# PIPING AND INSTRUMENT DIAGRAM LEGEND - UNIT ONE

VENTS AND DRAINS TO RADIOACTIVE WASTE SYSTEMS

DWD - DIRTY WASTE DRAIN TANK
ABS - AUXILIARY BUILDING SUMP
RBS - REACTOR BUILDING SUMP
→ M-213

PCQ - PRIMARY COOLANT QUENCH TANK
RBD - REACTOR BUILDING EQUIPMENT DRAIN HEADER
ABD - AUXILIARY BUILDING EQUIPMENT DRAIN HEADER
→ M-214

RBV - REACTOR BUILDING VENT HEADER
ABV - AUXILIARY BUILDING VENT HEADER
GCH - GAS COLLECTION HEADER
→ M-215

PIPING DESIGNATIONS

X X X - X - X

PRESSURE
MATERIAL
CLASS (NUCLEAR / NON)
SIZE
SYSTEM LOCATION

PENETRATION AND CONNECTION SYMBOLS

⬡ PIPING PENETRATION AT REACTOR BUILDING (SEE DRAWING C-108)

◇ PIPING CONNECTIONS AT CONDENSERS E-11A & B (SEE WESTINGHOUSE DRAWING 720J986, VP M5-1).

▽ PIPING CONNECTIONS AT TURBINE-GENERATOR (K1) (SEE WESTINGHOUSE DRAWING 720J114, VP M4-4).

| DWG.NO. | INSTR.NO. | PIPING & INSTRUMENT DIAGRAMS |
|---|---|---|
| M-200 | | PIPING SYMBOLS AND DRAWING INDEX |
| M-201 | | INSTRUMENT SYMBOLS AND IDENTIFICATION |
| M-202 | 6600-6799 | MAIN STEAM |
| M-203 | 6800-6999 | REHEAT STEAM |
| M-204 | 2800-2999 | CONDENSATE AND FEEDWATER |
| M-205 | 3000-3199 | EXTRACTION STEAM HEATER VENTS AND DRAINS |
| M-206 | 2600-2799 | STEAM GENERATOR SECONDARY SYSTEM |
| M-207 | 3200-3399 | CONDENSATE DEMINERALIZER |
| M-208 | 3400-3599 | CONDENSATE DEMINERALIZER RESIN REGENERATION SYSTEM |
| M-209 | 3600-3799 | CIRCULATIND WATER AND INTAKE STRUCTURE EQUIPMENT |
| M-210 | 3800-3999 | SERVICE WATER |
| M-211 | 4000-4199 | AUXILIARY COOLING WATER |
| M-212 | 4200-4399 | PLANT MAKEUP AND DOMESTIC WATER SYSTEMS |
| M-213 | 4400-4599 | DIRTY LIQUID AND LAUNDRY RADIOACTIVE WASTE |
| M-214 | 4600-4799 | CLEAN LIQUID RADIOACTIVE WASTE |
| M-215 | 4800-4999 | GASEOUS RADIOACTIVE WASTE |
| M-216 | 5000-5199 | LUBE OIL |
| M-217 | 5200-5399 | EMERGENCY DIESEL GENERATORS AND FUEL OIL SYSTEM |
| M-218 | 5400-5599 | INSTRUMENT AND SERVICE AIR |
| M-219 | 5600-5799 | FIRE WATER, HALON FIRE AND TURBINE FIRE SYSTEMS |
| M-220 | 5800-5999 | PLANT HEATING AND STARTUP BOILER |
| M-221 | 6000-6199 | CHILLED WATER SYSTEM, CONTROL RM, ELECT AREAS AND ADMIN BUILDING |
| M-222 | 6200-6299 | CHILLED WATER SYSTEM, REACTOR AND AUXILIARY BUILDING, MAIN CHILLER CLG WTR |
| M-223 | 6400-6499 | TURBINE SAMPLING SYSTEM |
| M-224 | 8200-8299 | CHLORINATION SYSTEM |
| M-225 | 8300-8399 | GAS SYSTEMS |
| M-226 | 8400-8499 | SEAL OIL, MAIN TURBINE AND FEEDWATER PUMP BEARING LUBE OIL SYSTEM |
| M-227 | 8300-8399 | ELECTRO-HYDRAULIC FLUID AND EMERGENCY TRIP HP OIL SYSTEMS |
| | | |
| M-230 | 1000-1199 | REACTOR COOLANT SYSTEM |
| M-231 | 1200-1399 | MAKEUP AND PURIFICATION SYSTEM |
| M-232 | 1400-1599 | DECAY HEAT REMOVAL SYSTEM |
| M-233 | 1600-1799 | CHEMICAL ADDITION SYSTEM |
| M-234 | 2200-2399 | INTERMEDIATE COOLING SYSTEM |
| M-235 | 2000-2099 | SPENT FUEL COOLING SYSTEM |
| M-236 | 2400-2599 | REACTOR BUILDING SPRAY AND CORE FLOODING SYSTEM |
| M-237 | 1800-1999 | SAMPLING SYSTEM |
| M-238 | 6500-6599 | CONTROL ROD DRIVES AND MISCELLANEOUS REACTOR COOLANT PUMP CONNECTIONS |
| M-240 | 3600 | OILY WATER TREATMENT |
| | | |
| M-258 | - | SEE NOTE 6 |
| M-259 | 7000-7199 | AIR FLOW DIAGRAM ADMINISTRATION BUILDING |
| M-260 | 7200-7399 | AIR FLOW DIAGRAM TURBINE BUILDING, BOILER RM, AND MISCELLANEOUS AREAS |
| M-261 | 7400-7599 | AIR FLOW DIAGRAM REACTOR BUILDING |
| M-262 | 7600-7599 | AIR FLOW DIAGRAM AUXILIARY BUILDING AND RADWASTE AREAS |
| M-263 | 7800-7999 | AIR FLOW DIAGRAM AUXILIARY BUILDING, CONTROL RM, ELEC AND CLEAN AREAS |
| M-264 | 2100-2199 | AIR FLOW DIAGRAM CONTAINMENT PENETRATION RM VENTILATION SYSTEM |
| | | |
| M-500 | | INSTRUMENT IDENTIFICATION |

NOTES:

1. SEE ENGINEERING STANDARD DDG-001 FOR P&ID FORMAT, COMPONENT REPRESENTATION AND EXPLANATION OF SYMBOLS.
2. SEE M-200 SH.2 AND SH.3 FOR SYMBOLS (FIG.1-256).
3. VALVE POSITIONS DEPICTED ARE TYPICAL POWER OPERATION (MODE 1) VALVE POSITIONS. ACTUAL VALVE POSITIONS ARE CONTROLLED BY OPERATIONAL PROCEDURES.
4. VALVE HAS 1/2 THREADED PIPE CONNECTION. TUBING IS CONNECTED VIA PIPE-TO-TUBE CONNECTOR, AND ROUTED TO NEAREST CONTAMINATED FLOOR DRAIN OR FUNNEL.
5. THE PENNANT SYMBOL ( ▷ ) INDICATES THAT THE ASSOCIATED PIPING AND COMPONENTS ARE SEISMIC CATEGORY I PER THE REQUIREMENTS OF SECTION C-1 OF NRC REGULATORY GUIDE 1.29, THE FLAG SYMBOL ( P ) INDICATES THE NON-Q LISTED PIPING HAS BEEN ANALYZED AND DESIGNED TO WITHSTAND SEISMIC LOADS IN ACCORDANCE WITH SECTION C-2 OF REG. GUIDE 1.29. BY CONVENTION THESE SYMBOLS ARE ONLY SHOWN ON UNIT 2 P&ID'S AND NOT ON UNIT 1 P&ID'S.
6. M-258: FIRE DAMPER INVENTORY.

# PIPING AND INSTRUMENT DIAGRAM LEGEND - UNIT TWO

VENTS AND DRAINS TO RADIOACTIVE WASTE SYSTEMS

DWD - DIRTY WASTE DRAIN TANK
ABS - AUXILIARY BUILDING SUMP
RBS - REACTOR BUILDING SUMP
→ M-2213

PCQ - PRIMARY COOLANT QUENCH TANK
RBD - REACTOR BUILDING EQUIPMENT DRAIN HEADER
ABD - AUXILIARY BUILDING EQUIPMENT DRAIN HEADER
→ M-2214

RBV - REACTOR BUILDING VENT HEADER
ABV - AUXILIARY BUILDING VENT HEADER
GCH - GAS COLLECTION HEADER
→ M-2215

PIPING DESIGNATIONS

UNIT 2 — 2 X X X - X - X

PRESSURE
MATERIAL
CLASS (NUCLEAR / NON)
SIZE
SYSTEM LOCATION

PENETRATION AND CONNECTION SYMBOLS

⬡ PIPING PENETRATION AT REACTOR BUILDING (SEE DRAWING C-2112)

◇ PIPING CONNECTIONS AT CONDENSERS 2E-11A & B (SEE SOUTHWESTERN ENGINEERING DRAWINGS: ZE-72605, ZE-72621) (VP M2005-10 & M2005-11).

▽ PIPING CONNECTIONS AT TURBINE-GENERATOR (2K1) (SEE GENERAL ELECTRIC DRAWINGS: 2135R758,233A6530) (VP M2004-17 & M2004-18).

| DWG.NO. | INSTR.NO. | PIPING & INSTRUMENT DIAGRAMS |
|---|---|---|
| M-2200 | | PIPING SYMBOLS AND DRAWING INDEX |
| M-2201 | | INSTRUMENT SYMBOLS AND IDENTIFICATION |
| M-2202 | 0200-0399 | MAIN STEAM |
| M-2203 | 0400-0599 | REHEAT STEAM |
| M-2204 | 0600-0799 | CONDENSATE AND FEEDWATER |
| M-2205 | 0800-0999 | EXTRACTION STEAM HEATER VENTS AND DRAINS |
| M-2206 | 1000-1199 | STEAM GENERATOR SECONDARY SYSTEM |
| M-2208 | 9600-9799 | TURBINE-GENERATOR AUXILIARY SYSTEM |
| | | MAIN FEEDWATER AUXILIARY SYSTEM |
| M-2209 | 1200-1399 | CIRCULATING WATER SYSTEM |
| M-2210 | 1400-1599 | SERVICE WATER |
| M-2211 | 1600-1799 | AUXILIARY COOLING WATER |
| M-2212 | 1800-1999 | PLANT MAKEUP AND DOMESTIC WATER |
| M-2213 | 2000-2199 | LIQUID RADIOACTIVE WASTE |
| M-2214 | 2200-2399 | BORON MANAGEMENT |
| M-2215 | 2400-2599 | GASEOUS RADIOACTIVE WASTE |
| M-2216 | 2600-2799 | LUBE OIL |
| M-2217 | 2800-2999 | EMERGENCY DIESEL AND FUEL OIL |
| M-2218 | 3000-3199 | INSTRUMENT AND SERVICE AIR |
| M-2219 | 3200-3399 | FIRE WATER, HALON FIRE SUPPRESSION, TURBINE $CO_2$ SYSTEMS |
| M-2220 | 3400-3599 | PLANT HEATING SYSTEM |
| M-2221 | 3600-3799 | CHILLED WATER CONTROL ROOM ELECTRICAL AREA |
| M-2222 | 3800-3999 | CHILLED WATER CONTAINMENT, AUXILIARY AND TURBINE BUILDINGS |
| M-2223 | 4000-4199 | SECONDARY SAMPLING SYSTEM |
| M-2224 | 4200-4299 | SOLID RADWASTE SYSTEM |
| M-2225 | 4300-4399 | TURBINE BUILDING SUMPS AND DOMESTIC WATER |
| M-2226 | 4400-4499 | REGENERATIVE WASTE PROCESSING SYSTEM |
| M-2229 | 4400-4599 | STARTUP AND BLOWDOWN DEMINERALIZER SYSTEM |
| M-2230 | 4600-4799 | REACTOR CODLANT SYSTEM |
| M-2231 | 4800-4999 | CHEMICAL AND VOLUME CONTROL SYSTEM |
| M-2232 | 5000-5199 | SAFETY INJECTION SYSTEM |
| M-2233 | 6600-6699 | REACTOR COOLANT PUMP OIL COLLECTION SYSTEM |
| M-2234 | 5200-5399 | COMPONENT COOLING WATER |
| M-2235 | 5400-5599 | FUEL POOL SYSTEM |
| M-2236 | 5600-5799 | CONTAINMENT SPRAY SYSTEM |
| M-2237 | 5800-5999 | SAMPLING SYSTEM |
| M-2238 | 6000-6199 | REACTOR COOLANT PUMP CONNECTIONS |
| M-2239 | 6200-6399 | HYDROGEN AND NITROGEN ADDITION SYSTEM |
| M-2240 | 6400-6599 | FEEDWATER CHEMICAL FEED SYSTEM |
| | | |
| M-2258 | - | SEE NOTE 6 |
| M-2259 | 7800-7999 | AIR FLOW AND CONTROL DIAGRAM AUXILIARY BUILDING EXTENSION |
| M-2260 | 8000-8199 | AIR FLOW AND CONTROL DIAGRAM TURB BLDG, SEC PLANT EQUIP AREA, MISC AREA |
| M-2261 | 8200-8399 | AIR FLOW AND CONTROL DIAGRAM CONTAINMENT BUILDING |
| M-2262 | 8400-8599 | AIR FLOW AND CONTROL DIAGRAM AUXILIARY BUILDING AND WASTE MANAGEMENT AREA |
| M-2263 | 8600-8799 | AIR FLOW AND CONTROL DIAGRAM AUX BLDG, CONT RM, ELEC AND CLEAN LAB AREAS |
| M-2264 | 8800-8899 | AIR FLOW AND CONTROL DIAGRAM CONTAINMENT PENETRATION RMS, VENT SYSTEMS |
| | 8900-8999 | AREA RADIATION MONITORS (SK-M-2266-2271) |
| | 9000-9199 | C.E. REACTOR INSTRUMENTATION |
| | 9200-9368 | G.E. INSTRUMENTS |
| | 9369-9399 | AMERTAP SYSTEM |
| | 9400-9499 | G.E. INSTRUMENTS ASSOCIATED WITH BORIC ACID CONCENTRATOR |
| | 9500-9599 | G.E. INSTRUMENTS ASSOCIATED WITH WASTE CONCENTRATOR |
| M-2265 | 9800-9999 | RADIOLOGICAL DOSE ASSESSMENT COMPUTER SYSTEM |
| M-2266 | | LOW LEVEL RADIOACTIVE WASTE STORAGE BUILDING AIR FLOW AND CONTROL DIAGRAM |

**DRAFTING NOTE:**
**IF THIS DRAWING IS REVISED, THEN REVISE M-200 ALSO. (TYPICAL ALL SHEETS)**

NOTES:

1. SEE ENGINEERING STANDARD GES-01 FOR P&ID FORMAT, COMPONENT REPRESENTATION AND EXPLANATION OF SYMBOLS.
2. SEE M-2200 SH.2 AND SH.3 FOR SYMBOLS (FIG.1-256).
3. VALVE POSITIONS DEPICTED ARE TYPICAL POWER OPERATION (MODE 1) VALVE POSITIONS. ACTUAL VALVE POSITIONS ARE CONTROLLED BY OPERATIONAL PROCEDURES (LICENSING COMMITMENT-OCAN068809).
4. VALVE HAS 1/2 THREADED PIPE CONNECTION. TUBING IS CONNECTED VIA PIPE-TO-TUBE CONNECTOR, AND ROUTED TO NEAREST CONTAMINATED FLOOR DRAIN OR FUNNEL.
5. THE PENNANT SYMBOL ( ▷ ) INDICATES THAT THE ASSOCIATED PIPING AND COMPONENTS ARE SEISMIC CATEGORY I PER THE REQUIREMENTS OF SECTION C-1 OF NRC REGULATORY GUIDE 1.29, THE FLAG SYMBOL ( P ) INDICATES THE NON-Q LISTED PIPING HAS BEEN ANALYZED AND DESIGNED TO WITHSTAND SEISMIC LOADS IN ACCORDANCE WITH SECTION C-2 OF REG. GUIDE 1.29. BY CONVENTION, THESE SYMBOLS ARE ONLY SHOWN ON UNIT 2 P&ID'S AND NOT ON UNIT 1 P&ID'S.
6. M-2258: UNIT 2 FIRE DAMPER INVENTORY.

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|---|---|---|---|
| ARKANSAS NUCLEAR ONE<br>UNIT 2<br>RUSSELLVILLE, ARKANSAS | | | |
| PIPING & INSTRUMENT DIAGRAM<br>INSTURMENT AND<br>COMPONENT SYMBOLS | | | |
| Entergy | DRAWING NO | SHEET | REVISION |
| | LRA-M-2200 | 1 | 0 |

RED "R" IF ORIGINAL

BASED ON M-2200 SH 1 REV 19

D-06