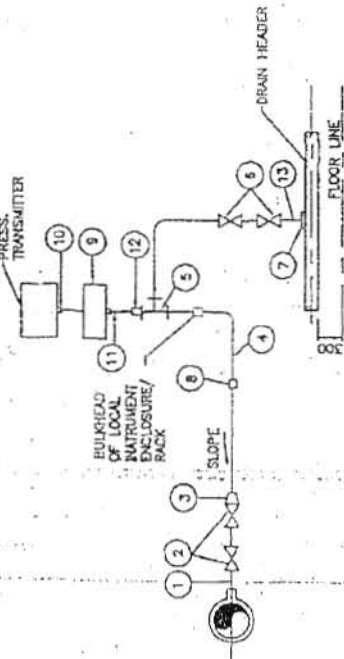


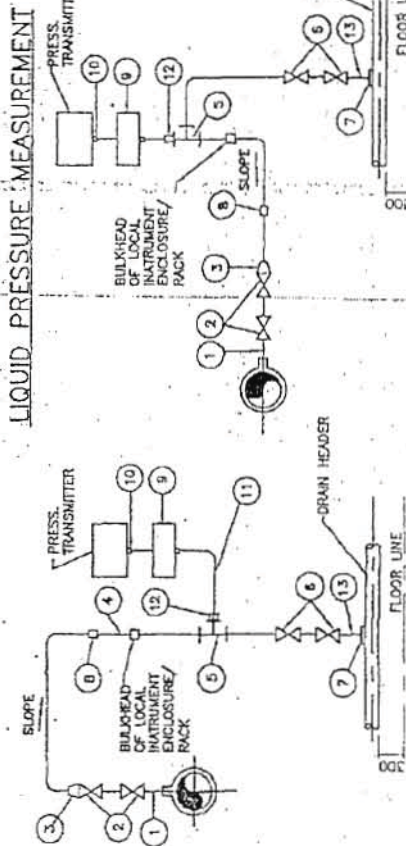


**LIST OF MATERIALS**

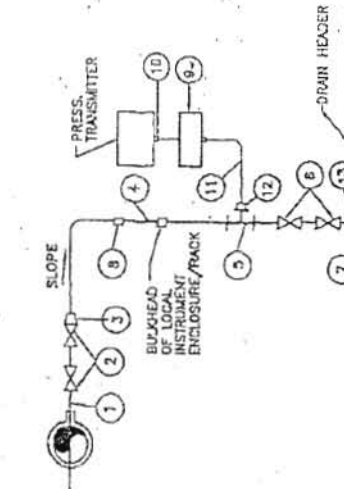
ITEM NO.	DESCRIPTION
1.	1/2" 3/4" NPS SCH. 80/180 XIS/PRT NIPPLE OF MATERIAL SAME AS THAT OF MAIN PIPE.
2.	3/4" 1" SW GLOBE VALVE.
3.	3/4" 1" TO 1/2" REDUCING INSERT
4.	1/2" NPS PIPE
5.	1/2" SW EQUAL TEE
6.	1/2" SW GLOBE VALVE
7.	1/2" NPS SCH. 80/180 SWK 1/2" CS/AS COUPLER
8.	2/3 VALVE MANIFOLD (FOR DETAIL SEE DRAWING NO. 0000-102-POI-A-023)
9.	SUITABLE ADAPTER
10.	1/2" PIPE x 1/2" TUBE UNION
11.	SS TUBE
12.	1/2" NPS SCH. 80/180 SWK 1/2" NPT(M) CS/AS NIPPLE



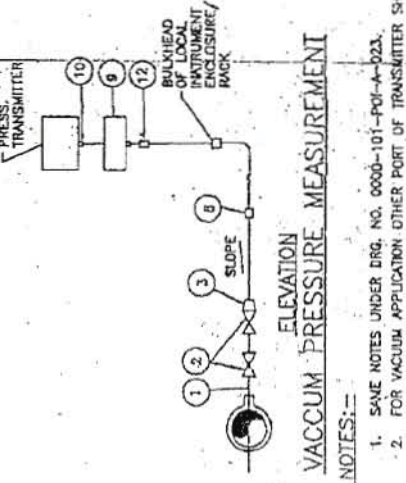
**TRANSMITTER MOUNTED BELOW INSTRUMENT SOURCE POINT**



**TRANSMITTER MOUNTED ABOVE INSTRUMENT SOURCE POINT**



**TRANSMITTER MOUNTED ABOVE INSTRUMENT SOURCE POINT**



**VACUUM PRESSURE MEASUREMENT**

NOTES:—

1. SAVE NOTES UNDER DRG. NO. 0000-101-POI-A-023.
2. FOR VACUUM APPLICATION OTHER PORT OF TRANSMITTER SHALL BE KEPT OPEN TO ATMOSPHERE.

**FOR TENDER PURPOSE ONLY**

**एन टी सी**  
**NTPC LIMITED**  
(A GOVERNMENT OF INDIA ENTERPRISE)  
ENGINEERING DIVISION

**TYPICAL THERMAL POWER PROJECT**  
(SG PACKAGE)

INSTRUMENT INSTALLATION DIAGRAM

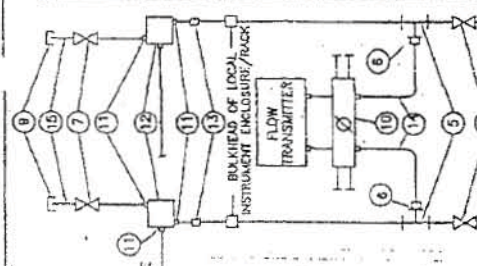
(PRESSURE MEASUREMENT USING PRESS /DP TRANSMITTERS STEAM/LIQUID VACUUM)

PROJECT	SCALE	DRG. NO.	REV. NO.
AS	N.T.S.	0000-101-POI-A-025	A

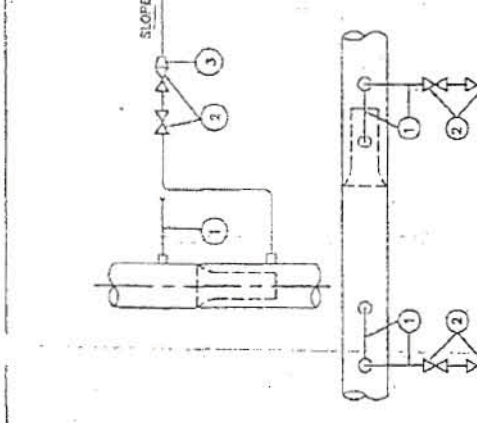
CAD FILE NAME: D:\NORTH KARANPURA\_3\660MW\0000-102-POI-A-025RA.DWG

This document is the property of NATIONAL THERMAL POWER CORPORATION LTD. No part of this document will be reproduced by any means without the written permission.

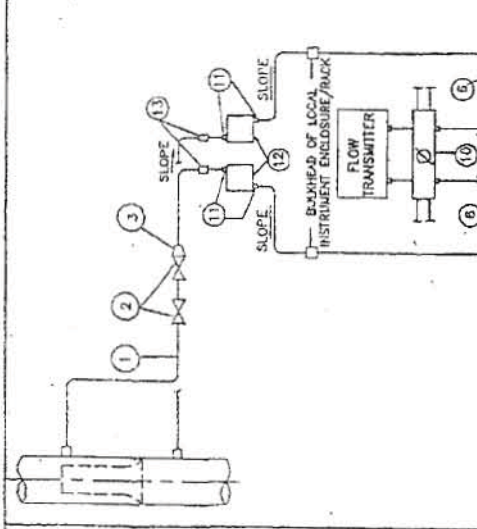
LIST OF MATERIALS	
ITEM NO.	DESCRIPTION
1.	3/4" / 1" NPS SCH. 80/160/285/791 (AS PER PROCESS REQUIREMENT) NIPPLE OF MATERIAL SAME AS THAT OF MAIN PIPE.
2.	3/4" / 1" SW GLOBE VALVE.
3.	3/4" / 1" TO 1/2" REDUCING INSERT
4.	1/2" NPS PIPE
5.	1/2" SW EQUAL TEE
6.	1/2" PIPE x 1/2" TUBE UNION
7.	1/2" SW GLOBE VALVE.
8.	1/2" NPS SCH. 80/160 SW 1/2" SW CS/AS COUPLER
9.	1/2" NPT (F) CS CAP
10.	5 VALVE MANIFOLD
11.	SUITABLE ADAPTER
12.	CONDENSATE POT (RESERVOIR)
13.	1/2" PIPE UNION
14.	SS TUBE
15.	1/2" NPS SCH. 80/160 SW 1/2" NPT (M) CS/AS NIPPLE



STEAM FLOW MEASUREMENT IN VERTICAL PIPES  
ELEVATION



FEEDWATER FLOW MEASUREMENT IN VERTICAL PIPES - TRANSMITTER MOUNTED BELOW INSTRUMENT SOURCE POINT  
ELEVATION



DETAIL OF 5 VALVE MANIFOLD (ITEM NO. 10)

- NOTES:-
1. SAME NOTES UNDER DRG. NO. 0000-101-POI-A-023.
  2. CONDENSATE POTS SHALL BE PROVIDED FOR ALL STEAM SERVICES.
  3. FOR WATER SERVICES CONDENSATE POTS SHALL BE PROVIDED ONLY IN THOSE CASES WHERE TEMP. > 120°C

PROJECT: TYPICAL THERMAL POWER PROJECT (SG PACKAGE)

TITLE: INSTRUMENT INSTALLATION DIAGRAM

SCALE: A3

SIZE: N.T.S.

DRG. NO.: 0000-101-POI-A-026

REV. NO.: A

PROJECT: TYPICAL THERMAL POWER PROJECT (SG PACKAGE)

TITLE: INSTRUMENT INSTALLATION DIAGRAM

SCALE: A3

SIZE: N.T.S.

DRG. NO.: 0000-101-POI-A-026

REV. NO.: A

PROJECT: TYPICAL THERMAL POWER PROJECT (SG PACKAGE)

TITLE: INSTRUMENT INSTALLATION DIAGRAM

SCALE: A3

SIZE: N.T.S.

DRG. NO.: 0000-101-POI-A-026

REV. NO.: A

PROJECT: TYPICAL THERMAL POWER PROJECT (SG PACKAGE)

TITLE: INSTRUMENT INSTALLATION DIAGRAM

SCALE: A3

SIZE: N.T.S.

DRG. NO.: 0000-101-POI-A-026

REV. NO.: A

PROJECT: TYPICAL THERMAL POWER PROJECT (SG PACKAGE)

TITLE: INSTRUMENT INSTALLATION DIAGRAM

SCALE: A3

SIZE: N.T.S.

DRG. NO.: 0000-101-POI-A-026

REV. NO.: A

PROJECT: TYPICAL THERMAL POWER PROJECT (SG PACKAGE)

TITLE: INSTRUMENT INSTALLATION DIAGRAM

SCALE: A3

SIZE: N.T.S.

DRG. NO.: 0000-101-POI-A-026

REV. NO.: A

PROJECT: TYPICAL THERMAL POWER PROJECT (SG PACKAGE)

TITLE: INSTRUMENT INSTALLATION DIAGRAM

SCALE: A3

SIZE: N.T.S.

DRG. NO.: 0000-101-POI-A-026

REV. NO.: A

PROJECT: TYPICAL THERMAL POWER PROJECT (SG PACKAGE)

TITLE: INSTRUMENT INSTALLATION DIAGRAM

SCALE: A3

SIZE: N.T.S.

DRG. NO.: 0000-101-POI-A-026

REV. NO.: A

PROJECT: TYPICAL THERMAL POWER PROJECT (SG PACKAGE)

TITLE: INSTRUMENT INSTALLATION DIAGRAM

SCALE: A3

SIZE: N.T.S.

DRG. NO.: 0000-101-POI-A-026

REV. NO.: A

No part of this document is the property of NATIONAL THERMAL POWER CORPORATION, LTD. This document will be reproduced by any means without the written permission.

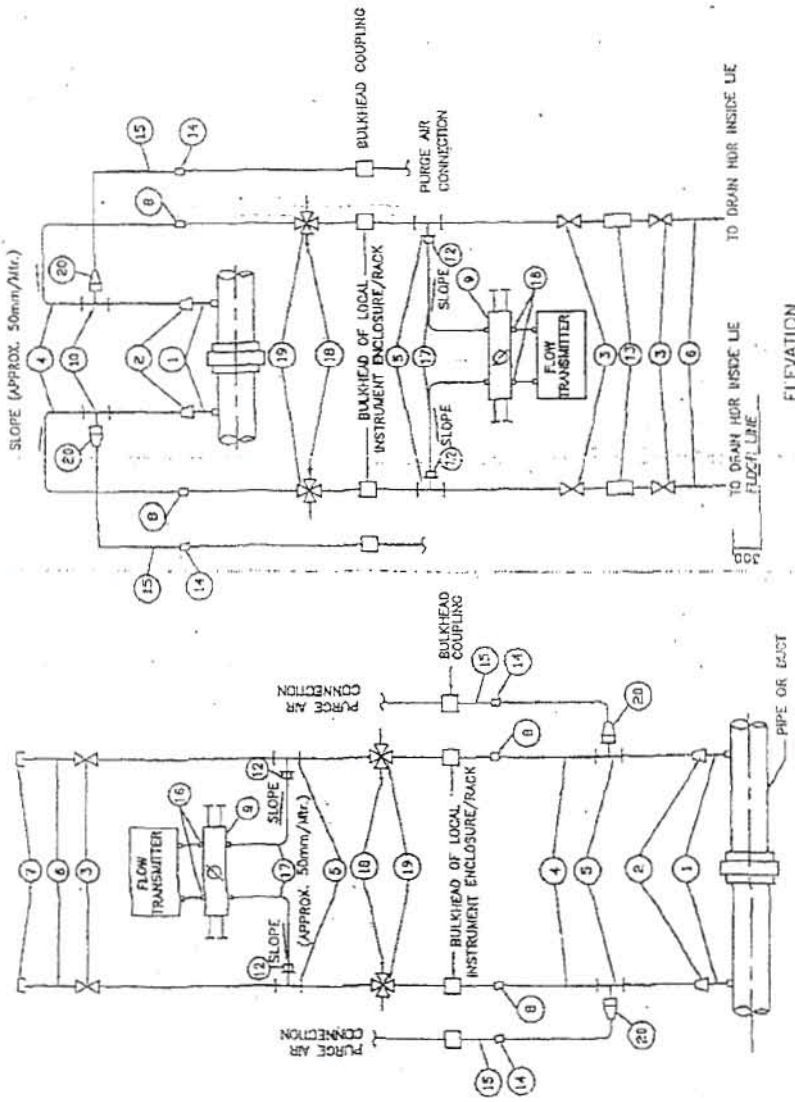


LIST OF MATERIALS

ITEM NO.	DESCRIPTION
1.	42x4.06mm M.S. BLACK PIPE.
2.	M 42x2 TO 3/4" SW REDUCING INSERT.
3.	3/4" SW GLOBE VALVE.
4.	3/4" PIPE.
5.	3/4" SW EQUAL TEE.
6.	3/4" SCH. 80 SW 2/1" NPT (M) CS/AS NIPPLE
7.	3/4" NPT (F) CS CAP.
8.	3/4" PIPE UNION.
9.	5 VALVE UNIFORM FOR DETAIL REFER DRAWING NO.0000-102-POI-A-028.
10.	3/4" SW EQUAL TEE.
11.	3/4" SW GATE VALVE.
12.	3/4" PIPE x 1/2" TUBE UNION
13.	DRAIN POT OF CS.
14.	1/2" GI FITTING
15.	1/2" NB GI PIPE
16.	SUITABLE ADAPTER
17.	SS TUBE
18.	QUICK DISCONNECT FITTINGS.
19.	3/4" SW 4 WAY VALVE.
20.	3/4" x 1/2" REDUCER.

NOTES:-

1. SAME NOTES AS UNDER DRG. NO. 0000-101-POI-A-023.



ELEVATION

TRANSMITTER MOUNTED ABOVE INSTRUMENT SOURCE POINT

TRANSMITTER MOUNTED BELOW INSTRUMENT SOURCE POINT

FOR TENDER PURPOSE ONLY

एन टी पी सी लिमिटेड  
NTPC LIMITED  
(A GOVERNMENT OF INDIA ENTERPRISE)  
ENGINEERING DIVISION

एन टी पी सी लिमिटेड  
NTPC

PROJECT  
TYPICAL THERMAL POWER PROJECT  
(SG PACKAGE)

TITLE  
INSTRUMENT INSTALLATION DIAGRAM  
(FLOW MEASUREMENT AIR/GAS)

REV. NO.	A
DRG. NO.	0000-101-POI-A-028
SCALE	N.T.S.
SIZE	A3

CAD FILE NAME: D:\NORTH KASAMPURA\_3x660MW\0000-102-POI-A-027RA.DWG

DATE	20/04/06
APPROVED	[Signature]
ARCH.	
C&I	
E	
H	

CLEARED BY

DRAWN DESIGN CHKD.

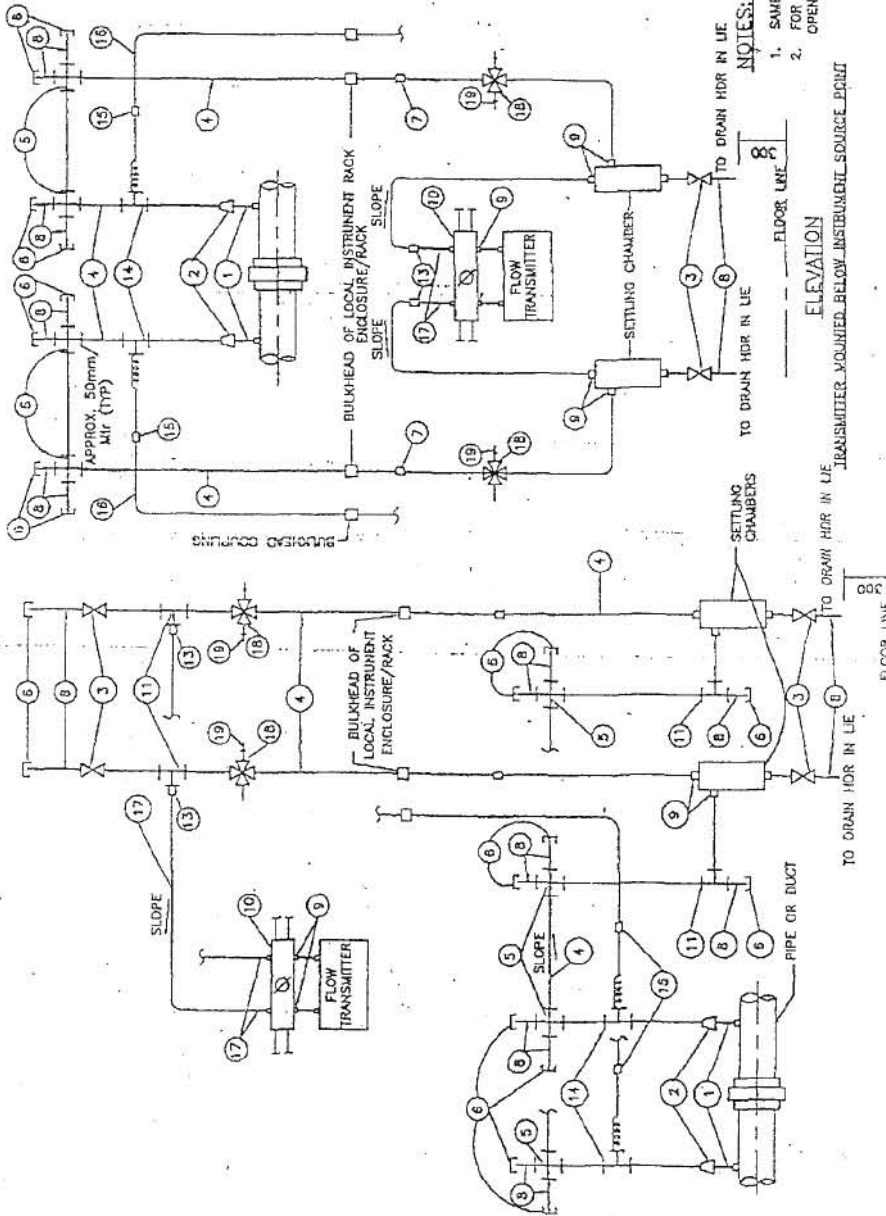
FIRST ISSUE

DESCRIPTION

This document is the property of NATIONAL THERMAL POWER CORPORATION LTD. No part of this document will be reproduced by any means without the written permission.

LIST OF MATERIALS

ITEM NO.	DESCRIPTION
1.	42x4.05mm M.S. BLACK PIPE.
2.	M 42x2 TO 3/4" SW REDUCING INSERT.
3.	3/4" SW GLOBE VALVE.
4.	3/4" NPS PIPE.
5.	3/4" SW EQUAL CROSS.
6.	3/4" NPT (F) CS/AS CAP.
7.	3/4" PIPE UNION.
8.	3/4" NPS SW 3/4" NPT (M) CS/AS NIPPLE.
9.	SUITABLE ADAPTER
10.	5 VALVE BULKHEAD FOR DETAIL REFER DRAWING NO. 0000-101-POI-A-029.
11.	3/4" SW EQUAL TEE.
12.	3/4" SW GATE VALVE.
13.	3/4" PIPE x 1/2" TUBE UNION
14.	3/4" SW x 1/2" SW BRANCH TEE.
15.	1/2" OI FITTING
16.	1/2" NB CI PIPE.
17.	SS TUBE
18.	3/4" SW 4 WAY VALVE.
19.	QUICK DISCONNECT FITTINGS.



NOTES:-  
 1. SAME NOTES UNDER DRG. NO. 0000-101-POI-A-023.  
 2. FOR VACUUM APPLICATION OTHER PORT OF TRANSMITTER SHALL BE KEPT OPEN TO ATMOSPHERE.

FOR TENDER PURPOSE ONLY

एन टी पी सी लिमिटेड  
**NTPC LIMITED**  
 (A GOVERNMENT OF INDIA ENTERPRISE)  
 ENGINEERING DIVISION

PROJECT: TYPICAL THERMAL POWER PROJECT (SG PACKAGE)

TITLE: INSTRUMENT INSTALLATION DIAGRAM (FLOW MEASUREMENT DIRTY AIR/ FLUE GAS)

REV. NO.	A
DRG. NO.	0000-101-POI-A-029
SCALE	N.T.S.
SIZE	A3

CAD FILE NAME: D:\NORTH KARANIPURA\_3x660MW\0000-102-POI-A-029RA.DWG

DIRTY AIR/FLUE GAS FLOW MEASUREMENT USING HEAD TYPE PRIMARY ELEMENT

REV. NO.	DATE	BY	CHKD.	APPD.	DATE	DESCRIPTION
A	26.04.06					FIRST ISSUE

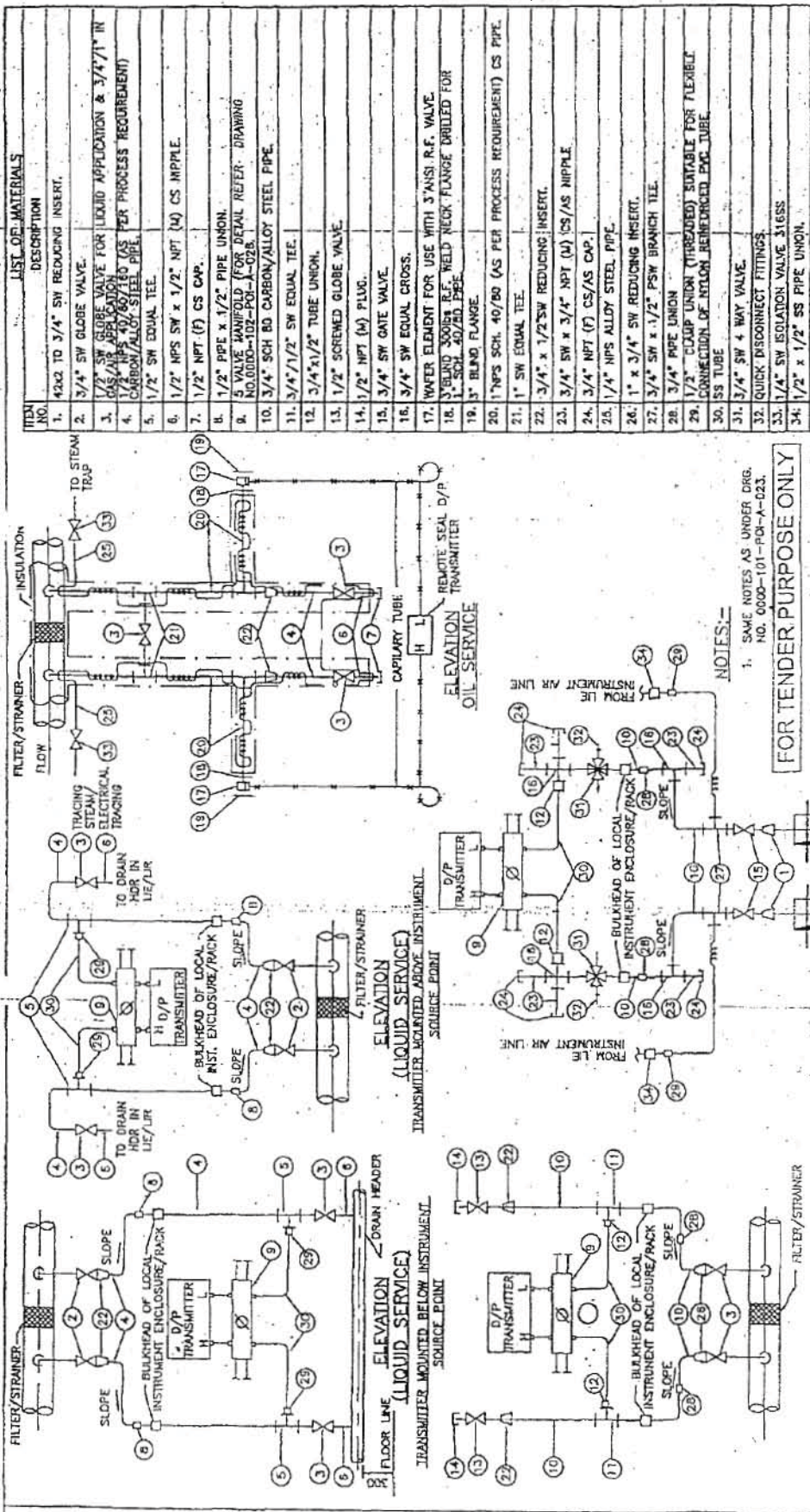
  

DRAWN	DESIGN	CHKD.	APPD.	DATE

CLEAR BY	E	C	CAI	ARCH.

No part of this document is the property of NATIONAL THERMAL POWER CORPORATION LTD. This document is the property of NATIONAL THERMAL POWER CORPORATION LTD. No part of this document will be reproduced by any means without the written permission.



ITEM NO.	DESCRIPTION
1.	1502 TO 3/4" SW REDUCING INSERT.
2.	3/4" SW GLOBE VALVE.
3.	1/2" SW GLOBE VALVE FOR LIQUID APPLICATION & 3/4" IN DISINTEGRATION RESISTANT (AS PER PROCESS REQUIREMENT)
4.	CARBON ALLOY STEEL PIPE
5.	1/2" SW EQUAL TEE.
6.	1/2" NPS SW x 1/2" NPT (M) CS NIPPLE.
7.	1/2" NPT (F) CS CAP.
8.	1/2" PIPE x 1/2" PIPE UNION.
9.	5 VALVE MANIFOLD (FOR DETAIL REFER. DRAWING NO. 0000-101-POI-A-028)
10.	3/4" SCH 80 CARBON/ALLOY STEEL PIPE.
11.	3/4" x 1/2" SW EQUAL TEE.
12.	3/4" x 1/2" TUBE UNION.
13.	1/2" SCREWED GLOBE VALVE.
14.	1/2" NPT (M) PLUG.
15.	3/4" SW GATE VALVE.
16.	3/4" SW EQUAL CROSS.
17.	WATER ELEMENT FOR USE WITH 3" ANSI R.F. VALVE.
18.	3" BLIND SOCKET R.F. WELD NECK FLANGE DRILLED FOR 1" SCH 40/80 PIPE.
19.	3" BLIND FLANGE.
20.	1" NPS SCH. 40/80 (AS PER PROCESS REQUIREMENT) CS PIPE.
21.	1" SW EQUAL TEE.
22.	3/4" x 1/2" SW REDUCING INSERT.
23.	3/4" SW x 3/4" NPT (M) CS/AS NIPPLE.
24.	3/4" NPT (F) CS/AS CAP.
25.	1/4" NPS ALLOY STEEL PIPE.
26.	1" x 3/4" SW REDUCING INSERT.
27.	3/4" SW x 1/2" PSW BRANCH TEE.
28.	3/4" PIPE UNION.
29.	1/2" CLAMP UNION (THREADED) SUITABLE FOR FLEXIBLE CONNECTION OF NYLON REINFORCED PPG TUBE.
30.	SS TUBE
31.	3/4" SW 4 WAY VALVE.
32.	QUICK DISCONNECT FITTINGS.
33.	1/4" SW ISOLATION VALVE 316SS.
34.	1/2" x 1/2" SS PIPE UNION.

NOTES:-  
 1. SAME NOTES AS UNDER DRG. NO. 0000-101-POI-A-023.  
**FOR TENDER PURPOSE ONLY**

**भारतीय थर्मल पावर लिमिटेड**  
**NTPC LIMITED**  
 (A GOVERNMENT OF INDIA ENTERPRISE)  
 ENGINEERING DIVISION

**TYPICAL THERMAL POWER PROJECT**  
 (SG PACKAGE)

PROJECT: TYPICAL THERMAL POWER PROJECT (SG PACKAGE)  
 TITLE: INSTRUMENT INSTALLATION DIAGRAM  
 DIFF. PRESS. MEASUREMENT (LIQUID, OIL, AIR/GAS SERVICE)

REV. NO.	REV. NO.
A	A

SIZE	SCALE	DRG. NO.
A3	N.T.S.	0000-101-POI-A-030

CAD FILE NAME: D:\NORTH\_KARANPURA\_3x660MW\_0000-102-POI-A-030RA.DWG

**भारतीय थर्मल पावर लिमिटेड**  
**NTPC**

**FOR TENDER PURPOSE ONLY**

**TYPICAL THERMAL POWER PROJECT**  
 (SG PACKAGE)

PROJECT: TYPICAL THERMAL POWER PROJECT (SG PACKAGE)  
 TITLE: INSTRUMENT INSTALLATION DIAGRAM  
 DIFF. PRESS. MEASUREMENT (LIQUID, OIL, AIR/GAS SERVICE)

REV. NO.	REV. NO.
A	A

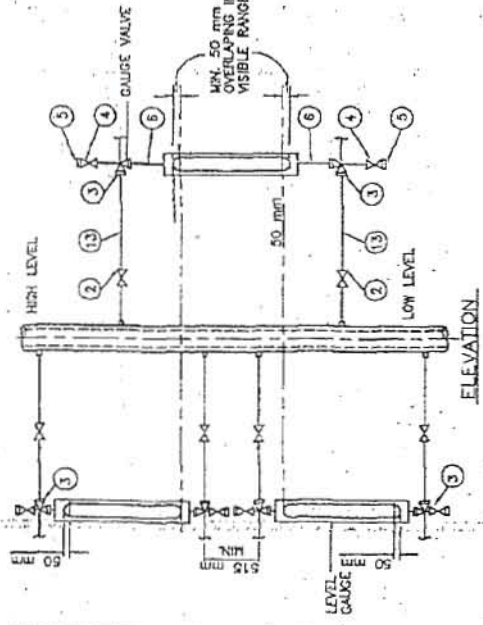
SIZE	SCALE	DRG. NO.
A3	N.T.S.	0000-101-POI-A-030

CAD FILE NAME: D:\NORTH\_KARANPURA\_3x660MW\_0000-102-POI-A-030RA.DWG

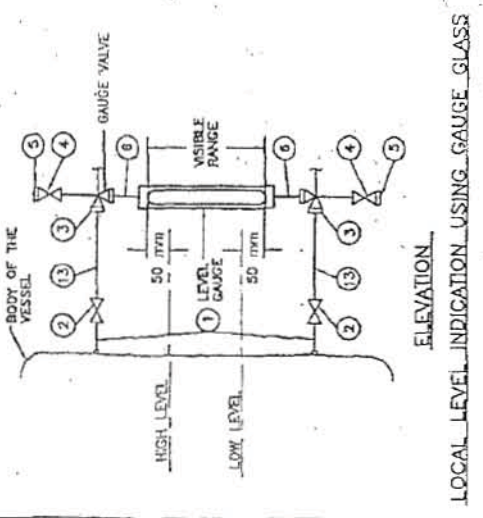
This document is the property of NATIONAL THERMAL POWER CORPORATION LTD. No part of this document will be reproduced by any means without the written permission.

LIST OF MATERIALS

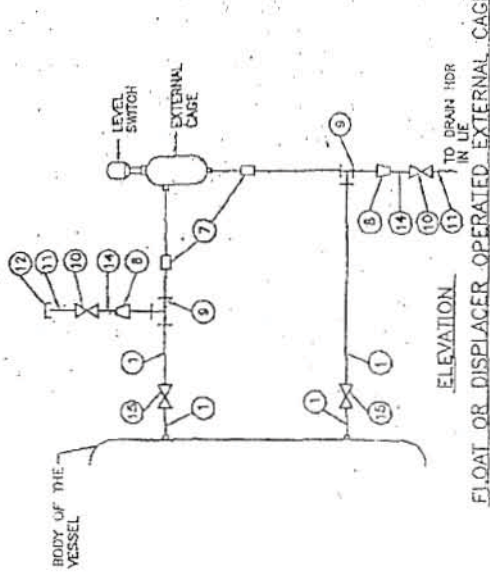
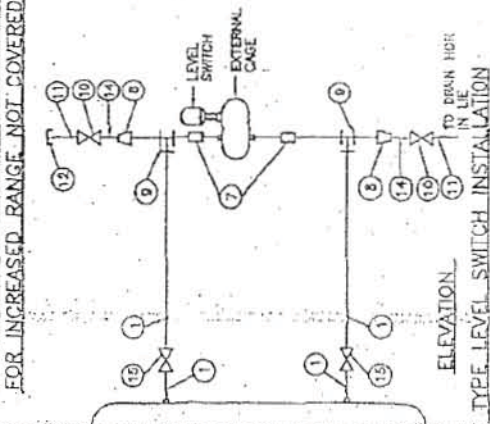
ITEM NO.	DESCRIPTION
1.	3/4" NPS SCH.40/80/100/120 (AS PER PROCESS REQUIREMENT) CARBON/ALLOY STEEL PIPE.
2.	3/4" SW GLOBE VALVE.
3.	3/4" SW UNION.
4.	3/4" NPT GLOBE VALVE.
5.	3/4" NPT (M) CAP.
6.	3/4" NPT (F) UNION CONNECTION.
7.	1" SW EQUAL UNION.
8.	1" x 1/2" SW REDUCING INSERT.
9.	1" SW EQUAL TEE.
10.	1/2" SW GLOBE VALVE.
11.	1/2" NPS SWMT/2" NPT(M) CS/AS NIPPLE.
12.	1/2" NPT (F) CS CAP.
13.	3/4"x1/2" NPS SCH.40/80 CS/AS PIPE.
14.	1/2" NPS SCH.80/100 CS/AS NIPPLE.
15.	1" SW GLOBE VALVE.



LOCAL LEVEL INDICATION USING MULTIPLE GAUGES FOR INCREASED RANGE NOT COVERED IN A SINGLE UNIT



LOCAL LEVEL INDICATION USING MULTIPLE GAUGES FOR INCREASED RANGE NOT COVERED IN A SINGLE UNIT



NOTES:-  
 1. FOR LEVEL GAUGE 3/4" AND FOR LEVEL SWITCH 1" PROCESS CONNECTION SHALL BE PROVIDED.  
 2. NOTES UNDER DRG. NO. 0000-101-POI-A-023 (WHICHEVER ARE RELEVANT).

FOR TENDER PURPOSE ONLY


 एन.टी.पी.सी. लिमिटेड  
**NTPC LIMITED**  
 (A GOVERNMENT OF INDIA ENTERPRISE)  
 ENGINEERING DIVISION

PROJECT: TYPICAL THERMAL POWER PROJECT (SG PACKAGE)  
 TITLE: INSTRUMENT INSTALLATION DIAGRAM (LEVEL GAUGE & SWITCHES)  
 SIZE: A3  
 SCALE: N.T.S.  
 DRG. NO.: 0000-101-POI-A-031  
 REV. NO.: A

REV. NO.	DESCRIPTION	DATE	BY	CHECKED BY	SCALE	SIZE	DRG. NO.	REV. NO.
A	FIRST ISSUE	25.04.06				A3	0000-101-POI-A-031	A

CAD FILE NAME: D:\NORTH\_KARANPURA\_3x660MW\0000-102-POI-A-031RA.DWG

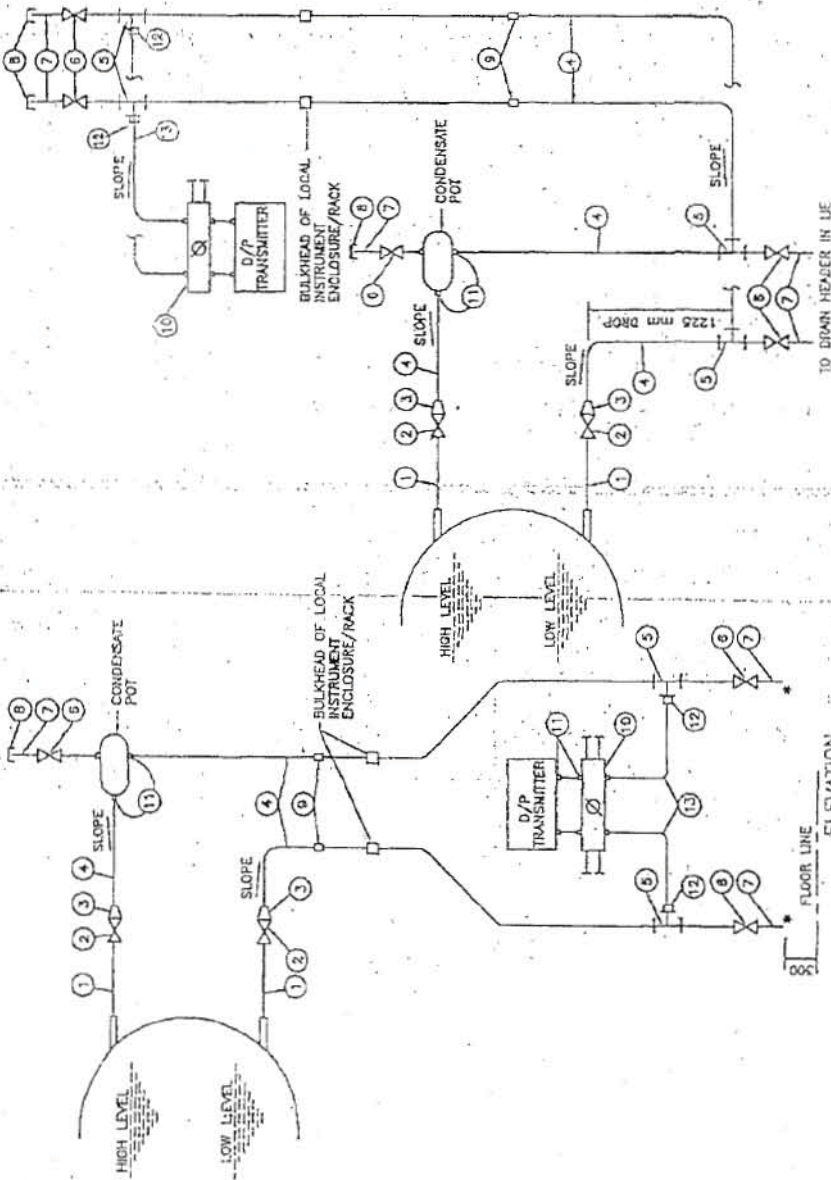
This document is the property of NATIONAL THERMAL POWER CORPORATION LTD. No part of this document will be reproduced by any means without the written permission.

LIST OF MATERIALS

ITEM NO.	DESCRIPTION
1.	1" NPS SCH.40/80/160/205/240 GAS PER PROCESS REQUIREMENT CARBON ALLOY STEEL PIPE.
2.	1" SW GLOBE VALVE.
3.	3/4" x 1" TO 1/2" REDUCING INSERT.
4.	1/2" NPS SCH.80/160/205/240 PER PROCESS REQ. CS/AS PIPE.
5.	1/2" SW EQUAL TEE.
6.	1/2" NPS SW GLOBE VALVE.
7.	1/2" NPS SW x 1/2" NPT (M) CS/AS NIPPLE.
8.	1/2" NPT (F) CS CAP.
9.	1/2" PIPE UNION.
10.	5-VALVE MANFOLD (FOR DETAILS REF. DRG. NO.0000-102-PCI-A-026.
11.	SUITABLE ADAPTER.
12.	1/2" PIPE x 1/2" TUBE UNION.
13.	S.S. TUBE.

NOTES:-

1. SAME NOTES AS UNDER DRG. NO.0000-101-PCI-A-023. (WHICHEVER ARE RELEVANT).
- \* TO DRAIN HEADER IN UE/LR.





TRANSMITTER MOUNTED BELOW INSTRUMENT SOURCE POINT

ELEVATION

TRANSMITTER MOUNTED ABOVE INSTRUMENT SOURCE POINT

FOR TENDER PURPOSE ONLY

LEVEL MEASUREMENT OF CLEAR NON-VISCOUS OR NON-CORROSIVE LIQUID IN CLOSED VESSEL WITH CONDENSABLE ATMOSPHERE USING D/P TRANSMITTER



  
 (A GOVERNMENT OF INDIA ENTERPRISE)  
 ENGINEERING DIVISION

PROJECT		TYPICAL THERMAL POWER PROJECT (SG PACKAGE)	
TITLE		INSTRUMENT INSTALLATION DIAGRAM (LEVEL MEASUREMENT USING D/P TRANSMITTERS)	
REV. NO.	DATE	SCALE	DRS. NO.
A	28.04.06	A3	
FIRST ISSUE		N.T.S.	
DRAWN		CHECKED	
DESIGN		APPROVED	
CHIEF		DATE	
		28.04.06	
DESCRIPTION		CLEARED BY	
		M E C	
		CHK ARCH.	
		APPD	
		DATE	
		28.04.06	
		SIZE	
		A3	
		N.T.S.	
		DRS. NO.	
		0000-101-PCI-A-032	
		REV. NO.	
		A	

CAD FILE NAME: D:\NORTH KARANPURA\_3x660MW\0000-102-PCI-A-052SH11A.DWG

This document is the property of NATIONAL THERMAL POWER CORPORATION LTD. No part of this document will be reproduced by any means without the written permission.

LIST OF MATERIALS

ITEM NO.	DESCRIPTION
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	
13.	
14.	2" NPS SCH. 40/80 (AS PER PROCESS REQUIREMENT) VESSEL NOZZLE.
15.	2" SW GLOBE VALVE.
16.	2" SW EQUAL TEE.
17.	2" NPS SCH. 40/80 CS/AS PIPE
18.	2" x 3/4" SW REDUCING INSERT
19.	3/4" SW GLOBE VALVE
20.	3/4" NPS SW x 3/4" NPT (M) CS/AS NIPPLE.
21.	3/4" NPT (F) CS CAP.
22.	2" ANSI 300 RA RAISED PHASE WELD NECK FLANGE.
23.	2" ANSI FLANGE OF LEVEL TRANSMITTER.
24.	3/4" NPS SCH. 40/80 CARBON STEEL PIPE.

NOTES:-

- SAME NOTES AS UNDER DRG. NO.0000-101-POI-A-023 (WHICHEVER ARE RELEVANT).

FOR TENDER PURPOSE ONLY

एन टी सी लिमिटेड  
**NTPC LIMITED**  
 (A GOVERNMENT OF INDIA ENTERPRISE)  
 ENGINEERING DIVISION

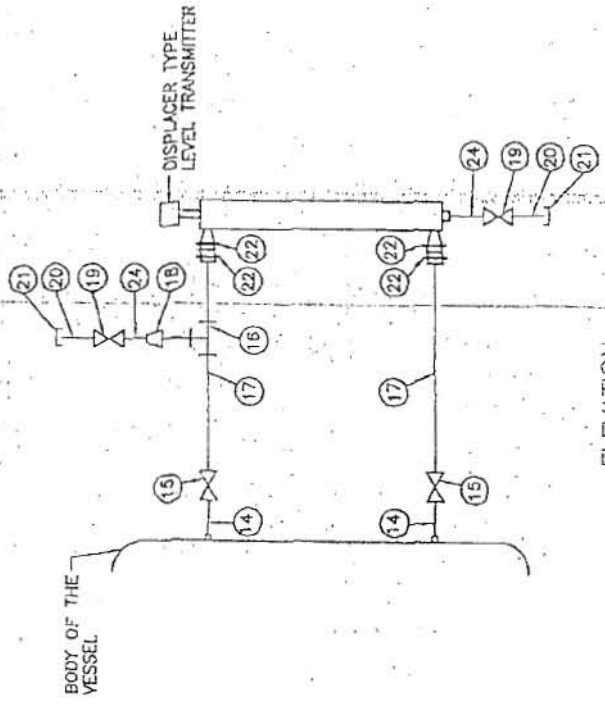
एन टी सी लिमिटेड  
**NTPC**

PRODUCT  
**TYPICAL THERMAL POWER PROJECT**  
 (SG PACKAGE)

TITLE  
 INSTRUMENT INSTALLATION DIAGRAM  
 (LEVEL MEASUREMENT USING DISPLACER TYPE TRANSMITTERS)

SIZE	SCALE	DRG. NO.	REV. NO.
A3	N.T.S.	0000-101-POI-A-032	A
SHEET 2 OF 2			

CAD FILE NAME: D:\NORTH KARANPURA\_3\6600MW\0000-102-POI-A-032\SI2RA.DWG



ELEVATION  
 DISPLACER TYPE LEVEL TRANSMITTER WITH SIDE CONNECTION

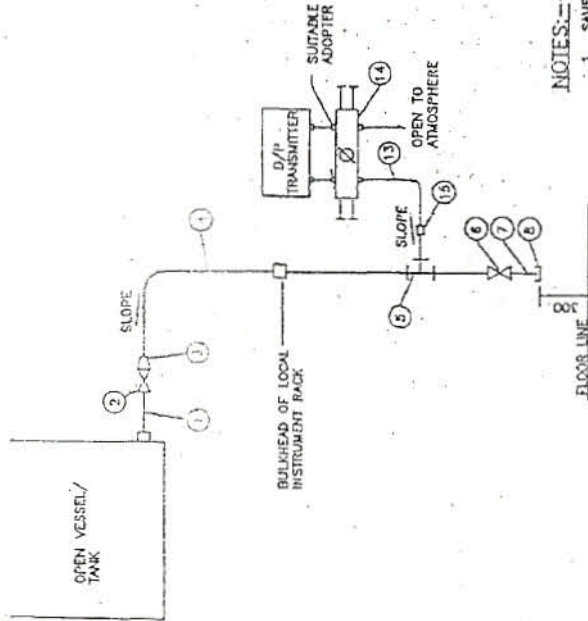
This document is the property of NATIONAL THERMAL POWER CORPORATION LTD. No part of this document will be reproduced by any means without the written permission.

REV. NO.	DESCRIPTION	DESIGN/DESIGN CHG.	CHKD.	DATE	APPRO.	SCALE	DRG. NO.	REV. NO.
A.	FIRST ISSUE							

SECTION C3, SUB-SECTION II

LIST OF MATERIALS

ITEM NO.	DESCRIPTION
1.	3/4" x 1" NPS 40/80 CARBON STEEL PIPE.
2.	3/4" SW GLOBE VALVE.
3.	3/4" x 1/2" SW REDUCING INSERT.
4.	1/2" NPS SCH. 40/80 CS PIPE.
5.	1/2" SW EQUAL TEE.
6.	1/2" SW GLOBE VALVE.
7.	1/2" NPS SW x 1/2" NPT(M) CS NIPPLE.
8.	1/2" HPT (F) CS CAP.
9.	3/4" TO 4" EXPANDER.
10.	3/4" BUTT WELDED GATE VALVE.
11.	4" ANSI 300 Bx R.F. WELD NECK FLANGE.
12.	TRANS. MANIFOLD FLANGE WITH FLUSH DRAINAGE OF LEVEL TRANSMITTER.
13.	SS TUBE.
14.	3-VALVE MANIFOLD (FOR DETAIL REF. DRG. NO. 0000-102-POI-A-023).
15.	1/2" PIPE x 1/2" TUBE UNION.

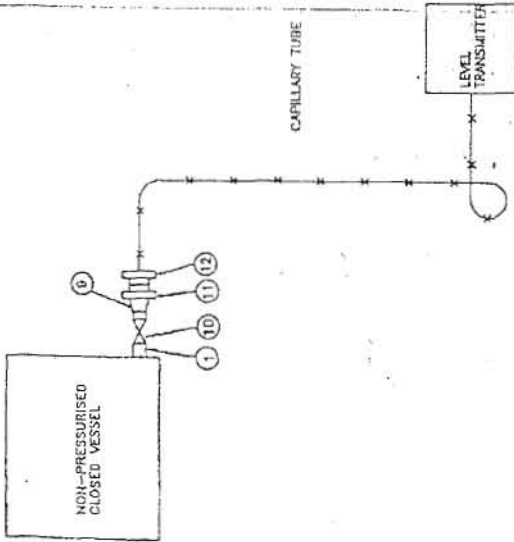


NOTES:-

1. SAME NOTES UNDER DRG. NO. 0000-101-POI-A-023.
2. FOR VACUUM APPLICATION OTHER PORT OF TRANSMITTER SHALL BE KEPT OPEN TO ATMOSPHERE.

ELEVATION

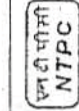
LEVEL MEASUREMENT OF VISCOUS OR CORROSIVE LIQUID IN CLOSED VESSEL USING FLUSH DIAPHRAGM/WAFER TYPE LEVEL TRANSMITTER WITH REMOTE SEAL



ELEVATION

LEVEL MEASUREMENT OF CLEAN LIQUID IN AN OPEN VESSEL USING D/P TRANSMITTER

FOR TENDER PURPOSE ONLY



एन टी पी सी लिमिटेड  
NTPC LIMITED  
(A GOVERNMENT OF INDIA ENTERPRISE)  
ENGINEERING DIVISION

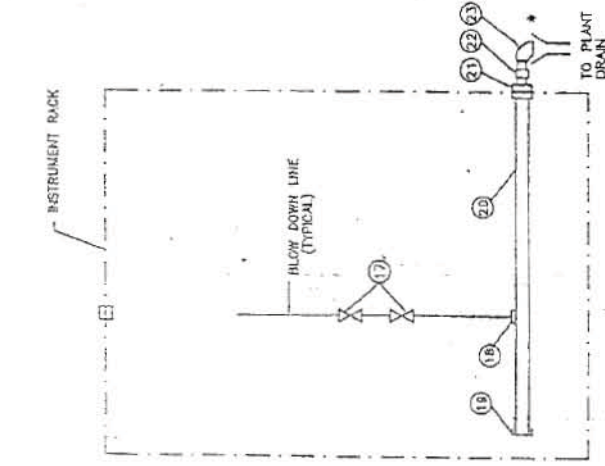
PROJECT	TYPICAL THERMAL POWER PROJECT (SG PACKAGE)
TITLE	INSTRUMENT INSTALLATION DIAGRAM (LEVEL MEASUREMENT-OPEN VESSEL)
DATE	28/04/06
SCALE	DRG. NO. 0000-101-POI-A-033
SIZE	A3
N.T.S.	
REV. NO.	A

CAD FILE NAME: D:\NORTH KARAPURA\_3\660MW\0000-102-POI-A-033\RA.DWG

This document is the property of NATIONAL THERMAL POWER CORPORATION LTD. No part of this document will be reproduced by any means without the written permission.

**LIST OF MATERIALS**

ITEM NO.	DESCRIPTION
1.	ISOLATION VALVE (gate/globe), SS.
2.	1/2" O.D. SEAMLESS SS PIPE.
3.	1/2" NPT (F) AIR FILTER REGULATOR.
4.	1/2" NPT x 1/2" O.D. (M) CONNECTOR SS.
5.	1/2" NPT (F) COUPLER SS.
6.	1" NB INST. AIR HEADER SS.
7.	1" PSB END CAP SS.
8.	1/2" NPT (F) COUPLER SS.
9.	1/2" NPT x 1/2" O.D. (M) CONNECTOR SS.
10.	1/2" COMP. NEEDLE VALVE SS.
11.	1/2" NPT (F) AIR PURGE SET.
12.	1/2" NPT (M) x 1/2" COMP VALVE SS.
13.	1/2" NPT PLUG SS.
14.	1/2" TUBE SS CONNECTOR.
15.	1/2" TUBE COMP. EQUAL TEE UNION.
16.	DRAIN VALVE 1/2" SW FOR WTR/STM/COND & 3/4" FOR AIR/FLUE GAS.
17.	1/2" SW HALF COUPLER
18.	2" SW CAP SS.
19.	2" NB ASTMA 105 GR. B SCH 80 BLOWDOWN HEADER
20.	2" PSW x 1" NPT (F) COUPLING.
21.	1" NPT x 1" BSP HEX NIPPLE.
22.	1" BSP ELBOW.
23.	BULKHEAD-SS 1/2" SWx1/2" NB THIRDLAND, SUITABLE FOR DI PIPE CONNECTION
24.	1/2" O.D. SEAMLESS TUBE SS.
25.	1/2" SW PRESS. GAUGE ISOLATION VALVE SS.
26.	1/2" TUBE x 1/2" NPT (F) BRANCH TEE SS.
27.	4" DIA x 1/2" NPT PR. GAUGE
28.	1/2" I.D. NYLON FLEX. HOSE BRADED WITH SS WIRE.
29.	1/2" NPT (M) x 1/2" HOSE BARBED CONN. SS.
30.	1/2" NPT (F) O-RING DISCONNECT SS.
31.	1/2" NPT (M) QUICKCONNECT SS.
32.	1/2" NPT (M) QUICKCONNECT SS.
33.	1/2" NPT (M) QUICKCONNECT SS.



**TYPICAL PURGE AIR CONNECTION INSIDE THE INST. ENCLOSURE**  
(APPLICABLE FOR AIR & FLUE GAS SERVICE INSTRUMENTS REQUIRING PURGE AIR)

**TYPICAL BLOW-DOWN HEADER CONNECTION INSIDE THE INSTRUMENT RACK/ENCLOSURE**

**NOTE:-**

- \* 1. DRAIN SHALL BE CONNECTED BY THE BIDDER TO THE NEAREST PLANT DRAIN THROUGH OPEN FUNNEL (1/2").
- \*\* 2. FOR AIR/FLUE GAS LIES FOR DRAINING THE IMPULSE LINE BETWEEN ITEM 17 DRAIN POT TO BE PROVIDED ALONGWITH DRAIN HEADER, 3/4" SW HALF COUPLER, ITEM 19, 20, 22, 23 & FUNNEL ALONGWITH 1/2" PIPING TO PLANT DRAIN HEADER SHALL BE PROVIDED FOR STM/WATER. ALL ITEMS EXCEPT DRAIN POT TO BE PROVIDED.
- 3. GI PIPES SHALL BE PROVIDED FOR PURGE AIR CONNECTION OUTSIDE I/E/L/R.

**FOR TENDER PURPOSE ONLY**

**NTPC LIMITED**  
(A GOVERNMENT OF INDIA ENTERPRISE)  
ENGINEERING DIVISION

**NTPC**

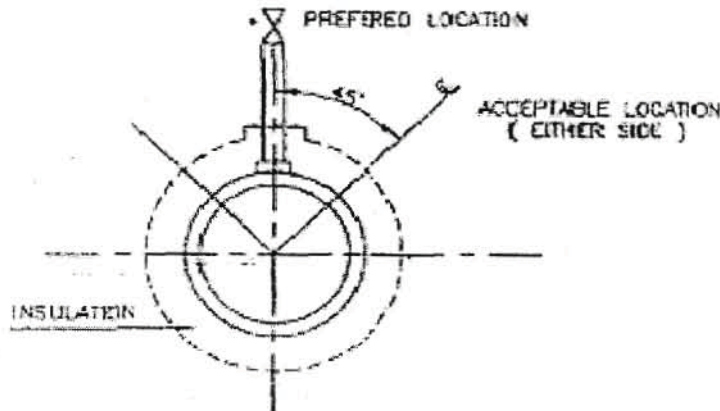
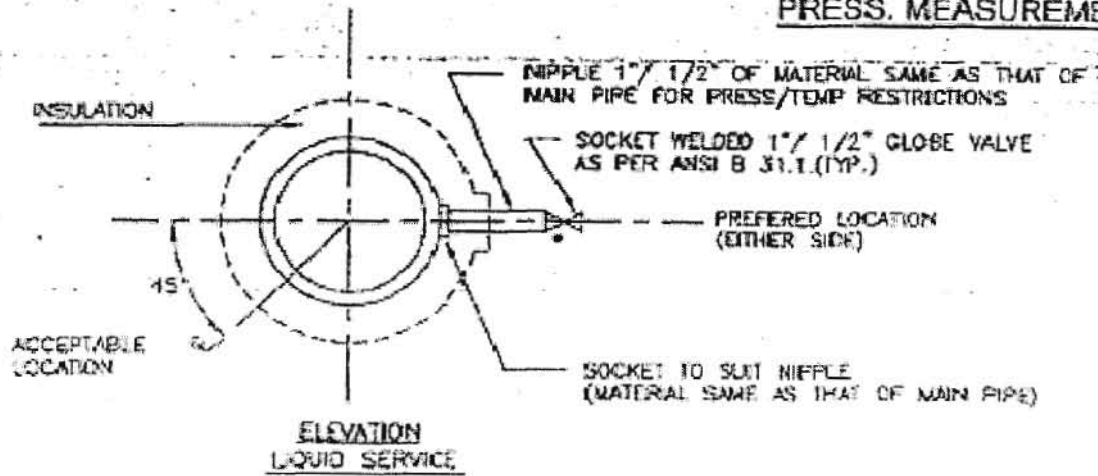
PROJECT	TYPICAL THERMAL POWER PROJECT (SG PACKAGE)
TITLE	INSTRUMENT INSTALLATION DIAGRAM
SCALE	A3
DATE	13/04/00
DRG. NO.	0000-101-POI-A-034
REV. NO.	A

REV. NO.	DESCRIPTION	Cleared by				
		M	E	C	D	A
A	FIRST ISSUE					

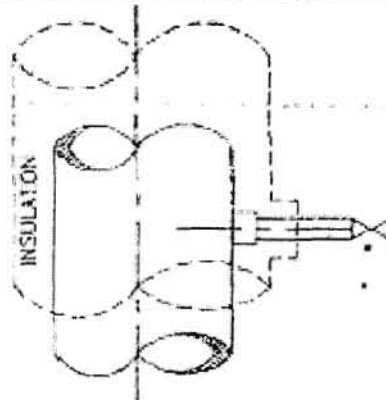
CAD FILE NAME: D:\NORTH KARANPURA\_3x660MW\0000-102-POI-A-034RA.DWG

No part of this document is the property of NATIONAL THERMAL POWER CORPORATION LTD. No part of this document will be reproduced by any means without the written permission.

**PRESS. MEASUREMENT**



**PRESSURE CONNECTION ON HORIZONTAL PIPE**



• USE DOUBLE ISOLATION VALVES FOR PRESSURE EQUAL TO OR EXCEEDING 40 Kg/Cm<sup>2</sup> OR TEMP. MORE THAN 280°C.

**PRESSURE CONNECTIONS IN VERTICAL PIPES**

**FOR TENDER PURPOSE ONLY**

**NTPC**

नामाला प्रालिम  
**NTPC LIMITED**  
(A COMPANY OF BSN ENTERPRISE)  
ENGINEERING DIVISION

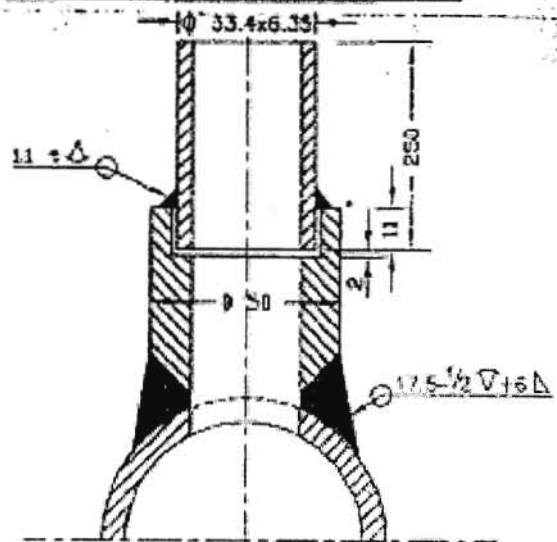
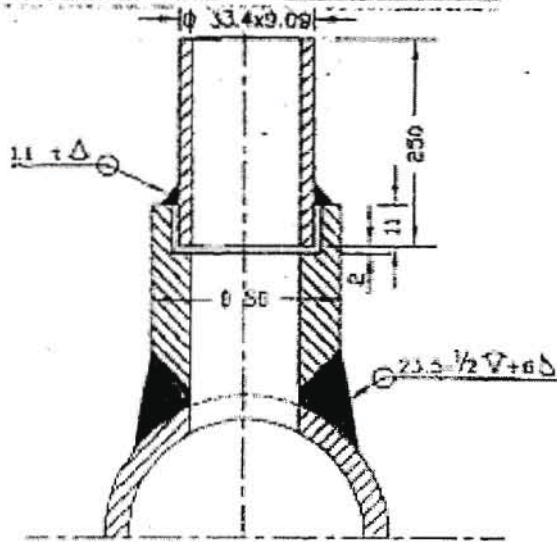
PROJECT		TYPICAL THERMAL POWER PROJECT (SG PACKAGE)			
FILE		INSTRUMENT SOURCE CONNECTION DETAILS			
NO. 4	DESCRIPTION	DATE	SCALE	CAD NO.	REV. NO.
4	FIRST ISSUE	27/11/04	N.T.S.	0000-101-POI-A-035	A
DRAWN BY		CHECKED BY		DATE	
271		271		27/11/04	

This document is the property of NATIONAL THERMAL POWER CORPORATION LTD. No part of this document will be reproduced by any means without the written permission.

**PRESSURE MEASUREMENT**

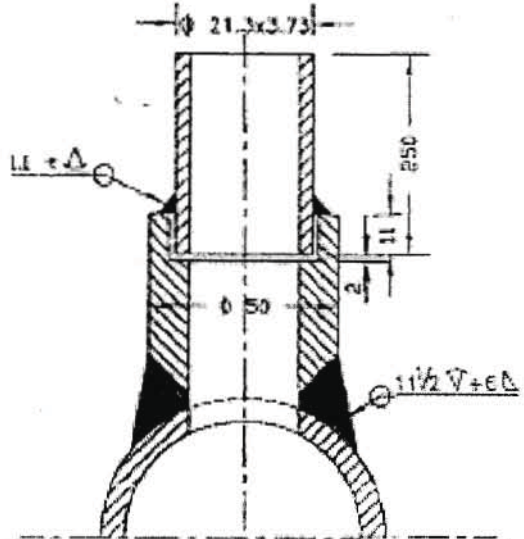
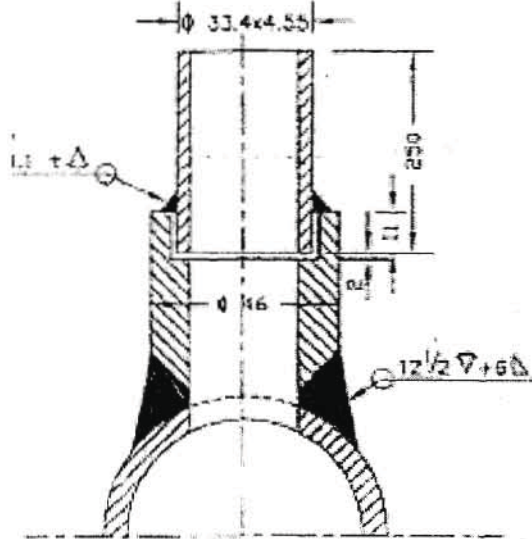
(SYSTEM PR. >40Kg/Sq Cm CL 9000)

(SYSTEM PR. >40Kg/Sq Cm CL 6000)



(SYSTEM PR. <40Kg/Sq cm Nb 25 CL 3000)


(SYSTEM PR. <40Kg/Sq cm Nb 15 CL 3000)



**NOTES:-**

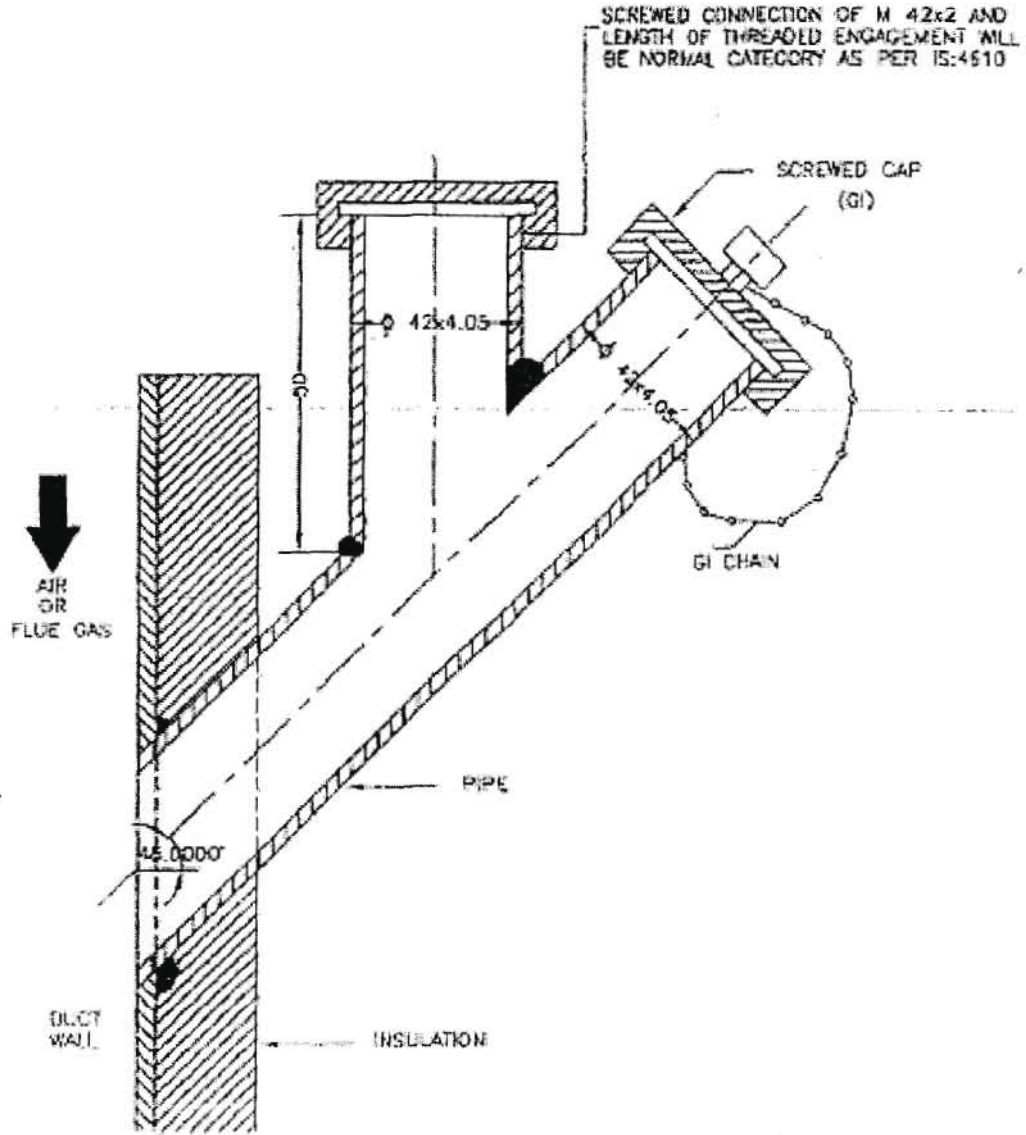
1. MATERIAL OF THE BOSS AND NIPPLE SHALL BE THE SAME AS THE PIPE INTO WHICH IT IS WELDED AND CONFIRM TO ANSI B 16.11
2. THE LENGTH OF THE NIPPLE SHOULD BE 250mm.
3. THE OTHER END OF THE NIPPLE SHALL BE SOCKET WELDED WITH 1" GLOBE VALVE OF MATERIAL AS PER ANSI B 16.1.
4. TWO ISOLATED VALVES ARE TO BE USED FOR PRESSURE = >40 Kg/Cm<sup>2</sup> OR TEMP. = >280°C.
5. EDGE HOLE MUST BE CLEAN AND SQUARE OR ROUNDED SLIGHTLY (1/64" RADIUS) FREE FROM BURRS, WIRE EDGES OR OTHER IRREGULARITIES.
6. ORIENTATION OF TAP WILL BE VARY WITH TYPE OF PROCESS FLUID AND NATURE OF RUN OF THE PIPE.
7. ACTIVITIES TO BE COMPLETED AT THE SHOP, WELD THE COUPLING (OR BOSS) ON THE PIPE AND DRILL PRESSURE CONNECTION HOLE (SAME AS I D OF NIPPLE) IN THE PIPE IN ALIGNMENT WITH HOLE IN THE COUPLING.
8. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE STATED.

FOR TENDER PURPOSE ONLY

				ena 1) p) sa) jaimataD <b>NTPC LIMITED</b> (A SOLE PROPRIETORSHIP OF NTPC LTD) ENGINEERING DESIGN	
PROJECT		TYPICAL THERMAL POWER PROJECT (SG PACKAGE)			
TITLE		INSTRUMENT SOURCE CONNECTION DETAILS			
REV	DESCRIPTION	DATE	BY	CHKD	APPD
A	FIRST ISSUE	22/10/00			
		SIZE	SCALE	DOC. NO.	REV. NO.
		272 of 646	N.T.S.	0000-101-POI-A-035	A

No part of this document will be reproduced by any means without the written permission.

**PRESS. MEASUREMENT**



**NOTES:**

1. THIS TYPE OF PRESSURE CONNECTION SHALL BE PROVIDED FOR PRESSURE MEASUREMENTS IN AIR AND FLUE GAS DUCT/FURNACE.
2. DIMENSIONS ARE INDICATIVE ONLY.

**FOR TENDER PURPOSE ONLY**

				एन टी पी सी लिमिटेड <b>NTPC LIMITED</b> (A COMPANY OF NDA (INDIA) LTD.) INSTRUMENTS DIVISION			
		PROJECT				TYPICAL THERMAL POWER PROJECT (SG PACKAGE)	
		TITLE				INSTRUMENT SOURCE CONNECTION DETAILS	
A		FIRST ISSUE		DATE		REV. NO.	
DESCRIPTION		DRAWN BY		SCALE		NO. OF SHEETS	
				A4		0000-101-POI-A-035	
				N.T.S.		28-3 of 44	

This document is the property of NATIONAL THERMAL POWER CORPORATION LTD. No part of this document will be reproduced by any means without the written permission.