

02-W

VALVE SYMBOLS

NORMALLY OPEN DURING FULL PLANT OPERATION

NORMALLY CLOSED DURING FULL PLANT OPERATION

VALVE TYPE

VALVE IDENT. NUMBER (TYPICAL)

GATE

LOCKED OPEN OR LOCKED CLOSED (TYPICAL)

GLOBE

STOP-CHECK

NORMALLY CLOSED

BUTTERFLY

BALL

PLUG

ANGLE

ANGLE STOP-CHECK

DIAPHRAGM SEATED (SAUNDERS)

FLUSHING DRAWING SYMBOL KEY

○ - START

□ - TERMINATION

△ - SAMPLE POINT

XX - FLOW PATH DIRECTION AND INSTRUCTION SEQUENCE NUMBER

⊕ - BLOCKED SIDE OF VALVE

⊗ - ADAPTER FLANGE

VALVE TYPE

CHECK

EXCESS FLOW CHECK

SET @ PSIG

ANGLE SAFETY OR RELIEF

SET @ PSIG

STRAIGHT SAFETY OR RELIEF

SET @ PSIG

POWER SAFETY OR RELIEF

QUICK-OPENING GATE (TYPICAL FOR OTHER VALVE TYPES)

MANUAL FLOW CONTROL

SET @ PSIG

SELF-CONTAINED PRV

SELF-CONTAINED BACK PRESSURE REGULATOR

HOSE GATE VALVE (TYPICAL FOR OTHER VALVE TYPES)

COMMON PORT

CLOSED PORT IN OPPOSITE MODE

THREE-WAY

CLOSED PORT IN MODE SHOWN

PLUG - IF SPECIFIED

FOUR-WAY

COMMON PORTS

OPERATOR SYMBOLS

RM

SYMBOL SHOWN BELOW VALVE NUMBER DENOTES MANUAL REMOTE OPERATED.

(FOR USE WITH VALVE & DAMPER SYMBOLS. FOR TYPICAL EXAMPLES SEE SHEET 4 OF 4)

INSTRUMENT IDENTIFICATION NUMBER FOR CONTROL AIR & INSTRUMENT AIR SIGNAL SOLENOID VALVES ONLY

VALVE IDENTIFICATION NUMBER (TYPICAL EXCEPT AS NOTED FOR CERTAIN SOLENOID VALVES)

DIAPHRAGM OPERATOR (TYPICAL)

CYLINDER OPERATOR (TYPICAL)

OPERATOR UNLOADED (TYPICAL)

OPERATOR LOADED (TYPICAL)

AC MOTOR

DC MOTOR

MOTOR OPERATOR (WITH MANUAL OVERRIDE)

DIAPHRAGM & CYLINDER OPERATORS (SPRING-RETURN) FOR CONTROL AND ON/OFF VALVES (TYPICAL FOR OTHER CONTROL DEVICES)

SOLENOID OPERATORS (SPRING-RETURN) FOR VALVES (TYPICAL FOR OTHER CONTROL DEVICES)

FOUR WAY SOLENOID VALVE DOUBLE ACTING

CYLINDER OPERATORS DOUBLE ACTING

MANUAL HANDWHEEL

MANUAL FLOW CONTROL

OPERATOR ACCESSORIES (TYPICAL FOR ALL TYPES OF OPERATORS EXCEPT AS NOTED)

PIPING SPECIALTY SYMBOLS

PIPING SPECIALTY IDENT. NUMBER (TYPICAL)

TRAP ASSEMBLY (MF-270.2.4)

AIR RELEASE VALVE

Y-TYPE STRAINER

TEMPORARY STRAINER

SINGLE BASKET STRAINER

DUPLEX BASKET STRAINER (WITH IN-OUT VALVING)

RUPTURE DISC

RESTRICTION DEVICE (SINGLE OR MULTI-STAGE)

RESTRICTION DEVICE (CAPILLARY)

EXPANSION JOINT

FLEXIBLE HOSE

INJECTOR/EJECTOR

FLAME ARRESTOR

SIGHT FLOW INDICATOR

ROOF EXHAUST HOOD

SPRAY NOZZLES

FILTER

SPARGER

ELECTRIC HEATER

SPRAY WATER NOZZLE

PIPE LINE COMPONENT SYMBOLS

END CLOSURE (WELDED CAP)

END CLOSURE (SCREWED CAP)

END CLOSURE (BLIND FLANGE)

END CLOSURE (HOSE CONN.)

REDUCER

QUICK DISCONNECT

SPECTACLE FLANGE

INSULATING FLANGE (DISSIMILAR METALS)

FLOOR DRAIN

ATMOSPHERIC VENT (WITH SCREEN)

THERMAL SLEEVE

RELIEF VALVE VENT PIPE SLIP JOINT

OPEN FUNNEL DRAIN

CLOSED FUNNEL DRAIN

PIPE LINE SYMBOLS

(P.C. DENOTES PIPING CONTRACTOR)

PRIMARY SERVICE (FURN. & INST. BY P.C.)

SECONDARY SERVICE (FURN. & INST. BY P.C.)

PRIMARY SERVICE (FURN. & INST. BY OTHERS UNLESS OTHERWISE NOTED)

SECONDARY SERVICE (FURN. & INST. BY OTHERS UNLESS OTHERWISE NOTED)

SLOPING LINE

ELECTRICALLY HEAT TRACED LINE (UNLESS OTHERWISE NOTED)

VACUUM-JACKETED CRYOGENIC LINE OR GUARDED LINE

MISCELLANEOUS SYMBOLS

DRAWING NUMBER SHEET NUMBER

PIPE LINE CONTINUATION ARROWHEAD (DIFFERENT P&ID)

DRAWING COORD. NUMBER

PIPE LINE CONTINUATION ARROWHEAD (SAME P&ID SHEET)

SEQUENCE LETTER ON SAME P&ID

PIPE LINE NUMBER IDENTIFICATION

ENCLOSURE FOR PIPING SPECIALTY NUMBERS, VALVE NUMBERS & DAMPER NUMBERS EXCEPT AS NOTED ABOVE

FURNISHED WITH ASSOCIATED EQUIPMENT

CONTAINMENT

PENETRATION OF PRIMARY CONTAINMENT

PENETRATION NUMBER & LETTER PREFIX

LETTER PREFIX CODE

M - PIPING

I - INSTRUMENTATION PIPING

INSIDE SHIELDED AREA

PENETRATION OF SHIELD WALL

CLASS AND/OR PIPING DESIGN TABLE CHANGE MARKER

| DRAWING RELEASE RECORD |           |         |                    |                | DRAWING RELEASE RECORD                         |      |           |      |       |
|------------------------|-----------|---------|--------------------|----------------|--|------|-----------|------|-------|
| REV.                   | SPEC. NO. | DATE    | DRAWN              | CHECKED        | DESCRIPTION                                    | REV. | SPEC. NO. | DATE | DRAWN |
| 1                      | H-2255    | 9-9-75  | adolph [illegible] | CB [illegible] | M-20 SHT 2 OF 5 WAS SHT MF-270.10.1 SHT 1 OF 4 |      |           |      |       |
| 2                      | H-2255    | 9-10-76 | adolph [illegible] | CB [illegible] | ADDED "FLUSHING DRAWING SYMBOL KEY"            |      |           |      |       |
| 3                      | H-2255    | 9-23-77 | adolph [illegible] | CB [illegible] | ADDED NOTE THAT SYMBOL 0 [illegible]           |      |           |      |       |

| DRAWING RELEASE RECORD |           |      |       |         | DRAWING RELEASE RECORD |      |           |      |       |
|------------------------|-----------|------|-------|---------|------------------------|------|-----------|------|-------|
| REV.                   | SPEC. NO. | DATE | DRAWN | CHECKED | DESCRIPTION            | REV. | SPEC. NO. | DATE | DRAWN |
|                        |           |      |       |         |                        |      |           |      |       |
|                        |           |      |       |         |                        |      |           |      |       |
|                        |           |      |       |         |                        |      |           |      |       |

|                |        |
|----------------|--------|
| PROJECT NUMBER | 4130   |
| DATE           | 9-9-75 |
| DATE           | 9-9-75 |
| DATE           | 9-9-75 |
| DATE           | 9-9-75 |

|            |             |
|------------|-------------|
| DATE       | 3-12-73     |
| APPROVED   | [signature] |
| STANDARD   | MF-270.10.1 |
| SH. 1 OF 4 |             |

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| P&ID INDEX & SYMBOLS                       |
| W.H. ZIMMER NUCLEAR POWER STATION UNIT-1   |
| THE CINCINNATI GAS & ELECTRIC COMPANY      |
| COLUMBUS & SO. FRONT OHIO ELECTRIC COMPANY |
| THE DAYTON POWER AND LIGHT COMPANY         |

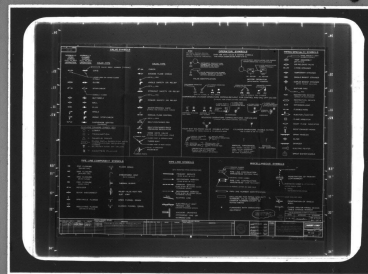
|             |        |
|-------------|--------|
| DRAWING NO. | M-20   |
| REV.        | B      |
| SHEET       | 2 OF 5 |

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