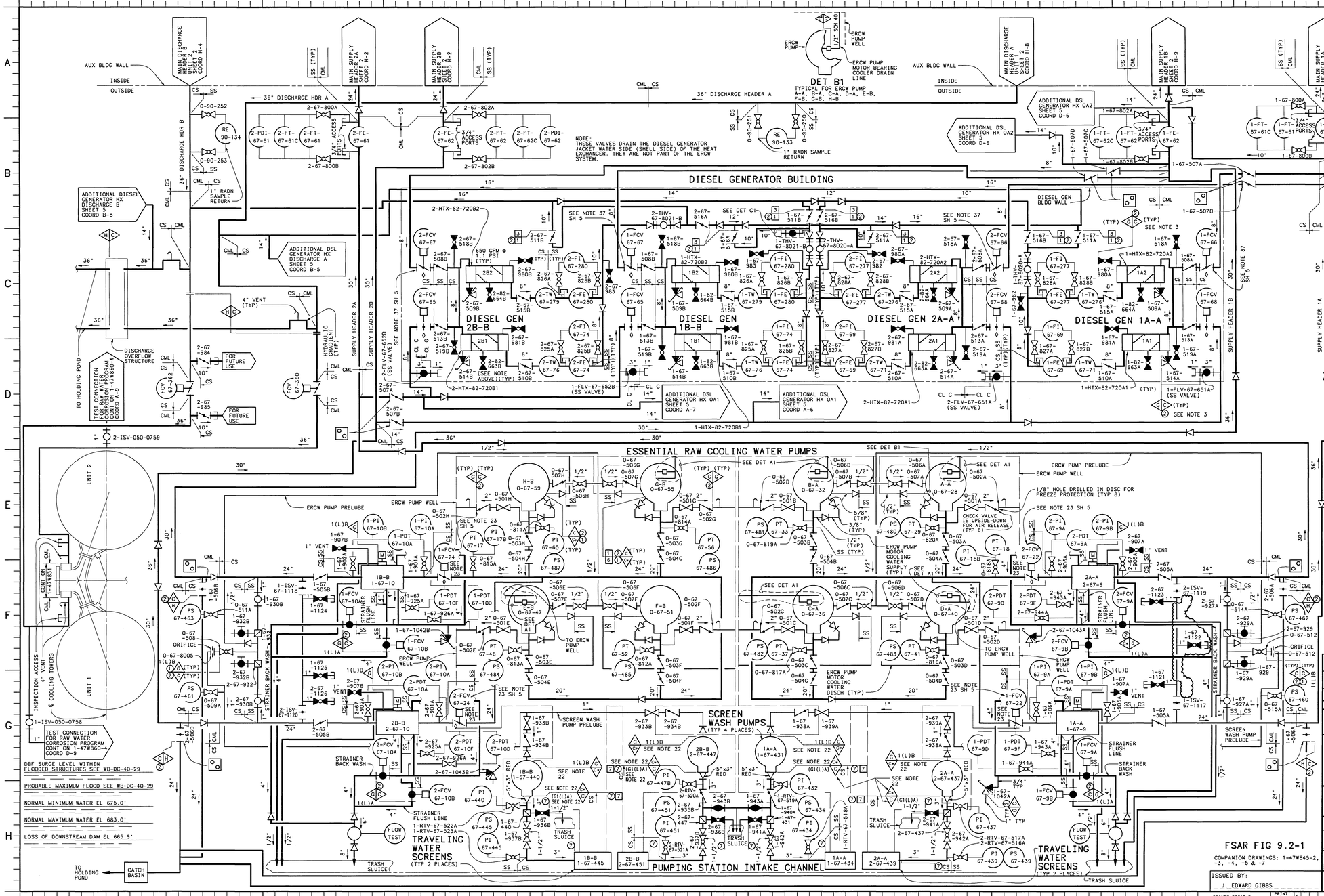

TABLE A1	
ERCW PUMP	FLOW CAGE ID
A-A	0-FC-067-0028
B-A	0-FC-067-0032
C-A	0-FC-067-0036
D-A	0-FC-067-0040
E-B	0-FC-067-0047
G-B	0-FC-067-0055

NOTES:
1. ALL VALVES ARE SAME SIZE AS PIPE UNLESS OTHERWISE NOTED.
2. EXPLANATION OF VALVE AND INSTRUMENT NUMBERS.
   INSTRUMENT NO. 1-FE-67-100 (TYPE) (SYSTEM) (INSTRUMENT NO.)
   VALVE NO. 1-FCV-67-100 (UNIT) (FUNCTION) (SYSTEM) (VALVE NO.)
3. SOURCE NOTE NCR SWP79-W-3 REPORT.
4. MAIN PROCESS SYSTEM VALVES ARE SHOWN IN THEIR NORMAL OPERATING POSITION.
5. ALL INSTRUMENT CONNECTIONS ARE 1/2" UNLESS OTHERWISE NOTED.
6. ALL PIPING AND VALVES ARE TVA CLASS B FOR CONTAINMENT ISOLATION AND REMAINDER OF SYSTEM PIPING AND VALVES TVA CLASS C, EXCEPT AS NOTED ON DIAGRAM. INSTRUMENT TAKEOFFS ARE SAME CLASS AS HEADERS THROUGH FIRST VALVE.
7. ALL TEST CONNECTIONS (TC) AND TEST VENT CONNECTIONS (TV) ARE 1/2" UNLESS OTHERWISE NOTED.
8. PIPING DESIGN TEMPERATURE IS 130°F.
9. FOR VALVE MARKER TAG LIST SEE WATTS BAR MECHANICAL VALVE PROGRAM RPT-009 & 010.
10. 1 3 THIS SYMBOL DENOTES A DESIGN PRESSURE BOUNDARY: 1=160 PSIG; 2=50 PSIG; 3=35 PSIG; 4=150 PSIG; 5=80 PSIG; 6=100 PSIG; 7=220 PSIG; 8=75 PSIG.
11. C/G DENOTES TVA CLASS BOUNDARIES. THE ACTUAL POINT OF PIPING CLASS INSTALLATION IS DENOTED ON 47W450, 37W206 AND 17W302 DRAWING SERIES AND WILL NOT BE LESS THAN DENOTED ON 1-, 2-47W640 SERIES.
12. 2 DENOTES THE HYDROSTATIC TEST PRESSURE. CONSTRUCTION SHALL DETERMINE IF THE COMPONENTS IN THE SYSTEM ARE LIMITING COMPONENT TO THE HYDROSTATIC TEST. ASME CODE CASES INVOLVING HYDROSTATIC TESTING MAY BE USED IF EN-DES APPROVES THEIR APPLICATION. PRESSURE BOUNDARIES ARE AT THE VALVE SEAT EVEN THOUGH THEY MAY BE SHOWN AT THE VALVE WELD. UNLESS OTHERWISE NOTED, DISCHARGE PIPING OPEN TO THE ATMOSPHERE DOWNSTREAM OF THE LAST ISOLATION VALVE IS EXEMPT FROM HYDROSTATIC TESTING IN ACCORDANCE WITH ASME CODE CASE N-240. 1=40 PSIG; 2=200 PSIG; 3=75 PSIG; 4=82.3 PSIG; 5=30 PSIG; 6=43.75 PSIG; 7=330 PSIG; 8=112.5 PSIG. HYDROSTATIC TEST PRESSURE DATA IS HISTORICAL INFORMATION AND NO LONGER MAINTAINED AS DESIGN OUTPUT.
13. THE COOLERS, CHILLERS AND ASSOCIATED EQUIPMENT IN THE AUXILIARY BUILDING ARE QUALIFIED AS SEISMIC CATEGORY 1. PER WB-DC-40-31.2 OR SEISMIC CATEGORY 1(L) PER WB-DC-40-31.13 . TO MAINTAIN THE ERCW PRESSURE BOUNDARY DURING AND AFTER A SAFE SHUTDOWN EARTHQUAKE (SSE). ALL PRIMARY SAFETY-RELATED COOLERS ARE QUALIFIED AS SEISMIC CATEGORY 1 PER WB-DC-40-36.1 (CW) ON THESE DRAWINGS INDICATES THE DESIGNATION 'VENDOR SUPPLIED SAFETY RELATED EQUIPMENT PACKAGES' WHICH MEET THE REQUIREMENTS DEFINED ON 47B21-1 & -1A. (Y) INDICATES SEISMIC CATEGORY 1 (L).
14. DENOTES A PIPE MATERIAL BOUNDARY:
    CS = CARBON STEEL
    SS = STAINLESS STEEL
    CML = CS WITH CEMENT MORTAR LINING

NOTES CONTINUED ON SHEET 5

REFERENCE DRAWINGS:
- 47B601-67 SERIES --- INSTRUMENT TABULATION
- 30B617 ---------- INSTRUMENT SYMBOLS
- 47W450 SERIES ----- ERCW PIPING
- 37W206 SERIES ----- INTAKE PUMPING STATION PIPING
- 17W302 SERIES ----- YARD PIPING
- 1-47W600-1 ---------- FLOW DIAGRAM-GENERAL PLANT SYSTEMS
- 1-47W844-3 ---------- FLOW DIAGRAM-RAW COOLING WATER
- 1-47W803-2 ---------- FLOW DIAGRAM-FEEDWATER
- 1-47W859-1 THRU 3 ---- FLOW DIAGRAM-COMPONENT COOLING SYSTEM
- 1-47W850 SERIES ----- FLOW DIAGRAM-FIRE PROTECTION AND RAW SERVICE WATER
- 1-47W610-67 SERIES --- CONTROL DIAGRAM
- 47W611-67 SERIES --- LOGIC DIAGRAM
- 47W586, 17W585 ---- PIPING-DIESEL GENERATOR BUILDING

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.")
- WB-DC-20-20 ---------- TRAVELING WATER SCREENS FOR WATER SUPPLY INTAKE PUMPING STATION
- N3-67-4002 ---------- ESSENTIAL RAW COOLING WATER
- 37W845-100 SERIES---- STRESS ANALYSIS PROBLEM BOUNDARY
- 47W845-100 SERIES---- STRESS ANALYSIS PROBLEM BOUNDARY

THIS CONFIGURATION CONTROL DRAWING SUPERSEDES UNIT 1 AS-CONSTRUCTED DRAWING 47W845-1 REVISION P.

REV	CHANGE REF	PREPARER	CHECKER	APPROVED	DATE
56	52798	ESJ	GJB	JHQ	10/12/09

REVISED PER DCA 52798-11-1.

SCALE: NTS — EXCEPT AS NOTED

PROJECT FACILITY
TPS, YARD, DGB
UNITS 1 & 2

TITLE
MECHANICAL FLOW DIAGRAM-ESSENTIAL RAW COOLING WATER SYSTEM

1 — WATTS BAR NUCLEAR PLANT, TENNESSEE VALLEY AUTHORITY — Q

DESIGN		INITIAL ISSUE	ENGINEERING APPROVAL
DRAFTER S.R. HANCOCK	CHECKER C.E. THOMPSON	RO ISSUE PER WBEP 5.17 & RIMS B26 '89 1019 375	1 S.W. HUNGATE
DESIGNER M.L. CHAPMAN	REVIEWER J.F. LUND		2 S.W. HUNGATE
			3 F.A. KOONTZ
DATE 1-26-90	85 M	1-47W845-1	R56

FSAR FIG 9.2-1

COMPANION DRAWINGS: 1-47W845-2, -3, -4, -5 & -7

ISSUED BY: J. EDWARD GIBBS

PRINTS REQ'D R ____ PRINT SIZE F BR OR PROJ AB CE EC ME NE FE HE SE TE BL BF WB SQ — PRINT SIZE H BR OR PROJ AB CE EC ME NE FE HE SE TE BL BF WB SQ

CAD MAINTAINED DRAWING

CONFIGURATION CONTROL DRAWING