.ET.TS.PR051 Rev5	5.27.18	Earthing Tester	Excluded from GIS OEM Scope of supply	Refer the NPCIL response (to Query) Sr. No. 467
544	MEIL	15	20_I02.KK56.0.0.ET.TS.PR091_R5_TS for LV Switchgear and MCC		29_I02.KK56.0.0.ET.TS.PR082_R4_TS for DC distribution boards	Control scheme Drawings Required	Refer the NPCIL response (to Query) Sr. No. 471
DRY TYPE TRANSFORMER							
545	MEIL	16	19_I02.KK56.0.0.ET.TS.PR099_R3_TS of Dry type transformer	3.6.6	Core coil assembly and transformer enclosures shall be suitably supported and braced to withstand forces which will be encountered during seismic testing.	We will offer transformer suitable for seismic spectrum which was considered for the NPCIL-KK-3&4 units.	Refer the NPCIL response (to Query) Sr. No. 472
546	MEIL	17	19_I02.KK56.0.0.ET.TS.PR099_R3_TS of Dry type transformer	3.8.6	The transformer shall be able to withstand short circuits as well as switching and atmospheric impulse voltages as specified in data sheet.	According to standard IEC 60076-3, the switching impulse test is not applicable. Since the system voltage is less than the 72.5kV. We will perform the full wave lightning impulse test on the transformer with voltage levels of HV:- 60kVpeak.	Refer the NPCIL response (to Query) Sr. No. 473
547	MEIL	18	19_I02.KK56.0.0.ET.TS.PR099_R3_TS of Dry type transformer	5.4.4	The bus bars shall have a short time current rating higher of the two - as specified for the transformer/ LV switchgear. These bus bars will be connected to the switchgear bus bar through copper flexible.	LV side termination is suitable to busduct flange connection with extended busbar (front/top entry)	Refer the NPCIL response (to Query) Sr. No. 474
548	MEIL	19	19_I02.KK56.0.0.ET.TS.PR099_R3_TS of Dry type transformer	5.4.6	Terminal chamber for bus duct termination, on LV side of auxiliary transformer, shall have a gasketed cover plate, bolted to it. Separate inspection covers shall be provided to facilitate connection and inspection.	We will provide the LV termination is suitable to busduct connection with flange. Inspection window is not possible in the transformer with HV and LV terminal orientation is 90deg. Whereas the LV side busduct will be projected outside of 200 mm only.	Refer the NPCIL response (to Query) Sr. No. 475
549	MEIL	20	19_I02.KK56.0.0.ET.TS.PR099_R3_TS of Dry type transformer	6.1	The transformers shall sustain a symmetrical short circuit of 50 kA for 4 sec on HV side.	As per IS 2026-5 Symmetrical short circuit duration will be 2 sec.	Refer the NPCIL response (to Query) Sr. No. 476
550	MEIL	21	19_I02.KK56.0.0.ET.TS.PR099_R3_TS of Dry type transformer	6.17.5	The complete structure shall be rigid, self-supporting, free from vibration, twists & bends, and shall be suitable for connecting ventilation hood on the top. At the top of enclosure flanged throat connection, suitably drilled with gasket shall be provided for connection with ventilation duct	We will offer transformer with similar construction which was considered for the NPCIL-KK-3&4 units	Refer the NPCIL response (to Query) Sr. No. 477



551	MEIL	22	19_I02.KK56.0.0.ET.TS.PR099_R3_TS of Dry type transformer	9	The equipment may be stored outdoors for long periods before installation. The packing shall be completely suitable for outdoor storage, in areas with heavy rains/ high ambient temperature.	Packing will be as per our standard practice.	Refer the NPCIL response (to Query) Sr. No. 481
552	MEIL	23	19_I02.KK56.0.0.ET.TS.PR099_R3_TS of Dry type transformer	7.10	Type tests	Separate charges for type tests will be furnished during our final offer	Refer the NPCIL response (to Query) Sr. No. 483
553	MEIL	24	19_I02.KK56.0.0.ET.TS.PR099_R3_TS of Dry type transformer	7.11	Special tests	Separate charges for special tests will be furnished during our final offer	Refer the NPCIL response (to Query) Sr. No. 484
554	MEIL	25	19_I02.KK56.0.0.ET.TS.PR099_R3_TS of Dry type transformer	7.14	Tests at site	Testing at site is not in our scope.	Refer the NPCIL response (to Query) Sr. No. 485
555	MEIL	26	19_I02.KK56.0.0.ET.TS.PR099_R3_TS of Dry type transformer	Annexure-I	Isolation transformer 0.415/0.415 kV dimensions shall be limited as per actual site layout conditions	Please share the site layout drawing.	Refer the NPCIL response (to Query) Sr. No. 486
MV Power Cables							
556	MEIL	27	I02.KK56.0.0.0ET.TS.PR019	General	CABLE TYPE-PvVNG -A LS	In the mentioned voltage grade in the specification is 6 kV (unearthed). Since this voltage grade is not covered in IEC standards, shall we proceed with the voltage grade 6/10 (12) kV. Please confirm	Refer the NPCIL response (to Query) Sr. No. 487
557	MEIL	28	I02.KK56.0.0.0ET.TS.PR019	Clause No - 6.1.7	CABLE TYPE-PvVNG -A LS	In the specification, it is mentioned that core identification shall be with Coloured strips, however we understood that the same shall be applicable for 3 Core HT Cable, So, we proceed as per our practice with Natural colour core identification for single core cable as the same is listed in BOQ, please confirm	Refer the NPCIL response (to Query) Sr. No. 488
558	MEIL	29	I02.KK56.0.0.0ET.TS.PR019	Clause No 2.1 Figure No - 6.1.3.1.	CABLE TYPE-PvVNG -A LS	As per specification & in the Cross-sectional diagram of Page No - 8 of 25 & SI.No - 7, it is mentioned that Copper wire screen with Copper tape shall be applicable, however we understood that Open helix copper tape shall be applicable over Copper wire screen, please confirm the same.	Refer the NPCIL response (to Query) Sr. No. 489
559	MEIL	30	I02.KK56.0.0.0ET.TS.PR019	Clause No 6.1.7	CABLE TYPE-PvVNG -A LS	We understood that we will have to consider CCV process for curing.	Refer the NPCIL response (to Query) Sr. No. 490
560	MEIL	31	I02.KK56.0.0.0ET.TS.PR019	Clause No 6.11.7	CABLE TYPE-PvVNG -A LS	In the mentioned clause No it is mentioned that ISI marking and IS number need to mentioned on each drum, but cable is as per IEC Standard, so the same is not applicable. Please confirm the same.	Refer the NPCIL response (to Query) Sr. No. 491
561	MEIL	32	I02.KK56.0.0.0ET.TS.PR019			BOQ mentions 6 KV , in CI No. 2.1 of technical spec, however mentions UE grade	Refer the NPCIL response (to Query) Sr. No. 492
562	MEIL	33	I02.KK56.0.0.0ET.TS.PR019			In CI No. 3.0 , gives a comprehensive list of various standards. This includes both IS 7098 (Pt 2) as well as IEC 60502-2	Refer the NPCIL response (to Query) Sr. No. 493
563	MEIL	34	I02.KK56.0.0.0ET.TS.PR019			Further in CI No. 6.1.3 , it is mentioned as Cable design shall be in compliance with requirements of IEC 60502-2 and at various stages IEC standards are mentioned. UE grade is not covered in IEC standard	Refer the NPCIL response (to Query) Sr. No. 494



564	MEIL	35	I02.KK56.0.0.0ET.TS.PR019		1.Customer's requirement of voltage grade and applicable standards are differently mentioned in various places of the documents. In this regard, please note the following	In view of above and since BOQ mentions 6 KV and not 6.6 KV, we shall consider 3.6/ 6 KV as per IEC 502-2. Please confirm	Refer the NPCIL response (to Query) Sr. No. 495
565	MEIL	36	I02.KK56.0.0.0ET.TS.PR019			Also please note that Voltage grade as per IS 7098 (Pt 2) is 6.6/ 6.6 KV (UE). Hence IS standard could not be considered	Refer the NPCIL response (to Query) Sr. No. 496
566	MEIL	37	I02.KK56.0.0.0ET.TS.PR019			2.As per CI No.9.6.1 & QAP , Routine tests are to be witness by the Customer. However Routine tests shall be witness as per Sampling Plan of Acceptance tests as given in IEC 502-2	Refer the NPCIL response (to Query) Sr. No. 497
567	MEIL	38	I02.KK56.0.0.0ET.TS.PR019			3.As per CI No.9.6.2 & QAP , type tests to be witness by the Customer. However Type tests shall be conducted in external laboratory after manufacturing against the order. Type tests reports shall be submitted for review only	Refer the NPCIL response (to Query) Sr. No. 498
IPBD							
568	MEIL	39	MV Busduct Technical data sheet Doc.No: 102.KK56.0.0.ET.DS.PR074, Rev-R1, - 3.24, Page 7 of 14,		Material of Bus support insulator - Porcelain	We propose to offer Epoxy support insulator instead of Porcelain. We have supplied our busduct for Powerplants 3 &4 with Epoxy Insulator same will be followed	Refer the NPCIL response (to Query) Sr. No. 499
569	MEIL	40	MV Busduct Technical data sheet Doc.No: 102.KK56.0.0.ET.DS.PR074, Rev-R1, - 3.19, Page 6 of 14,		Canopy for outdoor horizontal portion of the Busduct	Canopies are not required for outdoor horizontal portion of the bus duct because, the MV bus duct is incircular shape hence there are no chances for accumulation of rain water.	Refer the NPCIL response (to Query) Sr. No. 500
570	MEIL	41	MV Busduct Technical data sheet Doc.No: 102.KK56.0.0.ET.DS.PR074, Rev-R1, - 1.46, Page 11 of 14,		Removable FRP shrouds for all busbar joints	We have not considered the FRP shrouds for IPBD. We have supplied our busduct for Power plants 3 &4 without shrouds, same will be followed	Refer the NPCIL response (to Query) Sr. No. 501
NSPBD							
571	MEIL	42	LV Busduct Technical data sheet Doc.No: 102.KK56.0.0.ET.DS.PR086, Rev-R1, - 3.15, Page 2 of 6		Busbar Material	We have considered the Al.alloy for Busbar and Enclosure. We have supplied our busduct for Powerplants 3 &4 with Al.alloy same will be followed	Refer the NPCIL response (to Query) Sr. No. 502
MV Cables Inside containment							
572	MEIL	43	I02.KK56. 0.0. ET.TS.PR100	General	CABLE TYPE-PvPng(A) HF	In the mentioned voltage grade in the specification is 6 kV (unearthed). Since this voltage grade is not covered in IEC standards, shall we proceed with the voltage grade 6/10 (12) kV. Please confirm	Refer the NPCIL response (to Query) Sr. No. 503
573	MEIL	44	I02.KK56. 0.0. ET.TS.PR100	Clause No - 6.1.7,	CABLE TYPE-PvPng(A) HF	In the specification, it is mentioned that core identification shall be with Coloured strips, however we understood that the same shall be applicable for 3 Core HT Cable, So, we proceed as per our practice with Natural colour core identification for single core cable as the same is listed in BOQ, please confirm	Refer the NPCIL response (to Query) Sr. No. 504



574	MEIL	45	I02.KK56. 0.0. ET.TS.PR100	Clause No 2.1 Figure No - 6.1.3.1.	CABLE TYPE-PvPng(A) HF	As per specification & in the Cross-sectional diagram of Page No - 8 of 25, Sl.No - 7, it is mentioned that Copper wire screen with Copper tape shall be applicable, however we understood that Open helix copper tape shall be applicable over Copper wire screen, please confirm .	Refer the NPCIL response (to Query) Sr. No. 505
575	MEIL	46	I02.KK56. 0.0. ET.TS.PR100	Clause No - 6.1.7,	CABLE TYPE-PvPng(A) HF	We understood that we will have to consider CCV process for curing.	Refer the NPCIL response (to Query) Sr. No. 506
576	MEIL	47	I02.KK56. 0.0. ET.TS.PR100	Clause No 6.11.7	CABLE TYPE-PvPng(A) HF	In the mentioned clause No it is mentioned that ISI marking and IS number need to mentioned on each drum, but cable is as per IEC Standard, so the same is not applicable. Please confirm the same.	Refer the NPCIL response (to Query) Sr. No. 507
Cables For Lighting							
577	MEIL	48	I02.KK56. 0.0. ET.TS.PR003	6.1.6	CABLE TYPE-VVGng-LS & VVGEng-LS	As per Clause Number 6.1.6, It is mentioned Nominal cable insulation thickness shall comply with the requirements of IS 1554. & As per Clause Number 6.1.3 It is mentioned that the design of screened and non-screened cables shall meet the requirements of IEC 60502-1,2004. Kindly Confirm the Standard Whether It is as per IS 1554 or IEC 60502-1	Refer the NPCIL response (to Query) Sr. No. 508
578	MEIL	49	I02.KK56. 0.0. ET.TS.PR003	General	CABLE TYPE-VVGng-LS & VVGEng-LS	Kindly confirm that shall we have to considered VVGng-LS for Unscreened cable & VVGEng-LS for screened cable. As the same is not specified in the given specification	Refer the NPCIL response (to Query) Sr. No. 509
579	MEIL	50	I02.KK56. 0.0. ET.TS.PR003	6.1.4	CABLE TYPE-VVGng-LS & VVGEng-LS	Kindly confirm that shall we have to offer Upto and including 6 Sq.mm with Solid Copper Conductor. As the same is not specified in the given specification	Refer the NPCIL response (to Query) Sr. No. 510
580	MEIL	51	I02.KK56. 0.0. ET.TS.PR003	6.1.10	CABLE TYPE-VVGng-LS & VVGEng-LS	Kindly confirm that shall we considered PVC ST2 Compound as outer sheath material instead of PVC ST1 material	Refer the NPCIL response (to Query) Sr. No. 511
581	MEIL	52	I02.KK56. 0.0. ET.TS.PR003	6.1.7	CABLE TYPE-VVGng-LS & VVGEng-LS	For Multi core unscreened cable, Inner sheath is not required as per specification, please confirm	Refer the NPCIL response (to Query) Sr. No. 512
582	MEIL	53	I02.KK56. 0.0. ET.TS.PR003	Clause No 6.11.7	CABLE TYPE-VVGng-LS & VVGEng-LS	In the mentioned clause No it is mentioned that ISI marking and IS number need to mentioned on each drum, but cable is as per IEC Standard, so the same is not applicable. Please confirm the same.	Refer the NPCIL response (to Query) Sr. No. 513
583	MEIL	54	I02.KK56. 0.0. ET.TS.PR003	Clause No 6.1.15	CABLE TYPE-VVGng-LS & VVGEng-LS	The mentioned clause no shall not be applicable for insulation compound, whether the same is applicable for sheathing only (Table - VALUE 2), VALUE 1 will not be consider	Refer the NPCIL response (to Query) Sr. No. 514
584	MEIL	55	-	BOQ Sr no.- 4.2.183, 4.2.184 & 4.2.185	VVGEng-LS	As per BOQ 4.2.183, 184 & 185 given cable Type is not covered in specification, please share the specification for the same to proceed	Refer the NPCIL response (to Query) Sr. No. 515

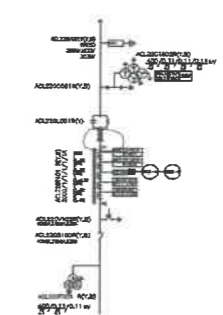


585	MEIL	56	I02.KK56. 0.0. ET.TS.PR004	6.1.8	CABLE TYPE-VVGng-FRLS & VVGEng-FRLS	As per Clause Number 6.1.8, It is mentioned Nominal cable insulation thickness shall comply with the requirements of IS 1554. & As per Clause Number 6.1.3 It is mentioned that the design of screened and non-screened cables shall meet the requirements of IEC 60502-1,2004. Kindly Confirm the Standard Whether It is as per IS 1554 or IEC 60502-1	Refer the NPCIL response (to Query) Sr. No. 516
586	MEIL	57	I02.KK56. 0.0. ET.TS.PR004	General	CABLE TYPE-VVGng-FRLS & VVGEng-FRLS	Kindly confirm that shall we considered VVGng-FRLS for Unscreened cable & VVGEng-FRLS for screened cable. As the same is not specified in the specification	Refer the NPCIL response (to Query) Sr. No. 517
587	MEIL	58	I02.KK56. 0.0. ET.TS.PR004	6.1.4	CABLE TYPE-VVGng-FRLS & VVGEng-FRLS	Kindly confirm that shall we have have to offer Upto and including 6 Sq.mm with Solid Copper Conductor	Refer the NPCIL response (to Query) Sr. No. 518
588	MEIL	59	I02.KK56. 0.0. ET.TS.PR004	6.1.12	CABLE TYPE-VVGng-FRLS & VVGEng-FRLS	Kindly confirm that shall we considered PVC ST2 Compound as outer sheath material instead of PVC ST1 Material	Refer the NPCIL response (to Query) Sr. No. 519
589	MEIL	60	I02.KK56. 0.0. ET.TS.PR004	General	CABLE TYPE-VVGng-FRLS & VVGEng-FRLS	For Multi core unscreened cable, Inner sheath is not required as per given specification, please confirm	Refer the NPCIL response (to Query) Sr. No. 520
590	MEIL	61	I02.KK56. 0.0. ET.TS.PR004	Clause No 6.11.7	CABLE TYPE-VVGng-FRLS & VVGEng-FRLS	In the mentioned clause No it is mentioned that ISI marking and IS number need to mentioned on each drum, but cable is as per IEC Standard, so the same is not applicable. Please confirm the same.	Refer the NPCIL response (to Query) Sr. No. 521
591	MEIL	62	I02.KK56. 0.0. ET.TS.PR004	Clause No 6.1.5	CABLE TYPE-VVGng-FRLS & VVGEng-FRLS	Kindly confirm that shall we have to consider Sector shape conductor from 25 Sq.mm and above size for multi core cables.	Refer the NPCIL response (to Query) Sr. No. 522
592	MEIL	63	I02.KK56. 0.0. ET.TS.PR004	Clause No 6.1.17	CABLE TYPE-VVGng-FRLS & VVGEng-FRLS	The mentioned clause no shall not be applicable for insulation compound, whether the same is applicable for sheathing only (Table - VALUE 2), VALUE 1 will not be consider	Refer the NPCIL response (to Query) Sr. No. 523
593	MEIL	64	I02.KK56. 0.0. ET.TS.PR098	6.1.5	CABLE TYPE-PvPng-HF & PvPng-A-FRHF	Kindly confirm that shall we have to consider Sector shape conductor from 25 Sq.mm and above size for multi core cables for cable type PvPng-A-FRHF	Refer the NPCIL response (to Query) Sr. No. 524
594	MEIL	65	I02.KK56. 0.0. ET.TS.PR098	6.1.7	CABLE TYPE-PvPng-HF & PvPng-A-FRHF	Kindly confirm that shall we have have to offer Upto and including 6 Sq.mm with Solid Copper Conductor	Refer the NPCIL response (to Query) Sr. No. 525
595	MEIL	66	I02.KK56. 0.0. ET.TS.PR098	Clause No 6.11.7	CABLE TYPE-PvPng-HF & PvPng-A-FRHF	In the mentioned clause No it is mentioned that ISI marking and IS number need to mentioned on each drum, but cable is as per IEC Standard, so the same is not applicable. Please confirm the same.	Refer the NPCIL response (to Query) Sr. No. 526
Fibre optic cable & Lan cables							
596	MEIL	67	06_I02.KK56.0.0.ET.TS.PR080_R4_TECHNICAL SPECIFICATION FOR FIBER OPTIC CABLES		FO cable	FIBER TYPE: As per BOQ Supply of 6 Core multi-mode fiber optics cable OKSng(A)-FRHF-01-M6-6MG2 which is OM1 fiber type as per clause 5.2, while BOQ & subsequent description mentions about 50±2.5µm micron fiber, which may be OM2 for Clause 5.1 or OM4 for Clause 5.2. So please confirm the fiber type & clause 5.1 or 5.2 to consider?	Refer the NPCIL response (to Query) Sr. No. 527

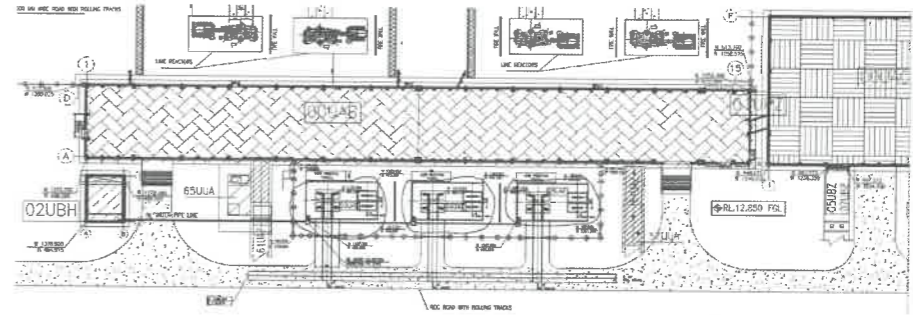


597	MEIL	68	06_I02.KK56.0.0.ET.TS.PR080_R4_TECHNICAL SPECIFICATION FOR FIBER OPTIC CABLES		FO cable	INNER SHEATH (Clause 5.2.2-Table 3 & Clause 5.2.5.4.iii); is mentioned of silicon rubber, while these are flame retardant cables as per Cat A as per IEC 60332-3-22, so inner sheath should be LSZH. Please confirm.	Refer the NPCIL response (to Query) Sr. No. 528
598	MEIL	69	06_I02.KK56.0.0.ET.TS.PR080_R4_TECHNICAL SPECIFICATION FOR FIBER OPTIC CABLES		FO cable	Fiber optics cable OKSng(A)-FRHF-01-M4-4MG2-1500: ---4F shall be with OM1 fiber type, please reconfirm.	Refer the NPCIL response (to Query) Sr. No. 529
Response not received Previous queries							
599	MEIL	70	18)230kV GIS and GIBD_I02.KK56.0.0.ET.TS.PR053_-1	4.11 3 pg no. 11	In case of maintenance of any other disconnecter switches (besides bus disconnecter switches), only one feeder of that diameter shall be affected	We understand that Double busbar system required, hence diameter system not envisaged While maintenance on line side disconnecter all three phases of particular bay will be out of service	Acceptable FOR 230kV GIS. (The tender clause referred may kindly be rechecked. The tender clause doesnot mandate the requirement as mentioned in the query.)
600	MEIL	71	18)230kV GIS and GIBD_I02.KK56.0.0.ET.TS.PR053_-1	5.16.1 c pg no. 42	The mean lifetime for current transformers shall not be less than 50 years	Generall the GIS Lifecycle is 30 years , including all equipments like SF6 gas , insulators O-rings , CT, VT etc	Type tested (as per relevant IEC standards) equipment shall be acceptable. (The tender clause referred may kindly be rechecked. The tender doesnot mandate the requirement as mentioned in the query. As per tender clause 5.17.1.C mean lifetime for current transformers shall not be less than GIS life cycle.)
601	MEIL	72	18)230kV GIS and GIBD_I02.KK56.0.0.ET.TS.PR053_-1	5.1.9	viii. Mechanical interlocks shall be provided in the operating mechanism to preventdischarging of closing springs when the breaker is in the closed position.	The provision of mechanical interlock in HV GIS is not envisage however padlock facility can be given in operating mechanism .	Electrical interlocking for the mentioned function shall be a mandatory requirement. Additional mechanical interlocks/padlocks etc are preferred but not mandatory. Additional Mechanical interlocks/ padlock facility shall be provided as per OEM practices and the same shall be acceptable.
602	MEIL	73	18)230kV-GIS and GIBD_I02.KK56.0.0.ET.TS.PR053_-1	6.1.6	The type test must have not been conducted earlier than 7 years from the date of opening bids.In case the type tests were conducted earlier than 7 years, such type tests shall be carried out by the contactor free of cost before commencement of supply.	As per the latest CEA guidelines, the Type tests conducted upto 15 years are acceptable. We request a confirmation on the same as there has be no change in the type tested design	Type test validity as per relevant CEA guidelines shall be acceptable for 400/230kV GIS and GIBD.
603	MEIL	74	BOQ	1.1.1.1 & 1.1.1.4	Both Portable & online mentioned	We understood that Online PD monitoring system shall be considered Kindly confirm	Online PD monitoring system is envisaged for 400kV GIS/GIBD. In addition to this a portable PD monitoring system shall also be supplied. (Kindly recheck the item no. of Supply schedule. The Item Sr. no. for Online PD Monitoring is 1.1.11 of Supply BoQ and Item Sr. No. for Portable PD monitoring system is 1.2.12 of supply BoQ)
604	MEIL	75	BOQ & SLD	1.1.1.3	In BOQ SF6 to Air Bushing Quantity mentioned 21 means only for 7 bays	As per BOQ we understand that Total 22 Bays included in scope , but SF6 to Air bushings qty mentioned only for Line bays We presume same termination is applicable for other bays Kindly confirm	SF6-Air Bushings are envisaged only for EHV line bays. There are a total of 7 no. of line bays. Termination to GT, Shunt Reactors and Line Reactors are envisaged through SF6-Oil bushings. The SF6-Oil bushings shall be supplied as a part of GT/Line Reactor/Shunt reactor and are excluded from the scope of this tender. However, supply and termination of GIBDs upto the Bushing flange shall be under the scope of the Contractor.
605	MEIL	76	16, 17) I02.KK56.0.0.ET.TS.PR051-Rev 4 400kV GIS & GIBD	4.16 Page no. 16	Each gas-filled compartment shall be equipped with static filters (e.g. Alumina), density switches, PD Sensors (UHF),	We shall provide PD sensors as per standard practise, it is not required to place PD sensors on each gas compartment Kindly confirm	PD sensors shall be provided as per OEM recommendations and practices
606	MEIL	77	I02.KK56.0.0.ET.TS.PR051	5.7.9	Porcelain shall be homogeneous, free from laminations, cavities and other flaws or imperfections that might affect the mechanical or dielectric quality and shall be thoroughly vitrified, tough and impervious to moisture. Glazing of the porcelain shall be of uniform brown colour free from blisters, burns and similar other defects.	Offered Bushings shall be polymeric type	Type tested arrangement as per relevant IEC standards shall be acceptable. The offered bushings shall be of the same type/design used for type tests. Also the Bushings shall comply with pollution levels, suitability for washing and creepage distances as per the tender requirements.



607	MEIL	78	I02.KK56.0.0.ET.TS.PR051	5.8.1	LCCs shall be free-standing type panel with dust and vermin proof construction. These shall be located near the GIS.	For 220kV GIS the LCC shall be integrated type to save the overall space requirement, request a confirmation on the same.	<p>The subject mentioned clause is regarding the 400kV GIS.</p> <p>For 230kV GIS LCC, free standing type is not a mandatory requirement. Arrangement as per standard OEM practises shall be acceptable.</p> <p>However, the equipment layout shall be prepared based on the below.</p> <p>1) Annexure A Layout & EP location for 230kV GIS building attached along with I02.KK56.0.0.ET.TS.PR053- Technical Specification for 230kV Gas Insulated Switchgear & Gas Insulated Bus duct.</p> <p>2) Annexure -1 Layout of 230kV Outdoor Switchyard attached with the tender document I02.KK56.0.0.ET.TS.PR054- Technical Specification for 230kV Outdoor Switchyard.</p>
608	MEIL	79	I02.KK56.0.0.ET.TS.PR051	6.1.6	All the equipment offered should have been successfully type tested as per the relevant standards, amended up to date. In case the equipment of the type and design offered has already been type tested, the Contractor shall furnish type test reports before proceeding with manufacture. Type tests must not have been conducted earlier than 7 years from the date of opening of bids. In case the type tests were conducted earlier than 7 years, such type tests shall be carried out by the Contractor free of cost before commencement of supply.	As per the latest CEA guidelines, the Type tests conducted upto 15 years are acceptable. We request a confirmation on the same as there has been no change in the type tested design	Type test validity as per relevant CEA guidelines shall be acceptable for 400/230kV GIS and GIBD. This is in line with the tender requirements.
609	MEIL	80	I02.KK56.0.0.ET.TS.PR079_R3_TS	5.4.9	Bus duct supports	We have considered 80 microns galvanised thickness on busduct support structure as higher thickness will be a reason of peel off.	<p>As per clause 3.4.4 (iv) of I02.KK56.0.0.ET.TS.PR079 "The support structure shall be fabricated from standard steel section and shall be hot dip galvanized after fabrication. The hot dip galvanization (Specifications for structural steel shall be as per IS 2062 grade- C) shall be in accordance with IS 2629 with a minimum thickness of 120 microns for all the structural steel supports, taking into account the highly corrosive environment at KKNPP site."</p> <p>The same shall prevail.</p>
610	L&T	1	mpe_Section C Part01	General	I02.KK56.0.0.ET.OKP.WD004_SLD for 400kV system and I02.KK56.0.0.ET.OKP.WD005_SLD for 230kV system	Air bushings termination points are not shown in Line feeder bays in SLD.	<p>TI sy in</p>  <p>shall be placed just before Wavetraps. Gas Insulated Bus ducts in the tender SLD (Kindly refer the blue highlighted marking : interface point between Air insulated and Gas Insulated parts of SF6-Air Bushings, kindly Refer Annexure -1 Layout of the tender document I02.KK56.0.0.ET.TS.PR052- Technical Specification for 400kV Outdoor Switchyard</p>



611	L&T	2	mpe_Section C Part01	General	I02.KK56.0.0.ET.TS.PR054_R4_TS For 230kV Outdoor Switchyard and I02.KK56.0.0.ET.TS.PR052_R4_TS For 400kV Outdoor Switchyard	3 Nos Shunt Reactors termination points to be clarified in outdoor switchyard Layout plan.	 <p>Refer Annexure -1 Layout of 400kV Outdoor Switchyard attached with the tender document I02.KK56.0.0.ET.TS.PR052- Technical Specification for 400kV Outdoor Switchyard for tentative location of Shunt Reactors. Outline of Shunt Reactor Foundation plan (tentative) is encircled in blue ink the attached snapshot. As mentioned in the drawing, the locations are tentative and minor changes are expected. Exact locations and editable copies of layout drawing shall be provided during detailing.</p>
612	L&T	3	mpe_Section C Part01	General	I02.KK56.0.0.ET.OKP.WD004_SLD for 400kV system and I02.KK56.0.0.ET.OKP.WD005_SLD for 230kV system	2 Nos GT bays Termination point to be clarify. (Via tunnels 61UAZ & 51UAZ).	Refer the attached drawings (50UBF. Unit Auxiliary Tra_KK56_R_H_C_002910 & 60UBF. Unit Auxiliary Tra_KK56_R_H_C_004088) for end portion of GIBD tunnels (Unit 5&6). These drawings are preliminary drawings and provided for reference purpose only. Also, GT interface drawings will be provided during detailing to the successful bidder.
613	L&T	4	mpe_Section C Part01	General	I02.KK56.0.0.ET.OKP.WD004_SLD for 400kV system and I02.KK56.0.0.ET.OKP.WD005_SLD for 230kV system	As per SLD in GT Bay only one number 5 Core CT mentioned But BOQ 2 Nos 5 Core CT.Please clarify	Refer items listed under item 1.1.5 of Supply BoQ. Only 1 no. of 5 core CT is listed under the same. Second CT listed is a metering CT for Special Energy meters.
614	L&T	5	mpe_Section C Part01	General	I02.KK56.0.0.ET.OKP.WD004_SLD for 400kV system and I02.KK56.0.0.ET.OKP.WD005_SLD for 230kV system I02.KK56.0.0.ET.TS.PR054_R4_TS For 230kV Outdoor Switchyard and I02.KK56.0.0.ET.TS.PR052_R4_TS For 400kV Outdoor Switchyard	In technical specifications VTs not indicated in GT Bay, however it mentioned in BOQ and SLD.Please clarify	VT shall be included in GT bay. Items as per SLD, listed as per Supply BoQ along with technical specifications shall be considered.
615	L&T	6	mpe_Section C Part01	General	I02.KK56.0.0.ET.TS.PR054_R4_TS For 230kV Outdoor Switchyard and I02.KK56.0.0.ET.TS.PR052_R4_TS For 400kV Outdoor Switchyard	Clause (1.17 pg.11/125) Outdoor switchyard (I02.KK56.01UAK.0.ET.OK. WD001) -Tentative layout including the GIBD routing is attached as Annexure of I02.KK56.0.0.ET.TS.PR052. – This document is not available.Please share reference drawing	The drawing is attached as Annexure-1 to I02.KK56.0.0.ET.TS.PR052- Technical Specification for 400kV Outdoor Switchyard. The drawing is not separately included but as a part of the specification. Kindly go through the last pages of above said specification. Additional point: Construction of drains for 230kV and 400kV Switchyard areas as per NPCIL issued drawing is also included under scope of Contractor. The same shall be executed via relevant item nos of Civil SOQR.

ВЕДОМОСТЬ РАБОЧИХ ЧЕРТЕЖЕЙ ОСНОВНОГО КОМПЛЕКТА
LIST OF WORKING DRAWINGS OF THE MAIN SET

Лист Sheet	Наименование Name	Примечание Note
1	Общие данные General data	Изм.1 (Зам.) Chg.1 (Repl)
2	Схема расположения элементов тоннеля. Разрезы 1-1, 5-5, Узел 4 Layout of elements for tunnel. Sections 1-1, 5-5, Unit 4	Изм.1 (Зам.) Chg.1 (Repl)
3	Схема расположения элементов тоннеля. Разрезы 6-6, 11-11, Узлы 1, 3 Layout of elements for tunnel. Sections 6-6, 11-11, Units 1, 3	Изм.1 (Зам.) Chg.1 (Repl)
4	Изделие закладное TA670 и ступенчатая ST1 Embedded part TA670 and step-ladder ST1	
5	Изделия закладные TA671, TA672, TA673, TA678 Embedded parts TA671, TA672, TA673, TA678	Изм.1 (Зам.) Chg.1 (Repl)
6	Изделия закладные TA674, TA675, TA676, TA677 Embedded parts TA674, TA675, TA676, TA677	
7	Схема гидроизоляции тоннеля Layout of tunnels waterproofing	Изм.1 (Зам.) Chg.1 (Repl)
8	Схема гидроизоляции тоннеля Layout of tunnels waterproofing	Изм.1 (Зам.) Chg.1 (Repl)

ВЕДОМОСТЬ СПЕЦИФИКАЦИЙ
LIST OF SPECIFICATIONS

Лист Sheet	Наименование Name	Примечание Note
2	Групповая спецификация тоннеля Group specification for tunnel 52(53,54) UAZ	
7	Спецификация гидроизоляции тоннеля Specification for waterproofing of tunnels 52(53,54) UAZ	

ВЕДОМОСТЬ РАСХОДА СТАЛИ, КГ
LIST OF STEEL CONSUMPTION, KG

Марка элемента Mark of element	Изделия закладные Embedded parts				Прочие марки Rolled steel of grade		Лок Manhole	Всего Total
	Арматура класса Reinforcement of grade		Столбы/Столбы IS:1732-1988		Столбы/Столбы IS:1732-1988			
Тоннель Tunnel 52(53,54) UAZ	A-III	Столбы/Столбы	IS:1732-1988	IS:1732-1988	IS:1732-1988	IS:1732-1988	360.0	3324.2 3164.0
	IS:1732-1988	IS:1732-1988	IS:1732-1988	IS:1732-1988	IS:1732-1988	IS:1732-1988	360.0	
	IS:1732-1988	IS:1732-1988	IS:1732-1988	IS:1732-1988	IS:1732-1988	IS:1732-1988	360.0	

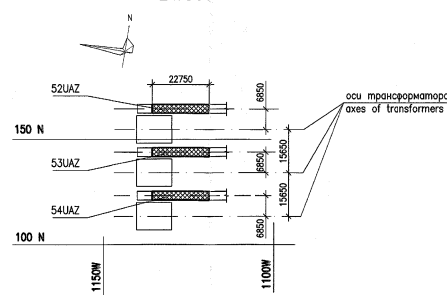
УСЛОВНЫЕ ОБОЗНАЧЕНИЯ
LEGEND

- монолитный железобетон
cast-in-place reinforced concrete
- примыкающие конструкции,
не входящие в данный комплект
adjoining structures that are not
in the scope of this design

ОБЩИЕ УКАЗАНИЯ

- 1 В настоящем комплекте разработаны рабочие чертежи геометрии по тоннелям макроразмеров 52UAZ, 53UAZ, 54UAZ.
- 2 Рабочие чертежи разработаны в соответствии с нормами, правилами и стандартами.
- 3 Сооружение относится к классу 4 по влиянию на безопасность по НП-001-15 "Общие положения безопасности атомных станций".
- 4 Категория ответственности конструкции за радиационную и ядерную безопасность — II по ПНД АЗ-5.6 "Нормы строительного проектирования АС с реакторами различного типа".
- 5 Категория сейсмостойкости сооружения — II по НП-031-01 "Нормы проектирования сейсмостойких атомных станций".
- 6 За относительную отметку 0.00 принята отметка чистого пола первого этажа здания 50UM, что соответствует абсолютной отметке +8.100 MSL.
- 7 Бетонирование выполнять согласно проекту производства работ на бетонирование, который разрабатывается Заказчиком с учетом требований R01.KK56.0.0.KZ.TT.WD001 "Технические требования по выполнению бетонных и железобетонных конструкций зданий и сооружений".
- 8 Монолитные конструкции сооружения выполнять из бетона класса по прочности на сжатие B35, марки по водонепроницаемости не ниже W8 по ГОСТ 26633-91.
- 9 Бетонная смесь должна быть подобрана из условия ее уодоупорядочиваемости по зернистости с минимальным водо-цементным отношением для данного класса бетона.
- 10 Запрещается добавка солей хлористого кальция, натрия и других солей в состав бетона, вызывающие коррозию арматуры и закладных изделий.
- 11 В бетоне конструкций не допускать непрофилированные места, расколы, пустоты и трещины. Места с дефектами ремонтируются в соответствии с ремонтно-технической документацией. Контроль качества бетона конструкций осуществляется в соответствии со СП 70.13330.2012 "Исусеи и ограждающие конструкции".
- 12 При укладке бетона B20, W6 на дно туннеля с уклоном 0.01 % для организации стока дренажных вод, обратить особое внимание на тщательность выполнения работ. Поверхность бетона (поверхность пола) не должна иметь выступов и впадин, препятствующих стоку воды. Класс шероховатости бетонной поверхности 3-III (СПНП 3.04.03-85 "Защита строительных конструкций и сооружений от коррозии").
- 13 При производстве работ обратить особое внимание на тщательность выполнения гидроизоляционных работ. Гидроизоляционные работы выполняются и контролируются в соответствии с R01.KK56.0.0.KZ.TT.WD002 "Технические требования на гидроизоляцию подземных частей зданий и сооружений".
- 14 При производстве и приемке работ руководствоваться R01.KK56.0.0.KZ.TT.WD001 "Технические требования по выполнению бетонных и железобетонных конструкций зданий и сооружений", СП 70.13330.2012 "Исусеи и ограждающие конструкции".
- 15 Обратную засыпку пазух котлована разрешается выполнять только после бетонирования перекрытий и набора бетоном конструкции перекрытия не менее 70 % проектной прочности. На участках со сборными плитами перекрытия обратную засыпку выполнять только после тщательной зачеканки швов между плитами на всю высоту шва.
- 16 Обратная засыпка выполняется песчано-гравийной смесью с песком (15..20 см) уплотнением грунта равномерно с обеих сторон до плотности не менее 1.75 т/м³. Размер крупного заполнителя песчано-гравийной смеси не более 40 мм, а размер мелкого заполнителя не менее 0.3 мм.
- 17 Верность основных комплектов рабочих чертежей смотрите ведомость пакета R23.KK56.50UBF.0.KZ.NP.WD001.
- 18 * Внесены изменения 1 в листы 1, 2, 3, 5, 8.
- 19 Изменение 1 вносится по письму Заказчика № NPCIL/Engg-LWR/KK5&6/CIVIL/2021/M/290 от 3.08.21

СХЕМА РАСПОЛОЖЕНИЯ
LAYOUT



GENERAL GUIDELINES

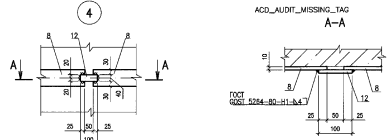
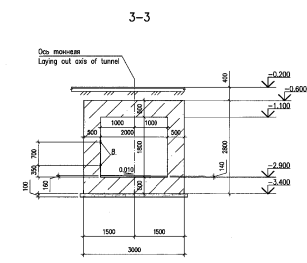
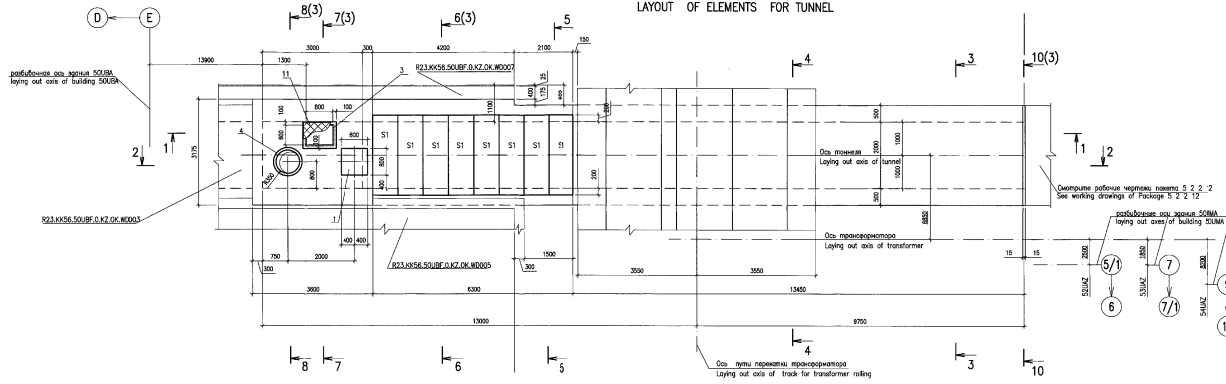
- 1 In given complete set the working drawings of 52UAZ, 53UAZ, 54UAZ wireway tunnels geometry have been designed.
- 2 Working drawings have been designed in accordance with codes, rules and standards.
- 3 The structure is related to safety class 4 as per NP-001-15 "General regulations of NPPs safety".
- 4 The radiation and nuclear safety responsibility category of the structure is II as per PINAE-5.6 "Construction design standards of nuclear power plants with reactors of different types."
- 5 The category of seismic stability of the structure is II as per NP-031-01 "Design Standards for Seismic-Resistant Nuclear Power Stations".
- 6 The finished floor level of the ground floor of building UBA was accepted as the relative elevation 0.000, which corresponds to the absolute elevation +8.100 MSL.
- 7 Concrete is carried out in accordance with work execution design, which is developed by Customer taking into consideration the requirements of R01.KK56.0.0.KZ.TT.WD001 "Technical requirements to performing concrete and reinforced concrete structures of buildings and constructions".
- 8 Cast-in-place structures of the construction are to make from concrete of grade B35 for compression strength and waterproofness grade no less than W8 by GOST 26633-91.
- 9 Concrete mix is to be selected according to its placeability with minimum water-cement ratio for the given mark of concrete.
- 10 Adding of calcium and sodium chlorides and other salts causing corrosion of the reinforcement and embedded items is prohibited.
- 11 It is inadmissible the presence of concrete disintegration, interlocks, and cracks in concrete structures. The defective spots are repaired in accordance with repair and process documentation. Quality control of the concrete structures is carried out in accordance with SP 70.13330.2010 "Load-Bearing Structures and Building Enclosures" (updated version of SNIP 3.03.01-07)
- 12 During the laying of concrete of grade B20, W6 to the floor of tunnels with the inclination 0.01 % for drainage water flowing off it is necessary to pay attention to thoroughness of the work carrying out. Concrete surface (surface of the floor) has to be smooth for unimpeded water flowing off. The urulation category of concrete surface is to be 3-III (SNP 3.04.03-85 "Protection of building structures and constructions from corrosion attack").
- 13 During the work execution it is necessary to pay attention to waterproofing work carrying out. Waterproofing work is carried out and controlled in accordance with R01.KK56.0.0.KZ.TT.WD001 "Technical requirements to waterproofing of underground parts of buildings and structures".
- 14 During the execution and acceptance of work it is necessary to pay attention to R01.KK56.0.0.KZ.TT.WD001 "Technical requirements to performing concrete and reinforced concrete structures of buildings and constructions", SP 70.13330.2012 "Load-Bearing Structures and Building Enclosures" (updated version of SNIP 3.03.01-07)
- 15 The backfilling of the pit hollows is permitted once strength of structure concrete is not less than 70% of the design strength. At sectors with precast floor slabs the backfilling is carried out only after the accurate joint packing along its whole height.
- 16 The backfilling is performed with sand-gravel mix with layer-by-layer (15..20 cm) compaction of soil up to density > 1.75 t/m³. The size of coarse aggregate of sand-gravel mix is no more than 40 mm, and the size of fine aggregate is no less than 0.3 mm.
- 17 For list of working drawings included in the main sets see packing list R23.KK56.50UBF.0.KZ.NP.WD001.
- 18 * Changes 1 have been made to the sheets 1, 2, 3, 5, 8.
- 19 Revision 1 is made in order to Letter from the Customer № NPCIL/Engg-LWR/KK5&6/CIVIL/2021/M/290 dated 3.08.21

Date: 18.08.2021
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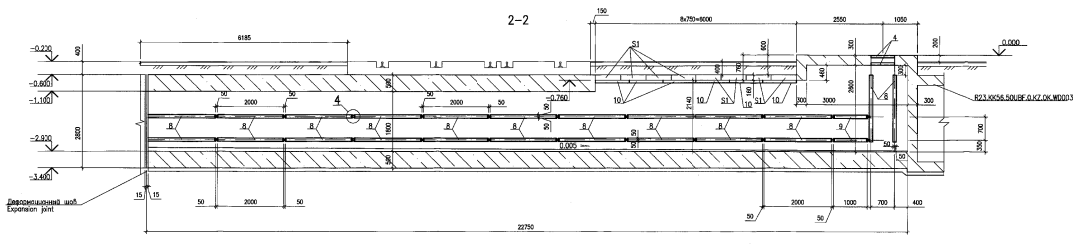
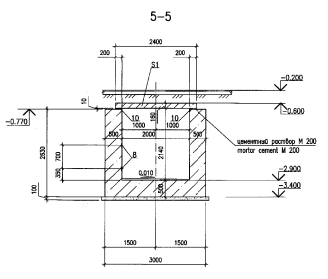
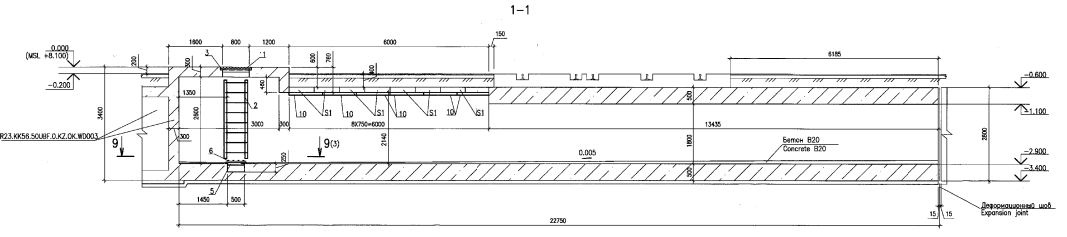
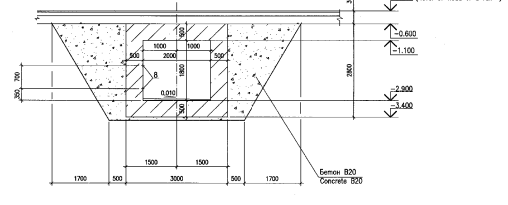
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Утвержден Approved	Инженер Engineer	09.21								
Н. контр. Inspector	Soboleva	09.21								
Разработчик Designer	Belozorova	09.21								
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<p>NUCLEAR POWER CORPORATION OF INDIA LTD</p> <p>R23.KK56.50UBF.0.KZ.OK.WD001</p> <p>АЭС "КУДАНКУЛАМ" БЛОК 5 NPP "KUDANKULAM" UNIT 5</p> <p>Сопровождающие чертежи в пределах светового двора. Геометрия трансформаторных структур SOUF Unit Auxiliary Transformers and Generator Transformers Structures Монолитный железобетонный тоннель в пределах светового двора. Геометрия Monolithic reinforced concrete tunnels within the limits of a light court yard. Geometry</p> <p>Общие данные General data</p> <p>Стадия Лист Листов Phase Sheet Sheets WD 1 8</p> <p>JSC ATOMPROEKT</p> <p>формат/size A1</p>										

СХЕМА РАСПОЛОЖЕНИЯ ЭЛЕМЕНТОВ ТОННЕЛЯ
LAYOUT OF ELEMENTS FOR TUNNEL



ГРУППОВАЯ СПЕЦИФИКАЦИЯ ТОННЕЛЕЙ 52(53, 54) UAZ
GROUP SPECIFICATION FOR TUNNEL 52(53, 54) UAZ

Пол. Item	Обозначение Designation	Наименование Description	Кол-во в шт. Qty. in pcs	Вид Вид	Масса в кг Mass in kg	Примечание Note	
S1	Р23.КК56.50УБФ.0.К2.ОК.М0001	Монолитные железобетонные элементы	8	8	8	24	710.0
1	Р23.КК56.50УБФ.0.К2.ОК.М0001	Решетки железобетонные	1	1	1	3	102.6
2	Р23.КК56.50УБФ.0.К2.ОК.М0001	Стеклопакеты	1	1	1	3	66.0
3	Р23.КК56.50УБФ.0.К2.ОК.М0001	Стеклопакеты	1	1	1	3	66.0
4	Р23.КК56.50УБФ.0.К2.ОК.М0001	Решетки железобетонные	2	2	2	6	21.7
5	Р23.КК56.50УБФ.0.К2.ОК.М0001	Решетки железобетонные	1	1	1	3	22.9
6	Р23.КК56.50УБФ.0.К2.ОК.М0001	Решетки железобетонные	1	1	1	3	12.6
7	Р23.КК56.50УБФ.0.К2.ОК.М0001	Решетки железобетонные	6	6	6	18	3.0
8	Р23.КК56.50УБФ.0.К2.ОК.М0001	Решетки железобетонные	22	22	22	66	22.7
9	Р23.КК56.50УБФ.0.К2.ОК.М0001	Решетки железобетонные	2	2	2	6	11.4
10	Р23.КК56.50УБФ.0.К2.ОК.М0001	Решетки железобетонные	12	12	12	36	8.6
11	Р01.КК.1.0.А.Р.Т.М001.В	Кол. Металл. С-300	1	1	1	3	120.0
12	Р23.КК56.50УБФ.0.К2.ОК.М0001	Стеклопакеты	22	22	22	66	0.13
	Бетон по уклону	Бетон марки В20, W6	9.2	9.2	9.2	274	



Р23.КК56.50УБФ.0.К2.ОК.М0001

АСБ КОДАНКУЛАН БЛОК
NPP KUDANKULAN UNIT 5

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Состав: [Table with columns: Имя, Долг, Фамилия, Имя, Долг, Фамилия, Имя, Долг, Фамилия, Имя, Долг, Фамилия]

Исполнитель: [Table with columns: Имя, Долг, Фамилия, Имя, Долг, Фамилия, Имя, Долг, Фамилия, Имя, Долг, Фамилия]

Проверен: [Table with columns: Имя, Долг, Фамилия, Имя, Долг, Фамилия, Имя, Долг, Фамилия, Имя, Долг, Фамилия]

Утвержден: [Table with columns: Имя, Долг, Фамилия, Имя, Долг, Фамилия, Имя, Долг, Фамилия, Имя, Долг, Фамилия]

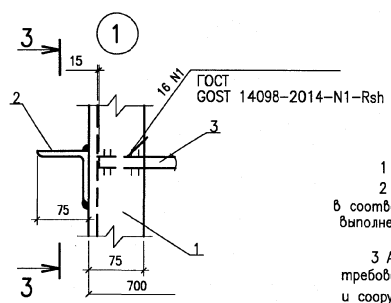
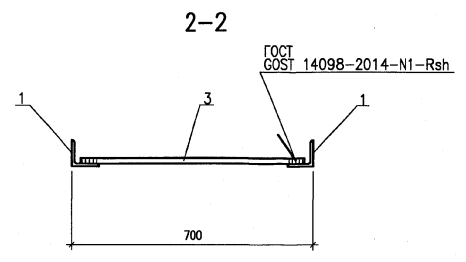
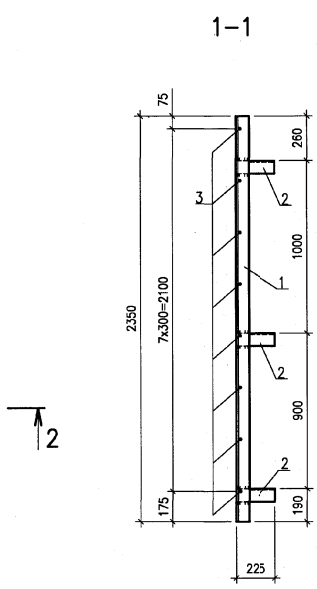
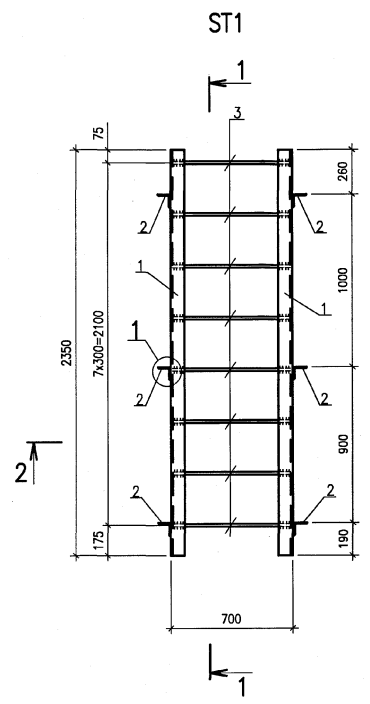
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Масштаб: [Table with columns: Имя, Долг, Фамилия, Имя, Долг, Фамилия, Имя, Долг, Фамилия, Имя, Долг, Фамилия]

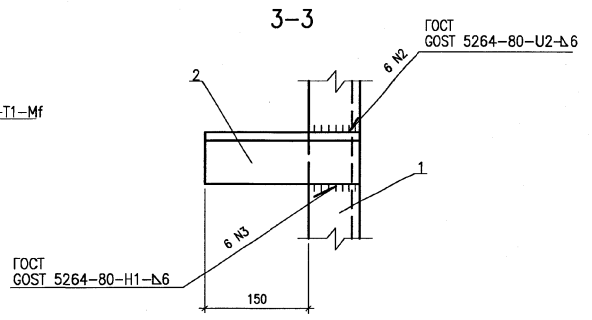
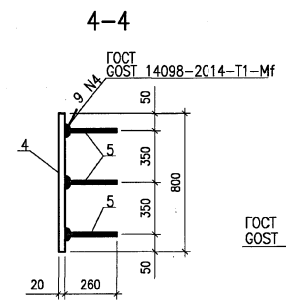
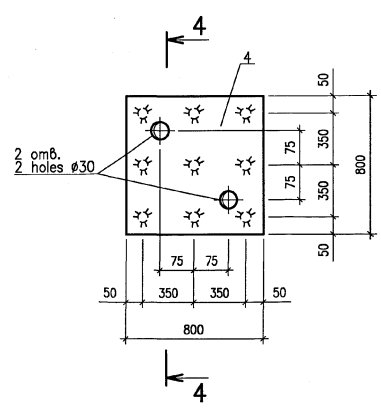
Лист: [Table with columns: Имя, Долг, Фамилия, Имя, Долг, Фамилия, Имя, Долг, Фамилия, Имя, Долг, Фамилия]

Всего листов: [Table with columns: Имя, Долг, Фамилия, Имя, Долг, Фамилия, Имя, Долг, Фамилия, Имя, Долг, Фамилия]

Исполнитель: JSC ATOMPROMTEK



TA670



СПЕЦИФИКАЦИЯ ИЗДЕЛИЙ
SPECIFICATION OF PRODUCTS

Марка изделия / Mark of article	Поз. det. / Item	Наименование / Name	Кол. / Quant.	Масса / Weight of part, kg	Масса изделия / Weight of the article, kg
ST1	1	Лестница / Units IS:7575/8 IS:908-1957 L=2350 GOST 27772-2015 GOST 27772-2015	2	21.0	68.0
	2	L=225	6	2.0	
	3	ISRO 20 IS:1732-1961 L=670	8	1.7	
TA670	4	Лист / Sheet IS:1730-1961 GOST 27772-2015 800x800	1	100.5	102.6
	5	12 A-III L=260 GOST 5781-82	9	0.23	

1 Electrodes for welding shall be of E42A type as per GOST 9467-75.
 2 The fabrication, quality control and acceptance of embedded parts shall be carried out as per the requirements of R01.KK56.0.0.KZ.TT.WD001 "Technical requirements to performing concrete and reinforced concrete structures of buildings and constructions".
 3 Anticorrosive coating see R01.KK56.0.0.KZ.TT.WD001 "Technical requirements to performing concrete and reinforced concrete structures of buildings and constructions".

1 Electrodes for welding shall be of E42A type as per GOST 9467-75.
 2 The fabrication, quality control and acceptance of embedded parts shall be carried out as per the requirements of R01.KK56.0.0.KZ.TT.WD001 "Technical requirements to performing concrete and reinforced concrete structures of buildings and constructions".
 3 For anticorrosive coating see R01.KK56.0.0.KZ.TT.WD001 "Technical requirements to performing concrete and reinforced concrete structures of buildings and constructions".

Package Number 5 6 2 64

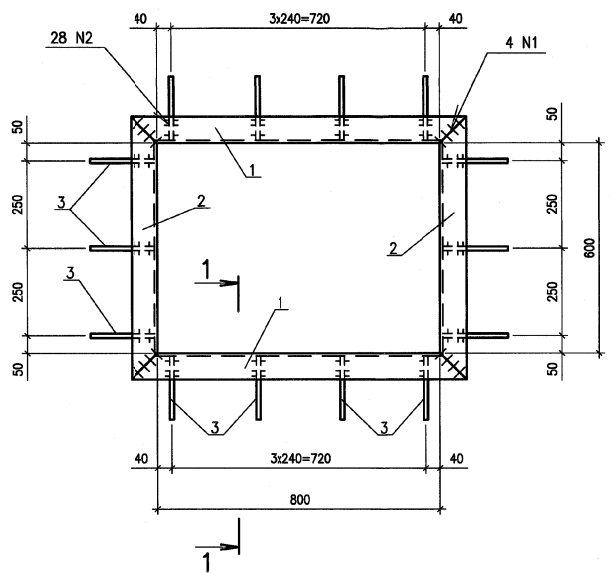
File: R23.KK56.50UBF.0.KZ.OK.WD001_004=0

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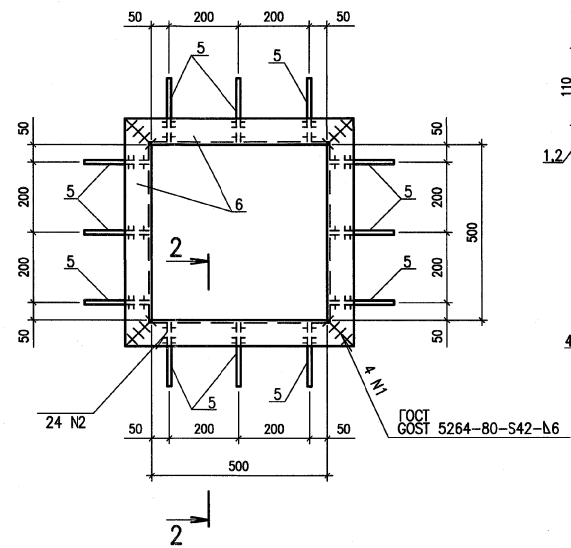
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R23.KK56.50UBF.0.KZ.OK.WD001					
АЭС "КУДАНКУЛАМ" БЛОК 5					
НПП "КУДАНКУЛАМ" УНИТ					
Изм.	Кол.уч.	Лист	№ док.	Подпись	Дата
Rev.	Q-ty	of prt.	Sheet	Signature	Date
Утвердил / Approved	Pereyaslovets				12.20
Н. контр. / Inspector	Soboleva				12.20
Разраб. / Designed	Gurova				12.20
			Изделие закладное TA670 и стремянка ST1 Embedded part TA670 and step-ladder ST1		
			Стадия / Phase		
			Лист / Sheet		
			Листов / Sheets		
			WD 4		
JSC ATOMPROEKT					

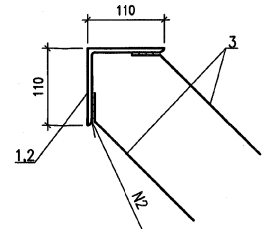
TA671



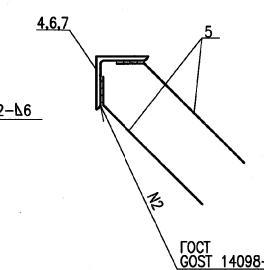
TA673



1-1



2-2



СПЕЦИФИКАЦИЯ ИЗДЕЛИЙ ЗАКЛАДНЫХ
SPECIFICATION OF EMBEDDED PARTS

Марка изделия / Mark of article	Поз. дет. / Item	Наименование / Name	Кол. / Quant.	Масса / Масса	Масса / Масса
		Детали / Units		изделия / of the article, kg	используемая / of the article, kg
TA671	1	IS11010 IS 808-1989 GOST 5245 GOST 21772-2015 L=1000	2	16.6	66.0
	2	L=800	2	13.3	
	3*	12 A-III GOST 5781-82 L=250	28	0.22	
	4	IS17576 IS 808-1989 GOST 5245 GOST 21772-2015 L=2670	1	18.2	
TA672	5*	12 A-III GOST 5781-82 L=250	16	0.22	21.7
	6	IS17576 IS 808-1989 GOST 5245 GOST 21772-2015 L=650	4	4.4	
TA673	5*	12 A-III GOST 5781-82 L=250	24	0.22	22.9
	7	IS17576 IS 808-1989 GOST 5245 GOST 21772-2015 L=1000	1	6.8	
TA678	5*	12 A-III GOST 5781-82 L=250	8	0.22	8.6

* - см. Ведомость деталей
 *- see List of parts

1 Electrodes for welding shall be of E42A type as per GOST 9467-75.
 2 Изготовление, контроль качества и приемку закладных изделий осуществлять в соответствии с требованиями R01.KK56.0.0.KZ.TT.WD001 "Технические требования по выполнению бетонных и железобетонных конструкций зданий и сооружений".
 3 Anticorrosive coating see R01.KK56.0.0.KZ.TT.WD001 "Technical requirements to performing concrete and reinforced concrete structures of buildings and constructions".
 4 Для удобства транспортировки и монтажа, закладные изделия большой длины допускается разрезать на части, с последующим восстановлением равнопрочным стыковым швом по GOST 5264-80.

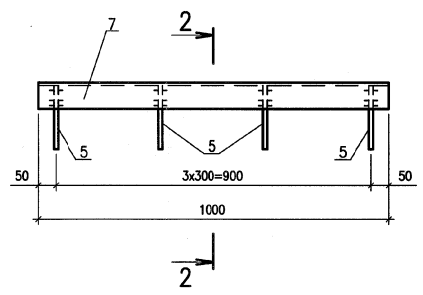
1 Electrodes for welding shall be of E42A type as per GOST 9467-75.
 2 The fabrication, quality control and acceptance of embedded parts shall be carried out as per the requirements of R01.KK56.0.0.KZ.TT.WD001 "Technical requirements to performing concrete and reinforced concrete structures of buildings and constructions".

3 For anticorrosive coating see R01.KK56.0.0.KZ.TT.WD001 "Technical requirements to performing concrete and reinforced concrete structures of buildings and constructions".
 4 For better convenience of transportation and erection it is allowed to cut long embedded parts into pieces and than restore them with full strength butt welds as per GOST 5264-80.

Package Number 5 6 2 64

File: R23.KK56.50UBF.0.KZ.OK.WD001_005=1

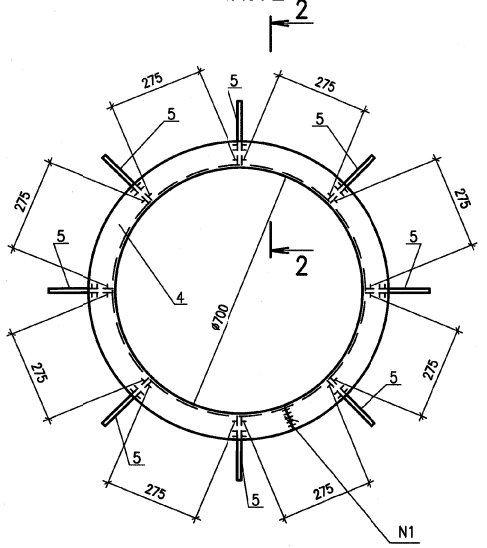
TA678



ВЕДОМОСТЬ ДЕТАЛЕЙ
LIST OF PARTS

Поз. / Item	Эскиз / Sketch
3	
5	

TA672



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1	-	Repl.	8385-21	09.21	
Изм. / Rev.	Кол.уч. / of prt.	Лист / Sheet	№ док. / Doc. No.	Подпись / Signature	Дата / Date
Утвердил / Approved	Перевыполнил /			09.21	
Н. контр. / Inspector	Soboleva			09.21	
Разраб. / Designed	Gurova			09.21	

R23.KK56.50UBF.0.KZ.OK.WD001
АЭС "КУДАНКУЛАМ" БЛОК 5
NPP "KUDANKULAM" UNIT 5

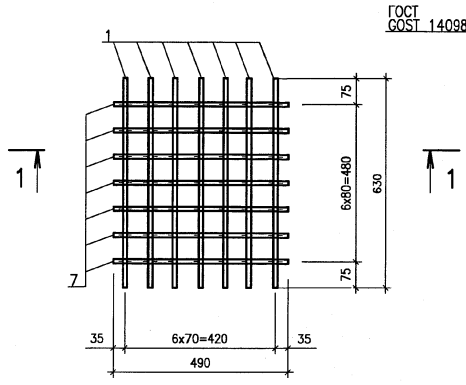
50UBF. Сооружения для блочных трансформаторов. Монолитные железобетонные тоннели в пределах светового двора. Геометрия 50UBF. Unit Auxiliary Transformers and Generator Transformers Structures. Monolithic reinforced concrete tunnels within the limits of a light court yard. Geometry

Изданы закладные TA671, TA672, TA673, TA678. Embedded parts TA671, TA672, TA673, TA678

Стадия / Phase	Лист / Sheet	Листов / Sheets
WD	5	

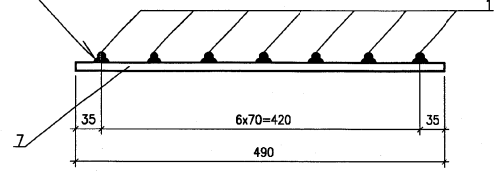
JSC ATOMPROEKT

TA674

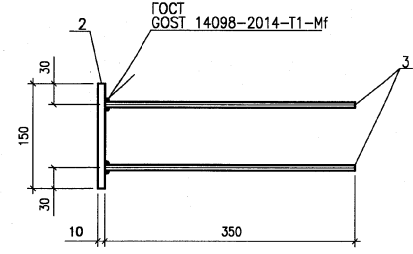


ГОСТ
GOST 14098-2014-K1-K1

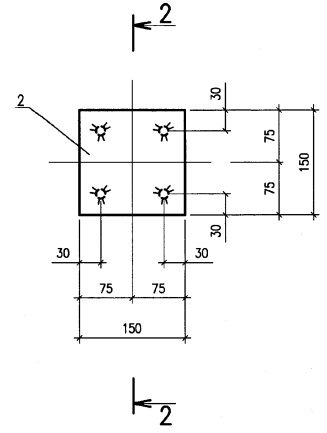
1-1



2-2



TA675



2

2

СПЕЦИФИКАЦИЯ ИЗДЕЛИЙ ЗАКЛАДНЫХ
SPECIFICATION OF EMBEDDED PARTS

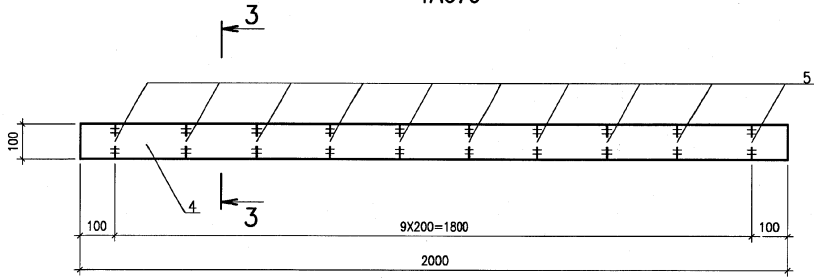
Иарка изделия Mark of article	Поз. Det. item	Наименование Name	Кол. Quant.	Масса (гем. Weight of part, kg)	Масса изделия Weight of the article kg
TA674	1	SRO 16 IS:1732-1961, L=630	7	1.0	12.6
	7	L=490	7	0.8	
TA675	2	t10 IS:1730-1961 C235 GOST 27772-2015 C235 GOST 27772-2015	1	1.8	3.0
	3	12 A-III GOST 5781-82	4	0.3	
		L=350			
TA676	4	t10 IS:1730-1961 C235 GOST 27772-2015 C235 GOST 27772-2015	1	15.7	22.7
	5*	12 A-III GOST 5781-82	10	0.7	
		L=780			
TA677	6	t10 IS:1730-1961 C235 GOST 27772-2015 C235 GOST 27772-2015	1	7.9	11.4
	5*	12 A-III GOST 5781-82	5	0.7	
		L=780			

* - см. Ведомость деталей
*- see List of parts

ВЕДОМОСТЬ ДЕТАЛЕЙ
LIST OF PARTS

Поз. Item	Эскиз Sketch
5	

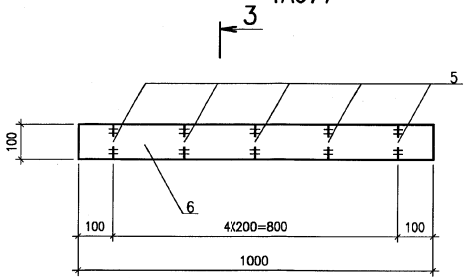
TA676



3

3

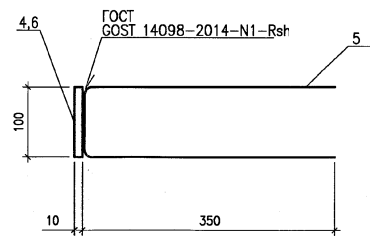
TA677



3

3

3-3



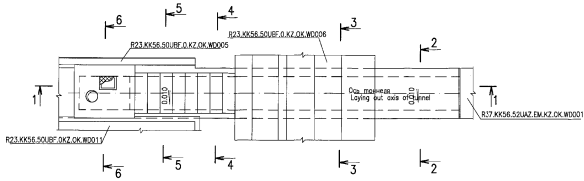
4,6

ГОСТ
GOST 14098-2014-N1-Rsf

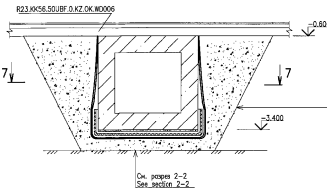
5

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						АЭС "КУДАНКУЛАМ" БЛОК NPP "KUDANKULAM" UNIT 5			
Изм. Rev.	Кол.уч. of prt.	Лист Sheet	№ док. Doc. No.	Подпись Signature	Дата Date	50UBF. Сооружения для блочных трансформаторов Монolithic reinforced concrete tunnels in the limits of a light court yard. Geometry 50UBF. Unit Auxiliary Transformers and Generator Transformers Structures Monolithic reinforced concrete tunnels within the limits of a light court yard. Geometry	Стадия Phase	Лист Sheet	Листов Sheets
Утвердил. Approved				Pereyaslavets	12.20		WD	6	
Н. контр. Inspector				Soboleva	12.20				
Разраб. Designed				Gurova	12.20				
						Изделия закладные TA674, TA675, TA676, TA677 Embedded parts TA674, TA675, TA676, TA677		JSC ATOMPROEKT	

СХЕМА ГИДРОИЗОЛЯЦИИ
LAYOUT OF WATERPROOFING

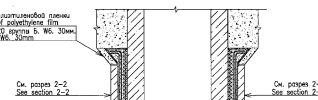


3-3



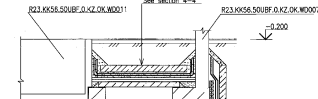
Порошковая бетонная смесь В15
Concrete mix class B15
Цементно-песчаный раствор М50-20 мм
Cement-sand mortar M50-20 mm
2 слоя защитной бетонной плиты
2 layers of protective film
2 слоя материала "Текнозащитом 6"
2 layers of "Technozhitem 6"
Монолитная железобетонная стена из бетонных блоков В15, W5-500 мм
Cast-in-place reinforced concrete wall of hollow blocks B15, W5-500 mm

7-7



2 слоя защитной бетонной плиты
2 layers of protective film
Защитный слой из мелкозернистого бетона класса В15, группа В, W5-300 мм
Protective layer of fine-grained concrete B15, group B, W5-300 mm

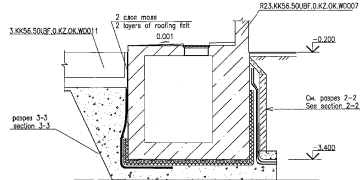
5-5



См. разрез 2-2
See section 2-2

См. разрез 2-2
See section 2-2

6-6

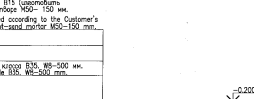


3.0x56.SOU.BF.0.KZ.OK.W0011

См. разрез 2-2
See section 2-2

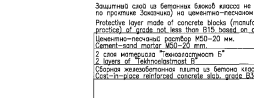
См. разрез 2-2
See section 2-2

2-2



Защитный слой из бетонных блоков класса не ниже В15 (изготовить по проекту Заказчика) на цементно-песчаном растворе М50-150 мм.
Protective layer made of concrete blocks (manufactured according to the Customer's project) of grade not less than B15 based on cement-sand mortar M50-150 mm.
Цементно-песчаный раствор М50-20 мм.
Cement-sand mortar M50-20 mm.
2 слоя материала "Текнозащитом 6"
2 layers of "Technozhitem 6"
2 слоя защитной пленки
2 layers of polyethylene film
Монолитная железобетонная стена из бетонных блоков В15, W5-500 мм.
Cast-in-place reinforced concrete wall structure from hollow blocks B15, W5-500 mm.

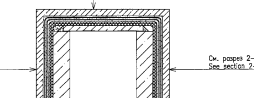
4-4



См. разрез 2-2
See section 2-2

См. разрез 2-2
See section 2-2

4-4



См. разрез 2-2
See section 2-2

См. разрез 2-2
See section 2-2

СПЕЦИФИКАЦИЯ ГИДРОИЗОЛЯЦИИ ТОННЕЛЕЙ 52(53, 54) УАЗ
SPECIFICATION FOR WATERPROOFING OF TUNNELS 52(53, 54) UAZ

Pos. Item	Обозначение Designation	Наименование Description	Единица измерения Unit	Количество Quantity	Масса Weight	Примечание Note
1		Лист 2.0 ОК (ОК 14918-80) Sheet 2.0 Ok (OK 14918-80) 300x1000	12.0	12.0	36.0	4.71
2*		Лист 2.0 ОК (ОК 14918-80) Sheet 2.0 Ok (OK 14918-80) 490x1000	12.0	12.0	36.0	7.46
3	"ИЛИ"	Универсальный шпатель Universal scraper H16, 7,5/8"	48	48	144	ИП. ПКБ
Материалы Materials						
	Порошковая бетонная смесь	Бетонная смесь В15 Concrete of grade B15	82.0	82.0	82.0	248.0 м ³
		Монолитный бетон класса В20 группа В, W5	4.6	4.6	4.6	14.4 м ³
		Цементно-песчаный раствор М50	3.0	3.0	3.0	9.0 м ³
		Защитный слой бетона класса не ниже В15	22.0	22.0	22.0	66.0 м ³
		Монолитный бетон класса В20 группа В, W5	480.0	480.0	480.0	1440.0 м ³
		Цементно-песчаный раствор М50	330.0	330.0	330.0	990.0 м ³
		Защитный слой бетона класса не ниже В15	0.3	0.3	0.3	0.9 м ³
		Полиуретановый мастификат "Бирма"	1.0	1.0	1.0	3.0 м ³
		Пластификатор мастификат типа "И-2"	12.0	12.0	12.0	36.0 м ³
		Шпатель 1-50, H16, ГОСТ 6487-79	30.0	30.0	30.0	90.0 м

* По 2 - количество вершины герметика (лист 8)
For item 2 see list of parts (Sheet 8)

Package Number 612 04

File: R23.KK56.SOU.BF.0.KZ.OK.W0011

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№	Дата	Исполнитель	Проверенный	Содержит	Лист
1	2011	С.С.С.	С.С.С.	Phase	Sheet
2	2011	С.С.С.	С.С.С.	Phase	Sheet
3	2011	С.С.С.	С.С.С.	Phase	Sheet
4	2011	С.С.С.	С.С.С.	Phase	Sheet
5	2011	С.С.С.	С.С.С.	Phase	Sheet
6	2011	С.С.С.	С.С.С.	Phase	Sheet
7	2011	С.С.С.	С.С.С.	Phase	Sheet
8	2011	С.С.С.	С.С.С.	Phase	Sheet
9	2011	С.С.С.	С.С.С.	Phase	Sheet
10	2011	С.С.С.	С.С.С.	Phase	Sheet

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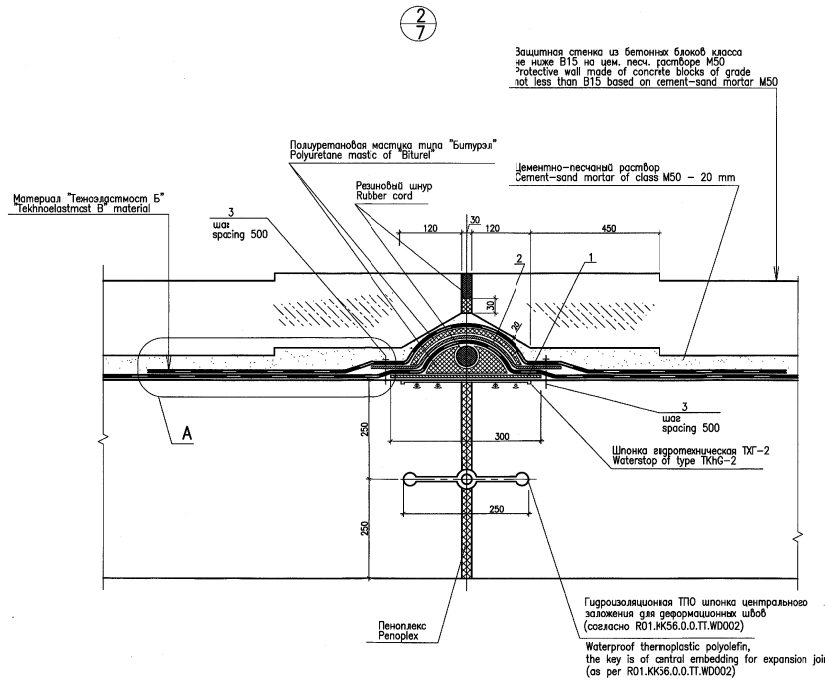
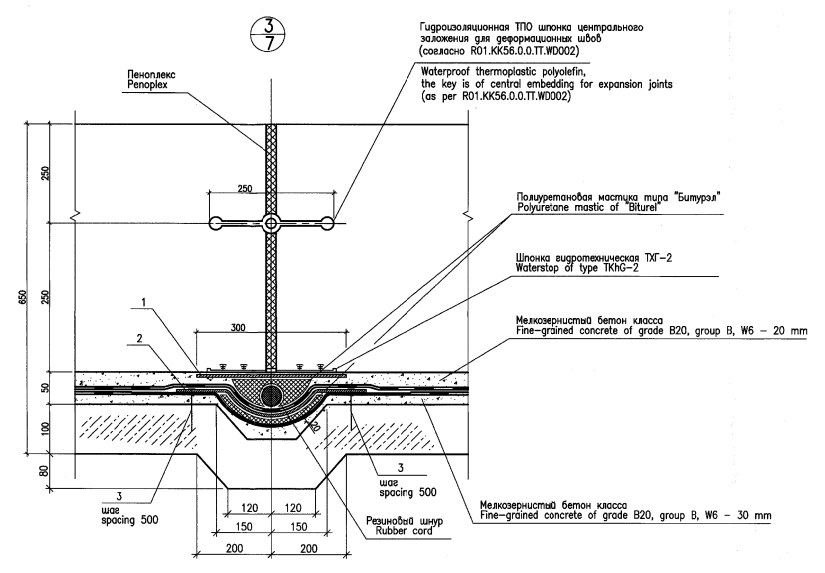
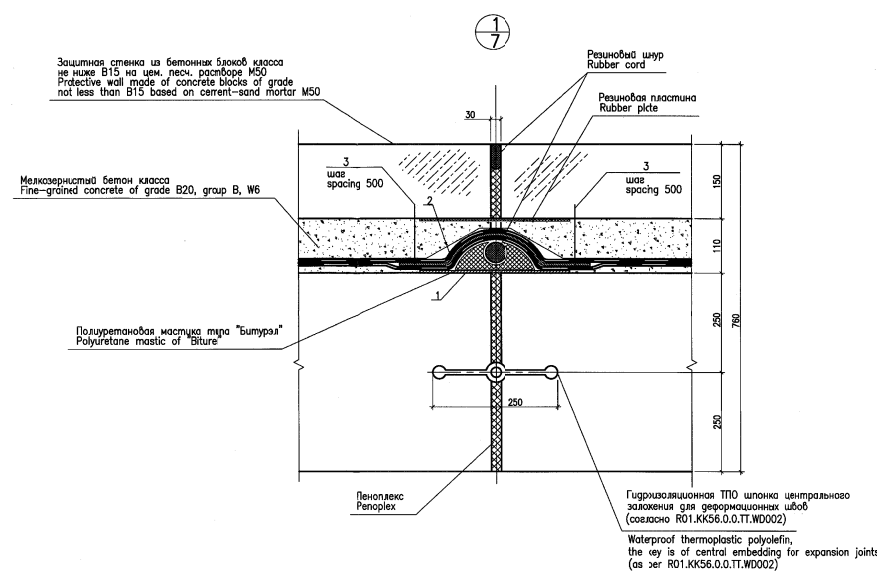
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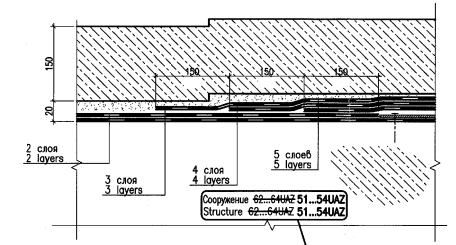
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ВЕДОМОСТЬ ДЕТАЛЕЙ LIST OF PARTS

Pos. Item	Эскиз Sketch
2	

УЗЕЛ А DETAIL A



Package Number 5 6 2 64

File: R23.KK56.50UBF.0.KZ.OK.WD001_008=1

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Изм.	№	Дат.	Исполн.	Провер.	Дата
1	2	08.21	Soboleva	Gurova	08.21

1. СЛУЖБ. Сооружения для блочных трансформаторов. Мониторинг напряжений токов в пределах светового двора. Геометрия. JSCUF Unit Auxiliary Transformers and Generator Transformers Structures. Monitoring of voltages and currents within the limits of a light court yard. Geometry.

Схема гидроизоляции тоннеля. Узы 1.3. 50354U42. 50354U42. 50354U42

1/2 JSC ATOMPROEKT

формат/size A1