



Post Office Box 2000, Spring City, Tennessee 37381-2000

WBL-22-034

August 1, 2022

10 CFR 50.4
10 CFR 50.71(e)

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Watts Bar Nuclear Plant, Units 1 and 2
Facility Operating License Nos. NPF-90 and NPF-96
NRC Docket Nos. 50-390 and 50-391

Subject: **Watts Bar Nuclear Plant, Units 1 and 2 - Update to Fire Protection Report Figures**

- References:
1. TVA letter to NRC, WBL-22-015, "Watts Bar Nuclear Plant (WBN) Units 1 and 2 – Update to Fire Protection Report," dated May 11, 2022
 2. TVA letter to NRC, CNL-15-256, "Watts Bar Nuclear Plant (WBN) Units 1 and 2 - Transmittal of Unit 1/Unit 2 Fire Protection Report," dated December 21, 2015

In Reference 1, the Watts Bar Nuclear Plant (WBN) Fire Protection Report (FPR) was submitted in accordance with Title 10 of the Code of Federal Regulations (10 CFR) 50.71(e). Subsequent to the submittal of this report, it was identified that updated Figures associated with the FPR had not been submitted since the Reference 2 submittal. Figures updated since the Reference 2 submittal are provided in the enclosure. Accordingly, this letter supplements information provided in the Reference 1 submittal. This issue has been added to the site corrective action program.

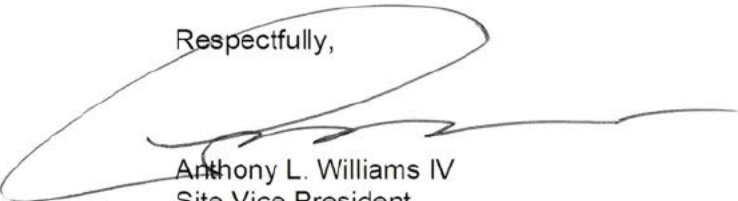
Tennessee Valley Authority (TVA) has reviewed this revision for redaction as indicated by Regulatory Issue Summary 2015-17, "Review and Submission of updates to Final Safety Analysis Reports, Emergency Preparedness Documents, and Fire Protection Documents," dated December 23, 2015, using the criteria provided by the Nuclear Regulatory Commission in SECY-04-191, "Withholding Sensitive Unclassified Information Concerning Nuclear Power Reactors From Public Disclosure" dated October 19, 2004. Based on the criteria provided for FPRs, the enclosed drawings have been determined not to be security sensitive and are not subject to withholding.

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There are no new regulatory commitments contained in this letter. Please direct any questions concerning this submittal to Jonathan Johnson, WBN Licensing Manager, at jtjohnson0@tva.gov.

I certify that I am duly authorized by TVA, and that, to the best of my knowledge and belief, the information contained herein accurately presents changes made since the previous submittal, necessary to reflect information and analyses submitted to the Commission or prepared pursuant to Commission requirements.

Respectfully,



Anthony L. Williams IV
Site Vice President
Watts Bar Nuclear Plant

Enclosure:

Fire Protection Report Figures

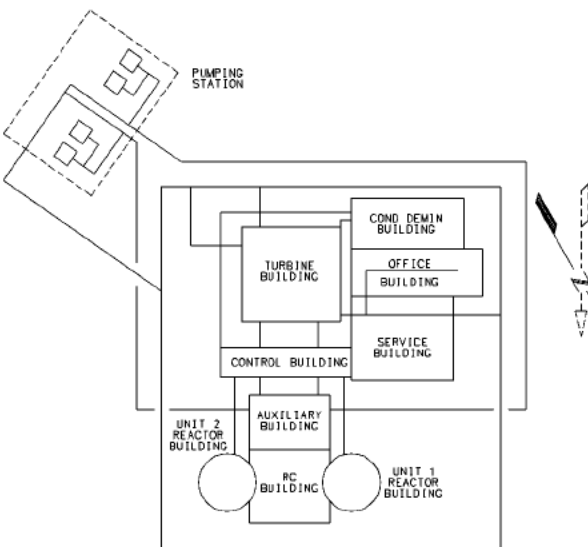
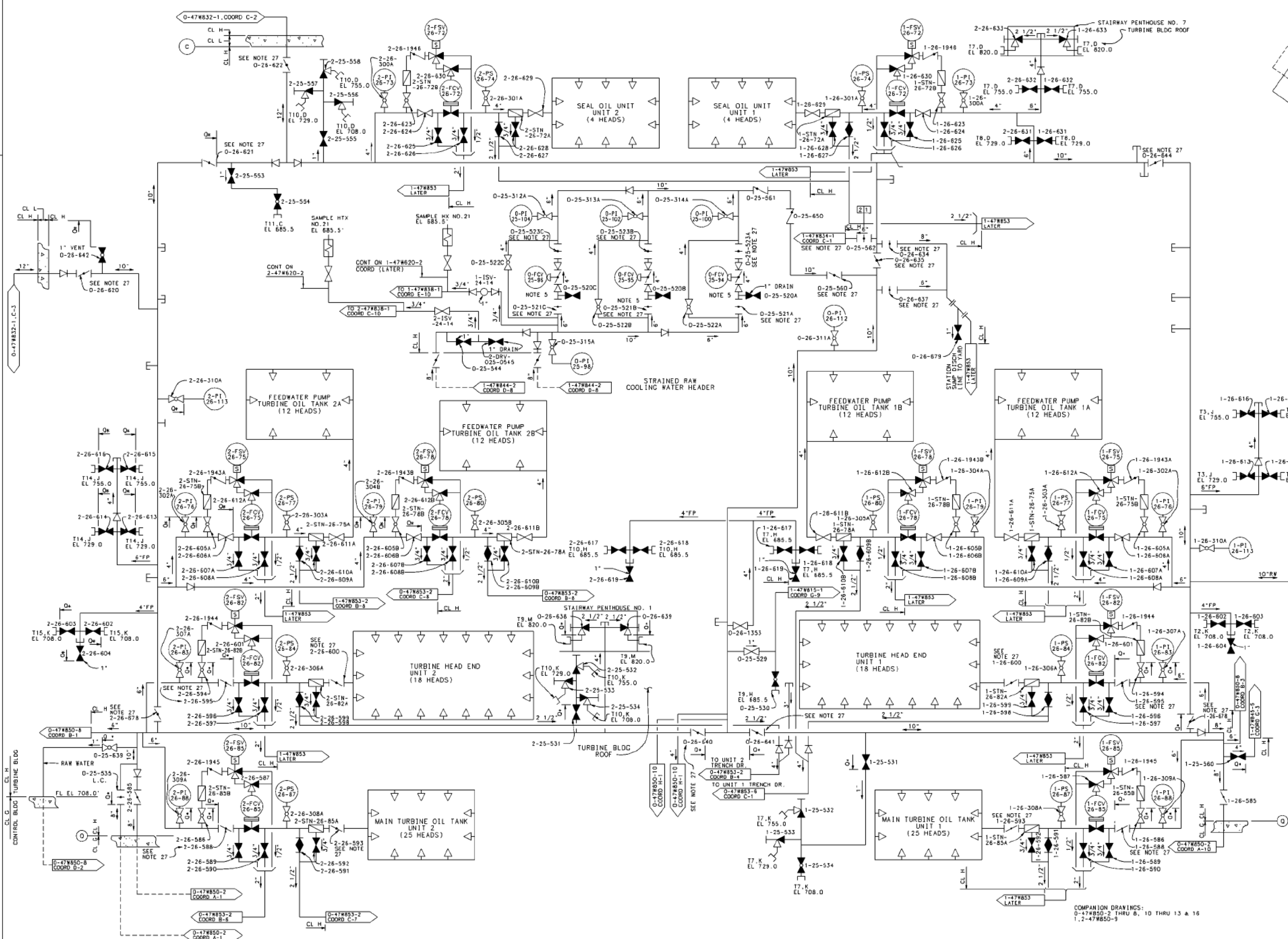
cc (wo/Enclosure):

NRC Regional Administrator - Region II
NRC Senior Resident Inspector - Watts Bar Nuclear Plant
NRC Project Manager – Watts Bar Nuclear Plant

ENCLOSURE
Tennessee Valley Authority
Watts Bar Nuclear Plant
Units 1 and 2

Fire Protection Report Figures

Figure II-1A
Figure II-2A
Figure II-3A
Figure II-7A
Figure II-9A
Figure II-10A
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Figure II-12A
Figure II-17A
Figure II-21A
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Figure II-30A
Figure II-32A
Figure II-35A
Figure II-36A
Figure II-41A
Figure II-43A
Figure II-46A



KEY PLAN
NOT TO SCALE

NOTE:
1. ALL ROOT VALVES HAVE AN "A" SUFFIX (NOT SHOWN) IN THE ADDRESS, FIELD TO COMPLETE THE COMPONENT IDENTIFICATION CODE.
2. ALL PIPING SHOWN ON THIS DWG IS TVA CLASS H EXCEPT AS NOTED.
3. FOR GENERAL NOTES & REFERENCE DWGS SEE 0-47W850-2.
4. NOT USED.
5. THE VALVES 0-FCV-25-94, 95, & 96 HAVE BEEN DISABLED IN THE "OPEN" POSITION BY DCN M-20905-A.
6. [12] THIS IS A NON-SAFETY RELATED INTERFACE POINT. INTERFACE POINT MUST BE CLOSED WITH HAND WHEEL REMOVED.

THIS DRAWING SUPERSEDES CONFIGURATION CONTROL DRAWINGS 1-47W850-1 R29 & 2-47W850-1 R4

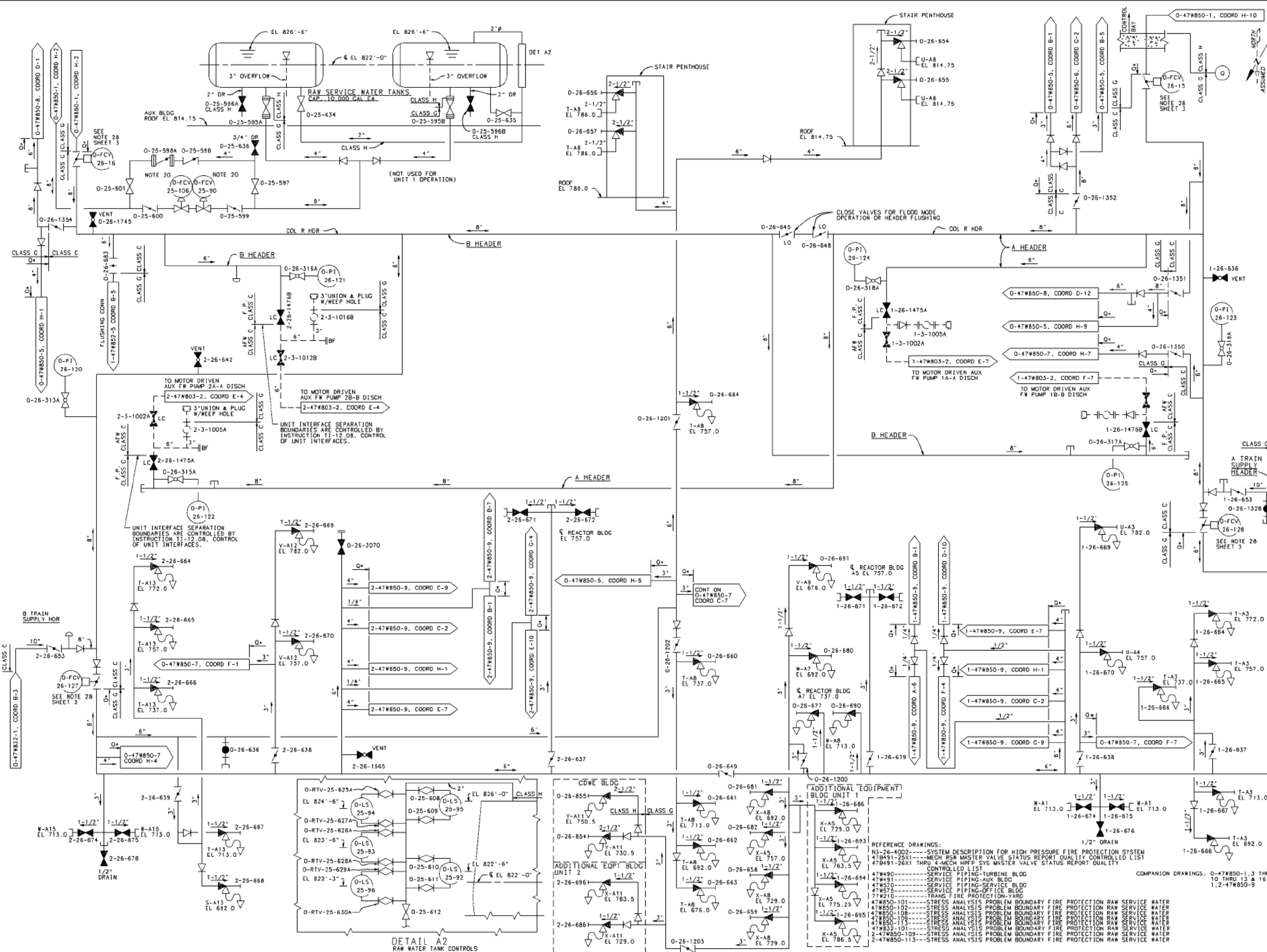
USFAR AMENDMENT 4

WATTS BAR
FIRE PROTECTION
REPORT

TURBINE BUILDING
FLOW DIAGRAM
FIRE PROTECTION &
RAW SERVICE WATER
FIRE PROTECTION REPORT
TVA DWG NO. 0-47W850-1 R7
FIGURE II-1A

COMPANION DRAWINGS:
0-47W850-2 THRU 6, 10 THRU 13 & 16
1, 2-47W850-3

CAD MAINTAINED DRAWING



- NOTES:
1. ALL VALVES ARE THE SAME SIZE AS THE PIPING UNLESS OTHERWISE NOTED.
 2. ALL PRESSURE GAUGE AND PRESSURE SWITCH VALVES ARE 1/2" GLOBE VALVES UNLESS OTHERWISE NOTED.
 3. FOR EACH RAW SERVICE WATER CONNECTION AND EACH FIRE HOSE CONNECTION THE FOLLOWING TYPICAL INFORMATION IS GIVEN:
 THE UNIT NUMBER, 1-25-501, 1-25-502, ETC.
 EL 713.0 - ELEVATION OF CONNECTION T3-K - NEAREST COLUMN LOCATION
 ALL SIAMSE FIRE HOSE CONNECTIONS ARE 2-1/2" UNLESS OTHERWISE NOTED.
 4. ALL RAW SERVICE WATER CONNECTIONS ARE 1" UNLESS OTHERWISE NOTED.
 5. NOT USED.
 6. NOT USED.
 7. NOT USED.
 8. ALL FIRE PROTECTION VALVES ON A UNIT BASIS SHALL BE PREFIXED WITH THE UNIT NUMBER, 1-25-501, 1-25-502, ETC.
 9. ALL RAW SERVICE WATER VALVES ON A UNIT BASIS SHALL BE PREFIXED WITH THE UNIT NUMBER, 1-25-501, 1-25-502, ETC.
 10. REFER TO 47W853 SERIES FOR EQUIPMENT DRAIN CONNECTIONS UNLESS OTHERWISE NOTED.
 11. VALVES WHICH ARE COMMON TO BOTH UNITS SHALL BE PREFIXED WITH "O", 0-25-501, 0-25-502, ETC.
 12. CLASS C INDICATES TWA PIPE CLASSIFICATION AS SHOWN ON 47B21-1. CLASS C IS UNCLASSIFIED AS TO CODE JURISDICTION BUT SYSTEM PIPING SHALL BE CONSTRUCTED IN ACCORDANCE WITH ANSI B31.1.0 (1973).
 13. HYDROSTATIC TESTING REQUIREMENTS AND APPLICABLE CODES, FOR HIGH PRESSURE FIRE PROTECTION AND RAW SERVICE WATER PIPING SHALL BE AS INDICATED BELOW:
 (A) SYSTEM TEMPERATURE IS 130 F. SYSTEM DESIGN PRESSURE AND APPLICABLE CODES ARE AS FOLLOWS:

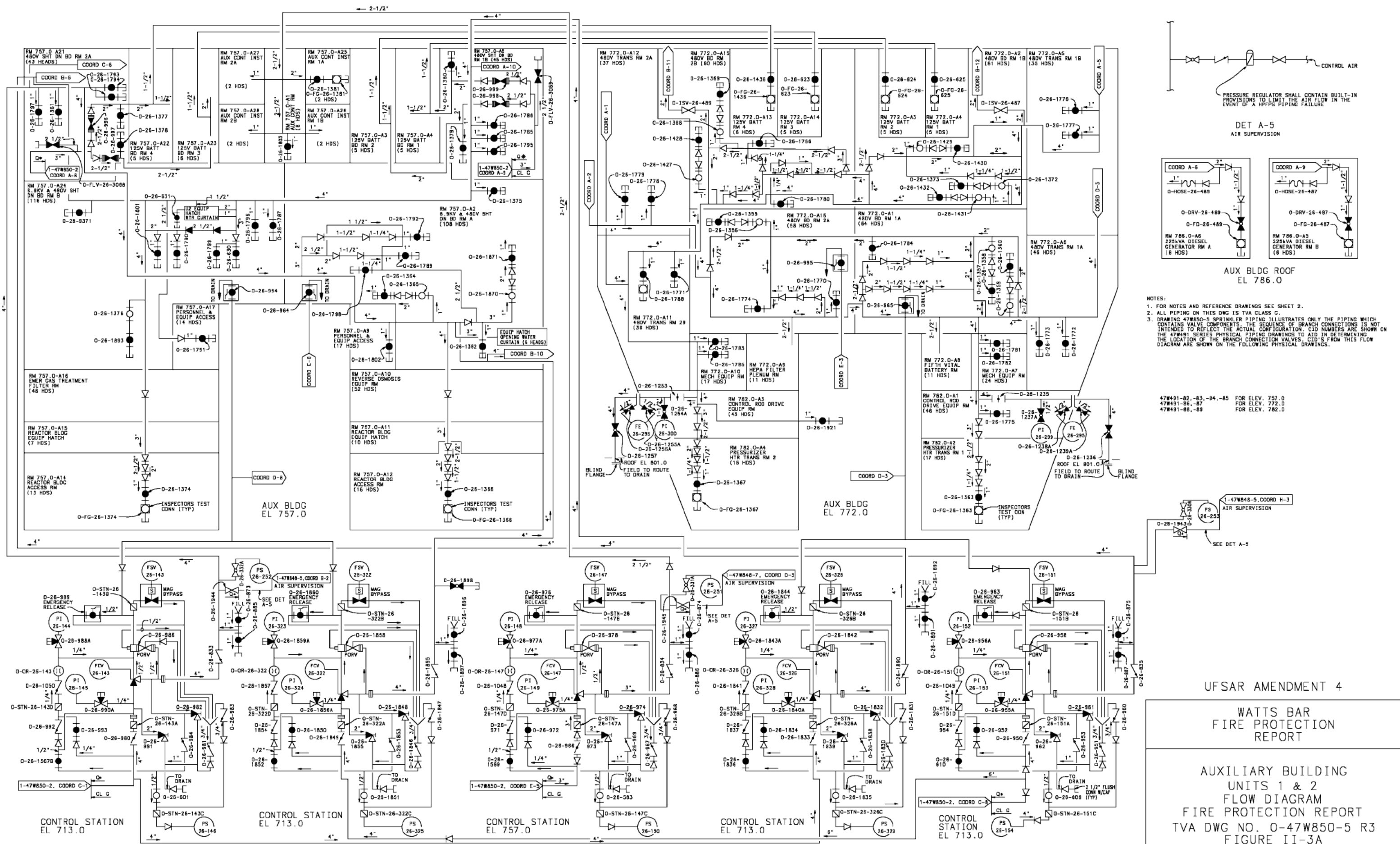
SYSTEM	DESIGN PRESS.	CODE
HPFF (CLASS B & C)	200 PSIG	NFPA/ASME SECT. III
HPFF (CLASS G & H)	150 PSIG	ASME B31.1
RSW (CLASS C & H)	150 PSIG	ASME B31.1
HPFF (CLASS L)	150 PSIG	NFPA
RSW (CLASS L)	150 PSIG	UNCLASSIFIED

 • THE DESIGN PRESSURE FOR PIPING LOCATED BELOW ELEVATION 720.0 FEET IS 155 PSIG.
 • THE FIRE PUMP TEST LOOP PIPING IS DEFINED AS THE PIPING DOWNSTREAM OF VALVE 2-26-520 AND 0-25-521 UP TO AND INCLUDING VALVE 0-25-520 FOR PUMPS 1A-A AND 1B-A. PIPING DOWNSTREAM OF VALVE 0-25-520 AND 0-25-521 UP TO AND INCLUDING VALVE 0-25-520 AND 0-25-521 SHALL HAVE A DESIGN PRESSURE OF 200 PSIG.
 THE HPFF/RSW SYSTEM MAY EXPERIENCE PRESSURE SURGES OF UP TO 200 PSIG DURING FIRE PUMP START. THESE PRESSURE SURGES MAY BE TRAPPED IN THE TRIM PIPING OF PREACTION SUPPRESSION SYSTEMS. THIS CONDITION IS ACCEPTABLE PER NFPA 13.09, R2.
 (B) SYSTEM HYDROSTATIC TEST PRESSURE SHALL BE DETERMINED AS FOLLOWS:
 FOR ASME B31.1, 1.5 X DESIGN PRESSURE
 FOR NFPA, THE GREATER OF 200 PSIG OR SYSTEM DESIGN PRESSURE PLUS 50 PSIG
 CODE TOLERANCE AND LIMITATIONS APPLY AS REQUIRED BY EACH CODE.
 (C) HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH CODES AS LISTED. FIRE PROTECTION PIPING WHICH IS ALSO TWA CLASS B, C, G OR H MAY BE TESTED AS FOLLOWS:
 ATTAIN THE ASME SECTION III/ANSI B31.1 PRESSURE AND HOLD FOR A MINIMUM OF TEN MINUTES. EXAMINATION FOR LEAKAGE MAY BEGIN WHEN THE HOLD TIME IS COMPLETED. FOR ANSI B31.1 SYSTEMS, HYDRO-PRESSURE SHALL BE MAINTAINED UNTIL THE EXAMINATION FOR LEAKAGE IS COMPLETE. AT THAT POINT, SYSTEM PRESSURE MAY BE REDUCED TO THE NFPA SYSTEM HYDROSTATIC TEST PRESSURE AND HOLD FOR THE REMAINDER OF THE TWO HOUR NFPA TEST DURATION. FOR ASME SYSTEMS, THE HYDRO-PRESSURE SHALL BE MAINTAINED FOR THE TWO HOUR NFPA DURATION OR UNTIL THE EXAMINATION FOR LEAKAGE IS COMPLETED, WHICHEVER IS GREATER. FOR SPRINKLER PIPING DOWNSTREAM OF THE DELUGE VALVES WHICH DOES NOT SERVE A SUPPLY FUNCTION FOR ASME OR B31.1 COMPONENTS, HYDROSTATIC TESTING ONLY TO NFPA REQUIREMENTS MAY BE SUBSTITUTED FOR TESTING TO ASME OR B31.1 PLUS NFPA REQUIREMENTS.
 (D) ALL FIRE PROTECTION PIPING SHALL BE HYDROSTATICALLY TESTED IN ACCORDANCE WITH NFPA 13, 14, 15, 18 OR 24, AS APPLICABLE.
 (E) ALL EMBEDDED OR BURIED PIPING SHALL BE HYDROSTATICALLY TESTED PRIOR TO EMBEDMENT OR BURIAL.
 (F) TWA CLASS L RSW PIPING SHALL BE TESTED IN ACCORDANCE WITH ANSI B31.1.
 (G) TWA PIPING INSTALLED PRIOR TO MARCH 31, 1987 (CLASS C, H & L) WHICH DOES NOT FALL UNDER THE HPFF SYSTEM LIMITED QUALITY ASSURANCE (O+) PROGRAM DO NOT REQUIRE RE-TESTING.
 (H) HPFF PIPING INSTALLED PRIOR TO AUGUST 28, 1992 WITH DOCUMENTED TEST WHICH VERIFY THAT NFPA HYDROSTATIC TEST PRESSURE (NOTES 13A) WAS HELD FOR 2 HOURS, DO NOT REQUIRE RE-TEST TO MEET ANSI B31.1 REQUIREMENTS. HOWEVER, ASME PIPING MUST HAVE A VALID TEST TO DEMONSTRATE COMPLIANCE WITH CURRENT REQUIREMENTS.
 14. THE DESIGN PRESSURE AND TEMPERATURE OF ALL DRAINS AND VENT LINES THROUGH THE LAST ISOLATION VALVE SHALL BE THE SAME AS THE PROCESS LINE.
 15. CONST. SHALL DETERMINE IF THE COMPONENTS IN THE SYSTEM LIMITING COMPONENTS TO THE HYDROSTATIC TEST. ASME CODE CASES INVOLVING HYDROSTATIC TESTING MAY BE USED IF IN DES APPROVED BY THEIR APPLICATION.
 16. PIPING AND COMPONENTS DENOTED WITH "O+" ARE UNDER THE LIMITED FIRE PROTECTION QA PROGRAM.
 17. ALL CONSTRUCTION ACTIVITIES FOR FEATURES COVERED BY THE LIMITED FIRE PROTECTION QUALITY ASSURANCE PROGRAM SHALL BE CONDUCTED IN ACCORDANCE WITH TWA GENERAL CONSTRUCTION SPECIFICATION NO. C-31.
 18. FOR LIMITED FIRE PROTECTION QUALITY ASSURANCE PROGRAM REQUIREMENTS SEE PROCEDURE 889-10.12.
 19. DESIGN CRITERIA/SYSTEM DESCRIPTION REFERENCE DOCUMENTS (USE THE LATEST REVISION ON ALL WORK UNLESS OTHERWISE SPECIFIED. SEE THE LATEST REVISION OF THE 47B21 SERIES DRAWINGS "PIPING SYSTEM CLASSIFICATION").
 47B21-60-62 - FIRE PROTECTION
 47B21-60-62 - FIRE PROTECTION
 20. THE VALVES 0-25-520 AND 0-25-521 HAVE BEEN DISABLED IN THE "OPEN" POSITION BY DCN M-20305-A. NOT USED FOR UNIT 1 AND UNIT 2 OPERATION.
- NOTES CONTINUED ON 0-47W850-3.

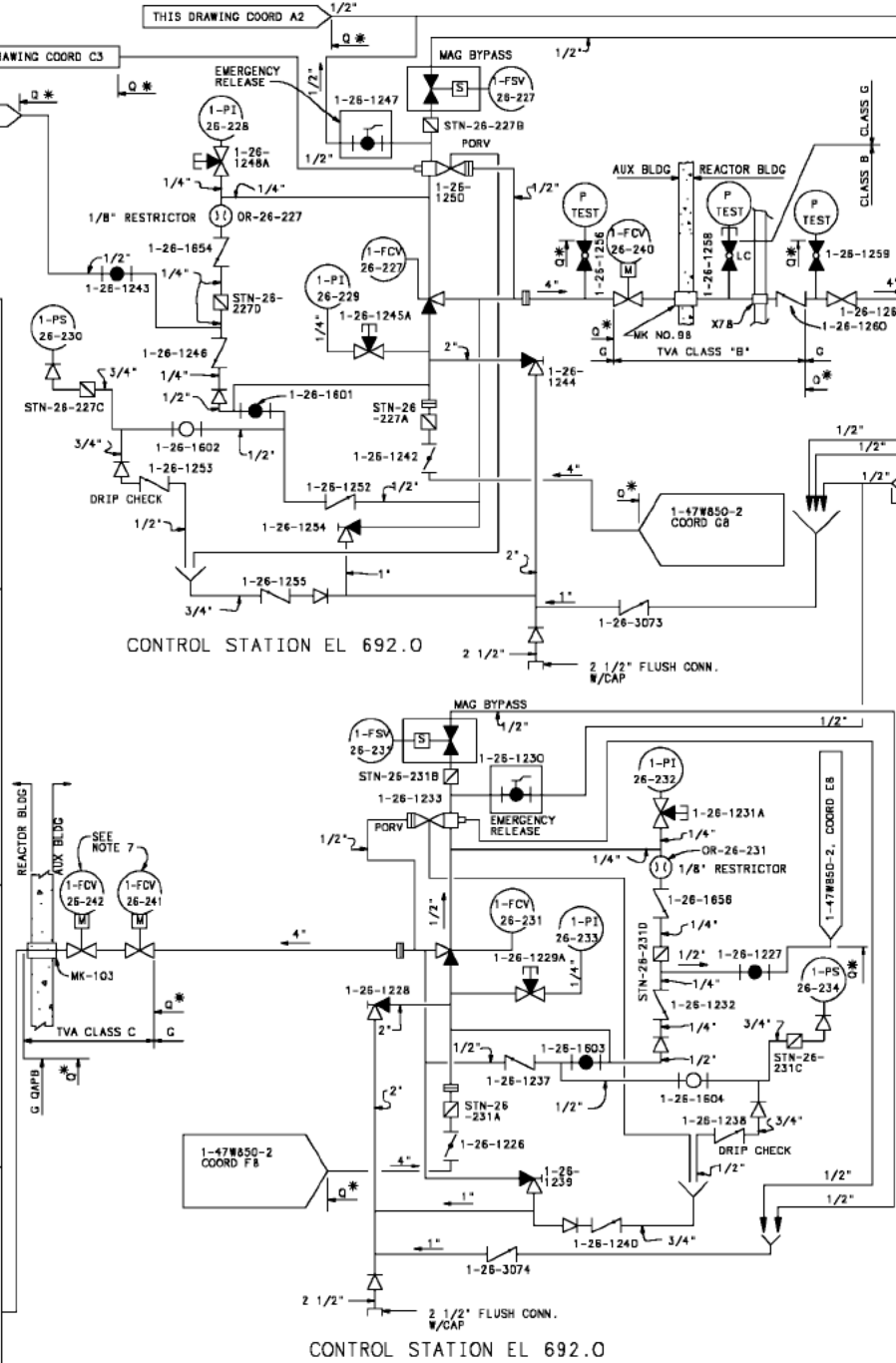
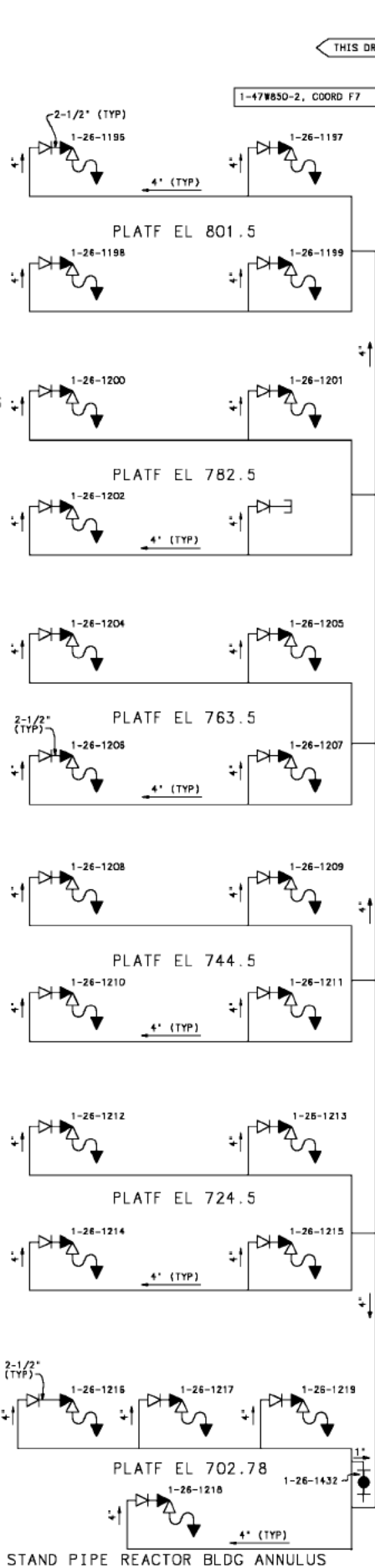
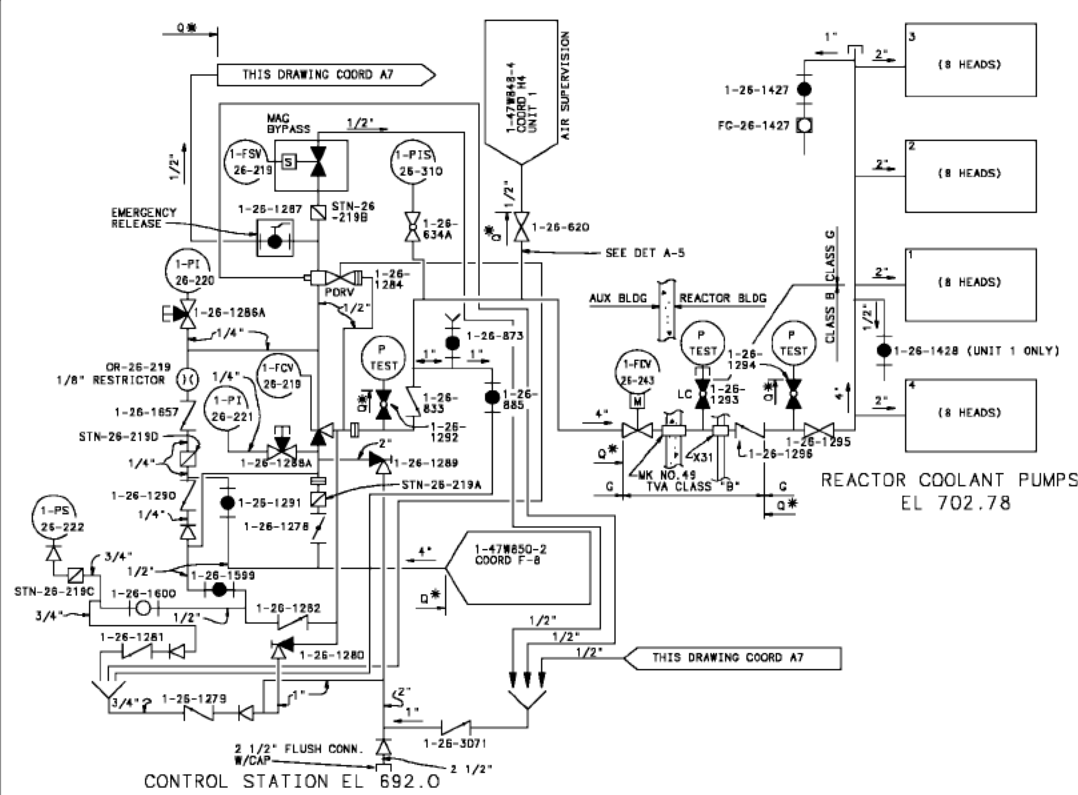
UFSAR AMENDMENT 4

WATTS BAR
FIRE PROTECTION
REPORT

AUXILIARY BUILDING
UNITS 1 & 2
FLOW DIAGRAM
FIRE PROTECTION &
RAW SERVICE WATER
FIRE PROTECTION REPORT
TVA DWG NO. 0-47W850-2 R7
FIGURE II-2A



CAD MAINTAINED DRAWING



- NOTES:
1. UNITS 1 AS SHOWN.
 2. FOR ADDITIONAL NOTES AND REFERENCE DRAWINGS SEE 0-47W850-2.
 3. ALL PIPING ON THIS DWG IS TVA CLASS G UNLESS OTHERWISE NOTED.
 4. THE FIRE HOSE STATIONS SHALL BE REMOVED DURING NORMAL OPERATIONS THAT ARE ATTACHED TO THE FOLLOWING VALVES:
1-SPV-25-1220 1-SPV-25-1223
1-SPV-25-1221 1-SPV-25-1224
1-SPV-25-1222 1-SPV-25-1225
 5. NOT USED.
 6. NOT USED.
 7. VALVE IS IN THE OPEN POSITION WITH POWER REMOVED TO PREVENT SPIRIOUS CLOSURE DURING AN APPENDIX R EVENT. (LOCK VALVE OPEN WITH FIRE PROTECTION LOCK).
 8. ALL FUTURE MODIFICATIONS ON THE HPFP SYSTEM PIPING WITHIN THE REACTOR BUILDING ANNULUS SHALL BE TREATED TO THE REQUIREMENTS ASSOCIATED WITH TVA CLASS G PIPING. THIS EXCLUDES SPRINKLER NOZZLES, HOSE VALVES AND OTHER UL/FM QUALIFIED EQUIPMENT.
 9. UNIONS ARE INSTALLED ON THE 2" PIPING TO THE RCP MOTOR RING HEADERS TO SUPPORT RCP MOTOR SWAPS DURING AN OUTAGE. A UNION MAY BE DECOUPLED AND CAPPED TO ALLOW FOR REMOVAL OF A RING HEADER WHILE ALLOWING THE 3 REMAINING RCP MOTOR RING HEADERS TO BE PLACED BACK IN-SERVICE FOR THE DURATION OF THE MOTOR SWAP. THE CAP SHALL BE RATED FOR SYSTEM PRESSURE (200 PSIG) AND QA LEVEL 3 (RECOMMEND TITC ARKOBOW OR EQUIVALENT). SUPPORTS FOR THIS CLASS G 2" PIPING ARE PROVIDED IN THE 47A058 SERIES DRAWINGS WHICH ALLOWS FOR THE SPAN OF 10 FEET FOR 2" PIPE. THEREFORE THE APPROXIMATELY 8 FEET (WORSE CASE) OF CAPPED 2" PIPE IS ACCEPTABLE. THE APPROPRIATE FIRE IMPAIRMENT PERMITS SHALL BE OBTAINED AND NEIL SHALL BE NOTIFIED OF THIS CONFIGURATION PRIOR TO REMOVAL OF THE RING HEADER. ONCE THE MOTOR SWAP IS COMPLETE, THE SYSTEM SHALL BE RESTORED TO NORMAL CONFIGURATION.

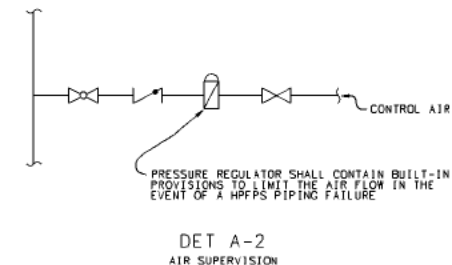
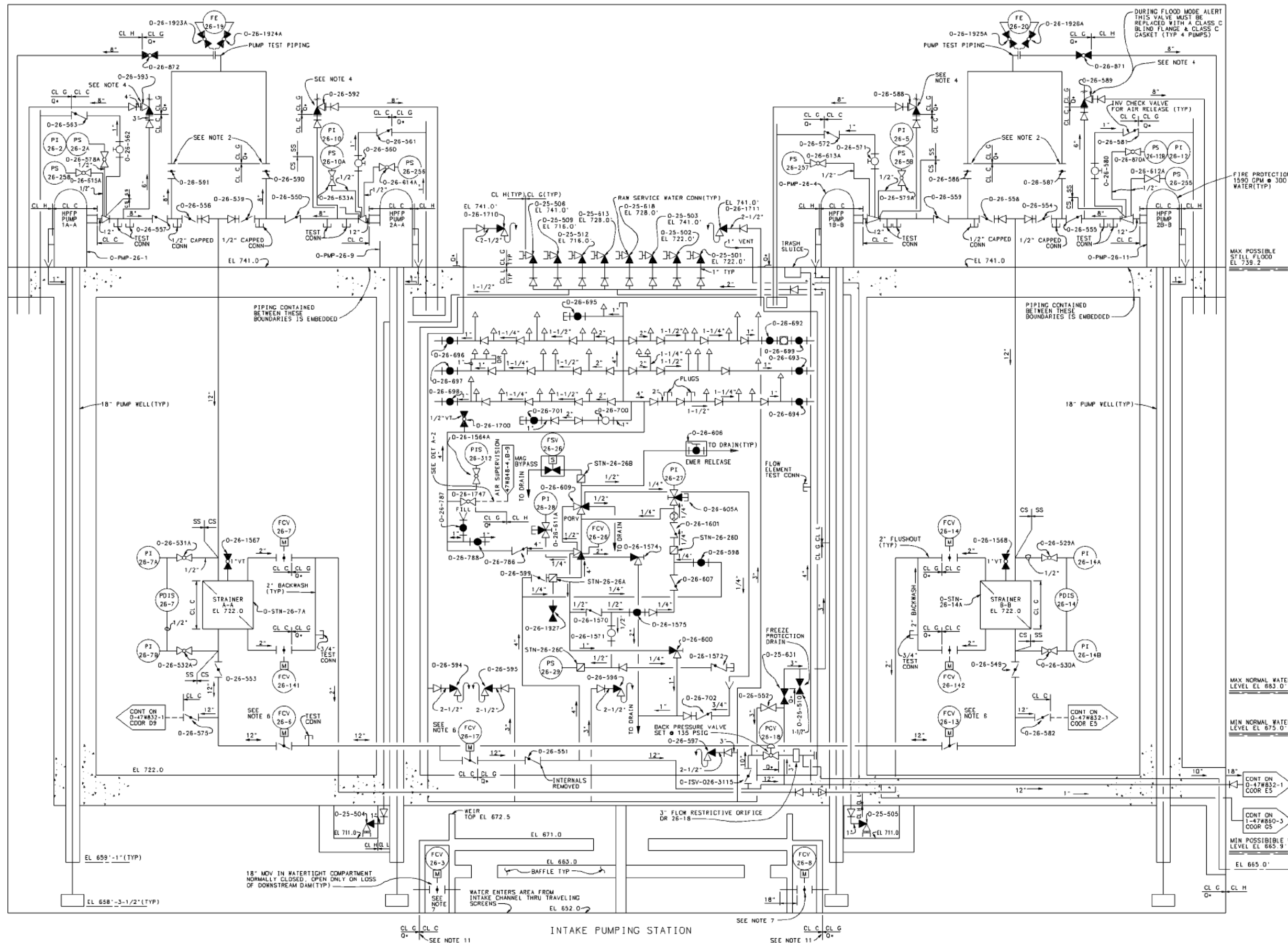
REFERENCE DRAWINGS:
 37W425-SERIES HYPOCHLORITE SYSTEM PIPING & EQUIPMENT
 17W320-SERIES HYDROGEN SYSTEM FOR GENERATOR COOLING
 37W206-SERIES INTAKE PUMPING STATION PIPING & EQUIP
 17W570-SERIES YARD STORAGE/TEMPORARY OFFICE BLDG
 47W850-SERIES HEATING, VENTILATION & AC (SERV & AB)
 47W570-SERIES AIR, WATER, FIRE PROT & GAS WELDING PIPING
 17W525-SERIES FIELD SERVICES FACILITY-PHASE 1 PIPING EMBEDDED & EXPOSED
 17W526-SERIES FIELD SERVICES FACILITY-PHASE 1 FP SPRINKLER SYSTEM
 17W586-SERIES EXPOSED OIL, AIR, WATER & MISC PIPING DOB & ADD'L DOB
 77W210-SERIES TRANSFORMER FIRE PROT SYSTEM
 17W530-SERIES WATER TREATMENT PLANT & MAKEUP DEM EXPOSED PIPING
 47W575-SERIES RAW WATER, FP, ROOF & FLOOR DRAINS
 17W596-SERIES SECURITY BACK-UP POWER BLDG EXP & EMB PIPING
 17W300-SERIES MECHANICAL-RAW, SV, FP, POT, COOL, DEMIN WATER, AIR, BLDG DRNS & CHEM STOR PIPING
 47W490-SERIES MECHANICAL-SERVICE WATER, AIR & FIRE
 47W491-SERIES MECHANICAL-SERVICE AIR, WATER, FIRE PROT & PRIMARY WATER MAKEUP
 47W492-SERIES MECHANICAL-SERVICE AIR, WATER, FIRE PROT & PRIMARY WATER MAKEUP
 FIRE SPRINKLERS INTERIM OFFICE BUILDING
 TVA CONTRACT 85K50 70B168
 91Q126-0 Q LIST HIGH PRESSURE FIRE PROTECTION
 91Q125-0 Q LIST RAW SERVICE WATER
 47W491-25X1 MECH, RSW SYS MVSR-ODS UNIT 1 & COMMON
 47W491-25X2 MECH, RSW SYS MVSR-ODS UNIT 1 & COMMON
 47W491-25X3 MECH, RSW SYS MVSR-ODS UNIT 2
 47W491-25X1 MECH, HPFP SYS MVSR-ODS UNIT 1 & COMMON
 47W491-25X2 MECH, HPFP SYS MVSR-ODS UNIT 1 & COMMON
 47W491-25X3 MECH, HPFP SYS MVSR-ODS UNIT 2
 47W491-25X4 MECH, HPFP SYS MVSR-ODS UNIT 2

COMPANION DRAWINGS:
 47W850-1 THRU 13

UFSAR AMENDMENT 4

WATTS BAR
 FIRE PROTECTION
 REPORT

AUXILIARY BUILDING
 UNITS 1 & 2
 FLOW DIAGRAM
 FIRE PROTECTION REPORT
 TVA DWG NO. 1-47W850-9 R24
 FIGURE II-7A

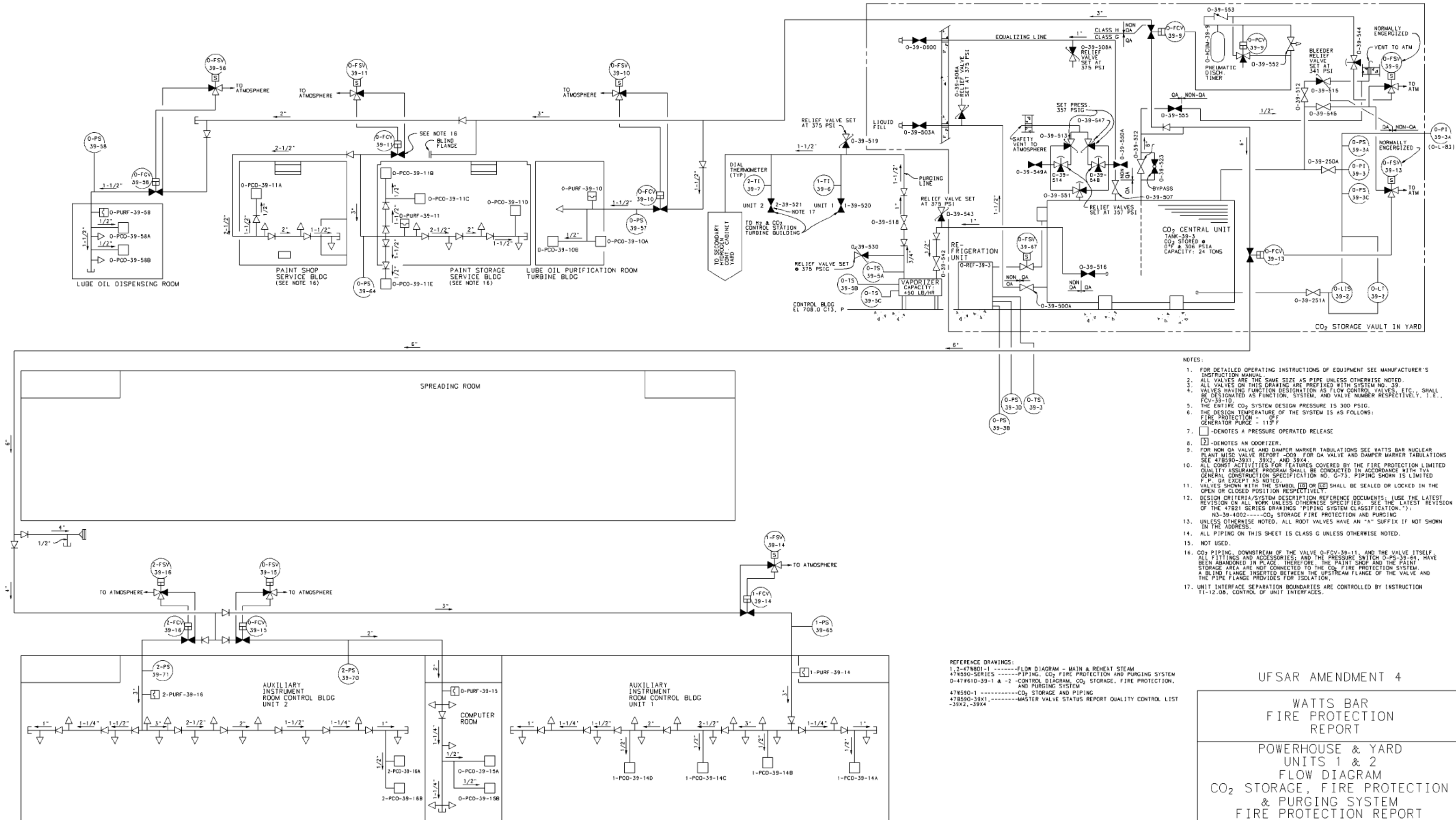


- NOTES:
- FOR PREVIOUS REVISIONS & GENERAL NOTES, SEE 47W832-1.
 - THE FIRE PUMP TEST LOOP ISOLATION VALVES O-26-586, O-26-587, O-26-590 & O-26-591 MUST BE LOCKED CLOSED EXCEPT DURING PUMP TESTING.
 - TEMPORARY INSTRUMENTATION HAS BEEN ADDED TO PUMP 1A-A, FOR SPECIFIC INFORMATION REFER TO DRAWINGS D2081, CONTRACT NO. 83224 AND 38219 (TVA).
 - RELIEF VALVE SET AT 145 PSIG.
 - ALL PIPING ON THIS DRAWING IS TYPICAL CLASS C, G, H, AND L AS NOTED.
 - VALVE IS IN THE OPEN POSITION WITH POWER REMOVED TO PREVENT SPURIOUS CLOSURE DURING AN APPENDIX R EVENT. REFER TO ELECTRICAL SINGLE LINE DRAWINGS 1-45W751-2, 1-45W751-10 AND 2-45W751-11 FOR METHOD OF POWER REMOVAL.
 - VALVE HAS POWER REMOVED IN THE CLOSED POSITION (LOCK VALVE CLOSED WITH FIRE PROTECTION LOCK). REFER TO ELECTRICAL SINGLE LINE DRAWINGS 1-45W751-1 AND 2-45W751-7 FOR METHOD OF POWER REMOVAL.
- REFERENCE DRAWING:
47W832-102 -----STRESS ANALYSIS PROBLEM BOUNDARY RAW SERV WATER & FIRE PROTECTION SYSTEM

UFSAR AMENDMENT 4

WATTS BAR FIRE PROTECTION REPORT

INTAKE PUMPING STATION
RAW SERVICE WATER &
FIRE PROTECTION SYSTEM
FLOW DIAGRAM
FIRE PROTECTION REPORT
TVA DWG NO. 0-47W832-2 R3
FIGURE II-10A



COMPANION DRAWINGS: 0-47843-2

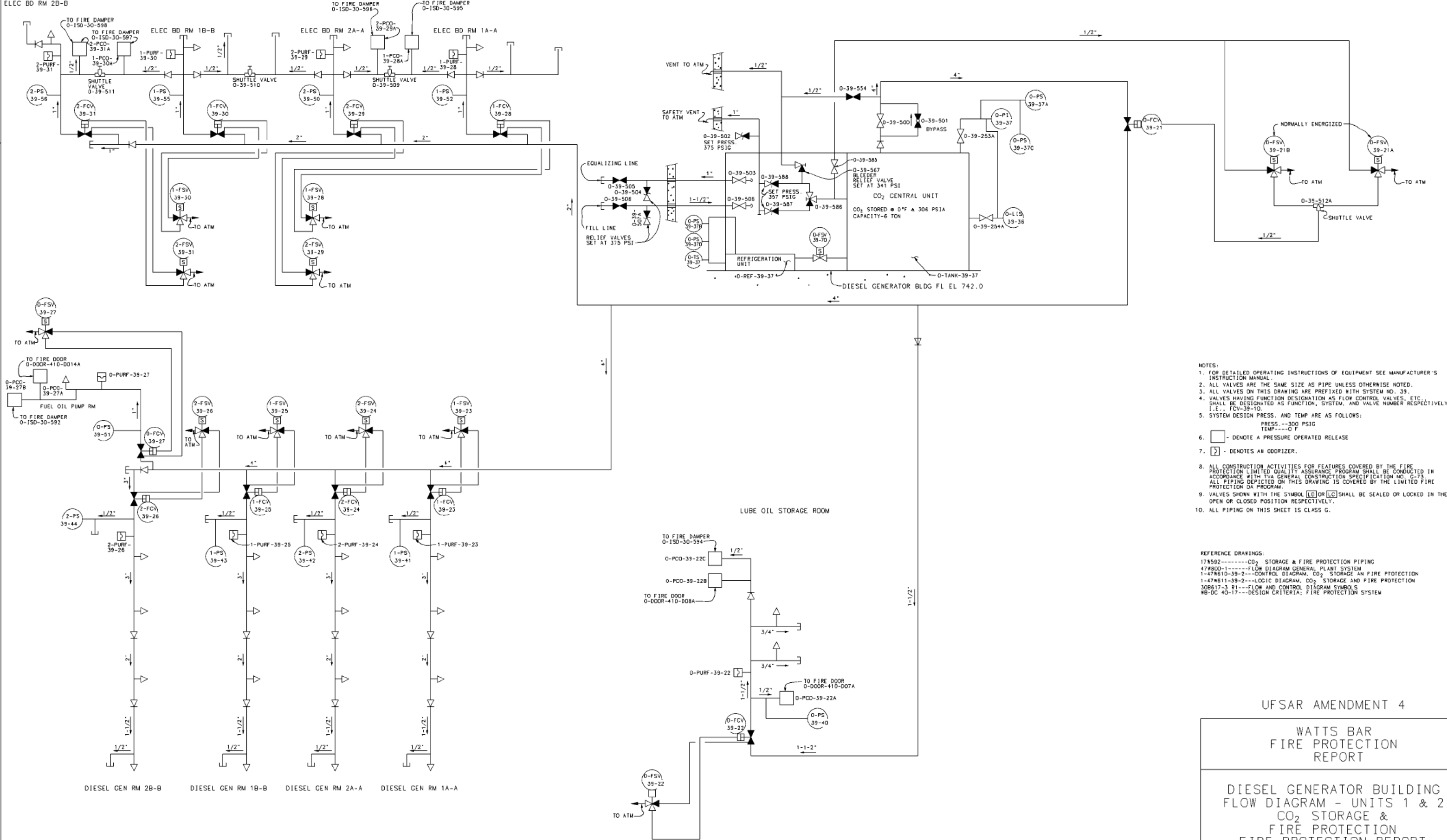
UFSAR AMENDMENT 4

WATTS BAR
FIRE PROTECTION
REPORT

POWERHOUSE & YARD
UNITS 1 & 2
FLOW DIAGRAM
CO₂ STORAGE, FIRE PROTECTION
& PURGING SYSTEM
FIRE PROTECTION REPORT
TVA DWG NO. 0-47843-1 R3
FIGURE II-11A

CAD MAINTAINED DRAWING

ELEC BD RM 2B-B



- NOTES:
1. FOR DETAILED OPERATING INSTRUCTIONS OF EQUIPMENT SEE MANUFACTURER'S INSTRUCTION MANUAL.
 2. ALL VALVES ARE THE SAME SIZE AS PIPE UNLESS OTHERWISE NOTED.
 3. ALL VALVES ON THIS DRAWING ARE PREFIXED WITH SYSTEM NO. 39.
 4. VALVES HAVING FUNCTION DESIGNATION AS FLOW CONTROL VALVES, ETC., SHALL BE DESIGNATED AS FUNCTION, SYSTEM, AND VALVE NUMBER RESPECTIVELY, I.E., FCV-39-10.
 5. SYSTEM DESIGN PRESS. AND TEMP ARE AS FOLLOWS:
PRESS.--300 PSIG
TEMP----0 F
 6. - DENOTE A PRESSURE OPERATED RELEASE
 7. - DENOTES AN ODORIZER.
 8. ALL CONSTRUCTION ACTIVITIES FOR FEATURES COVERED BY THE FIRE PROTECTION LIMITED QUALITY ASSURANCE PROGRAM SHALL BE CONDUCTED IN ACCORDANCE WITH TVA GENERAL CONSTRUCTION SPECIFICATION NO. G-73. ALL PIPING DEPICTED ON THIS DRAWING IS COVERED BY THE LIMITED FIRE PROTECTION QA PROGRAM.
 9. VALVES SHOWN WITH THE SYMBOL SHALL BE SEALED OR LOCKED IN THE OPEN OR CLOSED POSITION RESPECTIVELY.
 10. ALL PIPING ON THIS SHEET IS CLASS G.

REFERENCE DRAWINGS:

17N592-----CO₂ STORAGE & FIRE PROTECTION PIPING
47W800-1-----FLOW DIAGRAM GENERAL PLANT SYSTEM
1-47W810-39-2---CONTROL DIAGRAM, CO₂ STORAGE AND FIRE PROTECTION
1-47W811-39-2---LOGIC DIAGRAM, CO₂ STORAGE AND FIRE PROTECTION
30B617-3 R1---FLOW AND CONTROL DIAGRAM SYMBOLS
WB-DC 40-17---DESIGN CRITERIA; FIRE PROTECTION SYSTEM

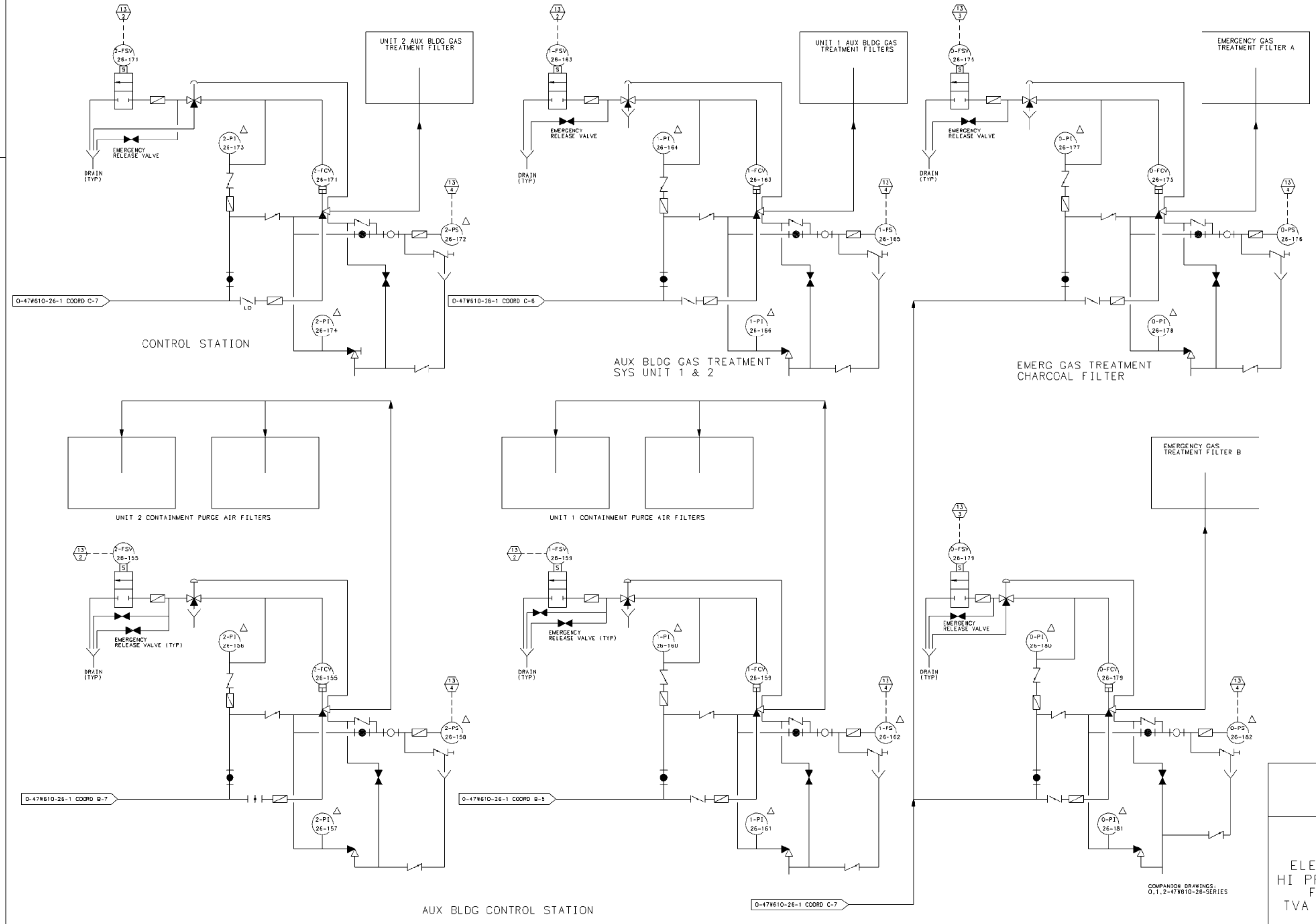
USFAR AMENDMENT 4

WATTS BAR
FIRE PROTECTION
REPORT

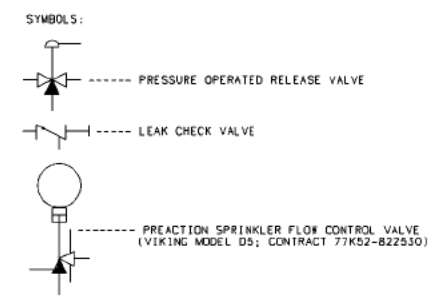
DIESEL GENERATOR BUILDING
FLOW DIAGRAM - UNITS 1 & 2
CO₂ STORAGE &
FIRE PROTECTION
FIRE PROTECTION REPORT
TVA DWG NO. 0-47W843-2 R2
FIGURE II-12A

COMPANION DRAWINGS: 0-47W843-1

CAD MAINTAINED DRAWING



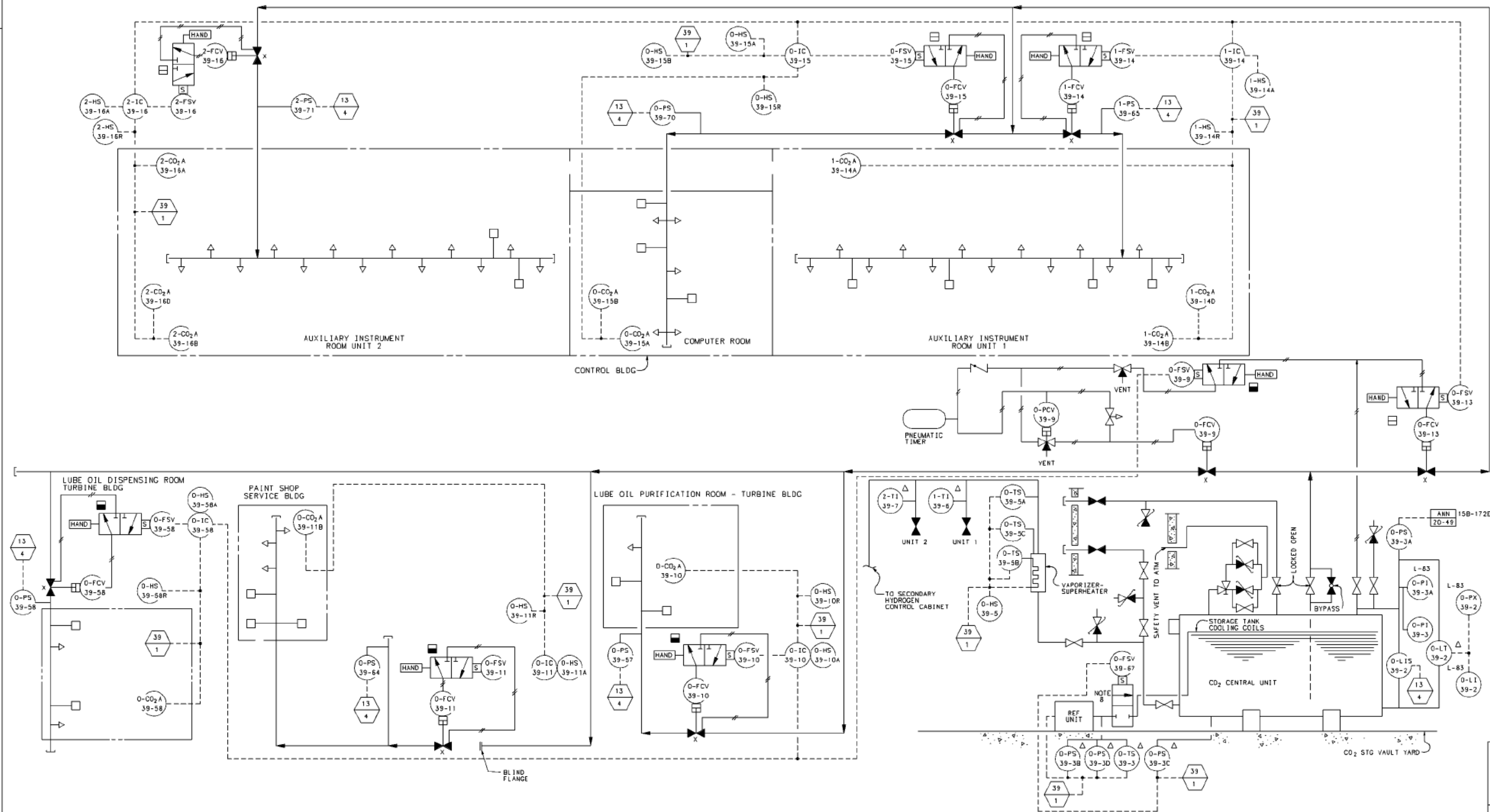
NOTES:
1. FOR GENERAL NOTES AND REFERENCE DRAWING SEE
0-47W610-26-1.



UFSAR AMENDMENT 4

WATTS BAR
FIRE PROTECTION
REPORT

POWERHOUSE
UNITS 1 & 2
ELECTRICAL CONTROL DIAGRAM
HI PRESS. FIRE PROTECTION SYS
FIRE PROTECTION REPORT
TVA DWG NO. 0-47W610-26-5 R2
FIGURE II-17A



- NOTES:
1. THE CO₂ STORAGE, FIRE PROTECTION, AND PURGING SYSTEM IS USED TO PROTECT CERTAIN FIRE HAZARD AREAS WHERE CO₂ IS NECESSARY FOR FIRE PROTECTION. CO₂ IS ALSO USED TO PURGE THE HYDROGEN SYSTEM.
 2. THE CO₂ SYSTEM IS MANUAL/AUTO-ELECTRIC IN OPERATION BY MEANS OF PUSH-BUTTON STATIONS OR AUTOMATICALLY ACTUATED CROSS-ZONED FIRE DETECTORS. IF A FIRE IS DETECTED, AN ALARM HORN SOUNDS IN THE AREA AFFECTED BY THE FIRE. A 20-SECOND TIMER IS ACTUATED WHICH GIVES PERSONNEL TIME TO CLEAR THE AREA BEFORE CO₂ IS DISCHARGED. AFTER 20 SECONDS, THE MASTER VALVE AND LOCAL VALVE OPEN AND THEN CLOSE, DISCHARGING A PREDETERMINED AMOUNT OF CO₂. IF THE FIRE IS DETECTED VISUALLY FIRST, THE CYCLE IS STARTED BY OPERATING A HAND SWITCH.
 3. PRESSURE CONTROLLED DEVICES ARE TO CLOSE FIRE DAMPERS UPON ACTIVATION OF THE FIRE-PROTECTION SYSTEM.
 4. THE DIESEL GENERATOR ROOMS AND ELECTRICAL BOARD ROOMS HAVE BOTH SMOKE DETECTORS AND AUTOMATICALLY OPERATED THERMOSTATS. THE CO₂ SYSTEM CAN BE ACTUATED MANUALLY OR AUTOMATICALLY BY ACTION OF ANY TWO THERMOSTATS IN THE SAME ROOM.
 5. THERE ARE CO₂ DISCHARGE ALARMS IN THE MAIN CONTROL ROOM FOR DETECTION OF ANY CO₂ RELEASE.
 6. FOR INSTRUMENTS SHOWN ON THIS DWG SERIES THAT FALL UNDER THE LIMITED FIRE PROTECTION QUALITY ASSURANCE PROGRAM SEE THE MAXIMO SNPM DATA AND LONG DESCRIPTION FOR THE INSTRUMENT.
 7. THE CABLES TO O-FSV-39-11 AND O-ARB-39-11 HAVE BEEN DISCONNECTED AND THE CO₂ SUPPLY TO O-FCV-39-11 HAS BEEN ISOLATED BY A BLIND FLANGE. THIS WILL PREVENT ANY POSSIBILITY OF CO₂ ACTUATION INTO THE PAINT SHOP AND PAINT STORAGE ROOM.
 8. REFER TO P.O. 3887277 FOR REFRIGERATION UNIT VENDOR DOCUMENTATION.

- REFERENCE DRAWINGS:
- O-47W611-39-1 AND 2 ---- LOGIC DIAGRAM - CO₂ STORAGE, FIRE PROTECTION, AND PURGING SYSTEM
 - 1-47W643-1 ---- FLOW DIAGRAM - CO₂ STORAGE, FIRE PROTECTION, AND PURGING SYSTEM
 - 1-47W643-2 ---- CO₂ STORAGE AND FIRE PROTECTION DIESEL GENERATOR BUILDING
 - 1-47W611-13-1, 4, AND 5 -- LOGIC DIAGRAM-FIRE DETECTION SYSTEM.

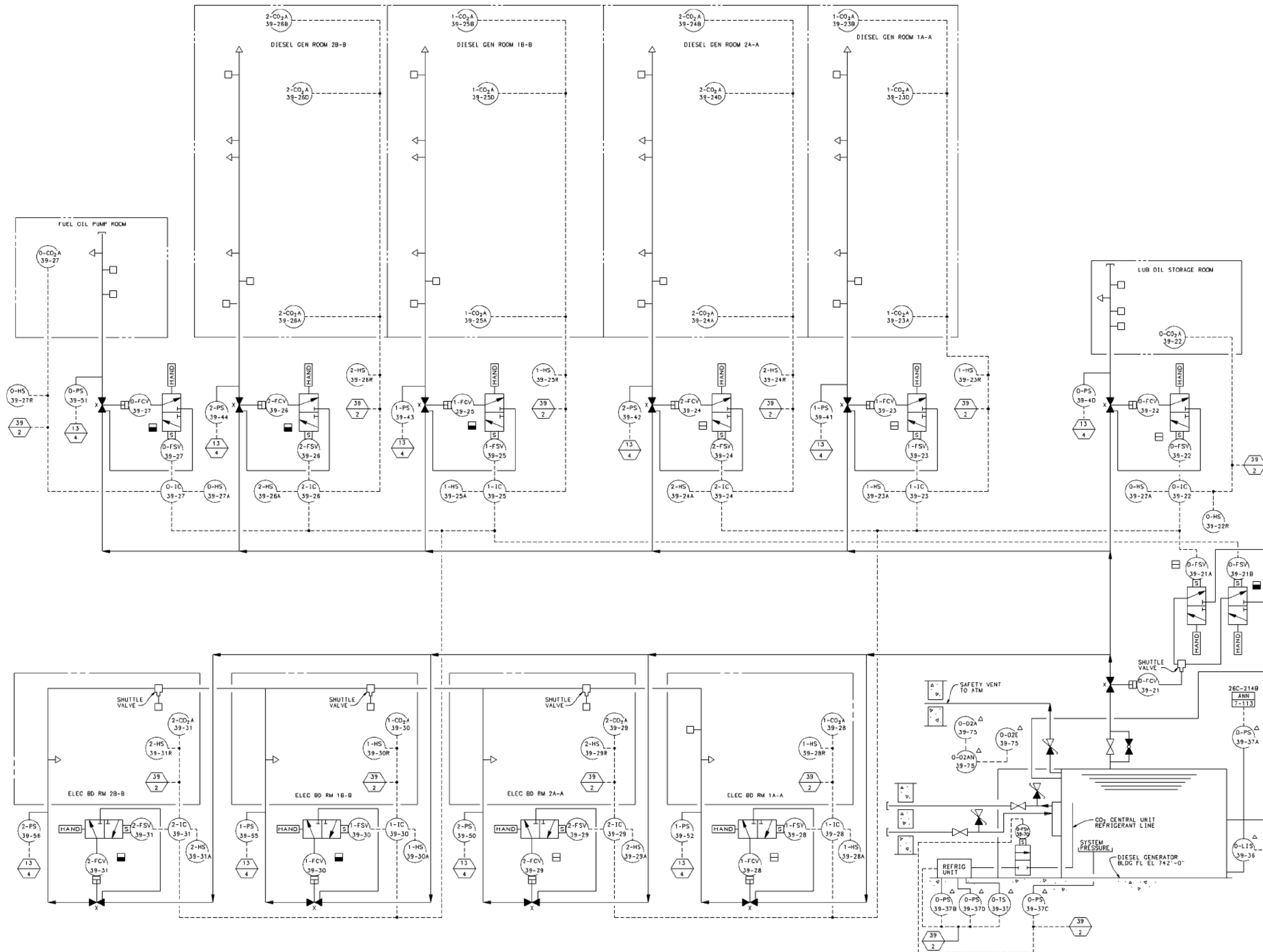
- SYMBOLS:
- CO₂ SPRAY HEAD
 - FIRE DOOR AND/OR DAMPER- CO₂ OPERATED.

UFSAR AMENDMENT 4

WATTS BAR
FIRE PROTECTION
REPORT

POWERHOUSE
UNITS 1 & 2
ELECTRICAL CONTROL DIAGRAM
CO₂ STG, FIRE PROT & PURG SYS
FIRE PROTECTION REPORT
TVA DWG NO. O-47W610-39-1 R3
FIGURE 11-21A

COMPANION DRAWING: O-47W610-39-2

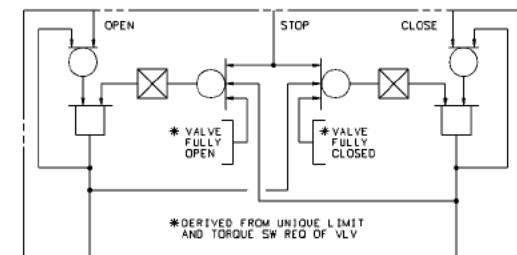
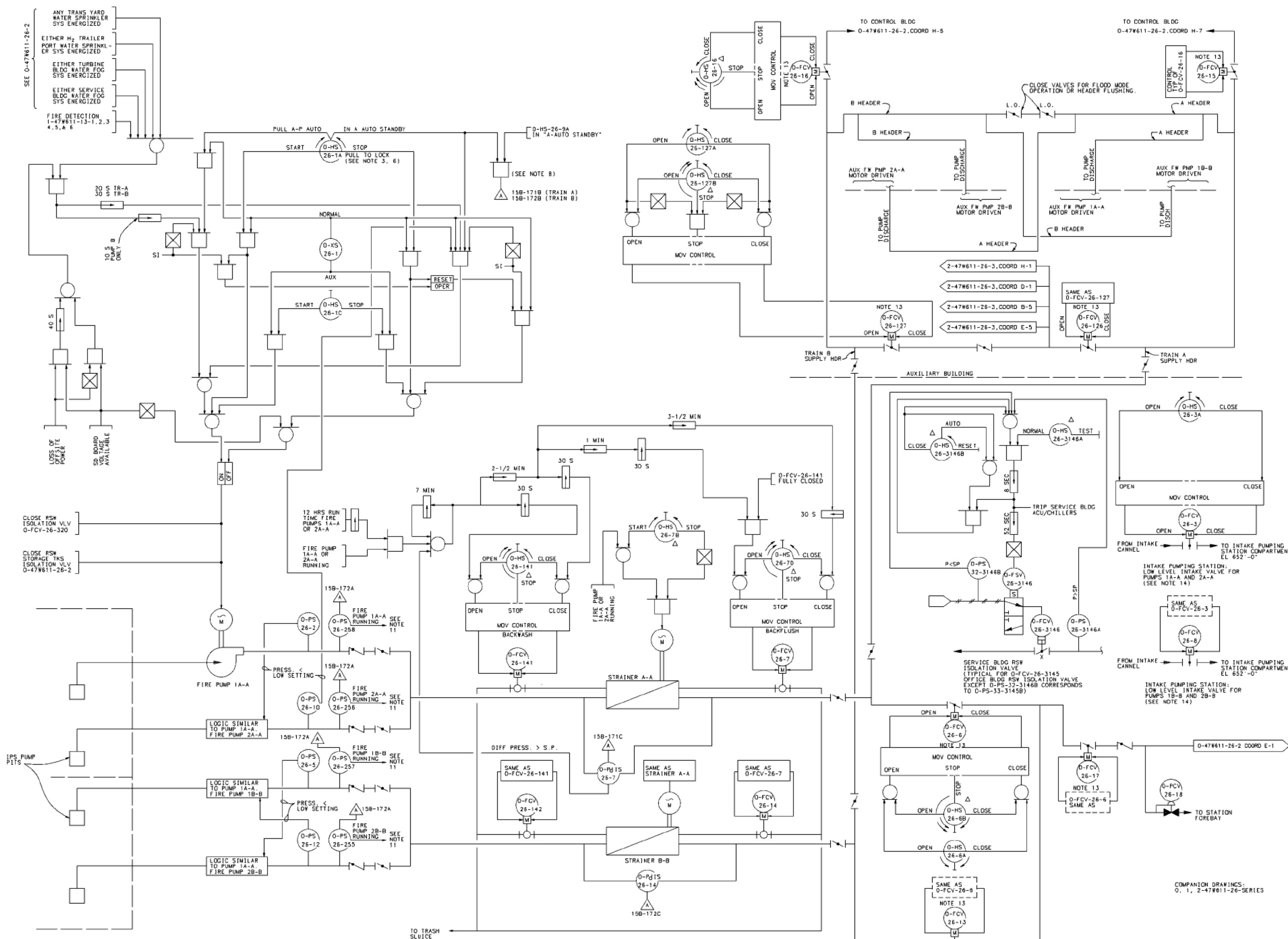


NOTES:
1. FOR GENERAL NOTES AND SYMBOLS SEE 0-47W610-39-1.

UFSAR AMENDMENT 4

WATTS BAR
FIRE PROTECTION
REPORT

DIESEL GENERATOR BUILDING
ELECTRICAL
CONTROL DIAGRAM
CO₂ STG, FIRE PROT & PURG SYS
FIRE PROTECTION REPORT
TVA DWG NO. 0-47W610-39-2 R2
FIGURE II-22A



- NOTES:
- FOR SYMBOLS SEE INSTRUMENTATION AND IDENTIFICATION STANDARDS LATEST ISSUE.
 - FOR COMPLETE INSTRUMENTATION AND COMPONENT TRAIN SEPARATION DESIGNATION SEE CONTROL DIAGRAM, 1-47#610-26-1.
 - FOR NORMAL OPERATION THE MAIN CONTROL SWITCH FOR ONE TRAIN A FIRE PUMP AND ONE TRAIN B FIRE PUMP WILL BE IN THE A-P AUTO POSITION. THE MAIN CONTROL SWITCHES FOR THE OTHER TWO FIRE PUMPS WILL BE IN THE A-AUTO STANDBY POSITION.
 - ALL MAIN CONTROL ROOM #2 TYPE SWITCHES ON THIS SHEET HAVE A PULL-TO-LOCK IN THE STOP POSITION AND ARE ANNUNCIATED FOR THIS CONDITION.
 - IF BOTH TRAIN A OR BOTH TRAIN B MAIN CONTROL ROOM FIRE PUMP CONTROL SWITCHES ARE IN THE "A-AUTO STANDBY" POSITION, AN ANNUNCIATOR ALERTS THE OPERATOR OF A FIRE PUMP SWITCH MISALIGNMENT.
 - FOR INSTRUMENTS THAT FALL UNDER THE LIMITED FIRE PROTECTION QUALITY ASSURANCE PROGRAM REFER TO MAXIMO.
 - "DIGITAL AND ANALOG LOGIC SYMBOLS ARE USED ON LOGIC DIAGRAMS TO FUNCTIONALLY DESCRIBE THE PROCESS CONTROL. REFER TO THE ASSOCIATED WIRING SCHEMATIC FOR THE ELECTRICAL COMPONENTS USED TO IMPLEMENT THE CONTROL SCHEME."
 - INPUT TO MICROBIOLOGICAL INDUCED CORROSION (MIC) REMOVAL SYSTEM SUPPLIED ON CONTRACT 91NNA-75954A, DRAWING# BEC50001.
 - NOT USED.

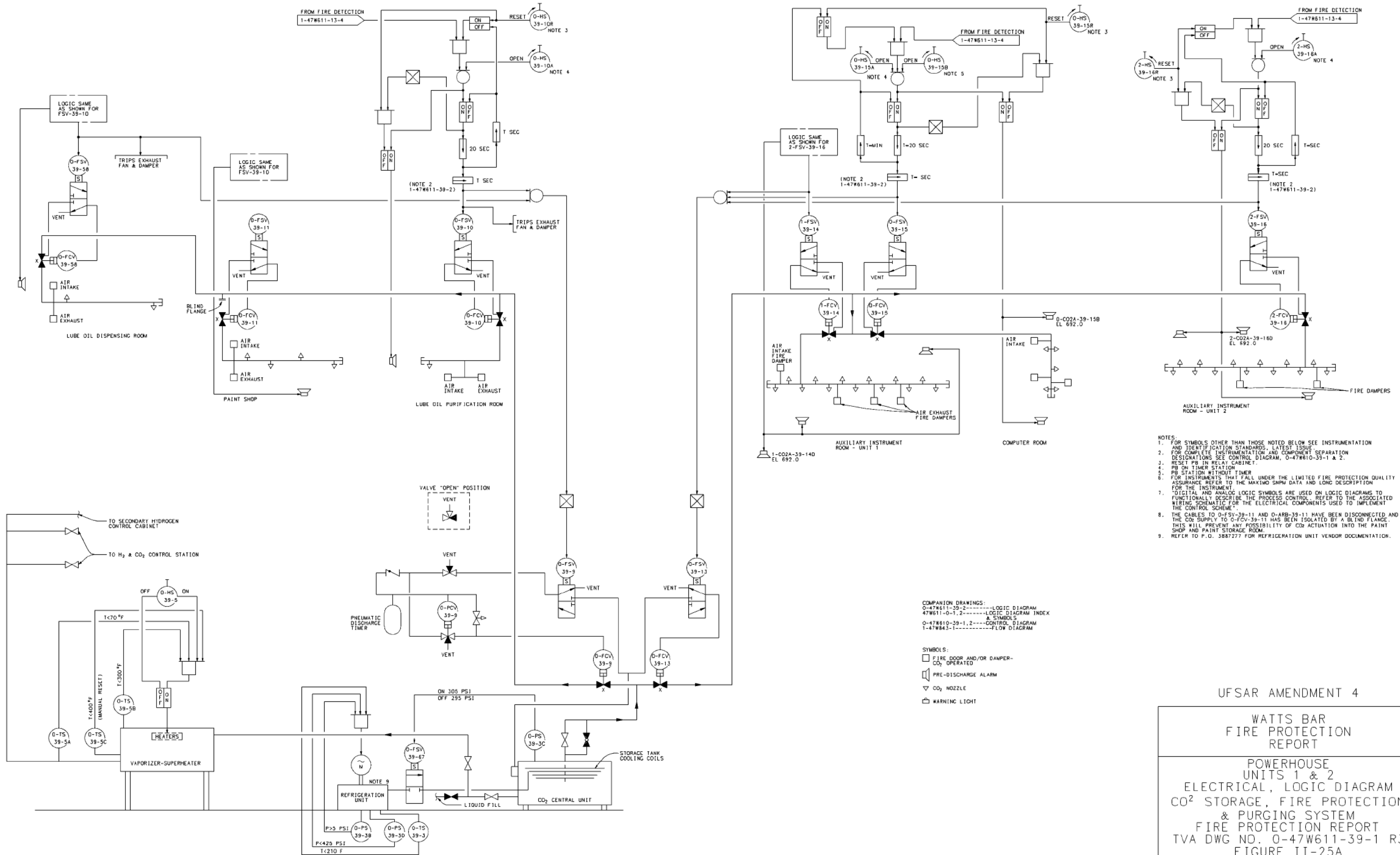
- REFERENCE DRAWINGS:
- 1-47#611-0-1-----LOGIC DIAGRAM INDEX
 - 0-1-47#610-26-SERIES---CONTROL DIAGRAMS
 - 1-47#612-1 A, 2-----FLOW DIAGRAMS
 - 1-47#610-1 THRU -13-----FLOW DIAGRAMS
 - 1-45#760-26-1 THRU -5-----SCHEMATIC DIAGRAMS
 - 1-45#600-26-1 THRU -16-----SCHEMATIC DIAGRAMS
 - 45#640-41, -43, -143, -156---SWITCH DEVELOPMENTS
 - 1-45#600-57-7-----SCHEMATIC DIAGRAMS

UFSAR AMENDMENT 4

WATTS BAR
FIRE PROTECTION
REPORT

POWERHOUSE
UNITS 1 & 2
ELECTRICAL
LOGIC DIAGRAM
HIGH PRESSURE FIRE PROTECTION
FIRE PROTECTION REPORT
TVA DWG NO. 0-47#611-26-1 R2
FIGURE II-23A

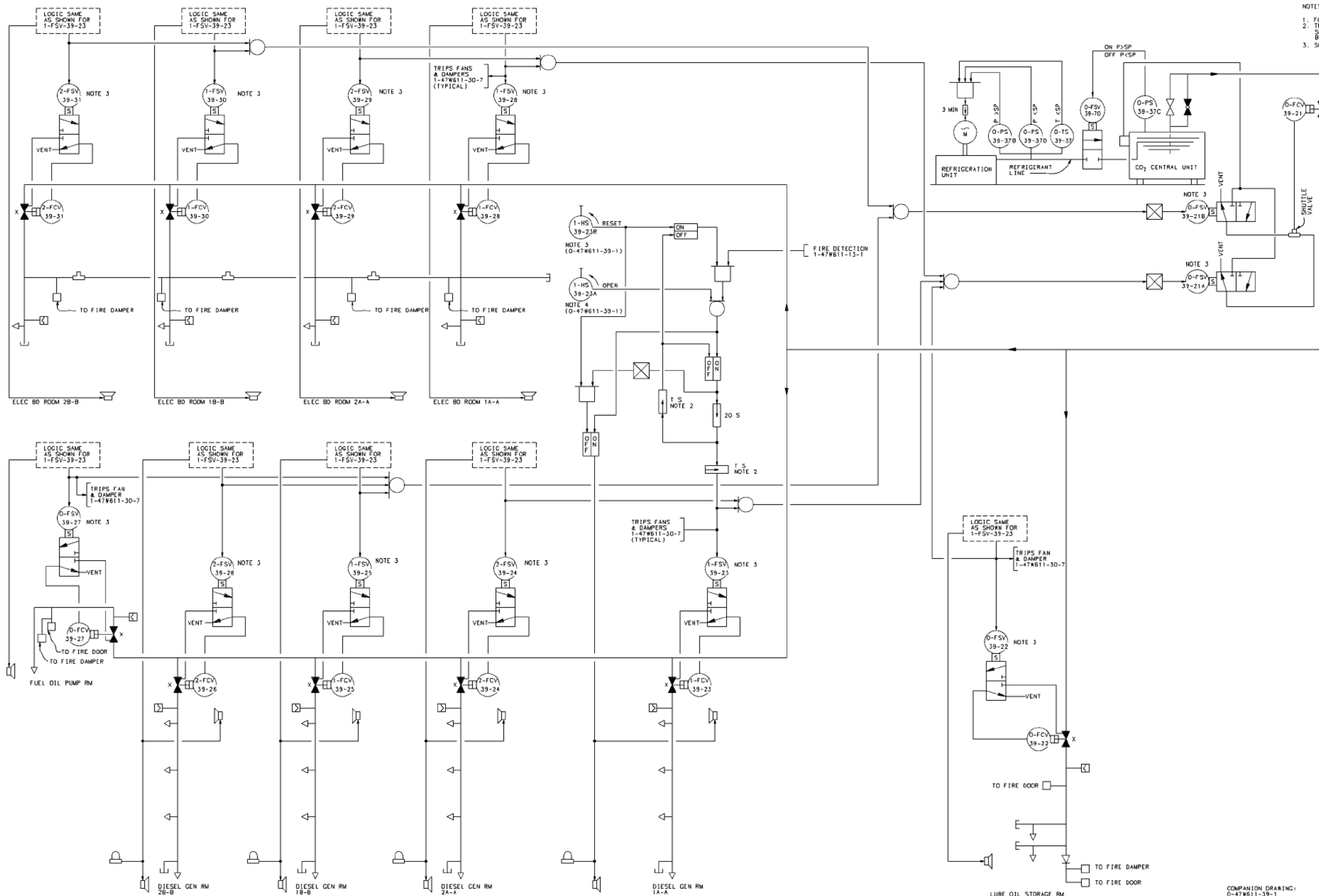
COMPANION DRAWINGS:
0, 1, 2-47#611-26-SERIES



UFSAR AMENDMENT 4

WATTS BAR
FIRE PROTECTION
REPORT

POWERHOUSE
UNITS 1 & 2
ELECTRICAL, LOGIC DIAGRAM
CO₂ STORAGE, FIRE PROTECTION
& PURGING SYSTEM
FIRE PROTECTION REPORT
TVA DWG NO. 0-47W611-39-1 R3
FIGURE II-25A



- NOTES:
1. FOR SYMBOLS AND GENERAL NOTES SEE 0-47W611-39-1.
 2. THE CO₂ DISCHARGE VALVES ARE HELD OPEN FOR A PRE-DETERMINED TIME SET BY A TIMER. THE AMOUNT OF TIME (T) SECONDS (S) WILL BE DETERMINED BY THE LENGTH OF TIME REQUIRED FOR THE CO₂ TO FILL EACH ROOM.
 3. SOLENOID CAN BE MANUALLY OPERATED IN CASE OF POWER FAILURE.

REFERENCE DRAWINGS:

- 1-47W611-39-2-----FLOW DIAGRAM
- 1-47W611-39-3-----WIRING DIAGRAM
- 1-47W611-39-4-----LOGIC DIAGRAM
- 1-47W611-39-5-----LOGIC DIAGRAM
- 0-47W611-39-2-----CONTROL DIAGRAM

SYMBOLS:

- DENOTES A PRESSURE OPERATED RELEASE
- ⊠ DENOTES AN ORGIZER

UFSAR AMENDMENT 4

WATTS BAR
FIRE PROTECTION
REPORT

DIESEL GENERATOR BUILDING
UNITS 1 & 2
ELECTRICAL, LOGIC DIAGRAM
CO₂ STORAGE, FIRE PROTECTION
& PURGING SYSTEM
FIRE PROTECTION REPORT
TVA DWG NO. 0-47W611-39-2 R2
FIGURE II-26A

COMPANION DRAWING:
0-47W611-39-1

CAD MAINTAINED DRAWING

UFSAR AMENDMENT 4

WATTS BAR
FIRE PROTECTION
REPORT

AUXILIARY BUILDING UNITS 1 & 2
FIRE PROTECTION
COMPARTMENTATION - FIRE CELLS
PLAN EL 692.0
FIRE PROTECTION REPORT
TVA DWG NO. 0-47W240-1 R1
FIGURE II-28A

CAD MAINTAINED DRAWING

UFSAR AMENDMENT 4

WATTS BAR FIRE PROTECTION REPORT
AUX & REACTOR BUILDING UNITS 1 AND 2 FIRE PROTECTION COMPARTMENTATION - FIRE CELLS PLAN EL 729.0 & 737.0 FIRE PROTECTION REPORT TVA DWG NO. 0-47W240-3 R1 FIGURE II-30A

CAD MAINTAINED DRAWING

UFSAR AMENDMENT 4

WATTS BAR
FIRE PROTECTION
REPORT

AUX & REACTOR BUILDING
UNITS 1 AND 2 FIRE PROTECTION
COMPARTMENTATION - FIRE CELLS
PLAN EL 772.0, 782.0 & 786.0
FIRE PROTECTION REPORT
TVA DWG NO. 0-47W240-5 R1
FIGURE II-32A

CAD MAINTAINED DRAWING

c

UFSAR AMENDMENT 4

WATTS BAR
FIRE PROTECTION
REPORT

DIESEL GENERATOR BUILDING
UNITS 1 & 2 FIRE PROTECTION
COMPARTMENTATION - FIRE CELLS
PLAN EL 742.0 & 760.5
FIRE PROTECTION REPORT
TVA DWG NO. 0-47W240-8 R1
FIGURE II-35A

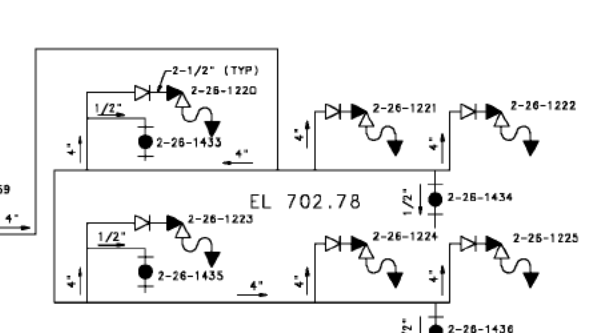
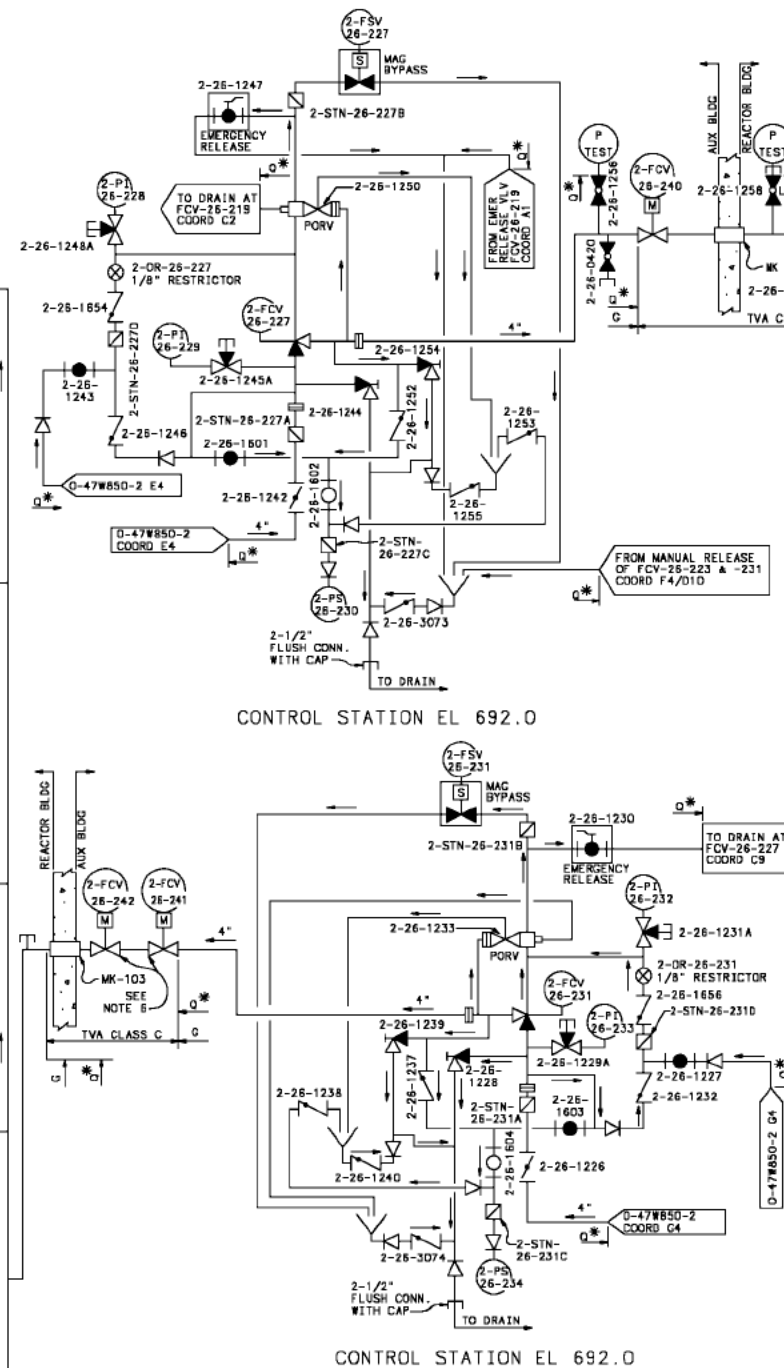
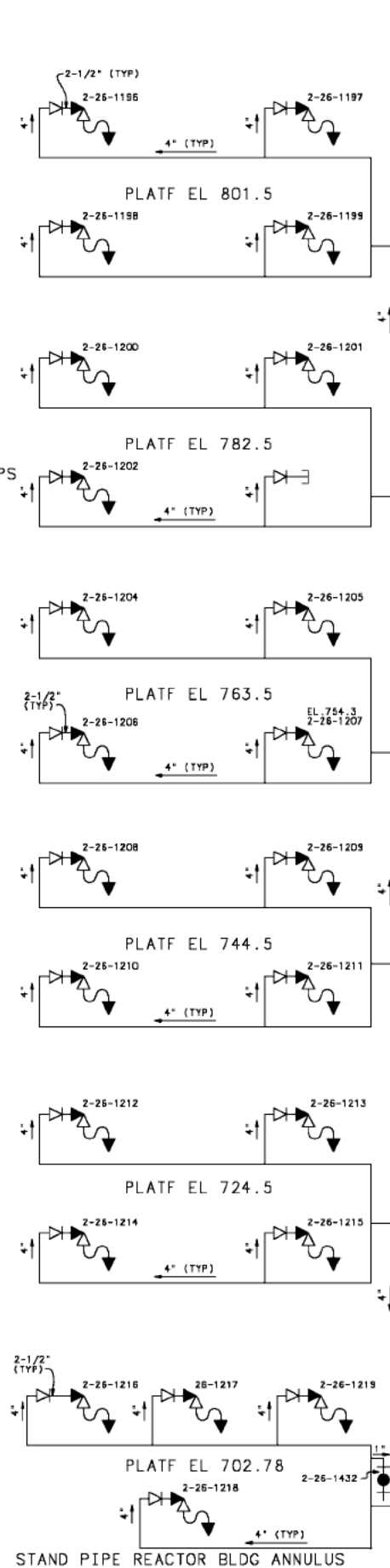
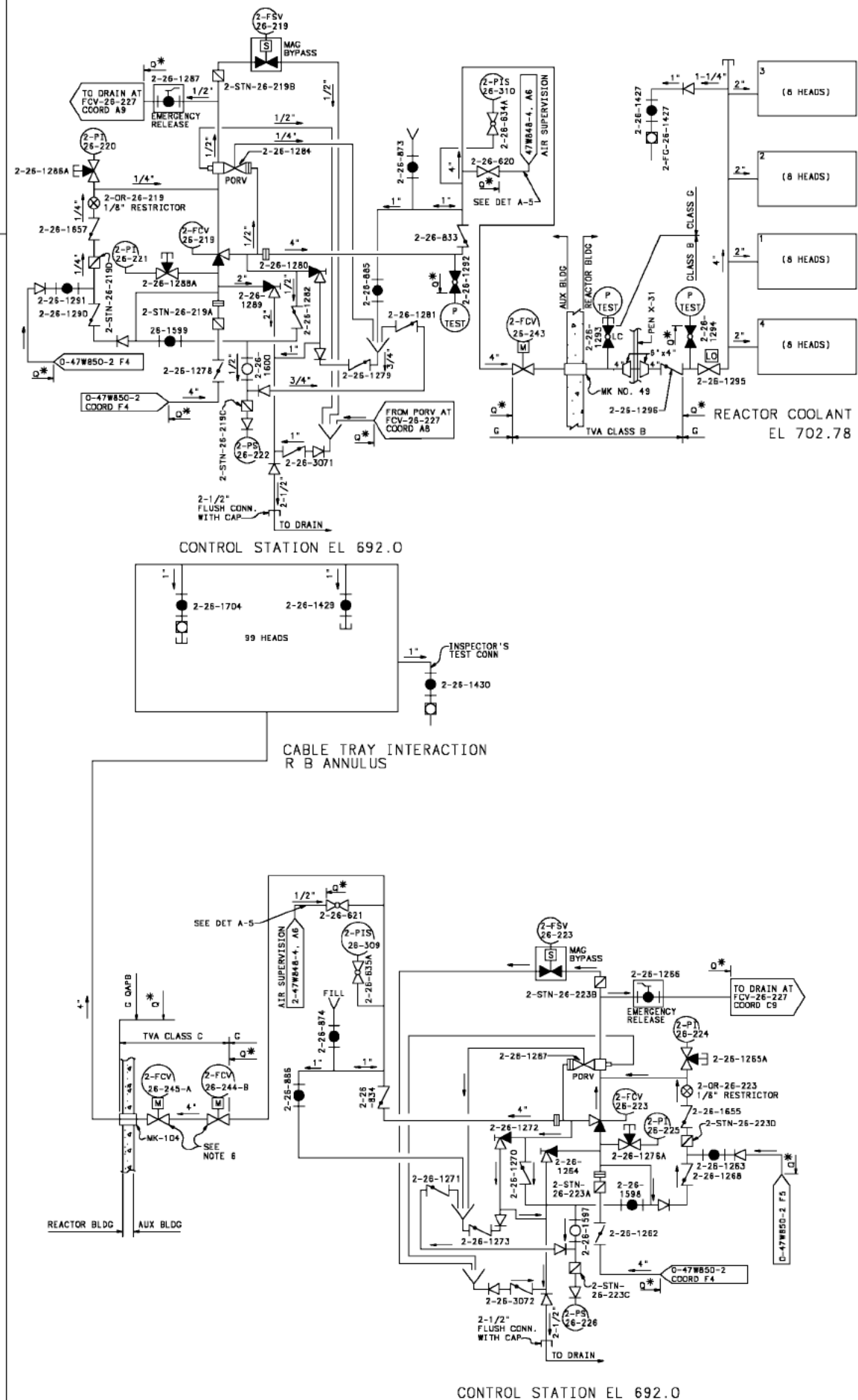
CAD MAINTAINED DRAWING

UFSAR AMENDMENT 4

WATTS BAR
FIRE PROTECTION
REPORT

WATER SUPPLY INTAKE PUMPING STATION
UNITS 1 & 2
FIRE PROTECTION
COMPARTMENTATION - FIRE CELLS
PLAN EL 726.0 & 728.0
FIRE PROTECTION REPORT
TVA DWG NO. 0-17W210-9 R1
FIGURE II-36A

CAD MAINTAINED DRAWING



STAND PIPE PIPE FOR REACTOR COOLANT PUMPS

NOTES:

1. NOT USED.
2. FOR ADDITIONAL NOTES AND REFERENCE DRAWINGS SEE 47W850-2.
3. ALL PIPING ON THIS DWG IS TVA CLASS C UNLESS OTHERWISE NOTED.
4. THE FIRE HOSE STATIONS SHALL BE REMOVED DURING NORMAL OPERATION THAT ARE ATTACHED TO THE FOLLOWING VALVES: 2-SPV-26-1220, 2-SPV-26-1221, 2-SPV-26-1222, 2-SPV-26-1223, 2-SPV-26-1224 AND 2-SPV-26-1225.
5. ALL FUTURE MODIFICATIONS ON THE HPFF SYSTEM PIPING WITHIN THE REACTOR BUILDING ANNULUS SHALL BE TREATED TO THE REQUIREMENTS ASSOCIATED WITH TVA CLASS C PIPING. THIS EXCLUDES SPRINKLER NOZZLES, HOSE VALVES AND OTHER UL/FM QUALIFIED EQUIPMENT.
6. VALVE IS IN THE OPEN POSITION WITH POWER REMOVED TO PREVENT SPURIOUS CLOSURE DURING AN APPENDIX R EVENT. (LOCK VALVE OPEN WITH FIRE PROTECTION LOCK).

REFERENCE DRAWINGS:

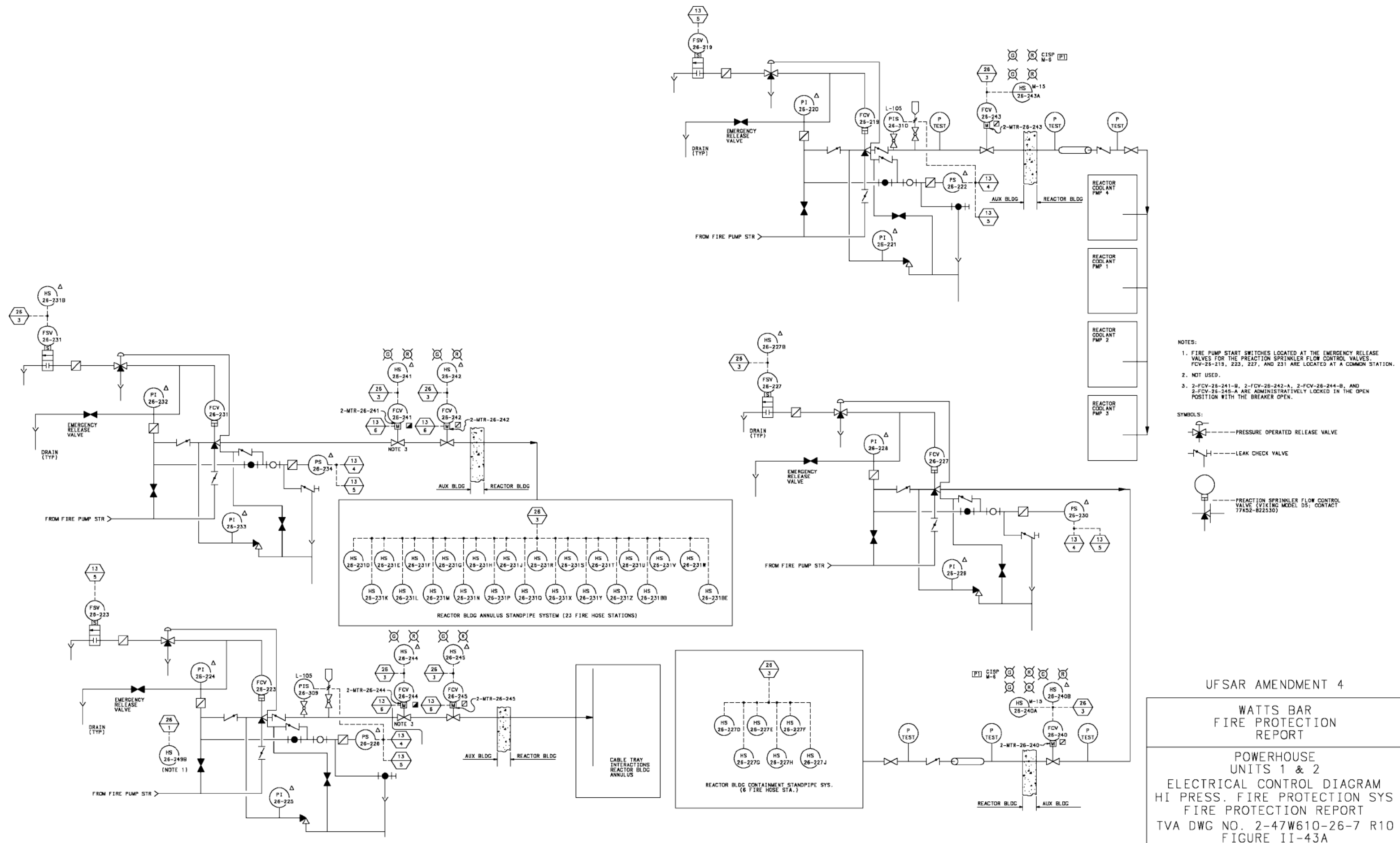
- 37W21-SERIES HYPOCHLORITE SYSTEM PIPING & EQUIPMENT
- 17W320-SERIES HYDROGEN SYSTEM FOR GENERATOR COOLING
- 37W208-SERIES INTAKE PUMPING STATION PIPING & EQUIP
- 17W303-SERIES YARD STORAGE/TORCHER PIPING & BLDG
- 47W850-SERIES HEATING, VENTILATION & AC (SERV & AB)
- 47W570-SERIES AIR, WATER, FIRE PROT & GAS WELDING PIPING
- 17W520-SERIES FIELD SERVICES FACILITY-PHASE I PIPING EMBEDDED & EXPOSED
- 17W526-SERIES FIELD SERVICES FACILITY-PHASE I FP SPRINKLER SYSTEM
- 17W586-SERIES EXPOSED OIL, AIR, WATER & MISC PIPING OGB & ADD'L OGB
- 77W210-SERIES TRANSFORMER FIRE PROT SYSTEM
- 17E530-SERIES WATER TREATMENT PLANT & MAKEUP DRAIN EXPOSED PIPING
- 47W575-SERIES RAW WATER, FP, ROOF & FLOOR DRAINS
- 17W596-SERIES SECURITY BACK-UP POWER BLDG EXP & EMB PIPING
- 17W300-SERIES MECHANICAL-RAW, SV, FP, POT, COOL, DEMIN WATER, ATR, BLDG DRNS & CHEM STOR PIPING
- 47W490-SERIES MECHANICAL-SERVICE WATER, ATR & FIRE PROTECTION
- 47W491-SERIES MECHANICAL-SERVICE AIR, WATER, FIRE PROT & PRIMARY WATER MAKEUP
- 47W492-SERIES MECHANICAL-SERVICE AIR, WATER, FIRE PROT & PRIMARY WATER MAKEUP

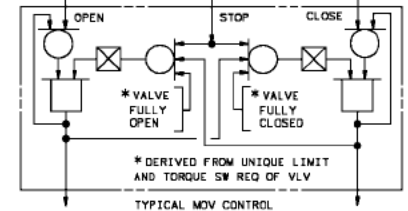
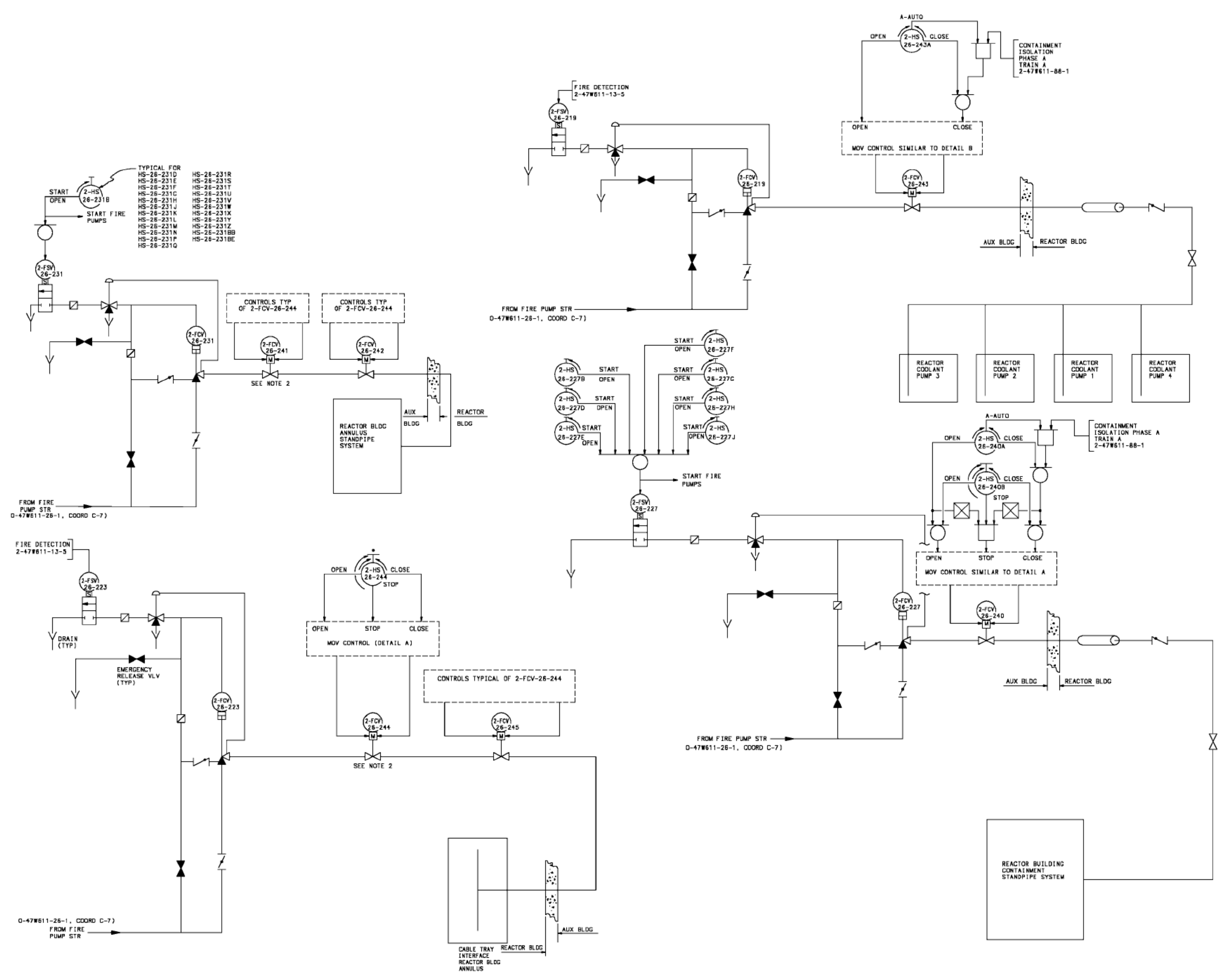
FIRE SPRINKLERS INTERIM OFFICE BUILDING
TVA CONTRACT 85K50 706188

UFSAR AMENDMENT 4

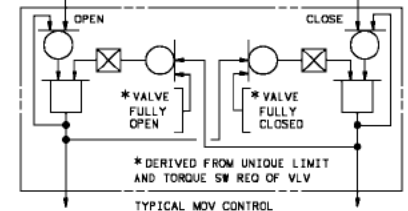
WATTS BAR
FIRE PROTECTION
REPORT

POWERHOUSE
UNITS 1 AND 2
ELECTRICAL CONTROL DIAGRAM
HI PRESS. FIRE PROTECTION SYS
FIRE PROTECTION REPORT
TVA DWG NO. 2-47W850-9 R27
FIGURE II-41A





DETAIL A



DETAIL B

- NOTES:
1. NOT USED.
 2. 2-FCV-26-241-B & 2-FCV-26-242-A ARE ADMINISTRATIVELY LOCKED IN THE OPEN POSITION WITH THE BREAKER OPEN. 2-FCV-26-244-B & 2-FCV-26-245-A ARE ADMINISTRATIVELY LOCKED IN THE OPEN POSITION WITH THE BREAKER OPEN.

UFSAR AMENDMENT 4

WATTS BAR
FIRE PROTECTION
REPORT

POWERHOUSE
UNITS 1 & 2
ELECTRICAL CONTROL DIAGRAM
HI PRESS. FIRE PROTECTION SYS
FIRE PROTECTION REPORT
TVA DWG NO. 2-47W611-26-3 R12
FIGURE II-46A