TENNESSEE VALLEY AUTHORITY
KNOXVILLE, TENNESSEE 37902
400 West Summit Hill Drive, E3A8

October 31, 1985

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulator Commission
Washington, D.C. 20555

Dear Mr. Denton:

Your letter to W. F. Willis dated September 26, 1985, requested copies of investigation reports and related documents dealing with potentially safety-related employee concerns on TVA's nuclear plants. Copies of the requested information as outlined in TVA's October 7, 1985, letter are enclosed and cover the period of October 25, 1985 through October 31, 1985. TVA has previously submitted copies of the requested information through October 11, 1985. We are also enclosing computer summaries of the information which we have transmitted to date.

If you have questions concerning the material transmitted, please contact M. S. Kidd or B. F. Siefken at FTS No. 856-2289 or 856-6230, respectively.

Sincerely,

K. W. Whitt
Director, Nuclear Safety
Review Staff

Enclosures
cc (Enclosures):
Mr. James M. Taylor, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Mr. J. Nelson Grace
Regional Administrator
U. S. Nuclear Regulatory Commission, Region II
101 Marietta Street, Suite 3100
Atlanta, Georgia 30323

A001

TENNESSEE VALLEY AUTHORITY
WATTS BAR EMPLOYEE CONCERN PROGRAM
NUCLEAR REGULATORY COMMISSION
WEEKLY K-FORM LISTING

QTC NUMBER	SUBJECT	KEY WORD	KEY WORD	MAY 16 LETTER	#
EX-85-059-002	INADQ INSTAL HANGERS	HANGERS	INSTALLATI	- -	1
IN-85-008-002	IMPROP INSTAL INSULA	CONSTRUCTI	ADEQUACY	- -	1
IN-85-050-002	NO GAUGES AVAILABLE	WELDING	INSPECTION	- -	1
IN-85-285-001	IMPROP INSTAL PLATES	CIVIL	ANCHORS	- -	1
IN-85-285-002	PULL TEST NOT 100%	CIVIL	ANCHORS	- -	1
IN-85-285-003	NGRS INT ONLY PRODUC	QA	VIOLATION	- -	1
IN-85-301-003	VALVES INFERIOR	DESIGN	ADEQUACY	- -	1
IN-85-316-005	INADQ PIPE SUP DESIG	DESIGN	ADEQUACY	- -	1
IN-85-316-006	PLANT UNCLEAN	CONSTRUCTI	CONTROL	- -	1
IN-85-316-007	IRONWORKERS WELD SUP	HANGERS	INSTALL	- -	1
IN-85-321-001	UNQUAL ENG PERSONS	CONSTRUCTI	PERSONNEL	- X -	1
IN-85-964-002	TEMP MAT FOR PERM SE	MATERIAL	CONTROL	- X -	1
IN-85-964-003	IMPROP MAT/EQIUP USE	MATERIAL	CONTROL	- X -	1
IN-85-964-X06	WUSE OF "SUPERGLUE"	CONSTRUCTI	CONTROL	- -	1
IN-85-967-001	POOR QUAL SKETCHES	DOCUMENT	CONTROL	- -	1
IN-85-988-001	INADW REV OF MATERIA	MATERIAL	CONTROL	- X -	1
IN-86-032-001	DEFECTIVE WELDS	WELDING	WORKMANSHI	- -	1
IN-86-032-002	DEFECTIVE MATERIAL	QA	VIOLATION	- -	1
IN-86-086-001	INADQ DOC ON REPAIR	WELDING	DOCUMENTAT	- -	1
IN-86-131-005	INCOMPLETE WELDS	WELDING	WORKMANSHI	- -	1
IN-86-133-001	GOUGE IN 10" PIPE	CONSTRUCTI	CONTROL	- -	1
IN-86-158-007	CUTS CLOSE TO CONDUI	CONSTRUCTI	CONTROL	- -	1
IN-86-158-008	BUTT WELD SUBSTITUTE	WELDING	WORKMANSHI	- -	1
IN-86-184-001	CLASSIF OF PIPING	CONSTRUCTI	CONTROL	- -	1
WI-85-077-001	INAPPROP EPOXY USED	CONSTRUCTI	CONTROL	- -	1
XX-85-006-001	SQN/DESIGN ERRORS	DESIGN	CONTROL	- -	1
XX-85-069-001	SQN/UNQUAL EMPL	OPERATIONS	PERSONNEL	- -	1
XX-85-069-002	BFN/UNQUAL EMPL	OPERATIONS	PERSONNEL	- -	1
XX-85-069-003	BLN/UNQUAL EMPLOYEES	OPERATIONS	PERSONNEL	- -	1
XX-85-069-009	BLN/REJECT ITEMS ACC	QA	EFFECT	- -	1
XX-85-096-005	SQN/MONITOR TUBE PRO	OPERATIONS	CONTROL	- -	1
*** Total ***					31

TENNESSEE VALLEY AUTHORITY
WATTS BAR EMPLOYEE CONCERN PROGRAM
NUCLEAR REGULATORY COMMISSION
ACCUMULATIVE K-FORM LISTING

QTC NUMBER	SUBJECT	KEY WORD	KEY WORD	MAY 16 LETTER	#
EX-85-002-001	SUPPORT ANALYSIS 1&2	DESIGN	CALCULATIO	- -	1
EX-85-002-002	ACCUMULATORS/UNIT 2	DESIGN	ADEQUACY	- -	1
EX-85-002-005	MARKS ON PIPING	MATERIAL	CONTROL	- -	1
EX-85-003-003	UNAUTH CHNG TO WDREC	WELDING	DOCUMENT	- -	1
EX-85-003-X06	WELD RECORDS FALSIFI	QA	VIOLATION	- -	1
EX-85-008-001	UNQUAL SUBJOURNEYMEN	CONSTRUCTI	PERSONNEL	- -	1
EX-85-008-002	ALCOHOLIC CRFT SUPER	CONSTRUCTI	PERSONNEL	- -	1
EX-85-009-001	SUBSTN WK BY SUBJRMN	CONSTRUCTI	PERSONNEL	- -	1
EX-85-010-002	UNQAUL SUBJOURNEYMEN	CONSTRUCTI	PERSONNEL	- -	1
EX-85-012-001	UNQUALIFIED PERSONNE	CONSTRUCTI	PERSONNEL	- -	1
EX-85-021-001	INADEQUAT ACCOUNTABI	WELDING	ROD	- X -	1
EX-85-021-002	VERIFI PROCESS/WELD	WELDING	WELDERS	- -	1
EX-85-023-001	NUC PR HEAT CODE PRO	MATERIAL	CONTROL	- X -	1
EX-85-026-001	CRACKS IN CONTAIN WA	CIVIL	CONCRETE	- -	1
EX-85-027-001	HVAC DAMPER TEST	TESTING	PRE OP	- -	1
EX-85-034-001	MECH DISCREPAN VALVE	MECHANICAL	INSTALLATI	- -	1
EX-85-037-002	HGRS WELDED BY APPRE	WELDING	WORKMANSHI	- -	1
EX-85-037-003	INADEQ WELDS IN UN 1	WELDING	WORKMANSHI	- -	1
EX-85-037-004	UNQUALIF WELD INSPEC	WELDING	INSPECTORS	- -	1
EX-85-039-001	NO PORTABLE OVENS	WELDING	ROD	- X -	1
EX-85-039-003	DESIGN DEFICIENCY	DESIGN	ADEQUACY	- -	1
EX-85-039-004	QA PROG INADQ ID NCR	QA	EFFECT	- X -	1
EX-85-042-002	WELDERS CERTIFICATIO	WELDING	WELDERS	- -	1
EX-85-042-003	WELDERS REQUALIFICAT	WELDING	WELDERS	- -	1
EX-85-042-004	WELDER REQUALIF TEST	WELDING	WELDERS	- -	1
EX-85-042-005	WELDER CERTIF UPDATE	WELDING	WELDERS	- -	1
EX-85-046-001	IMPRP FIRE DAMPERS	MEHCANICAL	HVAC	- -	1
EX-85-047-001	IMPROPER PIPE CLAMPS	INSTRUMENT	INSTALLATI	- -	1
EX-85-048-001	UNWRITTEN HOLD ORDER	CONSTRUCTI	CONTROL	- -	1
EX-85-048-003	FOREMAN BYPASS PROCE	QA	EFFECT	- X -	1
EX-85-048-004	SUBJOUR WELD PIPE FL	WELDING	WELDERS	- -	1
EX-85-049-001	NO SECURITY BARRIER	SECURITY	BREACH	- -	1
EX-85-052-003	INADQ WORK PKG PREPA	CONSTRUCTI	CONTROL	- -	1
EX-85-052-005	INSP NOT KNOWLEDGEAB	INSPECTION	INSPECTORS	- X -	1
EX-85-052-006	CONDUIT TORN OUT	CONSTRUCTI	CONTROL	- X -	1
EX-85-053-005	FIRE EQUIP NEGLECTED	OPERATIONS	CONTROL	- -	1
EX-85-053-006	INADQ ENGINEERS	CONSTRUCTI	CONTROL	- X -	1
EX-85-054-002	SUBJOURN AS JOURNEYM	OPERATIONS	PERSONNEL	- -	1
EX-85-059-002	INADQ INSTAL HANGERS	HANGERS	INSTALLATI	- -	1
HI-85-006-001	EMPLOYEE HARRASSMENT	QA	VIOLATION	- -	1
HI-85-020-001	REP VIOL & REC DISPL	QA	VIOLATION	- -	1
HI-85-024-001	SUPV HARAS INDIVIDUA	QA	EFFECT	- -	1
HI-85-029-001	ADV JOB ACT FOR CONC	QA	VIOLATION	- -	1
HI-85-033-001	EMPL RELIEV OF RESPO	QA	EFFECT	- -	1
HI-85-040-001	VOID/HI-85-040-002	QA	EFFECT	- -	1
HI-85-040-002	THREATS OF DISP ACTI	QA	EFFECT	- -	1
HI-85-041-001	DISP FOR REPT VIOLAT	QA	EFFECT	- -	1
HI-85-044-001	DISCIPL FOR REPORT	QA	EFFECT	- -	1

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QTC NUMBER	SUBJECT	KEY WORD	KEY WORD	MAY 16 LETTER	#
HI-85-045-001	OBSOLETE HAND SWITCH	QA	VIOLATION	- -	1
HI-85-046-001	INSTRUCTIONS VIOLATI	QA	VIOLATION	- -	1
HI-85-047-001	PUNISHMENT FOR MISTK	QA	EFFECT	- -	1
HI-85-049-001	RUPTURE RESTRAIN FIT	QA	VIOLATION	- -	1
HI-85-050-002	MAINT WLD CERTIFICAT	WELDING	WELDERS	- -	1
HI-85-055-001	INTIM FOR DAMAG REPR	QA	EFFECT	- -	1
HI-85-060-001	EMP HARAS FOR REP QC	QA	VIOLATION	- -	1
HI-85-065-001	THREATS FOR IRNS	QA	EFFECT	- -	1
HI-85-066-001	REPORTING VIOLATIONS	QA	EFFECT	- -	1
HI-85-067-001	EMP AFRAID REP DAMAG	QA	EFFECT	- -	1
HI-85-071-001	REP QC & EMP THREATE	QA	VIOLATION	- -	1
HI-85-073-001	REP QC & EMP THREATE	QA	VIOLATION	- -	1
HI-85-078-001	EMP REFUSED NCR	QA	EFFECT	- X -	1
HI-85-080-001	WELDER THREATENED	QA	EFFECT	- -	1
HI-85-082-001	QUALITY CONCERN	QA	VIOLATION	- -	1
HI-85-083-001	CRAFT HARASSMENT	QA	EFFECT	- -	1
HI-85-087-002	NONCONFORMING ITEMS	QA	EFFECT	- -	1
HI-85-097-001	INSPECTOR THREATENED	QA	VIOLATION	- -	1
HI-85-098-X01	HARDWRE DOES NOT CON	QA	EFFECT	- -	1
HI-85-101-001	EMPLOYEE THREATENED	QA	VIOLATION	- -	1
HI-85-105-001	BY-PASS QC HOLD POIN	ELECTRICAL	CABLES	- X -	1
HI-85-107-001	EMP EXP PRES AFT REP	QA	EFFECT	- -	1
HI-85-108-001	EMPLOYEE COERCED	TESTING	CONSTRUCTI	- -	1
HI-85-112-001	SQN/ORD TO VIOL PROC	QA	EFFECT	- -	1
IN-85-001-001	WELD INSPCT NOT CODE	WELDING	INSPECTION	- -	1
IN-85-001-002	WELD ROD CONTROL	WELDING	ROD	- X -	1
IN-85-001-003	WELDS UNDER WATER	WELDING	WORKMANSHI	- -	1
IN-85-001-004	NO VIS WELD TRAINING	WELDING	INSPECTORS	- -	1
IN-85-001-005	"SHODDY WORKMANSHIP"	WELDING	WORKMANSHI	- X -	1
IN-85-001-006	CODE WELDS VS REQUIR	WELDING	INSPECTION	- X -	1
IN-85-001-007	FAILURE FOLLOW PROCE	CONSTRUCTI	CONTROL	- -	1
IN-85-001-008	INSPEC FAILED TEST	WELDING	INSPECTION	- -	1
IN-85-007-001	WELD INSPECT TOOLS	WELDING	INSPECTION	- -	1
IN-85-007-003	VENDOR WELDS INSPECT	WELDING	INSPECTION	- X -	1
IN-85-008-002	IMPROP INSTAL INSULA	CONSTRUCTI	ADEQUACY	- -	1
IN-85-009-001	SCHEDULE VS. QUALITY	ELECTRICAL	SCHEDULE	- -	1
IN-85-010-001	ELEC HANGER DOCUMENT	HANGERS	DOCUMENT	- X -	1
IN-85-010-002	VIOLATION OF 050 NTS	HANGERS	050 NOTES	- X -	1
IN-85-010-004	FIRE PROT PIPNG DESN	DESIGN	ADEQUACY	- -	1
IN-85-010-004	FIRE PROT PIPNG DE S	DESIGN	ADEQUACY	- -	1
IN-85-012-001	MAT MANF TO ASTM SPC	MATERIAL	CONTROL	- -	1
IN-85-012-X02	TENSILE STRNG OF FIT	MATERIAL	CONTROL	- -	1
IN-85-016-001	BROKN CONCRE AT PLAT	CIVIL	INSTALLATI	- -	1
IN-85-016-002	NO DATA ON HNGR PLAT	HANGERS	INSTALLATI	- -	1
IN-85-016-003	TUBING NOT CLAMPED	HANGERS	INSTALLATI	- -	1
IN-85-017-001	BYPASSING PERMITS	CONSTRUCTI	CONTROL	- -	1
IN-85-018-004	SUPV NOT FOLLOW PROC	ELECTRICAL	CABLES	- X -	1
IN-85-019-001	OVERLOADED STRUCTURE	CONSTRUCTI	CONTROL	- X -	1

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QTC NUMBER	SUBJECT	KEY WORD	KEY WORD	MAY 16 LETTER	#
IN-85-020-001	IMPROP INSTAL REDHDS	CIVIL	ANCHORS	- -	1
IN-85-021-001	TUBE BENDERS	CONSTRUCTI	CONTROL	- -	1
IN-85-021-002	SYS77 DRAINS IN FLR	DESIGN	ADEQUACY	- -	1
IN-85-021-003	BACKDATE CERTF CARDS	WELDING	WELDERS	- -	1
IN-85-021-X04	VAVLES W/CARBON STUD	QA	EFFECT	- -	1
IN-85-021-X05	WELDER CERTIF FALSIF	WELDING	WELDERS	- -	1
IN-85-022-001	UNPERF INSP PIPE SUP	HANGERS	INSPECTION	- -	1
IN-85-024-001	DRWNS & 050 NOTES	HANGERS	050 NOTES	- -	1
IN-85-025-001	INCORE THERMO TEST	TESTING	PREOP	- -	1
IN-85-026-001	FITUP INSPECTS	WELDING	INSPECTION	- -	1
IN-85-027-001	IEB 79-14	HANGER	DOCUMENT	- X -	1
IN-85-027-002	COMPUTER ANALYSIS	DESIGN	CALCULATIO	- -	1
IN-85-027-003	INCOMPLETE WALKDOWNS	QA	EFFECT	- -	1
IN-85-029-002	INEFFEC DESIGN PROCS	DESIGN	EFFECT	- -	1
IN-85-031-001	ENBD PLTS NOT CORREC	DESIGN	CALCULATIO	- X -	1
IN-85-032-001	PIPING CALCULATIONS	DESIGN	ADEQUACY	- -	1
IN-85-033-001	EP 4.03	DESIGN	ADEQUACY	- X -	1
IN-85-037-001	CONCRETE ANCHORS	CIVIL	ANCHORS	- -	1
IN-85-038-001	ANALYS OF LARGE PIPE	DESIGN	CALCULATIO	- X -	1
IN-85-039-001	THML STRS ON PIPING	DESIGN	CALCULATIO	- X -	1
IN-85-039-002	STRES&SUPPRT LD PROB	DESIGN	CALCULATIO	- X -	1
IN-85-039-003	NO CRIT FOR CALCULAT	DESIGN	CALCULATIO	- X -	1
IN-85-046-001	COME/A/LONG PUL CABL	ELECTRICAL	CABLES	- -	1
IN-85-049-002	RAD CONT WATER	CONSTRUCT	CONTROL	- -	1
IN-85-049-004	NO PROT CLOTHING	CONSTRUCTI	CONTROL	- -	1
IN-85-050-002	NO GAUGES AVAILABLE	WELDING	INSPECTION	- -	1
IN-85-052-001	DRWNGS & 050 NOTES	HANGERS	050 NOTES	- -	1
IN-85-052-002	INTIMID FOR IRN'S	QA	EFFECT	- -	1
IN-85-052-003	INCORRECT INSTALLATI	CONSTRUCTI	CONTROL	- -	1
IN-85-052-004	HANGER CRITERIA	HANGERS	INSPECTION	- X -	1
IN-85-052-006	FIT-UP INSPECTIONS	QA	EFFECT	- -	1
IN-85-052-007	FITUP INSPECTIONS	WELDING	INSPECTION	- -	1
IN-85-052-008	PROCED FOR WELD RODS	WELDING	ROD	- X -	1
IN-85-054-001	MISMAT OF HANGR PART	HANGERS	INSTALLATI	- -	1
IN-85-055-001	WORK EFFECT BY HARAS	QA	EFFECT	- -	1
IN-85-055-002	CUT/WELD ANCHOR BOLT	QA	VIOLATION	- -	1
IN-85-055-003	UNCORRECTED WELDS	QA	VIOLATION	- -	1
IN-85-057-001	INSP INCONSIS RE:PRO	INSPECTION	INSPECTORS	- X -	1
IN-85-057-003	INTEGRITY DEGRADED	QA	EFFECT	- -	1
IN-85-062-002	CONDUIT SUP NOT INSP	WELDING	INSPECTION	- -	1
IN-85-064-001	SPRAY ON SHUTDN BDS	ELECTRICAL	BOARDS	- -	1
IN-85-064-002	SHUTDN BDS TOP OPEN	ELECTRICAL	BOARDS	- -	1
IN-85-066-001	SEISMIC TRENCH CONCN	CIVIL	BACKFILL	- -	1
IN-85-069-001	INADEQUATE INSPECTS	HANGERS	INSPECTION	- -	1
IN-85-070-001	CRACKED SLEEVE	CIVIL	SLEEVE	- -	1
IN-85-078-001	UO/SAFTY RELATE SYST	OPERATIONS	PERSONNEL	- -	1
IN-85-079-001	UNQUAL WELD INSPECTO	WELDING	INSPECTORS	- -	1
IN-85-079-003	UNADEQ PRE-HEAT	WELDING	WORKMANSHI	- -	1

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QTC NUMBER	SUBJECT	KEY WORD	KEY WORD	MAY 16 LETTER	#
IN-85-080-001	UNREPAIR ARC STRIKE	WELDING	WORKMANSHI	- -	1
IN-85-086-001	STM GEN MATERIALS	MATERIAL	CONTROL	- -	1
IN-85-088-001	VACUM TEST ON DOORS	TESTING	CONSTRUCTI	- -	1
IN-85-089-001	INADEQ WELD INSPECTO	WELDING	INSPECTORS	- -	1
IN-85-089-002	HANGER REVISIONS	HANGERS	INSTALLATI	- -	1
IN-85-089-003	UNQUALIFIED WELDERS	WELDING	WELDERS	- -	1
IN-85-089-004	UNDERSZ PIPE WELDS	WELDING	WORKMANSHI	- -	1
IN-85-089-005	UNWERVICABLE COILS	DESIGN	ADEQUACY	- X -	1
IN-85-091-001	LOST DOCUMENTATION	DOCUMENT	CONTROL	- -	1
IN-85-091-X02	NO NCR FOR LOST DOCU	DOCUMENT	CONTROL	- X -	1
IN-85-102-001	CNTL ROOM MODIFICATE	DESIGN	CONTROL	- X -	1
IN-85-103-001	IEB 79-02	DESIGN	CALCULATIO	- X -	1
IN-85-106-001	MN STM LOADS SUPPORT	DESIGN	CALCULATIO	- X -	1
IN-85-107-001	CEILING EMBEDDED PLA	DESIGN	ADEQUACY	- -	1
IN-85-108-001	SYS 68 PIPING	MATERIAL	CONTROL	- -	1
IN-85-108-X02	DISCREP FIELD CONDT	HANGERS	INSTALLATI	- -	1
IN-85-109-001	STRUCTURAL SUPPORT	HANGERS	INSTALLATI	- -	1
IN-85-109-002	BOLTS REPLAC BY WELD	DESIGN	ADEQUACY	- -	1
IN-85-109-003	VIOLAT WELD CRITERIA	WELDING	WORKMANSHI	- -	1
IN-85-109-005	AXIAL LOADS	DESIGN	ADEQUACY	- -	1
IN-85-109-X04	GE IN ALLOOWABLES	DESIGN	ADEQUACY	- -	1
IN-85-110-001	CONCRETE ANCHOR FAIL	DOCUMENT	CONTROL	- -	1
IN-85-110-002	INADEQ HANDLING NCRS	DOCUMENT	CONTROL	- -	1
IN-85-110-004	CAPABIL OF PIPE SUPP	DOCUMENT	CONTROL	- -	1
IN-85-112-001	BEND RAD/PULL TENS	ELECTRICAL	CABLES	- X -	1
IN-85-113-001	NO INDOCT OF STEAMFI	CONSTRUCTI	PERSONNEL	- -	1
IN-85-113-003	WELDER CERTIFICATION	WELDING	WELDERS	- -	1
IN-85-115-005	SUPV ATTIUDE	OPERATIONS	CONTROL	- X -	1
IN-85-118-001	STORAGE OF PIPING	MATERIAL	CONTROL	- X -	1
IN-85-119-001	IMPROPER LINE INSTAL	INSTRUMENT	INSTALLATI	- -	1
IN-85-119-002	DAMAGED INST TUBING	CONSTRUCTI	CONTROL	- -	1
IN-85-119-003	RADIAT MONITOR LINES	MECHANICAL	INSTALL	- -	1
IN-85-119-006	SUPPT TESTS NOT DONE	QA	VIOLATION	- -	1
IN-85-120-001	NONSUPPORT CABLES	INSTRUMENT	INSTALLATI	- -	1
IN-85-127-001	INCONSIS IN WELD INS	WELDING	WORKMANSHI	- -	1
IN-85-130-001	UNQUILIFIED PERSONNE	CONSTRUCTI	PERSONNEL	- -	1
IN-85-130-002	FIRE SEALS BREACHED	CONSTRUCTI	CONTROL	- -	1
IN-85-134-001	CRIT NOT MET/IDSS WL	QA	VIOLATION	- -	1
IN-85-134-002	NO INSPECT TOOLS	WELDING	INSPECTION	- -	1
IN-85-134-005	REJ WORK `BUY-OFFS'	DESIGN	EVALUATION	- -	1
IN-85-137-001	QUALITY OF WELDS	WELDING	INSPECTION	- -	1
IN-85-138-001	DEBRI LEFT IN CONDUI	ELECTRICAL	CABLES	- -	1
IN-85-140-001	OPER WATCH VS PAPER	OPERATIONS	CONTROL	- -	1
IN-85-141-001	UNQUAL SUPV MECH MAI	QA	EFFECT	- -	1
IN-85-142-003	UNFOLLOWED WORK PLAN	CONSTRUCTI	CONTROL	- -	1
IN-85-142-006	FALSE READINGS	INSTRUMENT	INSTALLATI	- -	1
IN-85-143-001	WELD PROCEDURES	WELDING	WELDERS	- -	1
IN-85-143-002	UNCORRECT FITTINGS	QA	EFFECT	- -	1

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QTC NUMBER	SUBJECT	KEY WORD	KEY WORD	MAY 16 LETTER	#
IN-85-144-001	LACK OF ROD EQUIPMEN	DESIGN	ADEQUACY	- -	1
IN-85-147-001	INSPEC/TEST VALVES	QA	EFFECT	- -	1
IN-85-148-001	DES CHCKS PER BY TEC	DESIGN	CONTROL	- -	1
IN-85-149-002	RUSTING WELDS	CONSTRUCTI	CONTROL	- -	1
IN-85-152-001	OUT/OF/DATE DRWNGS	DOCUMENT	CONTROL	- X -	1
IN-85-153-002	DESIGN FEATURES INCO	DESIGN	ADEQUACY	- -	1
IN-85-155-001	`POOR APPEARNC' WELD	WELDING	WORKMANSHI	- -	1
IN-85-156-001	POOR WORKMANSHIP	WELDING	WORKMANSHI	- -	1
IN-85-156-002	INADQ WELDS ON PLATF	WELDING	WORKMANSHI	- -	1
IN-85-160-001	UNREPORTED FIRE	CONSTRUCTI	CONTROL	- -	1
IN-85-160-002	UNQUALIFIED PERSONNE	CONSTRUCTI	PERSONNEL	- -	1
IN-85-169-001	SYS 62 VALVE CLASS	MATERIAL	CONTROL	- -	1
IN-85-170-001	UNAUTH RELEASE CABLE	MATERIALS	CONTROL	- -	1
IN-85-171-001	QUAL CONT PROCEDURES	QA	EFFECT	- -	1
IN-85-173-001	LEAK IN SPRINK SYS	MATERIAL	CONTROL	- -	1
IN-85-174-X02	SUSPENS/QA VIOLATION	QA	EFFECT	- -	1
IN-85-183-002	PROCED NOT FOLLOWED	OPERATIONS	CONTROL	- -	1
IN-85-186-002	INSL ON CONDT & CABL	ELECTRICAL	INSTALLATI	- -	1
IN-85-186-003	CABLE TRAYS IN SROOM	ELECTRICAL	INSTALLATI	- X -	1
IN-85-186-004	BOARDS IN ELEC PANEL	ELECTRICAL	BOARDS	- -	1
IN-85-186-005	UNTRAINED INSPECTORS	INSPECTION	INSPECTORS	- -	1
IN-85-186-010	INSUL OVER CUT WIRE	DESIGN	CALCULATIO	- -	1
IN-85-189-001	ACCESS TO VALVES	DESIGN	ADEQUACY	- X -	1
IN-85-189-002	ACCESS TO VALVES/#2	DESIGN	ADEQUACY	- X -	1
IN-85-192-001	RUST IN COOLING ROOM	MECHANICAL	INSTALLATI	- -	1
IN-85-192-002	LACK OF WELD COATING	WELDING	ROD	- -	1
IN-85-196-003	VALVE OPER INADEQ	OPERATIONS	CONTROL	- -	1
IN-85-196-004	INPROP INSTAL PIPING	MATERIAL	CONTROL	- -	1
IN-85-197-001	SENSING LINES NEG SL	INSTRUMENT	INSTALLATI	- -	1
IN-85-197-002	INSTRUMENT DRAIN LIN	INSTRUMENT	INSTALLATI	- -	1
IN-85-198-001	UNCOVERED CABLE TRAY	CONSTRUCTI	CONTROL	- -	1
IN-85-201-001	DIFFICULT CABLE PULL	ELECTRICAL	CABLES	- X -	1
IN-85-201-003	CONDUIT HAS NO FITTI	ELECTRICAL	CABLES	- X -	1
IN-85-202-001	CRACK IN WELD	WELDING	WORKMANSHI	- -	1
IN-85-203-001	HYDRAZINE SPILLS	TESTING	CONSTRUCTI	- -	1
IN-85-207-001	DAMAGE CALBLE JACKET	ELECTRICAL	CABLES	- X -	1
IN-85-207-002	USE OF FISH TAPE	ELECTRICAL	CABLES	- X -	1
IN-85-210-002	UNTRAINED ENGRS/INSP	INSPECTION	INSPECTORS	- -	1
IN-85-211-001	ERCW LINE LEAK	MECHANICAL	ERCW	- -	1
IN-85-211-002	ERCW LINE NOT STAINL	MECHANICAL	ERCW	- -	1
IN-85-212-001	INSP OF WELD SUPPORT	WELDING	INSPECTION	- -	1
IN-85-213-001	CHNG CABLE PULL PROC	ELECTRICAL	CABLES	- X -	1
IN-85-215-001	OUTSTANDING OWIL	CONSTRUCTI	CONTROL	- X -	1
IN-85-216-001	WELDING SEQUENCE	WELDING	PROCEDURE	- -	1
IN-85-217-001	CONDENS POTS, #1	DESIGN	ADEQUACY	- -	1
IN-85-218-001	APPROVAL OF AS-BUILT	INSTRUMENT	INSTALLATI	- X -	1
IN-85-220-001	EXCESSIVE HANGERS	DESIGN	ADEQUACY	- X -	1
IN-85-220-002	SUPV IGNORES EMP CON	QA	EFFECT	- -	1

TENNESSEE VALLEY AUTHORITY
WATTS BAR EMPLOYEE CONCERN PROGRAM
NUCLEAR REGULATORY COMMISSION
ACCUMULATIVE K-FORM LISTING

QTC NUMBER	SUBJECT	KEY WORD	KEY WORD	MAY 16 LETTER	#
IN-85-220-003	EXCESS NOS OF HGRS	CIVIL	CONCRETE	- -	1
IN-85-221-001	IMPROPER VALVE OPER	OPERATIONS	CONTROL	- -	1
IN-85-223-001	AS CONST DRAWINGS	DOCUMENT	CONTROL	- X -	1
IN-85-231-002	CONCRETE SOFT/BRITTL	CIVIL	CONCRETE	- -	1
IN-85-231-003	INADEQUATE CAULKING	CIVIL	INSTALLATI	- -	1
IN-85-232-001	INSTAL OF RED HEADS	CIVIL	ANCHORS	- -	1
IN-85-234-001	REQUIRE FOR WELD ROD	WELDING	ROD	- X -	1
IN-85-241-001	ANCHOR BOLT HOLES	CIVIL	CONCRETE	- -	1
IN-85-241-007	CHANG OF INFO CAB SL	QA	VIOLATION	- -	1
IN-85-242-002	INSUFF DOC PIPE SUPP	HANGERS	DOCUMENT	- -	1
IN-85-243-001	MIXING OF PAINTS	CONSTRUCTI	CONTROL	- -	1
IN-85-243-002	UNPAINT HANG & STEEL	DESIGN	ADEQUACY	- -	1
IN-85-244-001	WRONG PIPE ATTACHMNT	DESIGN	ADEQUACY	- -	1
IN-85-246-001	INSUFFNT MOVEMT/NVR	DESIGN	ADEQUACY	- -	1
IN-85-246-002	EXCAVATION ARC STRIK	WELDING	WORKMANSHI	- -	1
IN-85-246-003	INADQ INSTAL HANGERS	CIVIL	ANCHORS	- -	1
IN-85-246-005	RUSTED WELDS/#2/RB	WELDING	WORKMANSHI	- -	1
IN-85-247-001	QUALITY OF RODS	WELDING	ROD	- -	1
IN-85-247-002	UNSUIT WELD MACHINES	WELDING	EQUIPMENT	- -	1
IN-85-247-X03	NCR REPORTING CODE	DOCUMENT	CONTROL	- -	1
IN-85-250-001	INSP PERF W/O WK REL	HANGERS	INSPECTION	- -	1
IN-85-251-002	MAINT WITHOUT NCR	QA	EFFECT	- -	1
IN-85-255-001	CABLE PULL VIOLATION	ELECTRICAL	CABLES	- X -	1
IN-85-258-002	OVERALL PLANT SAFETY	DESIGN	ADEQUACY	- -	1
IN-85-259-001	UNTRAIN TEST PERSONL	TESTING	PERSONNEL	- -	1
IN-85-259-002	EVALUATE W/NO QA/QC	DESIGN	EVALUATION	- -	1
IN-85-260-001	WELDS WITHOUT DOCUMN	DOCUMENT	CONTROL	- X -	1
IN-85-260-002	NO INSPECT ON WELDS	QA	VIOLATION	- -	1
IN-85-260-003	WELD DOCUMNTATION	WELDING	DOCUMENT	- -	1
IN-85-260-X05	INSPECT DOC FALSIFIE	QA	VIOLATION	- -	1
IN-85-263-001	FAB NOT GETTING FCRS	DOCUMENT	CONTROL	- -	1
IN-85-270-001	ARC STRIKE	WELDING	WORKMANSHI	- -	1
IN-85-271-001	GROUND DOWN WELDS	CONSTRUCTI	CONTROL	- -	1
IN-85-272-003	VOIDS IN VALVES	QA	EFFECT	- -	1
IN-85-272-004	FIREPROOFING CABLES	DESIGN	ADEQUACY	- -	1
IN-85-273-001	UNPAINTED PIPE SUPPO	WELDING	INSPECTION	- -	1
IN-85-274-004	"PENCIL WHIPPING"	OPERATIONS	CONTROL	- -	1
IN-85-276-002	UNSPEC INST ON DRWGS	INSTRUMENT	INSTALLATI	- X -	1
IN-85-276-003	LACK OF DOCUMENTATIO	DOCUMENT	CONTROL	- X -	1
IN-85-277-001	INSTAL PIPE W/O DRWG	CONSTRUCTI	CONTROL	- -	1
IN-85-278-001	INADQ EMP FOR RECORD	DOCUMENT	CONTROL	- -	1
IN-85-278-002	INADQ DOCUMENT CONTR	DOCUMENT	CONTROL	- -	1
IN-85-278-003	INADQ QA RECORDS	DOCUMENT	CONTROL	- X -	1
IN-85-278-004	INADQ RECORDS MGMT	DOCUMENT	CONTROL	- -	1
IN-85-279-002	FCR & NCR APPROVALS	QA	EFFECT	- X -	1
IN-85-279-003	FCRS MISINCORP DRWGS	DOCUMENT	CONTROL	- -	1
IN-85-279-004	PROCEDURE VIOLATIONS	QA	EFFECT	- -	1
IN-85-279-005	NO TRACKING SYSTEM	DESIGN	CONTROL	- X -	1

TENNESSEE VALLEY AUTHORITY
WATTS BAR EMPLOYEE CONCERN PROGRAM
NUCLEAR REGULATORY COMMISSION
ACCUMULATIVE K-FORM LISTING

QTC NUMBER	SUBJECT	KEY WORD	KEY WORD	MAY 16 LETTER	#
IN-85-280-001	WELD MACHN VOLT/AMP	WELDING	EQUIPMENT	- -	1
IN-85-281-001	DIFFUSER FLOW	DESIGN	ADEQUACY	- -	1
IN-85-281-003	TRNSM NOT READ SAME	DESIGN	ADEQUACY	- -	1
IN-85-282-001	QA/QC CLEAR OF MATER	MATERIAL	CONTROL	- -	1
IN-85-282-002	PIPING WELDS	WELDING	WORKMANSHI	- -	1
IN-85-284-001	QUALITY OF WELD RODS	WELDING	ROD	- X -	1
IN-85-284-005	PLANT CLEAN IS POOR	CONSTRUCTI	CONTROL	- -	1
IN-85-285-001	IMPROP INSTAL PLATES	CIVIL	ANCHORS	- -	1
IN-85-285-002	PULL TEST NOT 100%	CIVIL	ANCHORS	- -	1
IN-85-285-003	NGRS INT ONLY PRODUC	QA	VIOLATION	- -	1
IN-85-286-004	RECORDS ACCESS/VAULT	DOCUMENT	CONTROL	- -	1
IN-85-286-006	EQUIPMENT DOCUMENTAT	OPERATIONS	CONTROL	- -	1
IN-85-286-007	WORK RELEASE AUTHORI	CONSTRUCTI	CONTROL	- -	1
IN-85-288-001	INPROP INSTAL HANGER	HANGERS	INSTALLATI	- X -	1
IN-85-289-001	ERRORS DURING TESTIN	OPERATIONS	PERSONNEL	- -	1
IN-85-289-002	DEFECT PIPING	DESIGN	ADEQUACY	- -	1
IN-85-289-003	INADQ CABL TRAY SUPP	DESIGN	ADEQUACY	- X -	1
IN-85-289-004	USE OF BUTT WELDS	DESIGN	ADEQUACY	- -	1
IN-85-289-006	VERMASCO APPL PREMAT	ELECTRICAL	INSTALLATI	- -	1
IN-85-291-001	SCRAP MATERIAL USED	MATERIAL	CONTROL	- -	1
IN-85-293-001	NCR 4412	DESIGN	ADEQUACY	- -	1
IN-85-295-002	VIOL INTRPS TEMP REQ	QA	VIOLATION	- -	1
IN-85-295-003	CABLE PULLING	ELECTRICAL	CABLES	- X -	1
IN-85-298-002	INADEQ WELD MACHINES	WELDING	EQUIPMENT	- -	1
IN-85-299-001	MAINT ON WELD MACHNS	WELDING	EQUIPMENT	- -	1
IN-85-300-002	IMPROP ROUTED CABLES	ELECTRICAL	CABLES	- X -	1
IN-85-300-X04	WELDING QUESTIONABLE	WELDING	WORKMANSHI	- -	1
IN-85-301-003	VALVES INFERIOR	DESIGN	ADEQUACY	- -	1
IN-85-303-001	TUNGSTEN IN WELD	WELDING	WORKMANSHI	- -	1
IN-85-305-001	YIELD POINT OF CLAMP	DESIGN	ADEQUACY	- -	1
IN-85-311-008	CR ENTRANCE FIREDOOR	OPERATIONS	CONTROL	- -	1
IN-85-316-005	INADQ PIPE SUP DESIG	DESIGN	ADEQUACY	- -	1
IN-85-316-006	PLANT UNCLEAN	CONSTRUCTI	CONTROL	- -	1
IN-85-316-007	IRONWORKERS WELD SUP	HANGERS	INSTALL	- -	1
IN-85-321-001	UNQUAL ENG PERSONS	CONSTRUCTI	PERSONNEL	- X -	1
IN-85-325-003	CYCLICAL STRESS FAIL	DESIGN	ADEQUACY	- -	1
IN-85-325-004	INSUFFIC BUTT WELD	DESIGN	ADEQUACY	- -	1
IN-85-325-005	OVERSTRESS CABLES	ELECTRICAL	CABLES	- X -	1
IN-85-325-006	VALV CONT/OPER TRAN	OPERATIONS	CONTROL	- -	1
IN-85-328-001	FLUSHING/NO HOSE	TESTING	CONSTRUCTI	- -	1
IN-85-332-001	LIMITORQUE VALVES	ELECTRICAL	FUSES	- X -	1
IN-85-337-001	ERCW LN W/CEMENT LIN	MECHANICAL	ERCW	- -	1
IN-85-337-002	WELD ROD CONTROL	WELDING	ROD	- X -	1
IN-85-338-001	VALV REMOV W/O AUTH	CONSTRUCT	CONTROL	- -	1
IN-85-338-002	INTERCHG W/O COMPATA	CONSTRUCTI	CONTROL	- -	1
IN-85-339-001	REDHEAD ANCR INSTAL	QA	VIOLATION	- -	1
IN-85-339-002	INSTALL ACCOUTABILIT	QA	VIOLATION	- -	1
IN-85-339-003	BYPASS PROC REQUIRMT	QA	VIOLATION	- -	1

TENNESSEE VALLEY AUTHORITY
WATTS BAR EMPLOYEE CONCERN PROGRAM
NUCLEAR REGULATORY COMMISSION
ACCUMULATIVE K-FORM LISTING

QTC NUMBER	SUBJECT	KEY WORD	KEY WORD	MAY 16 LETTER	#
IN-85-339-004	FALS PULL TEST RECRD	QA	VIOLATION	- -	1
IN-85-339-006	ACCESS FOR WELDING	DESIGN	ADEQUACY	- X -	1
IN-85-339-X06	FALSI ANCHOR PUL TST	QA	VIOLATION	- -	1
IN-85-343-002	CONTL OF HNGR MATERL	MATERIAL	CONTROL	- X -	1
IN-85-346-002	DAMAGED PENETRATIONS	CONSTRUCTI	CONTROL	- -	1
IN-85-346-003	WELD CERTIFICATIONS	WELDING	WELDERS	- -	1
IN-85-347-002	LOSS OF INSPC DOCUMN	DOCUMENT	CONTROL	- -	1
IN-85-347-004	IMPLEMT OF QA PROGRM	QA	EFFECT	- X -	1
IN-85-348-002	INSUFFNT AIR SYSTEM	DESIGN	ADEQUACY	- -	1
IN-85-348-003	RADIOACTIVE WATER	DESIGN	ADEQUACY	- -	1
IN-85-348-004	DWNGS WITHOUT FCR'S	DESIGN	CONTROL	- -	1
IN-85-352-001	UPDATE WELD CERTIFIC	WELDING	WELDERS	- -	1
IN-85-352-002	NO PORT WELD OVENS	WELDING	ROD	- -	1
IN-85-352-003	PIPE INST TO HGR PSI	CONSTRUCTI	CONTROL	- -	1
IN-85-358-001	INADEQ RADIOGRAPHIC	WELDING	INSPECTION	- -	1
IN-85-365-003	QULIFC OF WELD INSPE	INSPECTION	INSPECTORS	- -	1
IN-85-366-003	INADQ CONTROL DRWGS	DOCUMENT	CONTROL	- -	1
IN-85-367-001	CABLE PULL PRACTICES	ELECTRICAL	CABLES	- X -	1
IN-85-368-001	POOR QUALITY PIPES	MATERIAL	CONTROL	- -	1
IN-85-369-001	UNTRAIN CLERKS	CONSTRUCTI	PERSONNEL	- -	1
IN-85-369-004	NUC STORAGE LEVELS	MATERIAL	CONTROL	- X -	1
IN-85-373-001	DAMAGED CABLE	ELECTRICAL	CABLES	- X -	1
IN-85-374-001	UNPROTECTED CABLE	CONSTRUCTI	CONTROL	- -	1
IN-85-374-002	ALUMN ERICKSON CONNC	MATERIAL	CONTROL	- X -	1
IN-85-375-001	DELETED REQUIREMENTS	INSTRUMENT	INSTALLATI	- -	1
IN-85-375-002	CHANG QCP/AGREE W/IN	INSTRUMENT	INSTALLATI	- -	1
IN-85-375-003	UNQUALIFIED INSPECTO	INSPECTION	INSPECTORS	- -	1
IN-85-380-001	UNQUAL INSPECT/ENGRS	INSPECTION	PERSONNEL	- -	1
IN-85-380-003	DEFECTIVE WELDS	WELDING	WORKMANSHI	- X -	1
IN-85-388-003	UNLABELED MATERIALS	MATERIAL	CONTROL	- X -	1
IN-85-388-004	QA LEVEL MATERIALS	MATERIAL	CONTROL	- X -	1
IN-85-388-005	TECH REVIEW QUALIFIC	DOCUMENT	CONTROL	- -	1
IN-85-388-006	HEAT CODE TRACEABILI	MATERIAL	CONTROL	- X -	1
IN-85-388-007	PIPE LABELING RESPON	MATERIAL	CONTROL	- X -	1
IN-85-389-001	INSTAL BEFOR DSGN CG	CONSTRUCTI	CONTROL	- -	1
IN-85-393-002	UNNECESSARY MAINTENA	OPERATIONS	CONTROL	- -	1
IN-85-393-003	FSAR REQ FOR SUPERV	OPERATIONS	PERSONNEL	- -	1
IN-85-393-004	FALSIFY TEST DATA	QA	VIOLATION	- -	1
IN-85-393-X06	FIASIF TEST DATA	QA	VIOLATION	- -	1
IN-85-396-001	PROTECT OF WELD CABL	CONSTRUCTI	CONTROL	- -	1
IN-85-397-003	REQ UNIT 2 DIF FR 1	DESIGN	ADEQUACY	- -	1
IN-85-398-001	UNISTRUT CLAMP BOLTS	HANGERS	INSTALLATI	- -	1
IN-85-398-002	HANGER TORQUING	HANGERS	INSTALLATI	- -	1
IN-85-398-003	TORQUING BOLTS	HANGERS	INSTALLATI	- -	1
IN-85-400-001	FLOW VALVES, #1&2	DESIGN	ADEQUACY	- -	1
IN-85-400-002	GASKET FAILURE	DESIGN	ADEQUACY	- -	1
IN-85-401-001	QA DOCUMENTATION	QA	EFFECT	- X -	1
IN-85-404-001	REWORKED WELDS	WELDING	WORKMANSHI	- -	1

TENNESSEE VALLEY AUTHORITY
WATTS BAR EMPLOYEE CONCERN PROGRAM
NUCLEAR REGULATORY COMMISSION
ACCUMULATIVE K-FORM LISTING

QTC NUMBER	SUBJECT	KEY WORD	KEY WORD	MAY 16 LETTER	#
IN-85-405-001	METAL FATIFUE	DESIGN	ADEQUACY	- -	1
IN-85-406-001	UNAUTH CHNG TO WDREC	WELDING	DOCUMENT	- -	1
IN-85-406-002	WELD INSPCT CRITERIA	WELDING	INSPECTION	- -	1
IN-85-406-003	WELD INSPECT TOOLS	WELDING	INSPECTION	- -	1
IN-85-407-001	INACCURATE Q-LIST	DESIGN	ADEQUACY	- X -	1
IN-85-409-001	NO NCR FOR DOCUMENTA	QA	VIOLATION	- -	1
IN-85-410-003	EMBED PLATE "HOLLOW"	CIVIL	EMBED	- -	1
IN-85-410-005	REV PROC TO COR EROR	QA	EFFECT	- -	1
IN-85-410-006	GRPS ADHERE PROCEDUR	QA	EFFECT	- -	1
IN-85-411-001	SAFTY HAZ ON PLATFRM			- -	1
IN-85-411-002	DEFECTIVE WELD RODS	WELDING	ROD	- -	1
IN-85-412-001	MATERIAL AUTHORIZATN	MATERIAL	CONTROL	- X -	1
IN-85-413-001	"050"NOTES	HANGERS	050 NOTES	- -	1
IN-85-413-002	HNGR NOT TO DRW SPEC	HANGERS	INSTALLATI	- -	1
IN-85-415-002	CONCRETE ERCW LINES	MECHANICAL	ERCW	- -	1
IN-85-424-001	NO PORT OVENS	WELDING	ROD	- -	1
IN-85-424-002	NO SUPPT TO WELD INS	WELDING	INSPECTION	- -	1
IN-85-424-004	STMFIT PERFM WELDING	WELDING	ROD	- -	1
IN-85-424-006	ACCOUNT OF WELD RODS	WELDING	ROD	- X -	1
IN-85-424-007	LACK OF WELD ROD CON	WELDING	ROD	- X -	1
IN-85-424-009	UNQUALIFIED WELDER	WELDING	WELDERS	- -	1
IN-85-424-010	INADEQ SUPV CONTROL	WELDING	WELDERS	- -	1
IN-85-424-011	INADEQ UPDT WELD CER	WELDING	WELDERS	- -	1
IN-85-424-X13	FALSIF WELDER CERTIF	WELDING	WELDERS	- -	1
IN-85-425-001	OVERCROWDED JB	DESIGN	ADEQUACY	- X -	1
IN-85-425-003	PLACEMENT OF HANDSWI	ELECTRICAL	INSTALLATI	- X -	1
IN-85-425-004	CABL WITHOUT SWABBIN	ELECTRICAL	CABLES	- X -	1
IN-85-426-001	UNREQ PORT OVENS	WELDING	ROD	- -	1
IN-85-426-002	INADEQ WELD CERTIFIC	WELDING	WELDERS	- -	1
IN-85-428-002	SAW DRW FOR SNUBBER	HANGERS	INSTALLATI	- -	1
IN-85-432-001	OVERFILLED CABLES	DESIGN	ADEQUACY	- X -	1
IN-85-432-002	OVERFILLED CABLE TRY	DESIGN	ADEQUACY	- X -	1
IN-85-433-002	INSUL BREAK ON CABLE	ELECTRICAL	CABLES	- -	1
IN-85-435-001	OLD WELD MACHINES	WELDING	EQUIPMENT	- -	1
IN-85-435-002	INADEQ WELD PROGRAM	COST	SCHEDULING	- -	1
IN-85-435-003	VALUE OF OC RECORDS	QA	EFFECT	- -	1
IN-85-435-005	INADEQ WELD EQUIPMEN	WELDING	EQUIPMENT	- -	1
IN-85-436-004	MONITNG OF PULL TENS	ELECTRICAL	CABLES	- X -	1
IN-85-437-002	WRONG HGRS INSTALLED	HANGERS	INSTALLATI	- -	1
IN-85-437-005	PROCDURES FOR INSPEC	INSPECTION	INSPECTORS	- -	1
IN-85-439-001	ANCHORS IMPROP ALTER	CIVIL	ANCHORS	- -	1
IN-85-439-002	"HOLLOW" EMBED PLATE	CIVIL	EMBEDS	- -	1
IN-85-439-003	INADEQ CRAFT SUPV	CONSTRUCTI	PERSONNEL	- -	1
IN-85-439-006	SUBSTD WEAK CONCRETE	CIVIL	CONCRETE	- -	1
IN-85-440-001	CFT REQ INSP NEW ARE	QA	VIOLATION	- -	1
IN-85-441-001	NO DATA ON TUBE STEL	MATERIAL	CONTROL	- X -	1
IN-85-441-003	NO PORT WELD OVENS	WELDING	ROD	- -	1
IN-85-442-002	INADEQ TRAINING	INSPECTION	INSPECTORS	- -	1

TENNESSEE VALLEY AUTHORITY
WATTS BAR EMPLOYEE CONCERN PROGRAM
NUCLEAR REGULATORY COMMISSION
ACCUMULATIVE K-FORM LISTING

QTC NUMBER	SUBJECT	KEY WORD	KEY WORD	MAY 16 LETTER	#
IN-85-442-003	QCP GIVEN WITH ANSWR	INSPECTION	INSPECTORS	- -	1
IN-85-442-005	UNSUPERV ENGRN AIDES	CONSTRUCTI	PERSONNEL	- -	1
IN-85-442-006	UNTRAIN CLERK PERSNL	CONSTRUCTI	PERSONNEL	- -	1
IN-85-442-007	NO SECURITY ON PRINT	CONSTRUCTI	CONTROL	- -	1
IN-85-442-008	DOCUMNT ACCOUNTABILI	DOCUMENT	CONTROL	- -	1
IN-85-442-014	UNIT 1 WALKDOWN	QA	EFFECT	- -	1
IN-85-442-X12	LINING LOSS IN PIPE	MECHANICAL	ERCW	- -	1
IN-85-442-X13	UNDR DAM NOT TO SPEC	CIVIL	BACKFILL	- -	1
IN-85-443-002	SEGREGATE OF MATERLS	MATERIAL	CONTROL	- X -	1
IN-85-443-003	NO HEAT # ON PIPE	MATERIAL	CONTROL	- X -	1
IN-85-443-004	NO HEAT # ON PIPE	MATERIAL	CONTROL	- X -	1
IN-85-445-002	UNAUT ACCS TO WLD SY	WELDING	DOCUMENT	- -	1
IN-85-445-003	HANGERS LACK ID NOS	CONSTRUCTI	CONTROL	- -	1
IN-85-445-004	INCORR INSPEC REQUIR	QA	VIOLATION	- -	1
IN-85-445-008	PROC DIFFICULT TO KN	CRAFT	TRAINING	- -	1
IN-85-445-009	UNQUAL QC INSPECTORS	QA	VIOLATION	- -	1
IN-85-445-010	EYE TEST INADEQUATE	INSPECTION	INSPECTORS	- -	1
IN-85-445-013	47-050 HARD TO USE	HANGERS	050 NOTES	- -	1
IN-85-445-014	INADEQ QUAL ENGINEER	DESIGN	PERSONNEL	- -	1
IN-85-445-X15	INSP REQ FALSIFIED	QA	VIOLATION	- -	1
IN-85-445-X16	VOID/IN-85-445-002	QA	VIOLATION	- -	1
IN-85-446-001	WELD CHNG W/O AUTHOR	WELDING	DOCUMENT	- -	1
IN-85-447-003	INST AS-BUILT IN FLD	DESIGN	CONTROL	- X -	1
IN-85-450-001	FLUX BURNS OF WLD RD	WELDING	ROD	- -	1
IN-85-451-001	RUSTY WELDS IN RBI	CONSTRUCTI	CONTROL	- -	1
IN-85-453-005	WRONG HEAT # ON PIPE	MATERIAL	CONTROL	- X -	1
IN-85-453-006	MAINT TO WELD MACHNS	WELDING	EQUIPMENT	- -	1
IN-85-453-007	INADEQ CERTF OF WELD	WELDING	WELDERS	- -	1
IN-85-453-009	PASS OF WELD ROD	WELDING	ROD	- X -	1
IN-85-454-001	INADQ TRAIN WEL INSP	INSPECTION	INSPECTORS	- -	1
IN-85-454-004	PASS OF WELD ROD	WELDING	ROD	- -	1
IN-85-454-006	VALVE W/RUST ON BODY	CONSTRUCTI	CONTROL	- -	1
IN-85-455-001	POOR QUAL WELD RODS	WELDING	ROD	- -	1
IN-85-457-001	INADQ REVIEW BY PORC	OPERATIONS	CONTROL	- -	1
IN-85-457-002	NCRS FOR SPT FUL RCK	QA	EFFECT	- X -	1
IN-85-458-001	IMPROPER INSP WELDS	WELDING	INSPECTION	- -	1
IN-85-458-002	UNQUAL/TRAIN INSPECT	INSPECTION	INSPECTORS	- -	1
IN-85-458-004	HANGERS REMOV SYS 68	QA	EFFECT	- -	1
IN-85-458-005	ELEC BOX TEST UNPERF	ELECTRICAL	INSTALLATI	- -	1
IN-85-458-006	MGT VOIDED IRN'S	QA	VIOLATION	- X -	1
IN-85-458-007	CHNG OF WELD STATUS	WELDING	DOCUMENT	- -	1
IN-85-460-002	MATRL W/O HEAT #'S	MATERIAL	CONTROL	- X -	1
IN-85-460-003	GOUGE IN LINE, 1#	MECHANICAL	INSTALLATI	- -	1
IN-85-460-X04	ARC STRIKE ON SYS 78	WELDING	WORKMANSHI	- -	1
IN-85-460-X05	EXCAV ARC STRK SYS72	WELDING	WORKMANSHI	- -	1
IN-85-461-001	ACCEPT CRIT OF DRWNS	HANGERS	050 NOTES	- -	1
IN-85-463-003	CONT W/ENERGZ CONDCT	MECHANICAL	INSTALLATI	- -	1
IN-85-463-006	PROBL INSTRU INSTALL	INSTRUMENT	INSTALLATI	- -	1

TENNESSEE VALLEY AUTHORITY
WATTS BAR EMPLOYEE CONCERN PROGRAM
NUCLEAR REGULATORY COMMISSION
ACCUMULATIVE K-FORM LISTING

QTC NUMBER	SUBJECT	KEY WORD	KEY WORD	MAY 16 LETTER	#
IN-85-463-007	DELAY IN DOCUMT DRWS	DOCUMENT	CONTROL	- -	1
IN-85-463-008	INACCUR DOCUMENTATN	DOCUMENT	CONTROL	- -	1
IN-85-465-001	LINES CLOSE TO HANGR	MECHANICAL	INSTALLATI	- -	1
IN-85-465-002	LOOSE CONDUIT	HANGERS	INSTALLATI	- -	1
IN-85-469-002	COR DRIL W/O CUT REL	CIVIL	REBAR	- -	1
IN-85-469-003	ENTRAP OF CONTAMINTS	DESIGN	ADEQUACY	- -	1
IN-85-470-001	FAILURE OF SWTCHGEAR	ELECTRICAL	BOARDS	- -	1
IN-85-471-001	INEXP OPERATORS	OPERATIONS	CONTROL	- -	1
IN-85-472-002	NO NCRS ON ERCW LINS	QA	VIOLATION	- X -	1
IN-85-472-003	INADEQ DIR BY INSPEC	INSPECTION	INSPECTORS	- -	1
IN-85-472-004	SITE PROC REQUIREMNT	CONSTRUCTI	PERSONNEL	- -	1
IN-85-472-005	VIOL OF QA REQUIRMNT	QA	VIOLATION	- -	1
IN-85-472-006	INTERFER W/INSPECT	CIVIL	BACKFILL	- -	1
IN-85-472-007	EROSION IN TRENCH AR	CIVIL	BACKFILL	- -	1
IN-85-472-008	NO INSPECT DOCUMENTA	QA	EFFECT	- X -	1
IN-85-474-001	UNQUALF WORK PERFORM	QA	VIOLATION	- -	1
IN-85-475-001	POOR QUAL WELDS	WELDING	WORKMANSHI	- -	1
IN-85-476-003	UNINSPECTED WELDS	WELDING	INSPECTION	- -	1
IN-85-476-004	UNTRAIN WELD INSPECT	INSPECTION	INSPECTORS	- -	1
IN-85-478-001	NO`CRITIQUE PROCESS'	OPERATIONS	CONTROL	- -	1
IN-85-480-004	INADEQ WELD CERTIFIC	WELDING	WELDERS	- -	1
IN-85-481-001	NO QCP FOR CONC INSP	QA	EFFECT	- -	1
IN-85-485-X01	SOFT CONCRETE	CIVIL	CONCRETE	- -	1
IN-85-490-004	UNCORRECTED PIPES	QA	EFFECT	- -	1
IN-85-493-004	INADEQ WELD CERTIFIC	WELDING	WELDERS	- -	1
IN-85-496-001	ERCW LIQUEFACTION	CIVIL	BACKFILL	- -	1
IN-85-496-002	LINER OF ERCW PIPING	MECHANICAL	ERCW	- -	1
IN-85-497-001	COVERUP QA VIOLATION	QA	EFFECT	- -	1
IN-85-501-001	UNUSED WLD RDS DISPO	WELDING	ROD	- -	1
IN-85-506-001	OVERFILLED CABLE	ELECTRICAL	CABLES	- X -	1
IN-85-508-001	NO QA PROCED TRAIN	QA	EFFECT	- -	1
IN-85-510-001	NO OJT FOR WELD INSP	WELDING	INSPECTORS	- -	1
IN-85-511-002	PIPE WELDS NOT PRIME	WELDING	CONTROL	- -	1
IN-85-511-003	IMPRORER SURF PREPAR	CONSTRUCTI	CONTROL	- -	1
IN-85-511-004	INSPECT ALLOW DEVIAT	INSPECTION	INSPECTORS	- -	1
IN-85-512-002	INFERIOR ERICKSONS	MATERIAL	CONTROL	- X -	1
IN-85-512-003	DAMAGED CONDUIT	MATERIAL	CONTROL	- X -	1
IN-85-513-001	QA INSP UNQUALIFIED	INSPECTION	INSPECTORS	- -	1
IN-85-514-001	CONTAM DURING CUTTIN	CONSTRUCTI	CONTROL	- -	1
IN-85-515-002	UNQUALIFIED CRAFT	WELDING	WORKMANSHI	- -	1
IN-85-517-001	DISC FOR IRN BY SUPE	QA	EFFECT	- -	1
IN-85-519-001	OVERLOADED CABL TRAY	ELECTRICAL	CABLES	- X -	1
IN-85-520-002	BAD WELD ROD	WELDING	ROD	- -	1
IN-85-520-003	CRAFT DSGN NOT CONST	DESIGN	CONTROL	- -	1
IN-85-520-004	REBAR DAMAGE INDETER	CIVIL	REBAR	- -	1
IN-85-523-001	ELEC SHOCK FM HANGER	ELECTRICAL	CABLES	- -	1
IN-85-524-001	CRACKS IN FLUX	WELDING	RODS	- -	1
IN-85-524-002	HANGRS NOT WELDED	HANGERS	INSTALLATI	- -	1

TENNESSEE VALLEY AUTHORITY
WATTS BAR EMPLOYEE CONCERN PROGRAM
NUCLEAR REGULATORY COMMISSION
ACCUMULATIVE K-FORM LISTING

QTC NUMBER	SUBJECT	KEY WORD	KEY WORD	MAY 16 LETTER	#
IN-85-525-001	`SALT' CONCRETE	CIVIL	CONCRETE	- -	1
IN-85-527-001	CABLE PULL W/O FUSE	ELECTRICAL	CABLES	- X -	1
IN-85-529-005	INADEQ WELD INSPECTR	INSPECTION	INSPECTORS	- -	1
IN-85-530-001	WLDS NOT ACCRD PROCD	WELDING	INSPECTION	- -	1
IN-85-532-001	NO CRIT FOR SOCK WEL	WELDING	INSPECTION	- -	1
IN-85-532-003	SCHEULE VS. SAFETY	QA	EFFECT	- -	1
IN-85-532-004	WELDER RECERTIFICATE	WELDING	WELDERS	- -	1
IN-85-532-005	RECERT W/O VERIFICAT	WELDING	WELDERS	- -	1
IN-85-532-006	OVERSIZED WELDS	HANGERS	050 NOTES	- -	1
IN-85-533-009	GF WELD CERT W/O WEL	WELDING	WELDERS	- -	1
IN-85-533-X11	WELD CERT FALSIFIED	WELDING	WELDERS	- -	1
IN-85-534-001	FIRE PROTECT SYSTEM	DESIGN	ADEQUACY	- -	1
IN-85-534-002	FIRE PROT LINES	DESIGN	ADEQUACY	- -	1
IN-85-534-004	SPRINKLER BLOCKAGE	DESIGN	ADEQUACY	- -	1
IN-85-534-005	FIRE PROTEC HYDRO TE	TESTING	PRE OP	- -	1
IN-85-540-001	INADE WELD CERTIFICA	WELDING	WELDERS	- -	1
IN-85-541-001	REQ WELD ON 2 SIDES	DESIGN	ADEQUACY	- -	1
IN-85-543-002	INADEQ WELD CERTIFIC	WELDING	WELDERS	- -	1
IN-85-543-004	DETERORIATE STEEL	CONSTRUCTI	CONTROL	- -	1
IN-85-544-001	WORK W/O WORKPLAN	QA	VIOLATION	- -	1
IN-85-544-002	VIOLATION OF PROCEDU	QA	VIOLATION	- -	1
IN-85-544-005	WORK NOT ON DRAWINGS	CONSTRUCTI	CONTROL	- -	1
IN-85-545-001	INCONSIST IN WALL	DESIGN	VIOLATION	- -	1
IN-85-545-002	INCOMP HEAT # LOG	MATERIAL	CONTROL	- X -	1
IN-85-545-003	INSUFFIC FINL DOC RE	DOCUMENT	CONTROL	- -	1
IN-85-545-005	WBN CODE REQUIRMENTS	WELDING	INSPECTION	- -	1
IN-85-547-001	`FORGET' QA PROCEDUR	QA	VIOLATION	- -	1
IN-85-554-001	INCOMP STAIN STEL LN	CONSTRUCTI	CONTROL	- -	1
IN-85-556-001	SUBJ DOING JOUR WORK	CONSTRUCTI	PERSONNEL	- -	1
IN-85-563-007	UNQUAL PERS ON SITE	WELDING	INSPECTION	- -	1
IN-85-564-001	CARBON CONTAMINATION	MATERIAL	CONTROL	- X -	1
IN-85-570-001	UNTRAIN WARHSE PERSO	CONSTRUCTI	PERSONNEL	- -	1
IN-85-570-002	N-5 NO DEGREED ENGR	CONSTRUCTI	PERSONNEL	- -	1
IN-85-576-001	USE OF INSPEC ID	WELDING	DOCUMENT	- -	1
IN-85-579-001	INCOMPLETE WELD	WELDING	WORKMANSHI	- -	1
IN-85-581-001	CABLE PULL NOT PROPE	ELECTRICAL	CABLES	- X -	1
IN-85-581-002	WLDRS NOT QUAL ELEC	CONSTRUCTI	CONTROL	- -	1
IN-85-581-004	UNTRAIN JOURN ELEC	CONSTRUCTI	PERSONNEL	- -	1
IN-85-584-001	FIT-UP INSPECT REQUR	QA	EFFECT	- -	1
IN-85-584-002	NO INSPEC ON WELDS	WELDING	INSPECTION	- -	1
IN-85-588-002	WBN PROCE REVISIONS	QA	EFFECT	- -	1
IN-85-589-001	LINER ON ERCW LINE	MECHANICAL	ERCW	- -	1
IN-85-589-002	SUBJ DOING JOURN WRK	CONSTRUCTI	PERSONNEL	- -	1
IN-85-593-001	WELD REPAIR VIOLATIO	QA	VIOLATION	- -	1
IN-85-594-001	VALVES W/90% REJECT	CONSTRUCTI	CONTROL	- -	1
IN-85-595-002	REQUIR FOR EMBD/REDH	DESIGN	ADEQUACY	- -	1
IN-85-595-003	DRWNG AFTER INSTALL	DESIGN	CONTROL	- -	1
IN-85-595-005	SEP OF CARBON/SS	MATERIAL	CONTROL	- X -	1

TENNESSEE VALLEY AUTHORITY
WATTS BAR EMPLOYEE CONCERN PROGRAM
NUCLEAR REGULATORY COMMISSION
ACCUMULATIVE K-FORM LISTING

QTC NUMBER	SUBJECT	KEY WORD	KEY WORD	MAY 16 LETTER	#
IN-85-596-004	ERRONEOUS IRN'S	HANGERS	INSPECTION	- -	1
IN-85-600-001	POOR QUAL WELD ELECT	WELDING	ROD	- -	1
IN-85-600-002	INADEQ WELD MACHINES	WELDING	EQUIPMENT	- -	1
IN-85-600-003	NONTRAIN/HANGR INSTA	HANGERS	INSTALLATI	- -	1
IN-85-600-004	CONTAMINATED WELDS	WELDING	WORKMANSHI	- -	1
IN-85-600-005	REQUIR FOR STM GENER	TESTING	CONSTRUCTI	- -	1
IN-85-600-006	WELD CERTIFICATION	WELDING	WELDERS	- -	1
IN-85-601-001	INADEQ SURVL INSTRUC	QA	EFFECT	- -	1
IN-85-601-002	PROBLMS NOT CORRECTD	QA	EFFECT	- -	1
IN-85-606-001	INADEQ REC INSPECTIO	DOCUMENT	CONTROL	- -	1
IN-85-606-003	VIOL OF QCP 1.2	QA	VIOLATION	- -	1
IN-85-612-002	WORN OUT WELD MACHNS	WELDING	EQUIPMENT	- -	1
IN-85-612-006	INADEQ WELD CERTIFIC	WELDING	WELDERS	- -	1
IN-85-612-X07	WELDER CERTIF FALSIF	WELDING	WELDERS	- -	1
IN-85-613-001	THERMAL STRESS	DESIGN	ADEQUACY	- -	1
IN-85-615-001	OBSTRUCTED ACCESS	DESIGN	ADEQUACY	- X -	1
IN-85-616-001	RO NOT AVAILABLE	OPERATIONS	CONTROL	- -	1
IN-85-617-001	ACCESS TO HANG/PIPE	DESIGN	ADEQUACY	- X -	1
IN-85-618-004	DAMAGED INST TUBING	CONSTRUCTI	CONTROL	- -	1
IN-85-621-001	MATERIAL NONCONFORMA	QA	VIOLATION	- -	1
IN-85-622-001	OVERFILLED CONDUIT	ELECTRICAL	CABLES	- X -	1
IN-85-624-003	USED SCRAP MATERIAL	MATERIAL	CONTROL	- X -	1
IN-85-625-001	BROKEN MATERL ON HNG	CONSTRUCTI	CONTROL	- -	1
IN-85-625-002	ABAN/REP REDHEADS	DESIGN	ADEQUACY	- -	1
IN-85-628-001	INADEQ TRACK OF EQUP	MATERIAL	CONTROL	- X -	1
IN-85-629-001	MGMT DIRECTIONS/ORDE	CONSTRUCTI	CONTROL	- -	1
IN-85-630-002	SEAL LEAKS INTO BLDG	CIVIL	INSTALLATI	- -	1
IN-85-630-003	ERCW LINE IMPROP INS	MECHANICAL	ERCW	- -	1
IN-85-630-004	INADQ DOC FOR ERCW	MECHANICAL	ERCW	- X -	1
IN-85-630-005	INADQ INSPEC ERCW LI	MECHANICAL	ERCW	- -	1
IN-85-634-001	STRESS ANCHOR PLATES	DESIGN	ADEQUACY	- -	1
IN-85-634-002	UHI SAFETY INJECTION	WELDING	WORKMANSHI	- -	1
IN-85-636-001	OVERBAKED WELD RODS	WELDING	RODS	- -	1
IN-85-638-001	VOLUME OF PARTICLES	TESTING	CONSTRUCTI	- -	1
IN-85-639-X04	FALSIF QUAL/CERT REC	CONSTRUCTI	PERSONNEL	- -	1
IN-85-640-001	ANNULUS VACUUM FANS	TESTING	PREOP	- -	1
IN-85-640-002	CALIBRA OF LOAD CELL	OPERATION	CONTROL	- -	1
IN-85-640-003	LOAD CELL INCORRECT	OPERATIONS	CONTROL	- -	1
IN-85-641-002	VESSELS EXHIBIT CRAC	WELDING	WORKMANSHI	- -	1
IN-85-641-003	CONCRETE "CHIPPING"	CIVIL	CONCRETE	- -	1
IN-85-641-005	WELDS NOT IN ACC PRO	WELDING	WELDERS	- -	1
IN-85-642-001	CONDUIT TOO FULL	ELECTRICAL	CABLES	- X -	1
IN-85-644-002	DRAW/DES CHANGES	DESIGN	ADEQUACY	- -	1
IN-85-650-001	SPLIT TUBE STEEL	MATERIAL	CONTROL	- -	1
IN-85-657-001	WELDS NOT MEET SPECI	WELDING	WORKMANSHI	- X -	1
IN-85-658-002	WELDING PROCEDURES	WELDING	ROD	- -	1
IN-85-661-001	NCR 5612	QA	EFFECT	- -	1
IN-85-662-001	REVISED ADM. INSTRUC	DOCUMENT	CONTROL	- -	1

TENNESSEE VALLEY AUTHORITY
WATTS BAR EMPLOYEE CONCERN PROGRAM
NUCLEAR REGULATORY COMMISSION
ACCUMULATIVE K-FORM LISTING

QTC NUMBER	SUBJECT	KEY WORD	KEY WORD	MAY 16 LETTER	#
IN-85-664-001	ANCHOR VILLATIONS	CIVIL	ANCHORS	- -	1
IN-85-667-002	HVAC DUCT/NO HEAT #	MATERIAL	CONTROL	- X -	1
IN-85-670-001	HANGR/PIPE SUPPORTS	DESIGN	ADEQUACY	- -	1
IN-85-670-002	HANGER INSTALLATION	HANGERS	INSTALLATI	- -	1
IN-85-670-004	PROCEDURAL REVISIONS	CRAFT	TRAINING	- -	1
IN-85-671-001	FITUP INSPECTION	WELDING	INSPECTION	- -	1
IN-85-671-002	NOT ISSUING IRN/WRN	CIVIL	INSPECTION	- X -	1
IN-85-671-003	PREHEAT TEMPERATURE	WELDING	WORKMANSHI	- -	1
IN-85-671-004	WELDS NOT PROP INSPE	WELDING	INSPECTION	- -	1
IN-85-672-001	EXTEND PERIOD OF HEA	DESIGN	ADEQUACY	- -	1
IN-85-672-002	QUANTITY VS. QUALITY	QA	EFFECT	- -	1
IN-85-673-002	VERIFICATION OF DESN	DESIGN	ADEQUACY	- -	1
IN-85-676-001	DISAGREE W/TVA POLIC	QA	EFFECT	- -	1
IN-85-676-002	VIOLATE TECH. SPECTS	QA	VIOLATION	- -	1
IN-85-677-001	QUALITY VS. SCHEDULE	QA	EFFECT	- -	1
IN-85-678-001	HOLLOW UNDER CONCRET	CIVIL	CONCRETE	- -	1
IN-85-680-001	REBARS CUT	CIVIL	REBARS	- -	1
IN-85-681-001	EQUIPMENT MEASUREMEN	INSPECTION	INSPECTORS	- -	1
IN-85-681-002	WORN OUT EQUIPMENT	WELDING	EQUIPMENT	- -	1
IN-85-682-002	AWS WELD INSP QUESTI	INSPECTION	INSPECTORS	- X -	1
IN-85-682-003	QUAL PROG WEAK AREAS	WELDING	INSPECTION	- -	1
IN-85-682-004	PROMO BASED ON QTY	MANAGEMENT	CONTROL	- -	1
IN-85-682-005	MGT ALLOW INSP HARAS	QA	VIOLATION	- -	1
IN-85-682-X07	FALSIF INSPECT CARD	QA	VIOLATION	- -	1
IN-85-684-001	DEFECTIVE TUBE STEE0	MATERIAL	CONTROL	- -	1
IN-85-685-001	OVERFILLED CONDUITS	ELECTRICAL	CABLES	- X -	1
IN-85-685-002	DIRT/DUST ACCUMULATI	CONSTRUCTI	CONTROL	- -	1
IN-85-686-001	UNQUALIFIED WELDERS	WELDING	WELDERS	- -	1
IN-85-688-001	OVERFILL CABLE TRAYS	ELECTRICAL	CABLES	- X -	1
IN-85-688-002	INADEQUATE TVA PROCE	QA	VIOLATION	- -	1
IN-85-688-003	VALIDITY OF CRIT SYS	DESIGN	ADEQUACY	- X -	1
IN-85-688-004	PREVENT OF CORRECTIV	QA	VIOLATION	- -	1
IN-85-691-001	SECURITY BETW #1&#2	CONSTRUCT	CONTROL	- -	1
IN-85-693-003	EXP/TRAIN OF LABORER	CONSTRUCTI	PERSONNEL	- -	1
IN-85-704-001	DRAWING REPRODUCTION	DOCUMENT	CONTROL	- -	1
IN-85-705-001	UNQUALIFIED PERSONNE	CONSTRUCTI	PERSONNEL	- -	1
IN-85-705-002	UNQUALIFIED PERSONNE	CONSTRUCT	PERSONNEL	- -	1
IN-85-706-001	INSUF TRAIN OF WELDE	WELDING	WELDERS	- -	1
IN-85-706-002	UNTRAIN WELD INSPECT	WELDING	INSPECTORS	- -	1
IN-85-707-001	WELD APPEARANCE	WELDING	WORKMANSHI	- -	1
IN-85-707-002	CRACKED TUBING	CONSTRUCT	CONTROL	- -	1
IN-85-707-003	EXPERIENCED WELDERS	WELDING	WELDERS	- -	1
IN-85-710-002	VIOL OF WORK PERFORM	QA	VIOLATION	- -	1
IN-85-712-X01	DATA ENTRY OPERATION	QA	EFFECT	- -	1
IN-85-713-001	UNQUAL INSTRUCTORS	TRAINING	CRAFT	- -	1
IN-85-713-004	CONCRETE LIN IN PIPE	MECHANICAL	ERCW	- -	1
IN-85-719-001	VALVE LEAKAGE	TESTING	CONSTRUCTI	- -	1
IN-85-719-002	BEND OF ELEC CABLES	ELECTRICAL	CABLES	- X -	1

TENNESSEE VALLEY AUTHORITY
WATTS BAR EMPLOYEE CONCERN PROGRAM
NUCLEAR REGULATORY COMMISSION
ACCUMULATIVE K-FORM LISTING

QTC NUMBER	SUBJECT	KEY WORD	KEY WORD	MAY 16 LETTER	#
IN-85-720-002	SQN WASTE AT WBN	CONSTRUCTI	CONTROL	- -	1
IN-85-725-007	UNQUALIFIED FORMEN	CONSTRUCTI	PERSONNEL	- -	1
IN-85-725-011	IMPROP WELD CONSUMAB	WELDING	ROD	- X -	1
IN-85-725-X14	INADQ RECERT PROG	WELDING	WELDERS	- -	1
IN-85-725-X15	TEST PLATES INADQ	WELDING	WELDERS	- -	1
IN-85-725-X16	EQUP UNAVAIL RECERTI	WELDING	WELDERS	- -	1
IN-85-730-001	NO RIT-UP INSPECTION	WELDING	INSPECTION	- -	1
IN-85-733-001	QUALITY VS QUANTITY	ELECTRICAL	CABLES	- -	1
IN-85-733-002	CABLE PENETRATION	CONSTRUCTI	CONTROL	- -	1
IN-85-734-001	OVERFILLED CONDUITS	ELECTRICAL	CABLES	- X -	1
IN-85-743-008	OVERFILLED CONDUITS	ELECTRICAL	CABLES	- X -	1
IN-85-743-010	INCOMP DOCUMENTATION	QA	EFFECT	- -	1
IN-85-748-001	TIE-IN OF SEAL DRAIN	DESIGN	ADEQUACY	- -	1
IN-85-749-X04	REPORTING PROBLEMS	QA	EFFECT	- -	1
IN-85-754-001	INADQ PLATE & STEEL	MATERIAL	CONTROL	- -	1
IN-85-762-002	SQN INT DRAW AT WBN	QA	EFFECT	- -	1
IN-85-767-001	INADQ MANAGEMENT	QA	EFFECT	- X -	1
IN-85-767-003	INSP OF PAINTED WELD	WELDING	INSPECTION	- X -	1
IN-85-767-005	MGMT LACK KNOWLEDGE	QA	EFFECT	- X -	1
IN-85-767-006	INADQ TRAIN OPERATOR	OPERATIONS	CONTROL	- -	1
IN-85-768-X06	INADQ PROC ROD CONTR	WELDING	ROD	- X -	1
IN-85-768-X07	FALSIF ROD CONTRL RE	WELDING	ROD	- X -	1
IN-85-770-002	PROC FOR CER NOT PER	WELDING	WELDERS	- -	1
IN-85-770-003	UNCERTIFIED WELDERS	WELDING	WELDERS	- -	1
IN-85-770-X07	WELDERS CERT FALSIFI	WELDING	WELDERS	- -	1
IN-85-771-001	INOPERABLE VALVE	TESTING	PREOP	- -	1
IN-85-772-003	DESIGN OF AIR HANDLE	DESIGN	ADEQUACY	- -	1
IN-85-773-002	COPPER TUBING BREAKS	INSTRUMENT	INSTALLATI	- -	1
IN-85-774-002	MISSING DOC ELEC INS	DOCUMENT	CONTROL	- X -	1
IN-85-778-005	WELDER CERTIFICATION	WELDING	WELDERS	- -	1
IN-85-778-X07	WELDER CERT CARD FAL	WELDING	WELDERS	- -	1
IN-85-781-001	SAFETY RELATED QUEST	QA	EFFECT	- -	1
IN-85-785-006	MGS SLEEP THRU TRG	CRAFT	TRAINING	- -	1
IN-85-793-002	HOLE IN FLOOR	CONSTRUCTI	CONTROL	- -	1
IN-85-795-001	COMPRESS FITTING	INSTRUMENT	INSTALLATI	- -	1
IN-85-795-002	COMPRESS FITTING	INSTRUMENT	INSTALLATI	- -	1
IN-85-798-004	OVERFILLED CABLE TRA	ELECTRICAL	CABLES	- X -	1
IN-85-798-005	QUANTITY VS QUALITY	QA	EFFECT	- -	1
IN-85-802-001	TARGET ROCK VALVES	DESIGN	ADEQUACY	- -	1
IN-85-814-001	DEBRIS IN DRAINS	CONSTRUCTI	CONTROL	- -	1
IN-85-815-001	CERTIFICATI OF WELDR	WELDING	WELDERS	- -	1
IN-85-824-001	INSTALLA OF VALVES	DESIGN	ADEQUACY	- -	1
IN-85-824-002	UNAPPROV BEND PROCED	QA	EFFECT	- -	1
IN-85-824-005	INTIMID/SHORT-CUTS	QA	EFFECT	- -	1
IN-85-825-001	HEAT CODE PROGRAM	MATERIAL	CONTROL	- X -	1
IN-85-825-002	CLAIRTY IN PROCEDURE	OPERATIONS	CONTROL	- -	1
IN-85-828-001	UNCERCUT CALBE TRAYS	WELDING	WORKMANSHI	- -	1
IN-85-830-X01	NCR/DESIGN CHANGE	QA	EFFECT	- -	1

TENNESSEE VALLEY AUTHORITY
WATTS BAR EMPLOYEE CONCERN PROGRAM
NUCLEAR REGULATORY COMMISSION
ACCUMULATIVE K-FORM LISTING

QTC NUMBER	SUBJECT	KEY WORD	KEY WORD	MAY 16 LETTER	#
IN-85-831-001	COPPER TUBING BREAKS	INSTRUMENT	INSTALLATI	- -	1
IN-85-832-001	OVERFILLED CABLE TRA	ELECTRICAL	CABLES	- X -	1
IN-85-833-001	PAINT DELETED	DESIGN	ADEQUACY	- -	1
IN-85-834-002	TEMPERATURE OF WELDS	WELDING	WORKMANSHI	- -	1
IN-85-835-002	WELDING CERTIFICATIO	WELDING	WELDERS	- -	1
IN-85-839-001	ERCW MOTOR PROBLEM	DESIGN	ADEQUACY	- -	1
IN-85-841-001	REPLACEMENT PARTS	DESIGN	ADEQUACY	- -	1
IN-85-842-001	CONTROL ON DRAWINGS	CONSTRUCTI	CONTROL	- -	1
IN-85-844-001	UNTRAINED OPERATORS	OPERATIONS	PERSONNEL	- -	1
IN-85-845-001	SYS43 UNIS NOT ACHD	CIVIL	ANCHORS	- -	1
IN-85-845-002	SYS43 HANGER DESIGN	HANGERS	INSTALLATI	- X -	1
IN-85-845-003	IMPROP INST&MTL STOR	MATERIAL	CONTROL	- X -	1
IN-85-845-004	IMPROPER WELDING	WELDING	WORKMANSHI	- -	1
IN-85-846-001	WELD ACCEPT CRITERIA	WELDING	WORKMANSHI	- X -	1
IN-85-846-002	GOUT LINER/SAFTY HAZ	MECHANICAL	ERCW	- -	1
IN-85-846-003	UNRESPONS TO SAFETY	QA	EFFECT	- X -	1
IN-85-847-002	PERSONNEL THREATENED	QA	VIOLATION	- -	1
IN-85-847-003	EMPL UNABLE EXPR CON	QA	EFFECT	- -	1
IN-85-847-006	CRFT SUP ALW UNAP PL	QA	EFFECT	- -	1
IN-85-848-002	CRAFT REVIEW WK PACK	DOCUMENT	CONTROL	- -	1
IN-85-849-001	REINSTALLED BOARDS	QA	EFFECT	- -	1
IN-85-850-002	QUANTITY VS. QUALITY	QA	VIOLATION	- -	1
IN-85-850-004	WORK W/O OFFC APPROV	QA	VIOLATION	- -	1
IN-85-851-001	WELD NONCONFORMANCE	QA	VIOLATION	- -	1
IN-85-852-001	VENDOR WELDS	WELDING	WORKMANSHI	- X -	1
IN-85-852-002	ADEQ OF WELD INSPECT	WELDING	INSPECTION	- -	1
IN-85-852-003	WELDING PROCEDURES	WELDING	WELDERS	- -	1
IN-85-853-X02	VIOLAT TVA PROCEDURE	QA	VIOLATION	- -	1
IN-85-855-001	NCR PROGRAM	QA	EFFECT	- X -	1
IN-85-856-003	OVERFILL CABLE TRAYS	ELECTRICAL	CABLES	- X -	1
IN-85-856-004	BENDS IN CONDUIT	ELECTRICAL	CABLES	- X -	1
IN-85-856-005	BREAK ROPE W/CABLE P	ELECTRICAL	CABLES	- X -	1
IN-85-858-001	QUANTITY VS QUALITY	QA	EFFECT	- -	1
IN-85-864-002	MODIFI TO RHR MOTORS	MECHANICAL	RHR	- -	1
IN-85-865-002	SUPPORTS VIOL OF PRO	HANGERS	INSTALLATI	- -	1
IN-85-867-001	PRODUCTION VS QUALIT	QA	EFFECT	- -	1
IN-85-869-001	INADQ DESIGN OF DOOR	DESIGN	ADEQUACY	- -	1
IN-85-877-001	LIN ACPT WITH DEFAUL	QA	EFFECT	- X -	1
IN-85-878-X01	CABLE PULL PROCEDURE	ELECTRICAL	CABLES	- X -	1
IN-85-879-001	DUCTS BLOCKED	TESTING	CONSTRUCTI	- -	1
IN-85-880-001	INOPERABLE WELD MACH	WELDING	EQUIPMENT	- -	1
IN-85-886-001	INADQ DESIGNS	DESIGN	ADEQUACY	- X -	1
IN-85-886-X02	INADQ QA PROGRAM	QA	EFFECT	- X -	1
IN-85-890-001	COMPUTER TAMPERING	DOCUMENT	CONTROL	- -	1
IN-85-894-001	INADQ TRAINED OPERAT	OPERATIONS	CONTROL	- -	1
IN-85-894-003	WELDS IMPROPER MANNE	WELDING	WORKMANSHI	- X -	1
IN-85-897-001	INEXP CRAFTSMEN	CRAFT	TRAINING	- -	1
IN-85-900-X01	UNQUALIFIED PERSONNE	CONSTRUCTI	PERSONNEL	- -	1

TENNESSEE VALLEY AUTHORITY
WATTS BAR EMPLOYEE CONCERN PROGRAM
NUCLEAR REGULATORY COMMISSION
ACCUMULATIVE K-FORM LISTING

QTC NUMBER	SUBJECT	KEY WORD	KEY WORD	MAY 16 LETTER	#
IN-85-900-X02	METHOD FOR NONCONFOR	QA	EFFECT	- -	1
IN-85-911-001	LACK OF HEAT NUMBERS	MATERIAL	CONTROL	- X -	1
IN-85-913-001	ELECT JUNCTION BOXES	ELECTRICAL	BOXES	- -	1
IN-85-913-002	ELECT JUNCTION BOXES	ELECTRICAL	BOXES	- -	1
IN-85-913-004	CONSTRUCT VIOLATIONS	QA	VIOLATION	- -	1
IN-85-915-001	`FOR INFO ONLY' DRAW	DOCUMENT	CONTROL	- -	1
IN-85-915-002	DRAWING CONTROL	DOCUMENT	CONTROL	- -	1
IN-85-915-003	DRAWING CONTROL	DOCUMENT	CONTROL	- -	1
IN-85-915-X04	INVEST RESULTS FALSI	QA	VIOLATION	- -	1
IN-85-919-001	OVERFILL CABLE TRAYS	ELECTRICAL	CABLES	- X -	1
IN-85-923-002	WELDER ID FALSIFICAT	QA	VIOLATION	- -	1
IN-85-926-001	PRODUCTION ACCOUNTAB	QA	EFFECT	- -	1
IN-85-927-X01	STORAGE REQUIREMENTS	CONSTRUCTI	CONTROL	- X -	1
IN-85-930-001	PIPE LEAKING	MECHANICAL	INSTALLATI	- -	1
IN-85-932-001	NUMERIOUS 050 NOTES	HANGERS	050 NOTES	- -	1
IN-85-933-001	INEXP ENGINEERS	OPERATIONS	PERSONNEL	- -	1
IN-85-935-001	BAD CABLES/70-75% 0	ELECTRICAL	CABLES	- X -	1
IN-85-937-001	UNCERTIF SUPERVISORS	QA	EFFECT	- -	1
IN-85-939-001	PERS NOT TRAINED	PERSONNEL	QUALIFICAT	- -	1
IN-85-945-001	ELEC MANHOLES DISORG	ELECTRICAL	CABLES	- -	1
IN-85-947-001	DESIGN OF PIPE SUPPO	DESIGN	ADEQUACY	- -	1
IN-85-947-002	VERIF METHOD UNDEFIN	HANGERS	050 NOTES	- -	1
IN-85-947-003	HARDWARE QUAL QUESTI	QA	EFFECT	- X -	1
IN-85-947-004	INADQ ANCHOR PUL TST	CIVIL	ANCHORS	- -	1
IN-85-947-006	MECH DENTS/GOUGES	INSPECTION	CRITERIA	- -	1
IN-85-947-007	IMPROP INSTAL HANGER	HANGER	INSTALLATI	- X -	1
IN-85-947-X08	WELDERS FAILED TEST	WELDING	WELDERS	- -	1
IN-85-948-004	OPEN VALV BEFORE CHE	OPERATIONS	CONTROL	- -	1
IN-85-952-001	SYS DRAIN OP FLR DRA	DESIGN	ADEQUACY	- -	1
IN-85-954-001	EMP NOT PER WORK REQ	CONSTRUCTI	CONTROL	- -	1
IN-85-954-X03	VOID IN-85-954-X04	QA	VIOLATION	- -	1
IN-85-954-X04	EMPL FALSIF CHECKLIS	QA	EFFECT	- -	1
IN-85-955-001	PWR LOST SYST INOPER	DESIGN	ADEQUACY	- -	1
IN-85-960-001	UNACCEP WELD ON TANK	WELDING	WORKMANSHI	- X -	1
IN-85-964-002	TEMP MAT FOR PERM SE	MATERIAL	CONTROL	- X -	1
IN-85-964-003	IMPROP MAT/EQIUP USE	MATERIAL	CONTROL	- X -	1
IN-85-964-X06	WUSE OF "SUPERGLUE"	CONSTRUCTI	CONTROL	- -	1
IN-85-965-001	WELDOR CER BACKDATED	WELDING	WELDERS	- -	1
IN-85-967-001	POOR QUAL SKETCHES	DOCUMENT	CONTROL	- -	1
IN-85-973-001	LEVEL INDICATOR INAC	DESIGN	ADEQUACY	- -	1
IN-85-973-002	INADEQUATE SUPPORTS	DESIGN	ADEQUACY	- -	1
IN-85-973-003	INSTAL/PLASTIC CONDU	DESIGN	ADEQUACY	- -	1
IN-85-973-005	NO DOCUM OF EVALUATI	CONSTRUCTI	CONTROL	- -	1
IN-85-974-001	PROCEDURE CHANGES	DOCUMENT	CONTROL	- -	1
IN-85-976-001	UNREP MISTAKE DUE TO	MANAGEMENT	CONTROL	- -	1
IN-85-977-001	TAPE NOT REPL ON RCS	QA	VIOLATION	- -	1
IN-85-977-002	DOCUMENT OF TCS/SIS	DOCUMENT	CONTROL	- -	1
IN-85-979-002	SUBJOUR PER JOUR TSK	CONSTRUCTI	PERSONNEL	- -	1

TENNESSEE VALLEY AUTHORITY
WATTS BAR EMPLOYEE CONCERN PROGRAM
NUCLEAR REGULATORY COMMISSION
ACCUMULATIVE K-FORM LISTING

QTC NUMBER	SUBJECT	KEY WORD	KEY WORD	MAY 16 LETTER	#
IN-85-981-001	INADEQ WELD INSPECTO	WELDING	WELDERS	- -	1
IN-85-981-002	NO PROG FOR DOC CONT	DOCUMENT	CONTROL	- -	1
IN-85-982-001	REBAR LOCATERS UNUSE	CIVIL	REBAR	- -	1
IN-85-982-002	SLOPE REQUIREMENTS	CONSTRUCTI	CONTROL	- -	1
IN-85-982-003	INADEQ WELD FITTINGS	WELDING	WORKMANSHI	- -	1
IN-85-983-001	RB1&2 DRAIN INTO FLR	DESIGN	ADEQUACY	- -	1
IN-85-984-001	INADEQUATE DRAWINGS	DOCUMENT	CONTROL	- -	1
IN-85-984-002	LAX INSPECTION CRITE	QA	EFFECT	- -	1
IN-85-985-001	INCORRECT LINE SLOPE	INSTRUMENT	WORKMANSHI	- -	1
IN-85-986-X02	CONDUIT DRAWINGS	DOCUMENT	CONTROL	- -	1
IN-85-987-001	ADMINIS UPDATE	DOCUMENT	CONTROL	- -	1
IN-85-988-001	INADW REV OF MATERIA	MATERIAL	CONTROL	- X -	1
IN-85-995-001	QAULITY VS COST/SCHE	QA	EFFECT	- -	1
IN-85-995-002	PSAR COMMITMENTS	QA	EFFECT	- -	1
IN-85-995-003	UNQUALIF `SIGN-OFFS'	QA	VIOLATION	- -	1
IN-85-996-002	UNAUTH/DOC OF REWELD	QA	EFFECT	- -	1
IN-85-998-002	IRN PROG NEEDS IMPRO	QA	EFFECT	- X -	1
IN-86-003-001	INADQ INSTAL HANGER	HANGER	INSTALLATI	- -	1
IN-86-004-001	CONTROL OF DOCUMENTS	DOCUMENT	CONTROL	- X -	1
IN-86-004-X03	FALSIF VALUTED DOCUM	QA	VIOLATION	- -	1
IN-86-007-002	NO TRG FOR NEW PERS	QA	EFFECT	- -	1
IN-86-014-001	EXCESS SI ON EQUIPME	OPERATIONS	CONTROL	- -	1
IN-86-017-001	WELDS WRONG PROFILE	WELDING	WORKMANSHI	- -	1
IN-86-022-002	UNSKILLED EMPLOYEE	CONSTRUCTI	PERSONNEL	- -	1
IN-86-022-X03	FALSIFICATION OF DOC	QA	VIOLATION	- -	1
IN-86-027-001	PIPES MOVE DUR TEST	MATERIALS	INSTALLATI	- -	1
IN-86-028-001	CABLE PULL LIMITS	ELECTRICAL	CABLES	- X -	1
IN-86-028-002	OVERFILL CABLE TRAYS	ELECTRICAL	CABLES	- X -	1
IN-86-028-003	CUT TIE-WRAPS	ELECTRICAL	CABLES	- X -	1
IN-86-029-001	ITEM SPEC NOT SUPPOR	CONSTRUCTI	CONTROL	- -	1
IN-86-032-001	DEFECTIVE WELDS	WELDING	WORKMANSHI	- -	1
IN-86-032-002	DEFECTIVE MATERIAL	QA	VIOLATION	- -	1
IN-86-033-003	QUAL REQ RESP ON CFT	QA	EFFECT	- -	1
IN-86-034-001	OVERLOAD CONDUITS	ELECTRICAL	CABLES	- X -	1
IN-86-038-001	CORRECT ACTION DOCUM	MANAGEMENT	CONTROL	- -	1
IN-86-043-001	DUCT HGRS LOOSE BOLT	CONSTRUCTI	CONTROL	- -	1
IN-86-047-001	SYS FOR RET WELD ROD	WELDING	ROD	- X -	1
IN-86-047-002	WRONG WELD PROFILE	WELDING	WORKMANSHI	- -	1
IN-86-055-002	LEAKING PIPE	MAINTENANC	CORRECTION	- -	1
IN-86-055-003	HYDRAZINE SPILL	OPERATIONS	CONTROL	- -	1
IN-86-064-001	INAPT AIR FLOW SWITC	EQUIPMENT	INOPERABLE	- -	1
IN-86-068-001	POOR DESIGN HEAT EXC	MAINTENANC	CORRECTIVE	- -	1
IN-86-068-002	RETUBIN OF HEAT EXCH	MAINTENANC	CORRECTIVE	- -	1
IN-86-070-002	UNDERSTAIND SI'S	TESTING	PRE OP	- -	1
IN-86-070-004	SECURITY EQUIP MALFU	SECURITY	EQUIPMENT	- -	1
IN-86-070-005	SEC SYS POWERED DOWN	SECURITY	EQUIPMENT	- -	1
IN-86-070-006	MAINT OF SEC EQUIP	SECURITY	EQUIPMENT	- -	1
IN-86-070-007	IMPROP FUNC SEC EQUI	SECURITY	EQUIPMENT	- -	1

TENNESSEE VALLEY AUTHORITY
WATTS BAR EMPLOYEE CONCERN PROGRAM
NUCLEAR REGULATORY COMMISSION
ACCUMULATIVE K-FORM LISTING

QTC NUMBER	SUBJECT	KEY WORD	KEY WORD	MAY 16 LETTER	#
IN-86-076-001	PROG VER STARTUP TST	QA	EFFECT	- -	1
IN-86-079-002	INADEQ SAF REL EQUIP	DESIGN	ADEQUACY	- -	1
IN-86-080-001	INADQ DESIGN/AMS	DESIGN	ADEQUACY	- -	1
IN-86-081-001	INADEQ PLANT SYS STA	OPERATIONS	CONTROL	- -	1
IN-86-083-003	PRODUCTION VS QUALIT	TESTING	SURVEILLAN	- -	1
IN-86-086-001	INADQ DOC ON REPAIR	WELDING	DOCUMENTAT	- -	1
IN-86-087-002	EFFECT OF QA DEPT	QA	EFFECT	- X -	1
IN-86-087-003	DELAY IN CARS/DRS	QA	VIOLATION	- -	1
IN-86-087-004	DIFFERENCE IN Q-LIST	QA	EFFECT	- X -	1
IN-86-088-001	HIRE PERS TO QUAL PO	INSPECTION	INSPECTORS	- -	1
IN-86-090-001	DIFFERENCE IN Q-LIST	QA	EFFECT	- X -	1
IN-86-090-002	DELAY IN CARS/DRS	QA	VIOLATION	- -	1
IN-86-090-003	SIS APPROVAL W/O REV	OPERATIONS	CONTROL	- -	1
IN-86-091-001	UNQUAL TECH PERSONNE	OPERATIONS	PERSONNEL	- -	1
IN-86-093-001	INSUFF WELD ON PIPE	WELDING	WORKMANSHI	- -	1
IN-86-098-001	DELAY IN CAR/DR	QA	VIOLATION	- -	1
IN-86-102-001	REQ FOR CONDUIT INSU	HANGERS	INSTALLATI	- -	1
IN-86-102-002	NO ATTACH D/CONDUIT	CONSTRUCTI	CONTROL	- -	1
IN-86-103-001	NO ATTACH D/CONDUIT	ELECTRICAL	CABLES	- -	1
IN-86-103-002	REMOVAL OF INSULATIO	CONSTRUCTI	CONTROL	- -	1
IN-86-103-003	WORK PERF WITHOUT MR	MAINTENANC	CONTROLS	- -	1
IN-86-108-001	DRAWINGS NOT CURRENT	DOCUMENT	CONTROL	- X -	1
IN-86-108-002	INADEQUATE DRAWINGS	DOCUMENT	CONTROL	- -	1
IN-86-110-001	INADQ ICE LOADING	DESIGN	ADEQUACY	- -	1
IN-86-112-001	USE OF TOOLS NOT DOC	OPERATIONS	CONTROL	- -	1
IN-86-112-002	INADQ WELD RODS USED	WELDING	ROD	- X -	1
IN-86-112-003	FAIL TO RESOLVE PROB	QA	EFFECT	- X -	1
IN-86-114-001	UNQA PERS OPER MOVAT	OPERATIONS	CONTROL	- -	1
IN-86-115-001	ANCH BEING OVERTORQU	CIVIL	ANCHORS	- -	1
IN-86-118-001	QC SPECS FIELD USE	DOCUMENT	CONTROL	- -	1
IN-86-119-001	INADEQUATE CONDUITS	ELECTRICAL	CABLES	- -	1
IN-86-122-001	CRACKS IN WF 33 BEAM	MATERIAL	CONTROL	- -	1
IN-86-122-X02	UNCERTIFIED WELDER	WELDING	WELDERS	- -	1
IN-86-124-001	LOW GRADE STEEL	MATERIAL	CONTROL	- -	1
IN-86-127-001	QUOTA SYS VS. QUALIT	QA	EFFECT	- -	1
IN-86-131-002	VOID/IN-86-131-005			- -	1
IN-86-131-005	INCOMPLETE WELDS	WELDING	WORKMANSHI	- -	1
IN-86-133-001	GOUGE IN 10" PIPE	CONSTRUCTI	CONTROL	- -	1
IN-86-134-001	PROC UNAVAIL IN FIEL	DOCUMENT	CONTROL	- -	1
IN-86-134-002	NO POLICY ISSU IRN	QA	EFFECT	- X -	1
IN-86-135-003	LINES NOT INSPECTED	HANGERS	INSTALLATI	- -	1
IN-86-140-002	BOLTS CUT/WELD PLATE	CIVIL	ANCHORS	- -	1
IN-86-143-002	WELDER CERT BACKDATE	WELDING	WELDERS	- -	1
IN-86-144-002	SHAV NOT CLEANED UP	CONSTRUCTI	CONTROL	- -	1
IN-86-145-002	CONCRETE LINING APAR	MECHANICAL	ERCW	- -	1
IN-86-148-001	QC INEXPERIENCE	INSPECTION	INSPECTORS	- -	1
IN-86-150-001	TRACEABILITY NOT ATT	WELDING	ROD	- X -	1
IN-86-155-002	HANGER UNACCEP WELDS	WELDING	WELDERS	- -	1

TENNESSEE VALLEY AUTHORITY
WATTS BAR EMPLOYEE CONCERN PROGRAM
NUCLEAR REGULATORY COMMISSION
ACCUMULATIVE K-FORM LISTING

QTC NUMBER	SUBJECT	KEY WORD	KEY WORD	MAY 16 LETTER	#
IN-86-155-003	PIPE UNACCEPT WELDS	WELDING	DOCUMENT	- -	1
IN-86-155-004	WELDS MAY NOT INSPEC	WELDING	INSPECTION	- -	1
IN-86-158-004	FLR DRAIN STOPPED UP	CONSTRUCTI	CONTROL	- -	1
IN-86-158-005	CONDUITS NOT PLUGGED	DESIGN	ADEQUACY	- -	1
IN-86-158-007	CUTS CLOSE TO CONDUI	CONSTRUCTI	CONTROL	- -	1
IN-86-158-008	BUTT WELD SUBSTITUTE	WELDING	WORKMANSHI	- -	1
IN-86-164-001	REINSP PREV INST HGR	HANGERS	050 NOTES	- -	1
IN-86-167-001	NO TRACEABIL OF RODS	WELDING	ROD	- X -	1
IN-86-167-002	NO REQ STAMP ID WELD	WELDING	DOCUMENT	- -	1
IN-86-167-003	WELDING RODS INADEQU	WELDING	ROD	- -	1
IN-86-167-004	UNQUALIFIED WELDER	WELDING	WELDERS	- -	1
IN-86-167-005	WELDER REQUAL BACKDT	WELDING	WELDERS	- -	1
IN-86-167-X06	WELDER CERT CARD FAL	WELDING	WELDERS	- -	1
IN-86-169-001	CONDUIT HEAT DAMAGED	ELECTRICAL	CONDUITS	- -	1
IN-86-173-001	DESIGN CALCULATIONS	DESIGN	ADEQUACY	- -	1
IN-86-177-001	ANCHORS BEEN CUT OFF	CIVIL	ANCHORS	- -	1
IN-86-183-001	BOLTS INSTAL STL CON	MATERIAL	CONTROL	- -	1
IN-86-184-001	CLASSIF OF PIPING	CONSTRUCTI	CONTROL	- -	1
IN-86-189-001	BENT TUBES INSTALLED	CONSTRUCTI	CONTROL	- -	1
IN-86-190-003	ANCHOR NOT TEST INDI	CIVIL	ANCHORS	- -	1
IN-86-199-001	CAB PULL/REQ PER QCI	ELECTRICAL	CABLES	- X -	1
IN-86-200-003	SUPPORT NOT SAFE	CIVIL	ANCHORS	- -	1
IN-86-200-006	INSTR TUBING UNPROTE	CONSTRUCTI	CONTROL	- -	1
IN-86-201-001	CAB PULL LIMIT EXCEE	ELECTRICAL	CABLES	- X -	1
IN-86-205-001	ERCW UNSUITABLE	MECHANICAL	ERCW	- -	1
IN-86-205-002	POOR MANAGEMENT	CONSTRUCTI	PERSONNEL	- -	1
IN-86-205-003	INSTRU AIR UNSUITABL	MECHANICAL	INSTALLATI	- -	1
IN-86-205-007	FAVOR/WELDING TESTS	WELDING	INSPECTORS	- -	1
IN-86-205-009	TECH USED INADQ FILM	WELDING	INSPECTORS	- -	1
IN-86-208-001	SI REQ TO MUCH TIME	OPERATIONS	CONTROL	- -	1
IN-86-210-001	HEAT EXCH TUBES INAD	DESIGN	ADEQUACY	- -	1
IN-86-211-001	INADEQ WELD ID	WELDING	DOCUMENT	- -	1
IN-86-217-001	UNCERT CONCRE FINISH	CRAFT	TRAINING	- -	1
IN-86-219-001	GRINDOWN OF ANCHORS	CIVIL	ANCHORS	- -	1
IN-86-221-001	RED HEADS NOT REMOVE	CIVIL	ANCHORS	- -	1
IN-86-221-004	CLEANERS NOT APPVD	MATERIAL	CONTROL	- -	1
IN-86-226-001	HARAS FOR REP QC	QA	EFFECT	- -	1
IN-86-232-001	REPAIR ERCW VIOLAT	MECHANICAL	ERCW	- -	1
IN-86-232-002	OVERFILLED CABLE TRA	ELECTRICAL	CABLES	- X -	1
IN-86-232-X03	FCRS NOT APPROVED	CONSTRUCTI	CONTROL	- -	1
IN-86-238-003	OVERFILLED CABLE TRA	ELECTRICAL	CABLES	- X -	1
IN-86-243-001	PROB WITH PROC VIOLA	OPERATIONS	CONTROL	- -	1
IN-86-243-002	SAMPLING INADEQUATE	QA	EFFECT	- -	1
IN-86-246-006	LEAKS ON SEAL DRAIN	MECHANICAL	INSTALLATI	- -	1
IN-86-246-007	DRAINS PLUGGED OFF	MECHANICAL	INSTALLATI	- -	1
IN-86-246-008	PUMP MOTOR LEAKING	MECHANICAL	INSTALLATI	- -	1
IN-86-246-009	PUMP LEAKING	MECHANICAL	INSTALLATI	- -	1
IN-86-246-010	AIR SHUTOFF VALV LEA	MECHANICAL	INSTALLATI	- -	1

TENNESSEE VALLEY AUTHORITY
WATTS BAR EMPLOYEE CONCERN PROGRAM
NUCLEAR REGULATORY COMMISSION
ACCUMULATIVE K-FORM LISTING

QTC NUMBER	SUBJECT	KEY WORD	KEY WORD	MAY 16 LETTER	#
IN-86-246-011	LINE LEAKING FLUID	MECHANICAL	INSTALLATI	- -	1
IN-86-249-X02	INADQ QUALITY PROGRA	WELDING	WELDERS	- -	1
IN-86-252-X03	CALBE TERM SLIPS TES	ELECTRICAL	CABLES	- X -	1
IN-86-255-X07	NO COMPREH QA PROGRA	QA	EFFECT	- X -	1
IN-86-259-001	FAILURE USE FUSE LIN	ELECTRICAL	CABLES	- X -	1
IN-86-259-003	PVC CONDUITS BROKEN	ELECTRICAL	INSTALLATI	- -	1
IN-86-259-004	INADEQ CABLE PULL	ELECTRICAL	CABLES	- X -	1
IN-86-259-005	OVERFILLED CABLE TRA	ELECTRICAL	CABLES	- X -	1
IN-86-259-006	INADQ SEPAR OF CABLE	ELECTRICAL	CABLES	- X -	1
IN-86-259-X11	TVA PROC NO IEEE STD	DESIGN	ADEQUACY	- X -	1
IN-86-259-X13	FOREIGN OBJS IN CONC	CIVIL	CONCRETE	- -	1
IN-86-262-001	OVERFILL CABLE TRAYS	ELECTRICAL	CABLES	- X -	1
IN-86-262-002	OVERCROWDING CABLES	ELECTRICAL	CABLES	- X -	1
IN-86-262-003	EXCEED MAX PULL TENS	ELECTRICAL	CABLES	- X -	1
IN-86-262-004	CONDUITS TOO FULL	ELECTRICAL	CABLES	- X -	1
IN-86-262-005	INADEQ BOLTS FOR TRA	HANGERS	INSTALLATI	- -	1
IN-86-263-001	QA DOCU NOT MEET STD	DOCUMENT	CONTROL	- X -	1
IN-86-264-001	INDEPENDENT QA DEPT	QA	EFFECT	- X -	1
IN-86-266-X08	MGMT NOT COMPLY PROC	QA	EFFECT	- X -	1
IN-86-266-X09	LACK OF COVERAGE	ELECTRICAL	CABLES	- X -	1
IN-86-266-X10	PROCE REQ FOR CABLES	ELECTRICAL	CABLES	- X -	1
IN-86-268-003	IMPROPER INSTAL CABL	ELECTRICAL	CABLES	- X -	1
IN-86-269-002	INEXP PERS FOR PROCE	DOCUMENT	CONTROL	- -	1
IN-86-270-003	UNQUAL QC INSPECTORS	INSPECTION	INSPECTORS	- -	1
IN-86-271-002	INADQ SECURITY	CONSTRUCTI	SECURITY	- -	1
IN-86-271-003	UNCONTROLLED DOCUMEN	DOCUMENT	CONTROL	- -	1
IN-86-276-001	IMPROPER PLUGS INSTA	CONSTRUCTI	CONTROL	- -	1
IN-86-279-002	NONSPECIFIC PROCEDUR	CONSTRUCTI	CONTROL	- -	1
IN-86-281-001	WELDER PERF INADQ WK	WELDING	WORKMANSHI	- -	1
IN-86-290-001	IRNS NOT QUAL RECORD	QA	EFFECT	- X -	1
IN-86-291-005	EMP REQ TO WORK OT	OPERATIONS	CONTROL	- -	1
IN-86-291-007	SECURITY CLEAR PERS	OPERATIONS	SECURITY	- -	1
IN-86-291-008	EMERG HELP NOT AVAIL	OPERATIONS	CONTROL	- -	1
IN-86-293-001	SUSPECT USE OF DRUGS	CONSTRUCTI	CONTROL	- -	1
IN-86-294-002	INADQ WELD BASE PLAT	CIVIL	ANCHORS	- -	1
IN-86-295-001	INEFFEC DETECTORS	OPERATIONS	CONTROL	- -	1
IN-86-296-001	CCW LINE MOVES	DESIGN	ADEQUACY	- -	1
IN-86-297-001	INADEQUATE WELDS	WELDING	WORKMANSHI	- -	1
IN-86-299-001	DOC DOES NOT DET INF	HANGERS	DOCUMENT	- X -	1
IN-86-299-002	"WEAK LINK" HGR DESI	HANGERS	INSTALLATI	- X -	1
IN-86-300-004	IMPROP HANGER ATTACH	HANGERS	INSTALLATI	- -	1
IN-86-303-002	HOUSEKEEP NEEDS IMPR	CONSTRUCTI	CONTROL	- -	1
IN-86-303-003	PROCED SHOULD BE EXP	CRAFT	TRAINING	- -	1
IN-86-303-004	WELDER UPDATING	WELDING	WELDER	- -	1
IN-86-304-001	UNQUAL WELD INSPECTO	WELDING	INSPECTION	- -	1
IN-86-305-001	LACK OF CONCRETE BON	CIVIL	INSTALLATI	- -	1
IN-86-305-002	NO FIRE DAMPERS	DESIGN	ADEQUACY	- -	1
IN-86-305-004	WELD ROD NOT EXACT	WELDING	ROD	- X -	1

TENNESSEE VALLEY AUTHORITY
WATTS BAR EMPLOYEE CONCERN PROGRAM
NUCLEAR REGULATORY COMMISSION
ACCUMULATIVE K-FORM LISTING

QTC NUMBER	SUBJECT	KEY WORD	KEY WORD	MAY 16 LETTER	#
IN-86-306-001	INACCESS EMERG EQUIP	DESIGN	ADEQUACY	- X -	1
IN-86-310-001	OVERFILLED CABLE TRA	ELECTRICAL	CABLES	- X -	1
IN-86-314-002	CABLE PROCEDUR INADQ	ELECTRICAL	CABLES	- X -	1
IN-86-314-004	INADQ CABLE SEPARATI	ELECTRICAL	INSTALLATI	- -	1
IN-86-316-002	INCOMPLETE WORK PKG	OPERATIONS	CONTROL	- -	1
IN-86-316-003	WORK PKG VS MANUAL	OPERATIONS	CONTROL	- -	1
IN-86-316-005	WORK PKG INCOMPLETE	OPERATIONS	CONTROL	- -	1
IN-86-316-006	WORK PKGS INCOMPLETE	OPERATIONS	CONTROL	- -	1
IN-86-316-007	ENG INCOMP WORK PKGS	OPERATIONS	CONTROL	- -	1
IN-86-316-X09	ENG DISREGARD MANUAL	OPERATIONS	CONTROL	- -	1
NS-85-001-001	INACCUR WELD INSPECT	WELDING	INSPECTION	- -	1
NS-85-002-001	BFN/SUPTS ON RHR SYS	OPERATIONS	CONTROL	- -	1
NS-85-004-001	INADEQ ORIFICE PLATE	DESIGN	ADEQUACY	- -	1
OW-85-002-002	DAMAGE TO WEATERSTRI	FIRE	BARRIERS	- -	1
OW-85-003-001	ANCHORS OVER-ENGINEE	DESIGN	ADEQUACY	- -	1
OW-85-003-002	IMPROPER WELD MACHIN	WELDING	EQUIPMENT	- -	1
PH-85-001-002	INST LNS SLOPE PROB	INSTRUMENT	INSTALLATI	- -	1
PH-85-001-003	INSPECTOR NOT INSPEC	QA	VIOLATION	- -	1
PH-85-001-004	JR. ENG AUTHO DRWG	QA	EFFECT	- -	1
PH-85-001-005	IMPROPR FIT ON LINES	INSTRUMENT	INSTALLATI	- -	1
PH-85-001-007	UNAUTHOR REWORK CLAM	QA	EFFECT	- -	1
PH-85-001-008	DRAIN LINES NOT INSP	INSTRUMENT	INSTALLATI	- -	1
PH-85-001-009	INST LINES NOT INSPE	INSTRUMENT	INSPECTION	- -	1
PH-85-001-010	TAMPERED INSPE RESUL	QA	VIOLATION	- -	1
PH-85-001-011	INST HAS NO DOCUMENT	QA	EFFECT	- -	1
PH-85-001-012	FALSIF INSPECT RECOR	QA	VIOLATION	- -	1
PH-85-002-009	USAGE OF UNSUIT BOLT	CIVIL	ANCHORS	- X -	1
PH-85-002-018	HYDRO TEST NOT COMPL	TESTING	CONSTRUCTI	- -	1
PH-85-002-019	VOID/PH-85-002-029			- -	1
PH-85-002-021	UNQUALIF PERSONNEL	CONSTRUCTI	CONTROL	- -	1
PH-85-002-026	ANCHORS IMPROP INSTA	CIVIL	ANCHORS	- -	1
PH-85-002-027	IMPROPER INSTAL TUBE	INSTURMENT	INSTALLATI	- -	1
PH-85-002-029	UNQUALIFIED CRAFTSMA	WELDING	WELDERS	- -	1
PH-85-002-030	INADQ TRG/TEST WELDE	WELDING	WELDERS	- -	1
PH-85-002-X23	FALSI SETNG VALV/GAU	QA	VIOLATION	- -	1
PH-85-002-X24	FALSIF OF WORK	QA	VIOLATION	- -	1
PH-85-003-003	REEVAL OF QUAL CONST	ELECTRICAL	INSTALLATI	- -	1
PH-85-003-004	NO INSULA BETW PUMPS	DESIGN	ADEQUACY	- -	1
PH-85-003-005	IMPROP DESIGN SUPPOR	DESIGN	ADEQUACY	- -	1
PH-85-003-006	WBN INSTRUMENT UNACC	DESIGN	ADEQUACY	- -	1
PH-85-003-007	INSTAL REC DESTORYED	DOCUMENT	CONTROL	- X -	1
PH-85-003-009	SCRAPPED VALVES USED	MATERIAL	CONTROL	- X -	1
PH-85-003-010	RUSTY BEARINGS	OPERATIONS	CONTROL	- -	1
PH-85-003-011	INADEQ WELDING	WELDING	WORKMANSHI	- -	1
PH-85-003-020	INEXP WELDERS	WELDING	WORKMANSHI	- -	1
PH-85-003-021	ENG EVAL NOT CONDUCT	QA	VIOLATION	- -	1
PH-85-003-023	CABLE TRAYS OVERFILL	ELECTRICAL	CABLES	- X -	1
PH-85-003-024	VALVES ARE REUSED	QA	EFFECT	- -	1

TENNESSEE VALLEY AUTHORITY
WATTS BAR EMPLOYEE CONCERN PROGRAM
NUCLEAR REGULATORY COMMISSION
ACCUMULATIVE K-FORM LISTING

QTC NUMBER	SUBJECT	KEY WORD	KEY WORD	MAY 16 LETTER	#
PH-85-006-001	CHANGES TO 050 NOTES	HANGERS	050 NOTES	- -	1
PH-85-008-001	DOCUMENT FOR ASME CD	DOCUMENT	CONTROL	- X -	1
PH-85-008-002	"LOST" PAPERWORK	DOCUMENT	CONTROL	- -	1
PH-85-012-001	INSPECT OF WELDS	WELDING	INSPECTION	- -	1
PH-85-012-X03	INSPECT OF HVAC WORK	QA	EFFECT	- -	1
PH-85-013-001	`OFF-BRAND' WELD ROD	WELDING	ROD	- -	1
PH-85-014-002	INSPECT NOT PERFORMD	INSPECTION	DOCUMENT	- -	1
PH-85-016-001	QAULIF OF WELD INSPE	INSPECTION	INSPECTORS	- -	1
PH-85-018-001	AUDIT FINDS WITHHELD	QA	VIOLATION	- X -	1
PH-85-018-X02	QC/QA AUDIT PROGRAM	QA	EFFECT	- X -	1
PH-85-022-001	ORIFICE PLATES ERROR	DESIGN	ADEQUACY	- -	1
PH-85-027-001	CORRECT ACT TO WELDS	WELDING	WORKMANSHI	- -	1
PH-85-027-002	REPAIR OF MSRV REST	WELDING	WORKMANSHI	- -	1
PH-85-027-004	UNAUTHORIZED REPAIRS	WELDING	WORKMANSHI	- -	1
PH-85-027-005	NDE EXAM	WELDING	INSPECTION	- -	1
PH-85-030-001	OE EXPRESS OF CONCER	QA	EFFECT	- -	1
PH-85-032-001	SAMPL PROG QUESTIONA	HANGERS	INSTALLATI	- -	1
PH-85-038-001	OE PROCEDURE REVISIO	DESIGN	ADEQUACY	- -	1
PH-85-038-002	OEP-17 NOT FOLLOWED	QA	VIOLATION	- -	1
PH-85-042-001	INADEQ USE OF BOLTS	DESIGN	ADEQUACY	- -	1
WI-85-003-001	FALSE WELD CERTF CRD	WELDING	WELDERS	- -	1
WI-85-003-X02	WELDER CERT CARD FAL	WELDING	WELDERS	- -	1
WI-85-004-001	NCR PROGRAM	QA	EFFECT	- X -	1
WI-85-008-002	REVERIFI HT NUM REPT	MATERIAL	CONTROL	- X -	1
WI-85-011-001	INTER W/INSTL OF HNG	DESIGN	ADEQUACY	- -	1
WI-85-013-001	UNQUALIF WELD EMPLOY	INSPECTION	INSPECTORS	- -	1
WI-85-013-002	INADEQ WELD INSPECT	INSPECTION	INSPECTORS	- -	1
WI-85-013-003	INVALID TREND ANALYS	INSPECTION	INSPECTORS	- -	1
WI-85-013-004	NO CRIT/DAMAGE REBAR	CIVIL	REBAR	- -	1
WI-85-013-006	INACCURATE ANAL PROG	INSPECTION	INSPECTORS	- -	1
WI-85-016-001	PROCEDURE VIOLATIONS	CIVIL	CONCRETE	- -	1
WI-85-021-001	ENG & INSPEC REQUIRE	INSPECTION	INSPECTORS	- -	1
WI-85-025-001	ILLEG COMPUTER ACCES	WELDING	DOCUMENT	- -	1
WI-85-027-002	PIPING INSPECTION	TESTING	PREOP	- -	1
WI-85-028-001	UNTRAINED ELECTRICIA	CONSTRUCTI	PERSONNEL	- -	1
WI-85-029-002	INADEQ WELD INSPECT	QA	EFFECT	- -	1
WI-85-030-001	PROG COR ACT NOT IMP	QA	EFFECT	- -	1
WI-85-030-002	UNQUAL WELDING PERS	WELDING	INSPECTION	- -	1
WI-85-030-003	STOP WK OR NOT ISSUE	QA	EFFECT	- -	1
WI-85-030-004	INSPECTOR ACPT WELDS	QA	EFFECT	- X -	1
WI-85-030-005	ASME PROB NOT REPORT	WELDING	INSPECTION	- -	1
WI-85-035-001	HEAT # SIGN-OFFS	QA	EFFECT	- -	1
WI-85-035-002	INADEQUATE INSPECTIO	QA	VIOLATION	- -	1
WI-85-035-004	BOX ANCHOR WELDING	WELDING	WORKMANSHI	- -	1
WI-85-035-007	UNCERTIFIED WELDER	WELDING	WORKMANSHI	- -	1
WI-85-036-001	MATERIAL CONTROLS	MATERIAL	CONTROL	- 1 -	1
WI-85-040-001	NCR FOR ERCW LINE	MECHANICAL	ERCW	- -	1
WI-85-040-002	INADQ PROC/INSP PLAN	MECHANICAL	ERCW	- -	1

TENNESSEE VALLEY AUTHORITY
WATTS BAR EMPLOYEE CONCERN PROGRAM
NUCLEAR REGULATORY COMMISSION
ACCUMULATIVE K-FORM LISTING

QTC NUMBER	SUBJECT	KEY WORD	KEY WORD	MAY 16 LETTER	#
WI-85-040-003	ERCW TRENCH B	CIVIL	BACKFILL	- -	1
WI-85-040-004	LINES INADQ CONSTRUC	CIVIL	BACKFILL	- -	1
WI-85-041-001	WELD MAT INADEQUATE	WELDING	ROD	- -	1
WI-85-041-002	UNQUAL/TRG OF INSPEC	WELDING	INSPECTORS	- -	1
WI-85-041-003	DOC WELD SAMP FALSIF	QA	VIOLATION	- -	1
WI-85-042-001	OQA INCOMPL PROCEDUR	QA	EFFECT	- -	1
WI-85-042-002	OQA LEAD AUD QUESTIO	QA	EFFECT	- -	1
WI-85-046-002	INADEQ QA PERSONNEL	INSPECTION	INSPECTORS	- -	1
WI-85-046-003	BACKDATED TRAIN RECO	QA	VIOLATION	- -	1
WI-85-046-016	QA MGT "IMAGE CONSC"	QA	EFFECT	- X -	1
WI-85-046-X18	FALSIF TRAIN REPORTS	QA	VIOLATION	- -	1
WI-85-050-001	BAD WELDS	WELDING	WORKMANSHI	- -	1
WI-85-053-001	OVERLOOKED NCRS	QA	EFFECT	- X -	1
WI-85-053-002	IMPROP WELDING DOCUM	QA	EFFECT	- X -	1
WI-85-053-003	IMPORP WELDING DOCUM	CONSTRUCTI	CONTROL	- X -	1
WI-85-053-004	WELD ROD NOT CODE RE	WELDING	ROD	- X -	1
WI-85-053-005	CODE ITMS NOT CONTRO	MATERIAL	CONTROL	- X -	1
WI-85-053-006	TEST DIR NOT QUAL	CONSTRUCTI	TESTING	- X -	1
WI-85-053-007	ORIG DOCUMENT LOST	DOCUMENT	CONTROL	- X -	1
WI-85-053-008	CI QUESTION RE: 4NCR	QA	EFFECT	- -	1
WI-85-053-009	N5 PKGS NOT REVIEWED	QA	EFFECT	- -	1
WI-85-053-010	ANSI INSUF MANPOWER	QA	EFFECT	- -	1
WI-85-053-011	MATERIALS CONTROL	MATERIAL	CONTROL	- X -	1
WI-85-053-012	WELDS NOT INSPECTED	CONSTRUCTI	TESTING	- -	1
WI-85-054-003	DRAINS PLUGGED UP	MECHANICAL	INSTALLATI	- -	1
WI-85-055-001	WELDER RECERTIFICATI	WELDING	WELDERS	- -	1
WI-85-056-001	NOT FOLLOW CODE REQU	WELDING	WELDERS	- -	1
WI-85-058-001	PERS NOT DOCU QA PRO	QA	EFFECT	- -	1
WI-85-059-001	INSP NOT DOCU QA PRO	QA	EFFECT	- X -	1
WI-85-060-001	INADQ TRAINED ENGINE	OPERATIONS	PERSONNEL	- -	1
WI-85-061-001	EQUIPMENT REMOVED	QA	VIOLATION	- -	1
WI-85-064-001	WELD CARDS INCORRECT	WELDING	DOCUMENT	- -	1
WI-85-064-002	TRUSSES IMPROP WELD	WELDING	WORKMANSHI	- -	1
WI-85-064-003	INADQ WELDS	WELDING	WORKMANSHI	- -	1
WI-85-064-005	FIRE SYS PIPE IMPROP	WELDING	WORKMANSHI	- -	1
WI-85-064-006	WELD DOC "MANIPULATE	WELDING	DOCUMENT	- X -	1
WI-85-064-X04	WELD CARDS FALSIFIED	WELDING	DOCUMENT	- -	1
WI-85-065-001	INADQ INSTAL HANGERS	HANGERS	INSTALLATI	- -	1
WI-85-067-001	EMP SUSPEND INADVERT	QA	EFFECT	- -	1
WI-85-072-001	EMPLOYEE THREATENED	QA	EFFECT	- -	1
WI-85-077-001	INAPPROP EPOXY USED	CONSTRUCTI	CONTROL	- -	1
XX-85-001-001	SQN/D-G BATTERIES	QA	EFFECT	- X -	1
XX-85-002-001	BFN/EXPOSURE DOSES	OPERATIONS	CONTROL	- -	1
XX-85-003-001	BLN/PRODUCT VS QUALI	CIVIL	CONCRETE	- -	1
XX-85-006-001	SQN/DESIGN ERRORS	DESIGN	CONTROL	- -	1
XX-85-007-002	SQN/LEAK DUE TO MGMT	OPERATIONS	CONTROL	- -	1
XX-85-008-001	BLN/CABLE PULLING	ELECTRICAL	CABLES	- X -	1
XX-85-009-001	SQN/OPERATING SAFETY	OPERATION	CONTROL	- -	1

TENNESSEE VALLEY AUTHORITY
WATTS BAR EMPLOYEE CONCERN PROGRAM
NUCLEAR REGULATORY COMMISSION
ACCUMULATIVE K-FORM LISTING

QTC NUMBER	SUBJECT	KEY WORD	KEY WORD	MAY 16 LETTER	#
XX-85-010-001	SQN/VOIDED HANGERS	HANGERS	INSTALLATI	- -	1
XX-85-013-001	SQN/WRONG WELD ROD			- -	1
XX-85-016-001	BFN/UNTRN CRAFT PERS	QA	EFFECT	- -	1
XX-85-019-001	BLN/AUDIT FINDINGS	QA	VIOLATION	- X -	1
XX-85-019-X02	BLN/QC-QA AUDIT PROG	QA	EFFECT	- X -	1
XX-85-020-001	SQN/ECNS APPLICABILI	OPERATIONS	CONTROL	- -	1
XX-85-022-001	SQN/TAGGING VALVES	OPERATION	CONTROL	- X -	1
XX-85-023-001	SQN/PUL TEST NOT DON	QA	VIOLATION	- -	1
XX-85-023-X02	SQN/FALSIF ANCH TEST	QA	VIOLATION	- -	1
XX-85-027-001	SQN/CONCERN INADQ AD	QA	EFFECT	- -	1
XX-85-027-X02	SQN/HEAT CODE PROCED	MATERIAL	CONTROL	- X -	1
XX-85-027-X03	SQN/CABLE FROM SITE	QA	VIOLATION	- -	1
XX-85-027-X04	SQN/DEFECTIVE MATERI	MATERIAL	CONTROL	- -	1
XX-85-027-X07	SQN/VIOLATION SIGNOF	QA	VIOLATION	- -	1
XX-85-028-001	SQN/INCREASE IN RWP	OPERATIONS	CONTROL	- -	1
XX-85-028-X02	SQN/FALSFIFED SIGNAT	QA	EFFECT	- -	1
XX-85-028-X03	SQN/RADIA WORK PERMI	QA	EFFECT	- -	1
XX-85-034-001	BLN/VIOLAT SIGN-OFFS	QA	VIOLATION	- -	1
XX-85-034-X02	BLN/FALSFI WELD RECO	QA	VIOLATION	- -	1
XX-85-038-001	SQN/SEP OF CARBON/SS	MATERIAL	CONTROL	- X -	1
XX-85-039-001	SQN/WORKING IN TEAMS	OPERATION	CONTROL	- -	1
XX-85-041-001	SQN/WRONG TYPE ROD	WELDING	WORKMANSHI	- X -	1
XX-85-044-001	BFN/CAMS NOT FUNCTIO	DESIGN	ADEQUACY	- -	1
XX-85-045-001	BLN/WELD CERTIFICATI	WELDING	WELDERS	- -	1
XX-85-046-001	SQN/INST SENSING LIN	INSTRUMENT	INSTALLATI	- -	1
XX-85-049-X03	SQN/WELDER CERT FALS	WELDING	WELDERS	- -	1
XX-85-050-001	SQN/INADEQ QA CONTRO	INSTRUMENT	INSTALLATI	- X -	1
XX-85-050-002	BFN/INADEQ QA CONTRO	INSTRUMENT	INSTALLATI	- X -	1
XX-85-050-003	BLN/INADQ QA CONTROL	INSTRUMENT	INSTALLATI	- X -	1
XX-85-051-001	SQN/RADIATION MONITO	OPERATIONS	CONTROL	- -	1
XX-85-052-001	SQN/INADQ DESIGN DOO	DESIGN	ADEQUACY	- -	1
XX-85-053-001	SQN/IADQ DOCUMENTATI	HANGERS	DOCUMENT	- X -	1
XX-85-053-002	SQN/MISSING EVAL DOC	DESIGN	CALCULATIO	- X -	1
XX-85-053-X03	SQN/INEXP MANAGERS	OPERATIONS	CONTROL	- -	1
XX-85-054-001	SQN/VIOLAT SIGN-OFFS	QA	VIOLATION	- -	1
XX-85-062-001	BFN/SQN/BLN/DRAWINGS	DOCUMENT	CONTROL	- -	1
XX-85-062-002	BFN/BLN/INADQ FILING	DOCUMENT	CONTROL	- -	1
XX-85-062-003	BFN/SQN/DRAW VS INST	DOCUMENT	CONTROL	- X -	1
XX-85-065-001	SQN/IMPROPER INSPECT	WELDING	INSPECTORS	- -	1
XX-85-068-001	BLN/PRESSURE GAGES	TESTING	CONSTRUCTI	- -	1
XX-85-068-002	BLN/HYDRO TEST	TESTING	CONSTRUCTI	- -	1
XX-85-068-003	BLN/ASME VIOLATIONS	QA	EFFECT	- X -	1
XX-85-068-004	BLN/VERIF MATERI DIS	MATERIAL	CONTROL	- X -	1
XX-85-068-005	BLN/HEAT NUMBERS	MATERIAL	CONTROL	- X -	1
XX-85-068-006	BLN/WELD ROD CONTROL	WELDING	ROD	- X -	1
XX-85-068-007	SQN/REPLAC SPOOL PIE	QA	EFFECT	- -	1
XX-85-068-008	BLN/BOTTLED GAS CONC	WELDING	EQUIPMENT	- -	1
XX-85-069-001	SQN/UNQUAL EMPL	OPERATIONS	PERSONNEL	- -	1

TENNESSEE VALLEY AUTHORITY
WATTS BAR EMPLOYEE CONCERN PROGRAM
NUCLEAR REGULATORY COMMISSION
ACCUMULATIVE K-FORM LISTING

QTC NUMBER	SUBJECT	KEY WORD	KEY WORD	MAY 16 LETTER	#
XX-85-069-002	BFN/UNQUAL EMPL	OPERATIONS	PERSONNEL	- -	1
XX-85-069-003	BLN/UNQUAL EMPLOYEES	OPERATIONS	PERSONNEL	- -	1
XX-85-069-009	BLN/REJECT ITEMS ACC	QA	EFFECT	- -	1
XX-85-069-X05	SQN/FALSIF EMP OJT	QA	VIOLATION	- -	1
XX-85-070-001	SQN/ERRORS ON DRAWIN	DOCUMENT	CONTROL	- X -	1
XX-85-070-002	SQN/CLOSING QA PROBL	QA	EFFECT	- -	1
XX-85-071-002	SQN/VIOLAT PROJ REQU	OPERATIONS	CONTROL	- -	1
XX-85-071-003	SQN/HARDWARE REPAIR	QA	EFFECT	- -	1
XX-85-071-004	SQN/GEN HARDWARE CON	QA	EFFECT	- -	1
XX-85-074-001	BFN/INSPEC CERTIFICA	INSPECTION	INSPECTORS	- -	1
XX-85-074-003	BFN/FALSIF INSP CERT	INSPECTION	INSPECTORS	- -	1
XX-85-079-001	BLN/TEMPORARY HANGER	MECHANICAL	INSTALLATI	- -	1
XX-85-080-001	BLN/INADQ EXIT INTVW	QA	EFFECT	- -	1
XX-85-083-001	SQN/WELD INSPECTIONS	WELDING	INSPECTION	- -	1
XX-85-086-001	BLN/INADQ SIZE LINES	INSTRUMENT	INSTALLATI	- -	1
XX-85-086-002	BLN/DESIGN DEFICIENC	DESIGN	ADEQUACY	- -	1
XX-85-086-003	SQN/DESIGN DEFICIENC	DESIGN	ADEQUACY	- -	1
XX-85-086-004	BFN/DESIGN DEFICIENC	DESIGN	ADEQUACY	- -	1
XX-85-088-001	SQN/WELD CERT ALTERE	WELDING	WELDERS	- -	1
XX-85-089-001	BLN/PROCEDURE VIOLAT	QA	EFFECT	- -	1
XX-85-089-002	BLN/DELETION OF QCIR	QA	EFFECT	- -	1
XX-85-093-001	SQN/INADQ TRAIN ENGI	OPERATIONS	PERSONNEL	- -	1
XX-85-093-002	BLN/INADQ TRAIN ENGI	OPERATIONS	PERSONNEL	- -	1
XX-85-093-003	BFN/INADQ TRAIN ENGI	OPERATIONS	PERSONNEL	- -	1
XX-85-094-003	BLN/OVERCROWDNG CABL	ELECTRICAL	CABLES	- X -	1
XX-85-094-004	BLN/PULL TENSION	ELECTRICAL	CABLES	- X -	1
XX-85-094-005	BLN/"ILLEGAL" TOOL	ELECTRICAL	CABLES	- X -	1
XX-85-094-006	BLN/ELEC TERMINATION	TESTING	CONSTRUCTI	- X -	1
XX-85-094-007	BLN/VALVES WRG ALTIT	MATERIAL	CONTROL	- -	1
XX-85-094-008	BLN/MAINTE PROGRAM	MATERIALS	CONTROL	- -	1
XX-85-094-009	BLN/MGR QC & ENGINEE	QA	EFFECT	- X -	1
XX-85-096-004	SQN/RADIAT TUBE PROB	OPERATIONS	CONTROL	- -	1
XX-85-096-005	SQN/MONITOR TUBE PRO	OPERATIONS	CONTROL	- -	1
XX-85-098-002	SQN/RADIATION AREAS	OPERATIONS	CONTROL	- -	1
XX-85-099-001	SQN/SECURITY AT PLAN	OPERATIONS	CONTROL	- -	1
XX-85-100-001	SQN/WELD IMPRP REPAI	WELDING	WORKMANSHI	- -	1
XX-85-101-002	SQN/IMPRP INSTALLATI	CONSTRUCTI	CONTROL	- -	1
XX-85-101-003	SQN/RADIOACTIVE SPIL	OPERATIONS	CONTROL	- -	1
XX-85-101-004	SQN/MIN. RADIAT EXPO	OPERATIONS	CONTROL	- -	1
XX-85-101-006	SQN/UNQUALIF WELDER	WELDING	WELDERS	- -	1
XX-85-102-005	BFN/HARDWAR IMPRO ID	OPERATIONS	CONTROL	- X -	1
XX-85-102-006	BFN/VISUAL EXAM PROC	WELDING	INSPECTION	- -	1
XX-85-102-007	BFN/DEFECTS REQUEST	QA	EFFECT	- X -	1
XX-85-102-009	BFN/UNTRAINED PERSON	OPERATIONS	CONTROL	- -	1
XX-85-102-010	BFN/LIM DOC&RPR DEFE	QA	EFFECT	- X -	1
XX-85-102-011	SQN/DEFECTS ID BY MA	OPERATIONS	CONTROL	- X -	1
XX-85-102-012	SQN/UNTRAIN PERSONNE	OPERATIONS	CONTROL	- -	1
XX-85-104-X01	BLN/ERCW LINING WORK	MECHANICAL	ERCW	- -	1

TENNESSEE VALLEY AUTHORITY
WATTS BAR EMPLOYEE CONCERN PROGRAM
NUCLEAR REGULATORY COMMISSION
ACCUMULATIVE K-FORM LISTING

QTC NUMBER	SUBJECT	KEY WORD	KEY WORD	MAY 16 LETTER	#

*** Total ***

1248

TENNESSEE VALLEY AUTHORITY
WATTS BAR NUCLEAR PLANT
EMPLOYEE CONCERN PROGRAM
NUCLEAR REGULATORY COMMISSION LISTING

QTC NUMBER	SUBJECT	INVEST ORG	DATE REPORT	SUB ?	DATE RESPONSE	ACC ?	DATE CLOSED	KEY WORD
** MILESTONE:								
EX-85-042-003	WELDERS REQUALIFICAT	ERT	10/23/85	.T.	/ /	.F.	10/30/85	WELDING
** MILESTONE: 1 FUEL LOAD								
EX-85-003-003	UNAUTH CHNG TO WDREC	ERT	07/09/85	.T.	07/24/85	.T.	07/24/85	WELDING
EX-85-049-001	NO SECURITY BARRIER	NSRS	10/17/85	.T.	/ /	.F.	/ /	SECURITY
IN-85-001-003	WELDS UNDER WATER	ERT	07/10/85	.T.	09/23/85	.T.	09/23/85	WELDING
IN-85-012-X02	TENSILE STRNG OF FIT	NSRS	08/05/85	.T.	/ /	.F.	08/05/85	MATERIAL
IN-85-024-001	DRWNS & 050 NOTES	NSRS	07/03/85	.T.	/ /	.F.	/ /	HANGERS
IN-85-031-001	ENBD PLTS NOT CORREC	ERT	08/20/85	.T.	/ /	.F.	/ /	DESIGN
IN-85-037-001	CONCRETE ANCHORS	ERT	07/09/85	.T.	09/11/85	.F.	/ /	CIVIL
IN-85-038-001	ANALYS OF LARGE PIPE	ERT	07/08/85	.T.	09/05/85	.T.	09/05/85	DESIGN
IN-85-039-001	THML STRS ON PIPING	ERT	07/09/85	.T.	09/05/85	.T.	09/05/85	DESIGN
IN-85-052-001	DRWNGS & 050 NOTES	NSRS	07/03/85	.T.	07/30/85	.F.	/ /	HANGERS
IN-85-088-001	VACUM TEST ON DOORS	ERT	07/09/85	.F.	/ /	.F.	07/09/85	TESTING
IN-85-091-X02	NO NCR FOR LOST DOCU	ERT	08/26/85	.T.	/ /	.F.	10/03/85	DOCUMENT
IN-85-130-002	FIRE SEALS BREACHED	ERT	07/05/85	.T.	09/13/85	.T.	09/13/85	CONSTRUCTI
IN-85-169-001	SYS 62 VALVE CLASS	ERT	07/10/85	.T.	07/26/85	.T.	07/26/85	MATERIAL
IN-85-202-001	CRACK IN WELD	ERT	07/10/85	.T.	/ /	.F.	07/09/85	WELDING
IN-85-260-003	WELD DOCUMNTATION	ERT	10/07/85	.F.	/ /	.F.	/ /	WELDING
IN-85-311-008	CR ENTRANCE FIREDOOR	ERT	08/19/85	.T.	09/24/85	.T.	10/10/85	OPERATIONS
IN-85-325-006	VALV CONT/OPER TRAN	NSRS	10/01/85	.F.	/ /	.F.	10/04/85	OPERATIONS
IN-85-393-003	FSAR REQ FOR SUPERV	NSRS	07/03/85	.T.	08/30/85	.F.	/ /	OPERATIONS
IN-85-406-001	UNAUTH CHNG TO WDREC	ERT	07/09/85	.T.	07/24/85	.T.	07/24/85	WELDING
IN-85-413-001	"050"NOTES	NSRS	08/09/85	.T.	/ /	.F.	08/04/85	HANGERS
IN-85-424-011	INADEQ UPDT WELD CER	ERT	09/26/85	.T.	/ /	.F.	10/03/85	WELDING
IN-85-445-008	PROC DIFFICULT TO KN	NSRS	10/23/85	.F.	/ /	.F.	10/30/85	CRAFT
IN-85-445-010	EYE TEST INADEQUATE	NSRS	10/28/85	.T.	/ /	.F.	/ /	INSPECTION
IN-85-445-013	47-050 HARD TO USE	NSRS	10/10/85	.T.	/ /	.F.	10/16/85	HANGERS
IN-85-457-001	INADQ REVIEW BY PORC	NSRS	10/17/85	.T.	/ /	.F.	/ /	OPERATIONS
IN-85-465-002	LOOSE CONDUIT	NSRS	09/09/85	.F.	/ /	.F.	/ /	HANGERS
IN-85-472-002	NO NCRS ON ERCW LINS	NSRS	10/03/85	.F.	/ /	.F.	/ /	QA
IN-85-534-005	FIRE PROTEC HYDRO TE	NSRS	10/02/85	.F.	/ /	.F.	/ /	TESTING
IN-85-544-001	WORK W/O WORKPLAN	ERT	10/22/85	.F.	/ /	.F.	/ /	QA
IN-85-544-002	VIOLATION OF PROCEDU	ERT	10/23/85	.T.	/ /	.F.	/ /	QA
IN-85-581-002	WLDRS NOT QUAL ELEC	NSRS	10/17/85	.T.	/ /	.F.	10/17/85	CONSTRUCTI
IN-85-684-001	DEFECTIVE TUBE STEEO	NSRS	09/16/85	.F.	/ /	.F.	09/16/85	MATERIAL
IN-85-770-003	UNCERTIFIED WELDERS	ERT	09/26/85	.T.	/ /	.F.	10/03/85	WELDING
IN-85-795-001	COMPRESS FITTING	ERT	08/07/85	.T.	10/07/85	.T.	10/30/85	INSTRUMENT
IN-85-795-002	COMPRESS FITTING	ERT	08/07/85	.T.	10/07/85	.F.	10/30/85	INSTRUMENT
IN-85-853-X02	VIOLAT TVA PROCEDURE	ERT	10/12/85	.F.	/ /	.F.	10/18/85	QA
IN-85-915-003	DRAWING CONTROL	NSRS	10/22/85	.T.	/ /	.F.	10/22/85	DOCUMENT
IN-85-977-001	TAPE NOT REPL ON RCS	NSRS	10/10/85	.F.	/ /	.F.	/ /	QA
IN-85-977-002	DOCUMENT OF TCS/SIS	NSRS	10/03/85	.T.	/ /	.F.	/ /	DOCUMENT
IN-86-055-003	HYDRAZINE SPILL	NSRS	10/17/85	.T.	/ /	.F.	/ /	OPERATIONS
IN-86-087-004	DIFFERENCE IN Q-LIST	NSRS	10/04/85	.T.	/ /	.F.	/ /	QA

TENNESSEE VALLEY AUTHORITY
WATTS BAR NUCLEAR PLANT
EMPLOYEE CONCERN PROGRAM
NUCLEAR REGULATORY COMMISSION LISTING

QTC NUMBER	SUBJECT	INVEST ORG	DATE REPORT	SUB?	DATE RESPONSE	ACC?	DATE CLOSED	KEY WORD
IN-86-090-001	DIFFERENCE IN Q-LIST	NSRS	10/04/85	.T.	/ /	.F.	/ /	QA
IN-86-090-003	SIS APPROVAL W/O REV	NSRS	10/17/85	.T.	/ /	.F.	/ /	OPERATIONS
IN-86-102-001	REQ FOR CONDUIT INSU	NSRS	10/11/85	.T.	/ /	.F.	/ /	HANGERS
IN-86-102-002	NO ATTACH D/CONDUIT	NSRS	10/14/85	.F.	/ /	.F.	10/16/85	CONSTRUCTI
IN-86-155-004	WELDS MAY NOT INSPEC	NSRS	10/22/85	.F.	/ /	.F.	10/22/85	WELDING
IN-86-221-004	CLEANERS NOT APPVD	NSRS	10/10/85	.T.	/ /	.F.	/ /	MATERIAL
NS-85-001-001	INACCUR WELD INSPECT	ERT	08/13/85	.T.	09/27/85	.F.	/ /	WELDING
PH-85-003-021	ENG EVAL NOT CONDUCT	NSRS	10/10/85	.T.	/ /	.F.	10/16/85	QA
PH-85-006-001	CHANGES TO 050 NOTES	NSRS	08/09/85	.F.	/ /	.F.	08/09/85	HANGERS
PH-85-012-001	INSPECT OF WELDS	ERT	07/19/85	.T.	/ /	.F.	07/19/85	WELDING
PH-85-018-001	AUDIT FINDS WITHHELD	ERT	07/10/85	.F.	/ /	.F.	07/10/85	QA
WI-85-055-001	WELDER RECERTIFICATI	ERT	09/24/85	.T.	/ /	.F.	10/02/85	WELDING
WI-85-056-001	NOT FOLLOW CODE REQU	ERT	09/24/85	.T.	/ /	.F.	10/02/85	WELDING
** MILESTONE: 2 CRITICALITY								
IN-85-016-003	TUBING NOT CLAMPED	NSRS	09/03/85	.T.	/ /	.F.	/ /	HANGERS
IN-85-025-001	INCORE THERMO TEST	NSRS	07/03/85	.F.	/ /	.F.	/ /	TESTING
IN-85-064-002	SHUTDN BDS TOP OPEN	NSRS	06/28/85	.T.	07/22/85	.T.	07/22/85	ELECTRICAL
IN-85-069-001	INADEQUATE INSPECTS	ERT	07/10/85	.T.	10/10/85	.F.	/ /	HANGERS
IN-85-106-001	MN STM LOADS SUPPORT	ERT	07/11/85	.F.	/ /	.F.	07/11/85	DESIGN
IN-85-186-002	INSL ON CONDT & CABL	ERT	07/10/85	.F.	09/24/85	.T.	10/10/85	ELECTRICAL
IN-85-216-001	WELDING SEQUENCE	ERT	07/10/85	.T.	08/05/85	.F.	/ /	WELDING
IN-85-217-001	CONDENS POTS, #1	ERT	07/15/85	.T.	/ /	.F.	07/14/85	DESIGN
IN-85-246-001	INSUFFNT MOVEMT/NVR	NSRS	08/09/85	.F.	/ /	.F.	08/09/85	DESIGN
IN-85-281-001	DIFFUSER FLOW	ERT	07/05/85	.T.	08/02/85	.F.	/ /	DESIGN
IN-85-281-003	TRNSM NOT READ SAME	NSRS	08/15/85	.T.	09/17/85	.T.	09/17/85	DESIGN
IN-85-415-002	CONCRETE ERCW LINES	NSRS	07/11/85	.F.	/ /	.F.	07/11/85	MECHANICAL
IN-85-460-003	GOUGE IN LINE, 1#	ERT	08/29/85	.T.	09/24/85	.T.	10/17/85	MECHANICAL
IN-85-460-X05	EXCAV ARC STRK SYS72	ERT	10/21/85	.T.	/ /	.F.	10/21/85	WELDING
IN-85-534-001	FIRE PROTECT SYSTEM	NSRS	10/08/85	.F.	/ /	.F.	/ /	DESIGN
IN-85-601-001	INADEQ SURVL INSTRUC	NSRS	10/09/85	.T.	/ /	.F.	10/09/85	QA
IN-85-802-001	TARGET ROCK VALVES	NSRS	10/25/85	.T.	/ /	.F.	/ /	DESIGN
IN-86-122-001	CRACKS IN WF 33 BEAM	NSRS	10/10/85	.T.	/ /	.F.	10/16/85	MATERIAL
** MILESTONE: 3 5% POWER								
IN-85-001-002	WELD ROD CONTROL	ERT	07/10/85	.F.	/ /	.F.	07/06/85	WELDING
IN-85-016-001	BROKN CONCRE AT PLAT	NSRS/ERT	08/05/85	.F.	/ /	.F.	08/04/85	CIVIL
IN-85-021-003	BACKDATE CERTF CARDS	ERT	08/19/85	.T.	/ /	.F.	/ /	WELDING
IN-85-027-002	COMPUTER ANALYSIS	ERT	08/01/85	.T.	10/08/85	.T.	10/04/85	DESIGN
IN-85-052-008	PROCED FOR WELD RODS	ERT	07/10/85	.T.	09/24/85	.F.	/ /	WELDING
IN-85-064-001	SPRAY ON SHUTDN BDS	NSRS	06/28/85	.T.	/ /	.F.	06/28/85	ELECTRICAL
IN-85-086-001	STM GEN MATERIALS	ERT	07/10/85	.F.	/ /	.F.	07/10/85	MATERIAL
IN-85-108-001	SYS 68 PIPING	ERT	07/12/85	.F.	/ /	.F.	07/12/85	MATERIAL
IN-85-113-003	WELDER CERTIFICATION	ERT	07/10/85	.T.	10/07/85	.F.	/ /	WELDING
IN-85-140-001	OPER WATCH VS PAPER	NSRS	08/30/85	.T.	10/16/85	.T.	10/16/85	OPERATIONS
IN-85-186-004	BOARDS IN ELEC PANEL	ERT	07/05/85	.F.	09/23/85	.F.	09/23/85	ELECTRICAL

TENNESSEE VALLEY AUTHORITY
WATTS BAR NUCLEAR PLANT
EMPLOYEE CONCERN PROGRAM
NUCLEAR REGULATORY COMMISSION LISTING

QTC NUMBER	SUBJECT	INVEST ORG	DATE REPORT	SUB ?	DATE RESPONSE	ACC ?	DATE CLOSED	KEY WORD
IN-85-211-001	ERCW LINE LEAK	NSRS	06/27/85	.F.	/ /	.F.	06/27/85	MECHANICAL
IN-85-221-001	IMPROPER VALVE OPER	ERT	07/05/85	.T.	09/23/85	.T.	09/23/85	OPERATIONS
IN-85-346-003	WELD CERTIFICATIONS	ERT	09/26/85	.T.	/ /	.F.	10/03/85	WELDING
IN-85-352-001	UPDATE WELD CERTIFIC	ERT	09/26/85	.T.	/ /	.F.	10/03/85	WELDING
IN-85-388-006	HEAT CODE TRACEABILI	NSRS	07/03/85	.T.	07/26/85	.T.	07/26/85	MATERIAL
IN-85-453-007	INADEQ CERTF OF WELD	ERT	08/19/85	.T.	/ /	.F.	/ /	WELDING
IN-85-465-001	LINES CLOSE TO HANGR	NSRS	07/30/85	.T.	08/09/85	.T.	09/08/85	MECHANICAL
IN-85-493-004	INADEQ WELD CERTIFIC	ERT	09/26/85	.T.	/ /	.F.	10/03/85	WELDING
IN-85-501-001	UNUSED WLD RDS DISPO	ERT	09/03/85	.T.	/ /	.F.	/ /	WELDING
IN-85-532-004	WELDER RECERTIFICATE	ERT	09/26/85	.T.	/ /	.F.	10/03/85	WELDING
IN-85-532-005	RECERT W/O VERIFICAT	ERT	09/26/85	.T.	/ /	.F.	10/03/85	WELDING
IN-85-534-002	FIRE PROT LINES	NSRS	10/22/85	.F.	/ /	.F.	10/22/85	DESIGN
IN-85-540-001	INADE WELD CERTIFICA	ERT	09/26/85	.T.	/ /	.F.	10/03/85	WELDING
IN-85-543-002	INADEQ WELD CERTIFIC	ERT	09/26/85	.T.	/ /	.F.	10/03/85	WELDING
IN-85-554-001	INCOMP STAIN STEL LN	NSRS	09/03/85	.F.	/ /	.T.	09/03/85	CONSTRUCTI
IN-85-612-006	INADEQ WELD CERTIFIC	ERT	09/26/85	.T.	/ /	.F.	10/03/85	WELDING
IN-85-671-004	WELDS NOT PROP INSPE	NSRS	10/22/85	.T.	/ /	.F.	10/22/85	WELDING
IN-85-705-001	UNQUALIFIED PERSONNE	ERT	09/28/85	.T.	/ /	.F.	/ /	CONSTRUCTI
IN-85-778-001	WELDER CERTIFICATION	ERT	09/26/85	.T.	10/03/85	.F.	/ /	WELDING
IN-85-824-002	UNAPPROV BEND PROCED	ERT	08/23/85	.T.	10/18/85	.T.	10/30/85	QA
IN-85-845-004	IMPROPER WELDING	NSRS	10/10/85	.F.	/ /	.F.	10/16/85	WELDING
IN-86-119-001	INADEQUATE CONDUITS	NSRS	10/09/85	.T.	/ /	.F.	/ /	ELECTRICAL
IN-86-173-001	DESIGN CALCULATIONS	NSRS	10/28/85	.T.	/ /	.F.	/ /	DESIGN
PH-85-001-002	INST LNS SLOPE PROB	ERT	07/06/85	.T.	09/20/85	.T.	09/23/85	INSTRUMENT
WI-85-053-006	TEST DIR NOT QUAL	NSRS	10/25/85	.F.	/ /	.F.	/ /	CONSTRUCTI
** MILESTONE: 5 100% POWER								
IN-85-010-004	FIRE PROT PIPNG DESN	ERT	09/16/85	.F.	/ /	.F.	09/24/85	DESIGN
IN-85-021-002	SYS77 DRAINS IN FLR	ERT	08/23/85	.T.	/ /	.F.	08/30/85	DESIGN
IN-85-218-001	APPROVAL OF AS-BUILT	ERT	07/29/85	.T.	08/22/85	.T.	08/22/85	INSTRUMENT
IN-85-407-001	INACCURATE Q-LIST	NSRS	10/04/85	.T.	/ /	.F.	/ /	DESIGN
IN-85-688-003	VALIDITY OF CRIT SYS	NSRS	10/04/85	.T.	/ /	.F.	/ /	DESIGN
IN-85-945-001	ELEC MANHOLES DISORG	NSRS	10/22/85	.T.	/ /	.F.	10/22/85	ELECTRICAL
** MILESTONE: 6 01/01/86								
EX-85-012-001	UNQUALIFIED PERSONNE	ERT	09/28/85	.T.	/ /	.F.	/ /	CONSTRUCTI
IN-85-078-001	UO/SAFTY RELATE SYST	NSRS	10/14/85	.F.	/ /	.F.	10/16/85	OPERATIONS
IN-85-196-003	VALVE OPER INADEQ	ERT	08/24/85	.T.	/ /	.F.	/ /	OPERATIONS
IN-85-496-002	LINER OF ERCW PIPING	NSRS	10/03/85	.F.	/ /	.F.	/ /	MECHANICAL
IN-85-618-004	DAMAGED INST TUBING	NSRS	08/12/85	.T.	/ /	.F.	/ /	CONSTRUCTI
IN-85-825-002	CLAIRTY IN PROCEDURE	NSRS	10/22/85	.F.	/ /	.F.	10/22/85	OPERATIONS
MILESTONE: 6 09/02/85								
IN-85-020-001	IMPROP INSTAL REDHDS	NSRS/ERT	08/15/85	.T.	/ /	.F.	/ /	CIVIL

TENNESSEE VALLEY AUTHORITY
WATTS BAR NUCLEAR PLANT
EMPLOYEE CONCERN PROGRAM
NUCLEAR REGULATORY COMMISSION LISTING

QTC NUMBER	SUBJECT	INVEST ORG	DATE REPORT	SUB?	DATE RESPONSE	ACC?	DATE CLOSED	KEY WORD
** MILESTONE: 6 1ST REFUEL								
IN-85-211-002	ERCW LINE NOT STAINL	NSRS	10/03/85	.F.	/ /	.F.	/ /	MECHANICAL
** MILESTONE: 6 I85-166WBN								
IN-86-145-002	CONCRETE LINING APAR	NSRS	10/03/85	.F.	/ /	.F.	/ /	MECHANICAL
** MILESTONE: 6 IN85-113003								
EX-85-021-002	VERIFI PROCESS/WELD	ERT	09/26/85	.T.	/ /	.F.	10/03/85	WELDING
IN-85-426-002	INADEQ WELD CERTIFIC	ERT	09/26/85	.T.	/ /	.F.	10/03/85	WELDING
IN-85-815-001	CERTIFICATI OF WELDR	ERT	09/26/85	.T.	/ /	.F.	10/03/85	WELDING
IN-85-835-002	WELDING CERTIFICATIO	ERT	09/26/85	.T.	/ /	.F.	10/03/85	WELDING
** MILESTONE: 6 IN85-406001								
IN-85-445-002	UNAUT ACCS TO WLD SY	ERT	08/27/85	.T.	/ /	.F.	08/27/85	WELDING
IN-85-458-007	CHNG OF WELD STATUS	ERT	08/27/85	.T.	/ /	.F.	08/27/85	WELDING
** MILESTONE: 6 IN85-415002								
IN-85-196-004	INPROP INSTAL PIPING	NSRS	10/11/85	.F.	/ /	.F.	10/16/85	MATERIAL
IN-85-442-X12	LINING LOSS IN PIPE	NSRS	10/03/85	.F.	/ /	.F.	/ /	MECHANICAL
IN-85-589-001	LINER ON ERCW LINE	NSRS	10/03/85	.F.	/ /	.F.	/ /	MECHANICAL
IN-85-713-004	CONCRETE LIN IN PIPE	NSRS	10/03/85	.F.	/ /	.F.	/ /	MECHANICAL
IN-85-846-002	GOUT LINER/SAFTY HAZ	NSRS	10/03/85	.F.	/ /	.F.	/ /	MECHANICAL
** MILESTONE: 6 NO DATE								
IN-85-103-001	IEB 79-02	NSRS	08/09/85	.T.	/ /	.F.	08/09/85	DESIGN
IN-85-337-001	ERCW LN W/CEMENT LIN	NSRS	10/03/85	.F.	/ /	.F.	/ /	MECHANICAL
IN-85-373-001	DAMAGED CABLE	NSRS	06/28/85	.T.	07/25/85	.T.	07/25/85	ELECTRICAL
IN-85-532-006	OVERSIZED WELDS	NSRS	08/16/85	.T.	/ /	.F.	/ /	HANGERS
IN-85-543-004	DETERORIATE STEEL	NSRS	07/29/85	.F.	09/26/85	.T.	07/29/85	CONSTRUCTI
IN-85-915-002	DRAWING CONTROL	NSRS	10/17/85	.F.	/ /	.F.	10/17/85	DOCUMENT
IN-86-110-001	INADQ ICE LOADING	NSRS	10/25/85	.T.	/ /	.F.	10/30/85	DESIGN
IN-86-190-003	ANCHOR NOT TEST INDI	NSRS/ERT	10/24/85	.T.	/ /	.F.	10/30/85	CIVIL
IN-86-232-001	REPAIR ERCW VIOLAT	NSRS	10/03/85	.F.	/ /	.F.	/ /	MECHANICAL
** MILESTONE: 6 PH85-001002								
IN-85-119-001	IMPROPER LINE INSTAL	ERT	09/18/85	.T.	10/22/85	.T.	/ /	INSTRUMENT
** MILESTONE: 6 U2 FUEL LD								
IN-85-173-001	LEAK IN SPRINK SYS	ERT	08/13/85	.F.	/ /	.F.	08/13/85	MATERIAL
IN-85-189-002	ACCESS TO VALVES/#2	NSRS	10/04/85	.F.	/ /	.F.	10/04/85	DESIGN
IN-85-246-005	RUSTED WELDS/#2/RB	ERT	10/24/85	.T.	/ /	.F.	/ /	WELDING
IN-85-530-001	WLDS NOT ACCRD PROCD	NSRS	08/15/85	.F.	/ /	.F.	08/15/85	WELDING
IN-85-615-001	OBSTRUCTED ACCESS	NSRS	10/04/85	.F.	/ /	.F.	10/04/85	DESIGN

TENNESSEE VALLEY AUTHORITY
WATTS BAR NUCLEAR PLANT
EMPLOYEE CONCERN PROGRAM
NUCLEAR REGULATORY COMMISSION LISTING

QTC NUMBER	SUBJECT	INVEST ORG	DATE REPORT	SUB ?	DATE RESPONSE	ACC ?	DATE CLOSED	KEY WORD
** MILESTONE: 7 N/A								
EX-85-008-001	UNQUAL SUBJOURNEYMEN	ERT	09/28/85	.T.	/ /	.F.	/ /	CONSTRUCTI
EX-85-009-001	SUBSTN WK BY SUBJRMN	ERT	09/28/85	.T.	/ /	.F.	/ /	CONSTRUCTI
EX-85-010-002	UNQAUL SUBJOURNEYMEN	ERT	09/28/85	.T.	/ /	.F.	/ /	CONSTRUCTI
IN-85-021-001	TUBE BENDERS	ERT	07/27/85	.T.	10/22/85	.T.	/ /	CONSTRUCTI
IN-85-091-001	LOST DOCUMENTATION	ERT	09/16/85	.T.	/ /	.F.	/ /	DOCUMENT
IN-85-130-001	UNQUILIFIED PERSONNE	ERT	09/28/85	.T.	/ /	.F.	/ /	CONSTRUCTI
IN-85-411-001	SAFTY HAZ ON PLATFRM	NSRS	07/23/85	.T.	08/09/85	.T.	09/08/85	
IN-85-514-001	CONTAM DURING CUTTIN	ERT	08/22/85	.T.	/ /	.F.	/ /	CONSTRUCTI
IN-85-541-001	REQ WELD ON 2 SIDES	NSRS	08/15/85	.F.	/ /	.F.	08/15/85	DESIGN
IN-85-556-001	SUBJ DOING JOUR WORK	ERT	09/28/85	.T.	/ /	.F.	/ /	CONSTRUCTI
IN-85-589-002	SUBJ DOING JOURN WRK	ERT	09/28/85	.T.	/ /	.F.	/ /	CONSTRUCTI
IN-85-748-001	TIE-IN OF SEAL DRAIN	ERT	08/16/85	.F.	/ /	.T.	08/16/85	DESIGN
NS-85-002-001	BFN/SUPTS ON RHR SYS	ERT	10/12/85	.T.	/ /	.F.	/ /	OPERATIONS
XX-85-013-001	SQN/WRONG WELD ROD	ERT	08/22/85	.F.	/ /	.F.	08/27/85	
XX-85-019-001	BLN/AUDIT FINDINGS	ERT	07/10/85	.F.	/ /	.F.	07/10/85	QA

PSR

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50179

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1 Concern # EX-85-059-002

Category: 52 Confidentiality: _YES _NO (I&H)

Supervisor Notified: _X_YES ___NO NUCLEAR SAFETY RELATED YES

Concern: STAINLESS STEEL PIPE IS SUPPORTED BY CARBON STEEL HANGERS WITHOUT S/S SHIM STOCK. HANGERS ARE PAINTED, BUT PAINT WILL WEAR THROUGH AND THE S/S WILL BE CONTAMINATED. EG. ACCUMULATOR ROOM #4 (UNIT 2) APPROX. 720´ EL. 4" STAINLESS STEEL LINE SUPPORTED BY UN-SHIMMED C/S BOX HANGER. C/I HAS NO MORE INFORMATION. CONSTRUCTION DEPARTMENT CONCERN).

William S. Iselin OCT 28 1935
MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ___

NSRS/ERT _____

NSRS ✓

OTHERS (SPECIFY) _____

Hangers Install

Bruce L. Lieffen 10/29/85
NSRS DATE

PSS

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50177

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1

Concern# IN-85-008-002

Category: 52

Confidentiality:___Yes____No(I&H)

Supervisor Notified:_X__Yes____No

Nuclear Safety Related__YES__

Concern: IN FALL OF 1984, IN AUXILLIARY BLDG. 737, ELECTRICIANS AND INSULATORS WERE INSTALLING INSULATION OVER CEILING PLATES AND CABLE TRAY SUPPORTS. SOME INSULATION WAS INSTALLED CONTRARY TO PROCEDURE IN THAT SLITS MADE IN INSULATION (TO GO AROUND SUPPORT) WERE OVER EACH OTHER IN TWO LAYERS-INSTEAD OF AT LEAST 90 DEGREES TO SLIT IN OTHER LAYER. CONST. DEPT. CONCERN. CI HAS NO FURTHER INFORMATION.

NO FOLLOW UP REQUIRED.

[signature]
Manager, ERT date

NSRS has assigned responsibility for investigation of the above concern to:

ERT________

NSRS/ERT________

NSRS ✓

OTHERS (SPECIFY)________________

Construction adequacy

[signature] 10/28/85
NSRS date

PSR

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50177

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1 Concern# IN-85-050-002

Category: 33 Confidentiality:___Yes____No(I&H)

Supervisor Notified:_X__Yes____No Nuclear Safety Related__NO_____

Concern: NO FILLET WELD GAUGES AVAILABLE TO CRAFT (KNOWN) TO GAUGE WELDS MADE. THIS CONDITION EXISTED IN UNIT 2 REACTOR BUILDING FROM JANUARY 1985 TO MAY 1985. CONST. DEPT. CONCERN. DETAILS KNOWN TO QTC, WITHHELD DUE TO CONFIDENTIALITY. CI HAS NO FURTHER INFORMATION.

NO FOLLOW UP REQUIRED.

William L. Stokes
Manager, ERT date

NSRS has assigned responsibility for investigation of the above concern to:

ERT ✓

NSRS/ERT_____

NSRS_____.

OTHERS (SPECIFY)_____

welding Inspection

Bruce L. Lufkin 12/28/85
NSRS date

PSR

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50174

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 2 Concern: IN-85-285-001

Category: 5 Confidentiality YES NO (I&H)

Supervisor Notified: X YES NO NUCLEAR SAFETY RELATED YES

Concern: HANGER BASE PLATES INSTALLED IMPROPERLY. REBARS DRILLED THROUGH AND REDHEADS CUT OFF SHORT. BOLT AND HEADS CUT OFF AND WELDED TO BASE PLATE. ALL CRAFTS DID THIS.

EXAMPLES ARE DUCT SUPPORTS - CEILING OF CONTRTOL ROOM (SPREAD ROOMS) 708´ ELE - 5/8" REDHEADS. VARIOUS SIZE PLATES. 5-6 BOLTS CUT CLOSE TO COLUMNS AT EAST WALL. CI HAS NO FURTHER INFORMATION. CONST. DEPT. CONCERN.

NO FOLLOW UP REQUIRED.

O K Rees 10/19/85
MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ___

NSRS/ERT ___

NSRS ✓

OTHERS (SPECIFY) _____

civil anchors

Bruce F. Leiber 10/24/85
NSRS DATE

P51-

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50176

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1 Concern# IN-85-285-002

Category: 5 Confidentiality:___Yes____No(I&H)

Supervisor Notified:____Yes_X__No Nuclear Safety Related_YES__

Concern: TVA INSPECTED AND PULL TESTED REDHEADS IMPROPERLY: PULL TESTING WAS NOT 100%. BASE PLATE OR HANGER WAS BOLTED IN PLACE. EVEN READHEADS THAT WERE LOOSE COULD HAVE PASSED BY BEARING AGAINST THE BACK OF THE PLATE. BECAUSE THE HOLES WERE NOT INSPECTED BEFORE REDHEADS WERE SET, QC COULD NOT TELL IF REBAR HAD BEEN CUT. CI HAD NO MORE INFORMATION. CONST. DEPT. CONCERN.

NO FOLLOW UP REQUIRED.

William S. Lehman
Manager, ERT date

NSRS has assigned responsibility for investigation of the above concern to:

ERT_____

NSRS/ERT_____

NSRS ✓

OTHERS (SPECIFY)_____

Civil anchors

Bruce L. Siefken 10/24/85
NSRS date

PSR

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50176

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1 Concern# IN-85-285-003

Category: 52 Confidentiality:___Yes____No(I&H)

Supervisor Notified:____Yes__X_No Nuclear Safety Related__YES_

Concern: TVA MANAGERS (KNOWN) TOLD PERSONNEL TO CUT THROUGH REBAR WITH REDHEADS, CUT OFF REDHEAD SHIELDS AND TO CUT OFF BOLTS AND WELD THEM TO BASE PLATES WHERE REDHEADS COULD NOT BE PUT IN. MANAGEMENT WAS ONLY INTERESTED IN PRODUCTION, AND DID NOT LET WORKERS MOVE BASE PLATES IF REBAR WAS HIT.

NO FOLLOW UP REQUIRED.

[signature] 10/22/85
Manager, ERT date

NSRS has assigned responsibility for investigation of the above concern to:

ERT_____

NSRS/ERT_____

NSRS ✓

OTHERS (SPECIFY)_____

[signature] 10/24/85
NSRS date

QA Violation

PSK

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50177

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1 Concern# IN-85-301-003

Category: 15 Confidentiality:___Yes____No(I&H)

Supervisor Notified:____Yes_X__No Nuclear Safety Related_YES___

Concern: VALVES ARE INFERIOR AT WATTS BAR. SEATS WERE ALREADY CHANGED FROM HARD SEATS TO SOFT SEATS AFTER "HOT FUNCTIONAL TESTING". CI WILL NOT PROVIDE ANY ADDITIONAL INFORMATION. CONST. DEPT. CONCERN.

NO FOLLOW UP REQUIRED.

William L. Taylor
Manager, ERT date

NSRS has assigned responsibility for investigation of the above concern to:

ERT_____

NSRS/ERT_____

NSRS ✓

OTHERS (SPECIFY)_____

Bruce L. Scaffen 10/28/85
NSRS date

Design Adequacy

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50174

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1 Concern: IN-85-316-005

Category: 81 Confidentiality YES NO (I&H)

Supervisor Notified: X YES NO NUCLEAR SAFETY RELATED YES

Concern: PIPE SUPPORT DESIGN BY ENDES PUTS EXCESSIVE HEAT AND WELD METAL ON CIRCUMFERENTIALLY RESTRAINED SMALL BORE PIPE (1" FILLET). GENERIC DESIGN CONCERN; ONE EXAMPLE: RB2, ACCUMULATOR #1, 716´ ELE. 1" DIA. PIPE, SUPPORT 47A-060-63-39. CI HAS NO FURTHER INFORMATION. CONST. DEPT. CONCERN.

NO FOLLOW UP REQUIRED.

[signature] 10/19/85
MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ___

NSRS/ERT _____

NSRS ✓

OTHERS (SPECIFY) _____

Design Adequacy

[signature] 10/24/85
NSRS DATE

7512

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50174

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 4 Concern: IN-85-316-006

Category: 83 Confidentiality YES NO (I&H)

Supervisor Notified: X YES NO NUCLEAR SAFETY RELATED YES

Concern: PLANT IS FILTHY AND HAS ALWAYS BEEN FILTHY. THERE ARE INADEQUATE LABORERS ON CLEANUP DETAILS. LABORERS SHOULD VACUUM, BUT INSTEAD USE AIR HOSES. THIS ONLY BLOWS THE DUST AROUND.

AFTER THE RECENT CLEAN UP EFFORT WHILE WELDERS WERE FURLOUGHED, THE PLANT WAS STIL DIRTY, AND THE LABORERS HAD BLOWN A LOT OF DUST INTO CONTROL PANELS AND OPERATIONAL VALVES. CI HAS NO FURTHER INFORMATION. CONST. DEPT. CONCERN.

NO FOLLOW UP REQUIRED.

[signature] 10/19/85
MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ____

NSRS/ERT ______

NSRS ✓

OTHERS (SPECIFY) ____________

Construct Control

[signature] 10/24/85
NSRS DATE

P35--

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS   TRANSMITTAL NUMBER T50174

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority:4   Concern: IN-85-316-007

Category:86   Confidentiality YES NO (I&H)

Supervisor Notified: X YES NO   NUCLEAR SAFETY RELATED YES

Concern: IRONWORKERS DID WELDING ON PIPE SUPPORTS THAT SHOULD HAVE BEEN DONE BY STEAMFITTERS, BECAUSE IRONWORKERS´ QA/QC STANDARDS ARE NOT AS STRINGENT OR AS COMPLETE AS THOSE THAT APPLY TO STEAMFITTERS.

OUTSIDE RB2. 6" DIA. FEEDWATER LINES - KICKERS ON MK#03A-2-FW-R153
MK#03A-2-FW-R155

CI HAS NO MORE INFORMATION. CONST. DEPT. CONCERN.

NO FOLLOW UP REQUIRED.

[signature] MANAGER, ERT   10/19/85 DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ___

NSRS/ERT ___

NSRS ✓

OTHERS (SPECIFY) ___

[signature] NSRS   10/24/85 DATE

Hangers Install

map 6 P 51-

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T 50176

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 3 Concern# IN-85-321-001

Category: 86 Confidentiality:___Yes____No(I&H)

Supervisor Notified:____Yes____No Nuclear Safety Related__YES__

Concern: ENGINEERING PERSONNEL ARE UNQUALIFIED AND UN-KNOWLEDGEABLE. THEY ARE UNFAMILIAR WITH WELDING (DON'T KNOW AN ARC STRIKE). THEY WANT TO STRETCH THE JOB (E.G., FREQUENT MOVES FOR HANGERS AND EMBED PLATES). CONST. DEPT. CONCERN. CI HAS NO FURTHER INFORMATION.

NO FOLLOW UP REQUIRED.

William S. Stokes
Manager, ERT date

NSRS has assigned responsibility for investigation of the above concern to:

ERT_____

NSRS/ERT_____

NSRS ✓

OTHERS (SPECIFY)_____

construct Personnel

Bruce F. Sheffer 10/24/85
NSRS date

may16 P35

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50177

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1 Concern# IN-85-964-002

Category: 70 Confidentiality:___Yes____No(I&H)

Supervisor Notified:____Yes_X___No Nuclear Safety Related__YES__

Concern: SUPERINTENDENT (NAME KNOWN) HAD TEMPORARY MATERIALS PUT INTO PERMANENT SERVICE IN THE INTAKE PUMPING STRUCTURE.

EXAMPLE: PLUMBING, C/S FITTINGS, SUCH AS ELLS AND TEES OF UNKNOWN SIZES.

CI HAS NO FURTHER INFORMATION

Manager, ERT date

NSRS has assigned responsibility for investigation of the above concern to:

ERT_____

NSRS/ERT_____

NSRS ✓

OTHERS (SPECIFY)_____

material control

NSRS 10/28/85 date

may 16 PSE

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50177

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1 Concern# IN-85-964-003

Category: 53 Confidentiality:___Yes____No(I&H)

Supervisor Notified:____Yes__X__No Nuclear Safety Related__YES__

Concern: MATERIAL/EQUIPMENT IS ORDERED DEDICATED TO A SPECIFIC SYSTEM, UNIT, ETC., BUT IS FREQUENTLY INSTALLED/USED ELSEWHERE AND IT IS UNKNOWN IF DOCUMENTATION IS REVISED TO REFLECT THIS CANNIBALIZATION. CI HAS NO FURTHER INFORMATION

W. Thomas [illegible]
Manager, ERT date

NSRS has assigned responsibility for investigation of the above concern to:

ERT_____

NSRS/ERT_____

NSRS ✓

OTHERS (SPECIFY)_____

material control

Bruce L. Sieghan 10/28/85
NSRS date

PSR

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS | TRANSMITTAL NUMBER T50179

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1 | Concern # IN-85-964-X06

Category: 53 | Confidentiality: _YES _NO (I&H)

Supervisor Notified: ___YES _X_NO | NUCLEAR SAFETY RELATED YES

Concern: CRAFT PERSONNEL USE "SUPERGLUE" INSTEAD OF "PERMATEX" TO SEAL GASKETS TO FLANGES. C/I HAS NO MORE INFORMATION. CONSTRUCTION DEPARTMENT CONCERN.

William [signature] OCT 28 1985

MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ___

NSRS/ERT ______

NSRS ✓

OTHERS (SPECIFY) ________________

[signature] 10/29/85

NSRS DATE

construct Control

PSR

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50176

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1 Concern# IN-85-967-001

Category: 10 Confidentiality: ___Yes____No(I&H)

Supervisor Notified: _X__Yes____No Nuclear Safety Related____YES

Concern: SKETCHES PROVIDED BY SUPPORT GROUPS (KNOWN) ARE OF POOR QUALITY AND DO NOT PROVIDE SUFFICIENT INFORMATION REQUIRED TO PERFORM SUPPORT ANALYSIS. DETAILS KNOWN TO QTC, WITHHELD DUE TO CONFIDENTIALITY. CI HAS NO FURTHER INFORMATION.

NO FOLLOW UP REQUIRED.

William A. Foster
Manager, ERT date

NSRS has assigned responsibility for investigation of the above concern to:

ERT ✓

NSRS/ERT_____

NSRS_____

OTHERS (SPECIFY)_____

Document Control

Bruce L. Laffen 12/24/85
NSRS date

may16 PSR

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50177

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1 Concern# IN-85-988-001

Category: 7 Confidentiality:___Yes____No(I&H)

Supervisor Notified:____Yes_X__No Nuclear Safety Related__YES__

Concern: ENGINEERING REVIEW OF MATERIAL RECIEVED ON SITE IS NOT ADEQUATE: WHEN "OVERAGES" COME IN, ENGINEERING AIDES SIGN THEM OFF UNCRITICALLY: ARE ENGINEERING AIDES EQUALLY UNCRITICAL OF TECHNICAL DISCREPANCIES? ENGINEERS SHOULD BE RESPONSIBLE FOR THIS FUNCTION INSTEAD OF ENGINEERING AIDES. CI HAD NO FURTHER INFORMATION. CONST. DEPT. CONCERN.

NO FOLLOW UP REQUIRED

William L. Stokes
Manager, ERT date

NSRS has assigned responsibility for investigation of the above concern to:

ERT_____

NSRS/ERT_____

NSRS ✓

OTHERS (SPECIFY)_____

material Control

Bruce L. Singleton 10/25/85
NSRS date

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50177

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1 Concern# IN-86-032-001

Category: 33 Confidentiality:___Yes____No(I&H)

Supervisor Notified:____Yes__X_No Nuclear Safety Related__YES__

Concern: THE STRUCTURAL STEEL IN SOUTH VALVE ROOM UNIT 1 HAS DEFECTIVE WELDS. BEAM AT A1-K 733´-10" IS MISLOCATED ON EMBED PLATE. D13 DETAIL DWG. 48W1707-13. WELDS ON BEAM AT A15-K 733´-10" HAVE CARBON ARC SLAG IMBEDDED IN THEM. B18 DETAIL DWG 48W1707-18. CI HAS NO FURTHER INFORMATION. CONST. DEPT. CONCERN.

NO FOLLOW UP REQUIRED.

William S. Schaaf
Manager, ERT date

NSRS has assigned responsibility for investigation of the above concern to:

ERT_____

NSRS/ERT_____

NSRS ✓

OTHERS (SPECIFY)_____

Bruce L. Crighton 10/28/85
NSRS date

civil
Welding
Workmanship

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50179

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1

Concern # IN-86-032-002

Category: 33

Confidentiality: _YES _NO (I&H)

Supervisor Notified: ___YES _X_NO

NUCLEAR SAFETY RELATED YES

Concern: WELDERS WERE HIRED BY TVA TO COSMETICALLY REPAIR STRUCTURALLY DEFECTIVE WELDS IN THE NORTH AND SOUTH VALVE ROOMS. WELDERS WERE DIRECTED TO PLACE COVER PASSES OVER CRACKS WITHOUT EXCAVATING DEFECTIVE MATERIAL. NO SPECIFIC WELDS SPECIFIED. MANAGEMENT PERSONNEL INVOLVED IN ALLEGED COVER-UP WERE SPECIFIED (NAMES KNOWN). C/I HAS NO FURTHER INFORMATION.

MANAGER, ERT — DATE: OCT 28 1985

NSRS has assigned responsibility for investigation of the above concern to:

ERT ___

NSRS/ERT _____

NSRS ✓

OTHERS (SPECIFY) ______________________

NSRS — DATE: 10/29/85

QA Violation

PSR

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50177

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1 Concern# IN-86-086-001

Category: 33 Confidentiality:___Yes____No(I&H)

Supervisor Notified:__X_Yes____No Nuclear Safety Related__YES__

Concern: TVA (NUC. POWER) DOESN'T REPAIR WELDS IN ACCORDANCE WITH 10CFR50 APPENDIX B AND ASME. WELDS WHICH ARE REPAIRED PRIOR TO DOCUMENTATION BEING IN THE VAULT ARE NOT DOCUMENTED AS SUCH UNDER THE PROGRAM ESTABLISHED BY MAI-6. NUC. POWER CONCERN. UNIT 1 & 2. CI HAS NO ADDITIONAL INFORMATION.

NO FOLLOW UP REQUIRED.

William L. Stokes
Manager, ERT date

NSRS has assigned responsibility for investigation of the above concern to:

ERT_____

NSRS/ERT_____

NSRS ✓

OTHERS (SPECIFY)_____

Bruce L. Siefken 10/28/85
NSRS date

Welding Documentation

PSP

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50176

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1 Concern# IN-86-131-005

Category: 33 Confidentiality:___Yes____No(I&H)

Supervisor Notified:____Yes_X_No Nuclear SafetyRelated__YES_____

Concern: WELDS AT EAST ENTRANCE OF TURBINE BLDG., ARE NOT COMPLETED ON 24" MAIN STEAM LINE NORTH OF BIG GATE VALVE. UNIT 2 CONSTRUCTION DEPT. CONCERN. CI HAS NO FURTHER INFORMATION.

NO FOLLOW UP REQUIRED.

William L. Locke
Manager, ERT date

NSRS has assigned responsibility for investigation of the above concern to:

ERT_____

NSRS/ERT_____

NSRS ✓

OTHERS (SPECIFY)_____

Welders Workmanship

Bruce F. Raffman 10/24/85
NSRS date

PSK

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS   TRANSMITTAL NUMBER T50177

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1   Concern# IN-86-~~13~~ 133-001

Category: 52   Confidentiality:___Yes____No(I&H)

Supervisor Notified:_X__Yes____No   Nuclear Safety Related__YES__

Concern: THERE IS A GOUGE IN A 10" SS PIPE, EL 713, AUX. BLDG., UNIT 1. CONST. DEPT. CONCERN. GOUGE IS LOCATED IN A-12 HEAT EXCHANGER ROOM. NO ADDITIONAL INFORMATION KNOWN TO CI.

NO FOLLOW UP REQUIRED.

William [signature]
Manager, ERT   date

NSRS has assigned responsibility for investigation of the above concern to:

ERT________

NSRS/ERT________

NSRS ✓

OTHERS (SPECIFY)____________________

Construction Control

Bruce [signature]   10/28/85
NSRS   date

P-5R

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50179

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1 Concern # IN-86-158-007

Category: 52 Confidentiality: _YES _NO (I&H)

Supervisor Notified: ___YES ___NO NUCLEAR SAFETY RELATED YES

Concern: WELDERS HAVE MADE WELDS AND CUTS VERY CLOSE TO CONDUIT. THE CONDUIT CONTAINED CABLE WHICH EXPERIENCED HIGH TEMPERATURES. THE CABLE INSULATION WAS POSSIBLY DAMAGED. LOCATION GIVEN WAS THE AUX. BUILDING. NO FURTHER SPECIFICS COULD BE GIVEN. DISCOLORED AREAS ON THE CONDUIT WOULD IDENTIFY THE PROBLEM SPOT. C/I HAS NO FURTHER INFO.. CONST. CONCERN. UNIT 1 AND UNIT 2.

W. Blair Stokes OCT 28 1985
MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ___

NSRS/ERT _____

NSRS ✓

OTHERS (SPECIFY) _____

Construct Control

Bruce L. Siegfried 10/29/85
NSRS DATE

P5R2

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50179

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1

Concern # IN-86-158-008

Category: 33

Confidentiality: _YES _NO (I&H)

Supervisor Notified: _X_YES ___NO

NUCLEAR SAFETY RELATED YES

Concern: BUTT WELDS WERE SUBSTITUTED FOR FULL PENETRATION WELDS, AND SOMETIMES WELDS WERE "SLUGGED". THIS OCCURRED IN THE TURBINE BUILDING IN 1976. NO SPECIFIC LOCATIONS KNOWN. CONST. DEPT. CONCERN. C/I HAS NO FURTHER INFORMATION.

[signature] OCT 28 1985

MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ___

NSRS/ERT _____

NSRS ✓

OTHERS (SPECIFY) ________________________________

Welding Workmanship

[signature] 10/29/85

NSRS DATE

PSI-

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50174

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1 Concern: IN-86-184-001

Category: 33 Confidentiality YES NO (I&H)

Supervisor Notified: YES X NO NUCLEAR SAFETY RELATED YES

Concern: CLASSIFICATION OF STAINLESS STEEL PIPING SHOULD BE OF CONCERN. DIFFERENT GRADES AND DIFFERENT CLASS OF PIPE ARE ASSEMBLED IN THE SAME PIPING SYSTEM. PDO STEAM GENERATOR SUPPORTS SHOULD BE X-RAYED. THERE IS A PROBABILITY OF TRAPPED SLAG. THERE ARE DIFFERENT SIZE (GAUGE) PIPE WELDED TOGETHER IN RB1 AND THE FEED WATER HEATER STORAGE TANK. CI REFUSED TO PROVIDE FURTHER INFORMATION WHEN RE-CONTACTED BY ERT. CONST. DEPT. CONCERN.

NO FOLLOW UP REQUIRED.

O J Theo 10/9/85
MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ___

NSRS/ERT ___

NSRS ✓

OTHERS (SPECIFY) _____

Construct Control

Bruce F. Griffin 10/24/85
NSRS DATE

FSR

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50176

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1 Concern# WI-85-077-001

Category: 52 Confidentiality:___Yes____No(I&H)

Supervisor Notified:____Yes____No Nuclear Safety Related__YES__

Concern: CI ADVISED THAT AFTER EPOXY WAS APPLIED IN THE STEAM GENERATING ROOM, CI HEARD (COULD NOT SPECIFY SOURCE) THAT EITHER AN INAPPROPRIATE EPOXY WAS USED OR NO EPOXY WAS SUPPOSED TO BE USED IN THAT AREA BECAUSE OF HEAT IN THAT AREA. CI NEVER HEARD OF THE EPOXY BEING REMOVED AND DOUBTS THAT IT WOULD HAVE BEEN DONE ADEQUATELY BECAUSE OF THE TIME INVOLVED IN THE REMOVAL. CI SAID INSTALLATION REQUIRED 2 SHIFTS WORKING 6 MONTHS. REMOVAL WOULD BE 2-3 TIMES LONGER. CONST. DEPT. CONCERN. CI HAS NO FURTHER INFORMATION.

William S. Stokes

Manager, ERT date

NSRS has assigned responsibility for investigation of the above concern to:

ERT_____

NSRS/ERT_____

NSRS ✓

OTHERS (SPECIFY)_____

Construct Control

Bruce F. Leffler 10/24/85

NSRS date

P51C

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50174

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1 Concern: XX-85-006-001

Category: 10 Confidentiality YES NO (I&H)

Supervisor Notified: X YES NO NUCLEAR SAFETY RELATED YES

Concern: WERE THE DESIGN ERRORS MADE AT SEQUOYAH CORRECTED? THEY WERE CARRIED FORWARD TO WATTS BAR. ON THIS CONCERN, CI WAS CONTACTED FOR ADDITIONAL INFORMATION. CI STATED IT WAS HEARSAY AND CI HAD NO INFORMATION TO BACK IT UP. CONST. DEPT. CONCERN. CI HAS NO FURTHER INFORMATION.

NO FOLLOW UP REQUIRED.

O K Thero 10/19/85
MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ___

NSRS/ERT _____

NSRS ✓

OTHERS (SPECIFY) _____

Design Control

Bruce L. Siefken 11/4/85
NSRS DATE

PSF

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50174

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1 Concern: XX-85-069-001

Category: 88 Confidentiality YES NO (I&H)

Supervisor Notified: X YES NO NUCLEAR SAFETY RELATED YES

Concern: SEQUOYAH. MANY EMPLOYEES ARE CERTIFIED BUT ARE NOT QUALIFIED. THEY DO NOT HAVE ENOUGH ON THE JOB TRAINING (OJT) EVEN THOUGH IT IS DOCUMENTED THAT THEY DO HAVE ENOUGH OJT. THE CONCERN EXISTED FROM 1980 TO PRESENT. DETAILS KNOWN TO QTC, WITHHELD TO MAINTAIN CONFIDENTIALITY. NUC POWER CONCERN. CI HAS NO FURTHER INFORMATION.

NO FOLLOW UP REQUIRED.

O A Thews 10/24/85
MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ___

NSRS/ERT ___

NSRS ✓

OTHERS (SPECIFY) Operations Personnel

Bruce F. Griffin 10/24/85
NSRS DATE

PSE

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50174

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1 Concern: XX-85-069-002

Category: 86 Confidentiality YES NO (I&H)

Supervisor Notified: X YES NO NUCLEAR SAFETY RELATED YES

Concern: BROWNS FERRY. MANY EMPLOYEES ARE CERTIFIED BUT ARE NOT QUALIFIED. THEY DO NOT HAVE ENOUGH ON THE JOB TRAINING (OJT) EVEN THOUGH IT IS DOCUMENTED THAT THEY DO HAVE ENOUGH OJT. THE CONCERN EXISTED FROM 1980 TO PRESENT. DETAILS KNOWN TO QTC, WITHHELD TO MAINTAIN CONFIDENTIALITY. NUC POWER CONCERN. CI HAS NO FURTHER INFORMATION.

NO FOLLOW UP REQUIRED.

O S Thew 10/14/85
MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ___

NSRS/ERT _____

NSRS ✓

OTHERS (SPECIFY) _____

Bruce F. Sieglen 10/24/85
NSRS DATE

Operations Personnel

PSR

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50174

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1

Concern: XX-85-069-003

Category: 5

Confidentiality YES NO (I&H)

Supervisor Notified: X YES NO

NUCLEAR SAFETY RELATED YES

Concern: BELLEFONTE. MANY EMPLOYEES ARE CERTIFIED BUT ARE NOT QUALIFIED. THEY DO NOT HAVE ENOUGH ON THE JOB TRAINING (OJT) EVEN THOUGH IT IS DOCUMENTED THAT THEY DO HAVE ENOUGH OJT. THE CONCERN EXISTED FROM 1980 TO PRESENT. DETAILS KNOWN TO QTC, WITHHELD TO MAINTAIN CONFIDENTIALITY. NUC POWER CONCERN. CI HAS NO FURTHER INFORMATION.

NO FOLLOW UP REQUIRED.

[signature] 10/19/85
MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ___

NSRS/ERT ___

NSRS ✓

OTHERS (SPECIFY) ___

[signature] 10/24/85
NSRS DATE

Operations Personnel

B5

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50179

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1 Concern # XX-85-069-009

Category: 53 Confidentiality: _YES _NO (I&H)

Supervisor Notified: _X_YES ___NO NUCLEAR SAFETY RELATED YES

Concern: BELLEFONTE: VERY OFTEN, REJECTED ITEMS ARE ACCEPTED BY SOME ONE OTHER THAN A SUPERVISOR OR A HIGHER LEVEL (GRADE). TO ILLUSTRATE THE POINT, C/I STATED THAT THE SUPERVISOR WILL SEND ANOTHER EXAMINER/INSPECTOR WITH LESS QUALIFICATION AND EXPERIENCE TO RE-EXAMINE THE ONCE REJECTED ITEMS AND WILL GET ACCEPTANCE. C/I HAS NO FURTHER INFORMATION. NUC POWER CONCERN.

[signature] OCT 28 1985

MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ___

NSRS/ERT ______

NSRS ✓

OTHERS (SPECIFY) ______

[signature] 10/29/85

NSRS DATE

QA
Effect

PSR

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS   TRANSMITTAL NUMBER T50179

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1   Concern # XX-85-096-005

Category: 93   Confidentiality: _YES _NO (I&H)

Supervisor Notified: _X_YES ___NO   NUCLEAR SAFETY RELATED YES

Concern: SEQUOYAH: THE RADIATION MONITOR TUBE PROBLEM (THIMBLE GUIDE TUBE INCIDENT) IN UNIT 1 IN APRIL 1985 COULD OCCUR AGAIN, BECAUSE THE EQUIPMENT IS NOT PROPERLY DESIGNED TO BE FIXED DURING PLANT OPERATION. DETAILS KNOWN TO QTC, WITHHELD DUE TO CONFIDENTIALITY. CONSTRUCTION DEPT. CONCERN. C/I HAS NO FURTHER INFORMATION.

William [signature]   OCT 28 1985

MANAGER, ERT   DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ✓ ~~BSS~~ 10/29/85

NSRS/ERT _____

NSRS ✓ see XX-85-096-004

OTHERS (SPECIFY) ________________

Bruce S. Siefken [signature]   10/29/85

NSRS   DATE

NRC

TVA 64 (OS 9-65) (OP-WP 7-84)
UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : E. R. Ennis, Plant Manager, Watts Bar Nuclear Plant

FROM : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

DATE : October 30, 1985

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is NSRS Report No. I-85-456-WBN

Subject Hanger Weights Not Considered in Design

Concern No. IN-86-173-001

and associated recommendations for your action/disposition.

It is requested that you respond to this report and the attached recommendations by November 25, 1985. Should you have any questions, please contact J. H. Kincaid at telephone 3701.

Recommend Reportability Determination: Yes X No ____

Original signed by
M. S. Kidd

Director, NSRS/Designee

JHK:LAO
Attachment
cc (Attachment):
H. N. Culver, W12A19 C-K
QTC/ERT, Watts Bar Nuclear Plant
W. F. Willis, E12B16 C-K (4)

--Copy and Return--

To : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

From: _____

Date: _____

I hereby acknowledge receipt of NSRS Report No. I-85-456-WBN
Subject Hanger Weights Not Considered in Design for action/disposition.

_____ _____
Signature Date

0067U

TENNESSEE VALLEY AUTHORITY

NUCLEAR SAFETY REVIEW STAFF

NSRS INVESTIGATION REPORT NO. I-85-456-WBN

EMPLOYEE CONCERN IN-86-173-001

MILESTONE 3

SUBJECT: HANGER WEIGHTS NOT CONSIDERED IN DESIGN OF CONCRETE WALLS AND CEILINGS

DATES OF INVESTIGATION: September 25-October 11, 1985

LEAD INVESTIGATOR: J. H. Kincaid — Date: 10/9/85

INVESTIGATOR: C. R. Elledge — Date: 10/28/85

REVIEWED BY: P. R. Washer — Date: 10/28/85

APPROVED BY: M. A. Harrison — Date: 10/28/85

BACKGROUND

NSRS has investigated employee concern IN-86-173-001 which Quality Technology Company identified during the Watts Bar Employee Concern Program. The concern is worded:

> CI is concerned that design calculations have not considered the weight of all "extra" hangers added with respect to concrete structures (walls and ceilings). Unit 1 and 2 construction concern. CI has no additional information.

II. SCOPE

The issue of the investigation was determined from the stated concern to be that design calculations have not considered the weight of added items after the original design. Design criteria which identify design requirements and programs established for implementation were reviewed in reference to the stated concern, and a determination of the status of implementing the requirements was performed.

III. SUMMARY OF FINDINGS

TVA requirements for review and reevaluation for loads were specified in design criteria WB-DC-20-1.1, R6. The relevant requirements were stated in section 1.3, Reevaluation of Assumed Loads, as follows:

> A review and reevaluation for loads estimated or assumed during the design and construction process shall be made. This review shall consist of a comparison of the assumed loads used during design to the estimated applied loads. This comparison and evaluation shall be made by the organization responsible for the detailed design.
>
> The comparison and evaluation shall be made after the total plant design and construction has progressed to a point where applied loads are reasonably well known.
>
> An operating, uniformly distributed live load which can be added by plant personnel shall be documented on a drawing for use during the operating plant life.

The implementation of the above applicable requirements for review and reevaluation for loads had not been performed to date. The requirements had been implemented at TVA's Sequoyah Nuclear Plant to the extent that a rough draft of Live Load Evaluation had been circulated for OE review. A program had been defined at WBNP which developed the objectives, scope, and procedures for meeting the specified requirements; but no schedule for the actual evaluation or completion had been issued.

CONCLUSIONS AND RECOMMENDATIONS

A. Conclusion

The employee concern that design calculations for concrete structures (walls and ceilings) have not considered the weight of all "extra" hangers added has been substantiated. The requirements had been specified; and a program had been defined which developed objectives, scope, and procedures for meeting requirements. Design evaluation had not been initiated at WBNP, and a schedule for completion had not been established.

B. Recommendation

I-85-456-WBN-01 - Verification of Structural Concrete Loading Capacities

Develop a schedule for performing the comparison, evaluation, and necessary design calculations which conform to requirements. Expedite the review of the SQN evaluation to serve as an approximation of the WBN condition in order to determine if the WBN comparison/evaluation must be performed prior to startup testing.

TVA 64 (OS 9-65) (OP-WP 7-84)
UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

NRC

TO: E. R. Ennis, Plant Manager, Watts Bar Nuclear Plant

FROM: K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

DATE: OCT 30 1985

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is NSRS Report No. IN-85-246-005

Subject VENDOR WELD IRREGULARITIES

Concern No. IN-85-246-005

and associated recommendations for your action/disposition.

It is requested that you respond to this report and the attached recommendations by Nov. 25, 1985. Should you have any questions, please contact Wm. R. Pickering at telephone 365-4414.

Recommend Reportability Determination: Yes _____ No X

Original signed by
M. S. Kidd

Director, NSRS/Designee

Attachment
cc (Attachment):
H. N. Culver, W12A19 C-K
QTC/ERT, Watts Bar Nuclear Plant
W. F. Willis, E12B16 C-K (4)

--Copy and Return--

To : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

From: _____

Date: _____

I hereby acknowledge receipt of NSRS Report No. IN-85-246-005
Subject VENDOR WELD IRREGULARITIES for action/disposition.

_____ _____
Signature Date

NSRS RECOMMENDATIONS

Concern: IN-85-246-005

Recommendations

Q-85-246-005-01 - "Vendor Weld Irregularities" - The specific vendor weld conditions identified in this report should be evaluated by QC welding engineering (e.g., rusting; excessive weave impacting heat affected zone); and if determined unacceptable, documented and resolved on an NCR. Also, if determined unacceptable, other welds supplied by that vendor should be inspected for similar conditions.

Prepared By: _____
M. A. Harrison

QUALITY
TECHNOLOGY
COMPANY

P.O. BOX 600
Sweetwater, TN
37874

ERT INVESTIGATION REPORT

CONCERN NO: IN-85-246-005

CONCERN: WBNP Unit 2 Reactor Building, Elev 702', Azmuth 0 degrees looking toward center at crane wall. 3" diameter and 6" diameter pipe. Welds are rusted over. 2" - 3" weave, undercut and overground, etc.

INVESTIGATION
PERFORMED BY: Wm. R. Pickering

DETAILS:

PERSONNEL CONTACTED:

Confidential

FINDINGS:

This concern is partially substantiated.

Two 3 inch diameter and two 6 inch diameter vendor supplied expansion loops are installed in the Unit 2 Reactor Building at elevation 702'-0", Azmuth 0 degrees, radius 45'-06" as part of the Component Cooling System, System 70.

Welds "C" and "D" of Item 2B (refer to the weld map attached to the ASME NPP-1 Code Data Report for Fabricated Nuclear Piping) and weld "G" or Item 2C for piece mark 70-CC-235, serial number 12094; weld "D" of Item 2B and weld "G" of Item 2C for piece mark 70-CC-204, serial number 12221; also welds "F" and "G" of Item 2C and weld "D" of Item 2B for piece mark 70-CC-251, serial number 12100 are very rusted, have wide weave passes and weld reinforcement that appears to be excessive as described in the concern.

ERT INVESTIGATION REPORT

CONCERN NO: IN-85-246-005

DETAILS: (cont)

An inspection by an ERT investigator identified a 1/16" to 3/32" offset where the 90 degree elbows, Items 2B and 2C of piece mark 70-CC-235, Items 2B and 2C of piece mark 70-CC-304 and Items 2C and 2B of piece mark 70-CC-251 are welded to Items 1B typically of piece mark 70-CC-235, 70-CC-304 and 70-CC-251 respectively. ASME code, section ND-4426.2 "Thickness of Weld Reinforcement for Piping" states in part "...for single welded butt joints, the reinforcement applied to the outside surface....determined from the higher of the abutting surfaces involved shall be for 3" diameter schedule 160 pipe a maximum of 5/32" and reinforcement for 6" diameter schedule 40 pipe shall be a maximum of 5/32"." All welds mentioned in this report have weld reinforcement that is less than the maximum allowed.

AWS D-1.1 limits maximum weave pass widths, the ASME code does not; however, the welding process is governed by essential variables listed for a particular pre-qualified weld joint configuration. Given the tolerances listed on the vendor weld procedure 1-1-F3100-DG5, allowing for the widest root gap, the smallest allowable land, and a maximum groove angle with a 3/32 inch encroachment of weld metal at each toe, the maximum weld face for a 6 inch schedule 40 pipe would be 7/8 inch. For 3 inch diameter schedule 160 pipe it would be 1 1/16 inch. Contrary to the given allowances Weld D and G of 3" pipe serial number 12094 and Weld F of 6" pipe, serial number 12100 have weave passes that exceed the calculations derived from given tolerances of weld procedure specification 1-1-F3100-DGS.

Welds making up the 6" diameter expansion loop have successfully passed a non-destructive examination as required by the ASME code, however 3" diameter pipe does not require non-destructive examination. The weld toes are visable, indicating adequate fusion to the parent metal. Undercut, excessive grinding or other visual discontinuities were not observed.

DETAILS: (cont)

TVA has no requirement for surface cleanliness during the construction phase except metal surfaces prepared for welding. The responsible engineer for System 70 said the system is not subject to be painted until it is transferred to the Civil discipline. Scheduled transfer date is after the system successfully passes cold hydrostatic testing which is slated for January 9, 1986. Once the Civil discipline has responsibility, welds and piping surfaces will be prepared for protective coatings.

OBSERVATIONS:

Widths of weave passes, with respect to maximum allowable tolerances, are larger than they could be utilizing the weld procedure specification documented on the NPP-1 form. Although requalification of the weld configuration is not required unless essential variables are adjusted as listed in ASME ND-4352, Essential Variables for all Weld Processes, the widths of the weave passes indicate the heat effected zone was expanded further into the base metal. The expansion of the heat effected zone could effect the results of face bend test used to qualify the joint configuration and weld process as it did not take into account the additional weld metal deposited to the subject pipe. The only other alternative to account for the width of the weave passes would have been to adjust the fit-up tolerances greater than specified by procedure.

In addition the weave passes were applied by the Flux Core Arc Welding process. Stated in TVA Process Specification 1.M.1.2 Section 14.9 as a WBNP Guideline is "Weaving shall not result in a weld bead width greater than the following..." Subsection 14.9.2 states that for Gas Metal Arc Welding including flux cored the weave pass shall not be greater than 5/8".

If this process specification were to apply to vendor items, all welds mentioned in this report would violate the stated requirement.

ERT INVESTIGATION REPORT

CONCERN NO: IN-85-246-005

DETAILS: (cont)

CONCLUSION:

This concern is partially substantiated.

Weld surfaces are rusted as there weren't any preventative measures implemented to prevent rusting. Weave passes greater than allowable, in accordance with TVA Process Specification 1.M.1.2, Section 14.9, Subsection 14.9.2, are present on the vendor supplied items.

No evidence of excessive grinding was observed. The course appearance of the welds indicate no grinding or surface preparation. No undercut was present at any of the subject welds nor any other visual weld discontinuities were observed.

Prepared By W. Vaughn for W.R.P. 10/22/85
Date

Reviewed By O.B. Thero 10/22/85
Date

FINAL

REQUEST FOR REPORTABILITY EVALUATION

1. Request No. IN-85-246-005 (ERT Concern No.) _____ (ID No., if reported)

2. Identification of Item Involved: S/N # 12094, 12221, 12100, Expansion loops/system 70 component cooling (Nomenclature, system, manuf., SN, Model, etc.)

3. Description of Problem (Attach related documents, photos, sketches, etc.)

Vendor supplied items with weld weave passes greater than acceptable as per TVA process specification 1.M.1.2 Section 14.9 and excessive rust present on said welds.

4. Reason for Reportability: (Use supplemental sheets if necessary)

A. This design or construction deficiency, were it to have remained uncorrected, could have affected adversely the safety of operations of the nuclear power plant at any time throughout the expected lifetime of the plant.

NO X YES ___ If Yes, Explain: N/A

AND

B. This deficiency represents a significant breakdown in any portion of the quality assurance program conducted in accordance with the requirements of Appendix B.

No X Yes ___ If Yes, Explain: N/A

OR

C. This deficiency represents a significant deficiency in final design as approved and released for construction such that the design does not conform to the criteria bases stated in the safety analysis report or construction permit.

No X Yes ___ If Yes, Explain: N/A

OR

REQUEST FOR REPORTABILITY EVALUATION

D. This deficiency represents a significant deficiency in construction of or significant damage to a structure, system or component which will require extensive evaluation, extensive redesign, or extensive repair to meet the criteria and bases stated in the safety analysis report or construction permit or to otherwise establish the adequacy of the structure, system, or component to perform its intended safety function.

No X Yes ____ If Yes, Explain: N/A

OR

E. This deficiency represents a significant deviation from performance specifications which will require extensive evaluation, extensive redesign, or extensive repair to establish the adequacy of the structure, system, or component to perform its intended safety function.

No X Yes ____ If Yes, Explain: N/A

IF ITEM 4A, AND 4B OR 4C OR 4D OR 4E ARE MARKED "YES", IMMEDIATELY HAND-CARRY THIS REQUEST AND SUPPORTING DOCUMENTATION TO NSRS.

This Condition was Identified by: [signature] ERT Group Manager 365-4464 Phone Ext.

[signature] ERT Project Manager 365-4414 Phone Ext.

Acknowledgment of receipt by NSRS

[signature] Signed Date 12/24/85 Time 1054

NRC

TVA 64 (OS 9-65) (OP-WP 7-84)
UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : E. R. Ennis, Plant Manager, Watts Bar Nuclear Plant

FROM : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

DATE : OCT 30 1985

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is NSRS Report No. IN-85-544-002

Subject VIOLATION OF PROCEDURE

Concern No. IN-85-544-002

and associated recommendations for your action/disposition.

It is requested that you respond to this report and the attached recommendations by Nov. 25, 1985 . Should you have any questions, please contact R. A. KAER at telephone 365-4414 .

Recommend Reportability Determination: Yes ____ No X

Original signed
M. S. Kidd
Director, NSRS/Designee

Attachment
cc (Attachment):
H. N. Culver, W12A19 C-K
QTC/ERT, Watts Bar Nuclear Plant
W. F. Willis, E12B16 C-K (4)

--Copy and Return--

To : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

From: _____

Date: _____

I hereby acknowledge receipt of NSRS Report No. IN-85-544-002
Subject VIOLATION OF PROCEDURE for action/disposition.

_____ _____
Signature Date

NSRS RECOMMENDATIONS

Concern: IN-85-544-002

Recommendations

Q-85-544-002-01 - "Observations - NCRs" - Identify the doors determined by the UL survey of November 1984 to have had problems in an NCR, or other appropriate corrective action document, to assure all problems were/are addressed and resolved.

Q-85-544-002-02 - "Revision to WP 3553" - WBN Construction should change WP 3553 to reflect the appropriate revision level of NCR 4443 for which corrective action is authorized.

Prepared By: 10/23/85
M. A. Harrison

QUALITY TECHNOLOGY COMPANY
P.O. BOX 600 • SWEETWATER, TN. 37874 • (615)365-4414

ERT INVESTIGATION REPORT

CONCERN NO: IN-85-544-002

CONCERN: Management directed craft to violate procedure by penetrating skin on Battery Room doors. Craft removed pop rivets and welded on hasps, used bondo and did grinding.

PERFORMED BY: R. A. Kaer

DETAILS

Personnel Contacted: Confidential

Documents Reviewed:

Drawings: 46W401-8, Rev. 7 - Architectural Plan Elev. 772.0, 782.0,786.0
46W454-8, Rev.28 - Architectural Door & Hardware Schedule
46W454-9, Rev.21 - " " " "
46W454-11,Rev.17 - " " " "
46W454-13,Rev.27 - " " " "
46w454.14,Rev.23 - " " " "

Nonconformance Report 4443, Rev. 0 and Rev. 1

Memorandums ASB-83-0117-020 Dated 1-17-83
ADB-82-0517-033 Dated 5-17-83
WBN-83-0929-022 Dated 9-29-83
ASB-83-1020-031 Dated 10-20-83

Letter dated 9-29-84 from D. J. Kaiser, Underwriter Laboratory to J. B. Lyons - Chief of Technical and Administrative Staff (TVA)

Work Plan 3553

Summary of Investigation:

The activities described in the concern i.e., removal of pop rivets, welding, grinding and the use of bondo is substantiated, however, these activities were part of the corrective action required by Nonconformance Report #4443.

The statement in the concern that management directed the craft to violate the procedure was not substantiated due to the work being authorized by the NCR and a work plan.

DETAILS, continued

Findings:

It was identified by the CI, during the interview, that the skin of the Battery Room fire doors had been penetrated. Drawing 46W401-8 was reviewed to determine the identity of the fire doors in questions. These doors are as follows:

Door A-181, Vital Battery Room II, Elevation 772, Aux. Bldg.
Door A-182, Vital Battery Room I, Elevation 772, Aux. Bldg.
Door A-194, Vital Battery Room IV, Elevation 772, Aux. Bldg.
Door A-195, Vital Battery Room III,Elevation 772, Aux. Bldg.

A fifth Battery Room is being installed on Elevation 772. As of 10/15/85, the door to this room (Door A-210) has not been installed.

An ERT walkdown was performed to visually inspect the Battery Room fire doors in question. It was noted that doors A-181,A-182 and A-195 did appear to have been reworked, however it could not be determined whether or not the skin of the fire doors had been penetrated.

After the completion of the walkdown, NSB and Civil Construction personnel were contacted and were questioned about previous work performed on the Battery Room fire doors. It was identified by the cognizant personnel that these doors had been inspected previously and were identified in a nonconformance report. This nonconformance report (NCR 4443) was originally issued on 11/9/82. Through further investiagion, it was noted that problems with fire doors had been addressed prior to NCR 4443 being issued. The following is a sequence of events which transpired concerning problems with fire doors, including those identified in this concern:

May 17, 1982 - In a memo from J. C. Standifer to J. E. Wilkins (ADB-82-0517-033), it was identified that fire doors had been altered or damaged. A list of requirements to correct these doors was given. At this time, it was not identified which fire doors were altered or damaged, so it could not be determined whether the Battery Room fire doors were addressed.

November 9, 1982 - NCR 4443 Rev. 0 was issued. This NCR identified that the skin of the doors as well as the frames had been penetrated on the Battery Room fire doors. This was due to the fact that lock hasps were welded and signs were riveted to the doors. The NCR was dispositioned on November 12, 1982, stating that the unauthorized objects were to be removed and the holes were to be welded and then ground flush.

DETAILS, continued

Findings, continued

January 13, 1983 - The disposition to NCR 4443 was crossed out, initialed and dated without a redisposition or explanation given.

January 17, 1983 - Memorandum ASB-83-0117-020, J. C. Standifer to G. Wadewitz was issued, identifying additional types of alterations to fire doors. This memorandum did identify hasps that had been thru-bolted to fire doors. The corrective action described in the memorandum was to replace the fire doors.

January 20, 1983 - NCR 4443 , Block 7, stated to: "See memo from JCS to GW dated January 17, 1983 (ASB 830117-020) for repair instructions" - nothing was written in the disposition block (Block 4) of this NCR.

September 29, 1983 - Memorandum WBN-83-929-022 from G. Wadewitz to J. C. Standifer stated that two surplus doors (An "A" label door and a "B" label door) had been selected for destructive testing. These doors were welded on and bolted without "significant deleterious effect on either the door skin or the insulation". It was suggested that the disposition to NCR 4443R be changed to "use as is".

October 20, 1983 - Memorandum ASB-83-1020-031, from J.C. Standifer to G. Wadewitz was issued. Based upon the information provided in memo WBN-83-0929-022 (see 9-29-83), the disposition to NCR 4443 was changed to the following:

> "Hasps Through Bolted to Fire Doors
>
> Hasps and staples are to be removed and bolts replaced in the holes with bolt ends cut flush with tops of the nuts, tack welded, and ground smooth. Prime and paint.
>
> Hasps Welded to Fire Doors
>
> CONST to remove hasps and staples from door (do not use torch), fill with metal filler, grind flush, and smooth. Prime and paint."

November 21, 1983 - Work Plan 3553 was issued to repair the Battery Room fire doors in accordance with NCR 4443.

DETAILS, continued

Findings, continued

December 2, 1983 - NCR 4443 was changed to Revision 1. Fire doors A-121, C-10 and C-23 were added to this NCR. The disposition was to repair the fire doors in accordance with Memorandums ASB-83-0117-020 (1-17-83) and ASB-83-1020-031 (10-20-83). It should be noted that the first memorandum listed (ASB-83-0117-020) states that the fire doors were to be replaced, while the second memo (ASB-83-1020-031) states that the doors should be repaired.

January 5, 1984 - The Battery Room fire doors were inspected and accepted per the requirements of NCR 4443 Rev. 1.

November 1, 2, 1984 - Underwriter Laboratory personnel performed a walkdown of doors and frames installed at Watts Bar.

November 29, 1984 - A letter is issued from D.L. Kaiser (Underwriters Laboratory) to J. B. Lyons (TVA) describing the results of UL's walkdown. For doors and frames that had holes, UL states in part that : "...the filling of small screw holes with steel rivets or steel sheet metal screws is judged not to affect the performance of the assembly under fire exposure." This letter goes on to further describe other observations noted during the walkdown pertaining to fire doors. None of these other observations relate to the concern given by the CI.

Based upon the information provided in the memos, letters and nonconformance reports referenced in this investigation report, it can be substantiated that the skin of the Battery Room fire doors had been penetrated. However, this fact had been documented and identified by the responsible organizations, and the rework performed on the doors was in accordance with the requirements stated in the nonconformance report. Based on this information, there was no procedural violation, as stated in the concern.

The CI was contacted and the results of this investigation were discussed. The CI stated that he was unaware of NCR 4443 being issued which addressed the concerns given. The CI stated that he was satisfied with the investigation results and had no further concern on this matter.

CONCERN NO: IN-85-544-002

DETAILS, continued

Observations

1) Concerns regarding alterations and or damages to installed fire doors at WBNP, was originally addressed in May, 1982 (Memo ADB-82-0517-033). A nonconformance report was not written until November of 1982, and this NCR only addressed four fire doors. There were no additional NCR's located which addressed other fire doors, which were damaged or altered, however these doors required rework, and in some instances, the doors were to be replaced. This is a violation of 10CFR50, Appendix B, Criterion XV.

2) Work Plan 3553 was issued on 11/21/83, which stated to repair the doors per NCR 4443. At the time of this work plan, Revision 0 of NCR 4443 was in effect. The disposition of Revision 0 stated that the doors with hasps thru-bolted, and hasps welded, must be replaced. Revision 1 to NCR 4443 was not issued until 12-2-83, which allowed the rework of the fire doors instead of replacement. The memorandum referenced in the corrective action block of Revision 1 of the NCR was attached to the work plan, however the work plan was not updated to show the proper NCR revision.

Conclusion:

This concern is partially substantiated in that the skin of the Battery Room Fire Doors had been penetratred. However, this activity was addressed and resolved by the issuance of a Nonconformance Report (NCR 4443). The work and activities performed by the craft personnel was in compliance with the corrective action scope of the NCR.

Report Reviewed & Accepted: 10/25/85 NSRS

PREPARED BY _____ 10/21/85 DATE

REVIEWED BY _____ 10/21/85 DATE

REQUEST FOR REPORTABILITY EVALUATION

D. This deficiency represents a significant deficiency in construction of or significant damage to a structure, system or component which will require extensive evaluation, extensive redesign, or extensive repair to meet the criteria and bases stated in the safety analysis report or construction permit or to otherwise establish the adequacy of the structure, system, or component to perform its intended safety function.
No __X__Yes _____ If Yes, Explain: _____

_____

_____

OR

E. This deficiency represents a significant deviation from the performance specifications which will require extensive evaluation, extensive redesign, or extensive repair to establish the adequacy of the structure, system, or component to perform its intended safety function.
No __X___Yes _____ If Yes, Explain: _____

_____

_____

IF ITEM 4A, AND 4B OR 4C OR 4D OR 4E ARE MARKED "YES", IMMEDIATELY HAND-CARRY THIS REQUEST AND SUPPORTING DOCUMENTATION TO NSRS.

This Condition was Identified by: _____ 365-4464
ERT Group Manager Phone Ext.

_____ 365-4414
ERT Project Manager Phone Ext.

Acknowledgment of receipt by NSRS

_____ Date 10/23/85 Time 1207
Signed

ERT Form M

FINAL

REQUEST FOR REPORTABILITY EVALUATION

1. Request No. IN-85-544-002 _____
   (ERT Concern No.) (ID No., if reported)

2. Identification of Item Involved: Penetration of Fire door skin
   (Nomenclature, system, manuf.,SN, Model, etc.)

3. Description of Problem (Attach related documents, photos, sketches,etc.)
   Battery Room Fire doors had skin penetrated.

4. Reason for Reportability: (Use supplemental sheets if necessary)

   A. This design or construction deficiency, were it to have remained uncorrected, could have affected adversely the safety of operations of the nuclear power plant at any time throughout the expected lifetime of the plant.

      No __X__ Yes _____ If Yes, Explain:_____

      AND

   B. This deficiency represents a significant breakdown in any portion of the quality assurance program conducted in accordance with the requirements of Appendix B.

      No __X__ Yes _____ If Yes, Explain:_____

      OR

   C. This deficiency represents a significant deficiency in final design as approved and released for construction such that the design does not conform to the criteria bases stated in the safety analysis report or construction permit.

      No __X__ Yes _____ If Yes, Explain:_____

      OR

UNDERWRITERS LABORATORIES INC.
an independent, not-for-profit organization testing for public safety

November 29, 1984

Mr. John B. Lyons
Chief of Technical and
Administrative Staff
Tennessee Valley Authority
W12D126
400 Summit Hill Dr.
Knoxville, TN 37902

Our Ref: Project 84NK26564, File NC777-1

Dear Mr. Lyons:

UL established Project 84NK26564 to conduct the investigation described in UL's letter dated October 12, 1984 to review the installation of doors and frames installed in Watts Bar Nuclear Power Station.

The investigation was conducted as outlined in the Application forwarded with UL's October 23, 1984 letter. The anticipated field inspections were conducted by the undersigned (Daniel J. Kaiser) and William R. Carney on November 1 and 2, 1984. The inspection was to review the "as installed" conditions of the specified openings.

The following summary represents the judgment of Underwriters Laboratories Inc., based upon the results of the examination as it relates to established principles and previously recorded data.

The general Observations are a summary of all observations made. The UL Comments apply to those observations and the proposed construction revisions made by and discussed with Tennessee Valley Authority representatives.

GENERAL OBSERVATIONS

1. Signs - All of the doors were provided with one or several signs. The signs were of both large and small sizes and made of steel, aluminum or plastic, and were fastened to the door face with pop-rivets or steel sheet-metal screws.

UL COMMENTS

Plant-ons (signs) of a large size or those that consist of a combustible material may adversely affect the performance of the door under fire conditions. See Pars. 1-3.4, 2-8.3 and App. G of the National Fire Protection Association (NFPA) Standard No. 80-1983. Note that the NFPA Recommendations are not intended to prohibit the use of small signs indicating function, use or location of doors.

Additionally, the application of the unlabeled combustible materials could adversely affect the ability of the door assemblies to perform as an effective fire barrier. If a fire should occur on the side opposite the combustible material, the heat transmitted through the door could cause the combustible material to ignite and allow flames on the unexposed surface.

During discussions, it was agreed that if one small metallic sign could not provide all the information provided, stenciling the additional information on the door would not affect the performance of a UL Classified door under fire exposure.

2. Gasketing - Some of the door assemblies were provided with unlabeled, field installed, gasketing materials.

UL COMMENTS

The application of the unlabeled gasketing materials could adversely affect the ability of the door assemblies to perform as an effective fire barrier. If a fire should occur on the side opposite the gasketing material, the heat transmitted through the door could cause the gasketing material to ignite and allow flames on the unexposed surface.

UL Classifies gasketing material for use on fire doors. See Page 258 of UL's 1984 Building Materials Directory (BMD). The UL Labeled gasketing may be installed in the field in accordance with the installation instructions provided with the materials, provided it does not interfere with the operation of the door.

3. Small Security Plates - Several of the door assemblies had small, narrow steel security plates through-bolted to the door at the latch area.

UL COMMENTS

The through-bolting of a small, narrow steel security plate at the latch area is judged not to adversely affect the performance of the door under fire conditions. However, in the case of bullet-resisting doors, the bullet resistance may be affected.

4. Conduit Penetrations - Several of the frames were provided with electrical conduit penetrations.

UL COMMENTS

The installation of conduit to one side of a door frame with the proper fitting and conduit penetration protection, as shown by ILL. 2, is judged not to adversely affect the performance of the frame assembly under fire conditions.

As an alternate to protecting the complete throat of the frame adjacent to the penetration continuously welding the fitting to the frame and then protecting the inside of the conduit is judged not to adversely affect the performance of the frame assembly under fire conditions.

5. Door Position Indicators - For security purposes, door and frame assemblies had surface mounted door position indicator (magnetic switches) installed at the top of the assembly.

Other frames had frame switches located on the hinge rabbet of the frames and frame push buttons installed on the face of the frames.

UL COMMENTS

The installation of the surface mounted door position indicators is judged not to adversely affect the performance of the door and frame assembly.

The installation of the frame switches and frame buttons is judged not to adversely affect the performance of the door and frame assembly.

It should be noted that since some of these devices did not bear any type of UL label, we are unable to judge them from an electrical hazard or security aspect.

6. Holes In Doors and Frames - Doors and frames had small screw hole openings which remained after hardware or plant-ons were removed. In addition, several doors and frames had larger hole openings which remained after hardware was replaced.

UL COMMENTS

These openings could adversely affect the performance of the door assemblies under fire conditions.

As proposed, the filling of small screw holes with steel rivets or steel sheet metal screws is judged not to affect the performance of the assembly under fire exposure.

Also as proposed, the continuous welding of a No. 16 gauge steel plate covering the hole, overlapping the hole by a minimum of 3/4 in. is judged not to affect the performance of the assembly under fire exposure.

It is judged that the proper filling or covering of the holes would eliminate the possible adverse affect on the performance of the assemblies.

7. In-Operable Hardware - Some openings had components in bad repair or had in-operable doors, latches and/or door closers or hardware parts missing or pins or mounting screws missing.

UL COMMENTS

Fire doors should be in good repair and operable at all times. Their use is valueless unless properly maintained and closed or able to close at the time of fire.

In-operable hardware could prevent the door from closing and latching and thereby adversely affect the ability of the assembly to perform as an effective fire barrier.

It is our understanding that power station proposes to repair or replace all in-operable hardware. See NFPA 80, Chapter 14 on Care and Maintenance of openings.

8. Electric Strikes - In addition to the normal self-latching hardware, several pairs of doors and single swing doors were installed with a UL Listed electric strike mounted in the head of the frame or in the transom panels with latches mounted in the top channel of the doors.

UL COMMENTS

Electric strikes are intended to replace the strike plate used in fire door frames. Many of the electric strikes used in your assemblies were used as a secondary latching operation. Therefore, provided that the electric strike is installed per the manufacturer's installation instructions, the single swing door assemblies with the electric strike installed in the head of the frame are judged not to affect the performance of the assembly under fire exposure.

For those assemblies with electric strikes located in the transom panel, the installation of the electric strike and associated wiring and fittings could adversely affect the performance of the door assemblies under fire conditions.

It is our understanding that the power station proposes to replace those doors with an overall assembly evaluated for this particular construction.

9. Unlabeled Hardware - Some openings were equipped with unlabeled hardware components or those not intended to be used in the particular assembly being reviewed.

(Note: Mostly unlabeled top and bottom flush bolts on inactive doors of pairs were observed.

UL COMMENTS

The protection of an opening depends not only upon the use of Labeled doors of the proper type, but also upon the use of Labeled frames and other Labeled hardware accessories intended for use in the particular fire door assemblies.

NFPA 80, Pars. 1-6.1, 2-5.1 and 2-8.2.1, requires that only Labeled doors, door frames and hardware be used in fire rated openings.

It is our understanding that the power station proposes to replace all unlabeled/noncompatible components with Labeled devices.

See the UL Building Materials Directory for the appropriate UL Markings to be provided on the various devices.

10. Excessive Gaps Between Door and Frame - The clearances in many door and frame assemblies exceed the maximum clearance specified in NFPA 80, Par. 2-5.4. NEED COPY

UL COMMENTS

Excessive clearances could adversely affect the assembly's ability to perform satisfactorily under fire conditions.

Do Dur Hour NFPA

It is our understanding that the power station purposes to review all assemblies with excessive clearances and adjust the assemblies to the maximum gaps specified in NFPA 80.

12. With regard to the installation of the existing opening fire door frames, NFPA 80, PAR. 2-3 requires that "frames shall be securely anchored to the wall construction." The installation of the frames with approximately a 1/4 in. gap around the perimeter of the frame between the frame and the masonry wall may not meet this intent. Two adverse conditions may develop under fire situations.

1. Since the frame is not tight against the wall, it may not be prevented from rotating around its vertical axis when subjected to fire. The "caulk" not being a permanent, incompressible material cannot be considered capable of holding the frame in position. If the frame does twist, the strike may twist away from the latch bolt, allowing the latch to become disengaged and the door to swing open.

2. The amount of "caulk" sealing the opening from one side of the frame to the other may not act as an effective fire barrier. The materials, generally known as "caulk", normally do not resist the action of high temperature. Even seal materials which are intended for use a high temperatures may not have sufficient structural integrity to prevent the passage of fire when the fire undergoes great temperature changes.

Normally frames for existing openings are drawn tight at both the head and both jambs. A high temperature seal material is then applied around the perimeter of the frame where it meets the wall to seal off very small openings which may be present due to slight irregularities in the wall construction.

It is judged that the alternate installation shown on the attached ILL. 1 would be acceptable provided:

1. The frames have steel shims between the anchor reinforcement and the wall.

2. The head of the frames are constructed as shown for the jambs.

13. Unlabeled Louvers - Some door were provided with unlabeled louvers.

UL COMMENTS

There are some manufacturers who are eligible to install louvers at their manufacturing locations. When manufacturers install the louver in accordance with their Follow-Up Service Procedure, the louver does not necessarily bear a label.

We were unable to note whether you received the doors with the louvers or the louvers were added at another point in time.

It is our understanding that the power stations proposes to review their records and determine if the Labeled doors were received with the louvers installed. If they were not provided with the doors, it is our understanding that the power station proposes to replace the unlabeled louvers with Labeled louvers.

14. Reserved.

15. Hollow-Metal Frames - Some pressed steel frames were provided without labels.

UL COMMENTS

Par. 2-5.1 of NFPA 80-1983 states that "Only Labeled frames shall be used."

It is our understanding that the power station proposes to replace all unlabeled components with Labeled devices. However, if it can be determined that some of the door assemblies manufactured by the various manufacturers are constructed as described in their UL Follow-Up Procedure, it may be possible to apply labels to those assemblies under a separate project to visit the station at the same time as the manufacturer's representative. Please note that we will require the written authorization of the door manufacturer before we are in a position to try to make this determination.

See the UL Buildin . Materials Directory for the appropriate UL Markings to be provided on the various components.

16. Unlabeled Doors - Some doors did not bear labels.

UL COMMENTS

Par. 16.1 of NFPA 80-1983 states that "Only Labeled or Listed doors shall be used."

It is our understanding that the power station proposes to replace all unlabeled components with Labeled devices. However, if it can be determined that some of the door assemblies manufactured by the various manufacturers are constructed as described in their UL Follow-Up Procedure, it may be possible to apply labels to those assemblies under a separate project to visit the station at the same time as the manufacturer's representative. Please note that we will require the written authorization of the door manufacturer before we are in a position to try to make this determination.

See the UL Building Materials Directory for the appropriate UL Markings to be provided on the various components.

What are we doing with doors where the labels were removed?

In no event shall UL be responsible to anyone for whatever use or nonuse is made of the information contained in this report and in no event shall UL, its employees, or its agents incur any obligations or liability for damage, including, but not limited to consequential damages arising out of or in connection with the use, or inability to use, the information contained in this report.

The issuance of this report in no way implies Listing, Classification, or other recommendations by UL and does not authorize the use of UL Listing or Classification Marks or other reference to UL on or in connections with the product or system.

With this Report, we conclude our work on Project 84NK24322.

Very truly yours,

Daniel J. Kaiser

DANIEL J. KAISER
Senior Project Engineer
Fire Protection Department

Reviewed by:

H. J. Grussynski

H. J. GRUSSYNSKI
Senior Project Engineer
Fire Protection Department

DJK/HJG:jrr
LTR2

TVA 24 (OS-9-65)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

NRC

TO : E. R. Ennis, Acting Site Director, Watts Bar Nuclear Plant

FROM : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

DATE : October 30, 1985

SUBJECT: CORRECTIVE ACTION RESPONSE EVALUATION

REPORT NO. : Q-85-795-001-01

SUBJECT : COMPRESSION FITTINGS

CONCERN NO.: IN-85-795-001 and IN-85-795-002

(X) ACCEPT ( ) REJECT

When results of the site investigation for NCR 6278 are complete (est. November 29, 1985) please provide results to Director of Nuclear Safety Review Staff.

K. W. Whitt

GGB:MAH:LAO
Attachment
cc (Attachment):
H. N. Culver, W12A19 C-K
QTC/ERT, CONST-WBN
W. F. Willis, E12B16 C-K (4)

TVA 64 (OS-9-65)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : E. R. Ennis, Acting Site Director, Watts Bar Nuclear Plant

FROM : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

DATE : OCT 30 1985

SUBJECT: CORRECTIVE ACTION RESPONSE EVALUATION

REPORT NO. : Q-85-795-001-02

SUBJECT : COMPRESSION FITTINGS

CONCERN NO.: IN-85-795-001 and IN-85-975-002

( ) ACCEPT (X) REJECT

This response has been rejected because it did not fully address the recommendation for correcting the deficiency. More specifically, NSRS recommended that procedures that cover vendor recommendations for installing each type of compression fitting should be developed, and applicable safety-related work should be restricted to craft that have training on the procedures.

The line response only addressed training of instrumentation fitters and does not discuss procedure preparation and control of the work activity as recommended. There has been at least one serious event at TVA nuclear plant involving improperly installed compression fittings. Similar events have also recently occurred at other operating nuclear plants.

Contact Gerald Brantley (NSRS) at 4882-K or 3714-WBN for more details.

K. W. Whitt

Attachment
cc (Attachment):
H. N. Culver, W12A19 C-K
W. F. Willis, E12B16 C-K (4)
QTC/ERT, CONST-WBN

TVA 64 (OS-9-65)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : K. W. Whitt, Director, Nuclear Safety Review Staff, E3A8 C-K

FROM : Guenter Wadewitz, Project Manager, Watts Bar Nuclear Plant OC

DATE : OCT 01 1985

SUBJECT: WATTS BAR NUCLEAR PLANT - REQUEST FOR INVESTIGATION/EVALUATION

Attached are our responses to employee concern nos. IN-85-795-001 and IN-85-795-002.

Guenter Wadewitz

GW:LR
Attachments

To MAH — ✓ mah
10/10/85

✓ jch

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

NSRS 985795001-01

Response to Employee Concern IN-85-795-001

In response to this concern, NCR 6278 was issued August 27, 1985, and a site investigation will be undertaken for possible conditions adverse to quality with respect to this concern. We expect to complete the investigation by November 29, 1985. For any concerns in the meantime, contact Charlie Wagner or Shawn Hughes at extension 468. We will also let you know about the results of the investigation if you will contact us.

Principally prepared by Ed Burke, extension 530

TLR.

RESPONSE TO CONCERN NO. IN-85-795-002

Training classes were scheduled on August 27, 29, and 30, 1985, with the instrumentation fitters involved in the installation of compression fittings. The manufacturer's specifications and recommendations will be discussed, along with proper cuts on the end of tubing, proper insertion, adequate deburring of tubing after being cut, correct ferrule installation for each type, proper tightening, and methods to prevent over-torquing on reconnection.

Due to the stop-work order on welding and subsequent dogoff, we will be rescheduling the training classes when the work force increases. We will send a notice of future training schedules to NSRS or ERT, inviting them to attend and evaluate our training classes.

TLK

NRC

TVA 64 (OS-9-65)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : E. R. Ennis, Plant Manager, Watts Bar Nuclear Plant

FROM : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

DATE : OCT 25 1985

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is NSRS Report No. IN-85-544-001

Subject Fire Door Discrepancies

Concern No. IN-85-544-001

and associated recommendations for your action/disposition.

It is requested that you respond to this report and the attached recommendations by November 7, 1985. Should you have any questions, please contact R. A. Kaer at telephone 128-615-365-4414.

Recommend Reportability Determination: Yes _____ No X

Original signed by
M. S. Kidd
Director, NSRS/Designee

Attachment
cc (Attachment):
H. N. Culver, W12A19 C-K
QTC/ERT, Watts Bar Nuclear Plant
W. F. Willis, E12B16 C-K (4)

--Copy and Return--

To : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

From: _____

Date: _____

I hereby acknowledge receipt of NSRS Report No. IN-85-544-001
Subject Fire Door Discrepancies for action/disposition.

_____ _____
Signature Date

0053U

Q-85-544-001-01 - "Fire Door Discrepancies"

The noted discrepancies concerning doors A-124 and A-117 should be corrected.

QUALITY
TECHNOLOGY
COMPANY

P.O. BOX 600
Sweetwater, TN
37874

ERT INVESTIGATION REPORT

CONCERN NO.: IN-85-544-001

CONCERN: Management directed work to be done on Unit 1 & 2 fire doors without work plan, work package, documents or inspections, i.e. welding to replace locks, epoxy used in lieu of welding.

PERFORMED BY: R. A. Kaer

Details:

PERSONNEL CONTACTED: Confidential

DOCUMENTS REVIEWED:

Drawings -46W401-5, Rev 7- Architectural Plan El 708.0 & 713.0
46W454-6, Rev 23 - Architectural Door And Hardware Schedule
46W454-9, Rev 21 - Architectural Door and Hardware Schedule
46W454-10, Rev 32 - Architectural Door and Hardware Schedule
46W454-11, Rev 17 - Architectural Door and Hardware Schedule
46W454-12, Rev 4 - Architectural Door and Hardware Schedule
46W454-14, Rev 23 - Architectural Door and Hardware Schedule

Engineering Change Notices 4196, 3281, and 2597
Action Item (AI) #727
Work Plan 4933
Work Package C394C21
Work Plan 3553

SUMMARY OF INVESTIGATION:

The concern is not substantiated. Cognizant personnel were interviewed, applicable procedures and documents were reviewed, and a field walkdown was performed. The results of the above did identify doors which had been reworked, however, the rework of these doors were documented and covered under a work package and/or work plan.

The statement that management directed the work to be done without the work packages, work plans, documentation or inspection could not be substantiated. Personnel involved in the installation of fire doors, including craftsmen, foremen, general foremen, inspectors, and engineers were interviewed. None of these individuals could identify any work which took place on fire doors without the proper documentation and inspection. During the conduction of this investigation, several fire doors were noted as not working properly. These items are addressed in the Observation section of this report.

FINDINGS:

During the initial interview, the CI stated that several fire doors had been worked on without the use of work plans, work packages, documentation or inspections. The names of the individuals involved, as well as the general locations, were stated, however there were no specific door numbers given.

Cognizant craft personnel were interviewed. During these interviews, several fire doors were indentified as being reworked. These doors are as follows:

Door A-56, Elevation 713, Auxiliary Building
Door A-181, Elevation 772, Auxiliary Building
Door A-182, Elevation 772, Auxiliary Building
Door A-194, Elevation 772, Auxiliary Building
Door A-195, Elevation 772, Auxiliary Building

Doors A-181, A-182, A-194 and A-195 are fire doors to the Vital Battery Rooms. Door A-56 is a fire door between the Service Building and the Auxiliary Building, just outside the Titration Room (Room 713.0-A3).

A walkdown was performed to visually inspect the fire doors discussed in the interviews as well as additional fire doors in the Auxiliary and Turbine Buildings. The fire doors were inspected for any physical signs of rework (i.e. welding, grinding, holes, changed hardware, etc.). It was noted that doors A-181, A-182 and A-195 did appear to have had some grinding and epoxy work done on the frame and door face, (see work plan 3553 below). There was no visible apparent rework to the remaining doors that were inspected.

Civil Construction and Nuclear Service Branch (NSB) personnel were contacted and were questioned as to whether or not any work packages or work plans existed against fire doors A-56, A-181, A-182, A-194 and

A-195. Two work plans; 4933 and 3553, and one work package, C-394C21, were identified as being against these doors. These work packages/plans were reviewed to determine the scope of work involved. The following is a general outline of these packages:

Work Plan 3553- Fire Doors were to be repaired in accordance with the requirements given in NCR-4443. This included using metal filler epoxy , grinding and tack welding of bolts. This covered the items noted during the walkdown for doors A-181, A-182 and A-195.

Work Plan 4933 - General rework and inspection of fire doors including the replacement of weatherstripping on some doors.

Work Plan C-394C21- Lock sets (cylinders) were to be replaced with high security cylinders and covers in accordance with - Engineering Change Notice 3281.

The work described in the two work plans and the one work package, covers the work described by the craftsmen during their interviews. This was verified by a follow up contact of the craft personnel involved.

The statement in the concern that management directed the work to be done without the proper documents or inspections could not be substantiated. None of the personnel interviewed indicated that work was performed without the proper documentation in place. This was further verified in the review of related documentation (i.e. door data sheets, inspection reports, etc.). In no instance, was any documentation found, which was dated prior to the issuance date of the work plan/package.

The results of the investigation as well as the fire door numbers were discussed with the CI. The CI stated that these doors were the ones he was questioning and was unaware of the nonconformance report and work plans that were issued to rework the fire doors. The CI had no additional related concerns and was satisified with the results.

CONCERN NO: IN-85-544-001

OBSERVATIONS:

During the conduction of this investigation, several fire doors were noticed as being damaged or not working properly. They are as follows:

Door A-124, Elevation 737, Auxiliary Building - Does not close properly and creates a fire breach when it remains open. This will require corrective action to either repair the door or place a fire watch at the door.

Door A-143, Elevation 757, Auxiliary Building - Does not properly close. This is addressed in ERT Investigation Report IN-85-311-008.

Door A-117, Elevation 729, Auxiliary Building - Does not have an adequate seal around the top of the door. The weatherstripping is coming off in the upper left hand corner. There is a dent above the hinge area on the left hand door. This will require corrective action to replace the weatherstripping around the frame and repair the left hand door so that an adequate seal can be achieved.

CONCLUSION:

The concern is not substantiated. This conclusion is based on the following:

* Cognizant personnel were not aware of any work performed on fire doors without the proper documentation.
* There is no documented evidence that work was performed prior to the work packages or work plans being issued.
* All fire doors identified by the cognizant personnel, as being reworked, were properly documented

Prepared by _____ 10/15/85 date

Reviewed by _____ 10/15/85 date

Report Reviewed & Accepted: _____ 10/22/85 NRC

REQUEST FOR REPORTABILITY EVALUATION

FINAL

1. Request No. IN-85-544-001 _____
(ERT Concern No.) (ID No., if reported)

2. Identification of Item Involved: Fire Doors
(Nomenclature, system, manuf., SN, Model, etc.)

3. Description of Problem (Attach related documents, photos, sketches, etc.)

Work Performed on Fire Doors Without Proper Documentation and Inspection

4. Reason for Reportability: (Use supplemental sheets if necessary)

A. This design or construction deficiency, were it to have remained uncorrected, could have affected adversely the safety of operations of the nuclear power plant at any time throughout the expected lifetime of the plant.

NO X YES ____ If Yes, Explain: _____

AND

B. This deficiency represents a significant breakdown in any portion of the quality assurance program conducted in accordance with the requirements of Appendix B.

No X Yes ____ If Yes, Explain: _____

OR

C. This deficiency represents a significant deficiency in final design as approved and released for construction such that the design does not conform to the criteria bases stated in the safety analysis report or construction permit.

No X Yes ____ If Yes, Explain: _____

OR

REQUEST FOR REPORTABILITY EVALUATION

D. This deficiency represents a significant deficiency in construction of or significant damage to a structure, system or component which will require extensive evaluation, extensive redesign, or extensive repair to meet the criteria and bases stated in the safety analysis report or construction permit or to otherwise establish the adequacy of the structure, system, or component to perform its intended safety function.

No X Yes ____ If Yes, Explain: _____

_____

_____

OR

E. This deficiency represents a significant deviation from performance specifications which will require extensive evaluation, extensive redesign, or extensive repair to establish the adequacy of the structure, system, or component to perform its intended safety function.

No X Yes ____ If Yes, Explain: _____

_____

_____

IF ITEM 4A, AND 4B OR 4C OR 4D OR 4E ARE MARKED "YES", IMMEDIATELY HAND-CARRY THIS REQUEST AND SUPPORTING DOCUMENTATION TO NSRS.

This Condition was Identified by: O.R. Thew — ERT Group Manager — 365-4464 Phone Ext.

O.R. Thew for — ERT Project Manager — 365-4414 Phone Ext.

Acknowledgment of receipt by NSRS

_____ Date _____ Time _____

Signed

NRC

TVA 64 (OS-9-65)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : E. R. Ennis, Acting Site Director, Watts Bar Nuclear Plant

FROM : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-k

DATE : OCT 30 1985

SUBJECT: CORRECTIVE ACTION RESPONSE EVALUATION

REPORT NO. : IN-85-119-001

SUBJECT : INSTRUMENT SENSING LINE SLOPE

CONCERN NO.: IN-85-119-001

(X) ACCEPT ( ) REJECT

The additional information provided in the response dated October 14, 1985, is acceptable. However, upon follow-up verification, NSRS will evaluate justification for the determination that cleanliness requirements need not be specified for stainless sense lines other than the radiation sampling system.

Please notify NSRS referencing this concern number (IN-85-119-001) when slope and hanger deficiencies have been corrected.

K. W. Whitt

Attachment
cc (Attachment):
H. N. Culver, W12A19 C-K
QTC/ERT-WBN--For response to employee
W. F. Willis, E12B16 C-K (4)

TVA 64 (OS-9-63) (Continuous)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : K. W. Whitt, Director, Nuclear Safety Review Staff, E3A8 C-K

FROM : Guenter Wadewitz, Project Manager, Watts Bar Nuclear Plant OC

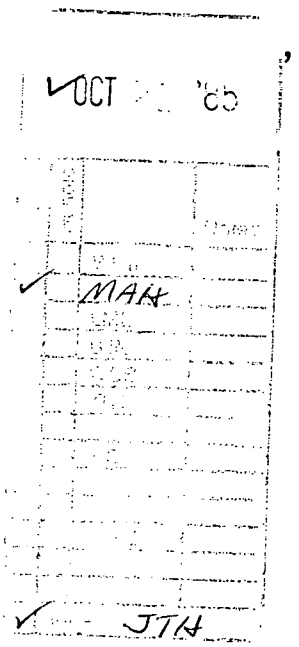
DATE : OCT 14 1985

SUBJECT: WATTS BAR NUCLEAR PLANT - REQUEST FOR INVESTIGATION/EVALUATION

Attached is our response to employee concern number IN-85-119-001.

W J Fiscler for
Guenter Wadewitz

COC:LLE
QERT.LE
Attachments
cc (Attachment):
H. N. Culver, W12A19 C-K



QTC CONCERN IN-85-119-001

The following response is the same as that to QTC concern PH-85-001-002 which reads:

> "The instrument line slope problems and the additional deficiencies were identified on July 9, 1985, by NCR 6172. ECN 5846 and workplans 5320 and 5846-2 will be generated to relocate the reactor coolant flow instrumentation to reduce sense line length and minimize maintenance requirements after fuel load. New instrument sense lines will be installed and documented to correct all slope and hanger deficiencies as listed on Employee Concern IN-85-218-001.
>
> The arc strikes discovered on the subject instrument lines will be eliminated with the installation of new piping. Generally, arc strike identification and removal is handled according to WBNP-QCP-4.10-18 and is not considered a generic deficiency by OC.
>
> The discovery of foreign material contacting stainless steel (i.e. duct tape) is similarly considered not to be a generic deficiency as Process Specification G29M 4.M.4.1 requires no specific cleaning requirements for these sense lines. Those sense lines that are required to be cleaned (swipe tested) are identified on cleanliness drawings and are limited to the 47W625 radiation sampling system per G29M 4.M.4.1 section 3.
>
> NOTE: NCR 6172 was termed significant by OC-QMO and NRC reportability will be reviewed by NEB-NLS."

Principally prepared by: Jim Cruise, NSB-B, extension 397.

TLP

NRC

TVA 64 (OS-9-65)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : Craven Crowell, Director of Information, E12A4 C-K

FROM : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

DATE : OCT 29 1985

SUBJECT: REPORTS SUBMITTAL FOR "NUCLEAR SAFETY UPDATE"

Attached is one copy each of the following final reports of investigation or evaluation of employee concerns for your use, summarization, and publication in Nuclear Safety Update. All have been reviewed and accepted by NSRS.

Concern No.	Investigation Performed by	Concern No.	Investigation Performed by
IN-85-010-004	ERT		
IN-85-140-001	NSRS		
IN-85-311-008	ERT		

Original signed by
M. S. Kidd

K. W. Whitt

Attachments

Please acknowledge receipt by signing, copying, and returning this transmittal form to J. T. Huffstetler at E3B37 C-K.

Name Date

Repo4A:B

cc: H. N. Culver, W12A19 C-K
E. R. Ennis, WBN
W. F. Willis, E12B16 C-K (4)
QTC/ERT, CONST-WBN

EMPLOYEE CONCERN DISPOSITION REPORT

CONCERN NO. IN-85-140-001

DATE OF PREPARATION: 10-23-85

CONCERN: The amount of paper work processed through the Control Room and shift Engineer's office- especially Surveillance Inspections - focuses the attention of the licensed operators away from a vigilant watch of plant status and conditions into making sure everything is properly filled out on all the many pages of data.

INVESTIGATION PERFORMED BY: TVA NSRS

FINDING(S): The surveillance paperwork load was felt to detract from "operationl vigilance" to some extent by most operators interviewed. This surveillance workload, however, was a normal function of the position at all TVA nuclear plants and could be partiallly attributed to the varied workload requirements and preoperational testing performed in the unit control room prior to fuel loading. This would appear to be primarily a scheduling and shift management function. It was stated by Operations Management interviewed that the Shift Engineer had the authority to man the shift with operations personnel as necessary for the workload and to meet WBN Technical Specifications requirements (requirements beginning at fuel load). Documentation reviewed indicated that this was correct for NRC required licensed and support positions, however, documented authority allowing the Shift Engineer to man the unit with a third Unit Operator position as he deemed necessary for workload requirements was not found in the Operation Section Letters and other documentation reviewed relating to shift manning.

CORRECTIVE ACTION(S)

Operations has issued AI-2.4, Revision 6, Section 2.3 and OSLA, Revision 0 which states that the shift engineer has the responsibility and authority to man the shift at all times with the proper number of personnel as conditions dictate.

CLOSURE STATEMENT: This concern was partially substantiated.

TVA 64 (OS-9-65)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : William H. Thompson, Manager, Employee Relations, E12B15 C-K KWW

FROM : E. R. Ennis, Acting Site Director, Watts Bar Nuclear Plant P&E (Nuclear)

DATE : OCT 02 1985

SUBJECT: WATTS BAR NUCLEAR PLANT - RESPONSE TO REQUEST FOR INVESTIGATION/EVALUATION

Reference: QTC concern number IN-85-140-001

The above referenced employee concern investigation report transmitted by your memorandum for investigation and/or evaluation has been reviewed by the Watts Bar P&E (Nuclear) staff. Our response is outlined in the attached employee concern report.

Should you have any further questions please contact Roger Goode at Watts Bar extension 8833.

Total pages transmitted: 2

E. R. Ennis

JEG:JPM:RWG:LB
Attachment

- -

To: Roger Goode, Project Engineer, Technical Services, Watts Bar Nuclear Plant

From: K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

I hereby acknowledge receipt of the response to employee concern number IN 85 140 001 and associated documents. Total number of pages received 2.

Signature 10/15/85 Date

(Please return copy of entire page.)

0374

ATTACHMENT 4

EMPLOYEE SAFETY CONCERN

TO: Redford Norman / Section Supervisor — Operations / Section

FROM: IN-85-140-001 / Employee

DATE: 9/17/85

EMPLOYEE CONCERN:

Excessive paperwork affects Operations.

RESOLUTION:

Operations has maintained the standard of properly manning the plant for proper operation and documentation by issuing AI-2.4, Revision 6, Section 2.3 and by OSLA-45, Revision 0 which states that the Shift Engineer has the responsibility and authority to man the shift at all times with proper number of personnel as conditions dictate.

Resolved by: Redford Norman RN / Section Supervisor — Date: 9/17/85

Distribution:
Copy 1 - Section Supervisor)
Copy 2 - Master File)---Concern
Copy 3 - Employee)

Copy 4 - Employee)---Completed Resolution
Copy 1 - Master File)

TVA 64 (OS-9-65)

UNITED STATES GOVERNMENT

Memorandum TENNESSEE VALLEY AUTHORITY

TO : E. R. Ennis, Acting Site Director, WBN

FROM : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

DATE : September 3, 1985

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is NSRS Report No. I-85-211-WBN

Subject Excessive Paperwork Affects Operations

Concern No. IN-85-140-001 and IN-85-616-001

and associated recommendations for your action/disposition.

It is requested that you respond to this report and the attached recommendations by September 16, 1985. Should you have any questions, please contact W. D. Stevens at telephone 6970-K; 222-WBN.

Recommend Reportability Determination: Yes _____ No X

Director, NSRS/Designee

cc: W. F. Willis, E12B16 C-K (4)
J. W. Coan, P-104 SB-K
H. N. Culver, W12A19 C-K
Guenter Wadewitz, WBN
QTC/ERT, CONST-WBN

--Copy and Return--

To : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

From:

Date:

I hereby acknowledge receipt of NSRS Report No. _____

Subject _____

for action/disposition.

_____ _____
Signature Date

(Please copy entire page for return)

file copy

TVA 64 (OS-9-65)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : E. R. Ennis, Acting Site Director, Wats Bar Nuclear Plant P&E (Nuclear)

FROM : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

DATE : OCT 16 1985

SUBJECT: CORRECTIVE ACTION RESPONSE EVALUATION

REPORT NO. : I-85-211-WBN

SUBJECT : Excessive Paperwork Affects Operations

CONCERN NO.: IN-85-140-001

(X) ACCEPT ( ) REJECT

( ) ACCEPT WITH COMMENT

Original Signed By
M. A. Harrison

K. W. Whitt

Attachments
cc (Attachments):
J. W. Coan, P-104 SB-K
H. N. Culver, W12A19 C-K
QTC/ERT, Watts Bar Nuclear Plant--For response to employee.
G. Wadewitz, Watts Bar Nuclear Plant
W. F. Willis, E12B16 C-K (4)

0027U

TENNESSEE VALLEY AUTHORITY

NUCLEAR SAFETY REVIEW STAFF

INVESTIGATION REPORT NO. I-85-211-WBN

Milestone 2

SUBJECT: ERT CONCERN NO. IN-85-616-001
IN-85-140-001

LEAD INVESTIGATOR: W D Stevens — W. D. STEVENS — DATE 8/30/85

INVESTIGATOR: Bruce F. Siefken — B. F. SIEFKEN — DATE 8/30/85

APPROVED BY: — M. A. HARRISON — DATE 8/30/85

I. BACKGROUND

The employee concerns as received from the ERT stated:

Concern IN-85-616-001

"Excessive paperwork causes reactor operators to be unavailable for running the plant for two hours. Much of this paperwork could be delegated to other groups with the operators having oversight."

Concern IN-85-140-001

"The amount of paperwork processed through the Control Room and Shift Engineer's office--especially surveillance inspections--focuses the attention of the licensed operators away from a vigilant watch of plant conditions into making sure everything is properly filled out on all the many pages of data.

II. SCOPE

Documentation that related to both licensed and unlicensed control room operator duties was reviewed and unit operators and operations management were interviewed regarding required paperwork performed and its effect on "operator vigilance" during plant operations.

III. SUMMARY OF FINDINGS

Based upon a review of applicable documents and interviews with Unit Operators and Operations Management, the specific findings listed below were identified:

A. Routine paperwork as described by interviewees consisted of the following:

1. Daily journal entries.

2. System status file/configuration log updates.

3. Review of daily, weekly, and other periodic surveillance instructions performed by lower grade operators.

4. Review of Assistant Unit Operator routine log sheets.

5. Actual performance and documentation of Unit Operator performed surveillance instruction procedures.

This paperwork appeared consistent with Unit Operator (Nuclear) duties as described in the job description for the position and as required by the following plant procedures:

1. AI-2.1, "Authorities and Responsibilities for Safe Operation and Shutdown," sections 3.5, 3.15, and 3.17.

2. Operating Section Letter - 2, "Maintaining Cognizance of Operational Status."

3. Operating Section Letter - 41, "Operations Narrative Log Books."

4. Surveillance Instruction - 2, "Shift and Daily Surveillance Log" (requirements for operator signoff reviews).

B. Interviews with licensed and unlicensed unit operators resulted in the following information:

- o Estimates of the time required for performance of routine paperwork varied from 30 minutes to 8 hours and was dependent on the shift worked and the plant conditions.

- o No meaningful amount of paperwork could be delegated to any group other than Operations. An extra (third) Unit Operator was needed only during sporadic heavy workload periods.

- o The paperwork load which consisted of surveillance instruction performance for Emergency Core Cooling System (ECCS) equipment and valve stroke timing tests on safety-related equipment appeared to be the major items that diverted the unit operator's attention from the rest of the main control room boards. It was stated, however, that no one other than another qualified operator could perform this function on a control room panel.

C. Interviews with Operation Management resulted in the following information:

- o A third Unit Operator would normally be used on the control room functions during unit startup conditions up to approximately 20 percent power.

- o The Shift Engineer had the authority to call in and use operations personnel as necessary for shift manning requirements.

- o Surveillance tests which were performed on unit equipment in the control room but outside the "horseshoe" area of the control boards involving long-term testing (e.g., Diesel Generator Load Testing) were normally performed by a third Unit Operator if the workload was heavy or test performance was scheduled on the day shift.

- o Surveillance testing performed in the control room by the Unit Operator helped him in maintaining an awareness of unit conditions.

IV. CONCLUSIONS AND RECOMMENDATIONS

A. Concern No. IN-85-616-001

Conclusion

Concern IN-85-616-001 was not substantiated due to the following considerations.

1. The interviews conducted indicated that although the paperwork load was at times heavy due to present work conditions (testing prior to fuel loading) and that to some degree this paperwork might detract from normal duties, it did not appear to be of the magnitude that the operators were "unavailable for running the plant for two hours."

2. The majority of paperwork causing the greatest concern to Unit Operators interviewed (e.g., performing and reviewing Surveillance Instructions) could not be performed by "other groups" due to the nature of the work performed and NRC licensing requirements.

Recommendation

None

B. Concern No. IN-85-140-001

I-85-211-WBN-01, "Additional Operator Manning Authority"

Conclusions

Concern IN-85-140-001 was partially substantiated due to the following considerations.

1. As indicated in conclusion A.1 (above), the surveillance paperwork load was felt to detract from "operational vigilance" to some extent by most operators interviewed. This surveillance workload, however, was a normal function of the position at all TVA nuclear plants and could be partially attributed to the varied workload requirements and preoperational testing performed in the unit control room prior to fuel loading. This would appear to be primarily a scheduling and shift management function. It was stated by Operations Management interviewed that the Shift Engineer had the authority to man the shift with operations personnel as necessary for the workload and to meet WBN Technical Specifications requirements (requirements beginning at fuel load). Documentation reviewed indicated that this was correct for NRC required licensed and support positions, however, documented authority allowing the Shift Engineer to man the unit with a third Unit Operator position as he deemed necessary for workload requirements was not found in the Operation Section Letters and other documentation reviewed relating to shift manning.

NSRS Recommendation

Document the authority of the Shift Engineer to provide additional operator support above the minimum staffing requirements as necessary to meet the changing workloads both prior to and after fuel loading.

EMPLOYEE CONCERN DISPOSITION REPORT

CONCERN NO. IN-85-311-008

DATE OF PREPARATION: 10-23-85

CONCERN: The fire door A143, 20 ft outside control room entrance is habitually open despite safety signs that require door to be closed at all times. Installing a self-closing mechanism was expressed as being a solution to this problem.

INVESTIGATION PERFORMED BY: ERT

FINDING(S): Door A143 was open most of the time, constituting an unauthorized fire breach. An incorrect door check was installed and was incapable of closing the door against negative pressure created by fans in BD room A. Lack of cross reference between different makes of door checks apparently contributed to installation of the incorrect door check.

CORRECTIVE ACTION(S)

The door check problem and additional deficiencies were identified on September 6, 1985, by NCR 6306. OE will initiate an ECN to cover work after receiving NCR 6306. OC will write a workplan to rework door A143 door check and document per QCP-2.18 (type and model hardware).

Due to the significance of fire doors (fire barriers), OC will inspect, rework and document all fire doors with surface mounted, concealed and mortise door checks per QCP-2.18. OC will also revise QCP-2.18 for traceability of door checks.

OE will update 46W454 series to provide a cross reference to verify engineering equivalent to door checks.

Other fire doors will be reinspected for proper closure mechanisms in accordance with NCR 6306, and will be reworked as necessary to assure proper closure is installed.

CLOSURE STATEMENT: This concern was substantiated.

FINAL

REQUEST FOR REPORTABILITY EVALUATION

1. Request No. IN-85-311-008 (ERT Concern No.) _____ (ID No., if reported)

2. Identification of Item Involved: _____ (Nomenclature, system, manuf., SN, Model, etc.)

3. Description of Problem (Attach related documents, photos, sketches, etc.)

Fire door A143, 20 ft outside control room entrance is habitually open despite safety signs that require door to be closed at all times.

4. Reason for Reportability: (Use supplemental sheets if necessary)

A. This design or construction deficiency, were it to have remained uncorrected, could have affected adversely the safety of operations of the nuclear power plant at any time throughout the expected lifetime of the plant.

NO ___ YES X If Yes, Explain: Installation of the incorrect door check resulted in an unauthorized fire breach that remained uncontrolled and uncorrected.

AND

B. This deficiency represents a significant breakdown in any portion of the quality assurance program conducted in accordance with the requirements of Appendix B.

No ___ Yes X If Yes, Explain: Contrary to the requirements of 10CFR50, App B, Criterion V, Hardware Schedule Drawings were not revised to delineate the correct door hardware to be installed, when an approved equal was used.

OR

C. This deficiency represents a significant deficiency in final design as approved and released for construction such that the design does not conform to the criteria bases stated in the safety analysis report or construction permit.

No X Yes ___ If Yes, Explain: _____

OR

REQUEST FOR REPORTABILITY EVALUATION

D. This deficiency represents a significant deficiency in construction of or significant damage to a structure, system or component which will require extensive evaluation, extensive redesign, or extensive repair to meet the criteria and bases stated in the safety analysis report or construction permit or to otherwise establish the adequacy of the structure, system, or component to perform its intended safety function.

No X Yes ____ If Yes, Explain: _____

OR

E. This deficiency represents a significant deviation from performance specifications which will require extensive evaluation, extensive redesign, or extensive repair to establish the adequacy of the structure, system, or component to perform its intended safety function.

No X Yes ____ If Yes, Explain: _____

IF ITEM 4A, AND 4B OR 4C OR 4D OR 4E ARE MARKED "YES", IMMEDIATELY HAND-CARRY THIS REQUEST AND SUPPORTING DOCUMENTATION TO NSRS.

This Condition was Identified by: O. L. Thero — ERT Group Manager — 365-4464 Phone Ext.

W. Klein S. Lehn — ERT Project Manager — 365-4444 Phone Ext.

Acknowledgment of receipt by NSRS

_____ Date _____ Time _____

Signed

EMPLOYEE CONCERN DISPOSITION REPORT

CONCERN NO. IN-85-010-004

DATE OF PREPARATION: 10-22-85

CONCERN: Problem with fire protection piping design in Unit #1. CI gave this example: Unit 1, Aux. building, elev. 692', undersized fire protection piping for the amount of sprinklers being fed by line, EG: 5 sprinkler heads on a 1" line fed by a 1 1/4" line. CI feels that this design does not meet fire protection codes.

INVESTIGATION PERFORMED BY: ERT

FINDING(S): The fire protection sprinkler system piping was installed in accordance with NPFA Section 13, chapter 3. The adequacy of the sprinkler system was established based upon hydraulic design calculations, empirical analysis, field walkdown inspections and inspections by authorized agencies. An installation similar to that described in the concern could not be located.

CORRECTIVE ACTION(S) None required

CLOSURE STATEMENT: This concern was not substantiated.

ERT Form Q

TVA 64 (OS-9-65)

UNITED STATES GOVERNMENT

Memorandum TENNESSEE VALLEY AUTHORITY

TO : S. Schum, QTC-ERT Program Manager, WBN CONST

FROM : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

DATE : September 24, 1985

SUBJECT: TRANSMITTAL OF ACCEPTED FINAL REPORTS

The following final reports have been reviewed and accepted by NSRS and are transmitted to you for preparation of employee responses:

IN-85-010-004	

K. W. Whitt

Please acknowledge receipt by signing below, copying and returning this form to J. T. Huffstetler, E3B37 C-K.

Name Date

Attachments

cc (Attachments):

J. W. Coan, P-104 SB-K
H. N. Culver, W12A19 C-K
E. R. Ennis, Watts Bar Nuclear Plant
G. Wadewitz, Watts Bar Nuclear Plant
W. F. Willis, E12B16 C-K (4)

REPO7:G5

QUALITY TECHNOLOGY COMPANY
P.O. BOX 600 • SWEETWATER, TN. 37874 • (615)365-4414

ERT INVESTIGATION REPORT

CONCERN NO: IN-85-010-004

CONCERN: Problem with fire protection piping design in Unit 1. CI gave this example: Unit 1, Aux Bldg, Elev 692', undersized fire protection piping for the amount of sprinklers being fed by line; 5 sprinkler heads on a 1" line being fed by a 1 1/4" line. CI feels that this design does not meet fire protection codes.

Performed by: K. M. Vadlamani

Details:

Personnel Contacted: Confidential

Documents Reviewed:

FSAR Chapter 9, Section 9.5.1 "Fire Protection System"

General Construction Specification, G-73-Inspection, Testing and Documentation Requirements for Fire Protection Systems and Features

WBN QCI 1.39, Fire Protection Program

National Fire Protection Association 13, Standard for the Installation of Sprinkler Systems

WB-DC-40-17, Design Criteria for Fire Protection System

Drawing 47W491-68, Auxiliary Building - Unit 1 & 2 Mechanical Fire Protection (as Constructed)

Objectives:

The objective of this investigation is to determine whether or not the fire protection piping referenced in the subject concern, is designed in accordance with the corresponding National Fire Protection Code for the sprinkler systems.

Discussion:

Fire Protection System documentation was reviewed, which indicated that this System (System 26) is designated as a Limited Quality Assurance Program System. Watts Bar design criteria document SB-DC-40-17, Section 2.7 "System Classification", states that the portion of the fire protection system serving the auxiliary feedwater system, auxiliary charging system, and spent fuel pool are designated as Class C. The remainder of the fire protection system is designed to the requirement of the NFPA code. NFPA Volume 1, Section 13, provides the installation requirements for sprinkler systems, which is based upon engineering principles, test data, and field experience. NFPA, Section 13, addresses: general information (Chapter 1), system components (Chapter 3), spacing/location and position of sprinklers (Chapter 4), and hydraulically designed sprinkler systems (Chapter 7). These chapters are related to the subject concern.

Discussions with the cognizant fire protection system engineers, (ie, ENDES, Construction and Nuc Pwr) indicated that the entire sprinkler system was installed per the guidelines provided in NFPA, Section 13. The sprinkler installations and their water supplies located in the Auxiliary Building (Elev. 692´) are considered as ordinary hazard occupancies. This is based upon the NFPA guidelines in 13.1-7. TVA´s pipe schedule for the sprinkler head installation for ordinary hazard occupancies, is in accordance with NFPA Guidelines given in 13.3-4 & 13.3-6. However, the design calculations and verification of the sprinkler system is based upon NFPA Chapter 7, "Hydraulically Designed Sprinkler Systems". This chapter states that "pipe sizes are selected on a pressure loss basis to provide a prescribed density distributed with a reasonable degree of uniformity over a specified area." Chapter 7, Article 7-1.1.2 specifies that, "the design basis for a hydraulically designed sprinkler system supersedes the rules in the sprinkler standard governing pipe schedules, except that all systems continue to be limited by area, and pipe sizes shall be no less than 1 inch nominal for ferrous piping and 3/4 inch for copper tubing." In addition, NFPA, Section 13, Chapter 3, exception to article 3-4.1, specifies that "the pipe schedule provisions do not apply to hydraulically designed systems." ENDES personnel stated that the adequacy of the overall fire protection sprinkler system, including those in the Auxiliary Building at Elev. 692´, was established via hydraulic design calculations, empirical analysis, engineering field walkdowns, and acceptance inspections conducted by the fire insurance inspectors (periodically). Cognizant engineering personnel (CONST/ENDES) stated that they have not come across a situation similar to the subject concern.

ERT INVESTIGATION REPORT

CONCERN NO: IN-85-010-004

On 8-26-85 the investigator and the Nuclear Power Fire Protection Engineer performed a field walk-down of the Auxiliary Building at Elev. 692', 713', 737' and 757'. The purpose of this walkdown was to determine if in fact the condition, as expressed in the subject concern does exist. The team could not locate an installation which was identical or similar with that described in the subject concern. Two fire protection sprinkler piping lines, located near the charging pump rooms A11, A10, and A9 in the Auxiliary Building (Ele. 692'), matched the description of the subject concern for the number of sprinkler heads in one line. However, the branch pipes containing five (5) sprinkler heads were 1" & 1 1/4", and each were fed by a 1 1/2" cross feed pipe. The field condition was compared with the corresponding WBNP-Unit 1 mechanical fire protection drawing 47W491-68, Rev. 2. The piping is part of 10CFR50 Appendix "R" floor area sprinkler piping and is in conformance with the drawing.

The observations are as follows:

Line #	Sprinkler #	Branch Pipe Size	Cross-Feed Pipe size
1.	A82A, A81A, & A79A	1"	1 1/2"
	A28A & A89A	1 1/4"	1 1/2"
2.	A35A & A36A	1"	1 1/2"
	A38A, A39A, & A53A	1 1/4"	1 1/2"

The investigation was suspended at this point because it was felt that a complete investigation could not be conducted unless specific details about the questionable installation were availble.

On 9/4/85, the CI was contacted to discuss the results of the subject investigation. The CI agreed with the investigation results and has no further questions of the subject concern.

Summary of Findings:

1. The fire protection sprinkler system piping is installed in accordance with NFPA Section 13, Chapter 3.

2. The sprinkler system design is based upon NFPA Section 13, Chapter 7, "Hydraulically Designed Sprinkler System".

ERT INVESTIGATION REPORT

3. NFPA Section 13, Chapter 3, Article 4.1, "Exception", exempts the pipe schedule provisions to hydraulically designed sprinkler systems.

4. NFPA Section 13, Chapter 7, Article 1.1.2 specifies that the design basis for hydraulically designed sprinkler system supercedes the rules in the sprinkler standard governing pipe schedules.

5. The adequacy of the sprinkler system was established based upon hydraulic design calculations, empirical analysis, field walkdown inpsections, and inspections by authorized agencies.

6. The investigation could not locate an installation which is similar to that described in the subject concern.

Conclusion:

Based upon the investigation results, the subject concern as stated is not substantiated.

Report Reviewed & Accepted: 9/20/85

Prepared by Krishna Mohan Vadlamani 9/16/85
date

Reviewed by 9/16/85
date

FINAL

REQUEST FOR REPORTABILITY EVALUATION

1. Request No. IN-85-010-004 (ERT Concern No.) _____ (ID No., if reported)

2. Identification of Item Involved: Fire Protection System Piping (Nomenclature, system, manuf., SN, Model, etc.)

3. Description of Problem (Attach related documents, photos, sketches, etc.)

Problem with fire protection piping design in Unit #1. CI gave this example: Unit 1, Aux. Bldg., elev. 692', undersized fire protection piping for the amount of sprinklers being fed by line EG: 5 sprinkler heads on a 1" line being fed by a 1 1/

line CI feels that this design does not meet fire protection codes.

4. Reason for Reportability: (Use supplemental sheets if necessary)

A. This design or construction deficiency, were it to have remained uncorrected, could have affected adversely the safety of operations of the nuclear power plant at any time throughout the expected lifetime of the plant.

NO X YES ___ If Yes, Explain: _____

_____

_____

AND

B. This deficiency represents a significant breakdown in any portion of the quality assurance program conducted in accordance with the requirements of Appendix B.

No X Yes ___ If Yes, Explain: _____

_____

_____

OR

C. This deficiency represents a significant deficiency in final design as approved and released for construction such that the design does not conform to the criteria bases stated in the safety analysis report or construction permit.

No X Yes ___ If Yes, Explain: _____

_____

_____

OR

REQUEST FOR REPORTABILITY EVALUATION

D. This deficiency represents a significant deficiency in construction of or significant damage to a structure, system or component which will require extensive evaluation, extensive redesign, or extensive repair to meet the criteria and bases stated in the safety analysis report or construction permit or to otherwise establish the adequacy of the structure, system, or component to perform its intended safety function.

No X Yes ____ If Yes, Explain: ____________________

OR

E. This deficiency represents a significant deviation from performance specifications which will require extensive evaluation, extensive redesign, or extensive repair to establish the adequacy of the structure, system, or component to perform its intended safety function.

No X Yes ____ If Yes, Explain: ____________________

IF ITEM 4A, AND 4B OR 4C OR 4D OR 4E ARE MARKED "YES", IMMEDIATELY HAND-CARRY THIS REQUEST AND SUPPORTING DOCUMENTATION TO NSRS.

This Condition was Identified by: [signature] 365-4464
ERT Group Manager — Phone Ext.

[signature] 365-4414
ERT Project Manager — Phone Ext.

Acknowledgment of receipt by NSRS

[signature]
Signed

Date 9/20/85 Time 1208

TVA 64 (OS-9-65)

UNITED STATES GOVERNMENT

Memorandum TENNESSEE VALLEY AUTHORITY

TO : G. Wadewitz, Project Manager, OC-Watts Bar Nuclear Plant

FROM : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

DATE : OCT 10 1985

SUBJECT: CORRECTIVE ACTION RESPONSE EVALUATION

REPORT NO. : IN-85-311-008

SUBJECT : Fire Door Breaching Problem

CONCERN NO.: IN-85-311-008

(X) ACCEPT ( ) REJECT

( ) ACCEPT WITH COMMENT

Original signed by
M. S. Kidd
K. W. Whitt

Attachments
cc (Attachments):
J. W. Coan, P-104 SB-K
H. N. Culver, W12A19 C-K
QTC/ERT, Watts Bar Nuclear Plant
W. F. Willis, E12B19 C-K (4)

10/11/85--JTH
cc: QTC/ERT, CONST, WBN--For response to employee.

0012U

TVA 64 (OS-9-63) (Continuous)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : K. W. Whitt, Director, Nuclear Safety Review Staff, E3A8 C-K

FROM : Guenter Wadewitz, Project Manager, Watts Bar Nuclear Plant OC

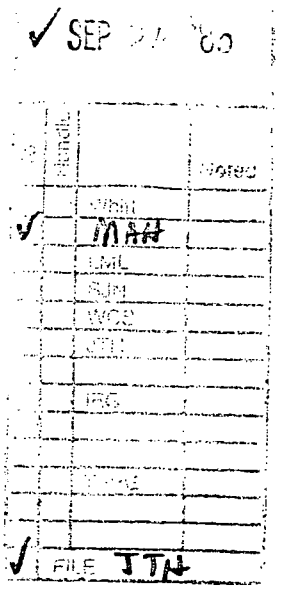
DATE : SEP 18 1985

SUBJECT: WATTS BAR NUCLEAR PLANT - REQUEST FOR INVESTIGATION/EVALUATION

Attached is our response to employee concern number IN-85-311-008.

Guenter Wadewitz

COC:LLE
QERT.LE
Attachments
cc (Attachment):
R. A. Pedde, 12-112 SB-K
H. N. Culver, W12A19 C-K



QTC CONCERN - IN-85-311-008

NFPA's National Fire Codes 1979, Volume 7, Section NFPA 80 states:

> Self Closing Doors. The door shall swing easily and freely and shall be equipped with a closing device to cause the door to close and latch each time it is opened. The closing mechanism shall not have a hold open feature.
>
> Self closing doors are doors which, when opened and released, return to the closed position.
>
> A closing device shall be installed on every fire door.

Originally door A143 would close by itself. Due to HVAC balancing (air flow balance of ductwork, TVA-9C), which caused a pressure buildup on the south side of door A143, air discharge of this pressurized area was insufficient because of a lack of return capacity during the balancing test. When door A143 was opened, it would not close by itself due to the air pressure restraints.

Investigation of the door check on door A143 revealed that the wrong strength size of door check was installed. Therefore, it is concluded that the door check on door A143 is inadequate to close the door.

Examination of the door check installed on door A143 verified a Yale door check was installed instead of a Russwin. Note 4 on drawing 46W454-1 states "all hardware bought by TVA on all contracts shall be the item specified or an approved equal." OE and OC personnel did not know how to determine what the model number of a Yale door check was since Yale, unlike Russwin, does not have a sticker applied to the door check identifying the model number. This resulted in incorrect hardware being installed.

The door check problem and additional deficiencies were identified on September 6, 1985, by NCR 6306. OE will initiate an ECN to cover work after receiving NCR 6306. OC will write a workplan to rework door A143 door check and document per QCP-2.18 (type and model hardware).

Due to the significance of fire doors (fire barriers), OC will inspect, rework and document all fire doors with surface mounted, concealed and mortise door checks per QCP-2.18. OC will also revise QCP-2.18 for traceability of door checks.

OE will update 46W454 series to provide a cross reference to verify engineering equivalent to door checks.

Other fire doors will be reinspected for proper closure mechanisms in accordance with NCR 6306, and will be reworked as necessary to assure proper closure is installed.

NOTE: If NCR 6306 is made significant by OC-QMO, then NRC reportability will be reviewed by NEB-NLS.

TLR
BW

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : Guenter Wadewitz, Project Manager, OC-WBN

FROM : K. W. Whitt, Director, Nuclear Safety Review Staff, E3A8 C-K

DATE : August 20, 1985

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

WBNP PROJECT MANAGER
AUG 21 '85

Note	Distribution	Noted
	AAPC	
✓	CEO	
	CSO	
	PMS	
	QM	
	SE	
RETURN TO MASTER FILE		

Transmitted herein is NSRS Report No. IN-85-311-008

Subject Fire Door Breaching Problem

Concern No. IN-85-311-008

and associated recommendations for your action/disposition.

It is requested that you respond to this report and the attached recommendations by September 6, 1985. Should you have any questions, please contact M. A. Harrison at telephone 6328.

Recommend Reportability Determination: Yes X . No _____

Director, NSRS/Designee

cc: W. F. Willis, E12B16 C-K (4/5)
J. W. Coan, WBN QTC/ERT-WBN
~~H. N. Culver, W12A19 C-K~~

--Copy and Return--

To: K. W. Whitt, Director of Nuclear Safety Review Staff, E7B31 C-K

From: Guenter Wadewitz, Project Manager, Watts Bar Nuclear Plant OC

Date: August 26, 1985

I hereby acknowledge receipt of NSRS Report No. IN-85-311-008

Subject "Incorrect Door Check"

for action/disposition.

Bobbie Bentley for Signature Guenter Wadewitz 8/26/85 Date

(Please copy entire page for return)

NUCLEAR SAFETY REVIEW STAFF RECOMMENDATIONS: IN-85-311-008

Q-85-311-008-01 "Incorrect Door Check"

QC should initiate a NCR to document and resolve the use of the incorrect door check on fire door A143.

Resolution should include a method identifying the installed hardware. A traceability of some of the door checks is uncertain, other fire doors should be verified to contain the correct door checks, or be included on the door.

This item should be evaluated for reportability to the NRC.

CONCERN NO: IN-85-311-008

CONCERN: The fire door A143, 20ft. outside control room entrance is habitually open despite safety signs that require door to be closed at all times. Installing a self-closing mechanism was expressed as being the solution to this concern.

INVESTIGATION
PERFORMED BY: Ray Chappell

DETAILS:

Personnel Contacted:

DOCUMENTS REVIEWED: PURCHASE CONTRACTS-75K52-86100-1, and -2 April 4,1975

DRAWINGS: 46W401-7 R/10
46W454-10 R/32
46W455-13 R/3
46W454-9 R/21
46W454-7 R/25
46W454-1 R/42

This investigation evaluated the concern that fire door A143 was habitually left open, despite safety signs that are posted on the door requiring it to be closed at all times. Door A143 is a fire barrier between the 480V shutdown bd room "A" and "1B".

FINDINGS:

Investigation of this concern verified the following conditions:

1) Door A143 is a fire barrier between the 480V shutdown bd room "A" and "1B".

2) The concern stated that "a self-closing mechanism was expressed as being the solution to this concern." Inspection of door A143 confirmed that a self closing mechanism had previously been installed, however the door check was not capable of closing the door.

Details: (continued)

3) An observation was made of personnel going through door A143. Some personnel; realizing the door would not close by itself; would manually close the door. Most people however would walk through without noticing whether the door would close or remain open, consequently the door remained open most of the time. In discussing this problem with site engineering, they stated that originally the door would close, but evindently since the fans were running in bd room A, they were creating a negative pressure causing too much restaint. Site engineering was asked why this condition was not considered in the design of the door check. They referred the concern to Mr. Don Root in En Des, Knoxville. En Des stated that the fans should not affect the door closure.

4) Drawings 46W454-1 R/42, 46W454-7 R/25, and 46W454-10 R/32, Architectural Door and Hardware Schedules, were reviewed, which identified a Russwin catalog no. 1-2810-6 door check to be installed on door A143. Examination of the door check installed on door A143, verified a "Yale" door check was installed instead of a Russwin. Note 4, on drawing 46W454-1 states, "all hardware bought by TVA on all contracts shall be the item specified or an approved equal". En Des was asked what the approved Yale equal would be for a Russwin door check. They stated a Yale 56BCPXSB would be the equal to a Russwin 1-2810-6. En Des and site personnel however did not know how to determine what the model number of a Yale door check was, since Yale, unlike Russwin, does not have a sticker applied to the door check identifying the model number.

5) The Yale Product Application Group was contacted regarding the method for identifying model numbers of Yale door checks, and what the equal Yale door check would be to the Russwin door check.Yale stated that numbers 2,3,4,5, or 6 would be stamped on the end of the door check, with 6 being the strongest. Yale further confirmed that Yale door check models 56BCPXSB and 3106 were equal to the Russwin model 1-2810-6 however, the series number could not be determined, only the strength. Each series of door checks has the same number system regarding strength. Yale stated that for that particular series, we should find a number six (6) stamped on the end of the door check body.

CONCERN NO: IN-85-311-008

Details: (continued)

Item 5: (continued)

The body of the door check on door A143 was inspected, and determined that the number four (4) was stamped on the end of the door check body. A follow up call to Yale verified the strength of a number four (4) door check is recommended for three (3) foot doors maximum. Door A143 is a four (4) foot door and requires a door check with a strength designator of six (6).

6) In the early stages of the project, doors and hardware were purchased in bulk quanities. Specific door numbers were not identified in the purchase order. Door and hardware schedule drawings were not updated cross-referencing equal type and model hardware to aid in matching the correct hardware with the correct doors. Once a Yale door check is removed from the shipping container the model is difficult to determine.

CONCLUSION:

This concern is substantiated.

This conclusion is based on the following deficiencies:

1) Door A143 was open most of the time, constituting an unauthorized fire breach.

2) The incorrect door check is installed on door A143.

3) No cross reference exists on site to verify approved "Engineering equivalent", (for type and model door hardware) resulting in incorrect hardware being installed.

4) Yale hardware is not uniquely identified, and when removed from the shipping container traceability for model and type of hardware is lost, resulting in incorrect hardware being installed.

Report reviewed & accepted: 8/12/85

Prepared by Raymond D Chappell 8-13-85
date

Reviewed by O K Theis 8/13/85
date

TVA 64 (OS 9-65) (OP-WP

NRC

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO: E. R. Ennis, Plant Manager, Watts Bar Nuclear Plant

FROM: K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

DATE: OCT 30 1985

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is NSRS Report No. I-85-476-WBN

Subject TVA's Insepctor Eye Testing Program

Concern No. IN-85-445-010

and associated recommendations for your action/disposition.

It is requested that you respond to this report and the attached recommendations by November 11, 1985. Should you have any questions, please contact C. R. Elledge at telephone 3697.

Recommend Reportability Determination: Yes X No ____

Original signed by
M. S. Kidd

Director, NSRS/Designee

Attachment
cc (Attachment):
H. N. Culver, W12A19 C-K
QTC/ERT, Watts Bar Nuclear Plant
W. F. Willis, E12B16 C-K (4)

--Copy and Return--

To : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

From: _____

Date: _____

I hereby acknowledge receipt of NSRS Report No. IN-85-445-010
Subject TVA's Inspector Eye Testing Program for action/disposition.

_____ _____
Signature Date

TENNESSEE VALLEY AUTHORITY

NUCLEAR SAFETY REVIEW STAFF

NSRS INVESTIGATION REPORT NO. I-85-476-WBN

EMPLOYEE CONCERN IN-85-445-010

MILESTONE 1

SUBJECT: TVA'S INSPECTOR EYE TESTING PROGRAM

DATES OF INVESTIGATION: September 25-October 7. 1985

LEAD INVESTIGATOR: Charles R Elledge — C. R. Elledge — 10/28/85 Date

INVESTIGATOR: J H Kincaid — J. H. Kincaid — 10/28/85 Date

REVIEWED BY: P R Washer — P. R. Washer — 10/28/85 Date

APPROVED BY: [signature] — M. A. Harrison — 10/28/85 Date

I. BACKGROUND

NSRS has investigated employee concern IN-85-445-010 which Quality Technology Company identified during the Watts Bar Employee Concern Program. The concern is worded:

> TVA's Inspector Eye Testing Program is inadequate: Many Inspectors Test ran out in early 1985, But they were not Re-tested, and were not told not to inspect. Personnel have been improperly Certified as "Inspectors" (ANST TC-1A) even though the necessary eye Test was not Current.

Additional information was obtained from the Quality Technology Company.

II. SCOPE

Construction Quality Control personnel performing visual weld inspections after certifications had expired, due to not meeting the annual eye examination requirement, was determined to be the primary concern. This concern was investigated by reviewing associated documents and interviewing appropriate personnel. The documents reviewed in conducting this investigation were located in the Construction Document Control vault, Medical Office, and Quality Control Unit Supervisor's office.

III. SUMMARY OF FINDINGS

Based on a review of applicable documents and interviews with appropriate personnel, NSRS substantiated the identified concern. Listed below are the specific findings identified.

A. Review of Documents

A review of the Office of Construction Quality Control Training Program Manual, Section III.2, "Training, Qualification and Certification Procedure for Nondestructive Examination and Welding Inspection Personnel," Paragraph 2.2.C, requires QC inspectors to obtain an eye examination on an annual basis. A review of QC inspector eye examination and inspection records revealed the following.

1. Mechanical/Instrumentation QC Unit - A review of eye examination documents (TVA 6780C) on 10 inspectors revealed that 7 of the 10 inspectors had not adequately maintained visual weld inspection certifications due to not obtaining the annual eye examination on time. The timeframe by which the eye examinations exceeded 12 months ranged from 1 day to 14 months. As of the date of the investigation, 9 of the 10 inspectors had a current eye examination. However, one inspector had not obtained an eye examination since 2/7/84, but had continued to perform weld inspections.

2. Welding QC Unit - The review of eye examination documents on 10 inspectors revealed that 2 of the 10 inspectors had not adequately maintained weld inspection certifications due to not obtaining the annual eye examination.

3. Hanger QC Unit - A review of eye examination documents associated with 10 inspectors in this unit showed that 1 of the 10 inspectors had not adequately maintained weld inspection certification due to not obtaining an annual eye examination.

4. Electrical QC Unit - The eye examination document review on 7 inspectors revealed that 4 of the 7 had not adequately maintained weld inspection certifications due to not obtaining the annual eye examination.

B. Personnel Interviews

Interviews with Construction Quality Control Unit supervisors revealed that the Quality Control Section did not have a section-level procedure in place for assuring compliance with Section III.2 of the Quality Control Training Program Manual (QCTPM). The QCTPM required the Quality Manager's Organization (QMO) supervisor to verify procedure compliance prior to certifying inspectors. Also, the unit supervisors assumed responsibility for maintaining inspector certifications. The Mechanical/ Instrumentation, Welding, Hanger, and Electrical QC units had inspectors who had failed to obtain an annual eye examination. The unit supervisors all stated that when inspectors had not obtained an annual eye examination, those inspectors were removed from visual weld inspection duties and instructed to obtain an eye examination as soon as possible. Upon successfully completing the eye examination, all inspection rights were reinstated. When this occurred, the unit supervisor initiated a letter to file stating that the inspectors had not performed any weld inspections while certifications were in question.

IV. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusion

The concern was substantiated since Watts Bar Construction Quality Control Inspectors were performing weld inspections without adequate certifications due to not obtaining the annual eye examination as required.

B. Recommendations

I-85-476-WBN-01 - Inspectors Should Obtain Eye Exam

Inspectors identified during this investigation as not having a current eye examination should be removed from weld inspection duties and sent to Medical for an eye examination. Should an inspector fail to successfully complete the eye examination, all inspections performed by that inspector since the last successful eye examination should be reinspected. For those inspectors who did not receive the annual eye examination but passed the reexamination, a letter to file should be initiated to document the noncompliance. Also, an NCR should be initiated to document the noncompliance and track dispositioning.

I-85-476-WBN-02 - Evaluate NDE Inspectors' Certifications

Watts Bar Nuclear Quality Control Units should evaluate all NDE inspectors' certifications for compliance with the Quality Control Training Program Manual, Section III. 2, with special emphasis on the annual eye examination.

I-85-476-WBN-03 - Instructions to Track Certifications

Watts Bar Nuclear Quality Control Section should establish instructions that would define a means of effectively tracking and maintaining NDE inspector certifications.

TVA 34 (OS 9-65) (OP-WP 7-84)
UNITED STATES GOVERNMENT

NRC

Memorandum

TENNESSEE VALLEY AUTHORITY

TO: E. R. Ennis, Plant Manager, Watts Bar Nuclear Plant

FROM: K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

DATE: OCT 30 1985

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is NSRS Report No. I-85-450-WBN

Subject HYDRO TEST DIRECTOR CERIFICATION

Concern No. WI-85-053-006

and associated recommendations for your action/disposition.

It is requested that you respond to this report and the attached recommendations by Nov. 25, 1985. Should you have any questions, please contact R. N. Russell at telephone 3733-WBN.

Recommend Reportability Determination: Yes _____ No X

Original signed by
M. S. Kidd
Director, NSRS/Designee

Attachment
cc (Attachment):
H. N. Culver, W12A19 C-K
QTC/ERT, Watts Bar Nuclear Plant
W. F. Willis, E12B16 C-K (4)

--Copy and Return--

To : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

From: _____

Date: _____

I hereby acknowledge receipt of NSRS Report No. WI-85-053-006
Subject HYDRO TEST DIRECTOR CERTIFICATION for action/disposition.

_____ _____
Signature Date

TENNESSEE VALLEY AUTHORITY

NUCLEAR SAFETY REVIEW STAFF

NSRS INVESTIGATION REPORT NO. I-85-450-WBN

EMPLOYEE CONCERN WI-85-053-006

MILESTONE 3

SUBJECT: HYDRO TEST DIRECTOR CERTIFICATION

DATES OF INVESTIGATION: October 4-17, 1985

INVESTIGATOR: R. N. Russell — Date: 10/25/85

IEWED BY: G. G. Brantley — Date: 10/25/85

APPROVED BY: M. A. Harrison — Date: 10/25/85

I. BACKGROUND

The employee concern as received from ERT stated: "The hydro test directors are craft personnel and are not qualified to applicable QCPs/QCTs." This concern was Quality Technology Company number WI-85-053-006.

II. SCOPE

Qualification requirements and records for test directors were reviewed. Interviews with individuals involved in the hydro test program were conducted. Applicable QCPs/QTCs were reviewed to ensure that base requirements for test directors were included.

In the area of requirements, the following were reviewed.

A. TVA Quality Assurance Topical Report - FSAR, Section 17, Table 17D-2, Sheets 5-6.

B. Construction Quality Assurance Procedure, QAP 11.1, "Construction Testing."

C. Construction QTPM, Section II, "Experience, Training, and Qualification of Personnel Not Requiring Certification."

D. ANSI N45.2.6-1978, "Qualification of Inspection, Examination, and Testing Personnel for Nuclear Power Plants."

In implementing these requirements a selected sample of hydrostatic test packages were reviewed, test director's name extracted from these, and a check on each one's qualification to the applicable QCPs/QCTs was conducted. Test directors and craft personnel involved in the hydrostatic test program were interviewed to ascertain the validity of the expressed concern.

III. SUMMARY OF FINDINGS

A. Qualification Requirements

1. The TVA Quality Assurance Topical Report requires that inspection, examination, and testing personnel be certified by procedure for functions identified by ANSI N45.2.6-1978.

2. The Construction Procedure QAP 11.1 (Section 7.1.1), "Construction Testing," requires that test directors be trained and certified in accordance with Section II of the Construction Quality Training Program Manual (QTPM).

3. Section II of the Construction QTPM specifies the requirements for experience, training, and qualification of test directors. However, this procedure also contains the following statement: "Personnel who infrequently are assigned an activity on a closely supervised basis are exempt from the requirements of this procedure." This statement violates the requirements of the upper-tier documents and the commitment made in the TVA Topical Report.

B. Qualification of Personnel

1. Test directors identified by review of hydro test packages were all qualified according to Construction requirements. Each engineering unit maintains a record of procedure certification for each test director identified.

2. Construction craft supervision and selected craft involved in hydro testing of systems were interviewed. Craft supervision stated that craftsmen were not trained or certified to hydro procedures. Also, to their knowledge, no craft personnel had been assigned as test director. The craft interviewed agreed that no training, certification, or official assignment as test director had occurred. However, it was felt that the craftsmen had more experience and know-how than some test directors. This could have left the impression that the craftsman was in charge of the test when, in reality, he was not.

IV. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

The allegation is unsubstantiated for the following reasons.

1. A review of hydro test packages indicate that only certified test directors from the engineering or QC units have been used to direct hydro tests.

2. Interviews with engineering, craft, and QC personnel indicate no assignment or use of craftsmen as test directors.

3. Section II of the Construction QTPM contains an exception to an FSAR commitment that would deviate from the TVA commitment to the NRC (see Section III.3).

B. Recommendation

I-85-450-WBN-01 - Deviation from FSAR

Remove the variance from Section II of the Construction QTPM that allows personnel who infrequently are assigned an activity on a closely supervised basis to be exempt from the requirements of that procedure.

TVA 64 (OS 9-65) (OP-WP 7-84)
UNITED STATES GOVERNMENT

NRC

Memorandum

TENNESSEE VALLEY AUTHORITY

TO: E. R. Ennis, Plant Manager, Watts Bar Nuclear Plant

FROM: K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

DATE: OCT 30 1985

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is NSRS Report No. I-85-286-WBN

Subject IMPROPER ANNUNCIATION OF TARGET ROCK VALVES

Concern No. IN-85-802-001

and associated recommendations for your action/disposition.

It is requested that you respond to this report and the attached recommendations by Nov. 25, 1985. Should you have any questions, please contact D. K. Baker at telephone 3843-WBN.

Recommend Reportability Determination: Yes X No ____

Original signed by
M. S. Kidd
Director, NSRS/Designee

Attachment
cc (Attachment):
H. N. Culver, W12A19 C-K
QTC/ERT, Watts Bar Nuclear Plant
W. F. Willis, E12B16 C-K (4)

--Copy and Return--

To : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

From: _____

Date: _____

I hereby acknowledge receipt of NSRS Report No. IN-85-802-001
Subject IMPROPER ANNUNCIATION for action/disposition.

_____ _____
Signature Date

TENNESSEE VALLEY AUTHORITY

NUCLEAR SAFETY REVIEW STAFF

NSRS INVESTIGATION REPORT NO. I-85-286-WBN

EMPLOYEE CONCERN IN-85-802-001

MILESTONE 2

SUBJECT: IMPROPER ANNUNCIATION OF TARGET ROCK VALVES

DATES OF INVESTIGATION: September 19-October 11, 1985

LEAD INVESTIGATOR: D. K. Baker — Date: 10-24-85

INVESTIGATOR: FOR J. D. Smith — Date: 10-25-85

REVIEWED BY: P. R. Washer — Date: 10-25-85

APPROVED BY: M. A. Harrison — Date: 10/25/85

I. BACKGROUND

NSRS has investigated employee concern IN-85-802-001 which Quality Technology Company identified during the Watts Bar Employee Concern Program. This concern is worded:

> Both Units 1 and 2, problem exists with Target Rock Valves installed in both Sampling System and Main Steam System. Target Rock Valves improperly annunciate part of the time and Reed Switches on valves require constant adjustment. Valves in Sampling System located in 3/8" stainless steel lines in Annulus and Primary Containment Areas. Valves in Main Steam System located on either 2" or 3" stainless steel lines in South Valve Room. CI did not specify line numbers or valve serial or mark numbers.

II. SCOPE

The issue of the investigation was determined from the stated concern to be: Target Rock Valves improperly annunciate part of the time, and Reed Switches on valves require constant adjustment. Based on the description in the concern, NSRS identified 18 valves on each unit that fit the description in the concern. The MR history for the Unit 1 valves was reviewed. Electrical Maintenance personnel were contacted to determine if an MR trending program existed for these valves and to determine their experience with these valves. Operations personnel were interviewed to determine the safety implication of the improper annunciation of the red and green lights on the control board.

III. SUMMARY OF FINDINGS

Based on the review of the maintenance history of the valves and the review of the subject with Electrical Maintenance and Operations personnel, the following information was obtained.

A. The valves were determined to be the outboard steam generator blowdown valves located in the valve room and various valves in the postaccident sampling system. The MR history on the valves was reviewed, and it was determined that the valves have had excessive annunciation problems. The valves themselves have had few problems. Interviews with personnel in Electrical Maintenance revealed that the MRs on valve operation were a result of two problems. The first problem was due to a lack of detailed knowledge or instruction on the Reed switch adjustment. The second problem was due to the preciseness and close tolerance to which the switches were set which resulted in the calibration being lost when the valves were heated up during hot functionals. The first problem had been resolved previously.

B. The steam generator blowdown valves were determined to be the valves of the most concern. These valves were located in the valve rooms. According to the safety engineer at Sequoyah Nuclear Plant, typical valve room temperatures range from 135° to 165°F with temperatures in excess of 200°F when there are steam leaks in the valve room. The valve rooms were crowded and difficult areas in which to move. The valves in question were located overhead and several feet off the wall. The calibration effort was time-consuming and required a cover with several screws to be removed to permit access. Because of these conditions, excessive maintenance on these valves was substantiated as being an industrial safety concern.

These valves were environmentally qualified to Category C (will experience environmental condition of design basis accident through which it need not function for mitigation of said accidents and whose failure (in any mode) is deemed not detrimental to plant safety or accident mitigation and need not be qualified for any accident environment). The inboard steam generator blowdown valves and the steam generator were the two environmentally qualified barriers. These valves were found in Table 3.6-2 of the Tech Specs which lists valves which require valve stroke timing. The red and green lights were used to determine the stroke time of these valves (SI-4.0.5.1.A). Erroneous indication from these lights due to out-of-calibration Reed Switches would prevent the stroke timing from being properly performed and could result in a Tech Spec violation. In addition, false or improper annunciation could provide conflicting or confusing information to the operators even though alternate indication exists to determine actual flow (steam blowdown rate controller 1-FIC-15-43).

C. The Target Rock postaccident monitoring valves were found in the annulus and in the primary containment. The ones in the annulus were accessible during operation. The ones in the primary containment were not. The accessibility (or lack thereof) of these valves did not pose an industrial safety concern. These valves were environmentally qualified to Category A (equipment that will experience the environmental conditions of design basis accidents for which it must function to mitigate said accidents, and that will be qualified to demonstrate operability in the accident environment for the time required for accident mitigation with safety margin to failure). These valves were found in Table 3.6-2 of the Tech Spec which lists valves which require valve stroke timing. These valves did not have stroke timing criteria but must be periodically shown operable. Because of the environmental qualification level of these valves, they must be periodically shown to be operable to meet Section 3.6.3 of the Tech Specs.

D. Electrical Maintenance personnel stated that an MR trending program covering these problems did not exist. They also indicated that plans were to utilize the MR tracking program to do trending in the future. Unit 2 hot functionals have not been run, and little maintenance history has been accumulated on Unit 2. However, it was assumed that this problem affects both units.

V. CONCLUSIONS AND RECOMMENDATIONS

Conclusion

The concern was substantiated as both a nuclear and an industrial safety problem. The valves perform their intended function, but erroneous annunciation can violate the Section 3.6.3 Tech Specs and lead the operator to wrong conclusions even though indication exists to determine actual flow. Excessive maintenance in a high temperature, hard-to-access area creates an industrial safety concern.

Recommendation

I-85-286-WBN-01 - Reliability Improvement

WBN should investigate methods to improve the reliability of the annunciation of these valves. This should include checking with SQN to determine whether they have had similar problems with Target Rock Valves. If they have had similar problems, determine whether they have a solution to the problem. WBN should also go back to the valve manufacturer to determine whether this is a generic problem and whether they have a recommended resolution.

Since the problem appears to be in part caused by the tight tolerances to which the Reed Switches are adjusted, the basis of the tolerance should also be reviewed to determine whether less restrictive tolerances would be acceptable.

Conclusion

An MR trending program does not exist of this type of switches.

Recommendation

I-85-286-WBN-02 - MR Trending

Trending of MRs should be utilized to identify problems of this nature with plant equipment to prevent or minimize recurrence.

TVA 64 (OS-9-65)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

NRC

TO : E. R. Ennis, Acting Site Director, Watts Bar Nuclear Plant

FROM : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

DATE : OCT 30 1985

SUBJECT: CORRECTIVE ACTION RESPONSE EVALUATION

REPORT NO. : IN-85-052-008

SUBJECT : Weld Rod Control

CONCERN NO.: IN-85-052-008

( ) ACCEPT (X) REJECT

NSRS feels that your response to this employee concern needs to be improved. There are several points raised in the report which are not addressed in your response. NSRS's evaluation of your response to each point is listed below and is numbered to correspond to the scheme used in QTC's investigation report.

a. Warehouse (Hut 12) Storage Conditions

The report states that two containers of weld rod exhibited broken seals. This appears to be a violation of QCP-1.36, Rev. 7, "Storage and Housekeeping." This apparent violation is not addressed in your response. NSRS agrees that an inspection of the weld rod containers at the rod shack before accepting the rods from the warehouse and an additional inspection of the container before issuing weld rods is appropriate and should help ensure that only rods which are in the proper condition are issued for use. However, QCI-4.01 contains no provisions for the welding material control center to reject rods delivered from the warehouse. Furthermore, the housekeeping inspections are apparently ineffective since damaged weld rod containers were noted by the QTC investigator. NSRS believes that stricter controls are warranted in this area.

b. QC Hold Tag on Weld Rod

The QTC investigator noted a pallet of weld rod with a QC hold tag attached in the warehouse. The hold tag had no identifying information. The use of these QC hold tags does not appear to be properly controlled. QCP-1.06 which controls receiving inspections does not cover the method of identifying items which should not be issued. The procedure refers to the IRN procedure, QCI-1.02-1, but this procedure does not contain provisions for properly labeling items on a QC hold. This area also needs strengthening in NSRS's opinion.

0055U

CORRECTIVE ACTION RESPONSE EVALUATION

c. Unused Weld Rod Stubs on Floor

The QTC investigator noted unused E7018 weld rods lying on the floor near the weld materials control center in the turbine building. The report also noted several past instances where the same condition was found. Thus, it appears that previous corrective actions have not been extirely adequate. Your response does not adequately address the finding or the apparent lack of effectiveness of previous corrective actions.

d. Unsecured Weld Rod/Stub Depositories

The QTC investigator noted a lack of security on unused weld rod in that unused weld rod had been deposited in and could be retrieved from a locked stub depository. An unlocked stub depository was also noted in item f. Your response notes that an additional inspection performed by OC identified two depositories which may require modification or replacement. This same item was noted earlier in WBNS surveillance CO-35840234-X01 on August 29, 1984. Thus, it appears that effective corrective actions had not been taken to the noted surveillance finding. Your response did not adequately address this area.

e. Weld Rod Maximum Exposure Time Exceeded

The QTC investigator noted weld rods which had been exposed to the air longer than the maximum allowed time. Your response indicated that NCR 6198 was issued tocorrect this deficiency. The corrective action described in this NCR appears to be an adequate response to the noted deficiency.

f. Rod Shack No. 3

The QTC investigator noted several coated weld rods on the floor of the rod shack. Your response, however, does not address this minor point. The investigator also noted that the stub depository was unlocked. Your subsequent inspection did not find any unlocked containers. The review of historical documentation in the QTC report also did not include finding unlocked stub depositories. Thus this appears to be an isolated incident. Corrective action in response to item d appears adequate to correct the stub return box security.

E. R. Ennis

CORRECTIVE ACTION RESPONSE EVALUATION

g/h. The QTC investigator questioned the control center attendants regarding procedural requirements for reconditioning weld rods and noted that some confusion existed. However, your response did not indidicate that any corrective action was taken to remedy this situation or justify why no corrective action is needed. The retraining to be done in response to NCR's 6197 and 6198 appears to address these points.

h/i. Oven Log Book Entries

The QTC investigator noted inconsistencies in the entries for oven temperatures. NCR 6197 was generated to correct and track this deficiency. This NCR does not address the effect of improperly baking weld rods evidenced by the inconsistencies in the oven logs. The corrective action outlined in NCR 6697 appears to be appropriate to prevent reoccurance.

Also attached is a copy of QTC's evaluation of your response for your information. Please respond to the points raised in this evaluation. If you have any questions, please contact Bruce Siefken at 6230 in Knoxville.

Original signed by
M. S. Kidd

K. W. Whitt

Attachment
cc (Attachment):
H. N. Culver, W12A19 C-K
W. F. Willis, E12B16 C-K (4)
QTC/ERT, CONST-WBN

TVA 64 (OS-9-63) (Continuous)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : K. W. Whitt, Director, Nuclear Safety Review Staff, E3A8 C-K

FROM : Guenter Wadewitz, Project Manager, Watts Bar Nuclear Plant OC

DATE : SEP 16 1985

SUBJECT: WATTS BAR NUCLEAR PLANT - REQUEST FOR INVESTIGATION/EVALUATION

Attached is our response to employee concern number IN-85-052-008.

Guenter Wadewitz

COC:LLE
QERT.LE
Attachments
cc (Attachment):
R. A. Pedde, 12-112 SB-K
H. N. Culver, W12A19 C-K

SEP 24 '85

Note	Handle		Noted
		Whitt	
		LML	
		BJN	
		WCS	
		JTH	
		IRG	
		TARC	
		FILE	

Report No : IN-85-052-008
Subject : Weld Rod Control
Concern No : IN-85-052-008

NSRS Recommendations: IN-85-052-008

1. Q-85-052-008-01 "Weld Rod Control"

   WBN PMO should evaluate the program controls which have consistently failed to provide adequate control of weld rod, determine the actions needed to assure control of weld rod in accordance with requirements, and implement same. Evaluate this item for reportability to the NRC.

Response

A review of the investigation report and investigation of comments in the field observation portion of the report resulted in the initiation of NCR's 6197 and 6198. NCR 6197 identifies a failure to follow procedures for documenting the reconditioning of coated electrodes. NCR 6198 identifies 7018 electrodes which were returned to and reissued from a single weld material control center and exceeded the maximum exposure time from issue to return to oven.

Other than an area of noncompliance identified during investigation of this report, the review of program controls as recommended by NSRS has determined these controls to be adequate. Additional emphasis and clarification will be placed on or added to this control process.

We also offer the following comments/clarification for portions of the report:

1. WBNP-QCI-4.01 revision 4 permits storage of unopened and undamaged containers in protected dry areas having no temperature or humidity control. Possibility for damage exists while in storage or in transit for issue at the rod shack. Because of this possibility, all containers are checked for damage at the rod shack. This check is made before acceptance from the warehouse and before opening for issue.

2. Electrodes discussed in the item were received with the requested documentation. Because this purchase was the first from the supplier and the first under a new contract, a decision was made to run additional testing. Two boxes (those "missing") were requisitioned on TVA Form 575 from the warehouse and delivered to the weld test shop. A selection from the boxes was made for moisture content and a selection for testing operability was also made. Both tests were found to be acceptable. An engineering hold was placed on the electrodes (after testing) when notified that a different size electrode on the same contract and by the same manufacturer had failed testing required by Bellefonte Nuclear Plant.

   None of these electrodes were issued from the rod control centers. Electrodes were returned to the manufacturer.

3. WBNP-QCI-4.01 revision 4 contains the statement "...in a holding oven with minimum (emphasis added) temperature of 250 degrees Fahrenheit..." This applies to E7018 electrodes. Similar requirements for other rod types are also listed. Maximum temperatures are established and limited by duration over 500 degrees Fahrenheit and frequency over 600 degrees Fahrenheit.

4. Although the QC investigation failed to locate an unlocked stub container, investigation did identify two locations which may require modification or replacement of selected containers.

5. Corrective actions for NCR violation and TVA audit deviations are stated and must be acceptable to the auditing organization. These deviations are not closed until the corrective actions have been implemented and verified.

6. All Quality Assurance program elements are audited on an annal basis as a minimum. Surveillances are an onoing activity. Surveillances and/or additional audits are scheduled because of field observations, NCRs, NRC violations, or other indications that deviations may exist. QC requirements for frequency of surveillance or audit were found to be sufficient.

TLR

QUALITY TECHNOLOGY COMPANY

P.O. BOX 600 • SWEETWATER, TN. 37874 • (615)365-4414

October 7, 1985
ERT: QTC 85.818
OMB3316-0073
43086

M. A. Harrison
Head of Investigations
Nuclear Safety Review Staff
Tennessee Valley Authority
Knoxville, TN 37902

Dear Mr. Harrison:

SUBJECT: Review of Response to IN-85-052-008

REFERENCE: Memo dated September 16, 1985 - Guenter Wadewitz to K. W. Whitt

There is no evidence of remedial action as to impact of QCP 1.36 storage & housekeeping only that if will be stopped at the Rod Shack. The warehouse controls and the control of filler metal prior to leaving the warehouse "implementation" are not addressed.

At the time this report was generated (7/6/85) the only justificaton for having the palet on "hold" was a "verbal" engineer instruction.

NCR 6198 does not reflect heat & lot number of the filler metal in questioned used over a period of 3 months and where used (safety related nonsafety related) IE Traceability.

NCR 6197- does address past quality of weld rod and welding.

This was a committment to NRC in 1981. The response "may require modification", however the NRC report was closed out.

"Deviations may exist" from previously NCR-NRC reports. ERT report IN-85-052-008 states that deviations do & have existed.

Summary: Based on what was found in report IN-85-052-008, there has been a lack of corrective action to assure that the stated deviations have not continued.

Sincerely yours,

QUALITY TECHNOLOGY COMPANY

W. S. Schum
Project Manager
EMPLOYEE RESPONSE TEAM

WSS/WMK/law

NRC

TVA 64 (OS 9-65) (OP-WP 7-84)
UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : E. R. Ennis, Acting Site Director, Watts Bar Nuclear Plant

FROM : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

DATE : OCT 30 1995

SUBJECT: CORRECTIVE ACTION RESPONSE EVALUATION

REPORT NO. : IN-85-021-001

SUBJECT : TUBE BENDING

CONCERN NO.: IN-85-021-001

(X) ACCEPT ( ) REJECT

Repsonse was coordinated with QTC Investigator R. Chappell. Total agreement regarding chrome-plating of bending shoes was not reached, however NSRS and QTC will concur with the response as stated, acknowledging that chrome-plating is recommended, but not absolutely required, by GCS G-29C.

Original signed by
M. S. Kida

K. W. Whitt

cc: H. N. Culver, W12A19 C-K
W. F. Willis, E12B16 C-K (4)
QTC/ERT, CONST-WBN--For response to employee.

0062U

TVA 64 (OS-9-63) (Continuous)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : K. W. Whitt, Director, Nuclear Safety Review Staff, E3A8 C-K

FROM : Guenter Wadewitz, Project Manager, Watts Bar Nuclear Plant OC

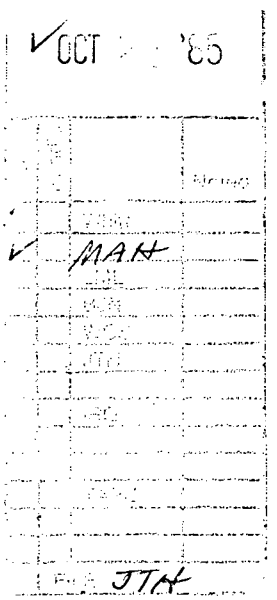
DATE : OCT 18 1985

SUBJECT: WATTS BAR NUCLEAR PLANT - REQUEST FOR INVESTIGATION/EVALUATION

Attached is our response to employee concern number IN-85-021-001.

G J Fischer for
Guenter Wadewitz

COC:LLE
QERT.LE
Attachments
cc (Attachment):
H. N. Culver, W12A19 C-K



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CONCERN NO. IN-85-021-001

NCR 6276 was written to address and document this concern. The correction method proposed will consist of an OE recommended program to evaluate instrument pipe and tubing bends on unit 1 to ensure that installations adequately comply with G-29 process specification 4.M.2.1. This program is currently being organized by OE and will be implemented by the site upon disposition of the NCR.

Finding 1:

This finding does not cite the use of bending equipment that cannot be located or traced to a qualification record, but it does note the fact that 41 benders are missing. This finding reflects an accountability and record keeping problem rather than a specific quality problem. However, NCR 6276 specifies a correction method for the potential use of these missing benders on previous installations. This includes not only bending equipment that has since been identified and qualified but also includes equipment that can no longer be accounted for. OE has developed a comprehensive sampling program to establish the acceptability of all unit 1 bends based on design requirements regardless of their origin. The disposition of the nonconformance report will reflect the results of the sampling program. Also NCR 6275 addresses the necessary modifications to site procedures to ensure adequate control of bending equipment and prevent future concerns regarding bending equipment management.

Finding 2 and 4(A):

Bending operations performed on TVA safety classes A, B, C, and D pipe and tubing are considered QA and as such must meet the applicable ASME Code requirements. Construction Specification G-29 process specification 4.M.2.1 designates the applicable ASME Code requirements. Bending operations on TVA safety classes G and H are not governed by the ASME Code and are not required to be performed or documented explicitly in accordance with Constuction Specification G-29. Therefore an unqualified and/or unidentified bender may be used on TVA classes G and H pipe or tubing of any material.

Construction Specification G-29, Process Specification 4.M.2.1 paragraph 2.5.4 also states that "tools used in bending stainless steel shall be used exclusively to bend stainless steel". Consistent with this requirement past practice has been to qualify and identify bending equipment used exclusively on stainless steel. Benders used on non-QA (classes G and H) bends are not required to be qualified or identified. Therefore these benders are not uniquely identified. The method used for distinguishing equipment used exclusively to bend stainless steel from that used in non-QA applications therefore led to this finding, which is in itself not a specific quality problem. However, the correction method for NCR 6275 will provide site procedure revisions (1) to describe color coding and identification of bending equipment for specific applications and (2) to describe a surveillance method to ensure that qualified and uniquely identified bending equipment is used exclusively on stainless steel.

Finding 3(A):

CF 186 is indeed an invalid process and was erroneously reported to the ERT investigator as the proper cold forming qualification record for bender ID No. 298.

Bender ID No. 298 is a qualified bender for 1/2" schedule 80 stainless steel pipe as substantiated by CF-190. The situation cited of bender ID No. 298 which was used to bend 1/2" schedule 80 stainless steel pipe is, therefore, the proper application of this bending equipment.

However, in accordance with the correction method of NCR 6275 site procedures will be revised to initiate a surveillance method to provide additional control and to ensure the continued proper use of bending equipment. In addition IEU-A will commit to reviewing all unit 2 vaulted documentation to ensure reference to correct bender qualification processes. Action required to ensure proper documentation of unit 1 bending activities is addressed in Concern Number IN-85-824-002 Supplement A.

Finding 3(B) Reference response to Finding 2, 4(A) and 4(B):

Further discussion with ERT personnel established that both radius blocks in question are in fact marked "Parker" and are not site fabricated.

Current procedures do not require unique identification of all benders. Investigations indicate that these two bending shoes (Radius Blocks) were not used on any QA applications. These shoes have now been removed from the field and placed under engineering control.

Future control of bending equipment will be handled as specified in the response to Findings 2 and 4(A).

Finding 3(C):

This finding does not cite a case where there was an incorrect entry on the bender usage list (BUL) due to its location in relation to the location of the bending operation. However, the correction method of NCR 6275 will provide revisions to site procedures requiring a surveillance program to ensure that the BUL is handled in accordance with QCI 3.13-5 requirements and is kept in the bending area. Affected craft personnel will be retrained in the requirements of the revised procedures.

Finding 4(B):

This finding is not substantiated by construction specification G-29 which states "To alleviate the possibility of galling when bending stainless steel it is recommended that tools and formers be chrome plated".

Finding 4(B) continued:

When procurement of new bending equipment is necessary, an attempt is made to purchase tools and formers that are chrome plated, however, some required equipment is not available from the vendor in a plated condition. Also special site fabricated equipment is not plated.

Since construction specification G-29 does not require bending tools to be plated but merely recommends that they be plated when used on stainless steel, the site is not required to make special arrangements to have them plated. A request from OC for further clarification of this concern resulted in the issue of a memo from J. W. Coan to Guenter Wadewitz (B45 850925 253) reemphasizing OE's commitment to the statements made in Process Specification G-29 (see attached memos). Also the justification for not requiring plated bending equipment is reinforced by G-29 process specification 4.M.4.1 which specifies the exterior surface cleanliness requirements and acceptance criteria for stainless steel pipe and tubing. Any further discussion of this issue should be directed to OE.

Finding 5:

This finding is addressed by the correction methods for both NCR 6275 and NCR 6276. NCR 6275 specifies a correction method for the potential past use of an invalid cold forming qualification record. This correction method will consist of an OE recommended program to evaluate all instrumentation pipe and tubing bends in unit 1 to ensure their adequate compliance wih G-29 requirements.

There have been documentation errors in the recording of cold forming qualification record numbers on some unit 2 subassemblies, however, there is nothing to suggest that unqualified bends were made on unit 2. Also the correction method for NCR 6276 will require OE to evaluate some specific invalid cold forming qualification records and to determine their adequacy. Most of the invalid qualification records were deemed invalid due to very slight discrepancies in wall thickness and ovality. OE has expressed a high level of confidence in their ability to accept these qualifications. The correction method for NCR 6275 will provide site procedure changes to ensure adequate control of bending equipment.

Listed below is an explanation of the alleged procedure deficiencies associated with specific subassemblies.

Subassembly	Date Bought	Procedure	Deficiency
2-032-ALA	01-28-85	CF-129	Min. Wall not acceptable
2-032-ALA	01-28-85	CF-132	Min. Wall not acceptable
2-032-ALA	01-28-85	CF-131	Min. Wall not acceptable
2-068-L062-03	07-09-85	CF-129	Min. Wall not acceptable
1-062-L348A-09	02-29-84	CF-132	Min. Wall not acceptable

Concern No. IN-85-021-001 continued

Finding 5 continued:

The findings listed on the previous page are common in nature. In each case the procedure number cited was, in fact, not a valid qualification for the bending equipment used, but was referenced on documentation for the subassembly. Further investigation of weld maps, bender usage lists, and QC documentation (QCP 3.11-2 Attachment B) reveals that these procedure numbers (CF-129, CF-131, and CF-132) were inadvertently listed in addition to valid procedure numbers and qualified bender ID numbers which were used in the fabrication of each subassembly. In each case the valid procedure that supersedes the invalid procedure is listed alongside the invalid procedure as if two procedures were used for the same type of bend. The procedures CF-129, CF-131, and CF-132 were deemed invalid due to minor deficiencies in the original test results and therefore the bending process was requalified and new procedure numbers assigned. In addition, procedures CF-129, CF-131, and CF-132 have been sent to OE for evaluation and possible approval. The unnecessary procedure numbers will be deleted from the identified documents and final disposition of the questionable bend procedures will be in accordance with NCR 6276.

Listed below is a summary of the invalid procedure numbers and the valid procedure numbers which qualified the benders used in fabrication of each subassembly.

Subassembly	Invalid Procedure	Valid Procedure	Qualified Bender ID
2-032-AL-A	CF-129	CF-179	I-146
2-032-AL-A	CF-132	CF-180	I-144
2-032-AL-A	CF-131	CF-180	I-144
2-068-L062-03	CF-129	CF-179	I-159
1-062-L348A-09	CF-132	CF-180	I-131

All bends on the subassemblies in question can be traced to a qualified bender (i.e. a bender which has been certified by a valid cold forming qualification). Therefore, QC feels that these installations are in accordance with Design, Quality, and Safety requirements. Documentation will be corrected in accordance with WBNP QCI 1.08 "Quality Assurance Records". Corrective action will be taken as detailed in NCR 6275 to prevent future errors in recording of applicable information on fabrication and inspection documents.

Concern No. IN-85-021-001 continued

Finding: 2-003-L382-01 11-16-84 CF-186 Ovality Not Acceptable

A review of documentation and of the craft foreman's BUL sheet has identified No. I-91 as the bender used for bends on 1/2" schedule 80 stainless steel pipe in this subassembly. The bend procedure or cold forming process (CF-186), referenced on the bending inspection records, is not considered valid for qualification of bending and in addition applies to 1/2" schedule 40 stainless steel pipe, not schedule 80. This discrepancy resulted from an incorrect bend procedure number being entered on the records as a supporting document for the integrity of bender No. I-91.

However, this bender is qualified for production bending of 1/2" schedule 80 stainless steel pipe by cold forming process CF-190. Although this error went undetected by both engineering and quality control personnel, no conditions (adverse to quality or safety) resulted. Documentation will be corrected in accordance with WBNP QCI 1.08 "Quality Assurance Records".

Finding: 2-032-ALA 01-28-85 CF-186 Ovality Not Acceptable

Bend procedure CF-186 was referenced on bending inspection documentation as the process which qualified bender No. I-92, the actual bending tool used for bends on 1/2" schedule 40 stainless steel pipe in subassembly 2-032-ALA. Bend procedure CF-186 is not considered a valid bending procedure. Due to ovality measurements of sample bends made to qualify the procedure which were slightly higher than allowed wihout OE approval. This bend procedure has been forwarded to OE for evaluation and will be dispositioned as part of NCR 6276.

Finding: 2-043-L232B-02 05-13-85 CF-199 Heat No. 09118 Not Qualified

This finding indicates a specific heat number (09118) for tubing which was bent using a process that was not qualified for that heat of material. A review of documentation for subassembly 2-043-L232B-02 and weld map W-2-043-AL R3 which identifies the heat numbers of materials used in fabrication of the subassembly clearly disputes this finding and shows that no deficiency exists. Subassembly 2-043-L232B-02 contains no tubing with heat No. 09118. This is verified by QCP 3.13-6 Test 76 ("Inspection of Tubing Instrument Lines"). Further investigation determined that this subassembly was fabricated using bender No. I-149 in accordance with procedure CF-199 which is qualified specifically for the tubing used. Bends made on tubing bearing heat No. 454925 were made using bender No. I-187 in accordance with procedure No. CF-166 which is also qualified for the material used. Bending records for the installation in question are accurate and acceptable. Therefore no deficiency exists.

Finding: 2-043-L232C-02 05-13-85 CF-199 Heat No. 09118 Not Qualified

The subassembly identifier number cited in this finding does not exist. Therefore, the finding can not be addressed. ERT investigator, Ray Chappell, was contacted by OC on August 23, 1985 for clarification. Mr. Chappell was unable to provide any further information regarding this detail and informed OC to disregard the finding.

Finding: 1-062-L263B-01 02-18-84 CF-144 Min. No. of Bends Not Made

Deficient bend procedure CF-144 was referenced on the inspection record as the result of incorrectly transcribing the correct procedure number CF-194 to the final inspection document. The existing document will be corrected by the responsible engineer and quality control inspector in accordance with site procedure WBNP QCI 1.08, "Quality Assurance Records".

Findings:	2-032-AO-B	01-28-85	Bend Per Process Not Inspected
	2-032-ALA	01-28-85	Bend Per Process Not Inspected

An OC review of QCP 3.11-2 Attachment B documentation for the above subassemblies revealed four (4) bend procedure numbers noted as associated with particular bender ID numbers on the line entry marked "Bender Number(s) for Bend(s) used in Subassembly". These numbers were not listed on the inspection checklist under the heading marked "Process No." This column of the checklist indicates to the inspector which bending processes were used and require inspection. The additional bend procedure numbers noted are in fact associated with the particular bending tools that were used in the fabrication of these subassemblies. However, they should be considered unnecessary information. Although no quality control requirements were violated, the procedure numbers not applicable to these subassemblies will be removed from the inspection document in accordance with WBNP QCI 1.08 "Quality Assurance Records".

Finding 6:

NCR 6275 and NCR 6276 address this concern. The correction method of NCR 6275 specifies site procedure changes that will require a weekly surveillance of (1) bending operations, (2) use of the BUL, and (3) an examination of bending equipment. This surveillance program would assign responsibility for a physical condition verification of bending equipment, and also document the disposition of any lost or damaged equipment.

The correction method for NCR 6276 will consist of an OE recommended program to evaluate instrument pipe and tubing bends on unit 1 to ensure that installations adequately comply with G-29 specifications.

Finding 6 continued:

We have no indications that programmatic provisions for periodic requalification of benders is necessary. At both SQN and WBN, there have been no identified instances of worn or out-of-adjustment bending equipment causing unacceptable quality bends. In fact at SQN, the initial inspection instruction written in 1977 to implement G-29 specifications required that a sample bend inspection be performed quarterly on each qualified bender. After three years of sample bend inspections in this manner no problems were encountered and the sample bend inspection performance period was extended to an annual basis.

Since that time, no out-of-tolerance problems were encountered. BLN construction personnel were also consulted on this matter. BLN reported that they had experienced no problems with out-of-tolerance bends after an original bender qualification. Based on this past experience, we feel that the new procedure revisions requiring a surveillance program (to verify the physical condition of bending equipment on a weekly basis) will ensure continued bend quality.

The correction method for NCR 6275 will also involve a revision to QCI 3.11-2 to require additional inspection of bends on completed subassemblies.

Finding 7:

The correction method for NCR 6275 will require a procedure revision to QCI 3.13-5. This procedure revision will delete the requirement of having craft personnel record both the cold forming qualification record number and the bend equipment unique identifier on the BUL. In addition, it is recognized that in the past the bending process might not have been qualified for each material heat on which it was used. This resulted in the referencing of invalid cold forming qualification records on past documentation. The pending revision to QCI 3.13-5 requires that all heat numbers be recorded by the craft for each bending process used. Verification of the acceptability of the bending process for each material heat number listed will become the responsibility of engineering. With these procedure changes, there will be no need to list heat numbers on the Test 52 attachment B. The statement concerning unqualified material being used is absolutely unsubstantiated. QCP 3.11-2 paragraph 6.2.2 requires that inspection "verify that the correct material was used in the instrument line installation". QCP 3.13-6 paragraph 6.1.2 requires that the inspector "verifies the heat numbers on the tubing installed correspond to the heat numbers specified on the compression fitting map and the heat number is of the proper type, grade, and TVA class". QCI 4.03 Attachment C "Fitup Inspection" requires a verification of heat numbers of the two features to be joined. These procedures are being followed and provide definite assurance that the correct material is being used. Based on these facts we ascertain that this allegation is untrue and unsubstantiated.

Concern No. IN-85-021-001 continued

Finding 7 continued:

Procedure revisions to QCP 3.11-2 in accordance with the correction method of NCR 6275 will address and resolve the problems of documentation with erroneous information being vaulted. In addition OC will attempt to qualify three separate heats of each material, thereby qualifying the process for all heats of like material. This effort should help eliminate errors associated with qualifications made on only one heat.

Conclusion:

There are many tests that also indirectly serve to verify the quality of field bends such as the individual line inspections (Test 52), individual hydrostatic tests, cleanliness (swipe) tests, pre-op testing, cold hydro and hot functional testing. Past history with SQN and unit 1 WBN has not revealed even the slightest problem with field produced bends from a functional standpoint.

It is true that the initial WBN bending program did not provide adequate record keeping. However, there is very little, if anything, to suggest that there is an actual quality problem with any field bends. Many of the allegations made appear serious until one realizes that there are valid qualified procedures for all pipe and tubing that is normally bent. In the great majority of cases when the words "unqualified procedure" was used, it simply means that someone wrote down an unqualified procedure number on a document or piece of equipment, not that there is in fact no valid procedure to perform the bends in question.

The ERT investigation did not reveal a single bend in place in the field that would not satisfy the requirements of a qualified bend. However, it is felt that the correction methods of NCR 6275 and NCR 6276 will provide the necessary changes to ensure adequate control of bending equipment and documentation and to prevent future concerns regarding bending program management.

Principally prepared by Charles Wagner, extension 468.

NCR

TVA 64 (OS 9-65) (OP-WP 7-84)
UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : E. R. Ennis, Acting Site Director, Watts Bar Nuclear Plant

FROM : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

DATE : OCT 30 1985

SUBJECT: CORRECTIVE ACTION RESPONSE EVALUATION

REPORT NO. : IN-85-824-002

SUBJECT : TUBE BENDING

CONCERN NO.: IN-85-824-002

(X) ACCEPT ( ) REJECT

Response was coordinated with QTC investigator, R. Chappell.

Original signed by
M. S. Kidd

K. W. Whitt

cc: H. N. Culver, W12A19 C-K
W. F. Willis, E12B16 C-K (4)
QTC/ERT, CONST-WBN--For response to employee.

0063U

TVA 64 (OS-9-63) (Continuous)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : K. W. Whitt, Director, Nuclear Safety Review Staff, E3A8 C-K

FROM : Guenter Wadewitz, Project Manager, Watts Bar Nuclear Plant OC

DATE : OCT 18 1985

SUBJECT: WATTS BAR NUCLEAR PLANT - REQUEST FOR INVESTIGATION/EVALUATION

Attached is our response to employee concern number IN-85-824-002.

G J Fischer
Guenter Wadewitz

COC:LLE
QERT.LE
Attachments
cc (Attachment):
H. N. Culver, W12A19 C-K

EMPLOYEE CONCERN NO. IN-85-824-002

ITEM 1 - NO APPROVED BENDING PROCEDURE

Although bending is currently controlled by site instructions and procedures (WBNP QCP 4.10-5, WBNP QCI 3.11, WBNP QCP 3.11, WBNP QCI 3.11-1, WBNP QCP 3.11-2, and WBNP QCI 1.12-7), it was recognized on NCR 6276 that site procedures were not properly implemented to control unit 1 bending operations. The correction method of NCR 6276 stipulates that OE is to " . . . provide recommendations for corrective action necessary to ensure the quality of affected installations." OC has surveyed the types and quantities of the unit 1 bends in question and has provided this data to OE for review. It is anticipated that OE will provide guidelines for establishing a sampling program whereby OC Quality Control personnel will be required to inspect a representative number of unit 1 pipe and tubing bends to establish that an acceptable level of quality exists. This program is intended to provide an adequate level of confidence in the quality of all affected unit 1 bends.

ITEM 2 - NO CERTIFIED "BENDING" PERSONNEL

OC concurs with ERT response that "No requirement exists for qualifying 'bending' personnel. The bending equipment determines the bend quality and qualification of personnel was not considered necessary."

ITEM 3 - NO QUALIFIED BENDING MACHINES UNTIL APPROXIMATELY THREE YEARS AGO

Although bending machine qualification is currently controlled by site instruction WBNP QCI 1.12-7 and site procedure WBNP QCP 4.10-5, it was recognized on NCR 6276 that methods of controlling unit 1 bending machine qualification during that time period were not properly implemented. The correction method of NCR 6276 stipulates that OE is to " . . . provide recommendations for corrective action necessary to ensure the quality of affected installations." OC has surveyed the quantities and types of bends made by field bending equipment for unit 1. This data has been submitted to OE for review. It is anticipated that OE will provide guidelines for establishing a sampling program which will require OC Quality Control personnel to inspect a representative number of unit 1 pipe and tubing bends to establish that an acceptable level of quality exists. This program is intended to provide an adequate level of confidence in the quality of all affected unit 1 bends.

EMPLOYEE CONCERN NO. IN-85-824-002 continued

ITEM 4 - PAPERWORK HAS "MYSTERIOUSLY" APPEARED FOR ALL BENDING ACTIVITIES CONDUCTED PREVIOUS TO THIS THREE YEAR TIME PERIOD

It is assumed that the "mysterious paperwork" in your concern is in reference to NCRs 3864 and 4633 which were generated as a result of inadequate control of bending processes as cited in QA audit WB-M-81-08. These nonconformance reports were initiated in accordance with site procedures with the intended purpose of establishing an acceptable level of quality for all previously documented instrument sense lines.

FINDINGS

In response to findings addressing the documentation for bending activities prior to 1983 (prior to the issue and implementation of WBNP QCI 3.13-5), we concur with the deficient items as detailed. Our research reveals that the requirements of WBNP QCP 4.10 listed below were not satisfied as recognized by QA Audit Report WB-M-81-08 Deficiency No. 1.

1. Bend numbers were not added to fabrication sketches.

2. Bend numbers were not added to the PCOS.

3. The qualified bending procedures were not documented on the PCOS.

4. The inspection requirements were not listed on the PCOS.

5. The inspection acceptance was not documented on the PCOS.

NCR 3864 was initiated on January 5, 1982 as a result of these findings with a disposition requiring that all previously documented subassemblies have bends reinspected to verify the absence of cracks and wrinkles. Documentation to this effect was completed and attached to the nonconformance report. An additional commitment was made to include a signed-off inspection statement on all subsequent process control operation sheets. Failure to comply with this commitment ultimately led to the issue of NCR 4633. Furthermore, it is recognized that the disposition of NCR 3864 did not fully address each requirement of WBNP QCP 4.10 as recommended by the memorandum (SWP 820222 185) concerning the subject from H. B. Rankin to J. E. Wilkins dated February 19, 1982. An inspection of bends to verify the absence of cracks and wrinkles is sufficient only when documentation exists to support the fact that bending operations have been performed with adequately qualified benders. Having lacked this documentation, a reinspection of all bends in accordance with WBNP QCP 4.10 (including inspections of wall thickness, ovality, bend radius, and magnetic particle or liquid penetrant inspection) would have been required to meet the intent of the DPO disposition.

FINDINGS CONTINUED

NCR 4633 was initiated on February 8, 1983 as a result of improper implementation of the corrective action of NCR 3864 which responded to site QA Audit WB-M-81-08. The disposition of this NCR required that the qualification procedures in effect during the nonconformance period (June 11, 1982 to February 7, 1983) be evaluated by means of inspecting sample bends. These bends were produced using bending equipment of the same manufacturer and model number used for the original qualification tests as well as pipe and tubing sizes and heat numbers specified on the original tests. Inspectors were instructed to verify that bends were free from cracks, buckles, grooves, or bulges. Once again, this disposition was inadequate as a result of insufficient documentation related to the identification of bending equipment used for each subassembly. Furthermore, this disposition did not address the possible use of unqualified bending equipment during this period. It merely served to enhance the level of confidence in the previously qualified bending procedures.

In consideration of these shortcomings discovered in the previous attempts to address inadequate control of unit 1 bending activities, we have generated NCR 6276. The correction method of this nonconformance states that OE is " . . . to provide recommendations for corrective action necessary to ensure the quality of affected installations." More specifically, this will involve a unit 1 bend sampling program whereby a representative sample of each type of unit 1 bend will be inspected to ensure that the criteria related to pipe and tubing wall thickness and ovality has been satisfied, as well as ensuring that all bends are free from buckles, wrinkles, bulges, and grooves. In addition, each bend will be subjected to a magnetic particle or liquid penetrant inspection. It is our contention that such a comprehensive inspection on a random sample of the total bend population will substantiate our level of confidence in the quality of the entire unit 1 bending program.

EMPLOYEE CONCERN NO. IN-85-824-002

RESPONSE TO CONCLUSION

ITEM NO. 6 - WHY WEREN'T REINSPECTION ACTIVITIES/DOCUMENTS ENCLOSED IN EACH PIPING SUBASSEMBLY DOCUMENTATION PACKAGE FOR TRACEABILITY?

Site instruction WBNP QCI 1.08 requires that " NCRs . . . that alter inspection requirements shall be referenced in the remarks section" of the applicable QA record. This requirement was in effect during the disposition periods of NCRs 3864 and 4633. It is our conclusion that an oversight on the part of engineering and inspection personnel resulted in noncompliance with this requirement. However, upon acceptable completion of the disposition of NCR 6276, evidence of satisfactory compliance with the correction method will be included in each affected instrument subassembly documentation package.

For any further information regarding these concerns or follow-up actions you may contact the Instrumentation Engineering Unit supervisor.

Principally prepared by Shawn Hughes, extension 468.

2/8
W.K.

NEC

TVA 64 (OS-9-65)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : E. R. Ennis, Acting Site Director, Watts Bar Nuclear Plant

FROM : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

DATE : OCT 30 1985

SUBJECT: CORRECTIVE ACTION RESPONSE EVALUATION

REPORT NO. : I-85-125-WBN

SUBJECT : PERSONNEL QUALIFICATIONS

CONCERN NO.: IN-85-393-003

( ) ACCEPT (X) REJECT

I-85-125-WBN-01, Experience Requirements Not Met

It is NSRS's position that the present supervisor does not meet the experience requirements specified in the FSAR, the OQAM, and ANSI N18.1. However, NSRS does not consider this to be a significant safety problem. Therefore, the application of the ANSI N18.1 option to allow the engineering section supervisor to perform in more than one discipline (i.e., apply his experience to fulfill the requirements of the subject position) is acceptable to NSRS. It should be noted, however, that this approach confirms WBN's agreement that the ANSI standard is applicable to the subject position. This item is therefore closed.

I-85-125-WBN-02, Interpretation of Requirements

During the resolution of item No. 1 above, it became apparent that considerable confusion exists among plant staff on the application of the FSAR and OQAM requirements in this area. Therefore, this recommendation is still considered necessary. NSRS has not received corrective action for this recommendation and therefore this item remains open.

Original signed by
M. S. Kidd
K. W. Whitt

Attachment
cc (Attachment):
H. N. Culver, W12A19 C-K
W. F. Willis, E12B16 C-K (4)
QTC/ERT, CONST-WBN
0056U

NRC

TVA 64 (OS-9-65)

UNITED STATES GOVERNMENT

Memorandum TENNESSEE VALLEY AUTHORITY

TO : S. Schum, QTC-ERT Program Manager, WBN CONST

FROM : K. W. Whitt, Director of Nuclear Sfety Review Staff, E3A8 C-K

DATE : OCT 30 1985

SUBJECT: TRANSMITTAL OF ACCEPTED FINAL REPORTS

The following final reports have been reviewed and accepted by NSRS and are transmitted to you for preparation of employee responses.

EX-85-042-003	
IN-85-445-008	
IN-86-110-001	
IN-86-190-003	

Original signed by
M. S. Kidd

K. W. Whitt

Please acknowledge receipt by signing below, copying and returning this form to J. T. Huffstetler, E3B37 C-K

Name Date

Attachments

cc (Attachments):
W. F. Willis, E12B16 C-K (4)
H. N. Culver, W12A19 C-K
E. R. Ennis, WBN

REP07:G4

QUALITY
TECHNOLOGY
COMPANY

P.O. BOX 600
Sweetwater, TN
37874

ERT INVESTIGATION REPORT

CONCERN NO. EX-85-042-003

CONCERN: Welders are being requalified on carbon plate with carbon backing strip. The test plate is set at 33° for the test and this one test requalifies the welder for every process he had before including pipe.

INVESTIGATION
PERFORMED BY: W. M. Kemp, Jr.

Personnel Contacted: Confidential

Documents Reviewed:

ASME Section IX, Part QW Perforance Qualification
AWS D1.1 Section 5 Qualfication (Welders)
Process Specification 1.C.2.2 (R1) Test #SM-RQ (C) AWS
Process Specification 1.M.2.2 (R3) Test #SM-RQ (M) ASME
Process Specification 1.M.2.2 (R3) Test #GT-RQ (M) ASME

Summary of Investigation:

The review and investigation of this concern has determined that the statement in the concern is substantiated, however this is an acceptable method for renewal of expired qualification per the ASME and AWS codes.

Findings:

ASME Section IX, QW 322, Renewal of Qualification states in part:

> "Renewal of qualification for a specific welding process under (a or b) (Expired Qualification) "above may be made on a single test joint (plate or pipe) on any thickness, position or material to reestablish the welders or welding operators qualification for any thickness, position or material for the process for which he was previously qualifiied."

AWS D1.1, Section 5, Para 5.30, Period of Effecftiveness states:

> "The requalification test need be made only in the 3/8" in. (9.5 MM) thickness."

CONCERN NO. EX-85-042-003

DETAILS, continued

Findings, continued

The following are TVA's requirements for "Performance Qualification Renewal Test" - test coupons to be welded.

PS 1.C.2.2 (R1) AWS D1.1 3/8" x 3" x 6" Using Backing Strip SMAW, RT Exam
PS 1.M.2.2 (R3) ASME IX, 3/8" x 3" x 6" SMAW , Rt. Exam
PS.1.M.2.2 (R3) ASME I, x 3/8" x 3" x 6" GTAW, Rt. Exam

Backing strips were utilized in all performance qualification renewal tests. A random review of welding procedures for backing material requirements determined the following:

A) SM-U-1, No backing required.
B) GT11-B-1 or GT11-0-1A, No backing required.
C) SM11-B-3, Backing required.

In the case of A&B, ASME and AWS concurs that if backing material is not required by the WPS, it may or may not be used. This means that a full penetration weld can be achieved, with or without the use of backing material and is not considered an essential variable.

In the case of Item C, the WPS requires backing and is an essential variable.

Conclusion:

The concern as stated is substantiated in the fact that the statement is true. However, the "performance qualification renewal test" conducted is in accordance with and acceptable by the AWS/ASME codes. TVA's "performance qualification renewal tests" will satisfy the ASME/AWS code requirements for qualifications which have expired.

Report Reviewed & Accepted
10/23/85
NSRS.

PREPARED BY W M Kemp Oct 18 1985
DATE

REVIEWED BY O B Shew 10/19/85
DATE

FINAL

REQUEST FOR REPORTABILITY EVALUATION

1. Request No. EX-85-042-003 _____
(ERT Concern No.) (ID No., if reported)

2. Identification of Item Involved: Welder Requalification
(Nomenclature, system, manuf.,SN, Model, etc.)

3. Description of Problem (Attach related documents, photos, sketches,etc.)
Welders are being requalified on carbon plate with carbon lacking strips. The test plate is set at 33 degrees for the test and this one test requalifies the welder for every process he had including pipe

4. Reason for Reportability: (Use supplemental sheets if necessary)

A. This design or construction deficiency, were it to have remained uncorrected, could have affected adversely the safety of operations of the nuclear power plant at any time throughout the expected lifetime of the plant.

No __X__ Yes _____ If Yes, Explain:_____

_____

_____

AND

B. This deficiency represents a significant breakdown in any portion of the quality assurance program conducted in accordance with the requirements of Appendix B.

No __X__ Yes _____ If Yes, Explain:_____

_____

_____

OR

C. This deficiency represents a significant deficiency in final design as approved and released for construction such that the design does not conform to the criteria bases stated in the safety analysis report or construction permit.

No __X__ Yes _____ If Yes, Explain:_____

_____

_____

OR

REQUEST FOR REPORTABILITY EVALUATION

D. This deficiency represents a significant deficiency in construction of or significant damage to a structure, system or component which will require extensive evaluation, extensive redesign, or extensive repair to meet the criteria and bases stated in the safety analysis report or construction permit or to otherwise establish the adequacy of the structure, system, or component to perform its intended safety function.
No __X__Yes _____ If Yes, Explain: ______________________________

____

____

OR

E. This deficiency represents a significant deviation from the performance specifications which will require extensive evaluation, extensive redesign, or extensive repair to establish the adequacy of the structure, system, or component to perform its intended safety function.
No __X___Yes _____ If Yes, Explain: ______________________________

____

____

IF ITEM 4A, AND 4B OR 4C OR 4D OR 4E ARE MARKED "YES", IMMEDIATELY HAND-CARRY THIS REQUEST AND SUPPORTING DOCUMENTATION TO NSRS.

This Condition was Identified by: [signature]______ 365-4464___
ERT Group Manager Phone Ext.

[signature]______ 365-4414___
ERT Project Manager Phone Ext.

Acknowledgment of receipt by NSRS

[signature]______________ Date 10/23/85____ Time 1125___
Signed

TENNESSEE VALLEY AUTHORITY

NUCLEAR SAFETY REVIEW STAFF

NSRS INVESTIGATION REPORT NO. I-85-452-WBN

EMPLOYEE CONCERN IN-85-445-008

MILESTONE 1 - FUEL LOAD

SUBJECT: INSPECTION PROCEDURE REVISION AND TRAINING

DATES OF INVESTIGATION: September 24-October 16, 1985

LEAD INVESTIGATOR: R. N. Russell — Date: 10/23/85

REVIEWED BY: G. G. Brantley — Date: 10/23/85

APPROVED BY: M. A. Harrison — Date: 10/23/85

I. BACKGROUND

The employee concern as received from the ERT stated:

> The excessive number of construction/inspection criteria makes it difficult to know the latest requirements. By this stage of the project, procedures should not require further change. (. . . EG QCP-3.14 written 8-7-78, revised 14th time 1-2-85, and QCP-1.14 is now at Rev. 16). Normal "training" method for these changes is "read & route", but this is not adequate for the larger procedures such as the one for anchor pull tests.

This concern was Quality Technology Company number IN-85-445-008 dated August 19, 1985.

II. SCOPE

Documentation relating to the revision of QCPs and training of individual inspectors was reviewed. Interviews with personnel involved in field inspections related to QCP-1.14 and QCP-3.11 were performed. Documents were reviewed and personnel interviewed to determine the following:

A. Reason for procedure change;

B. number of procedure changes and intervals between change;

C. training received for procedure changes;

D. methods of training for QCP changes; and,

E. qualification to the current revision level for inspectors at the time of inspection.

III. SUMMARY OF FINDINGS

A. Excessive Number of Inspection Criteria

There is a large number of QCP procedures. Eighty-nine procedures fill approximately three volumes. However, these are required because of industry standards, design requirements, NRC regulations, and other upper-tier documents. The Code of Federal Regulations requires and TVA management has decided that procedures requiring these inspections are necessary to ensure quality and reliability of equipment and workmanship.

B. Procedures Should Not Require Further Change

QCP-1.14 has been revised twice in the past year, once in 1984, and twice in 1983. Each of these changes was required by changes in the General Construction Specification G-32, which is the governing document for the Construction QCP.

No QCP-3.14 R14 was found. QCP-3.11 R14 dated 1/2/85 fits the description of the revised QCP described in the employee concern. This procedure was revised one time in 1985, once in 1984, and three times in 1983. New requirements were added in three of these cases, and the other changes were made for clarification and editorial purposes.

Five other QCPs were examined. Each of these was changed in 1985 because of changing upper-tier documents. Quality control inspectors were interviewed. Each inspector is not qualified to all inspection procedures. They are qualified only to those procedures that affect the work of their QC section; i.e., electrical, mechanical, instrumentation, etc. This limits the number and type of procedures that each inspector must be trained to perform. The four inspectors interviewed did not consider the number of inspections or changes to instructions to be excessive. The inspectors were certified to an average of 10 procedures each.

There are a total of 89 QCPs. 90 percent of these procedures have been revised nine times or less for the life of the project. 63 percent have been revised less than five times. In reviewing a selected QCP, it was determined that QCP-3.05 R24 was revised 25 percent of the time because of changes in the upper-tier documents, 21 percent of the time due to NRC inspection findings, 21 percent of the time to add new sections or delete old sections, and 33 percent of the time for clarification of requirements or data sheets.

C. Training Method for QCP Changes is "Read and Route"

Each new inspector is required to have on-the-job training with a qualified inspector. At the conclusion of this on-the-job training he/she is tested to complete the qualification.

Procedure changes require a training session in which a section supervisor gets all inspectors that are certified to that procedure together. He/She or his/her representative go over the changes with a question-and-answer session at the end. Attendance at the training session is documented.

Major procedure changes (as identified by the Procedures and Training Section) require that inspectors undergo a retest for certification to the current procedure-revision level after the training session.

The "read-and-route" method of training for procedure update was done prior to 1982. The above-described method was used after 1982.

D. Inspections are Done with Outdated Procedures

Inspectors are trained in new procedures prior to issuance of the procedures. For example, QCP-1.14 Revision 16 was issued on 7/31/85 for use. The training program for the inspectors using QCP-1.14 was held on 7/25/85.

Checks are conducted to ensure that qualified inspectors are performing inspections. After an inspection has been performed, the date of the inspection is compared with the inspector's certification date for the latest revision level of the applicable procedure. This is done by the inspection group leader and is later done by the records unit. If a discrepancy is found, the inspection card is returned to the responsible unit and the inspection is redone.

V. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The allegation is unsubstantiated for the QCP program for the following reasons.

A. The number of inspection criteria are related to requirements in upper-tier documents and a conscious management decision to ensure quality through checks and inspections. Even though there are 89 QCPs containing inspection criteria, each inspector is required to be qualified only for those procedures in his/her responsible area.

B. Procedure changes are not arbitrary. They are related to a changing set of codes and standards, clarifications, and NRC findings. The QCP changes have not been excessive.

C. Inspectors are trained and tested in inspection procedures prior to performing inspections. The "read-and-route" method of training has not been used for inspection personnel since 1982.

D. Checks and balances were found that ensure that personnel were qualified to the latest revision level of inspection procedures. This system is also used to catch mistakes and correct them expeditiously.

Recommendations

None.

TENNESSEE VALLEY AUTHORITY

NUCLEAR SAFETY REVIEW STAFF

NSRS INVESTIGATION REPORT NO. I-85-455-WBN

EMPLOYEE CONCERN IN-86-110-001

MILESTONE 6

SUBJECT: ICE BASKET LOADING

DATES OF INVESTIGATION: October 15-18, 1985

INVESTIGATOR: G. G. Brantley for J. D. Gilbreath — Date: 10/24/85

REVIEWED BY: G. G. Brantley — Date: 10/24/85

APPROVED BY: M. A. Harrison — Date: 10/25/85

I. BACKGROUND

NSRS has investigated Employee Concern IN-86-110-001 which was communicated to the Quality Technology Company (QTC) in response to the Watts Bar Employee Concern Program. The specific concern analyzed and discussed in this report was expressed to QTC as follows:

> During ice loading, TVA used jack hammers to compact ice to achieve the minimum basket weight requirements. This could result in "channeling" of ice and endanger containment integrity during a LOCA (loss of cooling accident).

QTC also relayed that the concerned individual had no further information on the incident.

II. SCOPE

The scope of this investigation was directed toward verification of the event occurrence and assessment of the impact on ice condenser performance.

A. During the course of this investigation, discussions were held with cognizant personnel in the Mechanical Maintenance Section of NUC PR and with Westinghouse personnel in Pittsburg, Pennsylvania.

B. In addition, the following documents were reviewed.

1. WBNP FSAR

2. Maintenance Instruction MI-61.1, Rev. 3, "Initial Ice Loading Procedure"

3. WAT-EOP-18, Rev. 0, "Ice Loading Operation"

4. WCAP-2951, "Ice Condenser Reactor Containment," June 1966

5. WCAP-7040, "Ice Condenser Reactor Containment," March 1967

III. SUMMARY OF FINDINGS

Through discussions with NUC PR personnel, the allegation of "ice compacting" was substantiated. During initial ice loading, a modified pneumatic soil compacter was used to compact the ice in the upper 12 feet of approximately 50 percent of the ice baskets. This mechanism was used in an attempt to obtain the maximum allowable weight of ice per basket. MI-61.1 requires that each basket be filled with 1450-1550 pounds of ice.

Although MI-61.1 does not specifically allow or prohibit the use of a compacter, it does state in Section 1.0 that "the activities contained in this instruction may be altered if the change promotes better efficiency or ease of operating and does not adversely affect the quality of work performed." It further states in Section 6.5.2.2 that "the ice loading equipment and loading technique should be adjusted so that 1450 to 1550 pounds of ice is deposited in each basket."

A subsequent phone concersation with Westinghouse engineering personnel in Pittsburg, Pennsylvania, indicated that during the early qualification tests for the ice condenser, various ice configurations were examined to determine effects on performance. WCAP-2951 states in Section II that "condenser performance is not significantly affected by the shape or size of pieces of ice within the range of interest." It further elaborates in Section V.E.5:

> A number of ice shapes and ice bed configurations were tested including baskets full of ice chips or ice cubes of various shapes, baskets with and without steam flow holes, and a large block of ice with flow holes. The results indicate that performance was not strongly affected by the ice configuration.

Further tests performed and documented in WCAP-7040 substantiated the earlier tests (see Section IV.C.1.c).

During the review of the actual loading records, it was noted that 614 (about 32 percent) of the ice baskets had a weight exceeding the allowable maximum of 1550 pounds. In accordance with requirements of MI-61.1, the information was furnished to EN DES who subsequently forwarded the data to Westinghouse for analysis. At Westinghouse's suggestion, ice was removed from 36 of the baskets on August 5, 1984. This work was accomplished through issuance of Maintenance Request A408828 and implemented through Surveillance Instruction 6.17.

IV. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

Although the concern of ice compacting was substantiated, the accumulated evidence would indicate no adverse impact on ice condenser performance.

B. Recommendations

None.

TENNESSEE VALLEY AUTHORITY

NUCLEAR SAFETY REVIEW STAFF

NSRS INVESTIGATION REPORT NO. I-85-439-WBN

EMPLOYEE CONCERN IN-86-190-003

MILESTONE 6

SUBJECT: CONCRETE ANCHOR TESTING

DATES OF INVESTIGATION: October 3-7, 1985

INVESTIGATOR: A. M. Gentry _____ Date 10/24/85

REVIEWED BY: P. B. Border _____ Date 10/24/85

APPROVED BY: M. A. Harrison _____ Date 10/28/85

I. BACKGROUND

A concern was received by the Quality Technology Company Employee Response Team that stated:

> An employee told the CI that the safety related concrete anchors (REDHEADS) were tested by a sampling plan rather than individually. CI questioned the acceptability of this practice.

II. SCOPE

The ANSI and ASTM Standards, TVA Design Standards, and TVA Construction Specifications were reviewed to determine the acceptable methods for anchor testing. Construction and Nuclear Power site procedures were reviewed to determine if sampling methods are being implemented.

III. SUMMARY OF FINDINGS

A. Applicable Codes, Standards, and Procedures

The following documents were reviewed as a part of this investigation.

1. ANSI B40.1, "Gauges - Pressure Indicating Dial Type - Elastic Element"
2. ANSI B94.12, "Carbide-Tipped Masonry Drills and Blanks for Carbide-Tipped Masonry Drills"
3. ASTM A36, "Standard Specification for Structural Steel"
4. ASTM A307, "Standard Specification for Carbon Steel Externally and Internally Threaded Standard Fasteners"
5. ASTM A325, "Standard Specification for High-Strength Bolts for Structural Steel Joints"
6. ASTM C144, "Standard Specification for Aggregate for Masonry Mortar"
7. ASTM E488-84, "Strength of Anchors in Concrete and Masonry Elements"
8. NRC I-E Bulletin 79-02 and TVA responses thereto
9. Construction Specification G-2, "Plain and Reinforced Concrete"
10. Construction Specification G-32, "Bolt Anchors Set in Hardened Concrete"
11. Construction Specification G-34, "Repair of Concrete"
12. Construction Specification G-51, "Grouting and Dry Packing of Base Plates and Joints"

13. Design Standard DS-C6.1, "Concrete Anchorages"

14. Construction Procedure WBN-QCP-1.14, "Inspection and Testing of Bolt Anchors Set in Hardened Concrete and Control of Attachments to Embedded Features"

15. Nuclear Power Procedure MAI-1, "Installation, Testing of Bolted Anchors Set in Hardened Concrete"

B. Construction implements and complies with procedure QCP-1.14, "Inspection and Testing of Bolt Anchors Set in Hardened Concrete and Control of Attachments to Embedded Features," for anchor testing.

C. Nuclear Power implements and complies with procedure MAI-1, "Installation, Testing of Bolted Anchors Set in Hardened Concrete," for anchor testing.

D. Both procedures reference and implement General Construction Specification (G-Spec) G32, "Bolt Anchors Set in Hardened Concrete."

This specification references ANSI and ASTM standards, other G-Specs, and Design Standard DS-C6.1, "Concrete Anchorages." These documents established the following method which is used for anchor testing.

1. Qualification tests are performed prior to the initial use of each size and brand of anchor at each project in project-placed concrete. The results of these tests are analyzed to assure that the design loads will be supported and that the required factors of safety are achieved.

2. Prior to installation testing, anchors are grouped into what is called a "lot." A lot is defined as the anchors installed by a specific crew either in a specific location in the plant or over a period of time. If the lot is defined on the basis of time, the maximum time is two weeks. The installing crew applies a unique identification marking adjacent to the anchor or anchors, and a record of all installations is maintained. Regardless of the basis for a lot, anchors of different types or brands are grouped into separate lots.

3. Lots are marked on controlled drawings, and the numbers and sizes of anchors are indicated.

4. Each anchor in the lot is inspected for perpendicularity, spacing between anchors, distances from abandoned anchors and free edges, embedment depth, and thread engagement.

5. A sample of anchors is randomly selected for proof testing. The number tested is dependent on the number of anchors in the lot. A large number of anchors dictates a larger sample. Failures identified in the sample require additional anchors be tested.

E. A review of 36 randomly selected anchor test records indicated that Construction and Nuclear Power are implementing procedural requirements.

F. NRC recognized an increase in deficiency reports regarding concrete anchors in 1979 and subsequently issued NRC IE Bulletin 79-02. This bulletin basically required that anchor design, safety factors, and documentation be reevaluated and that a testing program be initiated to confirm that anchors will perform their intended functions. The testing program outlined by NRC allowed sampling techniques to be utilized and emphasized that a high failure rate was basis for increased testing.

G. A review of ASTM E488, "Strength of Anchors in Concrete and Masonry Elements," showed that sampling techniques were acceptable for anchor testing.

IV. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

The employee concern is substantiated in that sampling techniques are used. However, determination of adequacy of the anchors based on sampling is an acceptable technique endorsed by industry standards, TVA procedures, and NRC in IE Bulletin 79-02.

B. Recommendations

None.

TVA 64 (OS-9-65)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

NRC

TO : Craven Crowell, Director of Information, E12A4 C-K

FROM : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

DATE : OCT 25 1985

SUBJECT: REPORTS SUBMITTAL FOR "NUCLEAR SAFETY UPDATE"

Attached is one copy each of the following final reports of investigation or evaluation of employee concerns for your use, summarization, and publication in Nuclear Safety Update. All have been reviewed and accepted by NSRS.

Concern No.	Investigation Performed by	Concern No.	Investigation Performed by
IN-85-186-004	ERT		
IN-85-221-001	ERT		
PH-85-001-002	ERT		

Original signed by
M. S. Kidd

K. W. Whitt

Attachments

Please acknowledge receipt by signing, copying, and returning this transmittal form to J. T. Huffstetler at E3B37 C-K.

Name Date

Repo4A:B

cc: H. N. Culver, W12A19 C-K
E. R. Ennis, WBN
QTC/ERT, CONST-WBN

EMPLOYEE CONCERN DISPOSITION REPORT

CONCERN NO. IN-85-186-004

DATE OF PREPARATION: 10-2-85

CONCERN: FIREPROOFING BOARDS IN ELECTRICAL PANELS ARE GENERALLY OVER OR UNDERSIZED AND IMPROPERLY INSTALLED. NEED TO CHECK AT RANDOM THE GAP BETWEEN THE WIRE AND BOARD. ELECTRICAL PENETRATIONS GOING THRU FLOOR AND WALLS ARE STUFFED WITH COTTON. (NO SPECIFIC LOCATION AVAILABLE)

INVESTIGATION PERFORMED BY: ERT

FINDING(S): CONTACT WITH THE CONCERNED INDIVIDUAL REVEALED THAT THE FIELD JARGON FOR KAOWOOL IS "COTTON", THEREFORE THE NOTED CONCERN WAS DUE TO A MISUNDERSTNDING ON THE INTERVIEWERS PART.

AN INSPECTION OF ELECTRICAL PANELS AND CABLE TRAY WALL PENETRATIONS WAS CONDUCTED TO DETERMINE IF THE PENETRATIONS WERE INSTALLED TO THE REQUIREMENTS OF DRAWINGS 45W883-1, -2, -3, AND -4.

THE SPACES BETWEEN THE CABLES AND FIBREBOARD WERE FILLED WITH KAOWOOL AS REQUIRED.

THIRTEEN PENETRATIONS WERE EXAMINED FROM THE CONTROL ROOM AND RELAY ROOM. THIRTEEN TRAY PENETRATIONS WERE EXAMINED IN THE AUXILIARY, CONTROL, AND TURBINE BUILDINGS. ALL PENETRATIONS EXAMINED MET THE REQUIREMENTS OF THE 45W883 SERIES DRAWINGS.

CORRECTIVE ACTION(S) NONE REQUIRED

CLOSURE STATEMENT: THIS CONCERN WAS NOT SUBSTANTIATED.

REQUEST FOR REPORTABILITY EVALUATION

FINAL

1. Request No. IN-85-186-004 _____
(ERT Concern No.) (ID No., if reported)

2. Identification of Item Involved: Electrical Panel Fireproofing Boards
(Nomenclature, system, manuf., SN, Model, etc.)

3. Description of Problem (Attach related documents, photos, sketches, etc.)

Electrical Panel Fireproofing Boards are improperly installed and not of proper size.

4. Reason for Reportability: (Use supplemental sheets if necessary)

A. This design or construction deficiency, were it to have remained uncorrected, could have affected adversely the safety of operations of the nuclear power plant at any time throughout the expected lifetime of the plant.

No X Yes _____ If Yes, Explain: _____

AND

B. This deficiency represents a significant breakdown in any portion of the quality assurance program conducted in accordance with the requirements of Appendix B.

No X Yes _____ If Yes, Explain: _____

OR

C. This deficiency represents a significant deficiency in final design as approved and released for construction such that the design does not conform to the criteria bases stated in the safety analysis report or construction permit.

No X Yes _____ If Yes, Explain: _____

OR

D. This deficiency represents a significant deficiency in construction of or significant damage to a structure, system or component which will require extensive evaluation, extensive redesign, or extensive repair to meet the criteria and bases stated in the safety analysis report or construction permit or to otherwise establish the adequacy of the structure, system, or component to perform its intended safety function.

No X Yes ____ If Yes, Explain: ____

OR

E. This deficiency represents a significant deviation from performance specifications which will require extensive evaluation, extensive redesign, or extensive repair to establish the adequacy of the structure, system, or component to perform its intended safety function.

No X Yes ____ If Yes, Explain: ____

IF ITEM 4A, AND 4B OR 4C OR 4D OR 4E ARE MARKED "YES", IMMEDIATELY HAND-CARRY THIS REQUEST AND SUPPORTING DOCUMENTATION TO NSRS.

This Condition was Identified by: O R Theis — ERT Group Manager — 365-4464 Phone Ext.

M M Mobley — ERT Project Manager — 365-4414 Phone Ext.

Acknowledgment of receipt by NSRS

Signed ____ Date ____ Time ____

TVA 64 (OS-9-85)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : E. R. Ennis, Plant Manager, Watts Bar Nuclear Plant

FROM : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

DATE : September 23, 1985

SUBJECT: CORRECTIVE ACTION RESPONSE EVALUATION

REPORT NO: IN-85-186-004 and IN-85-221-001

SUBJECT: Fireproofing Material and Valve Damage

CONCERN NO: IN-85-186-004 and IN-85-221-001

☐ ACCEPT

☒ ACCEPT WITH COMMENT ☐ REJECT

Items (1) Q-85-221-001-01, "Reportability" and (2) Q-85-221-001-03, "Improper Valve Operation" have been determined to require no further evaluation. These items are closed. Please notify NSRS when action to correct Q-85-186-004-01 is complete.

Prepared by 9/12/85 Date
M. A. Harrison

Reviewed by 9/25/85 Date
M. S. Kidd

Attachment
cc (Attachment):
H. N. Culver, W12A19 C-K
QTC/ERT, Watts Bar Nuclear Plant -- For response to employee.
BUDGETD:FF

TVA 64 (OS-9-65)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : K. W. Whitt, Director, Nuclear Safety Review Staff, E7B31 C-K

FROM : E. R. Ennis, Acting Site Director, Watts Bar Nuclear Plant P&E (Nuclear)

DATE : SEP 16 1985

SUBJECT: WATTS BAR NUCLEAR PLANT - ADDITIONAL RESPONSE TO EMPLOYEE CONCERN NOS. IN-85-221-001 AND IN-85-186-004

This is in response to M. A. Harrison's August 16, 1985 45D to H. N. Culver requesting further information on the subject employee concerns.

IN-85-221-001-01--requested information concerning the Office of Engineering (OE) reportability evaluation. The valves in question (2-ISV-70-558B and 1-ISV-70-5574-A) were inspected and the actions outlined in the referenced memorandum were taken; these actions were taken as routine maintenance. Results of the inspection gave no indication of the existence of any nonconforming condition. Therefore, a nonconformance report has not been written and this item is not considered reportable under 10 CFR 50.55(e) or 10 CFR 21.

IN-85-221-01-03--requested a response to valve handwheel sizing. OE's standard specifications for valves provide general criteria for sizing handwheels so that they can be operated without "cheater bars" and still not be excessively large, by specifying maximum wheel size and maximum handwheel rim pull (see the attachment for representative example of standard speicfication requirements).

IN-85-186-004--requested further information regarding a QTC followup on bend radius violation. (Reference QTC letter ERT:QTC85.0168). Control room cabinets 1-M-5 and 1-M-6 were examined by the Nuclear Services Branch engineering staff. The examples cited by QTC were found to be in violation of the minimum bend radius found in Electrical Design Standard DS-E12.1.5 and examples could be readily identified. This condition has been identified on NCR 6295 and referred to OE for evaluation.

A conductor with cut insulation was also identified. This was also verified by Nuclear Services Branch. Since this is a nonsafety-related annunciation cable, it will be repaired on a maintenance request.

These responses have been discussed with the responsible QTC representatives, Roger Bird and Rana Ahmed.

E. R. Ennis

LMR:AH
Attachment
cc (Attachment):
R. M. Pierce, 9-169 SB-K
Plant Manager's Office, Watts Bar P&E (Nuclear)

7.2 Valves shall operate with stems mounted in any position.

7.3 All valves which are not bidirectional shall have an arrow on the body indicating the direction of flow.

7.4 Butt-weld end preparations shall be in accordance with TVA drawing Mechanical Details - Pipe Joints for Butt Welding.

7.5 Valve handwheel diameters shall not exceed the following:

Valve Size	Handwheel Diameter, Inches (Valve Pressure Rating)
2-1/2-10	18 (150 lb)
	24 (300-900 lb)
	30 (1500 lb)
12-18	24 (150 lb)
	30 (300-1500 lb)
Above 18	30 (150-1500 lb)

7.6 Valves shall be capable of being heated and cooled at a rate of 100°F per hour by the flowing media between 40°F and the design temperature as specified on the valve data sheet. ASME Section III, Class 1 valves shall be capable of sustaining cyclic thermal transients specified on the valve data sheet.

7.7 All valves which are specified to be seismically qualified per the valve data sheet shall be designed to withstand the seismic and operability conditions in appendix I for Category I active valves and/or appendix II for Category I nonactive valves.

7.8 The maximum handwheel rim pull shall not exceed 80 lb when opening or closing the valve against the differential pressure specified on the valve data sheet. When manual valves require in excess of 80-lb rim pull for opening or closing the valve an enclosed gear operator shall be provided. An impactor handwheel may be furnished for seating or unseating the valve provided that the rim pull does not exceed the 80 lb for all valve cycling operations other than seating or unseating.

7.9 In addition to the valve identification and marking requirements of section 2.0, each valve shall bear, on another securely attached metal tag, the TVA mark number as shown on the valve data sheet.

7.10 After valve hydrostatic testing is completed, the valve packing shall be removed. Valves shall be shipped without packing installed. Valve packing shall be suitably packaged (plastic bag) and securely attached to the valve for shipment.

7.11 All exterior ferrous metal surfaces of each valve, with the exception of machined, finished, or bearing surfaces, shall be given one coat of a suitable shop primer.

FOR

NAME: H N CULVER
DATE: 8/16/85
ADDRESS: W12 A19 C-K
☐ Chatta ☐ M. S. ☐ Knox ☐ Nor.

Fold here for return

FROM

NAME: M A HARRISON
EXTENSION: 6320
ADDRESS: E3B35-K
☐ Chatta ☐ M. S. ☐ Knox ☐ Nor.

The following employee concern report responses require additional information

IN 85 ZZI 001 - Need OE Reportability Evaluation

~~EX~~ *

IN-85-186-004 - QTC/NSRS follow-up verified bend radius violations

Applicable documentation is attached for your information and use. Please provide response to these items by 9/6/85

M A Harrison - 8/16/85

CC: S. Schwa - QTC
IN 85 ZZI 001
IN 85 186 004

TVA 45D (05-9-80) INTEROFFICE MAILING SLIP

QUALITY
TECHNOLOGY
COMPANY

P.O. BOX 600
Sweetwater, TN
37874

August 8, 1985
ERT;QTC85.168

Mr. M. A. Harrison
Head of Investigation
Nuclear Safety Regulation Staff
Knoxville, Tennessee

Dear Mike:

Subject: TVA Response to Observations Described in ERT Investigation Report for Employee Concern No: IN-85-186-004

The TVA response to observatioin No.3, related to minimum bend radius of conductors in cabinets (including M5/C1), stated that no cables were found which violated minimum bend radius requirements. On 8/8/85 a QTC investigator (Roger Bird) accompanied by a member of NSRS (Bruce Siefken) inspected several main control room panels to determine if the minimum bend radius violations previously observed by QTC still existed.

Minimum bend radius violations were observed in cabinets M6/B1 (Termination 15A3), M6/B2 (Occasional Single Conductors), M6/C2 (Termination Nos. 1ML12, 1ML87), and M5/C1 (Termination No. 7048-2A, among others). In addition, cut insulation was noted on the conductor to termination 1ML13 in cabinet M6/C2.

Based on the above observations, it is recommended that the TVA response to Observation No. 3 in Report IN-85-186-004 be revised.

Sincerely Yours,

QUALITY TECHNOLOGY COMPANY

W. S. Schum
Project Manager
EMPLOYEE RESPONSE TEAM

WSS/mb

CORRECTIVE ACTION RESPONSE EVALUATION

REPORT NO: IN-85-186-004

SUBJECT: Fireproofing Material and Installation

CONCERN NO: IN-85-186-004

[X] ACCEPT

[ ] ACCEPT WITH COMMENT

[ ] REJECT

Prepared By Gerald L. Brantley for MAH 8/5/85

Reviewed By Gerald L. Brantley 8/5/85

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : K. W. Whitt, Director, Nuclear Safety Review Staff, E7B31 C-K

FROM : R. M. Pierce, Project Manager, Watts Bar Nuclear Plant, 9-169 SB-K

DATE : July 19, 1985

SUBJECT: WATTS BAR NUCLEAR PLANT - REQUEST FOR INVESTIGATION/EVALUATION

Attached is the requested response to QTC Concern No. IN-85-186-004.

(1 attachment)

If additional information is needed, contact J. D. Collins, extension 3000.

R. M. Pierce

TO : R. M. Pierce, Project Manager, Watts Bar Nuclear Plant, 9-169 SB-K

FROM : K. W. Whitt, Director, Nuclear Safety Review Staff, E7B31 C-K

DATE : 8/5/85

SUBJECT: WATTS BAR NUCLEAR PLANT - REQUEST FOR INVESTIGATION/EVALUATION

I hereby acknowledge receipt of the response to QTC Concern No. IN-85-186-004 - 2 pages.

Signature

8/5/85
Date

(Please copy entire page for return)

U85156.02

Report No : IN-85-186-004
Subject : Fireproofing Material and Installation
Concern No: IN-85-186-004

NSRS Recommendations: IN-85-186-004

1. Q-85-186-004-01 "Observations; Various"

   WBN PMO should correct the conditions specified in the "Observations" section of this report.

Observations

1. Control room cabinets examined were dirty inside, i.e., cigarette butts, screws, termination lugs, dirt, excess RTV sealant, Kaowool, conductor and cable material.

2. Metal tray cover in M9/1 was lying on cables.

3. Conductors are routed in some cabinets in a manner which violates minimum bend radius (M5/C1).

Response

This response covers that portion of the subject report dealing with the observations of the Employee Response Team (ERT) made while investigating concerns stated in that report. This portion begins on page 2 of the report.

I have noted the NSRS investigation results did not substantiate the concern(s) and agree. WBN review of the "NSRS Recommendations" has been conducted and detailed in the following paragraphs. Please note that the NSRS observations were not related to the concern and pose no safety significance to plant construction or operation.

The control room cabinets were examined by Nuclear Services Branch personnel. Some debris has been identified as cigarette butts, kaowool fiber, and RTV foam scraps. No excessively dirty cabinets were observed. Corrective action will include a maintenance request generated to clean out remaining debris from unit 1 cabinets. Unit 2 cabinets are still under construction and will be cleaned out periodically by craft personnel.

The metal tray cover was located on the tray but not fastened down by screws. A maintenance request will be generated to install screws.

No particular cable in M5/C1 was cited for having minimum bend radius violations. For cable type WVA, which was most common in M5/C1, the training bend radius is .448 inches for individual conductors from the cable. No particular cable was found to exceed this criteria.

TVA 64 (05-9-65)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : R. M. Pierce, Project Manager, 9/169 SP-K

FROM : K. W. Whitt, Director, Nuclear Safety Review Staff, E7B31 C-K

DATE : July 10, 1985

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is NSRS Report No. IN-85-186-004

Subject Fireproofing Material and Installation

Concern No. IN-85-186-004

and associated recommendations for your action/disposition.

It is requested that you respond to this report and the attached recommendations by July 26, 1985. Should you have any questions, please contact M. A. Harrison at telephone 6328.

Recommend Reportability Determination: Yes _____. No ✓

M. A. Harrison
Director, NSRS/Designee

cc: W. F. Willis, E12B16 C-K (6)
W. T. Cottle, WBN

--Copy and Return--

To: K. W. Whitt, Director of Nuclear Safety Review Staff, E7B31 C-K

From: R. M. Pierce, Project Manager, Watts Bar Nuclear Plant, 9-169 SB-K

Date: July 12, 1985

I hereby acknowledge receipt of NSRS Report No. IN-85-186-004

Subject Fireproofing Material and Installation

for action/disposition.

R M Pierce
Signature

7/12/85
Date

(Please copy entire page for return)

NSRS RECOMMENDATIONS: IN-85-186-004

1. Q-85-186-004-01 "Observations; Various"

WBN PMO should correct the conditions specified in the "Observations" section of this report.

ERT INVESTIGATION REPORT

CONCERN NO: IN-85-186-004

CONCERN: Fireproofing boards in electrical panels are generally over or undersized and improperly installed. Need to check at random the gap between the wire and board. Electrical penetrations going thru floor and walls are stuffed with cotton. (No specific location available)

INVESTIGATION
PERFORMED BY: R.A. Bird

DETAILS:

FINDINGS:

The concern about the use of "cotton" in fire barriers was not substantiated. Contact with the C/I revealed that the field jargon for Kaowool is "cotton", therefore the noted concern was due to a misunderstanding on the interviewers part.

The concern about the installation of fireproofing boards in panels was not substantiated. An inspection of electrical panels and cable tray wall penetrations was conducted to determine if the penetrations were installed to the requirements of drawings 45W883-1,-2,-3,and -4.

The spaces between the cables and fibreboard were filled with Kaowool as required.

CONCERN NO:IN-85-186-004

DETAILS: (continued)

Thirteen penetrations were examined from the Control Room and Relay Room. Thirteen tray penetrations were examined in the Auxiliary, Control, and Turbine Buildings. All penetrations examined met the requirements of the 45W883 series.

OBSERVATIONS:

1. Control room cabinets examined were dirty inside ie. cigarette butts, screws, termination lugs, dirt, excess RTV sealant, Kaowool, conductor and cable material.
2. Metal tray cover in M9/1 was laying on cables.
3. Conductors are routed in some cabinets in a manner which violates minimum bend radius. (M5/C1)

Report Reviewed & Accepted:

7/10/85

NSRS

Prepared by Roger A Bird 7/6/85
Date

Reviewed by O K Thew 7/6/85
Date

EMPLOYEE CONCERN DISPOSITION REPORT

CONCERN NO. IN-85-221-001

DATE OF PREPARATION: 10/21/85

CONCERN: IMPROPER VALVE OPERATON - A 4' PRY-BAR (CHEATER) WAS USED TO OPERATE THE 2" VALVE ON EL. 692' (UNIT 2) NEAR STAIRWAY. VALVE AND/OR PIPE APPEAR TO BE DAMAGED.

INVESTIGATION PERFORMED BY: ERT

FINDING(S):
1. VALVE #2-ISV-70-558B IS DAMAGED AT THE STEM AND LEAKING FROM THE STEM SEAL.

2. VALVE #2-ISV-70-652B AND 2-ISV-70-FBV-590B ARE LEAKING FROM THE STEM SEALS.

3. VALVE #1-ISV-70-557A-A IS SLIGHTLY BENT AT THE STEM STUD NEAR THE WHEEL.

CORRECTIVE ACTION(S)

MR A525384 WAS INITIATED TO CORRECT PROBLEMS WITH VALVES 2-ISV-70-558B, 2-ISV-70-562B AND 2-FBV-70-590B. MR A525382 WAS INITIATED TO CORRECT PROBLEMS ON VALVE 1-ISV-70-557A-A. THESE MR'S REQUIRE TESTING TO VERIFY OPERABILITY AND NO STEM LEAKAGE.

CLOSURE STATEMENT: THIS CONCERN WAS SUBSTANTIATED.

REQUEST FOR REPORTABILITY EVALUATION

JUL 9 1985

1. Request No. IN-85-221-001 (ERT Concern No.) _____ (ID No., if reported)

2. Identification of Item Involved: Valve Operation (Nomenclature, system, manuf., SN, Model, etc.)

3. Description of Problem (Attach related documents, photos, sketches, etc.)

Improper Valve Operation

4. Reason for Reportability: (Use supplemental sheets if necessary)

A. This design or construction deficiency, were it to have remained uncorrected, could have affected adversely the safety of operations of the nuclear power plant at any time throughout the expected lifetime of the plant.

No _____ Yes X If Yes, Explain: The need to have a cheater bar to operate valves could pose a safety problem during operation.

AND

B. This deficiency represents a significant breakdown in any portion of the quality assurance program conducted in accordance with the requirements of Appendix B.

No ✓ Yes X If Yes, Explain: ~~X~~ 7/5/85 per phone con S. Schwin QTC on 7/5/85 1455 "Yes" was marked in error.

OR

C. This deficiency represents a significant deficiency in final design as approved and released for construction such that the design does not conform to the criteria bases stated in the safety analysis report or construction permit.

No X Yes _____ If Yes, Explain: _____

OR

ERT Form M

D. This deficiency represents a significant deficiency in construction of or significant damage to a structure, system or component which will require extensive evaluation, extensive redesign, or extensive repair to meet the criteria and bases stated in the safety analysis report or construction permit or to otherwise establish the adequacy of the structure, system, or component to perform its intended safety function.

No ____ Yes X If Yes, Explain: Possible redesign or replacement may be required.

OR

E. This deficiency represents a significant deviation from performance speci ications which will require extensive evaluation, extensive redesign, or extensive repair to establish the adequacy of the structure, system, or component to perform its intended safety function.

No X Yes ____ If Yes, Explain: ____

IF ITEM 4A, AND 4B OR 4C OR 4D OR 4E ARE MARKED "YES", IMMEDIATELY HAND-CARRY THIS REQUEST AND SUPPORTING DOCUMENTATION TO NSRS.

This Condition was Identified by: [signature] 365-4417
ERT Group Manager Phone Ext.

[signature] 365-4414
ERT Project Manager Phone Ext.

Acknowledgment of receipt by NSRS

[signature] Date 7/5/85 Time 1455
Signed

7/5/85 Notified E.R. Ennis of Item @ 1515. Ennis stated he was aware. [signature] 7/5/85

TVA 64 (08-9-85)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : E. R. Ennis, Plant Manager, Watts Bar Nuclear Plant

FROM : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

DATE : September 23, 1985

SUBJECT: CORRECTIVE ACTION RESPONSE EVALUATION

REPORT NO: IN-85-186-004 and IN-85-221-001

SUBJECT: Fireproofing Material and Valve Damage

CONCERN NO: IN-85-186-004 and IN-85-221-001

☐ ACCEPT

☒ ACCEPT WITH COMMENT ☐ REJECT

Items (1) Q-85-221-001-01, "Reportability" and (2) Q-85-221-001-03, "Improper Valve Operation" have been determined to require no further evaluation. These items are closed. Please notify NSRS when action to correct Q-85-186-004-01 is complete.

Prepared by
M. A. Harrison
9/22/85
Date

Reviewed by
M. S. Kidd
9/25/85
Date

Attachment
cc (Attachment):
H. N. Culver, W12A19 C-K
QTC/ERT, Watts Bar Nuclear Plant -- For response to employee.
BUDGETD:FF

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

TVA 64 (OS-9-65)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : K. W. Whitt, Director, Nuclear Safety Review Staff, E7B31 C-K

FROM : E. R. Ennis, Acting Site Director, Watts Bar Nuclear Plant P&E (Nuclear)

DATE : SEP 16 1985

SUBJECT: WATTS BAR NUCLEAR PLANT - ADDITIONAL RESPONSE TO EMPLOYEE CONCERN NOS. IN-85-221-001 AND IN-85-186-004

SEP 17 '85

This is in response to M. A. Harrison's August 16, 1985 45D to H. N. Culver requesting further information on the subject employee concerns.

IN-85-221-001-01--requested information concerning the Office of Engineering (OE) reportability evaluation. The valves in question (2-ISV-70-558B and 1-ISV-70-5574-A) were inspected and the actions outlined in the referenced memorandum were taken; these actions were taken as routine maintenance. Results of the inspection gave no indication of the existence of any nonconforming condition. Therefore, a nonconformance report has not been written and this item is not considered reportable under 10 CFR 50.55(e) or 10 CFR 21.

IN-85-221-01-03--requested a response to valve handwheel sizing. OE's standard specifications for valves provide general criteria for sizing handwheels so that they can be operated without "cheater bars" and still not be excessively large, by specifying maximum wheel size and maximum handwheel rim pull (see the attachment for representative example of standard speicfication requirements).

IN-85-186-004--requested further information regarding a QTC followup on bend radius violation. (Reference QTC letter ERT:QTC85.0168). Control room cabinets 1-M-5 and 1-M-6 were examined by the Nuclear Services Branch engineering staff. The examples cited by QTC were found to be in violation of the minimum bend radius found in Electrical Design Standard DS-E12.1.5 and examples could be readily identified. This condition has been identified on NCR 6295 and referred to OE for evaluation.

A conductor with cut insulation was also identified. This was also verified by Nuclear Services Branch. Since this is a nonsafety-related annunciation cable, it will be repaired on a maintenance request.

These responses have been discussed with the responsible QTC representatives, Roger Bird and Rana Ahmed.

E. R. Ennis

LMR:AH
Attachment
cc (Attachment):
R. M. Pierce, 9-169 SB-K
Plant Manager's Office, Watts Bar P&E (Nuclear)

7.2 Valves shall operate with stems mounted in any position.

7.3 All valves which are not bidirectional shall have an arrow on the body indicating the direction of flow.

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7.5 Valve handwheel diameters shall not exceed the following:

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2-1/2-10	18 (150 lb)
	24 (300-900 lb)
	30 (1500 lb)
12-18	24 (150 lb)
	30 (300-1500 lb)
Above 18	30 (150-1500 lb)

7.6 Valves shall be capable of being heated and cooled at a rate of 100°F per hour by the flowing media between 40°F and the design temperature as specified on the valve data sheet. ASME Section III, Class 1 valves shall be capable of sustaining cyclic thermal transients specified on the valve data sheet.

7.7 All valves which are specified to be seismically qualified per the valve data sheet shall be designed to withstand the seismic and operability conditions in appendix I for Category I active valves and/or appendix II for Category I nonactive valves.

7.8 The maximum handwheel rim pull shall not exceed 80 lb when opening or closing the valve against the differential pressure specified on the valve data sheet. When manual valves require in excess of 80-lb rim pull for opening or closing the valve an enclosed gear operator shall be provided. An impactor handwheel may be furnished for seating or unseating the valve provided that the rim pull does not exceed the 80 lb for all valve cycling operations other than seating or unseating.

7.9 In addition to the valve identification and marking requirements of section 2.0, each valve shall bear, on another securely attached metal tag, the TVA mark number as shown on the valve data sheet.

7.10 After valve hydrostatic testing is completed, the valve packing shall be removed. Valves shall be shipped without packing installed. Valve packing shall be suitably packaged (plastic bag) and securely attached to the valve for shipment.

7.11 All exterior ferrous metal surfaces of each valve, with the exception of machined, finished, or bearing surfaces, shall be given one coat of a suitable shop primer.

FOR
NAME: H N CULVER
DATE: 8/16/85
ADDRESS: W12 A19 C-K
☐ Chatta ☐ M. S. ☐ Knox ☐ Nor.

Fold here for return

FROM
NAME: M A HARRISON
EXTENSION: 6328
ADDRESS: E3B35-K
☐ Chatta ☐ M. S. ☐ Knox ☐ Nor.

The following employee concern report responses require additional information

IN 85 221 001 - Need DE Reportability Evaluation

~~EX~~ *

IN-85-186-004 - QTC/NSRS follow-up verified bend radius violations

Applicable documentation is attached for your information and use. Please provide response to these items by 9/6/85

8/16/85

CC: S. Schwa - QTC
IN 85 221 001
IN 85 186 004

TVA 45D (05-9-80) INTEROFFICE MAILING SLIP

QUALITY
TECHNOLOGY
COMPANY

P.O. BOX 600
Sweetwater, TN
37874

August 12, 1985
ERT:QTC85.0169

Mr. M. A. Harrison
Head of Investigation
Nuclear Safety Review Staff
Knoxville, Tennessee

Dear Mike:

Subject: TVA Corrective Action Response to Findings in ERT Investigation Report for Employee Concern IN-85-221-001.

The Nuc Power corrective action response for report IN-85-221-001 addresses corrective action recommended by NSRS. Item 1, reportability evaluation, which was directed to OE was not included in the documents supplied to QTC for closure of this concern. In addition, Nuc Power recommended in their response to Item 3 that valve handwheel sizing should be assigned to OE. It was not clear from the Nuc Power response if this part of Item 3 was assigned to OE.

It is recommended that the response to In-85-221-001 be revised to include OE's response to Items 1 and 3.

Sincerely Yours,

QUALITY TECHNOLOGY COMPANY

W. Scott Schum
Project Manager
EMPLOYEE RESPONSE TEAM

WSS/BH/mb

CORRECTIVE ACTION RESPONSE EVALUATION

REPORT NO: IN-85-221-001

SUBJECT: Valve Damage From Improper Operation

CONCERN NO: IN-85-221-001

[X] ACCEPT

[ ] ACCEPT WITH COMMENT

[ ] REJECT

Prepared By

2/5/85

Reviewed By

2/5/85

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : K. W. Whitt, Director, Nuclear Safety Review Staff, E7B31 C-K

FROM : W. T. Cottle, Site Director, NUC PR, Watts Bar Nuclear Plant

DATE : July 18, 1985

SUBJECT: WATTS BAR NUCLEAR PLANT - RESPONSE TO REQUEST FOR INVESTIGATION/EVALUATION

Reference: QTC concern number IN-85-221-001

The above referenced employee concern transmitted by your memorandum, dated 7-8-85, for investigation and/or evaluation has been reviewed by the Watts Bar NUC PR staff. Our response is outlined in the attached employee concern report.

Should you have any further questions please contact Roger Goode at WBN extension 8833.

Total pages transmitted: 10

JUL [illegible] '85

for W. T. Cottle

JEG:JPM:RWG:LWJ
Attachment
cc: E. R. Ennis, Watts Bar H. G. Parris, 500A CST2-C R. M. Pierce, 9-169 SB-K

To: Roger Goode, Project Engineer, Technical Services, Watts Bar Nuclear Plant
From: ______________________

I hereby acknowledge receipt of the response to employee concern number IN 85-221-001 and associated documents. Total number of pages received 10. Response for issue 2 & 3 only.

Signature 7/22/85 Date

(Please return copy of entire page.)

0374

TVA 64 (OS-9-65)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : J. Edward Gibbs, Site Services Manager, Watts Bar Nuclear Plant NUC PR

FROM : E. R. Ennis, Plant Manager, Watts Bar Nuclear Plant NUC PR

DATE : JUL 18 1985

SUBJECT: WATTS BAR NUCLEAR PLANT - QTC EMPLOYEE CONCERN NUMBER IN-85-221-001

Reference: Memorandum from J. Edward Gibbs to E. R. Ennis dated July 11, 1985 with subject "Report of Employee Concern Investigation (NSRS)"

In accordance with the above referenced memorandum, the identified concern has been investigated, the NSRS recommendations have been considered, and the following paragraphs address each recommendation assigned to NUC PR and define actions taken.

Item #2 (Q-85-221-002-02)

All of the subject valves have been inspected by NUC PR Mechanical Maintenance and the following actions have been/will be taken:

MR A525384 has been initiated to correct the problems with valves 2-ISV-70-558B, 2-ISV-70-562B, and 2-FBV-70-590B. This MR has post maintenance testing to verify operability and no stem leakage. MR A325382 has been initiated for valve 1-ISV-70-557A-A. The stem is bent slightly on this valve (above the handwheel) and the MR does require Operations to ensure valve operability and no leakage around the stem. These items will be completed by August 15, 1985 and copies of the MRs are attached.

Item #3 (Q-85-221-001-03)

This item actually involves three recommendations, the last of which is to ensure handwheel sizes are appropriate for valve size and type.

This is a design function and should be assigned as item 1 (Q-85-221-001-01). Concerning the other two (restriction on cheater bars and counterforce/countertorque training), General Operating Instruction 7 (General Equipment Operating Guidelines) addresses both of these items. General notes (copies attached) point out actions to be taken by Operations personnel in the event valve operations problems are encountered. The recommendations of this GOI are part of periodic training and is documented by the Nuclear Training Branch. We feel this is an appropriate program to ensure prevention of valve damage during operation.

J. Edward Gibbs
JUL 18 1985

WATTS BAR NUCLEAR PLANT - QTC EMPLOYEE CONCERN NUMBER IN-85-221-001

Since some valve operation is done by OC personnel just prior to transfer, a memorandum from the plant manager (NUC PR) to the project manager (OC) has been generated (copy attached), with copies of appropriate pages from GOI 7 attached, asking that he ensure this type of information/requirements are passed on to all appropriate personnel.

E. R. Ennis

cor
HBB:CDN:VCK
Attachment
cc (Attachment):
W. T. Cottle, Watts Bar

This memorandum was principally prepared by C. D. Nelson and coordinated with Redford Norman.

TVA 6436 (DNP 2-84)

MAINTENANCE REQUEST FORM—TVA NUCLEAR PLANTS

A— 525382

DATE: MONTH 7 DAY 16 YEAR 85 TIME ____ CST [1]

EQUIPMENT NAME: Isolation valve on pipe outside Charging Pmp Rm 1A-A [2]

EQUIPMENT LOCATION: BLDG Aux [3] COLUMN ____ ELEV 692 REMARKS ____

EQUIPMENT IDENTIFIER:

U	FUNCTION	SYSTEM	ADDRESS
1	1SV	70	557A-A

U/SYSTEM — COMPONENT — ADDRESS S

ASSIGNED TO: MECH. ☐ ELEC. ☐ INSTRUMENT ☐ OUTAGE ☐ OTHER ____

FAILURE DESCRIPTION/ WORK REQUESTED: Stem stud near handwheel is slightly bent Check operation of valve to insure proper opening and closing.

Ref: report # IN-85-221-001

ORIGINATOR: Rick Linnett [7] EXT: 8553 [8] SECTION: MM [9] SUPV. INITIALS: RBBforC

PRIORITY: EMER ☐ IM. ATTN. ☑ ROUTINE ☐ [11]

APPLICABLE LCO TECH. SPEC. TIME LIMIT: NA HRS. [12]

EQUIPMENT CATEGORY: CSSC ☑ NON-CSSC ☐ CLASS 1E YES ☐ NO ☑ NPRD/EQPT. HIST YES ☐ NO ☑

WORK INSTRUCTIONS (INCLUDING APPLICABLE PLANT INSTRUCTIONS): Stem is bent above handwheel and should not affect operabi. Have operations to verify valve will cycle completely by

POST MAINT. TEST REQUIREMENTS: Verify valve operable and verify no leaks around Stem

PRE-WORK/QE REVIEW (CSSC ONLY): RESP. SUPV. SIGNATURE ____ DATE / / QE SIGNATURE ____ DATE / / [16]

WORK CREW SIZE: [17] TOTAL ESTIMATED MANHOURS:

PLANNER REVIEW: [19] PLANNER SIGNATURE ____

JOB SAFETY PLANNING (SEE FORM TVA 6436D): [20] RESP. SUPV. SIGNATURE ____ DATE / /

WORK AUTHORIZATION: OPERATIONS SECT. SIGNATURE ____ DATE / /

CORRECTIVE ACTION/ WORK PERFORMED: [22]

DELAYS: DELAY CODE	MANHOUR

CAUSE OF FAILURE:

MATERIAL PROCUREMENT No's: (575, 9625, 4421, 4139, 209, 201, 144's)

CRAFTSMEN'S NAMES:

MAINTENANCE WORK COMPLETE: [27] CRAFT/SECT. REP. SIGNATURE ____ DATE / /

POST MAINTENANCE TEST(S) COMPLETE: [28] FORE./SECT. REP. SIGNATURE ____ DATE / /

ALL WORK/TESTING COMPLETE: [29] OPERATIONS SECT. SIGNATURE ____ DATE / /

MR COMPLETE- QE REVIEW (CSSC ONLY): QE SIGNATURE ____ DATE / /

TVA 6430 (DNP-2 84)

MAINTENANCE REQUEST FO —TVA NUCLEAR PLANTS A— 525384

DATE: MONTH 7 DAY 16 YEAR 85 TIME ____ CST [1]

EQUIPMENT NAME: Isolation valve on Safety Injection Pmp 2B-B [2]

EQUIPMENT LOCATION: BLDG Aux (42) [3]
COLUMN ____ ELEV 692
REMARKS Uncled Stnls outside SI pmp rm 2B-B

EQUIPMENT IDENTIFIER:

U	FUNCTION	SYSTEM	ADDRESS
2	1 5 V	7 0	5 5 8 B

U/SYSTEM — COMPONENT — ADDRESS S

ASSIGNED TO:

MECH.	ELEC.	INSTRUMENT	OUTAGE	OTHER
☐	☐	☐	☐	

FAILURE DESCRIPTION/
WORK REQUESTED:

Check valves for leakage around stem seal

Ref. report # IN-85-221-001

ORIGINATOR: Rick Drawetto [7] EXT: 8553 [8] SECTION: MM [9] SUPV. INITIALS: RBG for CA

PRIORITY: EMER. ☐ IM. ATTN. ☑ ROUTINE ☐ [11]

APPLICABLE LCO TECH. SPEC. TIME LIMIT: NA HRS. [12]

EQUIPMENT CATEGORY: CSSC ☑ NON-CSSC ☐ CLASS 1E YES ☐ NO ☑ NPRD/EQPT. HIST YES ☐ NO ☑

WORK INSTRUCTIONS (INCLUDING APPLICABLE PLANT INSTRUCTIONS):

Replace and/or adjust packing to stop leaks
Cycle valve to insure operability

QA

POST MAINTENANCE TEST INSTRUCTIONS/REQUIREMENTS:

Verify valve operable and verify no leaks

PRE-WORK/QE REVIEW (CSSC ONLY): [16]
RESP. SUPV. SIGNATURE ____ DATE / / QE SIGNATURE ____ DATE / /

WORK CREW SIZE: [17]

TOTAL ESTIMATED MANHOURS:

PLANNER REVIEW: [19]
PLANNER SIGNATURE

JOB SAFETY PLANNING (SEE FORM TVA 6436D): [20]
RESP. SUPV. SIGNATURE ____ DATE / /

WORK AUTHORIZATION:
OPERATIONS SECT. SIGNATURE ____ DATE / /

CORRECTIVE ACTION/
WORK PERFORMED: [22]

DELAYS: DELAY CODE | MANHOUR

CAUSE OF FAILURE:

MATERIAL PROCUREMENT No's:
(575, 9625, 4421, 4139, 209, 201, 144's)

CRAFTSMEN'S

MAINTENANCE WORK COMPLETE: [27]
FORE./SECT. REP. SIGNATURE ____ DATE / /

POST MAINTENANCE TEST(S) COMPLETE: [28]
FORE./SECT. REP. SIGNATURE ____ DATE / /

ALL WORK/TESTING COMPLETE: [29]
OPERATIONS SECT. SIGNATURE ____ DATE / /

MR COMPLETE-
QE REVIEW (CSSC ONLY):
QE SIGNATURE ____ DATE / /

MULTIPLE EQUIPMENT LIST

NOTE: This form is also used to maintain traceability for QA level I & II equipment when components are moved from one location to another.

MR# A-525384

Page 1 of 1

EQUIPMENT IDENTIFIER				EQUIPMENT NAME	EQUIPMENT LOCATION
Unit	Function	System	Address		
2	ISV	70	558B	ISV	El. 692 Aux. Bldg.
2	ISV	70	562B	ISV	
2	FBV	70	590B	FBV	

VALVE OPERATION

GENERAL

1. Wrenches or "cheaters" should not be used on MOV handwheels or other valves with gear drives.

2. An MR should be initiated for repair of manual valves which require a "cheater" for operation.

3. If leakage is detected after a valve has been closed, then open the valve and allow flow to clean the seat, then reclose the valve.

4. Do NOT use excessive force when backseating any valve. [Source Ref: Program Procedure TS.04.02.13-1403 (DPM WB 7503 dated 10/9/74) "Failure of Rockwell-Edwards Valves"]

5. Do NOT use RUBBER SEATED valves for throttling services.

6. GATE valves are not recommended for throttling and should be fully open or closed.

7. Valve Bonnet Overpresurrization Potential: This condition can develop when water is trapped in the bonnet of a split wedge valve when the stem is oriented in the horizontal or inverted position and the valve is then exposed to steam conditions, e.g., when a line is hydro or leak tested (with water) and the valve remains closed after the test loop is drained. If the line is then heated by steam, the water trapped in the valve bonnet expands with explosive force.

   To preclude this occurence, it is only necessary to cycle the valve open once after the line is drained; this forces the trapped water from the bonnet [Source Ref: Program Procedure TS-04.02.12-1403 (DPM N78A14 dated 12/11/78) "Potential Overpressurization of Valve Bonnets"]

MOTOR-OPERATED VALVES

1. Do NOT force the declutch lever from manual to the "motor" position.

2. Do NOT use declutch lever to stop valve travel during motor operation.

3. Do NOT torque seat plug valves or butterfly valves.

4. When operating the valve without line pressure, the final seating should be done manually with extreme care.

5. Do NOT bump motor to open or close a valve that is too tight for normal operation.

6. Before checking an MOV for motor rotation, place valve in midposition by use of handwheel.

7. Do NOT exceed a maximum of 1/4 turn of the handwheel after contact is made between the disc and seat.

8. When using handwheel, turn handwheel slowly when approaching either end of travel.

9. When running preop on an MOV and the "power on" light comes on when breaker is closed, open breaker and determine why valve is moving. (May be due to interlocks)

10. The motor should not be used to manually seat a valve further than the motor had the capability to seat it initially in the automatic mode.

11. Nuclear Units have experienced sticking MOVs after hydrostatic testing. To prevent the discovery of such a problem after unit startup has begun, all CSSC MOVs subjected to hydrostatic pressures during testing shall be cycled upon test completion. (WB5.1.8)

MANUAL-OPERATED VALVES

1. Always backseat valves (except flow balance/throttling valves) to isolate packing from line pressure. When backseating valves, do NOT use excessive force as this could separate the stem and disc.

2. Valves equipped with knobbed handwheel should be closed as tightly as possible WITHOUT using a "cheater".

3. Larger valves equipped with impactor handles or handwheels should be impacted firmly (about 1/2 turn of the cross arm after reaching valve seat). This does not apply to parallel slide valves.

4. On small valves do NOT exceed 1/4 turn on handwheel after contact is made between the disc and seat.

5. On opening and closing tandem valves such as blowdown valves on the auxiliary boilers, follow correct operating instructions for operation. In this case the inside valve is opened last and closed first. When such valves are NOT in the same body, the outside valve should be used as a throttle and should be opened last and closed first (easier to repair outside valve).

AIR-OPERATED DIAPHRAGM VALVES

1. Do NOT close the valve with the jacking handwheel except when necessary.

2. When using the jacking handwheel, do NOT use excessive force.

3. If valve is provided with dogs (locking bolts), check that dogs are removed before operation of the valve.

4. Do NOT exceed recommended air pressure.

SAFETY/RELIEF VALVES

1. When valves are equipped with flanged inlet, it is recommended that blank flanges be used in preference to using a hydrostatic test gag since excessive tightening of gag screw may damage valve seats on stem.

2. If a gag is used on a valve, follow manufacturer's instructions carefully.
3. Valve should never be gagged for hydrostatic test pressure greater than 1-1/4 times their set pressure.

INSTRUMENT ROOT VALVES

1. Instruments should be isolated locally at the instrument by the Instrument Department when possible.
2. Before opening an instrument root valve, check with the Instrument Department to ensure applicable instrument is safe to pressurize. EXAMPLE: Opening one of the root valves to a flow instrument will cause the instrument diaphragm to rupture if the instrument is not isolated or bypassed.

LOCKED VALVES

Valves are considered to be "locked" if they are padlocked, sealed or otherwise secured in the required position. Valves that are required to be locked should always be firmly seated/backseated in the required position so that the valve's position can be easily checked without unlocking the valve. Items requiring a specific method of locking should indicate the method; i.e., if a padlock is required, then the implementing instruction should state this.

TVA 14 (08-0-83)

mms/nf

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

T10 850718 926

TO : Guenter Wadewitz, Project Manager, Watts Bar Nuclear Plant OC

FROM : E. R. Ennis, Plant Manager, Watts Bar Nuclear Plant NUC PR

DATE : JUL 18 1985

SUBJECT: WATTS BAR NUCLEAR PLANT - VALVE OPERATION

Reference: Memorandum from J. Edward Gibbs to E. R. Ennis dated July 11, 1985 with subject of "Report of Employee Concern Investigation (NSRS)"

Since OC personnel do operate some valves prior to transfer, it is possible that excessive force could be applied to some valves.

Attached are copies of appropriate pages from our General Operating Instruction 7 that indicate necessary actions to take in the case of hard to operate valves.

Please ensure that appropriate personnel have these type instructions available as needed for activities that require valve operation prior to transfer.

Original signed by
E. R. Ennis

E. R. Ennis

HBB:CDN:VCK
Attachment
cc (Attachment):
NUC PR RIMS, 1520 CST2-C
J. Edward Gibbs, Site Services, Watts Bar
W. T. Cottle, Watts Bar

This memorandum was principally prepared by C. D. Nelson, extension 8241.

TVA 64 (05-9-65)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : W. T. Cottle, Site Director, NUC PR, Watts Bar Nuclear Plant

FROM : K. W. Whitt, Director, Nuclear Safety Review Staff, E7B31 C-K

DATE : July 8, 1985

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

WATTS BAR NUCLEAR PLANT SITE DIRECTOR'S OFFICE JUL 09 '85

WATTS BAR NUCLEAR PLANT SITE SERVICES OFFICE JUL 10 '85

Transmitted herein is NSRS Report No. IN-85-221-001

Subject VALVE DAMAGE FROM IMPROPER OPERATION

Concern No. IN-85-221-001

and associated recommendations for your action/disposition.

Note | Action | Reply

PB have Ennis respond C

It is requested that you respond to this report and the attached recommendations by July 22, 1985. Should you have any questions, please contact M. A. Harrison at telephone 6328-K.

Recommend Reportability Determination: Yes ✓ No ____

Director, NSRS/Designee

R. M. Pierce, 9-169 SP-K

cc: W. F. Willis, E12B16 C-K (4)
QTC-ERT, CONST, Watts Bar

--Copy and Return--

To: K. W. Whitt, Director of Nuclear Safety Review Staff, E7B31 C-K

From: J. Edward Gilbert

Date: 7/8/85

JUL 85

I hereby acknowledge receipt of NSRS Report No. IN-85-221-001

Subject Valve damage from improper operation

for action/disposition.

J Edward Gilbert
Signature

7/9/85
Date

(Please copy entire page for return)

NSRS Recommendations: IN-85-221-001

1. Q-85-221-001-01 "Reportability" Office of Engineering should determine if damage to valves 2-ISV-70-558B and/or 1-ISV-70-557A-A is reportable to the NRC under 10CFR21 or 10CFR50.55(e) 7/8/85

2. Q-85-221-001-02 "Valve Stem Damage" WBN-NUC PR should initiate maintenance to repair/replace valves identified in the report as damaged or leaking.

3. Q-85-221-001-03 "Improper Valve Operation" WBN-NUC PR should assure that appropriate controls are effective in preventing improper valve operations, such as:

   Restrictions on cheater bars
   Counterforce/Countertorque training
   Handwheel sizes appropriate for valve size & type

ERT INVESTIGATION REPORT

CONCERN NO: IN-85-221-001

CONCERN: Improper valve operation - A 4' pry-bar (cheater) was used to operate the 2" valve on El. 692' (Unit 2), near stairway. Valve and/or pipe appears to be damaged.

INVESTIGATION PERFORMED BY: Rana L. Ahmed

DETAILS:

1. It was verified by a walkdown inspection that valve number 2-ISV-70-558B on pipeline from the centrifugal charging pump 2B-B to the component cooling heat exchange pump C is damaged at the stem and is leaking from the stem seal.

2. Valve #2-ISV-70-562B and 2-ISV-70-FBV-590B are leaking from the stem seals. The valves are on the return line from the component cooling heat, exhange pump C to centrifugal charging pump #2B-B. (C.I. did not identify this problem, it was found during the walkdown inspection)

3. Valve #1-ISV-70-557A-A on pipeline from component cooling heat exchange 1A to centrifugal charging pump 1A-A is slightly bent at the stem stud near the wheel. (C.I. did not identify this problem, it was found during the walkdown inspection)

Conclusion: This concern was substantiated. The findings were reported to TVA for corrective action.

Prepared By _____ 6/28/85 Date

Reviewed By _____ 7/2/85 Date

Report Reviewed & Accepted.
7/5/85
NSRS

REQUEST FOR REPORTABILITY EVALUATION

1. Request No. IN-85-221-001 (ERT Concern No.) _____ (ID No., if reported)

2. Identification of Item Involved: Valve Operation (Nomenclature, system, manuf., SN, Model, etc.)

3. Description of Problem (Attach related documents, photos, sketches, etc.)

Improper Valve Operation

4. Reason for Reportability: (Use supplemental sheets if necessary)

A. This design or construction deficiency, were it to have remained uncorrected, could have affected adversely the safety of operations of the nuclear power plant at any time throughout the expected lifetime of the plant.

No ____ Yes X If Yes, Explain: The need to have a cheater bar to operate valves could pose a safety problem during operation.

AND

B. This deficiency represents a significant breakdown in any portion of the quality assurance program conducted in accordance with the requirements of Appendix B.

No ✓ Yes X If Yes, Explain: Changed 7/5/85 per phone con S. Schwin QTC on 7/5/85 1455 "Yes" was marked in error.

OR

C. This deficiency represents a significant deficiency in final design as approved and released for construction such that the design does not conform to the criteria bases stated in the safety analysis report or construction permit.

No X Yes ____ If Yes, Explain: _____

OR

REQUEST FOR REPORTABILITY EVALUATION Page ____ of ____

D. This deficiency represents a significant deficiency in construction of or significant damage to a structure, system or component which will require extensive evaluation, extensive redesign, or extensive repair to meet the criteria and bases stated in the safety analysis report or construction permit or to otherwise establish the adequacy of the structure, system, or component to perform its intended safety function.

No ____ Yes X If Yes, Explain: Possible redesign or replacement may be required.

OR

E. This deficiency represents a significant deviation from performance speci ications which will require extensive evaluation, extensive redesign, or extensive repair to establish the adequacy of the structure, system, or component to perform its intended safety function.

No X Yes ____ If Yes, Explain: ____

IF ITEM 4A, AND 4B OR 4C OR 4D OR 4E ARE MARKED "YES", IMMEDIATELY HAND-CARRY THIS REQUEST AND SUPPORTING DOCUMENTATION TO NSRS.

This Condition was Identified by: [signature] 365-4417
ERT Group Manager Phone Ext.

[signature] 365-4414
ERT Project Manager Phone Ext.

Acknowledgment of receipt by NSRS

[signature] Date 7/5/85 Time 1455
Signed

7/5/85 Notified E.R. Ennis of Item @ 1515. Ennis stated he was aware. [signature] 7/5/85

ERT Form M

EMPLOYEE CONCERN DISPOSITION REPORT

CONCERN NO. PH-85-001-002

DATE OF PREPARATION: 10/21/85

CONCERN: Slope problem with instrument lines in system 68; panels 226, 227, 228. Previous NCR only addresses 4 of 28 specific lines from these panels.

INVESTIGATION PERFORMED BY: ERT

FINDING(S):

Instrument sensing lines from each cabinet were inspected for slope at various locations between the cabinet location to the root valve in Unit 1.

Some specific discrepancies noted are as follows:

1. 1-068-L227-3, -4, -8, -9 have upward slope in excess of 1/2 inches per foot at bend in tubing by Az 150 dg. elev. 702 outside crane wall.

2. Upward slope of 3/8 inches per foot on 1-068-L228-7 line inside crane wall (Az 201 dg.).

3. Upward slope of 5/16 inches per foot on 1-068-L226-1 line at bend by Az 324 dg. outside crane wall.

4. 1-068-L227-1, -3 have less than 1/8 inches per foot slope at cabinet L227.

CORRECTIVE ACTION(S)

The instrument line slope problems and the additional deficiencies were identified on July 9, 1985, by NCR 6172. ECN 5846 and workplans 5320 and 5846-2 will be generated to relocate the reactor coolant flow instrumentation to reduce sense line length and minimize maintenance requirements after fuel load. New instrument sense lines will be installed and documented to correct slope and hanger deficiencies.

CLOSURE STATEMENT: This concern was substantiated.

REQUEST FOR REPORTABILITY EVALUATION

FINAL

1. Request No. PH-85-001-002 (ERT Concern No.) _____ (ID No., if reported)

2. Identification of Item Involved: System 68-S/G Flow Instrumentation (Nomenclature, system, manuf., SN, Model, etc.)

3. Description of Problem (Attach related documents, photos, sketches, etc.)

Slope of instrumentation lines to Panels L226, L227, and L228 are not correct. Positive slope exists in portions of the lines which could allow air entrapment in the sensing lines.

4. Reason for Reportability: (Use supplemental sheets if necessary)

A. This design or construction deficiency, were it to have remained uncorrected, could have affected adversely the safety of operations of the nuclear power plant at any time throughout the expected lifetime of the plant.

No ____ Yes __X__ If Yes, Explain: Air entrapment could affect the flow measurements or allow a water hammer to occur.

AND

B. This deficiency represents a significant breakdown in any portion of the quality assurance program conducted in accordance with the requirements of Appendix B.

No __X__ Yes ____ If Yes, Explain: _____

OR

C. This deficiency represents a significant deficiency in final design as approved and released for construction such that the design does not conform to the criteria bases stated in the safety analysis report or construction permit.

No __X__ Yes ____ If Yes, Explain: _____

OR

D. This deficiency represents a significant deficiency in construction of or significant damage to a structure, system or component which will require extensive evaluation, extensive redesign, or extensive repair to meet the criteria and bases stated in the safety analysis report or construction permit or to otherwise establish the adequacy of the structure, system, or component to perform its intended safety function.

No ____ Yes X If Yes, Explain: Sensing lines are not constructed with minimum -1/8 inch/foot. Conditions exist where line slope exceeds +1/2 inch/foot .

OR

E. This deficiency represents a significant deviation from performance specifications which will require extensive evaluation, extensive redesign, or extensive repair to establish the adequacy of the structure, system, or component to perform its intended safety function.

No X Yes ____ If Yes, Explain: ____

IF ITEM 4A, AND 4B OR 4C OR 4D OR 4E ARE MARKED "YES", IMMEDIATELY HAND-CARRY THIS REQUEST AND SUPPORTING DOCUMENTATION TO NSRS.

This Condition was Identified by: O. K. Thew — ERT Group Manager — 365-4464 Phone Ext.

M. S. Lee — ERT Project Manager — 365-4414 Phone Ext.

Acknowledgment of receipt by NSRS

Signed ____ Date ____ Time ____

TVA 64 (08-9-85)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : G. Wadewitz, Project Manager, Watts Bar Nuclear Plant

FROM : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

DATE : September 23, 1985

SUBJECT: CORRECTIVE ACTION RESPONSE EVALUATION

REPORT NO: PH-85-001-002

SUBJECT: Instrument Sensing Line Slope

CONCERN NO: PH-85-001-002

☐ ACCEPT

☒ ACCEPT WITH COMMENT ☐ REJECT

The additional information provided in the response dated September 18, 1985, is acceptable. However, upon follow-up verification, NSRS will evaluate justification for the determination that cleanliness requirements need not be specified for stainless sense lines other than the radiation sampling system.

Please notify NSRS referencing this concern number (PH-85-001-002) when slope and hanger deficiencies have been corrected.

9/24/85
Prepared by Date
M. A. Harrison

9/25/85
Reviewed by Date
M. S. Kidd

Attachment
cc (Attachment):
J. W. Coan, P-104 SB-K
BUDGETD:FF
H. N. Culver, W12A19 C-K
E. R. Ennis, Watts Bar Nuclear Plant
QTC/ERT, Watts Bar Nuclear Plant--For response to employee.

TVA 64 (OS-9-63) (Continuous)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : K. W. Whitt, Director, Nuclear Safety Review Staff, E3A8 C-K

FROM : Guenter Wadewitz, Project Manager, Watts Bar Nuclear Plant OC

DATE : SEP 18 1985

SUBJECT: WATTS BAR NUCLEAR PLANT - REQUEST FOR INVESTIGATION/EVALUATION

Attached is our additional information response to employee concern number PH-85-001-002.

Guenter Wadewitz

COC:LLE
QERT.LE
Attachments
cc (Attachment):
R. A. Pedde, 12-112 SB-K
H. N. Culver, W12A19 C-K

SEP

✓ MAH

✓ JTN

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

QTC CONCERN PH-85-001-002

The instrument line slope problems and the additional deficiencies were identified on July 9, 1985, by NCR 6172. ECN 5846 and workplans 5320 and 5846-2 will be generated to relocate the reactor coolant flow instrumentation to reduce sense line length and minimize maintenance requirements after fuel load. New instrument sense lines will be installed and documented to correct all slope and hanger deficiencies as listed on Employee Concern IN-85-218-001.

The arc strikes discovered on the subject instrument lines will be eliminated with the installation of new piping. Generally, arc strike identification and removal is handled according to WBNP-QCP-4.10-18 and is not considered a generic deficiency by OC.

The discovery of foreign material contacting stainless steel (i.e. duct tape) is similarly considered not to be a generic deficiency as Process Specification G29M 4.M.4.1 requires no specific cleaning requirements for these sense lines. Those sense lines that are required to be cleaned (swipe tested) are identified on cleanliness drawings and are limited to the 47W625 radiation sampling system per G29M 4.M.4.1 section 3.

NOTE: NCR 6172 was termed significant by OC-QMO and NRC reportability will be reviewed by NEB-NLS.

TLR.

Additional Information in response to req 45 dated 8/9/85 - See Response Evaluation prepared 9/22/85.

9/22/85

FOR
NAME: H. N. CULVER
DATE: 8/16/85
ADDRESS: W12A19C-K
☐ Chatta ☐ M. S. ☐ Knox ☐ Nor.

Fold here for return

FROM
NAME: M. A. HARRISON
EXTENSION: 6528
ADDRESS: E5B35-K
☐ Chatta ☐ M. S. ☐ Knox ☐ Nor.

Per discussion w/ you 8/15 & W. T. Cottle 8/14, IN 85-130-002 and PT-85-001-002 are forwarded to you to obtain response addressing the additional information needed to fully resolve the concerns.

Attached are the reports, NSRS recommendations, initial responses from line, evaluation forms, (NSRS & QTC) & 45's requesting clarification for your use and information. Please provide additional info necessary by 9/6/85.

8/16/85

cc: QTC
IN 85 130 002
PT 85 001-002

TVA 45D (OS-9-80) INTEROFFICE MAILING SLIP

FOR	NAME	DATE
	R. M. Pierce	8/9/85
	ADDRESS	☐ Chatta ☐ M. S. ☐ Knox ☐ Nor.
	9-169 SB-K	

Fold here for return

FROM	NAME	EXTENSION
	M. A. Harrison	6328
	ADDRESS	☐ Chatta ☐ M. S. ☐ Knox ☐ Nor.
	E3B35 C-K	

PH-85-001-002

A review of NCR 6172 written in response to NSRS report PH-85-001-002 indicated two areas identified in the report which were not addressed in the NCR, i.e., arc strikes and duct tape (refer to QTC letter to me, attached).

Please amend the response or the NCR to address intended action for those items and notify NSRS by August 23, 1985, so that we may complete corrective action identification for this item.

MAH:JTH
cc: S. Schum, QTC/ERT, CONST-WBN

TVA 45D (OS-9-80) INTEROFFICE MAILING SLIP

QUALITY
TECHNOLOGY
COMPANY

P.O. BOX 600
Sweetwater, TN
37874

July 31, 1985
ERT:QTC 85.0115

Mr. M. A. Harrison
Head of Investigation Group
Nuclear Safety Review Staff
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, Tennessee 37902

Dear Mr. Harrison:

Subject: TVA Response to Concern
PH-85-001-002

The TVA response which describes corrective action related to concern PH-85-001-002 states that NCR 6172 was initiated to rework instrument lines to achieve acceptable slope and to correct other identified conditions. Among the other conditions identified in the ERT report were ARC strikes and duct tape on instrument lines. These two conditions are not addressed in NCR 6172 or in the TVA response.

It is recommended that the TVA response be revised to address the ARC strikes and duct tape.

Sincerely Yours

QUALITY TECHNOLOGY COMPANY

W. S. Schum
Project Manager
EMPLOYEE RESPONSE TEAM

WSS/RC/mb

8/9/85--JTH
cc: R. M. Pierce, 9-169 SB-K

CORRECTIVE ACTION RESPONSE EVALUATION

REPORT NO: PH-85-001-002

SUBJECT: Instrument Sensing Line Slope

CONCERN NO: PH-85-001-002

☑ ACCEPT

☐ ACCEPT WITH COMMENT ☐ REJECT

Prepared By 7/24/85

Original Signed By
M. A. Harrison 7/25/85

Reviewed By

TVA 64 (05-9-65)

ATTACHMENT D

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : K. W. Whitt, Director, Nuclear Safety Review Staff, E7B31 C-K

FROM : R. M. Pierce, Project Manager, Watts Bar Nuclear Plant, 9-169 SB-K

DATE : July 19, 1985

SUBJECT: WATTS BAR NUCLEAR PLANT - REQUEST FOR INVESTIGATION/EVALUATION

Attached is the requested response to QTC Concern No. PH-85-001-002 (2 attachments).

If additional information is needed, contact J. D. Collins, extension 3000.

R. M. Pierce

TO : R. M. Pierce, Project Manager, Watts Bar Nuclear Plant, 9-169 SB-K

FROM : K. W. Whitt, Director, Nuclear Safety Review Staff, E7B31 C-K

DATE : 7/24/85

SUBJECT: WATTS BAR NUCLEAR PLANT - REQUEST FOR INVESTIGATION/EVALUATION

I hereby acknowledge receipt of the response to QTC Concern No. PH-85-001-002 - 3 pages.

Signature

Date 7/24/85

(Please copy entire page for return)

U85156.02

Report No : PH-85-001-002
Subject : Instrument Sensing Line Slope
Concern No: PH-85-001-002

Findings

The concern as stated was substantiated. Instrument sensing lines from each cabinet were inspected for slope at various locations between the cabinet location to the root valve in unit 1.

Some specific discrepancies noted are as follows:

1. 1-068-L227-3,-4,-8,-9 have upward slope in excess of 1/2 inches per foot at bend in tubing by Az 150 dg. elev. 702 outside crane wall.

2. Upward slope of 3/8 inches per foot on 1-068-L228-7 line inside crane wall (Az 201 dg.).

3. Upward slope of 5/16 inches per foot on 1-068-L226-1 line at bend by Az 324 dg. outside crane wall.

4. 1-068-L227-1,-3 have less than 1/8 inches per foot slope at cabinet L227.

Additional discrepancies noted are as follows:

1. Clamps do not have full thread engagement on lines 1-068-L227-1,-4 at support FOS 596 by cabinet L227.

2. Line 1-068-L337-3 line is in direct contact with support for Snubber 1-63-572.

3. Arc strikes on line 1-068-L228-7 in proximity of panel.

4. Grey duct tape installed on 1-068-L226-6 line by panel.

NSRS Recommendations: PH-85-001-002

1. Q-85-001-002-01 "Instrument Lines Slope"

   Reexamine instrument lines in system 68, unit 1; panels 226, 227, and 228. Initiate and process NCRs as required to address slope problems identified in PH-85-001-002 (attached) for locations between cabinets to the root valve.

2. Q-85-001-002-02 "Training -- Slope Requirements"

   WBN PMO should assure that installation and inspection personnel are aware of design requirements for instrument sensing line slope limits, and that inspection procedures provide for verification of acceptable slope.

Response

OC has initiated nonconforming condition report (NCR) 6172 because of the conditions identified. The disposition of this nonconformance will be to rework instrument lines to achieve acceptable slope and to correct other identified deficiencies. The cause of the condition is being evaluated but it is believed to have occurred because of ongoing construction activities (i.e., worker travel, rigging). This will be determined during evaluation of the NCR.

OE has performed a preliminary evaluation of the consequences of this condition had it gone undetected and has determined that inadequate slope in the reactor coolant flow transmitter sense lines could result in a shift in the signal output or a noisy output. Data taken during hot functional testing resulted in a deficiency that indicates the possibility of air in the sense lines; however, the resolution of this deficiency was deferred to the reactor coolant flow test scheduled after fuel load prior to initial criticality. This test requires that the transmitters be calibrated according to a procedure that requires backfilling of each sense line. Backfilling according to this procedure should eliminate any air in the sense lines. Final acceptance of the reactor coolant flow measurements occurs during startup testing where sensor errors are eliminated by normalization to calorimetric data.

Although this installation may increase the time required to calibrate the transmitters due to the difficulty of obtaining water-solid sense lines, any deficiencies in reactor coolant flow measurement would have been detected and corrected during required startup testing.

The adequacy of the clamps that do not have full thread engagement has been preliminarily evaluated and no functional failure is expected. Both of the above evaluations will be formally conducted and documented during disposition of the NCR.

Notes on the design drawings specifically instruct OC personnel to install sense lines to a required minimum slope and these requirements are in OC procedures QCP 3.11-2 and QCI 3.11-1. The lines identified had been previously QC inspected and met the drawing requirements.

TVA 64 (OS-9-65)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

2-WS-233

TO : R. M. Pierce, Project Manager, 9/169 SP-K

FROM : K. W. Whitt, Director, Nuclear Safety Review Staff, E7B31 C-K

DATE : July 10, 1985

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

JUL 12 '85
Project Manager's Office
Watts Bar Nuclear Plant

Transmitted herein is NSRS Report No. PH-85-001-002

Subject Instrument Sensing Line Slope

Concern No. PH-85-001-002

and associated recommendations for your action/disposition.

It is requested that you respond to this report and the attached recommendations by July 26, 1985. Should you have any questions, please contact M. A. Harrison at telephone 6328.

Recommend Reportability Determination: Yes ✓ No ____

[signature]
Director, NSRS/Designee

cc: W. F. Willis, E12B16 C-K (6)
W. T. Cottle, WBN

--Copy and Return--

JUL 15 '85

To: K. W. Whitt, Director of Nuclear Safety Review Staff, E7B31 C-K

From: R. M. Pierce, Project Manager, Watts Bar Nuclear Plant, 9-169 SB-K

Date: July 12, 1985

I hereby acknowledge receipt of NSRS Report No. PH-85-001-002

Subject Instrument Sensing Line Slope

for action/disposition.

[signature]
Signature

7/12/85
Date

(Please copy entire page for return)

NSRS RECOMMENDATIONS: PH-85-001-002

1. Q-85-001-002-01 "Instrument Lines Slope"

   Reexamine instrument lines in system 68, Unit 1; panels 226, 227, and 228. Initiate and process NCR's as required to address slope problems identified in PH-85-001-002 (attached) for locations between cabinets to the root valve.

2. Q-85-001-002-02 "Training -- Slope Requirements"

   WBN PMO should assure that installation and inspection personnel are aware of design requirements for instrument sensing line slope limits, and that inspection procedures provide for verification of acceptable slope.

ERT INVESTIGATION REPORT

CONCERN NO: PH-85-001-002

CONCERN: Slope problem with instrument lines in system 68; panels 226, 227, 228. Previous NCR only addresses 4 of 28 specific lines from these panels.

PERSONNEL CONTACTED:

FINDINGS:
The concern as stated was substantiated. Instrument sensing lines from each cabinet were inspected for slope at various locations between the cabinet location to the root valve in Unit 1.

Some specific discrepancies noted are as follows:

1. 1-068-L227-3,-4,-8,-9 have upward slope in excess of 1/2 inches per foot at bend in tubing by Az 150 dg. elev. 702 outside crane wall.

2. Upward slope of 3/8 inches per foot on 1-068-L228-7 line inside crane wall (Az 201 dg.).

3. Upward slope of 5/16 inches per foot on 1-068-L226-1 line at bend by Az 324 dg. outside crane wall.

4. 1-068-L227-1,-3 have less than 1/8 inches per foot slope at cabinet L227.

ADDITIONAL DISCREPANCIES NOTED ARE AS FOLLOWS:

1. Clamps do not have full thread engagement on lines 1-068-L227-1,-4 at support FOS 596 by cabinet L227.

2. Line 1-068-L227-3 line is in direct contact with support for Snubber 1-63-572.

3. Arc strikes on line 1-068-L228-7 in proximity of panel.

4. Grey duct tape installed on 1-068-L226-6 line by panel.

Prepared by Roger A. Bird 7/6/85
DATE

Reviewed by [signature] 7/6/85
Date

Report Reviewed & Accepted
[signature]
7/10/85
a/SRS