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MECHANICAL ABBREVIATIONS

AAV	AUTOMATIC AIR VENT
ABC	ABOVE BOTTOM CHORD
ABDN	ABANDONED
ABV	ABOVE
AC	AIR COMPRESSOR
AC	ACCESS COVER
AC	AFTER COOLER
ACC	AIR COOLED CONDENSER
ACC	ACCUMULATOR
ACCH	AIR COOLED CHILLER
ACFM	ACTUAL CUBIC FEET PER MINUTE
ACST	ACOUSTICAL
ACU	AIR CONDITIONING UNIT
AD	AIR DRYER
ADD	ADDENDUM
ADJ	ADJACENT
ADJT	ADJUSTABLE
ADMIN	ADMINISTRATIVE
AF	AIR FILTER
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AL	ALUMINUM
ALT	ALTERNATE
ALTV	ALTITUDE VALVE
AMB	AMBIENT
AMPS	AMPERES
ANC	ANCHOR
APNL	ACCESS PANEL
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
ARRG'T	ARRANGEMENT
AS	AIR SEPARATOR
ASR	AUTOMATIC SPRINKLER RISER
ASSOC	ASSOCIATION / ASSOCIATES
ATTEN	ATTENUATOR
AVG	AVERAGE
BA	BALL VALVE
BBC	BELOW BOTTOM CHORD
BBD	BOTTOM BLOWDOWN
BCS	BLACK CARBON STEEL
BC	BOTTOM CHORD OF TRUSS
BDD	BACK DRAFT DAMPER
BLWDN	BLOW DOWN
BETW	BETWEEN
BF	BLIND FLANGE
BF	BUTTERFLY VALVE
BFF	BELOW FINISHED FLOOR
BFP	BACKFLOW PREVENTER
BFDW	BOILER FEEDWATER
BG	BLAST GATE
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BM	BEAM
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BOS	BOTTOM OF STEEL
BOT	BOTTOM
BPV	BACK PRESSURE VALVE
BR	BRINE
BRCG	BRACING
BRKT	BRACKET
BS	BLOW-OFF SILENCER
BSMT	BASEMENT
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
BULL	BULLETIN
BV	BLOW OFF VALVE
BW	BUTT WELD
BY ARCH	BY ARCHITECTURAL TRADES
C	CENTIGRADE
C/C	CENTER TO CENTER
CAS	PLANT SERVICE AIR
CAD	COMPRESSED AIR DRYER
CAI	COMPRESSED AIR INSTRUMENT
CAIH	COMPRESSED AIR INTAKE HOOD
CAU	CAUSTIC
CAV	CONSTANT AIR VOLUME
CB	CATCH BASIN
CCW	COUNTER CLOCKWISE
CDW	COLD DOMESTIC WATER
CF	CUBIC FEET
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CHEM	CHEMICAL
CHKD PL	CHECKERED PLATE
CHL	CHILLER
CHP	CHILLED WATER PUMP-SECONDARY
CHSP	CHILLED WATER SECONDARY PUMP
CHR	CHILLED WATER RETURN
CHS	CHILLED WATER SUPPLY
CI	CAST IRON
CISP	CAST IRON SOIL PIPE
CIWP	CAST IRON WATER PIPE
CJ	CONSTRUCTION JOINT
CK	CHECK VALVE
CL	CENTERLINE
CLG	CEILING
CLR	CLEAR
CM	CENTIMETER
CNDS	CONDENSATE
CNDS-P	CONDENSATE, PUMPED
CNW	CONDENSER WATER
CNR	CONDENSATE RECEIVER
CO	CARBON MONOXIDE
CO	CLEAN OUT
CO2	CARBON DIOXIDE
COL	COLUMN
COMP	COMPRESSOR
CONC	CONCRETE
COND	CONDENSER (CONDENSATION)
CONN	CONNECTION
CONSTR	CONSTRUCTION
CONT	CONTINUATION (CONTINUOUS)
CONTR	CONTRACT(OR)
CP	CONTROL PANEL
CP	CENTIPOISE
CPLG	COUPLING
CPVC	CHLORINATED POLYVINYL CHLORIDE
CRV	CONDENSATE RECEIVER VENT
CS	CARBON STEEL
CTC	COOLING TOWER
CTR	CENTER
CTWR	COOLING TOWER WATER RETURN
CTWS	COOLING TOWER WATER SUPPLY
CU	COPPER
CUH	CABINET UNIT HEATER
CWP	COOLING WATER PUMP
CWR	COOLING TOWER WATER RETURN
CWS	COOLING TOWER WATER SUPPLY

CV	CONTROL VALVE
Cv	FLOW COEFFICIENT
CW	CITY WATER
CW	CLOCKWISE
CWR	COOLING WATER RETURN
CWS	COOLING WATER SUPPLY
CY	CUBIC YARD
CYL	CYLINDER
D&T	DRIP AND TRAP
DAP	ACID DRAIN PUMP
DB	DRY BULB TEMPERATURE
dB	DECIBEL
DEG	DEGREE
DEG C	DEGREE CENTIGRADE
DEG F	DEGREE FAHRENHEIT
DM	DEMINERALIZED WATER
DEPT	DEPARTMENT
DES	DESIGN
DET	DETAIL
DEX	DIESEL ENGINE EXHAUST
DF	DRINKING FOUNTAIN
DFR	DIESEL FUEL RETURN
DFS	DIESEL FUEL SUPPLY
DG	DOOR GRILLE
DI	DEIONIZED WATER
DI	DUCTILE IRON
DIA	DIAMETER
DIAPH	DIAPHRAGM
DIFF	DIFFUSER
DIM	DIMENSION
DISCH	DISCHARGE
DIST	DISTILLED WATER
DM	DIAPHRAGM VALVE
DN	DOWN
DOF	DIESEL FUEL OIL
DP	DIFFERENTIAL PRESSURE
DPR	DAMPER
DPS	DIFFERENTIAL PRESSURE SWITCH
DR	DRAIN
DS	DISCHARGE SILENCER
DS	DOWN SPOUT
DSP	DUPLEX SUMP PUMP
DV	DIAPHRAGM VALVE
DW	DOMESTIC WATER
DWG	DRAWING
DWH	DOMESTIC WATER HEATER-STEAM
EA	EACH
EAT	ENTERING AIR TEMPERATURE
EBH	ELECTRIC BASEBOARD HEATER
ED	EQUIPMENT DRAIN
EF	EXHAUST FAN
EFF	EFFICIENCY
EFL	EFFLUENT
EG	EXHAUST GRILLE
EHC	ELECTRIC HEATING COIL
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRIC(AL)
ELL	ELBOW
EMER	EMERGENCY
EMS	EMERGENCY SHOWER AND EYEWASH
EMW	EMERGENCY EYE WASH
ENCL	ENCLOSURE
ENT	ENTERING
EQ	EQUAL
EQPT	EQUIPMENT
ER	EXHAUST REGISTER
ESP	EXTERNAL STATIC PRESSURE
EST	ESTIMATED
EUH	ELECTRIC UNIT HEATER
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
EXP	EXPANSION
EXST	EXISTING
EXT	EXTERIOR
F	FAHRENHEIT
F/F	FACE TO FACE
FA	FIRE ALARM
FAI	FRESH AIR INTAKE
FAT	FINAL AIR TEMPERATURE
FC	FAIL CLOSED
FCU	FAN COIL UNIT
FD	FLOOR DRAIN
FDN	FOUNDATION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF	FINAL FILTER
FHC	FIRE HOSE CABINET
FHR	FIRE HOSE RACK/REEL
FIN	FINISH
FIXT	FIXTURE
FL	FIRE LINE
FL	FLOOR
FLEX	FLEXIBLE CONNECTOR
FLEX CONN	FLEXIBLE CONNECTOR
FLG	FLANGE
FO	FAIL OPEN
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FP	FAN POWERED
FP	FILTER PRESS
FP	FIRE PROTECTION
FP-CO2	FIRE PROTECTION, CO2
FPC	FIRE PROTECTION, CHEMICAL
FPM	FEET PER MINUTE
FPRF	FIREPROOF
FPT	FEMALE PIPE THREAD
FPV	FREON PURGE VENT
FRP	FIBERGLASS REINFORCED PLASTIC
FS	FLOW SWITCH
FT	FEET
FTG	FITTING
FTG	FOOTING
FTHD	FEET OF HEAD
FTR	FIN TUBE RADIATION
FUT	FUTURE
FV	FOOT VALVE
FW	FIRE WATER

GA	GAGE
GA	GATE VALVE
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GC	GENERAL CONTRACT(OR)
GCS	GALVANIZED CARBON STEEL
GD	GLOBE DIAPHRAGM
GENL	GENERAL
GL	GLOBE VALVE
GP	PROPANE GAS
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	GRADE
GRL	GRILLE
H	HEIGHT
HAC	HI-TEMP COMPRESSED AIR
HB	HOSE BIBB
HC	HEATING COIL
HCP	HANDICAPPED
HD	HEAD
HDGAF	HOT DIPPED GALVANIZED AFTER FABRICATION
HDW	HOT DOMESTIC WATER
HDWR	HOT DOMESTIC WATER RETURN
HDWS	HOT DOMESTIC WATER SUPPLY
HEPA	HIGH EFFICIENCY PARTICULATE AIR FILTER
Hg	MERCURY
HGR	HANGER
HGT	HEIGHT
HH	HOSE HYDRANT
HO	HUB OUTLET
HORIZ	HORIZONTAL
HP	HIGH POINT
HP	HIGH PRESSURE
HP	HORSEPOWER
HPC	HIGH PRESSURE CONDENSATE
HPNG	HIGH PRESSURE NATURAL GAS
HPS	HIGH PRESSURE STEAM
HR	HOSE REEL
HSB	HIGH STRENGTH BOLT
HTCP	HEAT TRACE CONTROL PANEL
HV	HEATING AND VENTILATING
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HVU	HEATING AND VENTILATING UNIT
HWH	HOT WATER HEATER
HHWR	HEATING HOT WATER RETURN
HHWS	HEATING HOT WATER SUPPLY
HYD	HYDRANT
Hz	HERTZ
I&C	INSTRUMENTATION AND CONTROLS
IAC	INSTRUMENT AIR COMPRESSOR
IAF	INSTRUMENT AIR FILTER
IAR	INSTRUMENT AIR RECEIVER
ICFM	INITIAL CUBIC FEET PER MINUTE
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IH	INTAKE HOOD
IN	INCH(ES)
INC	INCORPORATED
INSUL	INSULATION
INTR	INTERIOR
INV	INVERT
IN WC	INCHES WATER COLUMN
IN WG	INCHES WATER GAUGE
IPC	HIGH PRESSURE CONDENSATE
IPS	HIGH PRESSURE STEAM-125 PSIG
ITC	INSPECTOR TEST CONNECTION
IW	INDUSTRIAL WASTEWATER
IW-P	INDUSTRIAL WASTEWATER, PUMHED
JC	JANITOR CLOSET
K	KIPS
KG	KNIFE GATE
kPa	KILOPASCALS
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
KW	KILOWATT
KWH	KILOWATT-HOUR
L	LENGTH
LAB	LABORATORY
LAV	LAVATORY
LB	POUND
LBS	POUNDS
LDB	LEAVING DRY BULB
LG	LENGTH
LH	LEFT HAND
LIN	LINEAR
LO	LOCKOUT
LP	LOW POINT
LP	LOW PRESSURE
LPC	LOW PRESSURE CONDENSATE
LPM	LITERS PER MINUTE
LPS	LOW PRESSURE STEAM-15 PSIG
LVA	LEAVING AIR
LVG	LEAVING
LVR	LOUVER
LWB	LEAVING WET BULB
LWT	LEAVING WATER TEMHERATURE
M	METER
MACH	MACHINE
MATL	MATERIAL
MAU	MAKE-UP AIR UNIT
MAV	MANUAL AIR VENT
MAX	MAXIMUM
MBH	THOUSAND BTU PER HOUR
MC	MIST COLLECTOR
MCC	MOTOR CONTROL CENTER
MD	MOTORIZED DAMHER
MECH	MECHANICAL
MEZZ	MEZZANINE
MFG	MANUFACTURING
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MK	MARK
MM	MILLIMETER
MDPR	MANUAL DAMHER
MO	MOTOR OPERATED
MOLWT	MOLECULAR WEIGHT
MPT	MALE PIPE THREAD
MTD	MOUNTED
MUA	MAKE UP AIR
MW	MILL WATER

NC	NOISE CRITERIA
NC	NORMALLY CLOSED
ND	NECK DIAMETER
ND	NEEDLE VALVE
NEC	NATIONAL ELECTRIC CODE
NG	NATURAL GAS
NGM	NATURAL GAS METER
NK	NECK
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NO	NUMBER
NOM	NOMINAL
NORM	NORMAL
NPT	NATIONAL PIPE THREAD
NPSH	NET POSITIVE SUCTION HEAD
NPW	NON-POTABLE WATER
NTS	NOT TO SCALE
OXY	OXYGEN
OA	OUTSIDE AIR
OAD	OUTSIDE AIR DAMPER
OAI	OUTSIDE AIR INTAKE
OBD	OPPOSING BLADE DAMPER
OD	OUTSIDE DIAMETER
OPER	OPERATOR
OPNG	OPENING
OPP	OPPOSITE
ORD	OVERFLOW ROOF DRAIN
OS&Y	OUTSIDE STEM AND YOKE
OZ	OUNCE
P	PUMP
PA	PIPE ANCHOR
P&ID	PIPING & INSTRUMENTATION DIAGRAM
PCHP	PRIMARY CHILLED WATER PUMP
PCR	PUMPED CONDENSATE RETURN
PCV	PRIMARY PUMP CONTROL VALVE
PD	PRESSURE DIFFERENTIAL
PD	PRESSURE DROP
PDS	PRESSURE DIFFERENTIAL SWITCH
PDP	PRESSURE DEW POINT
PE	POLYETHYLENE
PEN	PENETRATION
PERF	PERFORATED
PG	PIPE GUIDE
PG	PRESSURE GAUGE
PH	PHASE
PIV	POST INDICATOR VALVE
PL	PLATE
PL	PLUG VALVE
PNL	PANEL
POC	POINT OF CONNECTION
POU	POINT OF USE
PP	POWER PANEL
PDI	PRESSURE DIDIFFERENTAL INDICATOR
PDR	PROCESS DRAIN
PPH	POUNDS PER HOUR
PRESS	PRESSURE
PREFAB	PREFABRICATED
PRI	PRIMARY
PROJ	PROJECT
PRV	PRESSURE REDUCING VALVE
PRV	PRESSURE RELIEF SAFETY VALVE
PS	PIPE SUPPORT
PS	PRESSURE SWITCH
PSF	POUNDS PER SQUARE FOOT
PSV	PRESSURE SAFETY VALVE
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH, ABSOLUTE
PSID	POUNDS PER SQUARE INCH, DIFFERENTIAL
PSIG	POUNDS PER SQUARE INCH, GAUGE
PT	POINT
PT	PRESSURE TRANSMITTER
PTFE	POLYTETRAFLUROETHYLENE
PVC	POLYVINYL CHLORIDE
PVDF	POLYVINYLIDENE FLUORIDE PLASTIC
PW	POTABLE WATER
PWR	POWER
QD	QUICK DISCONNECT
QDD	QUICK DISCONNECT, DRY
R or RAD	RADIUS
R or RSR	RISER
RA	RETURN AIR
RAG	RETURN AIR GRILLE
RAR	RETURN AIR REGISTER
RC	ROOF CONDUCTOR
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
RECIRC	RECIRCULATED
RED	REDUCER / REDUCTION
REF	REFERENCE
REG	REGISTER
REQD	REQUIRED
RF	RAISED FACE
RF	RETURN FAN
RFGT	REFRIGERANT
RFGV	REFRIGERANT VENT
RH	RELATIVE HUMIDITY
RH	RIGHT HAND
RHH	ROOF HOSE HOUSE
RM	ROOM
RP	RECIRCULATION PUMP
RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
RPM	REVOLUTIONS PER MINUTE
RS	ROOF SUMP
RTN	RETURN
RTU	ROOF TOP UNIT
RV	ROOF VENT
RV	RELIEF VALVE

S	SLOPE
SA	SUPPLY AIR
SA	SURGE ARRESTOR
SAG	SUPPLY AIR GRILLE
SAN	SANITARY SEWER, GRAVITY
SAN-F	SANITARY SEWER, FORCED
SAN-P	SANITARY SEWER, PUMPED
SAR	SUPPLY AIR REGISTER
SAT	SATURATION
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SCR	SCREW
SCV	SECTIONAL CONTROL VALVE
SD	SMOKE DETECTOR
SD	SUPPLY DIFFUSER
SEC	SECOND
SECT	SECTION
SEP	SEPARATE
SF	SUPPLY FAN
SFT	STEAM FIN TUBE
SH	SPRING HANGER
SHR	SHOWER
SHT	SHEET
SIM	SIMILAR
SLV	SLEEVE
SP	SPECIFIC
SP	STATIC PRESSURE
SP	SUMP PUMP
SPECS	SPECIFICATIONS
SQ	SQUARE
SQ FT	SQUARE FOOT
SQ YD	SQUARE YARD
SS	SERVICE SINK
SS	STRUCTURAL STEEL
SSH	SAFETY SHOWER & EYE WASH
SST	STAINLESS STEEL
SSU	SECOND SAYBOLT UNIVERSAL
ST	STEAM TRAP
STA	STATION
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STM	STEAM
STOR	STORAGE
STR	STRAINER
STRU	STRUCTURAL
STV	STEAM VENT
STW	STORM WATER
STW-P	STORM WATER, PUMPED
SUBST	SUBSTATION
SUH	STEAM UNIT HEATER
SURF	SURFACE
SV	SMOKE VENT
SWS	SERVICE WATER
SYS	SYSTEM
T	TRAP-STEAM
TBD	TO BE DETERMINED
TC	TOP CHORD
TDH	TOTAL DYNAMIC HEAD
TEMP	TEMPERATURE
THD	THREAD
THK	THICK
TOD	TOP OF DUCT
TOF	TOP OF FOOTING
TOS	TOP OF STEEL
TRV	THERMO/TEMP RELIEF VALVE
TSP	TOTAL STATIC PRESSURE
TW	TEMPERED WATER
TYP	TYPICAL
UG	UNDERGROUND
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED
UR	URINAL
V	VENT
V	VOLT(AGE)
VA	VALVE
VAC	VACUUM
VAC	VOLTS ALTERNATING CURRENT
VAV	VARIABLE AIR VOLUME
VCD	VOLUME CONTROL DAMPER (MANUAL)
VCP	VITRIFIED CLAY PIPE
VD	VOLUME DAMPER
VEL	VELOCITY
VENT	VENTILATOR
VERT	VERTICAL
VEST	VESTIBULE
VFD	VARIABLE FREQUENCY DRIVE
VISC	VISCOSITY
VOL	VOLUME
VTR	VENT THRU ROOF
W	WASTE
W	WIDTH (WIDE)
W/	WITH
W/O	WITHOUT
WB	WET BULB
WC	WATER CLOSET
WCO	WALL CLEAN OUT
WF	WASH FOUNTAIN
WFS	WATER FLOW SWITCH
WG	WATER GAUGE
WH	WALL HYDRANT
WH	WATER HEATER
WHA	WATER HAMMER ARRESTOR
WL	WATER LEVEL
WM	WATER METER
WOG	WATER OIL OR GAS
WOM	WOMEN'S
WSP	WORKING STEAM PRESSURE
WT	WEIGHT
WW	WELL WATER
WW	WELD WATER
XP	EXPLOSION PROOF
YD	YARD

NOTE:

1. FOR ADDITIONAL ABBREVIATIONS SEE INSTRUMENTATION AND CONTROL DRAWINGS

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BROOKHAVEN NATIONAL LABORATORY

UNDER CONTRACT WITH
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JOB TITLE: CENTRAL CHILLED WATER FACILITY PHASE II		DWG. TITLE: MECHANICAL ABBREVIATIONS	
ILR,GPP,LNI, HEM	DATE	ACCT. NO.	SHEET OF
SCALE: NO SCALE	DWN. BY: EP / REV'D BY: BN	JOB NO.: 11705	DWG. NO.
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