TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

June 21, 1982

Director of Nuclear Reactor Regulation
Attention: Ms. E. Adensam, Chief
Licensing Branch No. 4
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Ms. Adensam:

In the Matter of the Application of) Docket Nos. 50-390
Tennessee Valley Authority) 50-391

In my letter to you dated March 3, 1982, TVA provided information concerning submergence of electrical equipment at Watts Bar Nuclear Plant. This information was included as Appendix B of the referenced letter.

Enclosed are minor revisions to Appendix B for your information. These revisions from the previous submittal, which are circled for ready reference, do not affect the conclusions of the TVA analysis.

If you have any questions concerning this matter, please get in touch with D. P. Ormsby at FTS 858-2682.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Licensing

Sworn to and subscribed before me
this 21st day of June 1982
Paulette H. White
Notary Public
My Commission Expires 9-5-84

B001

Enclosure
cc: See page 2

Director of Nuclear Reactor Regulation June 21, 1982

cc: U.S. Nuclear Regulatory Commission
Region II
Attn: Mr. James P. O'Reilly, Regional Administrator
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

TYPICAL SOLENOID VALVE CIRCUITS

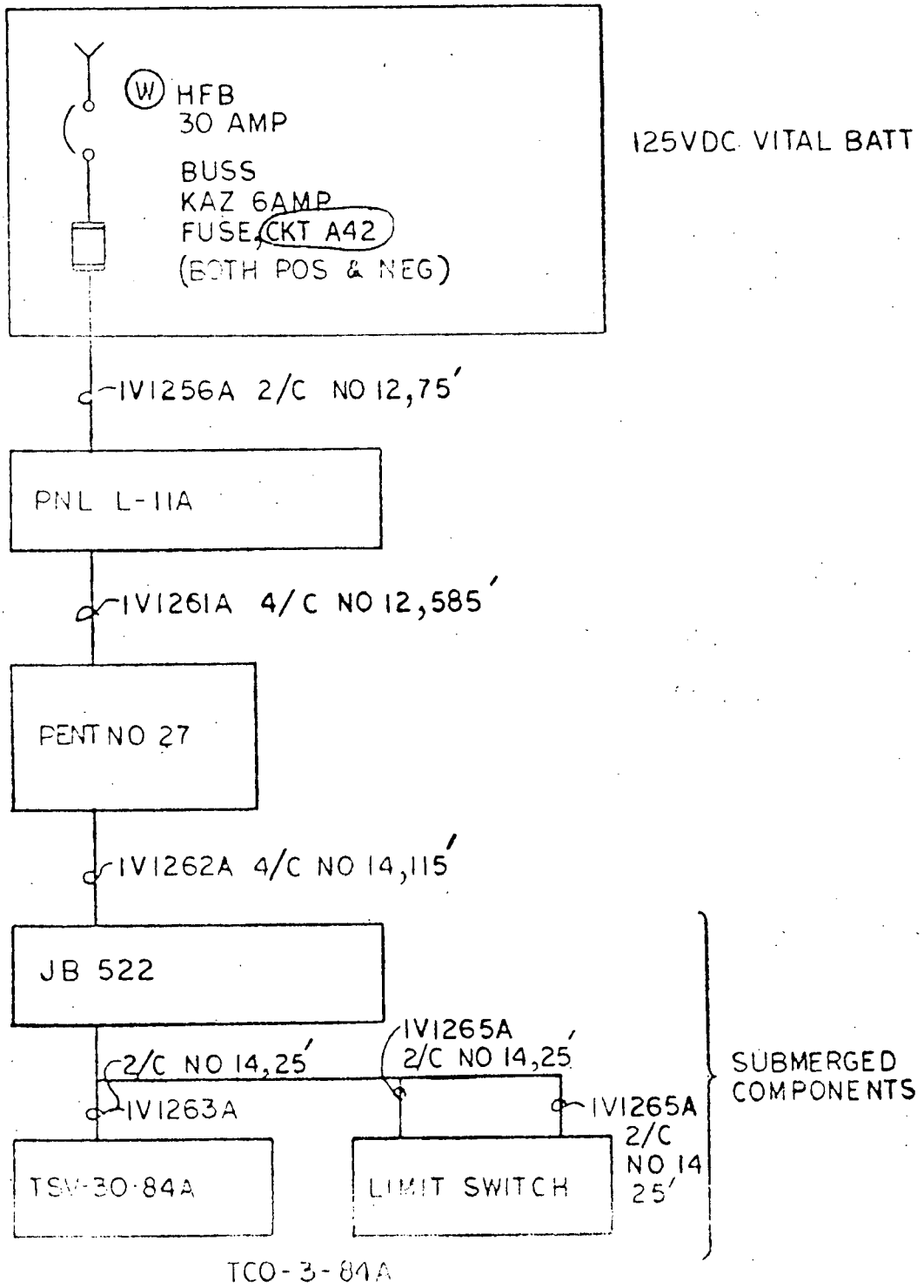


FIGURE B-1.1

PREPARED BY Jerry W. Jenner DATE 2-26-

CHECKED BY [illegible] DATE 3-22-

TYPICAL BAILEY INSTRUMENT LOOP

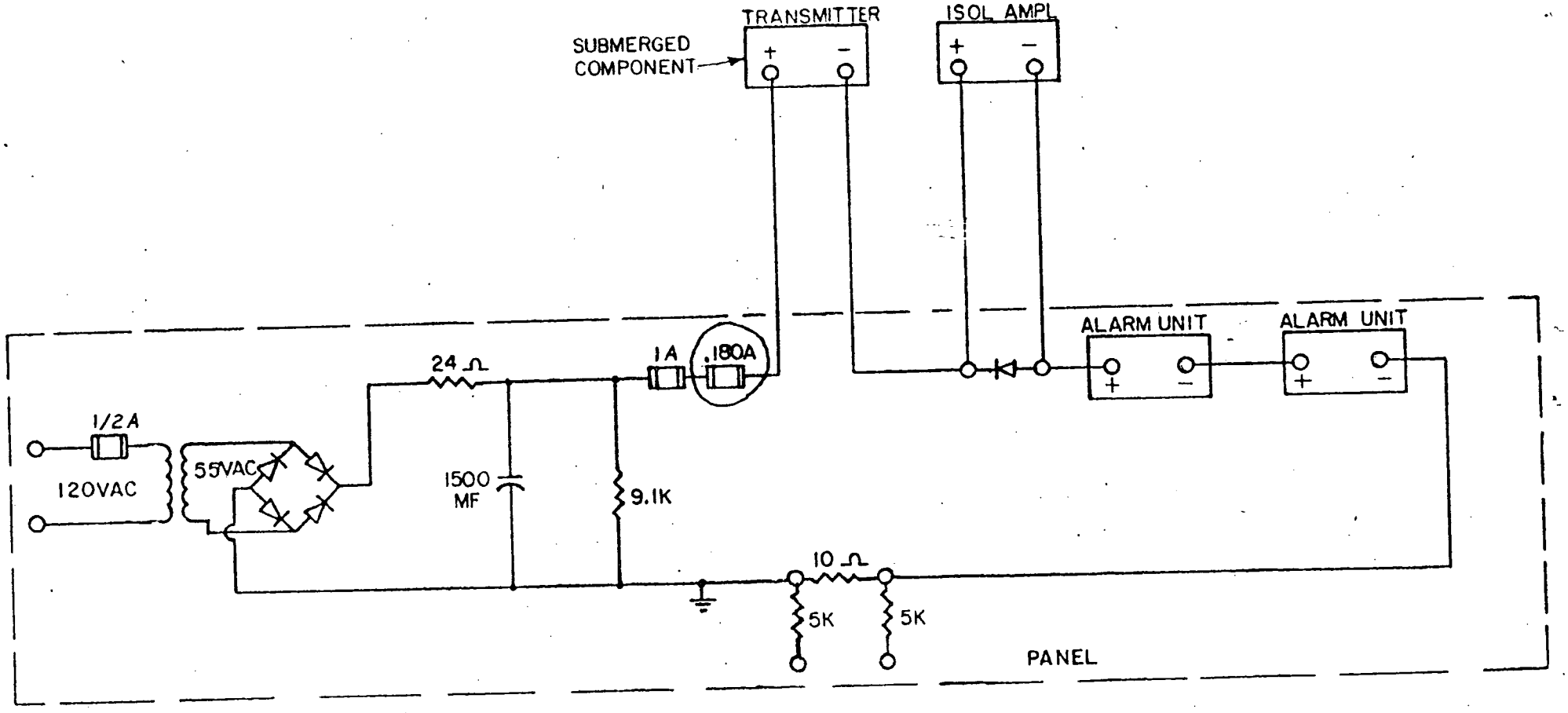
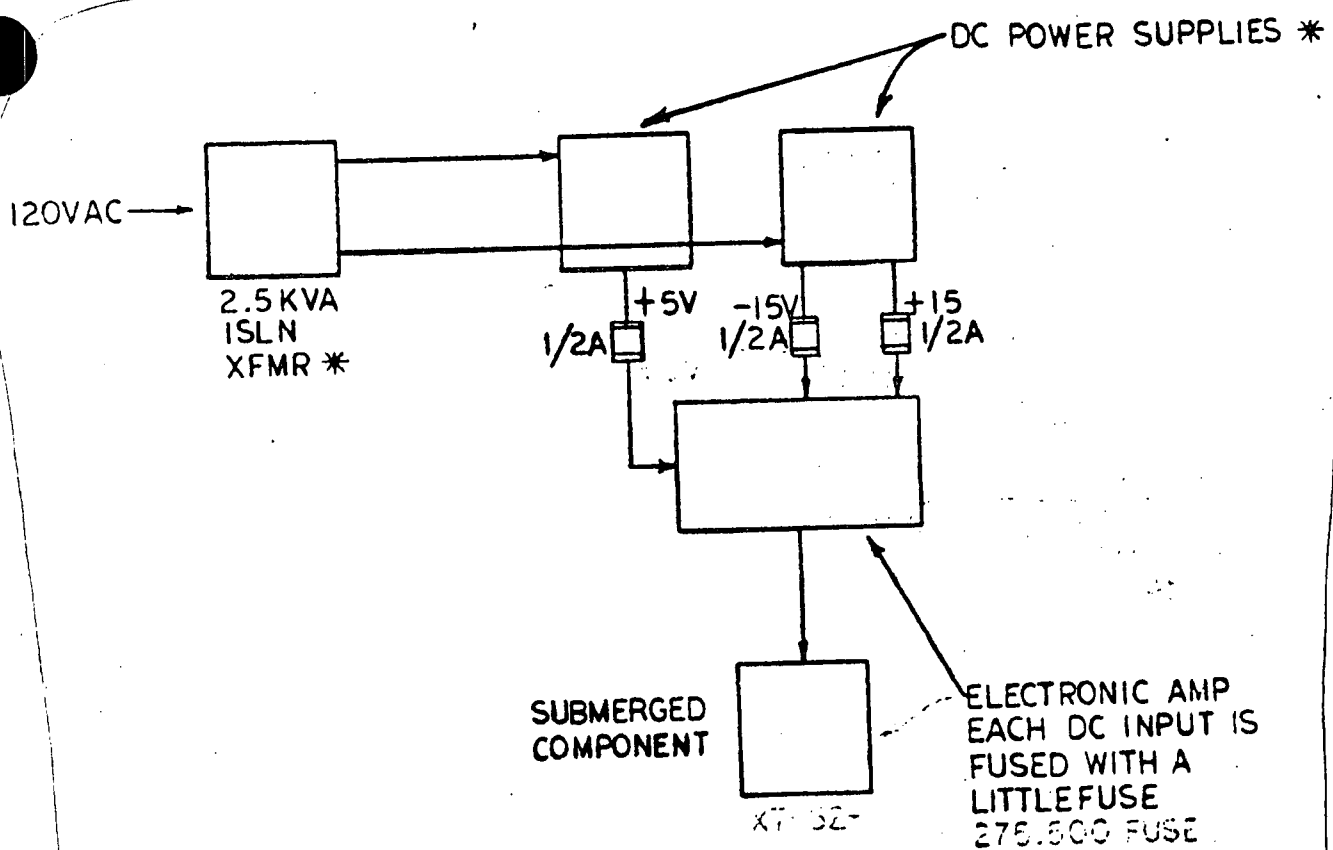


FIGURE B-1.3.3

PREPARED BY J. R. Smith DATE 3/19/82

CHECKED BY R. A. Tucker DATE 3-19-82



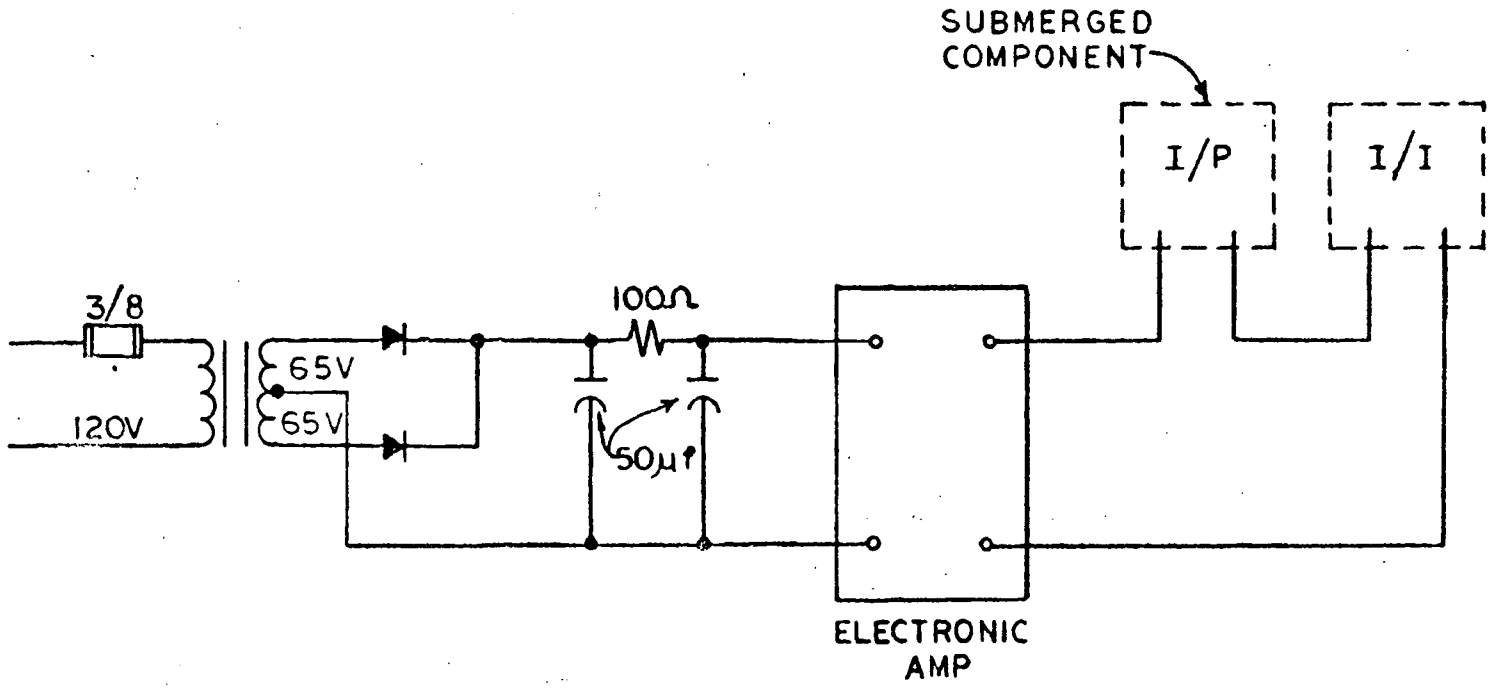
* COMMON TO ALL LOOSE PARTS CHANNELS

LOOSE PARTS MONITORING SYSTEM

FIGURE B-1.3.4

PREPARED BY J.R. Smith DATE 3/19--

CHECKED BY [illegible] DATE 3-[illegible]



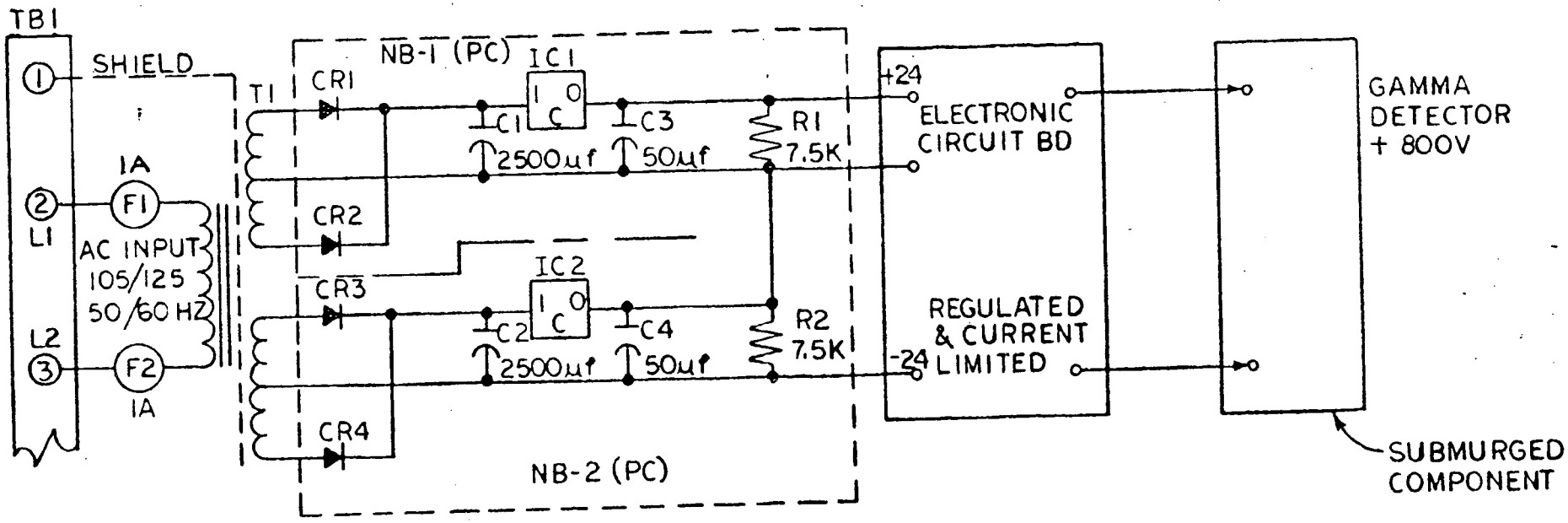
TYPICAL LOOP FOR A REMOTE MODULATED VALVE (FOXBORO)

New Figure

FIGURE B-1.3.5

PREPARED BY J.R. Smith DATE 3/17/82

CHECKED BY [illegible] DATE 3-17-82



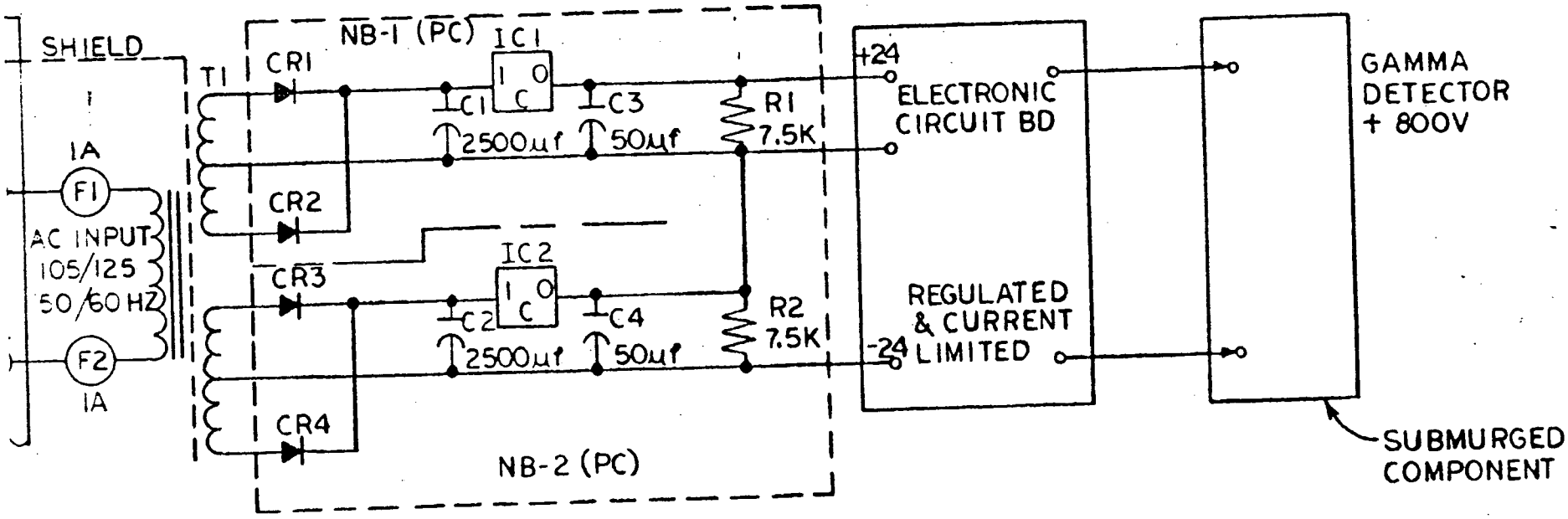
GAMMA MONITOR CIRCUIT

New Figure

FIGURE B-1.3.6

PREPARED BY T.R. Smith DATE 3/12/8

CHECKED BY [illegible] DATE 3-17-8



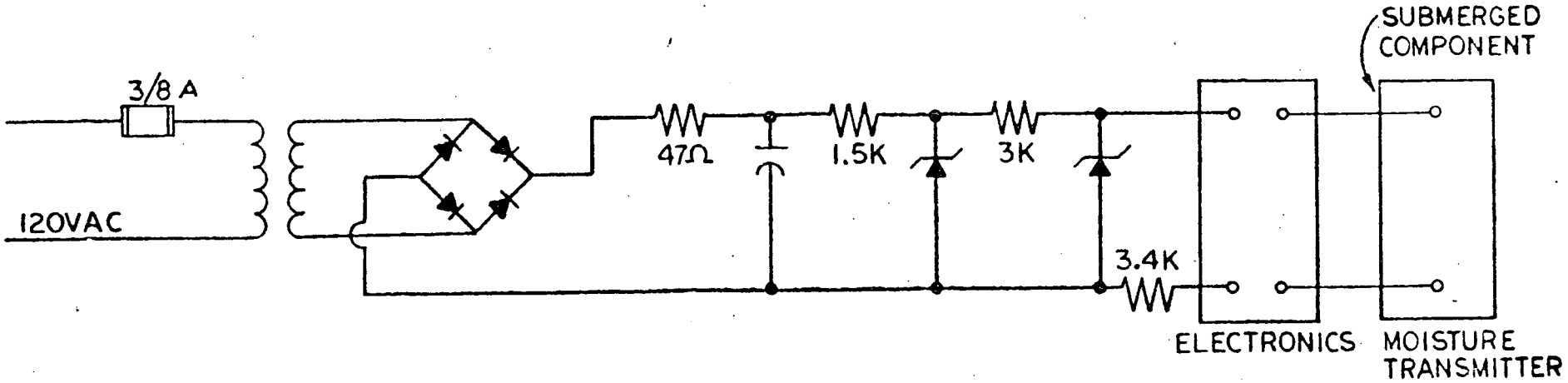
GAMMA MONITOR CIRCUIT

New Figure

FIGURE B-1.3.6

PREPARED BY R. Smith DATE 3/17/8

CHECKED BY [illegible] DATE 3-17-8



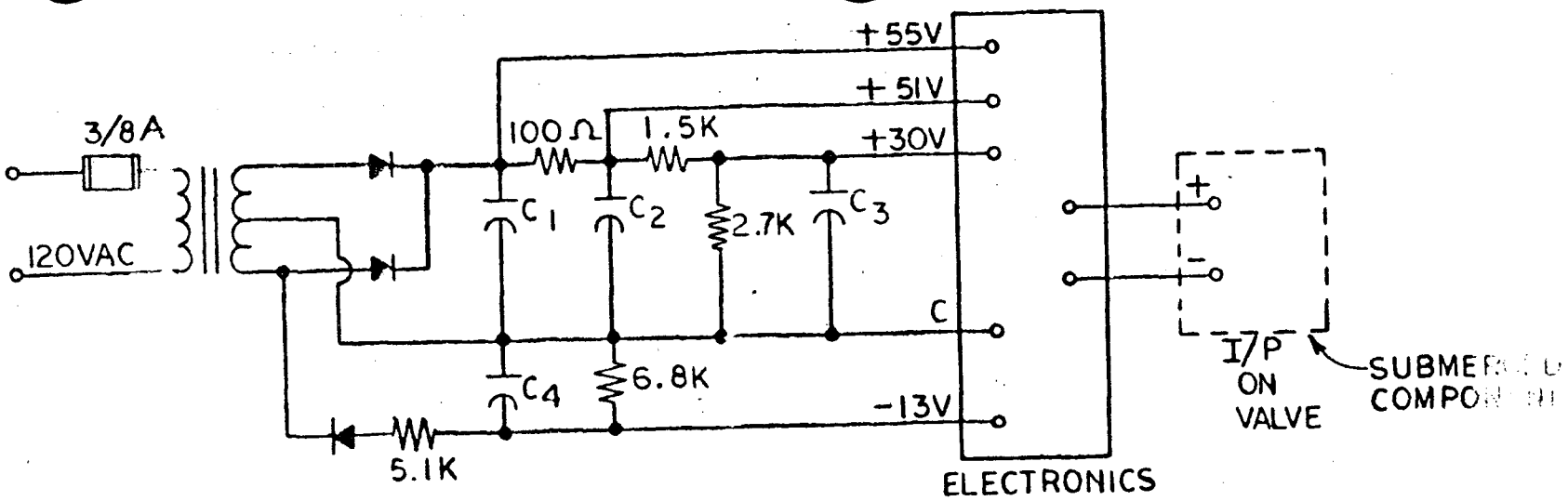
TYPICAL MOISTURE TRANSMITTER CIRCUIT

New Figure

FIGURE B-1.3.7

PREPARED BY J.R. Smith DATE 3/12/86

CHECKED BY [illegible] DATE 3/12/86



TYPICAL LOOP FOR A REMOTE MODULATED VALVE
(FOXBORO)

New
FIG
PREPARED
CHECKED BY

TYPICAL DC POWERED FLOW SWITCH, TEMPERATURE SWITCH AND HAND SWITCH CIRCUIT

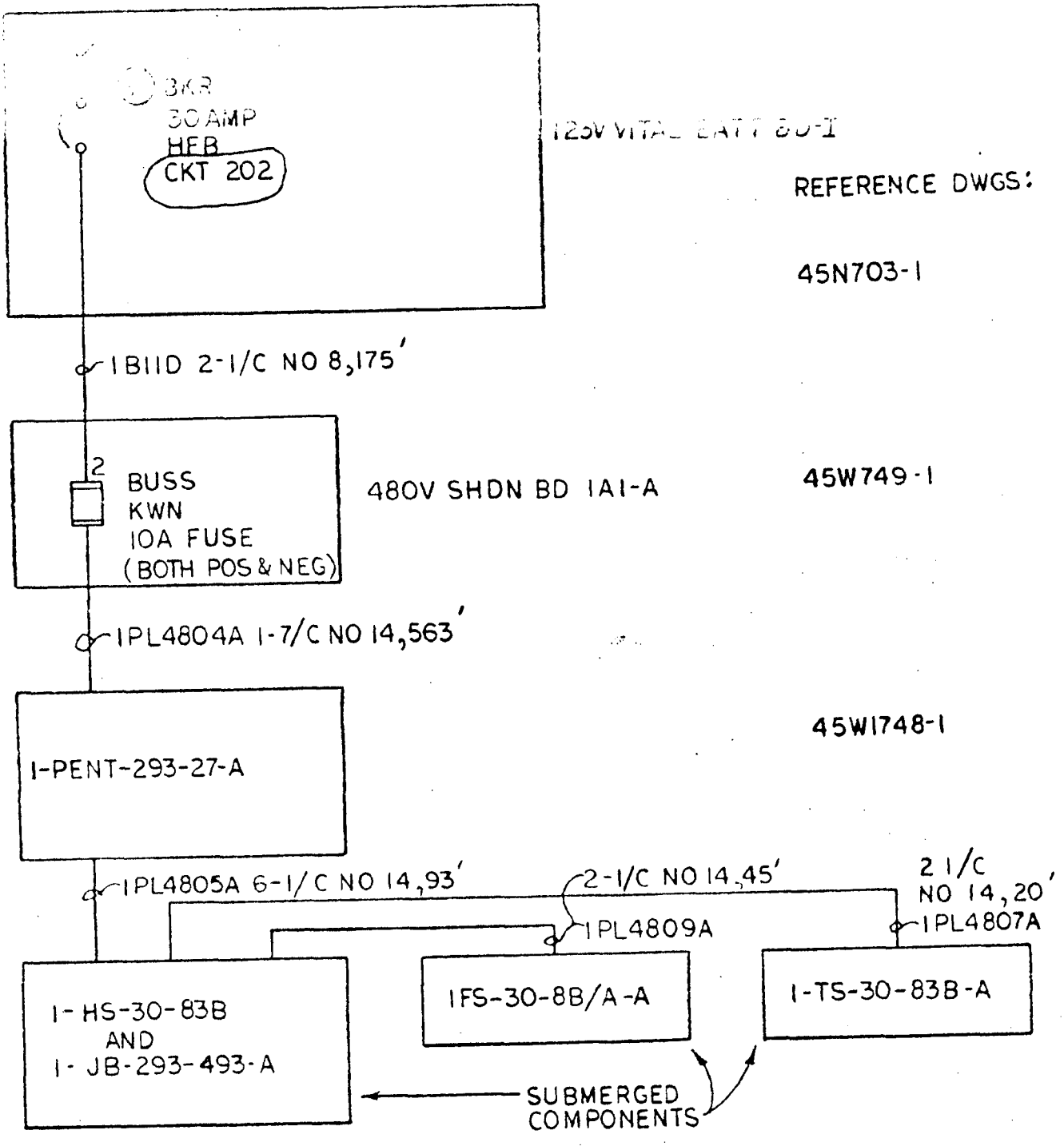


FIGURE B-1.5.1

PREPARED BY Jerry W. Simmons DATE 2-26

CHECKED BY M D Watts DATE 3-2

Prepared by Charles Jackson Date 2/15/82 Checked by J.F. Koop Date 3-22-82

APPENDIX B-1

WATTS BAR NUCLEAR PLANT
LIST OF SUBMERGED ELECTRICAL EQUIPMENT
POWERED FROM CLASS 1E I&C POWER SYSTEM
GROUPED BY COMPONENT TYPE

Instrument Loops

Component	Reference Appendix/Sheet
1-LT-3-172-A	B-2.2/1
1-LT-3-175-A	B-2.2/1
1-LT-3-93-D	B-2.2/1
1-LT-3-51-D	B-2.2/1
1-FT-68-6A-D	B-2.2/1
1-FT-68-48A-D	B-2.2/1
1-FT-68-71A-D	B-2.2/2
1-FT-68-29A-D	B-2.2/2
1-LT-3-173-B	B-2.2/2
1-LT-3-174-B	B-2.2/2
1-FT-1-21B-E	B-2.2/3
1-LT-3-38-E	B-2.2/3
1-LT-3-106-E	B-2.2/3
1-FT-68-6B-E	B-2.2/3
1-FT-68-48B-E	B-2.2/3
1-FT-68-71B-E	B-2.2/3
1-FT-68-29B-E	B-2.2/3
1-LT-3-94-F	B-2.2/4
1-LT-3-107-F	B-2.2/4
1-LT-3-111-F	B-2.2/4
1-FT-68-6D-F	B-2.2/4
1-FT-68-48D-F	B-2.2/4
1-FT-68-29D-F	B-2.2/4
1-FT-78-71D-F	B-2.2/4
1-PT-68-322-G	B-2.2/5
1-LT-3-42-G	B-2.2/5
1-LT-3-55-G	B-2.2/5
1-LT-3-56-G	B-2.2/5
1-PT-68-301	B-2.2/9
1-LT-68-300	B-2.2/9
1-PdT-62-8	B-2.2/9
1-FIT-62-10	B-2.2/9
1-FIT-62-11	B-2.2/9
1-FIT-62-23	B-2.2/11
1-FIT-62-24	B-2.2/11
2-FT-68-71A-D	B-2.2/20
2-FT-68-29A-D	B-2.2/20
2-FT-1-21B-E	B-2.2/21
2-LT-3-38-E	B-2.2/21
[illegible]	[illegible]

Component	Reference Appendix/Sheet
1-PdT-62-21	B-2.2/13
1-PT-68-311-C	B-2.2/13
1-LT-77-125	B-2.2/13
1-LT-77-126	B-2.2/13
1-FT-70-115	B-2.2/14
1-FT-70-119	B-2.2/14
1-FT-70-116	B-2.2/14
1-FIT-62-36	B-2.2/14
1-FIT-62-37	B-2.2/14
1-PdT-70-104	B-2.2/14
1-FT-70-105	B-2.2/14
1-FT-70-106	B-2.2/15
1-PT-63-62	B-2.2/15
1-PT-3-37	B-2.2/15
1-LT-63-82	B-2.2/15
1-MT-30-241	B-2.2/15
1-PdT-70-126	B-2.2/15
1-FT-70-108	B-2.2/15
1-PT-63-83C	B-2.2/16
1-FT-70-96	B-2.2/16
1-FT-70-98	B-2.2/16
1-PT-3-92	B-2.2/16
1-LT-77-410	B-2.2/16
1-LT-77-411	B-2.2/16
1-LT-68-312C	B-2.2/16
1-FIT-62-49	B-2.2/17
1-FIT-62-50	B-2.2/17
1-LT-63-60	B-2.2/17
1-PT-63-61	B-2.2/17
1-PT-63-86	B-2.2/17
1-PdT-62-47	B-2.2/17
2-LT-3-93-D	B-2.2/19
2-LT-3-51-D	B-2.2/19
2-FT-68-6A-D	B-2.2/19
2-FT-68-48A-D	B-2.2/19
2-FIT-62-49	B-2.2/30
2-LT-77-125	B-2.2/30
2-LT-77-126	B-2.2/31
2-MT-30-241	B-2.2/31
2-PdT-70-104	B-2.2/31

APPENDIX B-1

WATTS BAR NUCLEAR PLANT
LIST OF SUBMERGED ELECTRICAL EQUIPMENT
POWERED FROM CLASS 1E I&C POWER SYSTEM
GROUPED BY COMPONENT TYPE

Instrument Loops (Continued)

Component	Reference Appendix/Sheet
1-XT-52-103	B-2.2/10
1-XT-52-107	B-2.2/11
1-XT-52-111	B-2.2/11
1-XT-52-101	B-2.2/11
2-XT-52-104	B-2.2/11
2-XT-52-108	B-2.2/12
2-XT-52-109	B-2.2/12

Radiation Monitors

Component	Reference Appendix/Sheet
1-RE-90-273A	B-2.2/1
1-RE-90-274B	B-2.2/3
2-RE-90-273A	B-2.2/23
2-RE-90-274B	B-2.2/25
1-RM-90-210	B-2.2/13
2-RM-90-210	B-2.2/32

Neutron Monitors

Component	Reference Appendix/Sheet
1-NMD-92-NE31-D	B-2.2/1
1-NMD-92-NE41A-D	B-2.2/1
1-NMD-92-NE35-D	B-2.2/2
1-NMD-92-NE32-E	B-2.2/2
1-NMD-92-NE36-E	B-2.2/2
1-NMD-92-NE42A-E	B-2.2/2
1-NMD-92-NE43A-F	B-2.2/4
1-NMD-92-NE44A-G	B-2.2/5
2-NMD-92-NE31-D	B-2.2/18
2-NMD-92-NE35-D	B-2.2/18
2-NMD-92-NE41A-D	B-2.2/19

TENNESSEE VALLEY AUTHORITY

SUBJECT: LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM

PROJECT: WATTS BAR NUCLEAR PLANT UNIT 1

R.L. Lee/JDH 2/13/82 — COMPUTED BY / DATE

M Pyatt 3-22-82 — CHECKED BY / DATE

CLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
1-FSV-62-73A Limit switch for 1-FCV-62-73A, JB 394	Regen ht exch letdown isol vlv B	125 dc	Vital I	*	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 1, sheet 17	B	Fig. B-1.1
1-FSV-62-74A Limit switch for 1-FCV-62-74A, JB 394	Regen ht exch letdown isol vlv C	125 dc	Vital I	*	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 1, sheet 17	B	Fig. B-1.1
1-FSV-62-76A Limit switch for 1-FCV-62-76A, JB 394	Regen ht exch letdown isol vlv	125 dc	Vital I	*	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 1, sheet 17	(B)	Fig. B-1.1
1-FSV-87-7A Limit switch for 1-FCV-87-7A, JB 691	Test line isol vlv flow control	125 dc	Vital I	*	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 1, sheet 17	B	Fig. B-1.1
1-FSV-87-8A Limit switch for 1-FCV-87-8A, JB 691	Test line isol vlv flow control	125 dc	Vital I	*	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 1, sheet 17	B	Fig. B-1.1
1-TS-30-83B-A 1-FS-30-80B /A-A 1-HS-30-83B, JB 493	CRD cool unit temperature, flow and fan control	125 dc	Vital I	32.5	Fuse Buss KWN	10	Fuse Buss KWN	10	See note 2, sheet 17	C	Fig. B-5.1

*Not applicable. Refer to Remarks.

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM

PROJECT WATTS BAR NUCLEAR PLANT UNIT 1

Wm. Hartsell/jlh 2/13/82 DATE — COMPUTED BY

M Pratt 3/22/82 DATE — CHECKED BY

CLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
1-TSV-30-81B Limit switch for 1-TCO-30-81B, JB 528	CRD cool unit D-B rm div dmpr	125 dc	Vital II	37.9	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
1-TSV-30-82B Limit switch for 1-TCO-30-82B, JB 528	CRD cool unit D-B rm div dmpr	125 dc	Vital II	37.9	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
1-TSV-30-93B Limit switch for 1-TCO-30-93B, JB 524	CRD cool unit D-B suct dmpr	125 dc	Vital II	32.2	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
1-TSV-30-94B Limit switch for 1-TCO-30-94B, JB 524	CRD cool unit B-B rm div dmpr	125 dc	Vital II	32.2	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
1-FSV-62-59B Limit switch for 1-FCV-62-59B, JB 56	Excess letdown div flow control	125 dc	Vital II	(33.4)	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
1-TS-30-92B-B 1-FS-30-88B/A -B 1-HS-30-92B, JB 495	CRD cool unit temperature, flow and fan control	125 dc	Vital II	32.5	Fuse Buss KWN	10	Fuse Buss KWN	10	See note 2, sheet 17	C	Fig. B-1.5.1

TENNESSEE VALLEY AUTHORITY

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM

PROJECT WATTS BAR NUCLEAR PLANT UNIT 1

Wm Hartsell/WDH 2/13/82 COMPUTED BY DATE

M. Pratt 3/22/82 CHECKED BY DATE

CLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
2 1-TS-30-808-B 1-FS-30-83 B/A-B 1-HS-30-808 JB 520	CRD cool unit temperature, flow and fan control	125 dc	Vital II	(42.3)	Fuse Buss KWN	10	Fuse Buss KWN	10	See note 2, sheet 17	C	Fig. B-1.5.1
1-TS-30-888-A 1-FS-30-92 B/A-B 1-HS-30-888 JB 518	CRD cool unit temperature, flow and fan control	125 dc	Vital I	35.3	Fuse Buss KWN	10	Fuse Buss KWN	10	See note 2, sheet 17	C	Fig. B-1.5.1

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM

PROJECT WATTS BAR NUCLEAR PLANT UNIT 2

Wm Hartsell/SCH 2/13/92 COMPUTED BY DATE

M. Hyatt 3/22/92 CHECKED BY DATE

CLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	Isc (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
2-FSV-62-76A 2-FCV-62-76A JB 395	Regen ht exch letdown isol vlv	125 dc	Vital III	*	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 1, sheet 17	(B)	Fig. B-1.1
2-FSV-87-7A 2-FCV-87-7A JB 692	Test line isol vlv flow control	125 dc	Vital III	*	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 1, sheet 17	B	Fig. B-1.1
2-FSV-87-8A 2-FCV-87-8A JB 692	Test line isol vlv flow control	125 dc	Vital III	*	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 1, sheet 17	B	Fig. B-1.1
2-TSV-30-89A 2-TCO-30-89A JB 527	CRD cool unit C-A suct dmpr	125 dc	Vital III	40.8	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
2-TSV-30-90A 2-TCO-30-90A JB 527	CRD cool unit C-A rm div dmpr	125 dc	Vital III	41.37	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1

*Not applicable. Refer to Remarks.

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM

PROJECT WATTS BAR NUCLEAR PLANT UNIT 2

Wm Hartwell/SCH COMPUTED BY 2/13/82 DATE M Pratt CHECKED BY 3/22/82 DATE

CLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
JB 519 2-TS-30-88B-A 2-FS-30-92B/A -A 2-HS-30-88B	CRD cool unit temp cont CRD cool unit B-B flow CRD cool unit C-A fan cntl	125 dc	Vital III	39.4	Fuse Buss KWN	10	Fuse Buss KWN	10	See note 2, sheet 17	C	Fig. B-1.5.1
JB 494 2-TS-30-83B-A 2-FS-30-80B/A -A 2-HS-30-83B	CRD cool unit temp cont CRD cool unit D-B flow CRD cool unit A-A fan cntl	125 dc	Vital III	36.6	Fuse Buss KWN	10	Fuse Buss KWN	10	See note 2, sheet 17	C	Fig. B-1.5.1
2-TSV-30-81B 2-TCO-30-81B JB 529	CRD cool unit D-B suct dmpr	125 dc	Vital IV	(68.6)	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
2-TSV-30-82B 2-TCO-30-82B JB 529	CRD cool unit D-B rm div dmpr	125 dc	Vital IV	(68.6)	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
2-TSV-30-93B 2-TCO-30-93B JB 525	CRD cool unit B-B suct dmpr	125 dc	Vital IV	51.28	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM

PROJECT WATTS BAR NUCLEAR PLANT UNIT 2

Wm Hartwell/JCH 2/13/82 COMPUTED BY DATE

M. Hyatt 3/22/82 CHECKED BY DATE

CLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
2-TSV-30-94B 2-TCO-30-94B JB 525	CRD cool unit B-B rm div dmpr	125 dc	Vital IV	51.28	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
2-FSV-62-59B 2-FCV-62-59B JB 59	Excess letdown div flow cont	125 dc	Vital IV	54.9	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
2-TS-30-92B-B 2-FS-30-88B/A -B 2-HS-30-92B JB 517	CRD cool unit temp cont CRD cool unit C-A flow CRD cool unit B-B fan cntl	125 dc	Vital IV	31.0	Fuse Buss KWN	10	Fuse Buss KWN	1	See note 2, sheet 17	C	Fig. B-1.5.1
2-TS-30-80B-B 2-FS-30-83B/A -B 2-HS-30-80b JB 521	CRD cool unit temp cont CRD cool unit A-A flow CRD cool unit D-B fan cntl	125 dc	Vital IV	62.2	Fuse Buss KWN	10	Fuse Buss KWN	10	See note 2, sheet 17	C	Fig. B-1.5.1

*Not applicable. Refer to Remarks.

SUBJECT: LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM

PROJECT: WATTS BAR NUCLEAR PLANT UNIT 1

J.D. Reed/JDR — COMPUTED BY — 2/13/82 — DATE

M Pigott — CHECKED BY — 3/22/82 — DATE

NON CLASS-1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	Isc (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
1-FSV-62-35 1-FCV-62-35 Limit switches JB 687	RCP 3 seal return flow control	125 dc	Vital I	41.1	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
1-FSV-81-15 1-FCV-81-15 Limit switches JB 687	RCP 3 standpipe makeup water	125 dc	Vital I	35.3	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
1-FSV-62-9 1-FCV-62-9 Limit switches	RCP 1 seal return flow control	125 dc	Vital I	37.1	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
1-FSV-81-13 1-FCV-81-13 Limit switches	RCP 1 standpipe makeup water	125 dc	Vital I	33.1	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
1-PSV-68-301 1-PCV-68-301 Limit switches JB 2145	RC pressurizer relief tank	125 dc	Vital I	34.1	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
1-FSV-62-53 1-FCV-62-53 Limit switches JB 668	No. 1 seal bypass flow control	125 dc	Vital I	38.6	Fuse Buss KAZ	6	Fuse Buss KAZ	6 *	See note 2, sheet 17	C	Fig. B-1.1

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM PROJECT WATTS BAR NUCLEAR PLANT UNIT 1

J.D. Reed/JDR 3/13/82 COMPUTED BY DATE
M Pyatt 3/22/82 CHECKED BY DATE

NON CLASS-1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
1-FSV-68-310 1-FCV-68-310 Limit switches JB 2145	RCS flow cntl PRT to WDS RCDT	125 dc	Vital I	35.2	Fuse Buss KAZ	6	Fuse Buss KAZ	6A	See note 2, sheet 17	C	Fig. B-1.1
1-FSV-63-110 1-FCV-63-110 Limit switches	SIS accum tk 2 drain vlv	125 dc	Vital II	30.2	Fuse Buss KAZ	6	Fuse Buss KAZ	6A	See note 2, sheet 17	C	Fig. B-1.1
1-FSV-62-22 1-FCV-62-22 Limit switches JB 61	RCP 2 seal return flow cont	125 dc	Vital II	31.9	Fuse Buss KAZ	6	Fuse Buss KAZ	6A	See note 2, sheet 17	C	Fig. B-1.1
1-FSV-68-303 1-FCV-68-303 Limit switches WIR to PRT JB 2143	RCS flow cntl vlv-pr:	125 dc	Vital II	30.1	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
1-FSV-63-90 1-FSV-63-90 Limit switches	SIS accum tk 3 drain vlv	125 dc	Vital II	38.5	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
1-FSV-81-14 1-FCV-81-14 Limit switches JB 61	RCP 2 standpipe makeup water	125 dc	Vital II	33.2	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
1-FSV-43-31 1-FCV-43-31 Limit switches	Accum tk No. 2 isol	125 dc	Vital II	12.6	Fuse Buss KAZ	6	Fuse buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM

PROJECT WATTS BAR NUCLEAR PLANT UNIT 1

J.D.Reed/SCH 2/13/82 COMPUTED BY DATE

M Hyatt 3/22/82 CHECKED BY DATE

NON CLASS-1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
1-FSV-62-48 1-FCV-62-48 Limit switches JB 671	RCP 4 seal return flow control	125 dc	Vital II	32.6	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
1-FSV-81-16 1-FCV-81-16 Limit switches JB 671	RCP 4 standpipe makeup water	125 dc	Vital II	36.7	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
1-FSV-43-30 1-FCV-43-30 Limit switches	Accum tk No.1 isol vlv	125 dc	Vital II	14.6	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
1-FSV-43-32 1-FCV-43-32 Limit switches	Accum tk No. 3 isol vlv	125 dc	Vital II	15.7	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
1-FSV-43-33 1-FCV-43-33 Limit switches	Accum tk No. 4 isol vlv	125 dc	Vital II	31.0	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1

SUBJECT: LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM

PROJECT: WATTS BAR NUCLEAR PLANT UNIT 2

Wm. Hartwell/SOH 2/13/82 COMPUTED BY / DATE — [illegible] 3/22/82 CHECKED BY / DATE

NON CLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	Isc (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
2-FSV-62-35 2-FCV-62-35 Limit switches JB 688	RCP No. 3 seal return flow cont	125 dc	Vital III	30.8	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
2-FSV-81-15 2-FCV-81-15 Limit switches JB 688	RCP No. 3 standpipe makeup water	125 dc	Vital III	39.5	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
2-FSV-62-9 2-FCV-62-9 Limit switches	RCP No. 1 seal return flow cont	125 dc	Vital III	29.4	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
2-FSV-81-13 2-FCV-81-13 Limit switches	RCP No. 1 standpipe makeup water	125 dc	Vital III	38.8	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
2-PSV-68-301 2-PCV-68-301 JB 2146	RC pressurizer relief tank	125 dc	Vital III	28.0	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
2-FSV-62-53 2-FCV-62-53 Limit switches JB 669	No. 1 seal bypass flow cont	125 dc	Vital III	29.4	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
2-FSV-68-310 2-FCV-68-310 Limit switches JB 2146	RCS flow cntl PRT to WDS RCDT	125 dc	Vital III	34.1	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM

PROJECT WATTS BAR NUCLEAR PLANT UNIT 2

Wm Hartzell/LCK 2/13/82 COMPUTED BY DATE

M Hyatt 3/22/82 CHECKED BY DATE

NON CLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
2-FSV-77-3 2-FCV-77-3 JB 1662	RCDT drain vlv flow control	125 dc	Vital III	24.6	Fuse Buss FNM	3	Fuse Buss FNM	3	See note 2, sheet 17	C	Fig. B-1.5.1
2-LSV-77-415 2-LCV-77-415 JB 414	RCDT drain vlv flow control	125 dc	Vital III	27.2	Fuse Buss FNM	3	Fuse Buss FNM	3	See note 2, sheet 17	C	Fig. B-1.5.1
2-FSV-62-22 2-FCV-62-22 Limit switches JB 655	RCP 2 seal return flow cont	125 dc	Vital IV	34.7	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
2-FSV-68-303 2-FCV-68-303 Limit switches PRT JB 2144	RCS flow cntl vlv primary water to	125 dc	Vital IV	32.3	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
2-FSV-63-90 2-FCV-63-90 Limit switches	SIS accum tk 3 drain vlv	125 dc	Vital IV	29.1	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
2-FSV-81-14 2-FCV-81-14 Limit switches JB 655	RCP No. 2 stand pipe makeup water	125 dc	Vital IV	39.7	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM PROJECT WATTS BAR NUCLEAR PLANT UNIT 2 COMPUTED BY Wm. Hartwell 2/13/82 DATE CHECKED BY W. Lyatt 3/22/82 DATE

NON CLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
2-FSV-43-31 2-FCV-43-31 Limit switches	Accum tk No. 2 isol vlv	125 dc	Vital IV	15.2	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
2-FSV-62-48 2-FCV-62-48 Limit switches JB 672	RCP No. 4 seal return flow cont	125 dc	Vital IV	55.0	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
2-FSV-81-16 2-FCV-81-16 Limit switches JB 672	RCP No. 4 standpipe makeup water	125 dc	Vital IV	38.2	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
2-FSV-43-30 2-FCV-43-30 Limit switches	Accum tk No. 1 isol vlv	125 dc	Vital IV	14.3	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
2-FSV-43-32 2-FCV-43-32 Limit switches	Accum tk No. 3 isol vlv	125 dc	Vital IV	15.4	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
2-FSV-43-33 2-FCV-43-33 Limit switches	Accum tk No. 4 isol vlv	125 dc	Vital IV	15.2	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1
2-FSV-63-110 2-FCV-63-110 Limit switches	SIS accum tk 2 drain vlv	125 dc	Vital IV	32.6	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See note 2, sheet 17	C	Fig. B-1.1

SUBJECT: LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM

PROJECT: WATTS BAR NUCLEAR PLANT UNIT 2

Wm Hadwell/WDH COMPUTED BY 2/13/82 DATE — M Bell CHECKED BY 3/24/82 DATE

NON CLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
1-FSV-77-3 1-FCV-77-3 JB 1661	RCDT drain vlv flow control	125 dc	Vital III	23.8	Fuse Buss FNM	3	Fuse Buss FNM	3	See note 2, sheet 17	C	Fig. B-1.5.1
1-LSV-77-415 1-LCV-77-415 JB 308	RCDT drain vlv flow control	125 dc	Vital III	24.0	Fuse Buss FNM	3	Fuse Buss FNM	3	See note 2, sheet 17	C	Fig. B-1.5.1
JB 4104	Cable termination	*	*	*	*	*	*	*	See note 3, sheet 17	C	*
JB 4105	Cable termination	*	*	*	*	*	*	*	See note 3, sheet 17	C	*
JB 4106	Cable termination	*	*	*	*	*	*	*	See note 3, sheet 17	C	*
JB 4107	Cable termination	*	*	*	*	*	*	*	See note 3, sheet 17	C	*

*Not applicable; refer to remarks.

TENNESSEE VALLEY AUTHORITY

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM

PROJECT WATTS BAR NUCLEAR PLANT UNITS 1&2

J.D. Hutson — COMPUTED BY — 2/16/82 — DATE

M. Lyott — CHECKED BY — 3/22/82 — DATE

The following notes are applicable to the previous sheets:

Notes:

1. This component will be deenergized from the Class 1E I&C power system upon a loss of coolant accident or a safety injection signal.

2. This component is powered from the same circuit on the Class 1E I&C power system with (other) associated components; therefore, only one short-circuit current was calculated, using the component with the shortest cable. The (other) associated components are included in this list.

3. This component is associated with the response time testing equipment and is not energized during unit operation. Therefore, submergence of this equipment will not reflect a short-circuit condition on the Class 1E I&C power system.

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM

PROJECT WATTS BAR NUCLEAR PLANT UNIT 1

Wm Hartsell/gsh 2/13/92 COMPUTED BY DATE

CHECKED BY 2-22-92 DATE

NONCLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
1-FM-63-65 (L-190)	SIS accum tank N2 HDR vent vlv I/P	120 ac	Vital 1-I	*	Fuse Buss AGC	3/8	*	*	See notes 3&7, sheet 36	C	Fig. B-1.3.8
1-PT-63-301	RCS PRT press	120 ac	Vital 1-I	*	Fuse Buss AGC	1/8	*	*	See notes 3&7, sheet 36	C	Fig. B-1.3.1
1-LT-68-300	RC pressurizer relief tank	120 ac	Vital 1-I	*	Fuse Buss AGC	1/8	*	*	See notes 3&7, sheet 36	C	Fig. B-1.3.5
1-PM-68-340H (L-366)	RCS Przr press	120 ac	Vital 1-I	*	Fuse Buss AGC	3/8	*	*	See notes 3&7, sheet 36	C	Fig. B-1.3.1
1-PDT-62-8 (L-183)	RCP No. 1 DP across No. 1 seal	120 ac	Vital 1-I	*	Fuse Buss AGC	1/8	*	*	See notes 3&7, sheet 36	C	Fig. B-1.3.1
1-FIT-62-10	RCP 1 low range return flow	120 ac	Vital 1-I	*	Fuse Buss AGC	1/8	*	*	See notes 3&7, sheet 36	C	Fig. B-1.3.1
1-FIT-62-11	RCP 1 low range return flow	120 ac	Vital 1-I	*	Fuse Buss AGC	1/8	*	*	See notes 3&7, sheet 36	C	Fig. B-1.3.1

*Not applicable; refer to remarks

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM PROJECT WATTS BAR NUCLEAR PLANT UNITS 1&2 COMPUTED BY Wm Hartsell 2/15/82 DATE CHECKED BY [illegible] DATE 3-22-82

NONCLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	Isc (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
1-XT-52-107	Loose parts monitoring charge converter SG 2	120 ac	Vital 1-II	*	Fuse Buss MDL	1	*	*	See notes 5&7, sheet 36	C	Fig. B-1.3.4
1-XT-52-111	Loose parts monitoring charge converter	120 ac	Vital 1-II	*	Fuse Buss MDL	1	*	*	See notes 5&7, sheet 36	C	Fig. B-1.3.4
1-XT-52-101	Loose parts monitoring charge converter	120 ac	Vital 1-II	*	Fuse Buss MDL	1	*	*	See notes 5&7, sheet 36	C	Fig. B-1.3.4
1-FIT-62-23 (L-559)	RCP 2 low range return flow	120 ac	Vital 1-II	*	Fuse Buss AGC	1/8	*	*	See notes 3&7, sheet 36	C	Fig. B-1.3.1
1-FIT-62-24	RCP 2 high range return flow	120 ac	Vital 1-II	*	Fuse Buss AGC	1/8	*	*	See notes 3&7, sheet 36	C	Fig. B-1.3.1
1-FE-62-23	RCP 2 low range return flow	120 ac	Vital 1-II	*	Fuse Buss AGC	1/8	*	*	See notes 3&7, sheet 36	C	Fig. B-1.3.1
2-XT-52-104	Loose parts monitoring charge converter SG 3	120 ac	Vital 1-II	*	Fuse Buss AGC	1	*	*	See notes 5&7, sheet 36	C	Fig. B-1.3.4

*Not applicable; refer to remarks

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM PROJECT WATTS BAR NUCLEAR PLANT UNIT (2)

Wm Hartsell/sch 2/15/82 COMPUTED BY DATE — Roop CHECKED BY 3-22-82 DATE

NONCLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
2-XT-52-108	Loose parts monitoring charge converter SG 3	120 ac	Vital 1-II	*	Fuse Buss MDL	1	*	*	See notes 5&7, sheet 36	C	Fig. B-1.3.4
2-XT-52-109	Loose parts monitoring charge converter SG 4	120 ac	Vital 1-II	*	Fuse Buss MDL	1	*	*	See notes 5&7, sheet 36	C	Fig. B-1.3.4
2-XT-52-105	Loose parts monitoring charge converter SG 4	120 ac	Vital 1-II	*	Fuse Buss MDL	1	*	*	See notes 5&7, sheet 36	C	Fig. B-1.3.4
2-XT-52-102	Loose parts monitoring charge converter SG 1	120 ac	Vital 1-II	*	Fuse Buss MDL	1	*	*	See notes 5&7, sheet 36	C	Fig. B-1.3.4
2-XT-52-106	Loose parts monitoring charge converter SG 1	120 ac	Vital 1-II	*	Fuse Buss MDL	1	*	*	See notes 5&7, sheet 36	C	Fig. B-1.3.4
2-XT-52-103	Loose parts monitoring charge converter SG 2	120 ac	Vital 1-II	*	Fuse Buss MDL	1	*	*	See notes 5&7, sheet 36	C	Fig. B-1.3.4
2-XT-52-107	Loose parts monitoring charge converter SG 2	120 ac	Vital 1-II	*	Fuse Buss MDL	1	*	*	See notes 5&7, sheet 36	C	Fig. B-1.3.4

*Not applicable; refer to remarks

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM PROJECT WATTS BAR NUCLEAR PLANT UNITS 1&2 Wm. Hartwell 4/15/82 COMPUTED BY DATE CHECKED BY 3-22-82 DATE

NONCLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{sc} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
2-XT-52-111	Loose parts monitoring charge converter	120 ac	Vital 1-II	*	Fuse Buss MDL	1	*	*	See notes 5&7, sheet 36	C	Fig. B-1.3.4
2-XT-52-101	Loose parts monitoring charge converter	120 ac	Vital 1-II	*	Fuse Buss MDL	1	*	*	See notes 5&7, sheet 36	C	Fig. B-1.3.4
1-PDT-62-21 (1-L-182)	RCP 2 DP across No. 1 seal	120 ac	Vital 1-II	*	Fuse Buss AGC	1/8	*	*	See notes 3&7, sheet 36	C	Fig. B-1.3.1
1-RM-90-210	NIS source range detector 1 triax connectors	120 ac	Vital 1-III	*	Fuse Buss MTH	5	*	*	See notes 4&7, sheet 36	C	Fig. B-1.4
1-PT-68-311C	RCS PRT press	120 ac	Vital 1-III	*	Fuse Buss MDL	1/4	*	*	See notes 2&7, sheet 36	C	Fig. B-1.3.3
1-LT-77-125	Reac bldg FL + EG DR smp level xmtr	120 ac	Vital 1-III	*	Fuse Buss Slo-Blo	1/4	*	*	See notes 2&7, sheet 36	C	Fig. B-1.3.2
1-LT-77-126	Reac bldg FL + EG DR smp level xmtr	120 ac	Vital 1-III	*	Fuse Buss Slo-Blo	1/4	*	*	See notes 2&7, sheet 36	C	Fig. B-1.3.2

*Not applicable; refer to remarks

SUBJECT: LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM

PROJECT: WATTS BAR NUCLEAR PLANT UNITS 1

Wm Hartsell (for) W 2/15/82 — COMPUTED BY / DATE

CHECKED BY — 3-22-82 DATE

NONCLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
1-FT-70-115 (L-351B)	RC pmp 1 thrm bar outlet flow xmtr	120 ac	Vital 1-III	*	Fuse Buss MDL	1	*	*	See notes 2&7, sheet 36	C	Fig. B-1.3.3
1-FT-70-119 (L-351B)	RC pmp 1 LWR oil CLR outlet flow xmtr	120 ac	Vital 1-III	*	Fuse Buss MDL	1	*	*	See notes 2&7, sheet 36	C	Fig. B-1.3.3
1-FT-70-116 (L-351B)	RC pmp 1 UPR oil CLR outlet flow xmtr	120 ac	Vital 1-III	*	Fuse Buss MDL	1	*	*	See notes 2&7, sheet 36	C	Fig. B-1.3.3
1-FIT-62-36 1-FE-62-36	RCP 3 low range return flow	120 ac	Vital 1-III	*	Fuse Buss AGC	1/8	*	*	See notes 3&7, sheet 36	C	Fig. B-1.3.1
1-FIT-62-37	RCP 3 high range return flow	120 ac	Vital 1-III	*	Fuse Buss AGC	1/8	*	*	See notes 3&7, sheet 36	C	Fig. B-1.3.1
1-PDT-70-104	RCP PMP 2 thrm bar diff press xmtr	120 ac	Vital 1-III	*	Fuse Buss MDL	1	*	*	See notes 2&7, sheet 36	C	Fig. B-1.3.3
1-FT-70-105	RCP PMP 2 thrm bar outlet press xmtr	120 ac	Vital 1-III	*	Fuse Buss MDL	1	*	*	See notes 2&7, sheet 36	C	Fig. B-1.3.3

*Not applicable; refer to remarks

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM

PROJECT WATTS BAR NUCLEAR PLANT UNITS 1

COMPUTED BY Wm Hartsell DATE 2/15/82 CHECKED BY [signature] DATE 3-22-82

NONCLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	Isc (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
1-PT-63-83C	SIs accum Tk 3 press xmtr	120 ac	Vital 1-III	*	Fuse Buss AGC	1/8	*	*	See notes 3&7, sheet 36	C	Fig. B-1.3.1
1-FT-70-96	RC PMP 3 UPR oil clr outlet flow xmtr	120 ac	Vital 1-III	*	Fuse Buss MDL	1	*	*	See notes 2&7, sheet 36	C	Fig. B-1.3.3
1-FT-70-98	RC PMP 3 LWR oil clr outlet flow xmtr	120 ac	Vital 1-III	*	Fuse Buss MDL	1	*	*	See notes 2&7, sheet 36	C	Fig. B-1.3.3
1-PT-3-92	Stm gen No. 3 FW sup press xmtr	120 ac	Vital 1-III	*	Fuse Buss MDL	1	*	*	See notes 2&7, sheet 36	C	Fig. B-1.3.3
1-LT-77-410	React bldg aux FL + EQ Dr sump level indicator	120 ac	Vital 1-IV	*	Fuse Buss Slo-Blo	1/4	*	*	See notes 2&7, sheet 36	C	Fig. B-1.3.2
1-LT-77-411	React bldg aux FL + EQ Dr sump level indicator	120 ac	Vital 1-IV	*	Fuse Buss Slo-Blo	1/4	*	*	See notes 2&7, sheet 36	C	Fig. B-1.3.2
1-LT-68-312C (L-134)	RCS PRT level	120 ac	Vital 1-IV	*	Fuse Buss MDL	1	*	*	See notes 2&7, sheet 36	C	Fig. B-1.3.3

*Not applicable; refer to remarks

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM

PROJECT WATTS BAR NUCLEAR PLANT UNITS 1

COMPUTED BY W. Harris DATE 7/15/82

CHECKED BY [illegible] DATE 7-22-82

NONCLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
1-FIT-62-49 (L-561)	RCP 4 low range return flow	120 ac	Vital 1-IV	*	Fuse Buss AGC	1/8	*	*	See notes 3&7, sheet 36	C	Fig. B-1.3.1
1-FIT-62-50	RCP 4 high range return flow	120 ac	Vital 1-IV	*	Fuse Buss AGC	1/8	*	*	See notes 3&7, sheet 36	C	Fig. B-1.3.1
1-LT-63-60 (L-177)	SIS accum tank 4 level xmtr	120 ac	Vital 1-IV	*	Fuse Buss AGC	1/8	*	*	See notes 3&7, sheet 36	C	Fig. B-1.3.1
1-PT-63-61	SIS accum tank 4 pressure xmtr	120 ac	Vital 1-IV	*	Fuse Buss AGC	1/8	*	*	See notes 3&7, sheet 36	C	Fig. B-1.3.1
1-PT-63-86	SIS accum tank 3 press XMTR	120 ac	Vital 1-IV	*	Fuse Buss AGC	1/8	*	*	See Note 3, 7, sh 36	C	Fig. B-1.3.1
1-PDT-62-47	RCP 4 press DP No. 1 seal	120 ac	Vital 1-IV	*	Fuse Buss AGC	1/8	*	*	See Note 3, 7, sh 36	C	Fig. B-1.3.1

*Not applicable; refer to remarks

SUBJECT: LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM

PROJECT: WATTS BAR NUCLEAR PLANT UNIT 2

D.D. Wright/SCH 3/15/82 COMPUTED BY / DATE

G. Boop 3-22-82 CHECKED BY / DATE

CLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
2-FS-30-80A/B-A	CRD cool unit D-B	120 ac	vital 2-I	*	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See Note 1, sh 36	C	Fig. B-1.5.2
2-NMD-92-NE31-D	Neutron monitoring detector & triax connectors	120 ac	vital 2-I	*	Fuse Buss MTH	5	*	*	See Notes 4, 7, sh 36	C	Fig. B-1.4
2-NMD-92-NE35-D	Neutron monitoring detector & triax connectors	120 ac	vital 2-I	*	Fuse Buss MTH	5	*	*	See Notes 4, 7, sh 36	C	Fig. B-1.4

*Not applicable; refer to remarks

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM

PROJECT WATTS BAR NUCLEAR PLANT UNIT (2)

D.D. Wright/jcw 2/15/82 COMPUTED BY DATE

CHECKED BY 3-22-82 DATE

CLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
2-NMO-92-NE41A-D	Neutron monitoring detector & triax connectors	120 ac	vital 2-I	*	Fuse Buss MTH	5	*	*	See Notes 4, 7, sh 36	C	Fig. B-1.4
2-LT-3-93-D	Steam generator No. 3 level transmitter	120 ac	vital 2-I	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	A	Fig. B-1.3.1
2-LT-3-51-D	Steam generator No. 2 level transmitter	120 ac	vital 2-I	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	A	Fig. B-1.3.1
2-FT-68-6A-D	RCS loop 1 coolant flow	120 ac	vital 2-I	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	C	Fig. B-1.3.1
2-FT-68-48A-D	RCS loop 3 coolant flow	120 ac	vital 2-I	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	C	Fig. B-1.3.1

*Not applicable; refer to remarks

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM PROJECT WATTS BAR NUCLEAR PLANT UNIT (2) D D Wrightson 4/7/82 COMPUTED BY DATE G Rom 3-22-82 CHECKED BY DATE

CLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
2-FT-68-71A-D	RCS loop 4 coolant flow	120 ac	vital 2-I	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	C	Fig. B-1.3.1
2-FT-68-29A-D	RCS loop 2 coolant flow	120 ac	vital 2-I		Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	C	Fig. B-1.3.1
2-FS-30-92A/B-A	CRD cool unit B-B flow alarm	120 ac	vital 2-I	45.9	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See Note 1, sh 36	C	Fig. B-1.5.2
2-NMD-92-NE32-E	Neutron monitoring detector & triax connectors	120 ac	vital 2-II	*	Fuse Buss MTH	5	*	*	See Notes 4, 7, sh 36	C	Fig. B-1.4
2-NMD-92-NE36-E	Neutron monitoring detector & triax connectors	120 ac	vital 2-II	*	Fuse Buss MTH	5	*	*	See Notes 4, 7, sh 36	C	Fig. B-1.4

*Not applicable; refer to remarks

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM PROJECT WATTS BAR NUCLEAR PLANT UNIT (2) COMPUTED BY D.D. Watson DATE 3/5/82 CHECKED BY C.R. Boop DATE 3-22-82

CLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
2-NMD-92-NE42A-E	Neutron monitoring detector & triax connectors	120 ac	vital 2-II	*	Fuse Buss MTH	5	*	*	See Notes 4, 7, sh 36	C	Fig. B-1.4
2-FS-30-88A/B-B	CRD cool unit C-A flow alarm	120 ac	vital 2-II	*	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See Note 1, sh 36	C	Fig. B-1.5.2
2-FS-30-83A/B-B	CRD cool unit A-A flow alarm	120 ac	vital 2-II	45.8	Fuse Buss KAZ	6	Fuse Buss KAZ	6	See Note 1, sh 36	C	Fig. B-1.5.2
2-FT-1-21B-E	SG_3 main steam HDR flow-chan 2	120 ac	vital 2-II	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	C	Fig. B-1.3.1
2-LT-3-38-E	Steam generator No. 1 level transmitter	120 ac	vital 2-II	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	A	Fig. B-1.3.1

*Not applicable; refer to remarks

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM

PROJECT WATTS BAR NUCLEAR PLANT UNIT (2)

D.D. Wright/sew 3/15/82 COMPUTED BY DATE

CHECKED BY 3-22-82 DATE

CLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
2-LT-3-106-E	Steam generator No. 4 level transmitter	120 ac	vital 2-II	*	Fuse buss AGC	1/8	*	*	See Notes 3, 7, sh 36	A	Fig. B-1.3.1
2-FT-68-68-E	RCS loop 1 coolant flow	120 ac	vital 2-II	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	C	Fig. B-1.3.1
2-FT-68-488-E	RCS loop 3 coolant flow	120 ac	vital 2-II	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	C	Fig. B-1.3.1
2-FT-68-71B-E	RCS loop 4 coolant flow	120 ac	vital 2-II	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	C	Fig. B-1.3.1
2-FT-68-29R-E	RCS loop 2 coolant flow	120 ac	vital 2-II	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	C	Fig. B-1.3.1
2-LT-3-172-A	Steam generator No. 3 level transmitter	120 ac	vital 2-III	*	Fuse Buss MDL	1	*	*	See Notes 2, 7, sh 36	A	Fig. B-1.3.3

*Not applicable; refer to remarks

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM

PROJECT WATTS BAR NUCLEAR PLANT UNIT 2

D.D. Wright/scm 4-5-82 COMPUTED BY DATE

J. Boon 3-22-82 CHECKED BY DATE

CLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
2-LT-3-175-A	Steam generator No. 4 level transmitter	120 ac	vital 2-III	*	Fuse Buss MDL	1	*	*	See Notes 2, 7, sh 36	A	Fig. B-1.3.3
2-NMD-92-NE43A-F	Neutron monitoring detector & triax connectors	120 ac	vital 2-III	*	Fuse Buss MTH	5	*	*	See Notes 4, 7, sh 36	A	Fig. B-1.4
2-RE-90-273-A	Lower inside cntmt post acd area monitor	120 ac	vital 2-III	*	Fuse Little-fuse	1	*	*	See Notes 4, 7, sh 36	C	Fig. B-1.4
2-LT-3-94-F	Steam generator No. 3 level transmitter	120 ac	vital 2-III	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	A	Fig. B-1.3.1
2-LT-3-107-F	Steam generator No. 4 level transmitter	120 ac	vital 2-III	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	A	Fig. B-1.3.1

*Not applicable; refer to remarks

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM

PROJECT WATTS BAR NUCLEAR PLANT UNIT (2)

D.C. Wright/WCH 3/15/82 COMPUTED BY DATE

CHECKED BY 3-22-82 DATE

CLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
2-LT-3-111-F	Steam generator No. 4 level transmitter	120 ac	vital 2-III	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	A	Fig. B-1.3.1
2-FT-68-60-F	RCS loop 1 coolant flow	120 ac	vital 2-III	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	C	Fig. B-1.3.1
2-FT-79-480-F	RCS loop 3 coolant flow	120 ac	vital 2-III	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	C	Fig. B-1.3.1
2-FT-68-290-F	RCS loop 2 coolant flow	120 ac	vital 2-III	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	C	Fig. B-1.3.1
2-FT-68-710-F	RCS loop 4 coolant flow	120 ac	vital 2-III	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	C	Fig. B-1.3.1
2-LT-3-173-B	Steam generator No. 2 level transmitter	120 ac	vital 2-IV	*	Fuse Buss MDL	1	*	*	See Notes 2, 7, sh 36	A	Fig. B-1.3.3

*Not applicable; refer to remarks

SUBJECT: LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM

PROJECT: WATTS BAR NUCLEAR PLANT UNIT 2

D L Wadsworth 4/15/82 — COMPUTED BY / DATE

C Boop 3-22-82 — CHECKED BY / DATE

CLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
2-LT-3-174-B	Steam generator No. 1 level transmitter	120 ac	vital 2-IV	*	Fuse Buss MDL	1	*	*	See Notes 2, 7, sh 36	A	Fig. B-1.3.3
2-PT-68-322-G	RCS PRZR pressure	120 ac	vital 2-IV	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	A	Fig. B-1.3.2
2-NMD-92-NE44A-G	Neutron monitoring detector & triax connectors	120 ac	vital 2-IV	*	Fuse Buss MTH	5	*	*	See Notes 4, 7, sh 36	C	Fig. B-1.4
2-RE-90-274-B	Lower inside cntmt post acd area monitor	120 ac	vital 2-IV	*	Fuse Little-fuse	1	*	*	See Notes 2, 7, sh 36	A	Fig. B-1.4
2-LT-3-42-G	Steam generator No. 1 level transmitter	120 ac	vital 2-IV	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	A	Fig. B-1.3.2

*Not applicable; refer to remarks

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM

PROJECT WATTS BAR NUCLEAR PLANT UNIT 2

D D Wrightson 4/15/82
COMPUTED BY DATE

C Bone 7-22-82
CHECKED BY DATE

CLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
2-LT-3-55-G	Steam generator No. 2 level transmitter	120 ac	vital 2-IV	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	A	Fig. B-1.3.2
2-LT-3-56-G	Steam generator No. 2 level transmitter	120 ac	vital 2-IV	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	A	Fig. B-1.3.2
2-TE-68-18-E	RCS loop 1 cold leg temp	*	*	*	*	*	*	*	See Notes 6, 7, sh 36	A	Fig. B-1.2
2-TE-68-41-E	RCS loop 2 cold leg temp	*	*	*	*	*	*	*	See Notes 6, 7, sh 36	A	Fig. B-1.2
2-TE-68-60-E	RCS loop 3 cold leg temp	*	*	*	*	*	*	*	See Notes 6, 7, sh 36	A	Fig. B-1.2
2-TE-68-83-E	RCS loop 4 cold leg temp	*	*	*	*	*	*	*	See Notes 6, 7, sh 36	A	Fig. B-1.2
2-TE-68-44A-F	RCS loop 3 HL RTD man temp	*	*	*	*	*	*	*	See Notes 6, 7, sh 36	C	Fig. B-1.2
2-TE-68-44B-F	RCS loop 3 HL RTD man temp	*	*	*	*	*	*	*	See Notes 6, 7, sh 36	C	Fig. B-1.2

*Not applicable; refer to remarks

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM — PROJECT WATTS BAR NUCLEAR PLANT UNIT 2

D D Wright/sm 2/15/82 — COMPUTED BY / DATE

J Roop 2-22-82 — CHECKED BY / DATE

CLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
2-TE-68-2A-D	RCS LP1 HL RTD man temp	*	*	*	*	*	*	*	See Notes 6, 7, sh 36	C	Fig. B-1.2
2-TE-68-2B-D	RCS LP1 HL RTD man temp	*	*	*	*	*	*	*	See Notes 6, 7, sh 36	C	Fig. B-1.2
2-TE-68-14A-D	TCS LP1 cold leg RTD man	*	*	*	*	*	*	*	See Notes 6, 7, sh 36	C	Fig. B-1.2
2-TE-68-14B-D	RCS LP1 cold leg RTD man	*	*	*	*	*	*	*	See Notes 6, 7, sh 36	C	Fig. B-1.2
2-TE-68-25A-E	RCS LP 2 HL RTD man temp	*	*	*	*	*	*	*	See Notes 6, 7, sh 36	C	Fig. B-1.2
2-TE-68-25B-E	RCS LP 2 HL RTD man temp	*	*	*	*	*	*	*	See Notes 6, 7, sh 36	C	Fig. B-1.2
2-TE-68-37A-E	RCS loop 2 cold leg man temp	*	*	*	*	*	*	*	See Notes 6, 7, sh 36	C	Fig. B-1.2
2-TE-68-37B-E	RCS loop 2 cold leg man temp	*	*	*	*	*	*	*	See Notes 6, 7, sh 36	C	Fig. B-1.2
2-TE-68-56A-F	RCS loop 3 CL RTD man temp	*	*	*	*	*	*	*	See Notes 6, 7, sh 36	C	Fig. B-1.2
2-TE-68-56B-F	RCS loop 3 CL RTD man temp	*	*	*	*	*	*	*	See Notes 6, 7, sh 36	C	Fig. B-1.2

*Not applicable; refer to remarks

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM

PROJECT WATTS BAR NUCLEAR PLANT UNIT (2)

D.D. Wright/jcw 4/15/82 COMPUTED BY DATE

CHECKED BY 7-22-82 DATE

CLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
2-TE-68-67A-G	RCS LP4 HL RTD man temp	*	*	*	*	*	*	*	See Notes 6, 7, sh 36	C	Fig. B-1.2
2-TE-68-67B-G	RCS LP4 HL RTD man temp	*	*	*	*	*	*	*	See Notes 6, 7, sh 36	C	Fig. B-1.2
2-TE-68-79A-G	RCS LP4 cold Leg RTD man	*	*	*	*	*	*	*	See Notes 6, 7, sh 36	C	Fig. B-1.2
2-TE-68-79B-G	RCS LP4 cold leg RTD man	*	*	*	*	*	*	*	See Notes 6, 7, sh 36	C	Fig. B-1.2
2-TE-68-1-D	RCS loop 1 hot leg temp	*	*	*	*	*	*	*	See Notes 6, 7, sh 36	A	Fig. B-1.2
2-TE-68-24-D	RCS loop 2 hot leg temp	*	*	*	*	*	*	*	See Notes 6, 7, sh 36	A	Fig. B-1.2
2-TE-68-43-D	RCS loop 3 hot leg temp	*	*	*	*	*	*	*	See Notes 6, 7, sh 36	A	Fig. B-1.2
2-TE-68-65-D	RCS loop 4 hot leg temp	*	*	*	*	*	*	*	See Notes 6, 7, sh 36	A	Fig. B-1.2

*Not applicable; refer to remarks

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM PROJECT WATTS BAR NUCLEAR PLANT UNIT 2

R L Lee/SICH 7/19/82 COMPUTED BY DATE

J P Berge 7-22-82 CHECKED BY DATE

NONCLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
2-FT-70-116	RC pmp 1 upr oil clr outlet flow transmitter	120 ac	vital 2-III	*	Fuse Buss MDL	1	*	*	See Notes 2, 7, sh 36	C	Fig. B-1.3.3
2-FT-70-119	Rc pmp 1 lwr oil clr outlet flow transmitter	120 ac	vital 2-III	*	Fuse Buss MDL	1	*	*	See Notes 2, 7, sh 36	C	Fig. B-1.3.3
2-LT-68-312C (L-134)	RCS PRT level	120 ac	vital 2-II	*	Fuse Buss MDL	1	*	*	See Notes 2, 7, sh 36	C	Fig. B-1.3.3
2-LT-77-410	React bld aux fl & eq dr sump level indicator	120 ac	vital 2-II	*	Fuse Buss slo-blo	1/4	*	*	See Notes 2, 7, sh 36	C	Fig. B-1.3.2
2-LT-77-411	React bld aux fl & eq dr sump xmtr	120 ac	vital 2-II	*	Fuse Buss slo-blo	1/4	*	*	See Notes 2, 7, sh 36	C	Fig. B-1.3.2
2-LT-63-60	Sis accum tank 4 level xmtr	120 ac	vital 2-IV	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	C	Fig. B-1.3.1

*Not applicable; refer to remarks

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM

PROJECT WATTS BAR NUCLEAR PLANT UNITS 2

R L Lee/SEH 3/19/82 COMPUTED BY DATE

C Roop 3-22-82 CHECKED BY DATE

NONCLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
2-LT-63-82	Sis accum tank 4 level xmtr	120 ac	vital 2-III	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	C	Fig. B-1.3.1
2-FIT-62-23 2-PE-62-23 (L-559)	Rcp 2 low range return flow	120 ac	vital 2-II	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	C	Fig. B-1.3.1
2-FIT-62-24 2-PE-62-24	Rcp 2 high range return flow	120 ac	vital 2-II	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	C	Fig. B-1.3.1
2-FIT-62-36 2-PE-62-36	Rcp 3 low range return flow	120 ac	vital 2-III	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	C	Fig. B-1.3.1
2-FIT-62-37	Rcp 3 high range return flow	120 ac	vital 2-III	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	C	Fig. B-1.3.1
2-FIT-62-49 (L-561)	Rcp 4 low range return flow	120 ac	vital 2-IV	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	C	Fig. B-1.3.1
2-LT-77-125	Reac bldg fl & eq DR smp lvl transmitter	120 ac	vital 2-I	*	Fuse Buss slo-blo	1/4	*	*	See Notes 2, 7, sh 36	C	Fig. B-1.3.2

*Not applicable; refer to remarks

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM

PROJECT WATTS BAR NUCLEAR PLANT UNIT 2

R.L.Lee/JCH 2/19/82 COMPUTED BY DATE

C.Roop 2-22-82 CHECKED BY DATE

NONCLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
2-LT-77-126	Reac bldg fl & eq DR smp lvl transmitter	120 ac	vital 2-I	*	Fuse Buss slo-blo	1/4	*	*	See Notes 2, 7, sh 36	C	Fig. B-1.3.2
2-FM-63-65 (L-190)	Sis accum tank 2 hdr vent vlv I/P	120 ac	vital 2-I	*	Fuse Buss AGC	1/8	*	*	See Notes 2, 7, sh 36	C	Fig. B-1.3.8
2-MT-30-241 (L-185)	Lower compt mstre transmitter	120 ac	vital 2-I	*	Fuse Buss slo-blo	1/4	*	*	See Notes 2, 7, sh 36	C	Fig. B-1.3.2
2-PDT-70-104	RC PMP2 thrm bar diff press xmtr	120 ac	vital 2-I	*	Fuse Buss MDL	1	*	*	See Notes 2, 7, sh 36	C	Fig. B-1.3.3
2-PDT-62-8 (L-183)	RCP 1 DP - Seal 1	120 ac	vital 2-I	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	C	Fig. B-1.3.1
2-PT-68-301	RCS PRT Press	120 ac	vital 2-I	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	C	Fig. B-1.3.1
2-LT-68-300	RC pressurizer relief tank	120 ac	vital 2-I	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	C	Fig. B-1.3.1

*Not applicable; refer to remarks

SUBJECT: LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM

PROJECT: WATTS BAR NUCLEAR PLANT UNIT 2

R L Lee/SCH — COMPUTED BY — 2/19/82 — DATE

CHECKED BY — 3-22-82 — DATE

NONCLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
2-PM-68-340H	RCS pressurizer press	120 ac	vital 2-I	*	Fuse Buss MDL	1/8	*	*	See Notes 3, 7, sh 36	C	Fig. B-1.3.1
2-RM-90-210	NIS source range detector	120 ac	vital 2-I	*	Fuse Buss MTH	5	*	*	See Notes 4, 7, sh 36	C	Fig. B-1.4
2-FT-70-96	RC pmp 3 oil flow xmtr	120 ac	vital 2-I	*	Fuse Buss MDL	1	*	*	See Notes 2, 7, sh 36	C	Fig. B-1.3.3
2-FT-70-98	RC pmp 3 oil flow xmtr	120 ac	vital 2-I	*	Fuse Buss MDL	1	*	*	See Notes 2, 7, sh 36	C	Fig. B-1.3.3
2-FT-70-105	RC pmp 2 thrm flow xmtr	120 ac	vital 2-I	*	Fuse Buss MDL	1	*	*	See Notes 2, 7, sh 36	C	Fig. B-1.3.3

*Not applicable; refer to remarks

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM

PROJECT WATTS BAR NUCLEAR PLANT UNIT (2)

R.L. Lee/LCH COMPUTED BY 3/19/82 DATE — CHECKED BY 3-22-82 DATE

NONCLASS 1E COMPONENT	FUNCTION	POWER SOURCE VOLT.	POWER SOURCE BOARD	I_{SC} (AMP)	PRIMARY PROT. TYPE	PRIMARY PROT. RATING (AMP)	BACKUP PROT. TYPE	BACKUP PROT. RATING (AMP)	REMARKS	CATEGORY	TYPICAL CIRCUIT (Appendix B-1)
2-Pdt-62-21 (L-182)	RCP2 DP seal No. 1	120 ac	vital 2-II	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	C	Fig. B-1.3.1
2-PT-63-62	SIs accum tank 4 pressure xmtr	120 ac	vital 2-III	*	Fuse Buss AGC	1/8	*	*	See Notes 3, 7, sh 36	C	Fig. B-1.3.1

SUBJECT LOCA SUBMERGED ELECTRICAL EQUIPMENT POWERED FROM CLASS 1E I&C POWER SYSTEM

PROJECT WATTS BAR NUCLEAR PLANT UNITS 1&2

J.D. Hutson COMPUTED BY 2/15/82 DATE

CHECKED BY 3-22-82 DATE

The following notes are applicable to the previous sheets:

Notes:

1. Due to the configuration of the circuit in which this component is connected, its submergence merely produces full load current, resulting only in the spurious operation of an annunciator relay. Thus, no I_{SC} is tabulated.
2. The instrument loop power supply (Bailey and Robertshaw type) for this component is grounded, therefore, the instrument loop will be short circuited. However, the power supply will current limit and will not reflect a short-circuit condition on the Class 1E I&C power system.
3. The instrument loop power supply (Foxboro type) for this component is ungrounded, therefore, submergence of this component will not cause a short-circuit condition on this power supply.
4. This component is powered from a high voltage/low current dc power supply, which will current limit at 13 mA. Therefore, submergence of this component will not cause a short circuit condition on this power supply.
5. This component is powered from a regulated current limiting power supply, therefore, submergence of this component will not reflect a short-circuit condition on the Class 1E I&C power system.
6. This component is part of a resistance bridge on a low voltage instrumentation circuit; therefore, submergence of this component will not cause a short circuit condition on the Class 1E I&C power system.
7. The cable supplying this component is classified as a medium level signal cable; therefore, backup protection is not required.

Prepared by: J. O Hutson Date: 3/15/82 Checked by: J. W. Jones Date: 3-11-82

TABLE C-2-1.1

ASSOCIATED CABLES IDENTIFIED
IN TABLE C-2-1 POWERED FROM
120-VOLT AC POWER SUPPLY

Item No.	Cable No.
2	FE 519*
3	FE 560*
6	FE 733*
9	FE 1446**
10	FE 1451**
11	FE1455**
25	PL2463**
27	PL2483**
29	PP326**
31	PP566**
37	T1910**
38	T1916**
51	V1085*
56	1SR880**
57	1SR882**
58	1SR884**
59	1SR886**
64	2SR880**
65	2SR882**
66	2SR884**
67	2SR886**

*This cable is powered from an ungrounded 120-volt AC supply.

**This cable is powered from a grounded 120-volt AC supply

Prepared by: [signature] Date: 3/15/82 Checked by: R.L Swallows Date: 3/22/82

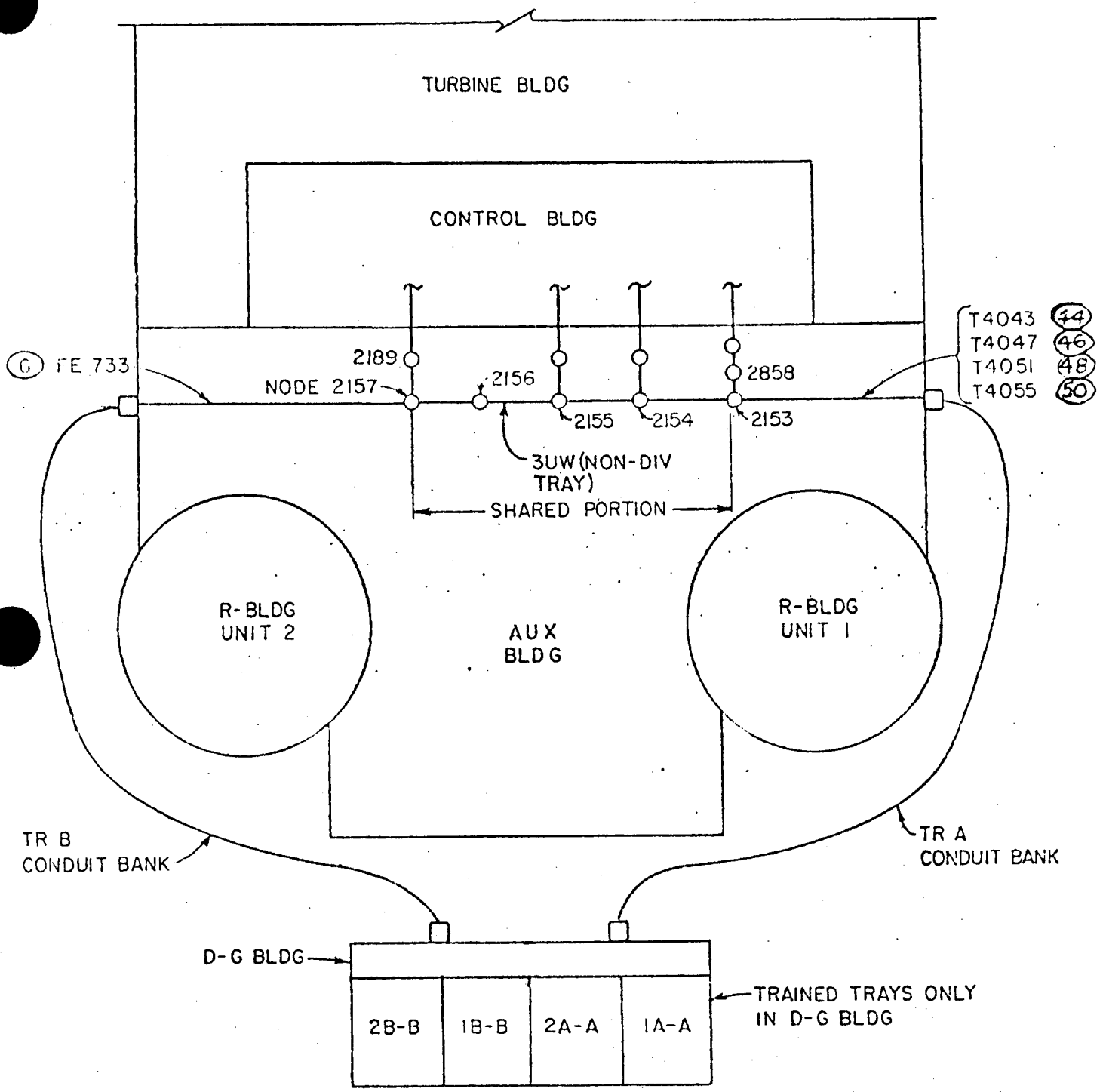
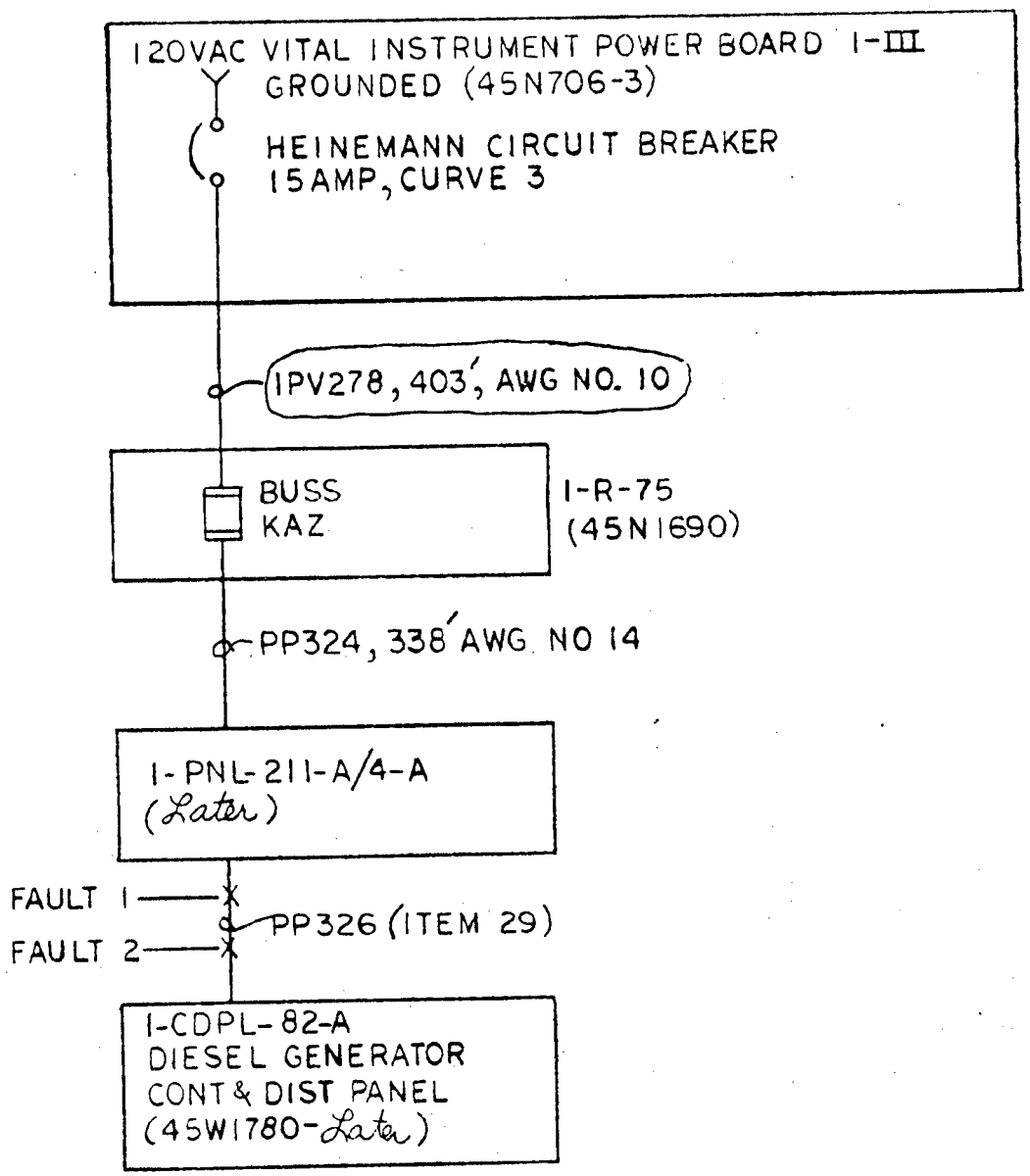


FIGURE C-2-1
"ASSOCIATED CIRCUITS"
SHARING OF COMMON RACEWAY

TYPICAL ASSOCIATED CABLE POWERED FROM 120VAC POWER SUPPLY (GROUNDED)



NEW MODIFICATION—DRAWINGS NOT ISSUED

FIGURE C-2-1.1A

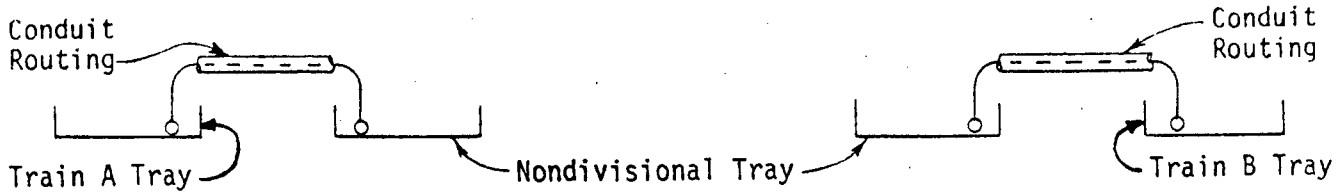
PREPARED BY J.A. Roop DATE 2-26-9

CHECKED BY L. J. Jackson DATE 3/17/

Prepared by: A. G. Taye Date: 2/15/82 Checked by: R.L. Swallows Date: 3/22/82

Table C-2-2

Twenty-four Cables Routed in Train A or B
Tray With Subsequent Routing In Different Segment(s)
of Nondivisional Tray*



Item	Cable	Item	Cable
1	FE500	8	FE1441
4	FE668		
5	FE688		
7	FE840		
12	FE1510		
68	FE1556		
		16	LTA945
		19	LTA952
		20	LTA953
		26	PL2482
		28	PLR555
30	PP446	32	PP686
		34	T1300**
		36	T1340**
52	1SR1	54	1SR500
53	1SR10	55	1SR506
60	2SR1	62	2SR500
61	2SR10	63	2SR506

*All of these cables are routed in voltage level V3 tray, except PLR555 (Item 28) which is routed in V4 (480V) tray.

**Sound powered telephone circuit, no analysis required.

062055.09

TYPICAL ASSOCIATED CABLE POWERED FROM 120VAC POWER SUPPLY (GROUNDED)

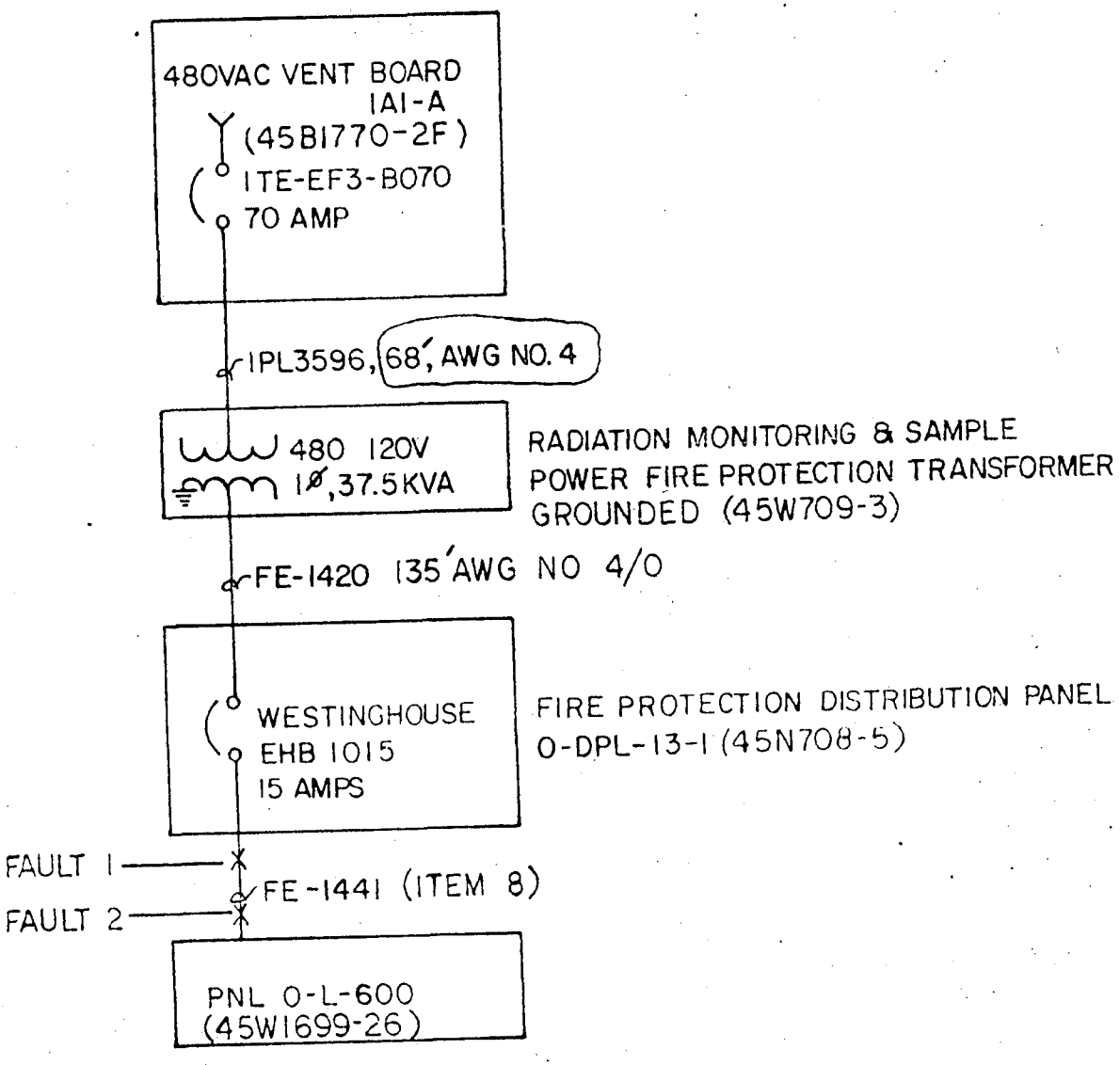


FIGURE C-2-2.1B

PREPARED BY M J Pyatt DATE 2-21-

CHECKED BY C. T. Jackson DATE 3/1

TYPICAL CIRCUIT FOR ASSOCIATED CABLE POWERED FROM 480-VOLT AC POWER SUPPLY

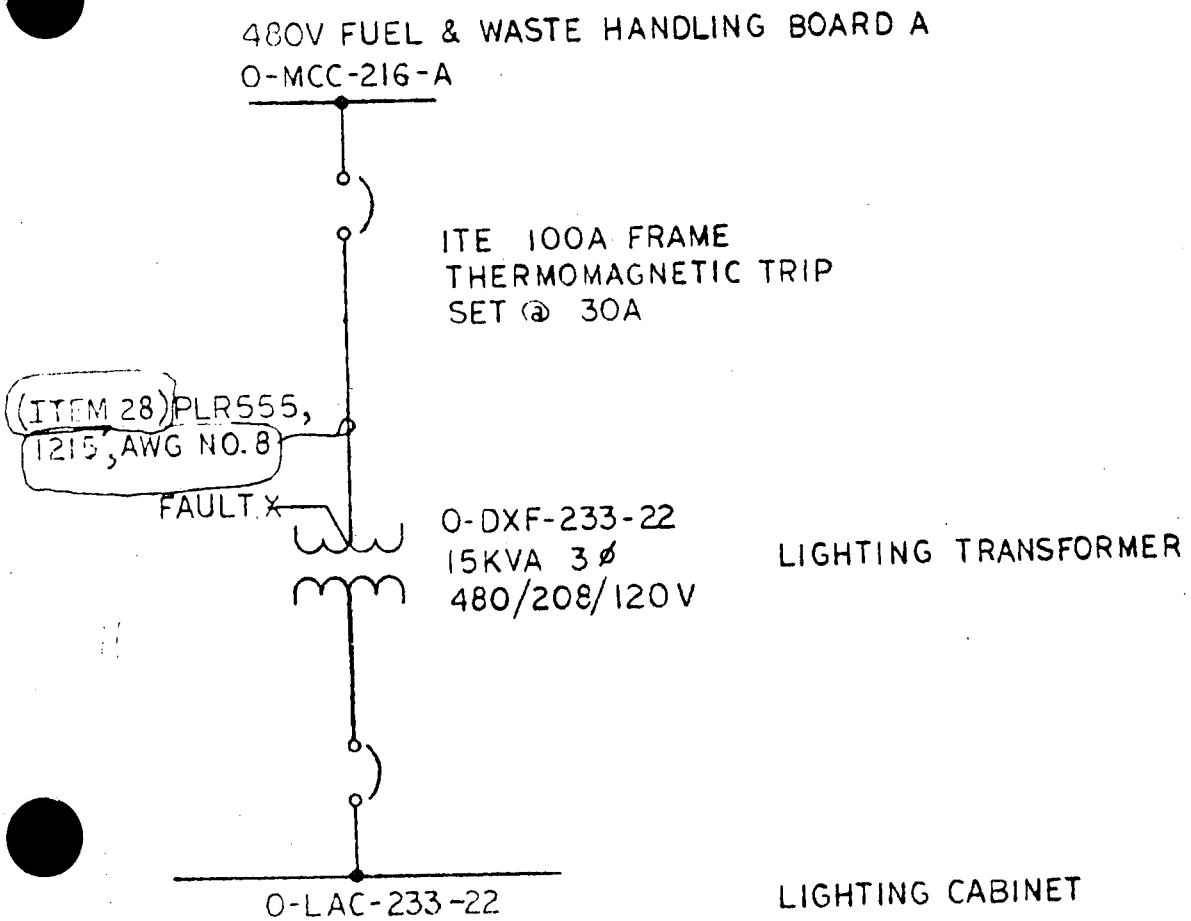


FIGURE C-2-2.4

PREPARED BY M.L.C. DATE 4-15-

CHECKED BY WHN DATE 4-15

TYPICAL ASSOCIATED CABLE POWERED FROM 120VAC POWER SUPPLY (GROUNDED)

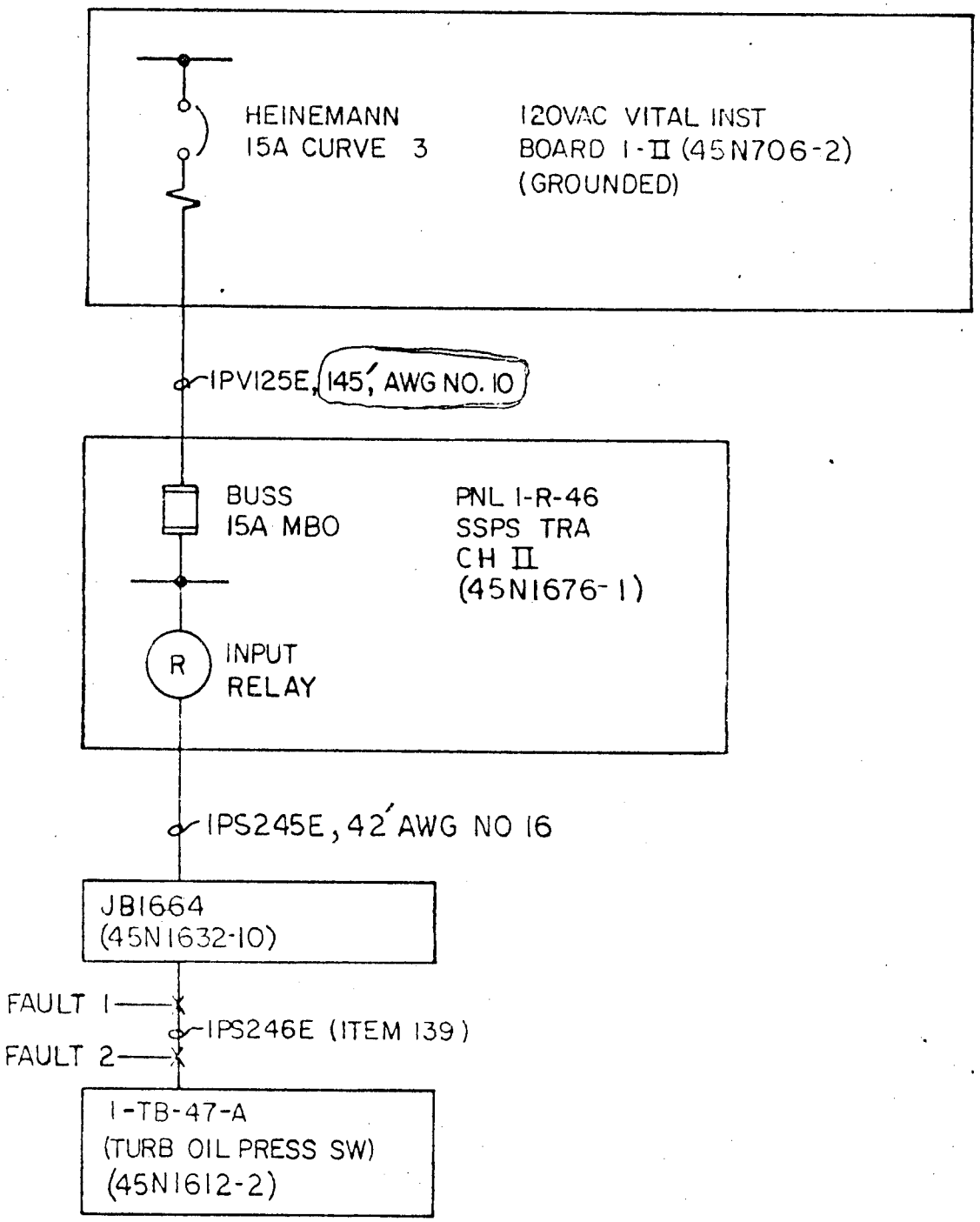


FIGURE C-2-4.1

PREPARED BY M. J. Pyatt DATE 3-24-

CHECKED BY J. W. Lemons DATE 3-11

TENNESSEE VALLEY AUTHORITY

SH 4 OF 16

M. D. Black 3/9/82 — COMPUTED BY — DATE
[illegible] 2/13/82 — DATE
[illegible] — CHECKED BY — DATE 2-13-82

SUBJECT TABLE C-3

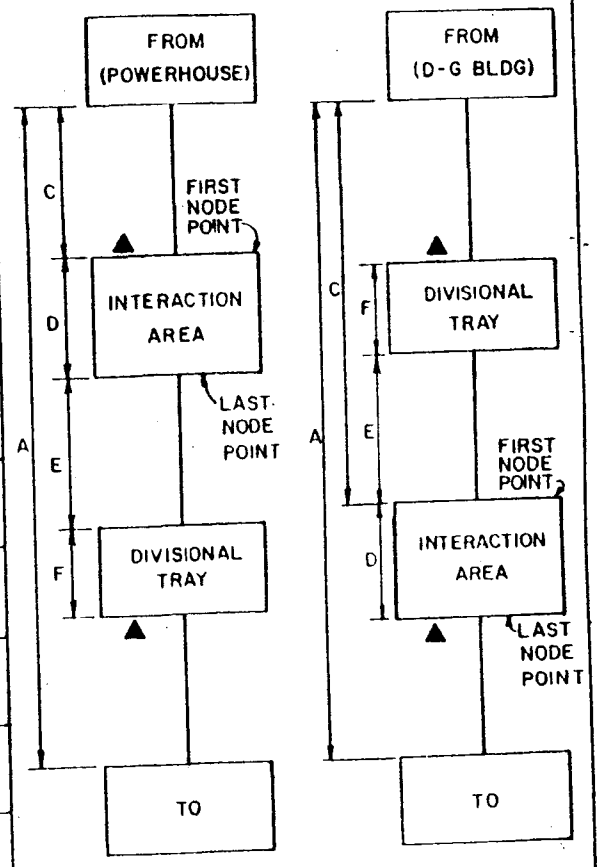
PROJECT WATTS BAR NUCLEAR PLANT

ITEM NO.	CABLE I.D. NO.	TERMINATION POINTS FROM	TERMINATION POINTS TO	A (FEET)	DISTANCES (FEET) B**	C	D	E	F
37	T1910	*O-BAY-259-35 C10Q/692	O-JB-296-260 D-C02R/742	1301	685	25 228	28 28	1117 914	81
38	T1916	* "	O-JB-296-263 D-MR2B/760	1254	685	55	59	1034	91
39	T2360	O-PCS-257-D5 D-C02R/742	*O-CAS-257-1/CAB6 Y-CAS/728	1745	0	1029	431	878	81
40	T2361	"	*O-SAS-257-1/CAB6 C9P/692	1338	0	1151	84	1015	65
41	T2371	O-PCS-257-D33 D-MR2B/760	*O-CAS-257-1/CAB6 Y-CAS/728	1886	0	1175	431	1069	76
42	T2372	"	*O-SAS-257-1/CAB6 C9P/692	1217	0	1100	56	958	107
43	T4042	*O-CAS-257-1/CAB7 Y-CAS/728	O-PCS3-257-D15 D-GR2B/742	1887	0	285	374	1001	107
44	T4043	*O-SAS-257-1/CAB7 C9P/692	O-PCS3-257-D15 D-GR2B/742	1432	0	51 144	56 119	1098 942	107
45	T4046	*O-CAS-257-1/CAB7 Y-CAS/728	O-PCS3-257-D16 D-GR1B/742	1831	0	280	374	990	107
46	T4047	*O-SAS-257-1/CAB7 C9P/692	"	1392	0	51 144	56 119	1098 942	107
47	T4050	*O-CAS-257-1/CAB7 Y-CAS/728	O-PCS3-257-D17 D-GR2A/742	1846	0	280	374	990	107
48	T4051	*O-SAS-257-1/CAB7 C9P/692	"	1407	0	51 144	56 119	1098 942	107

*.... TERMINATION POINT NEAREST POWER SOURCE.

**.. ADDITIONAL DISTANCE FROM TERMINATION POINT TO POWER SOURCE.

▲... POINTS WHERE SHORT CIRCUIT CALCULATIONS WERE MADE.



TENNESSEE VALLEY AUTHORITY

N.D. Black 3/4/82 SH 12 OF 14

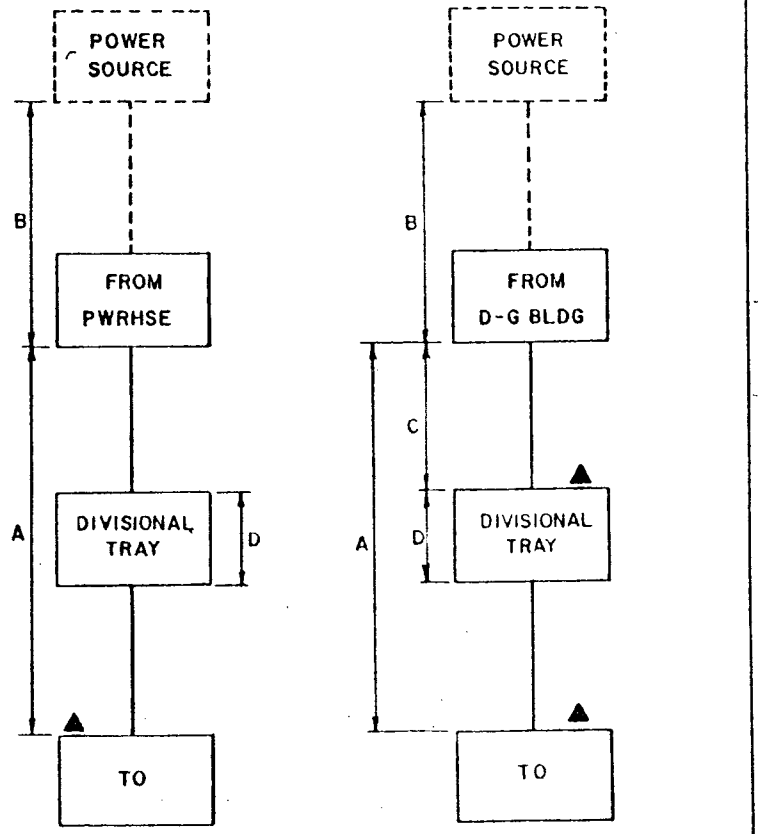
SUBJECT TABLE C-3 PROJECT WATTS BAR NUCLEAR PLANT

Ralph Swallows 2/4/82 COMPUTED BY DATE — [illegible] 2-14-82 CHECKED BY DATE

ITEM NO.	CABLE I.D. NO.	TERMINATION POINTS FROM	TO	A (FEET)	DISTANCES (FEET) B	C	D
32	PP636	*1-PNL-211-B/4-B A11T/757	2-CDPL-82-B/F-B D-BR2B/760	1134	403	—	100
34	T1300	*0-JB-292-1485 A14S/757	0-JB-296-1115 D-PGCR/742	1316	0	—	30
36	T1340	*0-JB-292-1490 A2S/757	0-JB-296-1119 D-PGCR/742	1109	0	—	65
52	1SR1	*1-CMPT-263-A1 A5S/772	1-MCC-215-A1/3A-A D-BR1A/760	1233	123	—	129
53	1SR10	* "	1-MCC-215-A2/3A-A D-BR1A/760	1221	123	—	109
54	1SR500	*1-CMPT-263-B1 A8S/772	1-MCC-215-B1/3A-B D-BR1B/760	1493	92	—	118
55	1SR506	* "	1-MCC-215-B2/3A-B D-BR1B/760	1485	92	—	110
60	2SR1	*2-CMPT-263-A1 A8S/772	2-MCC-215-A1/3A-A D-BR2A/760	1309	389	—	118
61	2SR10	*2-CMPT-263-A1 A8S/772	2-MCC-215-A2/3A-A D-BR2A/760	1312	389	—	122
62	2SR500	*2-CMPT-263-B1 A11S/772	2-MCC-215-B1/3A-B D-BR2B/760	1328	501	—	118
63	2SR506	*2-CMPT-263-B1 A11S/772	2-MCC-215-B2/3A-B D-BR2B/760	1320	501	—	110
68	FE1556	*0-PNL-13-L610 A3V/782	0-PNL-13-L622 D-PGCR/742	1353	699	—	65

▲...POINTS WHERE SHORT CIRCUIT CALCULATIONS WERE MADE.

*....TERMINATION POINT NEAREST POWER SOURCE.



TENNESSEE VALLEY AUTHORITY

M L Black 3/9/82 SH 15 OF 16

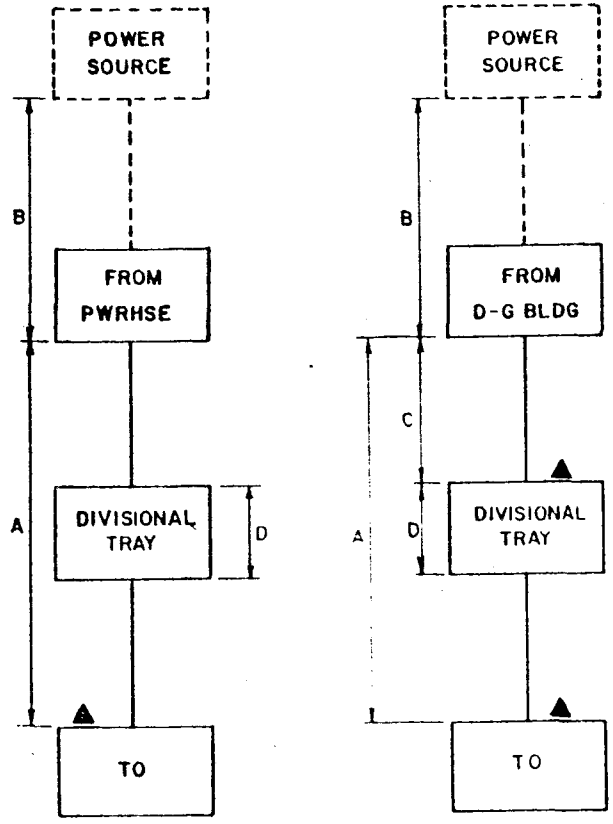
SUBJECT TABLE C-3 PROJECT WATTS BAR NUCLEAR PLANT

Ralph Emblom 2/14/82 COMPUTED BY DATE — Wm a Frye 2-14-82 CHECKED BY DATE

ITEM NO.	CABLE I.D. NO.	TERMINATION POINTS FROM	TERMINATION POINTS TO	A (FEET)	DISTANCES (FEET) B	C	D
1	FE500	0-ARB-39-24A D-PGCR/742	*1-BD-235-3-F A11R/757	1245	0	(2.5)	30
4	FE668	*1-BD-235-4-G A12R/757	0-JB-296-1144 D-PGCR/742	1288	0	—	15
5	FE689	*0-ARB-39-26B D-PGCR/742	2-PNL-275-R72 C11P/708	1225	1303	(4.5)	30
7	FE840	*0-JB-292-2032 A8S/737	0-HS-26-247F D-CR/760	1186	410	—	121
8	FE1441	*0-DPL-13-1 A8T/757	0-PNL-13-L619 D-PGCR/742	1296	135	—	15
12	FE1510	* "	"	1311	135	—	30
16	LTA945	*0-BAY-259-39 C10Q/692	0-JB-296-193 D-GR1B/742	1254	35	—	40
19	LTA952	* "	0-JB-296-1048 D-BR1B/760	1327	0	—	122
20	LTA953	* "	"	1317	35	—	122
26	PL2482	*0-MCC-218-1/6C T16J/708	0-JB-296-1336 D-FOTR/742	1188	0	—	43
28	PLR555	*0-MCC-216-A/6F1 A9S/713	0-DXF-233-22 D-PGCR/742	1215	0	—	40
30	PP446	*2-PNL-211-A/4-A A5S/757	2-CDPL-82-A/F-A D-BR2A/760	1300	403	—	107

▲ . . POINTS WHERE SHORT CIRCUIT CALCULATIONS WERE MADE.

* . . . TERMINATION POINT NEAREST POWER SOURCE.



TENNESSEE VALLEY AUTHORITY

D.D. Wright/ Gene Frye LICH — COMPUTED BY — DATE 3/13/82 — J.W. Lemore — CHECKED BY — DATE 3-17-82

SUBJECT FAULT ANALYSIS OF ASSOCIATED CABLES PROJECT WATTS BAR NUCLEAR PLANT

ITEM NO.	CABLE DATA MARK LTR	AWG	NO. OF COND	$I^2t \times 10^6$	FOR	POWER SOURCE BOARD	VOLT.	PROTECTIVE DEVICE TYPE	RATING (AMP)	CLEARING TIME (SEC)	FAULT ANALYSIS I (SHORT CIRCUIT) AMP	$I^2t \times 10^6$	CONDUCTOR CONTINUOUS CURRENT RATING (AMP)	REMARKS	TYPICAL CIRCUIT (APPENDIX C-2)
1	WDD-1 (PXJ)	8	2-1C	1.41	DG rm 2A-A CO2 fire protection	Vital 1-III	120 ac	Bkr Hein curve 3	15	0.1	73.1	.000534	50	—	Fig. C-2-2.1A
2	WGG (PJJ)	12	1-7C	.12	DG rm 2A-A CO2 fire protection	Vital 1-III	120 ac	Bkr Hein curve 3	15	0.11 1.5	68.9 23.2	.000478 .000807	22	—	Fig. C-2-1.1B
3	WGG (PJJ)	12	1-7C	.12	DG rm 1A-A CO2 fire protection	Vital 1-III	120 ac	Bkr Hein curve 3	15	0.1 1.5	66.0 22.9	.000453 .000786	22	—	Fig. C-2-1.1B
4	WDD-1 (PXJ)	8	2-1C	1.41	DG rm 2B-B CO2 fire protection	Vital 1-IV	120 ac	Bkr Hein curve 3	15	0.11	70.6	.000548	50	—	Fig. C-2-2.1A
5	WGG (PJJ)	12	1-7C	.12	DG rm 2B-B CO2 fire protection	Vital 1-IV	120 ac	Bkr Hein curve 3	15	1.2 0.13	20.5 63.6	.000504 .000526	22	—	Fig. C-2-2.1A
6	WGG (PJJ)	12	1-7C	.12	DG rm 1B-B CO2 fire protection	Vital 1-IV	120 ac	Bkr Hein curve 3	15	0.11 3.0	61.1 19.7	.000410 .001164	22	—	Fig. C-2-1.1B
7	WGB-1 (PXMJ)	12	1-2C	.221	Fire pump start ckt	Inst pwr 1-B	120 ac	Fuse Buss KAZ	6	0.17	22.4	.000085	27.3	—	Fig. C-2-1.1A

D.D. Wright/JPH 3/13/82 J.A. Lenahan 3-17-82
Gene Frye/JPH
COMPUTED BY DATE CHECKED BY DATE

SUBJECT FAULT ANALYSIS OF ASSOCIATED CABLES PROJECT WATTS BAR NUCLEAR PLANT

ITEM NO.	CABLE DATA: MARK LTR	AWG	NO. OF COND	I^2t x 10^6	FOR	POWER SOURCE: BOARD	VOLT.	PROTECTIVE DEVICE: TYPE	RATING (AMP)	CLEARING TIME (SEC)	FAULT ANALYSIS: I (SHORT CIRCUIT) AMP	I^2t x 10^6	CONDUCTOR CONTINUOUS CURRENT RATING (AMP)	REMARKS	TYPICAL CIRCUIT (APPENDIX C-2)
24	WTO-2 (XLPE)	16	1-2C	0.0458	CAP 0-CSPR -252-85	Comm rm Bay 39 dist pnl	24 dc	Fuse Buss GMT	1	.01 .085	80.8 4.4	.000065 .000002	16.4	--	Fig. C-2-1.2
25	WGE (PJJ)	12	1-5C	.12	DGB fuel oil trans pump cont	Diesel aux BD 2B2-B aux pwr xfmr	120 ac	Fuse Chase Shawmut TRM	1.0	.1 .1	16.7 16.7	.000028* .000028*	22	*Power supply limits to 16.7 amps, max. Isc & I^2t per this value	Fig. C-2-1.1A
26	WGB-1 (PXMJ)	12	1-2C	.221	Yard fuel oil trans pump cont	Diesel aux BD 2B2-B aux pwr xfmr	120 ac	Fuse Chase Shawmut TRM	1.6	*	18.8 18.8	*	22	*$I_{s.c.}$ for this calculation is less than $I_{continuous}$, cable cannot be damaged.	Fig. C-2-2.1A
27	WGE (PJJ)	12	1-5C	.12	Yard fuel oil trans pump cont	Diesel aux BD 2B2-B aux pwr xfmr	120 ac	Fuse Chase Shawmut TRM	1.6	.25 .083	25 14.2	.000016* .001109	22	*Power supply limits to 25 amps, max I_{sc} and I^2t per this value.	Fig. C-2-1.1A
28	WFA-4 (PXMJ)	8	1-3C	1.41	Ltg Cab 22 xfmr sup	Fuel & waste handling Bd A	480 ac	Bkr ITE EF	30	1.5	266.8	.10677	50	--	Fig. C-2-2.4
29	WIB (PJJ)	14	1-2C	.0473	DG 1A-A com start rel ckt	Vital 1-III	120 ac	Fuse Buss KAZ	6	.14 .021	25.6 63.9	.000092 .000085	17.6	--	Fig. C-2-1.1A

*Not applicable. Refer to Remarks.

TENNESSEE VALLEY AUTHORITY

R.L. Lee/JCH 2/13/82 J.W. Lenore 3-17-82
Gene Fryar COMPUTED BY DATE CHECKED BY DATE

SUBJECT FAULT ANALYSIS OF ASSOCIATED CABLES PROJECT WATTS BAR NUCLEAR PLANT

ITEM NO.	CABLE DATA MARK LTR	AWG	NO. OF COND	I^2t x 10^6	FOR	POWER SOURCE BOARD	VOLT.	PROTECTIVE DEVICE TYPE	RATING (AMP)	CLEARING TIME (SEC)	FAULT ANALYSIS I (SHORT CIRCUIT) AMP	I^2t x 10^6	CONDUCTOR CONTINUOUS CURRENT RATING (AMP)	REMARKS	TYPICAL CIRCUIT (APPENDIX C-2)
37	WHB-1 (PXMJ)	14	1-2C	.0874	Door D5 xfmr sup	Instr pwr pnl 1A	120 ac	Buss AGC fuse	1	0.01 0.01	333.8 32.9	.001114 .000011	22.8	--	Fig. C-2-1.1A
38	WHB (PJJ)	14	1-2C	.0473	Door D33 xfmr sup	Instr pwr pnl 1A	120 ac	Buss AGC fuse	1	0.01 0.01	272.7 33.2	.00074 .000011	17.6	--	Fig. C-2-1.1A
39	WTG-1 (PE)	19	1-3P	.00647	CAS cont door D5	Central alarm cabinet	6 VDC	Buss AGC fuse	1	* *	2.6 0.4	* *	4	See remark on item No. 26	Fig. C-2-1.3
40	WTG-1 (PE)	19	1-3P	.00647	SAS cont door D5	Central alarm cabinet	6 VDC	Buss AGC fuse	1	0.04 *	2.2 0.6	.000002 *	4	See remark on item No. 26	Fig. C-2-1.3
41	WTG-1 (PE)	19	1-3P	.00647	CAS cont door D33	Central alarm cabinet	6 VDC	Buss AGC fuse	1	* *	2.7 0.4	* *	4	See remark on item No. 26	Fig. C-2-1.3
42	WTG-1 (PE)	19	1-3P	.00647	SAS cont door D33	Central alarm cabinet	6 VDC	Buss AGC fuse	1	0.017 *	12.2 0.6	.0000025 *	4	See remark on item No. 26	Fig. C-2-1.3

*Not applicable. Refer to Remarks.

TENNESSEE VALLEY AUTHORITY

SUBJECT FAULT ANALYSIS OF ASSOCIATED CABLES PROJECT WATTS BAR NUCLEAR PLANT

R.L Lee/JCH 2/13/92 COMPUTED BY DATE
Gene Frye/JCH
J.A. Fenton 3-17-92 CHECKED BY DATE

ITEM NO.	CABLE DATA MARK LTR	AWG	NO. OF COND	I^2t x 10^6	FOR	POWER SOURCE BOARD	VOLT.	PROTECTIVE DEVICE TYPE	RATING (AMP)	CLEARING TIME (SEC)	FAULT ANALYSIS I (SHORT CIRCUIT) AMP	I^2t x 10^6	CONDUCTOR CONTINUOUS CURRENT RATING (AMP)	REMARKS	TYPICAL CIRCUIT (APPENDIX C-2)
43	WTG-1 (PE)	19	1-3P	.00647	Door D15 status	Central alarm cabinet	6 DC	Buss AGC fuse	1	0.35 *	2.6 0.4	.0000023 *	4	See remark on item No. (26)	Fig. C-2-1.3
44	WTG-1 (PE)	19	1-3P	.00647	Door D15 status	Central alarm cabinet	6 DC	Buss AGC fuse	1	0.01 *	14.6 0.5	.0000021 *	4	See remark on item No. (26)	Fig. C-2-1.3
45	WTG-1 (PE)	19	1-3P	.00647	Door D16 status	Central alarm cabinet	6 DC	Buss AGC fuse	1	0.35 *	2.6 0.4	.0000023 *	4	See remark on item No. (26)	Fig. C-2-1.3
46	WTG-1 (PE)	19	1-3P	.00647	Door D16 status	Central alarm cabinet	6 DC	Buss AGC fuse	1	0.01 *	14.6 0.5	.0000021 *	4	See remark on item No. (26)	Fig. C-2-1.3
47	WTG-1 (PE)	19	1-3P	.00647	Door D17 status	Central alarm cabinet	6 DC	Buss AGC fuse	1	0.35 *	2.6 0.4	.0000023 *	4	See remark on item No. (26)	Fig. C-2-1.3
48	WTG-1 (PE)	19	1-3P	.00647	Door D17 status	Central alarm cabinet	6 DC	Buss AGC fuse	1	0.01 *	(14.6) (*)	.0000021 *	4	See remark on item No. (26)	Fig. C-2-1.3

*Not applicable. Refer to Remarks.

TENNESSEE VALLEY AUTHORITY

COMPUTED BY: R. L. Lee/JOH, Gene Fryc/JOH DATE: 2/13/82 CHECKED BY: J W Searcie DATE: 3-17-82

SUBJECT: FAULT ANALYSIS OF ASSOCIATED CABLES PROJECT: WATTS BAR NUCLEAR PLANT

ITEM NO.	CABLE DATA: MARK LTR	AWG	NO. OF COND	I^2t x 10^6	FOR	POWER SOURCE: BOARD	VOLT.	PROTECTIVE DEVICE: TYPE	RATING (AMP)	CLEARING TIME (SEC)	FAULT ANALYSIS: I (SHORT CIRCUIT) AMP	I^2t x 10^6	CONDUCTOR CONTINUOUS CURRENT RATING (AMP)	REMARKS	TYPICAL CIRCUIT (APPENDIX C-2)
49	WTG-1 (PE)	19	1-3P	.00647	Door D18 status	Central alarm station cabinet	6 DC	Fuse Buss AGC	1	0.35 *	2.6 0.4	.0000023 *	4	See remark on item No. 26	Fig. C-2-1.3
50	WIG-1 (PE)	19	1-3P	.00647	Door D18 status	Central alarm station cabinet	6 DC	Fuse Buss AGC	1	0.01 *	14.6 0.5	.0000021 *	4	See remark on item No. 26	Fig. C-2-1.3
51	WHD (PJJ)	14	1-4C	.0473	DG corridor wtr spray cont	Inst pwr 1B	120 ac	Fuse Buss KAZ	6	0.012 0.3	94.8 17.0	.000107 .000086	17.6	—	Fig. C-2-1.1A
52	WHC (PJJ)	14	1-3C	.0473	Power off FCV-67-66-A	Inst pwr 1A	120 ac	Fuse Buss AGU	1	0.015	13.2	.0000026	17.6	—	Fig. C-2-2-1B
53	WHC (PJJ)	14	1-3C	.0473	Power off FCV-67-68-A	Inst pwr 1A	120 ac	Fuse Buss AGU	1	0.015	13.4	.0000026	17.6	—	Fig. C-2-2.1B
54	WHC (PJJ)	14	1-3C	.0473	Power off FCV-67-67-B	Inst pwr 1B	120 ac	Fuse Buss AGU	1	0.017	11.0	.000002	17.6	—	Fig. C-2-2-1B

*Not applicable. Refer to Remarks.

TENNESSEE VALLEY AUTHORITY

R.L. Lee/JFH Gene Frye/... — COMPUTED BY — 2/15/82 DATE — J W ... CHECKED BY — 3-17-82 DATE

SUBJECT FAULT ANALYSIS OF ASSOCIATED CABLES   PROJECT WATTS BAR NUCLEAR PLANT

ITEM NO.	CABLE DATA: MARK LTR	CABLE DATA: AWG	CABLE DATA: NO. OF COND	CABLE DATA: I^2t x 10^6	FOR	POWER SOURCE: BOARD	POWER SOURCE: VOLT.	PROTECTIVE DEVICE: TYPE	PROTECTIVE DEVICE: RATING (AMP)	PROTECTIVE DEVICE: CLEARING TIME (SEC)	FAULT ANALYSIS: I (SHORT CIRCUIT) AMP	FAULT ANALYSIS: I^2t x 10^6	CONDUCTOR CONTINUOUS CURRENT RATING (AMP)	REMARKS	TYPICAL CIRCUIT (APPENDIX C-2)
55	WHC (PJJ)	14	1-3C	.0473	Power off FCV-67-65-B	Inst pwr 1B	120 ac	Fuse Buss (AGU)	1	0.017	11.0	.000002	17.6	—	Fig. C-2-2.1B
56	WHB-1 (PXMJ)	14	1-2C	.0874	HS-30-447C P-Auto	Inst pwr 1A	120 ac	Fuse Buss (AGU)	1	0.01 0.011	190.0 13.5	.000361 .000002	22.8	—	Fig. C-2-1.1A
57	WHB-1 (PXMJ)	14	1-2C	.0874	HS-30-451C P-Auto	Inst pwr 1A	120 ac	Fuse Buss (AGU)	1	0.01 0.011	190.0 13.7	.000361 .000002	22.8	—	Fig. C-2-1.1A
58	WHB-1 (PXMJ)	14	1-2C	.0874	HS-30-449C P-Auto	Inst pwr 1B	120 ac	Fuse Buss (AGU)	1	0.01 0.015	187.0 12.0	.000349 .0000021	22.8	—	Fig. C-2-1.1A
59	WHB-1 (PXMJ)	14	1-2C	.0874	HS-30-453C P-Auto	Inst pwr 1B	120 ac	Fuse Buss (AGU)	1	0.01 0.015	187.0 12.2	.000349 .0000021	22.8	—	Fig. C-2-1.1A
60	WHC (PJJ)	14	1-3C	.0473	Pwr off FCV-67-66-A	Inst pwr 2A	120 ac	Fuse Buss (AGU)	1	0.015	12.0	.0000021	17.6	—	Fig. C-2-2.1B
61	WHC (PJJ)	14	1-3C	.0473	Pwr off FCV-67-68-A	Inst pwr 2B	120 ac	Buss (AGU) fuse	1	0.015	12.0	.000002	17.6	—	Fig. C-2-2.1B

*Not applicable. Refer to Remarks.

TENNESSEE VALLEY AUTHORITY

Wm Hartsell/JCH Gene Fryc/JCH 3/13/82 COMPUTED BY DATE

JWdennise 3-17-82 CHECKED BY DATE

SUBJECT FAULT ANALYSIS OF ASSOCIATED CABLES PROJECT WATTS BAR NUCLEAR PLANT

ITEM NO.	CABLE DATA MARK LTR	AWG	NO. OF COND	I^2t x 10^6	FOR	POWER SOURCE BOARD	VOLT.	PROTECTIVE DEVICE TYPE	RATING (AMP)	CLEARING TIME (SEC)	FAULT ANALYSIS I (SHORT CIRCUIT) AMP	I^2t x 10^6	CONDUCTOR CONTINUOUS CURRENT RATING (AMP)	REMARKS	TYPICAL CIRCUIT (APPENDIX C-2)
62	WHC (PJJ)	14	1-3C	.0473	Pwr off FCV-67-67-B	Inst pwr 2B	120 ac	Buss AGU fuse	1	0.016	11.7	.000002	17.6	—	Fig. C-2-2.1B
63	WHC (PJJ)	14	1-3C	.0473	Pwr off FCV-67-65-B	Inst pwr 2B	120 ac	Buss AGU fuse	1	0.016	11.8	.000002	17.6	—	Fig. C-2-2.1B
64	WHB-1 (PXMJ)	14	1-2C	.0874	HS-30-448C P-auto	Inst pwr 2A	120 ac	Buss AGU fuse	1	0.015 0.01	12.0 196.0	.000002 .00038	22.8	—	Fig. C-2-1.1A
65	WHB-1 (PXMJ)	14	1-2C	.0874	HS-30-452C P-auto	Inst pwr 2A	120 ac	Buss AGU fuse	1	0.015 0.01	11.8 58.3	.000002 .000033	22.8	—	Fig. C-2-1.1A
66	WHB-1 (PXMJ)	14	1-2C	.0874	HS-30-450C P-auto	Inst pwr 2B	120 ac	Buss AGU fuse	1	0.013 0.01	12.9 229.7	.000002 .00052	22.8	—	Fig. C-2-1.1A
67	WHB-1 (PXMJ)	14	1-2C	.0874	HS-30-454C P-auto	Inst pwr 2B	120 ac	Buss AGU fuse	1	0.013 0.01	12.9 229.7	.000002 .000527	22.8	—	Fig. C-2-1.1A
68	WGB-1 (PXMJ)	12	1-2C	.221	120V alm sup	DPL-13-1 Fire prot	120 ac	W EHB BKR	15	35	37.3	.0486	27.35	—	Fig. C-2-1.1B

TENNESSEE VALLEY AUTHORITY

Wm. Hartsell/ech Gene Fox/ech COMPUTED BY 3/13/82 DATE Charles Jackson CHECKED BY 3/17/82 DATE

SUBJECT FAULT ANALYSIS OF ASSOCIATED CABLES PROJECT WATTS BAR NUCLEAR PLANT

ITEM NO.	CABLE DATA MARK LTR	AWG	NO. OF COND	I^2t x 10^6	FOR	POWER SOURCE BOARD	VOLT.	PROTECTIVE DEVICE TYPE	RATING (AMP)	CLEARING TIME (SEC)	FAULT ANALYSIS I (SHORT CIRCUIT) AMP	I^2t x 10^6	CONDUCTOR CONTINUOUS CURRENT RATING (AMP)	REMARKS	TYPICAL CIRCUIT (APPENDIX C-2)
73	WHB (PJJ)	14	1-2C	.0473	Main stm dump vlv cont	Battery bd I	125 dc	Buss KAZ fuse	6	.018 .035	78.3 50.4	.00011 .000088	17.6		Fig. C-2-3.1
74	WHB (PJJ)	14	1-3C	.0473	Main stm dump vlv cont	Battery bd II	125 dc	Buss KAZ fuse	6	.034 .065	52.8 36.0	.000094 .000084	17.6		Fig. C-2-3.1
75	WHB (PJJ)	14	1-2C	.0473	Main stm dump vlv cont	Battery bd I	125 dc	Buss KAZ fuse	6	.018 .035	78.3 50.4	.00011 .000088	17.6		Fig. C-2-3.1
76	WHC (PJJ)	14	1-3C	.0473	Main stm dump vlv cont	Battery bd II	125 dc	Buss KAZ fuse	6	.034 .067	52.8 34.4	.000094 .000079	17.6		Fig. C-2-3.1
77	WHB (PJJ)	14	1-2C	.0473	Main stm dump vlv cont	Battery bd I	125 dc	Buss KAZ fuse	6	.018 .035	78.3 50.4	.00011 .000088	17.6		Fig. C-2-3.1
78	WHC (PJJ)	14	1-3C	.0473	Main stm dump vlv cont	Battery bd II	125 dc	Buss KAZ fuse	6	.034 .065	52.8 36.0	.000094 .000084	17.6		Fig. C-2-3.1
79	WHB (PJJ)	14	1-2C	.0473	Main stm cool down vlv cont	Battery bd I	125 dc	Buss KAZ fuse	6	.018 .035	78.3 50.4	.00011 .000088	17.6		Fig. C-2-3.1

TENNESSEE VALLEY AUTHORITY

SUBJECT FAULT ANALYSIS OF ASSOCIATED CABLES PROJECT WATTS BAR NUCLEAR PLANT

Wm Hartsell/sm 3/18/82 Charles Jackson 3/17/82
Gene Fry/sm
COMPUTED BY DATE CHECKED BY DATE

ITEM NO.	CABLE DATA MARK LTR	AWG	NO. OF COND	I^2t x 10^6	FOR	POWER SOURCE BOARD	VOLT.	PROTECTIVE DEVICE TYPE	RATING (AMP)	CLEARING TIME (SEC)	FAULT ANALYSIS I (SHORT CIRCUIT) AMP	I^2t x 10^6	CONDUCTOR CONTINUOUS CURRENT RATING (AMP)	REMARKS	TYPICAL CIRCUIT (APPENDIX C-2)
103	WGB (PJJ)	12	1-2C	.120	Trip Bus A	Battery bd 2	250 dc	BKR West. Tri-Pac Type FB	20	.42 1.90	206.41 151.39	.01789 .04355	22		Fig. C-2-3.2
104	WHB (PJJ)	12	1-2C	.120	Trip Bus A	Battery bd 2	250 dc	BKR West. Tri-Pac Type FB	20	2.6 3.7	116.9 97.6	.03553 .03523	22		Fig. C-2-3.2
105	WHB (PJJ)	14	1-2C	.0473	Main stm cool down vlv cont	Battery bd III	125 dc	Buss KAZ fuse	6	.01 .025	123.8 64.3	.000153 .000103	17.6		Fig. C-2-3.1
106	WHC (PJJ)	14	1-3C	.0473	Main stm cool down vlv cont	Battery bd IV	125 dc	Buss KAZ fuse	6	.031 .057	55.1 37.8	.000094 .000081	17.6		Fig. C-2-3.1
107	WHB (PJJ)	14	1-2C	.0473	Main stm dump vlv cont	Battery bd III	125 dc	Buss KAZ fuse	6	.01 .022	123.8 64.3	.000153 .00009	17.6		Fig. C-2-3.1
108	WHC (PJJ)	14	1-3C	.0473	Main stm dump vlv cont	Battery bd IV	125 dc	Buss KAZ fuse	6	.031 .057	55.1 37.8	.000094 .000081	17.6		Fig. C-2-3.1
109	WHB (PJJ)	14	1-2C	.0473	Main stm dump vlv cont	Battery bd III	125 dc	Buss KAZ fuse	6	.01 .022	123.8 64.3	.000153 .000090	17.6		Fig. C-2-3.1

Wm Hartsfield Gene Fowler 2/13/82 COMPUTED BY DATE — Charles Jackson 3/17/82 CHECKED BY DATE

SUBJECT: FAULT ANALYSIS OF ASSOCIATED CABLES PROJECT: WATTS BAR NUCLEAR PLANT

ITEM NO.	CABLE DATA: MARK LTR	AWG	NO. OF COND	I^2t x 10^6	FOR	POWER SOURCE: BOARD	VOLT.	PROTECTIVE DEVICE: TYPE	RATING (AMP)	CLEARING TIME (SEC)	FAULT ANALYSIS: I (SHORT CIRCUIT) AMP	I^2t x 10^6	CONDUCTOR CONTINUOUS CURRENT RATING (AMP)	REMARKS	TYPICAL CIRCUIT (APPENDIX C-2)
110	WHC (PJJ)	14	1-3C	.0473	Main stm dump vlv cont	Battery bd (IV)	125 dc	Buss KAZ fuse	6	.031 .051	55.1 36.1	.000094 .000066	17.6		Fig. C-2-3.1
111	WHB (PJJ)	14	1-2C	.0473	Main stm dump vlv cont	Battery bd (III)	125 dc	Buss KAZ fuse	6	.01 .022	123.8 64.3	.000153 .00009	17.6		Fig. C-2-3.1
112	WHC (PJJ)	14	1-3C	.0473	Main stm dump vlv cont	Battery bd (IV)	125 dc	Buss KAZ fuse	6	.031 .057	55.1 37.8	.000094 .000081	17.6		Fig. C-2-3.1
113	WHB (PJJ)	14	1-2C	.0473	Main stm cool down cont	Battery bd (III)	125 dc	Buss KAZ fuse	6	.01 .026	123.8 62.6	.000153 .000101	17.6		Fig. C-2-3.1
114	WHC (PJJ)	14	1-3C	.0473	Main stm cool down cont	Battery bd (IV)	125 dc	Buss KAZ fuse	6	.031 .057	55.1 37.8	.000094 .000081	17.6		Fig. C-2-3.1
115	WHB (PJJ)	14	1-2C	.0473	Main stm dump vlv vlv cont	Battery bd (III)	125 dc	Buss KAZ fuse	6	.01 .026	123.8 62.6	.000153 .000101	17.6		Fig. C-2-3.1
116	WHC (PJJ)	14	1-3C	.0473	Main stm vlv cont	Battery bd (IV)	125 dc	Buss KAZ fuse	6	.03 .058	55.1 37.8	.000091 .000083	17.6		Fig. C-2-3.1

Wm Hartsell/JCM 2/17/82 Charles Jackson 2/17/82
COMPUTED BY DATE CHECKED BY DATE

SUBJECT FAULT ANALYSIS OF ASSOCIATED CABLES PROJECT WATTS BAR NUCLEAR PLANT

ITEM NO.	CABLE DATA MARK LTR	AWG	NO. OF COND	I^2t x 10^6	FOR	POWER SOURCE BOARD	VOLT.	PROTECTIVE DEVICE TYPE	RATING (AMP)	CLEARING TIME (SEC)	FAULT ANALYSIS I (SHORT CIRCUIT) AMP	I^2t x 10^6	CONDUCTOR CONTINUOUS CURRENT RATING (AMP)	REMARKS	TYPICAL CIRCUIT (APPENDIX C-2)
117	WHB (PJJ)	14	1-2C	.0473	Main stm dump vlv cont	Battery bd (III)	125 dc	Buss KAZ fuse	6	.01 .026	123.7 62.6	.000153 .000101	17.6		Fig. C-2-3.1
118	WHC (PJJ)	14	1-3C	.0473	Main stm cool down vlv cont	Battery bd (IV)	125 dc	Buss KAZ fuse	6	.03 .058	55.1 37.9	.000091 .000083	17.6		Fig. C-2-3.1
119	WHB (PJJ)	14	1-2C	.0473	Main stm dump vlv cont	Battery bd (III)	125 dc	Buss KAZ fuse	6	.01 .026	123.9 62.6	.000153 .000102	17.6		Fig. C-2-3.1
120	WHC (PJJ)	14	1-3C	.0473	Main stm cool down vlv cont	Battery bd (IV)	125 dc	Buss KAZ fuse	6	.03 .058	55.1 37.9	.000091 .000083	17.6		Fig. C-2-3.1
121	WHB (PJJ)	14	1-2C	.0473	Main stm cool down vlv cont	Battery bd (III)	125 dc	Buss KAZ fuse	6	.01 .027	123.9 60.6	.000153 .000099	17.6		Fig. C-2-3.1
122	WHC (PJJ)	14	1-3C	.0473	Main stm cool down vlv cont	Battery bd (IV)	125 dc	Buss KAZ fuse	6	.03 .058	55.2 37.9	.000091 .000083	17.6		Fig. C-2-3.1
123	WHB (PJJ)	14	1-2C	.0473	Main stm cool down vlv cont	Battery bd (III)	125 dc	Buss KAZ fuse	6	.01 .026	123.9 62.6	.000153 .000102	17.6		Fig. C-2-3.1
124	WHC (PJJ)	14	1-3C	.0473	Main stm dump vlv cont	Battery bd (IV)	125 dc	Buss KAZ fuse	6	.03 .058	55.2 37.8	.000091 .000083	17.6		Fig. C-2-3.1

Wm Hartsfield/Gene Fyfe/WCH COMPUTED BY 2/13/82 DATE — Chas. J. Com CHECKED BY 3/17/82 DATE

SUBJECT FAULT ANALYSIS OF ASSOCIATED CABLES — PROJECT WATTS BAR NUCLEAR PLANT

ITEM NO.	CABLE DATA MARK LTR	AWG	NO. OF COND	I^2t x 10^6	FOR	POWER SOURCE BOARD	VOLT.	PROTECTIVE DEVICE TYPE	RATING (AMP)	CLEARING TIME (SEC)	FAULT ANALYSIS I (SHORT CIRCUIT) AMP	I^2t x 10^6	CONDUCTOR CONTINUOUS CURRENT RATING (AMP)	REMARKS	TYPICAL CIRCUIT (APPENDIX C-2)
125	WHB (PJJ)	14	1-2C	.0473	Main stm dump vlv cont	Battery bd (III)	125 dc	Buss KAZ fuse	6	.01 .026	123.9 62.6	.000153 .000102	17.6		Fig. C-2-3.1
126	WHC (PJJ)	14	1-3C	.0473	Main stm dump vlv cont	Battery bd (IV)	125 dc	Buss KAZ fuse	6	.03 .058	55.2 37.8	.000091 .000083	17.6		Fig. C-2-3.1
127	WHB (PJJ)	14	1-2C	.0473	Main stm dump vlv cont	Battery bd (III)	125 dc	Buss KAZ fuse	6	.01 .026	123.8 62.6	.000153 .000102	17.6		Fig. C-2-3.1
128	WHC (PJJ)	14	1-3C	.0473	Main stm dump vlv cont	Battery bd (IV)	125 dc	Buss KAZ fuse	6	.03 .058	55.1 37.8	.000091 .000083	17.6		Fig. C-2-4.1
129	WVA-3 (XLPE)	18	1-2C	.0102	Turb steam stop vlv trip	Vital 1-I	120 ac	Buss fuse MBO	15	.013 .019	81.7 169	.00009 .00054	12.7	Since 15A fuse supplies PWR to other components in SSPS rack these circuits will be separately fused at 5 amp.	Fig. C-2-4.1
130	WVA-3 (XLPE)	18	1-2C	.0102	Turb steam stop vlv trip	Vital 1-I	120 ac	Buss fuse MBO	15	.110 .016	85.7 185	.00081 .00055	12.7	Same as item 129	Fig. C-2-4.1

TENNESSEE VALLEY AUTHORITY

SUBJECT FAULT ANALYSIS OF ASSOCIATED CABLES PROJECT WATTS BAR NUCLEAR PLANT

Wm Hartsell/Geo Frechin 2/13/82 COMPUTED BY DATE Charles Jackson 3/17/82 CHECKED BY DATE

ITEM NO.	CABLE DATA: MARK LTR	AWG	NO. OF COND	$I^2t \times 10^6$	FOR	POWER SOURCE: BOARD	VOLT.	PROTECTIVE DEVICE: TYPE	RATING (AMP)	CLEARING TIME (SEC)	FAULT ANALYSIS: I (SHORT CIRCUIT) AMP	$I^2t \times 10^6$	CONDUCTOR CONTINUOUS CURRENT RATING (AMP)	REMARKS	TYPICAL CIRCUIT (APPENDIX C-2)
131	WVA-3 (XLPE)	18	1-2C	.0102	Turb steam stop vlv trip	Vital 1-II	120 ac	Buss fuse MBO	15	.24 .017	66.7 181	.00106 .00065	12.7	Same as item 129	Fig. C-2-4.1
132	WVA-3 (XLPE)	18	1-2C	.0102	Turb steam stop vlv trip	Vital 1-II	120 ac	Buss fuse MBO	15	.24 .017	66.9 182	.00107 .00056	12.7	Same as item 129	Fig. C-2-4.1
133	WVA-3 (XLPE)	18	1-2C	0.0102	Turb steam stop vlv trip	Vital 1-III	120 ac	Buss fuse MBO	15	.016 .01	~~186~~ 367.5	~~.00056~~ .00135	12.7	Same as item 129	Fig. C-2-4.1
134	WVA-3 (XLPE)	18	1-2C	0.0102	Turb steam stop vlv trip	Vital 1-III	120 ac	Buss fuse MBO	15	.09 .016	88.1 199.7	.00074 .00057	12.7	Same as item 129	Fig. C-2-4.1
135	WVA-3 (XLPE)	18	1-2C	0.0102	Turb steam stop vlv trip	Vital 1-IV	120 ac	Buss fuse MBO	15	.25 .018	66.4 178	.00108 .00055	12.7	Same as item 129	Fig. C-2-4.1
136	WVA-3 (XLPE)	18	1-2C	0.0102	Turb steam stop vlv trip	Vital 1-IV	120 ac	Buss fuse MBO	15	.2 .015	68.1 191	.00093 .00055	12.7	Same as item 129	Fig. C-2-4.1
137	WVK (XLPE)	16	1-2C	.0458	Reac SSPS sys inputs from turb	Vital 1-I	120 ac	Buss fuse MBO	15	.08 .02	97.8 160	.00077 .00051	16.4	Same as item 129	Fig. C-2-4.1

TENNESSEE VALLEY AUTHORITY

Wm Hartwell/GFox 2/13/87 COMPUTED BY DATE — Chas Jackson 3/6/87 CHECKED BY DATE

SUBJECT FAULT ANALYSIS OF ASSOCIATED CABLES PROJECT WATTS BAR NUCLEAR PLANT

ITEM NO.	CABLE DATA MARK LTR	AWG	NO. OF COND	I^2t x 10^6	FOR	POWER SOURCE BOARD	VOLT.	PROTECTIVE DEVICE TYPE	RATING (AMP)	CLEARING TIME (SEC)	FAULT ANALYSIS I (SHORT CIRCUIT) AMP	I^2t x 10^6	CONDUCTOR CONTINUOUS CURRENT RATING (AMP)	REMARKS	TYPICAL CIRCUIT (APPENDIX C-2)
138	WVK (XLPE)	16	1-2C	.0458	Reac SSPS sys inputs from turb	Vital 1-I	120 ac	Buss fuse 15 MBO		.08 .019	102 171	.00083 .00056	16.4	Same as item 129	Fig. C-2-4.1
139	WVK (XLPE)	16	1-2C	.0458	Reac SSPS sys inputs from turb	Vital 1-II	120 ac	Buss fuse 15 MBO		.07 .05	98.8 162.7	.00068 .00093	16.4	Same as item 129	Fig. C-2-4.1
140	WVK (XLPE)	16	1-2C	.0458	Reac SSPS sys inputs from turb	Vital 1-II	120 ac	Buss fuse 15 MBO		.08 .024	97.8 160	.00077 .00062	16.4	Same as item 129	Fig. C-2-4.1
141	WVK (XLPE)	16	1-2C	.0458	Reac SSPS sys inputs from turb	Vital 1-III	120 ac	Buss fuse 15 MBO		.07 .017	103.7 181.9	.00077 .00054	16.4	Same as item 129	Fig. C-2-4.1
142	WVK (XLPE)	16	1-2C	.0458	Reac SSPS sys inputs from turb	Vital 2-III	120 ac	Buss fuse 15 MBO		.07 .017	105.8 188.9	.00078 .00061	16.4	Same as item 129	Fig. C-2-4.1
143	WVA (XLPE)	16	1-2C	.0458	Inst loop 506	*	*	*	*	*	.65	*	16.4	ISC is limited to .65A by instrument loop power supply (Foxboro)	Fig. C-2-4.2

*Not applicable; refer to Remarks.

R.L. Lee/SCM Gene Fuchison COMPUTED BY 2/17/82 DATE Charles Jackson CHECKED BY 3/17/82 DATE

SUBJECT FAULT ANALYSIS OF ASSOCIATED CABLES PROJECT WATTS BAR NUCLEAR PLANT

ITEM NO.	CABLE DATA: MARK LTR	AWG	NO. OF COND	I^2t x 10^6	FOR	POWER SOURCE: BOARD	VOLT.	PROTECTIVE DEVICE: TYPE	RATING (AMP)	CLEARING TIME (SEC)	FAULT ANALYSIS: I (SHORT CIRCUIT) AMP	I^2t x 10^6	CONDUCTOR CONTINUOUS CURRENT RATING (AMP)	REMARKS	TYPICAL CIRCUIT (APPENDIX C-2)
144	WVA-3 (XLPE)	18	1-2C	.0102	Turb steam stop vlv trip	Vital 2-I	120 ac	Buss fuse 15 MBO		.11 .02	84.4 165	.00078 .00054	12.7	Same as item 129	Fig. C-2-4.1
145	WVA-3 (XLPE)	18	1-2C	.0102	Turb steam stop vlv trip	Vital 2-I	120 ac	Buss fuse 15 MBO		0.019 0.11	168.2 85.3	0.0005 0.0008	12.7	Same as item 129	Fig. C-2-4.1
146	WVA-3 (XLPE)	18	1-2C	.0102	Turb steam stop vlv trip	Vital 2-II	120 ac	Buss fuse 15 MBO		0.019 0.25	172.2 66.5	0.0006 0.001	12.7	Same as item 129	Fig. C-2-4.1
147	WVA-3 (XLPE)	18	1-2C	.0102	Turb steam stop vlv trip	Vital 2-II	120 ac	Buss fuse 15 MBO		0.019 0.25	173.5 66.7	0.0005 0.0011	12.7	Same as item 129	Fig. C-2-4.1
148	WVA-3 (XLPE)	18	1-2C	.0102	Turb steam stop vlv trip	Vital 2-III	120 ac	Buss fuse 15 MBO		0.023 0.12	155.6 81.9	0.0006 0.0008	12.7	Same as item 129	Fig. C-2-4.1
149	WVA-3 (XLPE)	18	1-2C	.0102	Turb steam stop vlv trip	Vital 2-III	120 ac	Buss fuse 15 MBO		0.021 0.12	157.8 82.6	0.0005 0.0008	12.7	Same as item 129	Fig. C-2-4.1
150	WVA-3 (XLPE)	18	1-2C	.0102	Turb steam stop vlv trip	Vital 2-IV	120 ac	Buss fuse 15 MBO		0.02 0.25	165.7 65.8	0.0005 0.0011	12.7	Same as item 129	Fig. C-2-4.1
151	WVA-3 (XLPE)	18	1-2C	.0102	Turb steam stop vlv trip	Vital 2-IV	120 ac	Buss fuse 15 MBO		0.02 0.25	168.2 66.1	0.0006 0.0011	12.7	Same as item 129	Fig. C-2-4.1

TENNESSEE VALLEY AUTHORITY

COMPUTED BY: Wm. Hertzell/GEH, Gene Frye/GEH — DATE: 3/13/82 — CHECKED BY: Charles Jackson — DATE: 3/17/82

SUBJECT FAULT ANALYSIS OF ASSOCIATED CABLES — PROJECT WATTS BAR NUCLEAR PLANT

ITEM NO.	CABLE DATA MARK LTR	AWG	NO. OF COND	I^2t x 10^6	FOR	POWER SOURCE BOARD	VOLT.	PROTECTIVE DEVICE TYPE	RATING (AMP)	CLEARING TIME (SEC)	FAULT ANALYSIS I (SHORT CIRCUIT) AMP	I^2t x 10^6	CONDUCTOR CONTINUOUS CURRENT RATING (AMP)	REMARKS	TYPICAL CIRCUIT (APPENDIX C-2)
152	WVK (XLPE)	16	1-2C	.0458	React SSPS sys inputs from turb	Vital 2-I	120 ac	Buss fuse MBO	15	0.025 0.066	148.8 101.9	0.00055 0.00067	16.4	Same as item 129	Fig. C-2-4.1
153	WVK (XLPE)	16	1-2C	.0458	React SSPS sys inputs from turb	Vital 2-I	120 ac	Buss fuse MBO	15	0.021 0.06	158.6 106.4	0.0005 0.0007	16.4	Same as item 129	Fig. C-2-4.1
154	WVK (XLPE)	16	1-2C	.0458	React SSPS sys inputs from turb	Vital 2-II	120 ac	Buss fuse MBO	15	0.025 0.075	148.9 96.8	0.0005 0.0007	16.4	Same as item 129	Fig. C-2-4.1
155	WVK (XLPE)	16	1-2C	.0458	React SSPS sys inputs from turb	Vital 2-II	120 ac	Buss fuse MBO	15	0.02 0.06	155.7 99.5	0.0005 0.0006	16.4	Same as item 129	Fig. C-2-4.1
156	WVK (XLPE)	16	1-2C	.0458	React SSPS sys inputs from turb	Vital 2-III	120 ac	Buss fuse MBO	15	0.025 0.065	149.6 100.5	0.0006 0.0007	16.4	Same as item 129	Fig. C-2-4.1
157	WVK (XLPE)	16	1-2C	.0458	React SSPS sys inputs from turb	Vital 2-III	120 ac	Buss fuse MBO	15	.05 .035	108.4 167.9	0.00059 0.00099	16.4	Same as item 129	Fig. C-2-4.1

Wm Hartsell/Jr 2/13/82 Charles Jackson 3/1/82
Cox Fyfe/Jch
COMPUTED BY DATE CHECKED BY DATE

SUBJECT FAULT ANALYSIS OF ASSOCIATED CABLES PROJECT WATTS BAR NUCLEAR PLANT

ITEM NO.	CABLE DATA: MARK LTR	AWG	NO. OF COND	I^2t x 10^6	FOR	POWER SOURCE: BOARD	VOLT.	PROTECTIVE DEVICE: TYPE	RATING (AMP)	CLEARING TIME (SEC)	FAULT ANALYSIS: I (SHORT CIRCUIT) AMP	I^2t x 10^6	CONDUCTOR CONTINUOUS CURRENT RATING (AMP)	REMARKS	TYPICAL CIRCUIT (APPENDIX C-2)
158	WVA (XLPE)	16	1-2C	.0458	Inst loop 506	*	*	*	*	*	.65 .65	*	16.4	See remark on item No. 143	Fig. C-2-4.2
159	WGC-1 (PXMJ)	12	1-3C	.221	Trip bus B	Battery 2	250 dc	Buss fuse (10) SC		.01 .011	135.4 107.6	.00018 .00013	27.3		Fig. C-2-3.2
160	WGC-1 (PXMJ)	12	1-3C	.221	Trip bus B	Battery 2	250 dc	Buss fuse (10) SC		.01 .01	185.3 141.0	.00034 .00020	27.3		Fig. C-2-3.2

*Not applicable; refer to Remarks.

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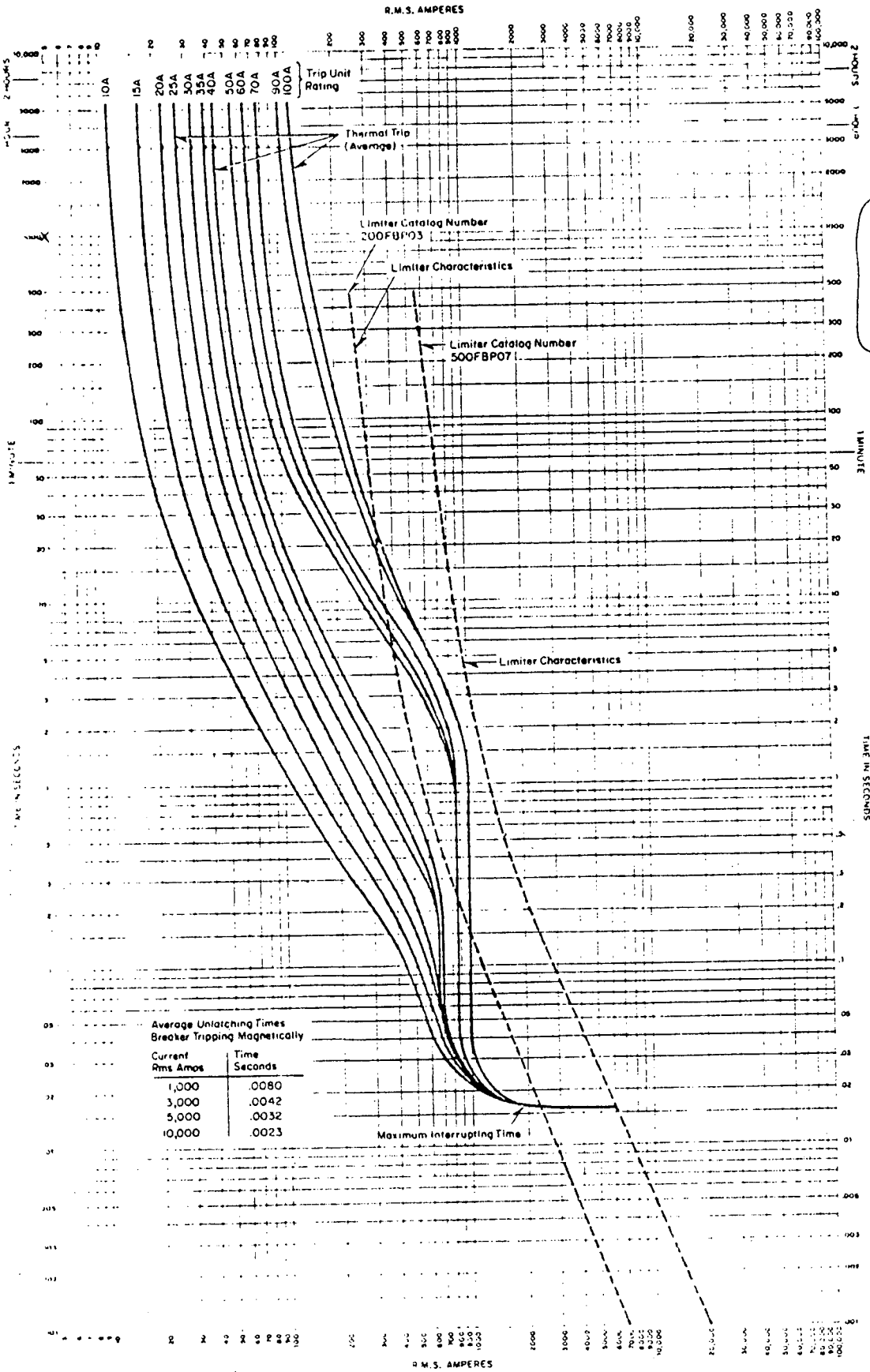

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