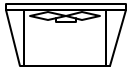


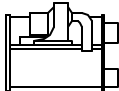
















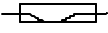













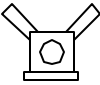
















P&ID/PFD SYMBOLS (GENERAL INSTRUMENT OR FUNCTION SYMBOLS)

FILE NAME	SYMBOL	DESCRIPTION	FILE NAME	SYMBOL	DESCRIPTION	FILE NAME	SYMBOL	DESCRIPTION
P150		COOLING TOWER	P168		HVAC COIL (A) HW HEATING WATER DX DIRECT EXPANSION CH CHILLED WATER STM STEAM (B) HCL HEATING COIL CCL COOLING COIL	P186		FLUID RECOVERY PUMP
P151		CHILLER	P169		UNIT HEATER (A) HW HEATING WATER DX DIRECT EXPANSION STM STEAM (B) HCL HEATING COIL	P187		DUAL SERVICE HEAT EXCHANGER
P152		HORIZONTAL CENTRIFUGAL PUMP	P170		PRESSURIZED GAS BOTTLE	P187A		SINGLE SERVICE HEAT EXCHANGER
P153		CENTRIFUGAL FAN WITH VARIABLE INLET VANES	P171		DOUBLE CONTAINMENT TANK	P188		MULTI BLADE DAMPER
P154		BLOWER/ CENTRIFUGAL FAN	P172		HUMIDIFIER	P189		OPPOSING BLADE DAMPER
P155		ROTARY PUMP	P173		MANUAL BALANCE DAMPER	P190		SINGLE BLADE DAMPER
P156		VERTICAL WET PIT PUMP	P174	NOT USED	NOT USED	P191		MOTOR
P157		PROGRESSIVE CAVITY PUMP	P175		MULTI POINT PITOT TUBE ARRAY	P192		TEST PORT
P158		VERTICAL SUMP PUMP	P176		DAMPER (NORMALLY OPEN) OR NORMALLY CLOSED	P193		INFRARED HEATER
P159		FLUID PUMP	P177	NOT USED	NOT USED	P194		HEATER
P160		AXIAL FAN	P178		EVAPORATIVE AIR COOLER	P195		DIAPHRAGM LINED TANK
P161		AXIAL FAN WITH VARIABLE INLET VANES	P179		OPPOSING BLADE DAMPER	P196		MIST ELIMINATOR
P162		2-STAGE RECIPROCATING AIR COMPRESSOR	P180		BACK DRAFT DAMPER	P197		HEPA FILTER
P163		SINGLE STAGE RECIPROCATING AIR COMPRESSOR	P181		SEPARATOR	P198		CARBON ABSORBER FILTER
P164		2-STAGE ROTARY TOOTH AIR COMPRESSOR	P182		SINGLE DUCT VARIABLE VOLUME BOX	P199		FILTER
P165		RECIPROCATING PUMP	P183		WING TYPE FACE AND BYPASS DAMPER (A) HW HEATING WATER DX DIRECT EXPANSION CH CHILLED WATER STM STEAM (B) HCL HEATING COIL CCL COOLING COIL			
P166		PRESSURE VESSELS, VERTICAL (SHOWN) OR HORIZONTAL (TANKS, RECEIVERS, SEPARATORS, SUMPS ETC.)	P184		COLLECTION BIN			
P167		TANK	P185		CYCLONE SEPARATOR			

NOTES:
WHEN ABBREVIATING COMPLY WITH NNSI Y1.1 AND/OR NATIONAL CAD STANDARD (NCS).

FOR SYSTEM ABBREVIATIONS USE THE MASTER SYSTEMS LIST IN THE LANL ENGINEERING MANUAL OST220-03-01, SECTION 210, TABLE 210-1.