

UNITED ENGINEERS & CONSTRUCTORS INC.  
Philadelphia, Pennsylvania 19105

Specification  
for  
Flow Transmitters

Westinghouse Electric Corporation  
Indian Point Generating Station-Unit No. 2  
Consolidated Edison Company of New York

Date: June 15, 1967

Specification No. 9321-01-252-23

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This specification covers the design, fabrication and delivery of flow transmitters for use in various steam and condensate systems of a Westinghouse turbo-generator.

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SECTION I

ENGINEERING DATA

1. Conditions of Service

- A. Type of Service . . . . . Public Utility Power Plant.
- B. Location . . . . . All equipment will be installed in an indoor station.

2. Design Data

A. General Requirements:

The transmitters will be used to send a pneumatic signal to remotely located receiver recorders and/or indicators.

B. Detail Requirements:

- 1. Refer to instrument specification sheets, numbers 1 to 7, inclusive, attached to and made a part of this specification.
- 2. All transmitters shall be tagged as noted on specification sheets. Tags shall be brass or aluminum and shall be attached with wire.

C. Equipment and Services to be Furnished by the Seller:

The Seller shall design, fabricate and deliver transmitters and orifice plates as covered by the specification sheets forming a part of this specification.

D. Equipment and Services to be Furnished by Others:

- 1. Unloading and installation of equipment.
- 2. External piping to transmitters.
- 3. Remote mounted recorders and indicators.
- 4. Orifice flanges.
- 5. Clean, dry instrument air at pressure of 75 psig.

SECTION II

GENERAL SPECIFICATIONS

1. Work Included

Seller shall furnish and deliver the equipment herein specified.

2. Acceptance Tests

If acceptance tests are made, the Owner will make them at his own expense.

Such tests will be made six months after the equipment has been put into regular service. Conditions of tests made by the Owner, prior to acceptance, shall be mutually established by the Seller and the Owner. Additional tests may be made within one year after commencing operation to determine whether the equipment meets this specification under all conditions of operation. Seller will be given the opportunity to witness these tests at his own expense. Tests will be completed within five years after shipment of equipment.

3. Performance

The equipment supplied shall be of ample capacity to perform its function adequately under the conditions herein specified, and shall in all its parts operate successfully at all specified conditions up to and including the maximum specified condition without undue noise, overheating, straining of parts, wear or vibration.

United Engineers & Constructors Inc.  
Philadelphia, Pennsylvania 19105

ADDENDUM NO. 1  
for  
FLOW TRANSMITTERS

for

Westinghouse Electric Corporation  
Indian Point Generating Station-Unit No. 2  
Consolidated Edison Company

Date: October 20, 1967  
Spec. No.: 9321-01-252-23

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1. Add the following four (4) flow transmitters & flow nozzles in accordance with the attached specification sheet No. 8, dated October 20, 1967:

<u>Instrument No.</u>	<u>Service</u>
FT-1200	Auxiliary Feed Water Flow to S.G. 21
FT-1201	Auxiliary Feed Water Flow to S.G. 22
FT-1202	Auxiliary Feed Water Flow to S.G. 23
FT-1203	Auxiliary Feed Water Flow to S.G. 24

DIFFERENTIAL PRESSURE INSTRUMENT

U. E. & C. J. O. 9321-01  
DATE 10-20-67 BY WLW  
REV. \_\_\_\_\_

SPEC. NO. 9321-01-252-23  
SHEET NO. 0 OF \_\_\_\_\_  
TAG NO. FT-1200 GEN. 21  
FT-1201 GEN. 22  
FT-1202 GEN. 23  
FT-1203 GEN. 24

SPECIFICATION SHEET

CLIENT WESTINGHOUSE ELECTRIC CORP  
LOCATION INDIAN POINT POWER PLANT-UNIT No. 2  
SERVICE AUX. FEED WATER FLOW TO STEAM GENERATORS 21, 22, 23 & 24 (4-Req'd.)

GENERAL	DESCRIPTION:	RECORDER <input type="checkbox"/>	INDICATOR <input type="checkbox"/>	BLIND <input type="checkbox"/>	CONTROLLER <input type="checkbox"/>	TRANSMITTER <input type="checkbox"/>	INTEG. <input type="checkbox"/>
	CASE:	RECTANGULAR <input type="checkbox"/>	CIRCULAR <input type="checkbox"/>	COLOR: _____		BLACK <input type="checkbox"/>	OTHER <u>MER. STD.</u>
CONTROL	MOUNTING:	FLUSH <input type="checkbox"/>	SURFACE <input type="checkbox"/>	BRACKET <input type="checkbox"/>	NO. PTS. RECORDING _____		INDICATING _____
	CHART TYPES:	CIRC. <input type="checkbox"/>	RANGE: _____	SQ. ROOT <input type="checkbox"/>	UNIFORM <input type="checkbox"/>	REV / DAY _____	
	SCALE: TYPE _____	RANGE: _____	SQ. ROOT <input type="checkbox"/>	UNIFORM <input type="checkbox"/>			
	CHART DRIVE:	SPRING <input type="checkbox"/>	DAY WIND <input type="checkbox"/>	ELECTRIC <input type="checkbox"/>	EXP. PROOF <input type="checkbox"/>	V _____	CY _____
DIFFERENTIAL UNIT	TYPE:	PNEUMATIC <input type="checkbox"/>	3-15 PSIG <input type="checkbox"/>	ELECTRIC <input type="checkbox"/>	OUTPUT _____		
	MTG. LOCATION:	INTERNAL <input type="checkbox"/>	PLUG-IN <input type="checkbox"/>	REMOTE <input type="checkbox"/>			
	PROP. _____ %	RESET <input type="checkbox"/>	RATE <input type="checkbox"/>	ON-OFF <input type="checkbox"/>	OTHER _____		
	ON MEASUREMENT INCREASE, OUTPUT:	INCREASES <input type="checkbox"/>		DECREASES <input type="checkbox"/>			
PRIMARY ELEMENT	AUTO-MAN SWITCH:	NONE <input type="checkbox"/>	INTERNAL <input type="checkbox"/>	EXTERNAL <input type="checkbox"/>	INTEGRAL <input type="checkbox"/>		
	SETPOINT ADJUSTMENTS:	PNEUMATIC <input type="checkbox"/>		ELECTRIC <input type="checkbox"/>	INTERNAL <input type="checkbox"/>		
	MANUAL REG:	NONE <input type="checkbox"/>	IN CASE <input type="checkbox"/>	SUB-PANEL <input type="checkbox"/>	USED WITH INSTR. NO. _____		
	TYPE:	PNEUMATIC <input type="checkbox"/>	OUTPUT: _____	3-15 <input type="checkbox"/>	<u>LINEAR WITH FLOW</u>		
OPERATING CONDITIONS	ELECTRIC <input type="checkbox"/>	OUTPUT: _____	EXP. PROOF <input type="checkbox"/>				
	SERVICE:	FLOW <input type="checkbox"/>	LEVEL <input type="checkbox"/>	DIFF. PRESS. <input type="checkbox"/>	DIFF. RANGE <u>0-150 IN. H<sub>2</sub>O</u>		
	TYPE:	FORCE BAL. <input type="checkbox"/>	BELLOWS <input type="checkbox"/>	MERC. MANO. <input type="checkbox"/>	OTHER _____		
	BODY MATL:	STEEL <input type="checkbox"/>	STHL. STL. <input type="checkbox"/>	OTHER _____ RATING <u>1085</u> PSIG AT <u>450</u> °F			
ACCESSORIES	ELEMENT MATL:	STHL. STL. <input type="checkbox"/>	OTHER _____				
	PROCESS CONNECTION SIZE:	NPT <input type="checkbox"/>	1/4" <input type="checkbox"/>	1/2" <input type="checkbox"/>	OTHER _____		
	TYPE:	ORIFICE <input type="checkbox"/>	FLOW NOZ. <input type="checkbox"/>	VENTURI <input type="checkbox"/>	OTHER <u>WELD-IN</u>		
	TYPE TAPS:	FLANGE <input type="checkbox"/>	VENA CONTRACTA <input type="checkbox"/>	PIPE <input type="checkbox"/>	OTHER _____		
NOTES	PIPE I.D.:	<u>3.826</u> "	FLANGE SIZE: _____ "	LB. ASA; TYPE: _____			
	ELEMENT MATL:	<u>304 STNL. STL.</u>	BORE: <u>BY MER.</u> "	BETA RATIO: <u>BY MER.</u>			
	FLUID:	<u>FEED WATER</u>	FLOW: NORMAL <u>200</u>	FULL SCALE <u>450</u>	UNITS <u>GPM</u>		
	PRESSURE:	NORMAL _____	PSIG. MAX. <u>1085</u>	PSIG. TEMPERATURE: NORMAL <u>60</u> °F	MAX. <u>450</u> °F		
	SPECIFIC GRAVITY:	<u>1.0</u>	AT <u>60</u> °F MOL. WT. _____	VISCOSITY _____ CP AT _____ °F			
	BASE CONDITIONS:	PSIA. <u>60</u> °F	STEAM: QUALITY _____ %	SUPERHEAT: _____ °F			
	FILTER-REGULATOR <input type="checkbox"/>	SUPPLY GAUGE <input type="checkbox"/>	MTG. BRACKET <input type="checkbox"/>	COND. POTS <input type="checkbox"/>	OUTPUT-GAUGE <input type="checkbox"/>		
	CHARTS: _____	INKSET <input type="checkbox"/>	METER MANIFOLD <input type="checkbox"/>	CONTROLLER MANIFOLD <input type="checkbox"/>			
ELECT. CONTACTS: _____							
OTHER: _____							