



Commonwealth Edison  
One First National Plaza, Chicago, Illinois  
Address Reply to: Post Office Box 767  
Chicago, Illinois 60690

DMO

December 15, 1983

Mr. J. G. Keppler, Regional Administrator  
U.S. Nuclear Regulatory Commission  
799 Roosevelt Road - Region III  
Glen Ellyn, IL 60137

Subject: Byron Generating Station Units 1 and 2  
Braidwood Generating Station Units 1 and 2  
Barton Instrument Accuracy  
NRC Docket Nos. 50-454, 50-455, 50-456,  
and 50-457

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- References (a): January 28, 1983 letter from T. R. Tramm  
to J. G. Keppler.
- (b): March 28, 1983 letter from T. R. Tramm  
to J. G. Keppler.
- (c): June 1, 1983 letter from T. R. Tramm  
to J. G. Keppler.
- (d): September 8, 1983 letter from T. R. Tramm  
to J. G. Keppler.

Dear Mr. Keppler:

This letter provides the final report on a deficiency reportable pursuant to 10 CFR 50.55(e) regarding the accuracy of Barton electronic instrument transmitters being installed at Byron and Braidwood stations. For NRC tracking purposes, this deficiency is numbered 82-11 for Byron and 82-12 for Braidwood.

As indicated in the interim reports on this deficiency, Barton and Westinghouse have determined the causes of the thermal non-repeatability problem to be:

1. An electrical leakage path through the wiper arm and shaft of the zero and span calibration potentiometers to the instrument case, and
2. The Barton calibration technique for temperature compensation wherein the zero output of the transmitter was elevated, calibrated, and then not checked at the elevated temperatures after the original zero was restored.

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December 15, 1983

Based on a statistical reduction of static calibration data received from Barton on 80 transmitters, Westinghouse calculated the expected error deviations contributed by the two causes of the thermal non-repeatability problem and evaluated the effect of any additional deviation on functions performed by these transmitters. As a result of this evaluation, and after incorporating all instrument errors, it has been determined that adequate margin exists in the setpoints of all our transmitters to absorb the additional errors from the thermal non-repeatability.

To correct the first cause of the thermal non-repeatability problem, an insulating washer will be added to eliminate the electrical leakage through the potentiometers. Attachment A to this letter is a list, for each unit, of all transmitters that will have an insulating washer added. The transmitters that are lined out already have an insulating washer added.

To correct the second cause of the thermal non-repeatability problem, Westinghouse is working with Barton to establish a representative model which may make it possible for the calibration technique error to be corrected in the field, if necessary.

Based on the margin inherent in the setpoints of all the transmitters to absorb the additional thermal non-repeatability errors, adequate justification exists to defer any modifications or adjustments until all corrective actions can be implemented simultaneously. This approach is consistent with the position Westinghouse has taken for the operating plants.

Please address further questions regarding this matter to this office.

Very truly yours,



T. R. Tramm  
Nuclear Licensing Administrator

lm

cc: Director of Inspection and Enforcement  
Byron Resident Inspector  
Braidwood Resident Inspector

Attachment A

ATTACHMENT A

List of Barton Transmitters Requiring Installation  
of an Insulating Washer for Byron Station Units 1 and 2  
and Braidwood Station Units 1 and 2

BYRON UNIT 1

CAE

F. D.

✓ have not received washer fix

WESTINGHOUSE NUCLEAR ENERGY SYSTEMS

PWR SYSTEMS DIVISION

PLANT: COMMONWEALTH EDISON CO.

SHOP ORDER CAES 325 SPEC SHEET NO. 01010

SPECIFICATION FOR ELECTRONIC PRESS XMTRS (QUAL GROUP A): QALPT

REV 27 DATED 08/09/83

PAGE 1

SUPPLIER: BARTON

REFERENCES: #1.E-SPEC 953328 (XMTRS BUILT TO A W-PWR APPROVED QUALIFICATION GROUP A BASELINE)  
 #2.XMTRS TO BE BUILT TO W-PWR DWG.8765D4G

REV	GENERAL SPECIFICATIONS	REV	GENERAL SPECIFICATIONS
01 01)	XMTRS TO MEET QUAL GROUP A REQMTS (REF #1)	01 02)	REQD FOR SEISMIC & POST ACCIDENT APPLICATION
01 03)	BODY MATERIAL - 316 STAINLESS STEEL	24 04)	PRES ELEMENT - BOURDON TUBE
01 05)	OUTPUT - 4 TO 20 MA (DIRECT ACTING)	24 06)	ELEMENT MAT'L: 316 STAINLESS STEEL
04 07)	MOUNTING: WALL MOUNT (SEISMIC BRACKET)	01 08)	CASE COLOR - MFR STANDARD
01 09)	REF ACC +/- 0.5% OF CALIB SPAN (REF #1)	03 10)	ELEC CONN: 8 FT 18 AWG LEAD WIRES
01 11)	HYDRO OR PRESSURE TEST TO 1.5 X DESIGN PRES	01 12)	POWER SUPPLY - (BY OTHERS) SEE REFERENCE #1
01 13)	CF = INSTRUMENT LOCATED IN CONTAINMENT FIELD	01 14)	ITEMS WITH LOC=CF NO ALUMINUM OR HALOGENS
01 15)	PROCESS CONNECTION: 1/2 INCH NPT (FEMALE)	01 16)	TRANSMITTER LOADING - SEE REFERENCE # 1
01 17)	IF LOC=CF PAINT NON ST ST PARTS PER PS597755	01 18)	WETTED PARTS TO BE CLEANED PER PS292722
01 19)	PROCESS FLUID: OIL BORIC ACID UNLESS NOTED	01 20)	CASE MATERIAL - MFR STANDARD UNLESS LOC=CF

REV NOTES: (APPLICABLE ONLY AS REFERENCED IN THE TABLE)  
 26 A) PROCESS FLUID: CONDENSED STEAM  
 26 B) SPARE TRANSMITTER (CAE/CCE ONLY)

REV	TAG NO.	FUNCTION	LOC	NOTES	MAX AVAIL RANGE (PSIG)	CALIBRATED SPAN (PSIG)	DESIGN PRES (PSIG)	NOT USED	NOT USED	W-PWRSD PART NUMBER
✓ 26	1PT 406	*W-RNG PRESS LP	*CF	N/A	0 - 3000	0 - 3000	3000	*	*	*8765D46G01*
✓ 26	1PT 406S1	*W-RNG PRESS SPAR	*CF	B	0 - 3000	0 - 3000	3000	*	*	*8765D46G01*
✓ 26	1PT 455	*PRZR PRESS	*CF	N/A	1700-2500	1700-2500	2500	*	*	*8765D46G01*
✓ 26	1PT 455S	*PRZR PRESS SPARE	*CF	B	1700 - 2500	1700 - 2500	2500	*	*	*8765D46G01*
✓ 26	1PT 456	*PRZR PRESS	*CF	N/A	1700-2500	1700-2500	2500	*	*	*8765D46G01*
✓ 26	1PT 457	*PRZR PRESS	*CF	N/A	1700-2500	1700-2500	2500	*	*	*8765D46G01*
✓ 26	1PT 458	*PRZR PRESS	*CF	N/A	1700-2500	1700-2500	2500	*	*	*8765D46G01*

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WESTINGHOUSE NUCLEAR ENERGY SYSTEMS  
 PLANT: COMMONWEALTH EDISON CO.  
 SPECIFICATION FOR ELECTRONIC PRESS XMTRS (QUAL GROUP A): OAE/PT

SHOP ORDER CAES 325 SPEC SHEET NO. 01010  
 REV 27 DATED 08/09/83  
 SUPPLIER: BARTON

PWR SYSTEMS DIVISION  
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REV	TAG NO.	FUNCTION	LOC	NOTES	MAX AVAIL RANGE (PSIG)	CALIBRATED SPAN (PSIG)	DESIGN PRES (PSIG)	NOT USED	W-PWRS PART NUMBER
26	1PT 514	SG LP1 STM PRES	F	A	0 - 1300	0 - 1300	2250	*	*8765D46G01*
26	1PT 515	SG LP1 STM PRES	F	A	0 - 1300	0 - 1300	2250	*	*8765D46G01*
26	1PT 516	SG LP1 STM PRES	F	A	0 - 1300	0 - 1300	2250	*	*8765D46G01*
26	1PT 524	SG LP2 STM PRES	F	A	0 - 1300	0 - 1300	2250	*	*8765D46G01*
26	1PT 525	SG LP2 STM PRES	F	A	0 - 1300	0 - 1300	2250	*	*8765D46G01*
26	1PT 526	SG LP2 STM PRES	F	A	0 - 1300	0 - 1300	2250	*	*8765D46G01*
26	1PT 534	SG LP3 STM PRES	F	A	0 - 1300	0 - 1300	2250	*	*8765D46G01*
26	1PT 535	SG LP3 STM PRES	F	A	0 - 1300	0 - 1300	2250	*	*8765D46G01*
26	1PT 536	SG LP3 STM PRES	F	A	0 - 1300	0 - 1300	2250	*	*8765D46G01*
26	1PT 544	SG LP4 STM PRES	F	A	0 - 1300	0 - 1300	2250	*	*8765D46G01*
26	1PT 545	SG LP4 STM PRES	F	A	0 - 1300	0 - 1300	2250	*	*8765D46G01*
26	1PT 546	SG LP4 STM PRES	F	A	0 - 1300	0 - 1300	2250	*	*8765D46G01*

019 ENTRIES FOR THIS SPEC SHEET

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CAE

PWR SYSTEMS DIVISION

08/15/83

SUPPLIER SHALL SATISFY THE SEISMIC AND POST ACCIDENT QUALIFICATION REQUIREMENTS FOR QUALIFICATION GROUP A TRANS-MITTERS LISTED ON THIS SPEC SHEET THROUGH COMPLIANCE WITH A QUALIFIED BASE LINE DESIGN CERTIFIED BY W-PWRSD.

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APPROVED: *M. H. Taylor* DATED: 8-25-83

VERIFIED: *J. Allen* DATED: 8-25-83



# Byron Unit 1

## CAE

✓ need washer fix

F.D.

WESTINGHOUSE NUCLEAR ENERGY SYSTEMS

PWR SYSTEMS DIVISION

PLANT: COMMONWEALTH EDISON CO.

SHOP ORDER CAES 325

SPEC SHEET NO. 01410

SPECIFICATION FOR ELECTRONIC DP XMTRS (QUAL GROUP A): QAELDP

REV 28 DATED 08/09/83

PAGE 1

SUPPLIER: BARTON

REFERENCES: #1.E-SPEC 953328 (XMTRS BUILT TO A W-PWR APPROVED QUALIFICATION GROUP A BASELINE)  
#2.XMTRS TO BE BUILT TO W-PWR DWG.8765D45

REV	GENERAL SPECIFICATIONS	REV	GENERAL SPECIFICATIONS
01 01)	XMTRS TO MEET QUAL GROUP A REQMENTS (REF #1)	01 02)	REQD FOR SEISMIC & POST ACCIDENT APPLICATION
01 03)	BODY MATERIAL - 316 STAINLESS STEEL	27 04)	PRES ELEMENT - BELLOWS
01 05)	OUTPUT - 4 TO 20 MA (DIRECT ACTING)	27 06)	ELEMENT MAT'L - 316 STAINLESS STEEL
05 07)	MOUNTING: WALL MOUNT (SEISMIC BRACKET)	01 08)	CASE COLOR - MFR STANDARD
01 09)	REF ACC +/- 0.5% OF CALIB SPAN (REF #1)	06 10)	ELEC CONN: 8 FT 18 AWG LEAD WIRES
01 11)	HYDRO OR PRESSURE TEST TO 1.5 X DESIGN PRES	01 12)	POWER SUPPLY - (BY OTHERS) SEE REFERENCE #1
01 13)	CF = INSTRUMENT LOCATED IN CONTAINMENT FIELD	01 14)	ITEMS WITH LOC-CF NO ALUMINUM OR HALOGENS
01 15)	PROCESS CONNECTION: 1/2 INCH NPT (FEMALE)	01 16)	TRANSMITTER LOADING - SEE REFERENCE #1
01 17)	IF LOC-CF PAINT NON ST ST PARTS PER PS597755	01 18)	WETTED PARTS TO BE CLEANED PER PS292722
01 19)	PROCESS FLUID: DIL BORIC ACID UNLESS NOTED	27 20)	BELLOWS FILL: SILICONE OIL
01 21)	CASE MATERIAL - MFG STANDARD UNLESS LOC-CF		

REV NOTES: (APPLICABLE ONLY AS REFERENCED IN THE TABLE)

- 01 A) PROCESS FLUID: WATER
- 01 B) REFERENCE LEVEL SYSTEM DWG 1684C85 SHEET 23
- 01 C) REFERENCE LEVEL SYSTEM DWG 1684C85 SHEET 24
- 02 D) MAX RANGE: 260-65 IN WC (FOR CAE & CCE); 150-40 IN WC (FOR CBE & CDE)
- 02 E) CALIB SPAN: 236-73 IN WC (FOR CAE & CCE); 135-44 IN WC (FOR CBE & CDE)
- 12 F) SUPPLY PER W DWG.9552D11; EXCEPT TO BE FACTORY FILLED, NOT FIELD FILLED PER DWG.
- 27 G) PROCESS FLUID: AIR
- 27 H) SUPPLY PER CNT.PRESS.XMTR.INSTALL DWG.8765D52; EXCEPT 15 FT.CAPLRY. EACH SIDE OF PENETRATION
- 27 I) RANGE TO BE 5 PSIA -150 PSIG
- 27 J) SUPPLY W 351 SENSOR W-PART NO.8765D49G01 AND 30 FT. CAPILLARY (FACTORY FILLED)
- 27 K) MAX.AVAIL.RANGE/CALIB. SPAN: -5 -10 PSIG

REV	TAG NO.	FUNCTION	LOC	NOTES	MAX AVAIL RANGE (INCH WC)	CALIBRATED SPAN (INCH WC)	DESIGN PRES (PSIG)	NOT USED	CAP LP/HP (FT.)	W-PWRSD PART NUMBER
27	1LT 459	*PRZR LEVEL	*CF	B	525-200	479-221	2500	*	N/A	*8765D45G03*
27	1LT 460	*PRZR LEVEL	*CF	B	525-200	479-221	2500	*	N/A	*8765D45G03*

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## WESTINGHOUSE NUCLEAR ENERGY SYSTEMS

PLANT: COMMONWEALTH EDISON CO.  
SPECIFICATION FOR ELECTRONIC DP XMTRS (QUAL GROUP A): QAELOPSHOP ORDER CAES 325  
REV 28 DATED 08/09/83  
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PAGE 2  
SUPPLIER: BARTON

REV	TAG NO.	FUNCTION	LOC	NOTES	MAX AVAIL RANGE (INCH WC)	CALIBRATED SPAN (INCH WC)	DESIGN PRES (PSIG)	NOT USED	CAP LP/HP (FT.)	W-PWRS PART NUMBER
27	1LT 461	PRZR LEVEL	CF	B	525-200	479-221	2500		N/A	*8765045G03
27	1LT 501	SG1 W-R LEVEL	CF	A,C	560-185	512-175	1300		N/A	*8765045G03
27	1LT 502	SG2 W-R LEVEL	CF	A,C	560-155	512-175	1300		N/A	*8765045G03
27	1LT 503	SG3 W-R LEVEL	CF	A,C	560-155	512-175	1300		N/A	*8765045G03
27	1LT 504	SG4 W-R LEVEL	CF	A,C	560-185	512-175	1300		N/A	*8765045G03
27	1LT 517	SG1 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	*8765045G03
27	1LT 518	SG1 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	*8765045G03
27	1LT 519	SG1 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	*8765045G03
27	1LT 527	SG2 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	*8765045G03
27	1LT 528	SG2 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	*8765045G03
27	1LT 529	SG2 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	*8765045G03
27	1LT 537	SG3 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	*8765045G03
27	1LT 538	SG3 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	*8765045G03
27	1LT 539	SG3 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	*8765045G03
27	1LT 547	SG4 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	*8765045G03
27	1LT 548	SG4 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	*8765045G03
27	1LT 549	SG4 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	*8765045G03

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PWR SYSTEMS DIVISION  
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PAGE 3

SHOP ORDER CAES 325  
REV 28 DATED 08/09/83  
SUPPLIER: BARTON

WESTINGHOUSE NUCLEAR ENERGY SYSTEMS

PLANT: COMMONWEALTH EDISON CO.  
SPECIFICATION FOR ELECTRONIC DP XMTRS (QUAL GROUP A): QAELOP

REV	TAG NO.	FUNCTION	LOC	NOTES	MAX AVAIL RANGE (INCH WC)	CALIBRATED SPAN (INCH WC)	DESIGN PRES (PSIG)	NOT USED	CAP LP/HP (FT.)	W-PWSD PART NUMBER
27	1LT 556	SG1 N-R LEVEL	CF	A.C	NOTE D	NOTE E	1300		N/A	8765D45G03
27	1LT 557	SG2 N-R LEVEL	CF	A.C	NOTE D	NOTE E	1300		N/A	8765D45G03
27	1LT 558	SG3 N-R LEVEL	CF	A.C	NOTE D	NOTE E	1300		N/A	8765D45G03
27	1LT 559	SG4 N-R LEVEL	CF	A.C	NOTE D	NOTE E	1300		N/A	8765D45G03
27	1LT PC002	CONT. FLR. DRN	CF		112-3	112-0	50		55/73	8765D45G07
27	1LT PC003	CONT. FLR. DRN	CF		112-0	112-0	50		55/73	8765D45G07
27	1LT PC006	CONT. WTR. LEVEL	CF		79-0	79-0	50		10/73	8765D45G07
27	1LT PC007	CONT. WTR. LEVEL	CF		79-0	79-0	50		10/73	8765D45G07
28	1PT PC004	CONT. PRESS. A	CF	B.H	NOTE I	NOTE I	150		0/30	8765D45G08
28	1PT PC005	CONT. PRESS. B	CF	G.H	NOTE I	NOTE I	150		0/30	8765D45G08
27	1LT P5261	HR55-DRAIN-TK	F	A	123-0	123-0	60		35/38	8765D45G10
28	1PT P5262	HR55-DRAIN-TANK	F	J	NOTE K	NOTE K	60		0/25	8765D45G09

031 ENTRIES FOR THIS SPEC SHEET

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WESTINGHOUSE NUCLEAR ENERGY SYSTEMS

PWR SYSTEMS DIVISION

08/11/83

SUPPLIER SHALL SATISFY THE SEISMIC AND POST ACCIDENT QUALIFICATION REQUIREMENTS FOR QUALIFICATION GROUP A TRANSMITTERS LISTED ON THIS SPEC SHEET THROUGH COMPLIANCE WITH A QUALIFIED BASE LINE DESIGN CERTIFIED BY W-PWRSO.

APPROVED: *J.P. Williams* DATED: *8/15/83*

VERIFIED: *M.E. Lagan* DATED: *8/15/83*

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# Byron Unit 2

WESTINGHOUSE NUCLEAR ENERGY SYSTEMS

PLANT: COMMONWEALTH EDISON CO.  
SPECIFICATION FOR ELECTRONIC PRESS XMTRS (QUAL GROUP A): QAE/PT

REV

REFERENCES: #1 E-SPEC 953328 (XMTRS BUILT TO A W-PWR APPROVED QUALIFICATION GROUP A BASELINE)  
#2 XMTRS TO BE BUILT TO W-PWR DWG. 8765D46

## GENERAL SPECIFICATIONS

- 01 01) XMTRS TO MEET QUAL GROUP A REQMENTS (REF #1)
- 01 03) BODY MATERIAL - 316 STAINLESS STEEL
- 01 05) OUTPUT - 4 TO 20 MA (DIRECT ACTING)
- 04 07) MOUNTING: WALL MOUNT (SEISMIC BRACKET)
- 01 09) REF ACC +/- 0.5% OF CALIB SPAN (REF #1)
- 01 11) HYDRO OR PRESSURE TEST TO 1.5 X DESIGN PRES
- 01 13) CF = INSTRUMENT LOCATED IN CONTAINMENT FIELD
- 01 15) PROCESS CONNECTION: 1/2 INCH NPT (FEMALE)
- 01 17) IF LOC=CF PAINT NON ST PARTS PER PS597755
- 01 19) PROCESS FLUID: DIL BORIC ACID UNLESS NOTED

## REV

- 01 02) REOD FOR SEISMIC & POST ACCIDENT APPLICATION
- 24 04) PRES ELEMENT - BOURDON TUBE
- 24 06) ELEMENT MAT'L: 316 STAINLESS STEEL
- 01 08) CASE COLOR - MFR STANDARD
- 05 10) ELFC CONN: 8 FT 18 AWG LEAD WIRES
- 01 12) POWER SUPPLY - (BY OTHERS) SEE REFERENCE #1
- 01 14) ITEMS WITH LOC=CF NO ALUMINUM OR HALOGENS
- 01 16) TRANSMITTER LOADING - SEE REFERENCE #1
- 01 18) WEITED PARTS TO BE CLEANED PER PS292722
- 01 20) CASE MATERIAL - MFR STANDARD UNLESS LOC=CF

## GENERAL SPECIFICATIONS

REV NOTES: (APPLICABLE ONLY AS REFERENCED IN THE TABLE)  
26 A) PROCESS FLUID: CONDENSED STEAM  
26 B) SPARE TRANSMITTER (CAE/CCE ONLY)

REV	TAG NO.	FUNCTION	LOC	NOTES	MAX AVAIL RANGE (PSIG)	CALIBRATED SPAN (PSIG)	DESIGN PRES (PSIG)	NOT USED	W-PWRS PART NUMBER
26	1PT 406	*W-RNG PRESS LP 1*CF		N/A	0 - 3000	0 - 3000	3000		*8765D46G01*
26	1PT 455	*PRZR PRESS	*CF	N/A	1700-2500	1700-2500	2500		*8765D46G01*
26	1PT 456	*PRZR PRESS	*CF	N/A	1700-2500	1700-2500	2500		*8765D46G01*
26	1PT 457	*PRZR PRESS	*CF	N/A	1700-2500	1700-2500	2500		*8765D46G01*
26	1PT 458	*PRZR PRESS	*CF	N/A	1700-2500	1700-2500	2500		*8765D46G01*

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SHOP ORDER CAES 325 SPEC SHEET NO. 01010  
REV 27 DATED 08/05/83  
SUPPLIER: BARTON

PWR SYSTEMS DIVISION

PAGE 1

## WESTINGHOUSE NUCLEAR ENERGY SYSTEMS

PLANT: COMMONWEALTH EDISON CO.

SPECIFICATION FOR ELECTRONIC PRESS XMTRS (QUAL GROUP A): QAE1PT

SHOP ORDER CAES 325

REV 27 DATED 08/09/83

PWR SYSTEMS DIVISION

SPEC SHEET NO. 01010

PAGE 2

SUPPLIER: BARTON

CBE

REV*	TAG NO.	FUNCTION	LOC*	NOTES*	MAX AVAIL RANGE (PSIG)	CALIBRATED SPAN (PSIG)	DESIGN* PRES (PSIG)	NOT USED	NOT USED	W. PWRSD PART NUMBER
26	1PT 514	5G LP1 STM PRES	F	A	0 1300	0 1300	2250			0765B46601
26	1PT 515	5G LP1 STM PRES	F	A	0 1300	0 1300	2250			0765B46601
26	1PT 516	5G LP1 STM PRES	F	A	0 1300	0 1300	2250			0765B46601
26	1PT 524	5G LP2 STM PRES	F	A	0 1300	0 1300	2250			0765B46601
26	1PT 525	5G LP2 STM PRES	F	A	0 1300	0 1300	2250			0765B46601
26	1PT 536	5G LP2 STM PRES	F	A	0 1300	0 1300	2250			0765B46601
26	1PT 534	5G LP3 STM PRES	F	A	0 1300	0 1300	2250			0765B46601
26	1PT 535	5G LP3 STM PRES	F	A	0 1300	0 1300	2250			0765B46601
26	1PT 536	5G LP3 STM PRES	F	A	0 1300	0 1300	2250			0765B46601
26	1PT 544	5G LP4 STM PRES	F	A	0 1300	0 1300	2250			0765B46601
26	1PT 545	5G LP4 STM PRES	F	A	0 1300	0 1300	2250			0765B46601
26	1PT 546	5G LP4 STM PRES	F	A	0 1300	0 1300	2250			0765B46601

019 ENTRIES FOR THIS SPEC SHEET

END

CAES 325 01010 2

CBE

WESTINGHOUSE NUCLEAR ENERGY SYSTEMS

PWR SYSTEMS DIVISION

08/15/83

SUPPLIER SHALL SATISFY THE SEISMIC AND POST ACCIDENT QUALIFICATION REQUIREMENTS FOR QUALIFICATION GROUP A TRANS-MITTERS LISTED ON THIS SPEC SHEET THROUGH COMPLIANCE WITH A QUALIFIED BASE LINE DESIGN CERTIFIED BY W-PWRSO.

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APPROVED: *M. J. Taylor* DATED: 8-25-83

VERIFIED: *J. A. Moran* DATED: 8-25-83



BYRON UNIT 2

CBE

✓ have not received washer for

## WESTINGHOUSE NUCLEAR ENERGY SYSTEMS

PWR SYSTEMS DIVISION

PLANT: COMMONWEALTH EDISON CO.

SHOP ORDER CAES 325

SPEC SHEET NO. 01410

SPECIFICATION FOR ELECTRONIC DP XMTRS (QUAL GROUP A): QAELDP

REV 28 DATED 08/09/83

PAGE 1

SUPPLIER: BARTON

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 #2.XMTRS TO BE BUILT TO W-PWR DWG.8765D45

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01 05)	OUTPUT - 4 TO 20 MA (DIRECT ACTING)	27 06)	ELEMENT MAT'L - 316 STAINLESS STEEL
05 07)	MOUNTING: WALL MOUNT (SEISMIC BRACKET)	01 08)	CASE COLOR - MFR STANDARD
01 09)	REF ACC +/- 0.5% OF CALIB SPAN (REF #1)	06 10)	ELEC CONN: 8 FT 18 AWG LEAD WIRES
01 11)	HYDRO OR PRESSURE TEST TO 1.5 X DESIGN PRES	01 12)	POWER SUPPLY - (BY OTHERS) SEE REFERENCE #1
01 13)	CF = INSTRUMENT LOCATED IN CONTAINMENT FIELD	01 14)	ITEMS WITH LOC=CF NO ALUMINUM OR HALOGENS
01 15)	PROCESS CONNECTION: 1/2 INCH NPT (FEMALE)	01 16)	TRANSMITTER LOADING - SEE REFERENCE # 1
01 17)	IF LOC=CF PAINT NON ST ST PARTS PER PS597755	01 18)	WETTED PARTS TO BE CLEANED PER PS292722
01 19)	PROCESS FLUID: DIL BORIC ACID UNLESS NOTED	27 20)	BELLWS FILL: SILICONE OIL
01 21)	CASE MATERIAL - MFG STANDARD UNLESS LOC=CF		

REV NOTES: (APPLICABLE ONLY AS REFERENCED IN THE TABLE)

01 A) PROCESS FLUID: WATER  
 01 B) REFERENCE LEVEL SYSTEM DWG 1684C85 SHEET 23  
 01 C) REFERENCE LEVEL SYSTEM DWG 1684C85 SHEET 24  
 02 D) MAX RANGE: 260-65 IN WC (FOR CAE & CCE); 150-40 IN WC (FOR CBE & CDE)  
 02 E) CALIB SPAN: 236-73 IN WC (FOR CAE & CCE); 135-44 IN WC (FOR CBE & CDE)  
 12 F) SUPPLY PER W DWG.9552D11; EXCEPT TO BE FACTORY FILLED, NOT FIELD FILLED PER DWG.  
 27 G) PROCESS FLUID: AIR  
 27 H) SUPPLY PER CNT.PRESS.XMTR. INSTALL DWG.8765D52; EXCEPT 15 FT. CAPLRY. EACH SIDE OF PENETRATION  
 27 I) RANGE TO BE 5 PSIA -150 PSIG  
 27 J) SUPPLY W 351 SENSOR W-PART NO.8765D49G01 AND 30 FT. CAPILLARY (FACTORY FILLED)  
 27 K) MAX.AVAIL.RANGE/CALIB. SPAN: -5 -10 PSIG

REV	TAG NO.	FUNCTION	LOC	NOTES	MAX AVAIL RANGE (INCH WC)	CALIBRATED SPAN (INCH WC)	DESIGN PRES (PSIG)	NOT USED	CAP LP/HP (FT.)	W-PWRSD PART NUMBER
27	*1LT 459	*PRZR LEVEL	*CF	B	525-200	479-221	2500		N/A	*8765D45G03
27	*1LT 460	*PRZR LEVEL	*CF	B	525-200	479-221	2500		N/A	*8765D45G03

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CAES 325 01410 1

CBE

## WESTINGHOUSE NUCLEAR ENERGY SYSTEMS

PLANT: COMMONWEALTH EDISON CO.  
SPECIFICATION FOR ELECTRONIC DP XMTRS (QUAL GROUP A): QAELOPSHOP ORDER CAES 325  
REV 28 DATED 08/03/83  
PWR SYSTEMS DIVISION  
SPEC SHEET NO. 01410  
PAGE 2  
SUPPLIER: BARTON

REV	TAG NO.	FUNCTION	LOC	NOTES	MAX AVAIL RANGE (INCH WC)	CALIBRATED SPAN (INCH WC)	DESIGN PLES (PSIG)	NOT USED	CAP LP/HP (FT.)	W-PWRS PART NUMBER
27	1LT 461	PRZR LEVEL	CF	B	525-200	479-221	2500		N/A	*8765D45G03*
27	1LT 501	SG1 W-R LEVEL	CF	A.C	560-185	512-175	1300		N/A	*8765D45G03*
27	1LT 502	SG2 W-R LEVEL	CF	A.C	560-155	512-175	1300		N/A	*8765D45G03*
27	1LT 503	SG3 W-R LEVEL	CF	A.C	560-155	512-175	1300		N/A	*8765D45G03*
27	1LT 504	SG4 W-R LEVEL	CF	A.C	560-185	512-175	1300		N/A	*8765D45G03*
27	1LT 517	SG1 N-R LEVEL	CF	A.C	NOTE D	NOTE E	1300		N/A	*8765D45G03*
27	1LT 518	SG1 N-R LEVEL	CF	A.C	NOTE D	NOTE E	1300		N/A	*8765D45G03*
27	1LT 519	SG1 N-R LEVEL	CF	A.C	NOTE D	NOTE E	1300		N/A	*8765D45G03*
27	1LT 527	SG2 N-R LEVEL	CF	A.C	NOTE D	NOTE E	1300		N/A	*8765D45G03*
27	1LT 528	SG2 N-R LEVEL	CF	A.C	NOTE D	NOTE E	1300		N/A	*8765D45G03*
27	1LT 529	SG2 N-R LEVEL	CF	A.C	NOTE D	NOTE E	1300		N/A	*8765D45G03*
27	1LT 537	SG3 N-R LEVEL	CF	A.C	NOTE D	NOTE E	1300		N/A	*8765D45G03*
27	1LT 538	SG3 N-R LEVEL	CF	A.C	NOTE D	NOTE E	1300		N/A	*8765D45G03*
27	1LT 539	SG3 N-R LEVEL	CF	A.C	NOTE D	NOTE E	1300		N/A	*8765D45G03*
27	1LT 547	SG4 N-R LEVEL	CF	A.C	NOTE D	NOTE E	1300		N/A	*8765D45G03*
27	1LT 548	SG4 N-R LEVEL	CF	A.C	NOTE D	NOTE E	1300		N/A	*8765D45G03*
27	1LT 549	SG4 N-R LEVEL	CF	A.C	NOTE D	NOTE E	1300		N/A	*8765D45G03*

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CAES 325 01410 2

CBE

WESTINGHOUSE NUCLEAR ENERGY SYSTEMS

PLANT: COMMONWEALTH EDISON CO.

SPECIFICATION FOR ELECTRONIC DP XMTRS (QUAL GROUP A): QAELDP

SHOP ORDER CAES 325 SPEC SHEET NO. 01410  
REV 28 DATED 08/09/83  
SUPPLIER: BARTON

PWR SYSTEMS DIVISION

PAGE 3

REV	TAG NO.	FUNCTION	LOC	NOTES	MAX AVAIL RANGE (INCH WC)	CALIBRATED SPAN (INCH WC)	DESIGN PRES (PSIG)	NOT USED	CAP LP/HP (FT.)	W-PWRSD PART NUMBER
27	ILT 556	SG1 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	8765D45G03
27	ILT 557	SG2 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	8765D45G03
27	ILT 558	SG3 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	8765D45G03
27	ILT 559	SG4 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	8765D45G03
27	ILT PG002	CONT. FLR DRN	CF	F	112 0	112 0	50		55/7	8765D45G07
27	ILT PG003	CONT. FLR DRN	CF	F	112 0	112 0	50		55/7	8765D45G07
27	ILT PG006	CONT. VTR LEVEL	CF	F	79 0	79 0	50		10/7	8765D45G07
27	ILT PG007	CONT. VTR LEVEL	CF	F	79 0	79 0	50		10/7	8765D45G07
28	IPY PG004	CONT. PRESS. A	CF	G,H	NOTE I	NOTE I	150		0/30	8765D45G08
28	IPY PG005	CONT. PRESS. B	CF	G,H	NOTE I	NOTE I	150		0/30	8765D45G08
27	ILT PS261	HR59 DRAIN TH.	F	A	120 0	120 0	60		35/35	8765D45G10
28	IPY PS262	HR56 DRAIN TANK	F	J	NOTE K	NOTE K	60		0/25	8765D45G09

031 ENTRIES FOR THIS SPEC SHEET

END

CAES 325 01410 3

WESTINGHOUSE NUCLEAR ENERGY SYSTEMS

PWR SYSTEMS DIVISION

08/11/83

SUPPLIER SHALL SATISFY THE SEISMIC AND POST ACCIDENT QUALIFICATION REQUIREMENTS FOR QUALIFICATION GROUP A TRANSMITTERS LISTED ON THIS SPEC SHEET THROUGH COMPLIANCE WITH A QUALIFIED BASE LINE DESIGN CERTIFIED BY W-PWRSD.

APPROVED: *T. Williams* DATED: 8/15/83

VERIFIED: *M. A. Taylor* DATED: 8/15/83

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# BRAIDWOOD UNIT 1

WESTINGHOUSE NUCLEAR ENERGY SYSTEMS

PLANT: COMMONWEALTH EDISON CO.

SPECIFICATION FOR ELECTRONIC DP XMTRS (QUAL GROUP A): QAE LDP

SHOP ORDER CAES 325  
REV 28 DATED 08/09/83

PWR SYSTEMS DIVISION

SPEC SHEET NO. 01410

PAGE 1

SUPPLIER: BARTON

REFERENCES: #1.E-SPEC 953328 (XMTRS BUILT TO A W-PWR APPROVED QUALIFICATION GROUP A BASELINE)  
#2.XMTRS TO BE BUILT TO W-PWR DWG.8765D45

## REV GENERAL SPECIFICATIONS

- 01 01) XMTRS TO MEET QUAL GROUP A REQMTS (REF #1)
- 01 03) BODY MATERIAL - 316 STAINLESS STEEL
- 01 05) OUTPUT - 4 TO 20 MA (DIRECT ACTING)
- 05 07) MOUNTING: WALL MOUNT (SEISMIC BRACKET)
- 01 09) REF ACC +/- 0.5% OF CALIB SPAN (REF #1)
- 01 11) HYDRO OR PRESSURE TEST TO 1.5 X DESIGN PRES
- 01 13) CF = INSTRUMENT LOCATED IN CONTAINMENT FIELD
- 01 15) PROCESS CONNECTION: 1/2 INCH NPT (FEMALE)
- 01 17) IF LOC=CF PAINT NON ST ST PARTS PER PS597755
- 01 19) PROCESS FLUID: DIL BORIC ACID UNLESS NOTED
- 01 21) CASE MATERIAL - MFG STANDARD UNLESS LOC=CF

## REV GENERAL SPECIFICATIONS

- 01 02) REOD FOR SEISMIC & POST ACCIDENT APPLICATION
- 27 04) PRES ELEMENT - BELLOWS
- 27 06) ELEMENT MAT'L - 316 STAINLESS STEEL
- 01 08) CASE COLOR - MFR STANDARD
- 06 10) ELEC CONN: 8 FT 18 AWG LEAD WIRES
- 01 12) POWER SUPPLY - (BY OTHERS) SEE REFERENCE #1
- 01 14) ITEMS WITH LOC=CF NO ALUMINUM OR HALOGENS
- 01 16) TRANSMITTER LOADING - SEE REFERENCE # 1
- 01 18) WETTED PARTS TO BE CLEANED PER PS292722
- 27 20) BELLOWS FILL: SILICONE OIL

## REV NOTES: (APPLICABLE ONLY AS REFERENCED IN THE TABLE)

- 01 A) PROCESS FLUID: WATER
- 01 B) REFERENCE LEVEL SYSTEM DWG 1684CB5 SHEET 23
- 01 C) REFERENCE LEVEL SYSTEM DWG 1684CB5 SHEET 24
- 02 D) MAX RANGE: 260-65 IN WC (FOR CAE & CCE); 150-40 IN WC (FOR CBE & CDE)
- 02 E) CALIB SPAN: 236-73 IN WC (FOR CAE & CCE); 135-44 IN WC (FOR CBE & CDE)
- 12 F) SUPPLY PER W DWG.9552D11;EXCEPT TO BE FACTORY FILLED,NOT FIELD FILLED PER DWG.
- 27 G) PROCESS FLUID: AIR
- 27 H) SUPPLY PER CNT.PRESS.XMTR.INSTALL DWG.8765D52; EXCEPT 15 FT.CAPLRY. EACH SIDE OF PENETRATION
- 27 I) RANGE TO BE 5 PSIA -150 PSIG
- 27 J) SUPPLY W 351 SENSOR W-PART NO.8765D49G01 AND 30 FT. CAPILLARY (FACTORY FILLED)
- 27 K) MAX.AVAIL.RANGE/CALIB. SPAN: -5 -10 PSIG

REV	TAG NO.	FUNCTION	LOC	NOTES	MAX AVAIL RANGE (INCH WC)	CALIBRATED SPAN (INCH WC)	DESIGN PRES (PSIG)	NOT USED	CAP LP/HP (FT.)	W-PWRSD PART NUMBER
27	1LT 459	PRZR LEVEL	CF	B	525-200	479-221	2500		N/A	8765D45G03
27	1LT 460	PRZR LEVEL	CF	B	525-200	479-221	2500		N/A	8765D45G03

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CAES 325 01410 1



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WESTINGHOUSE NUCLEAR ENERGY SYSTEMS  
 PLANT: COMMONWEALTH EDISON CO.  
 SPECIFICATION FOR ELECTRONIC DP XMTRS (QUAL GROUP A): OAE LDP  
 SHOP ORDER CAES 325 SPEC SHEET NO. 01410  
 REV 28 DATED 08/09/83  
 SUPPLIER: BARTON  
 PWR SYSTEMS DIVISION  
 PAGE 2

REV	TAG NO.	FUNCTION	LOC	NOTES	MAX AVAIL RANGE (INCH WC)	CALIBRATED SPAN (INCH WC)	DESIGN PRES (PSIG)	NOT USED	CAP LP/HP (FT.)	W-PWRS PART NUMBER
27	1LT 461	PRZR LEVEL	CF	B	525-200	479-221	2500		N/A	8765D45G03
27	1LT 501	SG1 W-R LEVEL	CF	A,C	560-185	512-175	1300		N/A	8765D45G03
27	1LT 502	SG2 W-R LEVEL	CF	A,C	560-155	512-175	1300		N/A	8765D45G03
27	1LT 503	SG3 W-R LEVEL	CF	A,C	560-155	512-175	1300		N/A	8765D45G03
27	1LT 504	SG4 W-R LEVEL	CF	A,C	560-185	512-175	1300		N/A	8765D45G03
27	1LT 517	SG1 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	8765D45G03
27	1LT 518	SG1 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	8765D45G03
27	1LT 519	SG1 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	8765D45G03
27	1LT 527	SG2 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	8765D45G03
27	1LT 528	SG2 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	8765D45G03
27	1LT 529	SG2 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	8765D45G03
27	1LT 537	SG3 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	8765D45G03
27	1LT 538	SG3 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	8765D45G03
27	1LT 539	SG3 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	8765D45G03
27	1LT 547	SG4 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	8765D45G03
27	1LT 548	SG4 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	8765D45G03
27	1LT 549	SG4 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	8765D45G03

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CAES 325 01410 2

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WESTINGHOUSE NUCLEAR ENERGY SYSTEMS  
 PLANT: COMMONWEALTH EDISON CO.  
 SPECIFICATION FOR ELECTRONIC DP XMTRS (QUAL GROUP A): QAELOP

SHOP ORDER CAES 325  
 REV 28 DATED 08/09/83  
 SUPPLIER: BARTON

PWR SYSTEMS DIVISION  
 SPEC SHEET NO. 01410  
 PAGE 3

REV	TAG NO.	FUNCTION	LOC	NOTES	MAX AVAIL RANGE (INCH WC)	CALIBRATED SPAN (INCH WC)	DESIGN PRES (PSIG)	NOT USED	CAP LP/HP (FT.)	W-PWRSO PART NUMBER
27	ILT 556	SG1 N-R LEVEL	CF	A.C	NOTE D	NOTE E	1300		N/A	8765D45G03
27	ILT 557	SG2 N-R LEVEL	CF	A.C	NOTE D	NOTE E	1300		N/A	8765D45G03
27	ILT 558	SG3 N-R LEVEL	CF	A.C	NOTE D	NOTE E	1300		N/A	8765D45G03
27	ILT 559	SG4 N-R LEVEL	CF	A.C	NOTE D	NOTE E	1300		N/A	8765D45G03
27	ILT PG002	CONT FLR DRN	CF	F	112-0	112-0	50		55/7	8765D45G07
27	ILT PG003	CONT FLP DRN	CF	F	112-0	112-0	50		55/7	8765D45G07
27	ILT PG006	CONT WTR LEVEL	CF	F	79-0	79-0	50		10/7	8765D45G07
27	ILT PG007	CONT WTR LEVEL	CF	F	79-0	79-0	50		10/7	8765D45G07
28	ILT PG004	CONT PRE55-A	CF	G.H	NOTE I	NOTE I	150		0/30	8765D45G03
28	ILT PG005	CONT PRE55-B	CF	G.H	NOTE I	NOTE I	150		0/30	8765D45G03
27	ILT PG261	HR55 DRAIN TK	F	A	123-0	123-0	50		85/35	8765B45G10
28	ILT PG262	HR56 DRN IN TANK	F	J	NOTE K	NOTE K	50		0/25	8765D45G03

END

031 ENTRIES FOR THIS SPEC SHEET

CAES 325 01410 3

WESTINGHOUSE NUCLEAR ENERGY SYSTEMS

08/11/83

PWR SYSTEMS DIVISION

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SUPPLIER SHALL SATISFY THE SEISMIC AND POST ACCIDENT QUALIFI-  
CATION REQUIREMENTS FOR QUALIFICATION GROUP A TRANS-  
MITTERS LISTED ON THIS SPEC SHEET THROUGH COMPLIANCE WITH A  
QUALIFIED BASE LINE DESIGN CERTIFIED BY W-PWRSO.

APPROVED: T.P. Williams DATED: 8/15/83

VERIFIED: M.G. Taylor DATED: 8/15/83

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# Braidwood Unit 1

WESTINGHOUSE NUCLEAR ENERGY SYSTEMS

PLANT: COMMONWEALTH EDISON CO.

SPECIFICATION FOR ELECTRONIC PRESS XMTRS (QUAL GROUP A): QAEUPT

REV

#1 E-SPEC 953328 (XMTRS BUILT TO A W-PWR APPROVED QUALIFICATION GROUP A BASELINE)

#2 XMTRS TO BE BUILT TO W-PWR DWG. 8765D46

GENERAL SPECIFICATIONS

- 01 01) XMTRS TO MEET QUAL GROUP A REQMTS (REF #1)
- 01 03) BODY MATERIAL - 316 STAINLESS STEEL
- 01 05) OUTPUT - 4 TO 20 MA (DIRECT ACTING)
- 01 07) MOUNTING: WALL MOUNT (SEISMIC BRACKET)
- 01 09) REF ACC +/- 0.5% OF CALIB SPAN (REF #1)
- 01 11) HYDRO OR PRESSURE TEST TO 1.5 X DESIGN PRES
- 01 13) CF - INSTRUMENT LOCATED IN CONTAINMENT FIELD
- 01 15) PROCESS CONNECTION: 1/2 INCH NPT (FEMALE)
- 01 17) IF LOC=CF PAINT NON ST ST PARTS PER PS597755
- 01 19) PROCESS FLUID: DIL BORIC ACID UNLESS NOTED

REV

- 01 02) RECD FOR SEISMIC & POST ACCIDENT APPLICATION
- 24 04) PRES ELEMENT - BOURDON TUBE
- 24 06) ELEMENT MAT'L: 316 STAINLESS STEEL
- 01 08) CASE COLOR - MFR STANDARD
- 05 10) ELFC CONN: 8 F1 18 AWG LEAD WIRES
- 01 12) POWER SUPPLY - (BY OTHERS) SEE REFERENCE #1
- 01 14) ITEMS WITH LOC=CF NO ALUMINUM OR HALOGENS
- 01 16) TRANSMITTER LOADING - SEE REFERENCE #1
- 01 18) WETTED PARTS TO BE CLEANED PER PS292722
- 01 20) CASE MATERIAL - MFR STANDARD UNLESS LOC=CF

GENERAL SPECIFICATIONS

REV NOTES: (APPLICABLE ONLY AS REFERENCED IN THE TABLE)

26 A) PROCESS FLUID: CONDENSED STEAM

26 B) SPARE TRANSMITTER (CAE/CCE ONLY)

REV	TAG NO.	FUNCTION	LOC	NOTES	MAX AVAIL RANGE (PSIG)	CALIBRATED SPAN (PSIG)	DESIGN PRES (PSIG)	NOT USED	W-PWRSD PART NUMBER
26	1PT 406	W-RNG PRESS LP 1*CF		N/A	0 - 3000	0 - 3000	3000		8765D46G01
26	1PT 406S1	W-RNG PRESS SPAR*CF		B	0 - 3000	0 - 3000	3000		8765D46G01
26	1PT 455	PRZR PRESS		N/A	1700-2500	1700-2500	2500		8765D46G01
26	1PT 455S	PRZR PRESS SPARE*CF		B	1700 - 2500	1700 - 2500	2500		8765D46G01
26	1PT 456	PRZR PRESS		N/A	1700-2500	1700-2500	2500		8765D46G01
26	1PT 457	PRZR PRESS		N/A	1700-2500	1700-2500	2500		8765D46G01
26	1PT 458	PRZR PRESS		N/A	1700-2500	1700-2500	2500		8765D46G01

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CAES 325 01010 1

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PWR SYSTEMS DIVISION  
SPEC SHEET NO. 01010  
PAGE 1

SHIP ORDER CAES 325  
REV 27 DATED 08/09/83  
SUPPLIER: BARTON



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WESTINGHOUSE NUCLEAR ENERGY SYSTEMS

PLANT: COMMONWEALTH EDISON CO.

SPECIFICATION FOR ELECTRONIC PRESS XMTRS (QUAL GROUP A): QALPT

SHOP ORDER CAES 325

REV 27 DATED 08/09/83

PWR SYSTEMS DIVISION

SPEC SHEET NO. 01010

PAGE 2

SUPPLIER: BARTON

REV	TAG NO.	FUNCTION	LOC	NOTES	MAX AVAIL RANGE (PSIG)	CALIBRATED SPAN (PSIG)	DESIGN PRES (PSIG)	NOT USED	NOT USED	W-PWRSD PART NUMBER
26	IPT 514	5G LP1 STM PRES	F	A	0 - 1300	0 - 1300	2250			8765D46601
26	IPT 515	5G LP1 STM PRES	F	A	0 - 1300	0 - 1300	2250			8765D48801
26	IPT 516	5G LP1 STM PRES	F	A	0 - 1300	0 - 1300	2250			8765D46601
26	IPT 524	5G LP2 STM PRES	F	A	0 - 1300	0 - 1300	2250			8765D46601
26	IPT 525	5G LP2 STM PRES	F	A	0 - 1300	0 - 1300	2250			8765D48801
26	IPT 526	5G LP2 STM PRES	F	A	0 - 1300	0 - 1300	2250			8765D46601
26	IPT 534	5G LP3 STM PRES	F	A	0 - 1300	0 - 1300	2250			8765D46601
26	IPT 535	5G LP3 STM PRES	F	A	0 - 1300	0 - 1300	2250			8765D46601
26	IPT 536	5G LP3 STM PRES	F	A	0 - 1300	0 - 1300	2250			8765D46601
26	IPT 544	5G LP4 STM PRES	F	A	0 - 1300	0 - 1300	2250			8765D46601
26	IPT 545	5G LP4 STM PRES	F	A	0 - 1300	0 - 1300	2250			8765D46601
26	IPT 546	5G LP4 STM PRES	F	A	0 - 1300	0 - 1300	2250			8765D46601

019 ENTRIES FOR THIS SPEC SHEET

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CAES 325 01010 2



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WESTINGHOUSE NUCLEAR ENERGY SYSTEMS

PWR SYSTEMS DIVISION

08/15/83

SUPPLIER SHALL SATISFY THE SEISMIC AND POST ACCIDENT QUALIFICATION REQUIREMENTS FOR QUALIFICATION GROUP A TRANSMITTERS LISTED ON THIS SPEC SHEET THROUGH COMPLIANCE WITH A QUALIFIED BASE LINE DESIGN CERTIFIED BY W-PWRSD.

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APPROVED: *M. J. Taylor* DATED: 8-25-83

VERIFIED: *J. A. Moran* DATED: 8-25-83

# BRAIDWOOD UNIT 2

WESTINGHOUSE NUCLEAR ENERGY SYSTEMS

PLANT: COMMONWEALTH EDISON CO.

SPECIFICATION FOR ELECTRONIC DP XMTRS (QUAL GROUP A): QAELOP

SHOP ORDER CAES 325 SPEC SHEET NO. 01410  
REV 28 DATED 08/09/83  
PWR SYSTEMS DIVISION  
SUPPLIER: BARTON

REFERENCES: #1.E-SPEC 953328 (XMTRS BUILT TO A W-PWR APPROVED QUALIFICATION GROUP A BASELINE)  
#2.XMTRS TO BE BUILT TO W-PWR DWG.8765D45

REV	GENERAL SPECIFICATIONS	REV	GENERAL SPECIFICATION
01 01)	XMTRS TO MEET QUAL GROUP A REQMTS (REF #1)	01 02)	REQD FOR SEISMIC & POST ACCIDENT APPLICATION
01 03)	BODY MATERIAL - 316 STAINLESS STEEL	27 04)	PRES ELEMENT - BELLOWS
01 05)	OUTPUT - 4 TO 20 MA (DIRECT ACTING)	27 06)	ELEMENT MAT'L - 316 STAINLESS STEEL
05 07)	MOUNTING: WALL MOUNT (SEISMIC BRACKET)	01 08)	CASE COLOR - MFR STANDARD
01 09)	REF ACC +/- 0.5% OF CALIB SPAN (REF #1)	06 10)	ELEC CONN: 8 FT 18 AWG LEAD WIRES
01 11)	HYDRO OR PRESSURE TEST TO 1.5 X DESIGN PRES	01 12)	POWER SUPPLY - (BY OTHERS) SEE REFERENCE #1
01 13)	CF = INSTRUMENT LOCATED IN CONTAINMENT FIELD	01 14)	ITEMS WITH LOC=CF NO ALUMINUM OR HALOGENS
01 15)	PROCESS CONNECTION: 1/2 INCH NPT (FEMALE)	01 16)	TRANSMITTER LOADING - SEE REFERENCE # 1
01 17)	IF LOC=CF PAINT NON ST ST PARTS PER PS597755	01 18)	WETTED PARTS TO BE CLEANED PER PS292722
01 19)	PROCESS FLUID: DIL BORIC ACID UNLESS NOTED	27 20)	BELLOWS FILL: SILICONE OIL
01 21)	CASE MATERIAL - MFG STANDARD UNLESS LOC=CF		

REV NOTES: (APPLICABLE ONLY AS REFERENCED IN THE TABLE)

- 01 A) PROCESS FLUID: WATER
- 01 B) REFERENCE LEVEL SYSTEM DWG 1684C85 SHEET 23
- 01 C) REFERENCE LEVEL SYSTEM DWG 1684C85 SHEET 24
- 02 D) MAX RANGE: 250-65 IN WC (FOR CAE & CCE); 150-40 IN WC (FOR CBE & CDE)
- 02 E) CALIB SPAN: 236-73 IN WC (FOR CAE & CCE); 135-44 IN WC (FOR CBE & CDE)
- 12 F) SUPPLY PER W DWG.9552D11; EXCEPT TO BE FACTORY FILLED, NOT FIELD FILLED PER DWG.
- 27 G) PROCESS FLUID: AIR
- 27 H) SUPPLY PER CNT.PRESS.XMTR.INSTALL DWG.8765D52; EXCEPT 15 FT.CAPLRY. EACH SIDE OF PENETRATION
- 27 I) RANGE TO BE 5 PSIA -150 PSIG
- 27 J) SUPPLY W 35I SENSOR W-PART NO.8765D49G01 AND 30 FT. CAPILLARY (FACTORY FILLED)
- 27 K) MAX.AVAIL.RANGE/CALIB. SPAN: -5 -10 PSIG

REV	TAG NO.	FUNCTION	LOC	NOTES	MAX AVAIL RANGE (INCH WC)	CALIBRATED SPAN (INCH WC)	DESIGN PRES (PSIG)	NOT USED	CAP LP/HP (FT.)	W-PWRSD PART NUMBER
27	*1LT 459	*PRZR LEVEL	*CF	* B	* 525-200	* 479-221	* 2500		* N/A	*8765D45G03*
27	*1LT 460	*PRZR LEVEL	*CF	* B	* 525-200	* 479-221	* 2500		* N/A	*8765D45G03*

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CAES 325 01410 1

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WESTINGHOUSE NUCLEAR ENERGY SYSTEMS  
 PLANT: COMMONWEALTH EDISON CO.  
 SPECIFICATION FOR ELECTRONIC DP XMTS (QUAL GROUP A): CAELDP  
 SHOP ORDER CAES 325  
 REV 28 DATED 08/09/83  
 SUPPLIER: BARTON  
 PWR SYSTEMS DIVISION  
 SPEC SHEET NO. 01410  
 PAGE 2

REV	TAG NO.	FUNCTION	LOC	NOTES	MAX AVAIL RANGE (INCH WC)	CALIBRATED SPAN (INCH WC)	DESIGN PRES (PSIG)	NOT USED	CAP LP/HP (FT.)	W-PWRS PART NUMBER
27	1LT 461	PRZR LEVEL	CF	B	525-200	479-221	2500		N/A	*8765D45G03*
27	1LT 501	SG1 W-R LEVEL	CF	A,C	560-155	512-175	1300		N/A	*8765D45G03*
27	1LT 502	SG2 W-R LEVEL	CF	A,C	560-155	512-175	1300		N/A	*8765D45G03*
27	1LT 503	SG3 W-R LEVEL	CF	A,C	560-155	512-175	1300		N/A	*8765D45G03*
27	1LT 504	SG4 W-R LEVEL	CF	A,C	560-155	512-175	1300		N/A	*8765D45G03*
27	1LT 517	SG1 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	*8765D45G03*
27	1LT 518	SG1 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	*8765D45G03*
27	1LT 519	SG1 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	*8765D45G03*
27	1LT 527	SG2 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	*8765D45G03*
27	1LT 528	SG2 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	*8765D45G03*
27	1LT 529	SG2 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	*8765D45G03*
27	1LT 537	SG3 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	*8765D45G03*
27	1LT 538	SG3 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	*8765D45G03*
27	1LT 539	SG3 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	*8765D45G03*
27	1LT 547	SG4 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	*8765D45G03*
27	1LT 548	SG4 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	*8765D45G03*
27	1LT 549	SG4 N-R LEVEL	CF	A,C	NOTE D	NOTE E	1300		N/A	*8765D45G03*

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CAES 325 01410 2

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## WESTINGHOUSE NUCLEAR ENERGY SYSTEMS

 PLANT: COMMONWEALTH EDISON CO.  
 SPECIFICATION FOR ELECTRONIC DP XMTRS (QUAL GROUP A): QAELOP

 SHOP ORDER CAES 325  
 REV 28 DATED 08/08/83  
 SUPPLIER: BARTON

 PWR SYSTEMS DIVISION  
 SPEC SHEET NO. 01410  
 PAGE 3

REV	TAG NO.	FUNCTION	LOC	NOTES	MAX AVAIL RANGE (INCH WC)	CALIBRATED SPAN (INCH WC)	DESIGN PRES (PSIG)	NOT USED	CAP LP/HP (FT.)	W-PWPSD PART NUMBER
27	ILT 556	SG1 N-R LEVEL	CF	A.C	NOTE D	NOTE E	1300		N/A	8765D45G03
27	ILT 557	SG2 N-R LEVEL	CF	A.C	NOTE D	NOTE E	1300		N/A	8765D45G03
27	ILT 558	SG3 N-R LEVEL	CF	A.C	NOTE D	NOTE E	1300		N/A	8765D45G03
27	ILT 559	SG4 N-R LEVEL	CF	A.C	NOTE D	NOTE E	1300		N/A	8765D45G03
27	ILT PC002	CONT. FLR DRN	CF	F	112-0	112-0	50		55/7	8765D45G07
27	ILT PC003	CONT. FLR DRN	CF	F	112-0	112-0	50		55/7	8765D45G07
27	ILT PC006	CONT. WTR LEVEL	CF	F	79-0	79-0	50		10/7	8765D45G07
27	ILT PC007	CONT. WTR LEVEL	CF	F	79-0	79-0	50		10/7	8765D45G07
28	ILT PG004	CONT. PRESS. A	CF	G.H	NOTE I	NOTE I	150		0/30	8765D45G09
28	ILT PG005	CONT. PRESS. B	CF	G.H	NOTE I	NOTE I	150		0/30	8765D45G09
27	ILT PS261	HRS5 DRAIN TK	F	A	123-0	123-0	60		35/39	8765D45G10
28	ILT PS263	HRS6 DRAIN TANK	F	J	NOTE K	NOTE K	60		0/28	8765D45G09

031 ENTRIES FOR THIS SPEC SHEET

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CAES 325 01410 3

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WESTINGHOUSE NUCLEAR ENERGY SYSTEMS

PWR SYSTEMS DIVISION

08/11/83

SUPPLIER SHALL SATISFY THE SEISMIC AND POST ACCIDENT QUALIFICATION REQUIREMENTS FOR QUALIFICATION GROUP A TRANS-MITTERS LISTED ON THIS SPEC SHEET THROUGH COMPLIANCE WITH A QUALIFIED BASE LINE DESIGN CERTIFIED BY W-PWRSO.

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APPROVED: *T.P. Williams* DATED: *8/15/83*

VERIFIED: *M. & L. Lagan* DATED: *8/15/83*



BRAIDWOOD UNIT 2

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F.V. I have not received washer fix

WESTINGHOUSE NUCLEAR ENERGY SYSTEMS

PLANT: COMMONWEALTH EDISON CO.

SPECIFICATION FOR ELECTRONIC PRESS XMTRS (QIAL GROUP A): QAELPT

REV

REFERENCES: #1 E-SPEC 953328 (XMTRS BUILT TO A W-PWR APPROVED QUALIFICATION GROUP A BASELINE)

#2 XMTRS TO BE BUILT TO W-PWR DWG. 8765D46

SHOP ORDER CAES 325 SPEC SHEET NO. 01010  
REV 27 DATED 08/09/83  
SUPPLIER: BARTON

GENERAL SPECIFICATIONS  
01 01) XMTRS TO MEET QUAL GROUP A REQMNTS (REF #1)  
01 03) BODY MATERIAL - 316 STAINLESS STEEL  
01 05) OUTPUT - 4 TO 20 MA (DIRECT ACTING)  
04 07) MOUNTING: WALL MOUNT (SEISMIC BRACKET)  
01 09) REF ACC +/- 0.5% OF CALIB SPAN (REF #1)  
01 11) HYDRO OR PRESSURE TEST TO 1.5 X DESIGN PRES  
01 13) CF = INSTRUMENT LOCATED IN CONTAINMENT FIELD  
01 15) PROCESS CONNECTION: 1/2 INCH NPT (FEMALE)  
01 17) IF LOC=CF PAINT NON ST ST PARTS PER PS597755  
01 19) PROCESS FLUID: DIL BORTIC ACID UNLESS NOTED  
01 20) CASE MATERIAL - MFR STANDARD UNLESS LOC=CF

REV NOTES: (APPLICABLE ONLY AS REFERENCED IN THE TABLE)

26 A) PROCESS FLUID: CONDENSED STEAM

26 B) SPARE TRANSMITTER (CAE/CCE ONLY)

REV#	TAG NO.	FUNCTION	LOC	NOTES	MAX AVAIL RANGE (PSIG)	CALIBRATED SPAN (PSIG)	DESIGN PRES (PSIG)	NOT USED	W-PWRSD PART NUMBER
26	1PT 406	W-RNG PRESS LP 1*CF	N/A	N/A	0 - 3000	0 - 3000	3000		8765D46G01
26	1PT 455	PRZR PRESS	CF	N/A	1700-2500	1700-2500	2500		8765D46G01
26	1PT 456	PRZR PRESS	CF	N/A	1700-2500	1700-2500	2500		8765D46G01
26	1PT 457	PRZR PRESS	CF	N/A	1700-2500	1700-2500	2500		8765D46G01
26	1PT 458	PRZR PRESS	CF	N/A	1700-2500	1700-2500	2500		8765D46G01

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CAES 325 01010 1

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PWR SYSTEMS DIVISION  
SPEC SHEET NO. 01010 PAGE 2

SHOP ORDER CAES 325  
REV 27 DATED 08/09/83  
SUPPLIER: BARTON

WESTINGHOUSE NUCLEAR ENERGY SYSTEMS

PLANT: COMMONWEALTH EDISON CO.  
SPECIFICATION FOR ELECTRONIC PRESS XMTRS (QUAL GROUP A): QALPT

REV	TAG NO.	FUNCTION	LOC	NOTES	MAX AVAIL RANGE (PSIG)	CALIBRATED SPAN (PSIG)	DESIGN PRES (PSIG)	USED	NOT USED	W-PWRSO PART NUMBER
26	4PT 514	50 LP1 51M PRES	F	A	0-1300	0-1300	2250			0765046601
26	4PT 515	50 LP1 51M PRES	F	A	0-1300	0-1300	2250			0765046601
26	4PT 516	50 LP1 51M PRES	F	A	0-1300	0-1300	2250			0765046601
26	4PT 524	50 LP2 51M PRES	F	A	0-1300	0-1300	2250			0765046601
26	4PT 525	50 LP2 51M PRES	F	A	0-1300	0-1300	2250			0765046601
26	4PT 526	50 LP2 51M PRES	F	A	0-1300	0-1300	2250			0765046601
26	4PT 534	50 LP3 51M PRES	F	A	0-1300	0-1300	2250			0765046601
26	4PT 535	50 LP3 51M PRES	F	A	0-1300	0-1300	2250			0765046601
26	4PT 536	50 LP3 51M PRES	F	A	0-1300	0-1300	2250			0765046601
26	4PT 544	50 LP4 51M PRES	F	A	0-1300	0-1300	2250			0765046601
26	4PT 545	50 LP4 51M PRES	F	A	0-1300	0-1300	2250			0765046601
26	4PT 546	50 LP4 51M PRES	F	A	0-1300	0-1300	2250			0765046601

019 ENTRIES FOR THIS SPEC SHEET

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CAES 325 01010 2

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WESTINGHOUSE NUCLEAR ENERGY SYSTEMS

PWR SYSTEMS DIVISION

08/15/83

SUPPLIER SHALL SATISFY THE SEISMIC AND POST ACCIDENT QUALIFICATION REQUIREMENTS FOR QUALIFICATION GROUP A TRANSMITTERS LISTED ON THIS SPEC SHEET THROUGH COMPLIANCE WITH A QUALIFIED BASE LINE DESIGN CERTIFIED BY W-PWRSD.

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APPROVED: *M. H. Taylor* DATED: 8-25-83

VERIFIED: *J. H. Hearn* DATED: 8-25-83