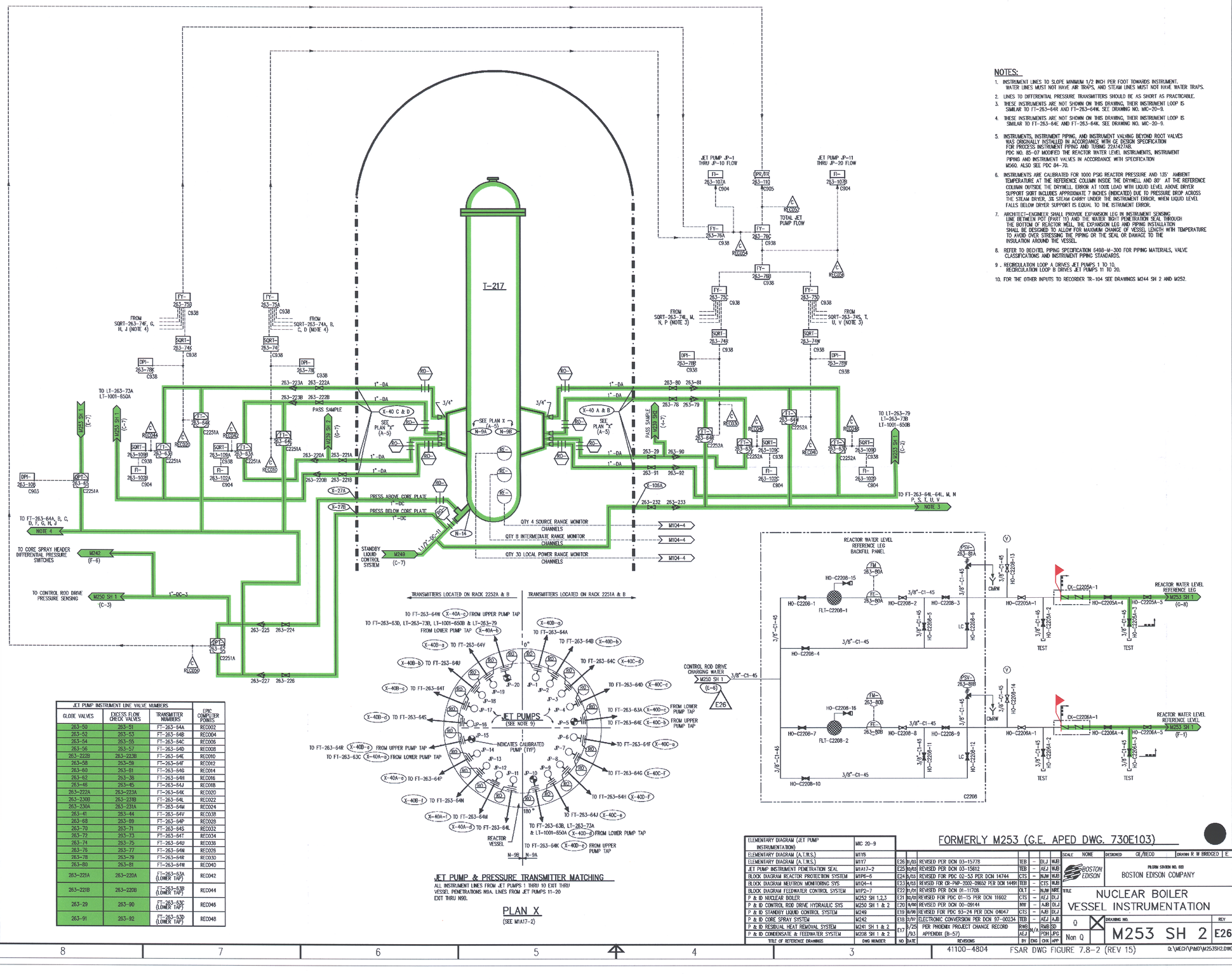


## NOTES:

1. INSTRUMENT LINES TO SLOPE MINIMUM 1/2 INCH PER FOOT TOWARDS INSTRUMENT. WATER LINES MUST NOT HAVE AIR TRAPS, AND STEAM LINES MUST NOT HAVE WATER TRAPS.
2. LINES TO DIFFERENTIAL PRESSURE TRANSMITTERS SHOULD BE AS SHORT AS PRACTICABLE.
3. THESE INSTRUMENTS ARE NOT SHOWN ON THIS DRAWING, THEIR INSTRUMENT LOOP IS SIMILAR TO FT-263-64R AND FT-263-64W. SEE DRAWING NO. MIC-20-9.
4. THESE INSTRUMENTS ARE NOT SHOWN ON THIS DRAWING, THEIR INSTRUMENT LOOP IS SIMILAR TO FT-263-64C AND FT-263-64K. SEE DRAWING NO. MIC-20-9.
5. INSTRUMENTS, INSTRUMENT PIPING, AND INSTRUMENT VALVING BEYOND ROOT VALVES WAS ORIGINALLY INSTALLED IN ACCORDANCE WITH GE DESIGN SPECIFICATION FOR PROCESS INSTRUMENT PIPING AND TUBING 22A1427AB. PDC NO. 85-07 MODIFIED THE REACTOR WATER LEVEL INSTRUMENTS, INSTRUMENT PIPING AND INSTRUMENT VALVES IN ACCORDANCE WITH SPECIFICATION M560. ALSO SEE PDC 84-70.
6. INSTRUMENTS ARE CALIBRATED FOR 1000 PSIG REACTOR PRESSURE AND 135° AMBIENT TEMPERATURE AT THE REFERENCE COLUMN INSIDE THE DRYWELL AND 80° AT THE REFERENCE COLUMN OUTSIDE THE DRYWELL. ERROR AT 100% LOAD WITH LIQUID LEVEL ABOVE DRYER SUPPORT SKIRT INCLUDES APPROXIMATE 7 INCHES (INDICATED) DUE TO PRESSURE DROP ACROSS THE STEAM DRYER. 3% STEAM CARRY UNDER THE INSTRUMENT ERROR, WHEN LIQUID LEVEL FALLS BELOW DRYER SUPPORT IS EQUAL TO THE ISTRUMENT ERROR.
7. ARCHITECT-ENGINEER SHALL PROVIDE EXPANSION LEG IN INSTRUMENT SENSING LINE BETWEEN POT (PART 11) AND THE WATER TIGHT PENETRATION SEAL THROUGH THE BOTTOM OF REACTOR WELL. THE EXPANSION LEG AND PIPING INSTALLATION SHALL BE DESIGNED TO ALLOW FOR MAXIMUM CHANGE OF VESSEL LENGTH WITH TEMPERATURE TO AVOID OVER STRESSING THE PIPING OR THE SEAL OR DAMAGE TO THE INSULATION AROUND THE VESSEL.
8. REFER TO BECHTEL PIPING SPECIFICATION 5498-M-300 FOR PIPING MATERIALS, VALVE CLASSIFICATIONS AND INSTRUMENT PIPING STANDARDS.
9. RECIRCULATION LOOP A DRIVES JET PUMPS 1 TO 10. RECIRCULATION LOOP B DRIVES JET PUMPS 11 TO 20.
10. FOR THE OTHER INPUTS TO RECORDER TR-104 SEE DRAWINGS M244 SH 2 AND M252.

### JET PUMP INSTRUMENT LINE VALVE NUMBERS

| GLOBE VALVES | EXCESS FLOW CHECK VALVES | TRANSMITTER NUMBERS | EPIC COMPUTER POINTS |
|---|---|---|---|
| 263-50 | 263-51 | FT-263-64A | RECO02 |
| 263-52 | 263-53 | FT-263-64B | RECO04 |
| 263-54 | 263-55 | FT-263-64C | RECO06 |
| 263-56 | 263-57 | FT-263-64D | RECO08 |
| 263-222B | 263-223B | FT-263-64E | RECO10 |
| 263-58 | 263-59 | FT-263-64F | RECO12 |
| 263-60 | 263-61 | FT-263-64G | RECO14 |
| 263-62 | 263-36 | FT-263-64H | RECO16 |
| 263-46 | 263-45 | FT-263-64J | RECO18 |
| 263-222A | 263-223A | FT-263-64K | RECO20 |
| 263-230B | 263-231B | FT-263-64L | RECO22 |
| 263-230A | 263-231A | FT-263-64M | RECO24 |
| 263-41 | 263-44 | FT-263-64V | RECO38 |
| 263-68 | 263-69 | FT-263-64P | RECO28 |
| 263-70 | 263-71 | FT-263-64S | RECO32 |
| 263-72 | 263-73 | FT-263-64T | RECO34 |
| 263-74 | 263-75 | FT-263-64U | RECO36 |
| 263-76 | 263-77 | FT-263-64N | RECO26 |
| 263-78 | 263-79 | FT-263-64R | RECO30 |
| 263-80 | 263-81 | FT-263-64W | RECO40 |
| 263-221A | 263-220A | FT-263-63A (LOWER TAP) | RECO42 |
| 263-221B | 263-220B | FT-263-63B (LOWER TAP) | RECO44 |
| 263-29 | 263-90 | FT-263-63C (LOWER TAP) | RECO45 |
| 263-91 | 263-92 | FT-263-63D (LOWER TAP) | RECO48 |

### JET PUMP & PRESSURE TRANSMITTER MATCHING

ALL INSTRUMENT LINES FROM JET PUMPS 1 THRU 10 EXIT THRU VESSEL PENETRATIONS N9A. LINES FROM JET PUMPS 11-20 EXIT THRU N9B.

### PLAN X

(SEE M1A17-2)

| ELEMENTARY DIAGRAM (JET PUMP INSTRUMENTATION) | MIC 20-9 |
|---|---|
| ELEMENTARY DIAGRAM (A.T.W.S.) | M1Y5 |
| ELEMENTARY DIAGRAM (A.T.W.S.) | M1Y7 |
| JET PUMP INSTRUMENT PENETRATION SEAL | M1A17-2 |
| BLOCK DIAGRAM REACTOR PROTECTION SYSTEM | M1P5-6 |
| BLOCK DIAGRAM NEUTRON MONITORING SYS | M104-4 |
| BLOCK DIAGRAM FEEDWATER CONTROL SYSTEM | M1P2-7 |
| P & ID NUCLEAR BOILER | M252 SH 1,2,3 |
| P & ID CONTROL ROD DRIVE HYDRAULIC SYS | M250 SH 1 & 2 |
| P & ID STANDBY LIQUID CONTROL SYSTEM | M249 |
| P & ID CORE SPRAY SYSTEM | M242 |
| P & ID RESIDUAL HEAT REMOVAL SYSTEM | M241 SH 1 & 2 |
| P & ID CONDENSATE & FEEDWATER SYSTEM | M208 SH 1 & 2 |

TITLE OF REFERENCE DRAWINGS / DWG NUMBER

| NO | DATE | REVISIONS | BY | ENG | CHK | APP |
|---|---|---|---|---|---|---|
| E26 | 11/03 | REVISED PER DCN 03-15778 | TEB | – | DLJ | WJB |
| E25 | 10/03 | REVISED PER DCN 03-15612 | TEB | – | AEJ | WJB |
| E24 | 5/03 | REVISED FOR PDC 02-53 PER DCN 14744 | CTS | – | NJW | WJB |
| E23 | 4/03 | REVISED FOR DR-PWR-2002-09652 PER DCN 14491 | TEB | – | CTS | WJB |
| E22 | 11/01 | REVISED PER DCN 01-11708 | OLT | – | NJW | NRE |
| E21 | 10/01 | REVISED FOR PDC 01-15 PER DCN 11602 | CTS | – | AEJ | DLJ |
| E20 | 9/00 | REVISED PER DCN 00-09144 | NW | – | AJB | DLJ |
| E19 | 9/98 | REVISED FOR PDC 93-24 PER DCN 04047 | CTS | – | AJB | DLJ |
| E18 | 2/97 | ELECTRONIC CONVERSION PER DCN 97-00234 | TEB | – | AEJ | AJB |
| E17 | 5/25/93 | PER PHOENIX PROJECT CHANGE RECORD APPENDIX (B-57) | RWB | N/A | RMB | SD |
| | | | AEJ | | PDH | JPG |

FORMERLY M253 (G.E. APED DWG. 730E103)

| | |
|---|---|
| SCALE | NONE |
| DESIGNED | GE/BECO |
| DRAWN | R W BRIDGED |
| E | |

BOSTON EDISON

PLANT SERVICE NO. 600

BOSTON EDISON COMPANY

TITLE: NUCLEAR BOILER VESSEL INSTRUMENTATION

Q [X] Non Q

DRAWING NO. M253 SH 2 E26

41100-4804 FSAR DWG FIGURE 7.8-2 (REV 15) D:\MECH\PaBD\M253SH2.DWG

| NO. | DATE | REVISIONS | BY | ENG | CHK | APP |
|---|---|---|---|---|---|---|
| 0 | 8-23-05 | | | | | |

CAD FILE: LRA-M-253-SH-02_E28.DGN

MASTER FILE: M253SH2-CALS_E28.CAL

SYSTEM INTENDED FUNCTION BOUNDARY

COMPONENTS SUBJECT TO AMR

REACTOR COOLANT SYSTEM PRESSURE BOUNDARY AMRM-33

d-50