S-596 NOTE: TYPICAL INSTALLATION OF THREE VORTEX STEAM METERS WITH TWO MOTOR OPERATED BALL-TYPE METER REGULATING VALVES

(a) All material shall be furnished and installed by the customer except meters, meter gaskets, meter jackets, meter regulating valves, relays, flow computers and orifice plates which will be furnished by the company for installation by the customer. Items supplied by the company are shown cross hatched or otherwise marked.

(b) Meter size determines size of meter piping. The interior surface of the meter piping shall be smooth and round, without shoulders. Welding neck flanges on meter piping shall be installed without backing rings. All traces of welding, lead or flash inside of pipe shall be removed. All meter piping shall be inspected by the company after its fabrication and prior to its erection.

For four pipe diameters upstream and two pipe diameters downstream of the meter the internal surface of the pipe shall be:

- Roughness no greater than .0015", .0038", .0061" and .0089" for 1", 2", 3" and 4" pipe respectively.
- Surface to be free from mill scale, pits, holes, reaming scores, rifling, bumps or other irregularities.
- Pipe inside diameter shall in no way depart from the nominal pipe inside diameter by more than 0.33%

(c) Orifice plates

Load orifice plates or spacer plates will be supplied by the company as required. Plates shall be installed by the customer with the identification data on the handle facing the service side and the handle extending horizontally to the right when viewed from the service side.

(d) Flanges shall conform to ASTM specification A105 ANSI B16.5.
(e) Bolts shall be chrome-moly conforming to ASTM specification A193, grade B7, hexagonal head.
(f) Nuts shall be carbon steel conforming to ASTM specification A194, grade CH, hexagonal.
(g) Gaskets shall conform to Con Edison Co. specification S-290G. Flange gaskets shall be field coated with high temperature anti-seize and lubricating compound - "never see" or equal. Flexitite gasket of 300N design is acceptable as an alternate.

(h) Thermal insulation of the piping up to the customer's main stop valve shall conform to Con Edison specification S-902.
(i) Steel pipe shall conform to ASTM specification A53, grade B. Seamless, schedule 40 for 4" and larger size. 2" and smaller diameter pipe shall be schedule 80. 3" and larger diameter pipe shall be schedule 40.

(j) All construction by the customer from the point of service termination up to and including the meter outlet valve shall be subject to approval by the company.

(k) The steam meter or ball valve shall be installed level with electronic housing or motor in the horizontal position (50 clockwise or 90 clockwise position). The meter piping shall be straight, horizontal and leveled clear space above, below, behind & in front of the meters and service equipment must be provided for maintenance.

(l) The installation of all steam piping and equipment shall conform to ASME code bolt.

(m) Steam traps before meters(s) will be furnished by the company for installation by the customer in accordance with Con Edison company drawing E0-9955-B.

(n) The company will install meters, make final wiring connection, and seal meter stop valves.

(o) Meter piping shall be adequately supported at points indicated or where piping support does not interfere with the removal of nuts & bolts from the flanges of the maintenance & operation of blow down valves. Provisions for attaching housing equipment shall be provided for installation and maintenance of 4" motorized valves and 4" meters in a manner acceptable to the company.

(p) See steam engineering specification no. S-988 for assembly of vortex meter.

(q) No permanent thermal insulation shall be installed at the flanges of the orifice plate, meter and meter regulating valves. Removable insulation jackets are permitted on the meter and meter regulating valve main body.

(r) Drill 1/2" hole through pipe wall at center of socket for 1/2" drain valve on meter piping. Tap hole must be free of burrs and obstructions.

(s) Motorized inside service stop valve must be designed to close electronically and open manually. Control switch shall be located outside steam room and in a secure location such as office of eng. or BLDG MGR.

* See "Approved Steam Service Equipment" booklet.

Steam Distribution Engineering
Specification No. S-596

Typical installation of three vortex steam meters (1" to 4") with two motor operated ball-type meter reg. valves

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Steam Engineering Dept.

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