TENNESSEE VALLEY AUTHORITY Watts Bar Nuclear Plant P. O. Box 800 Spring City, Tennessee 37381

July 20, 1987

U.S. Nuclear Regulatory Commission Attn: Document Control Desk Washington, DC 20555

Gentlemen:

In the Matter of the Application of Tennessee Valley Authority) Docket Nos. 50-327, 50-328) 50-390, 50-391 50-259, 50-260 50-296, 50-438 50-439

EMPLOYEE CONCERNS TASK GROUP (ECTG)

Construction Subcategory Report 17100 was submitted to the NRC on June 24, 1987. Pages 9-17 of Attachment A and Attachments B and C were inadvertently omitted. These pages are included with this letter for your inclusion into your copy of Construction Subcategory Report 17100.

Please telephone me at (615) 365-3587 (Watts Bar) if you have any questions.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

ames R Russell

James R. Russell Watts Bar Nuclear Plant ECTG Licensing Manager

cc (See page 2.):

8707310087 870720 PDR ADDCK 05000259 PDR PDR U.S. Nuclear Regulatory Commission

cc: Mr. G. G. Zech, Assistant Director Regional Inspections Division of TVA Projects Office of Special Projects U.S. Nuclear Regulatory Commission Region II 101 Marietta Street, NW, Suite 2900 Atlanta, Georgia 30323

> Mr. John A. Zwolinski, Assistant Director For Projects
> Division of TVA Projects
> Office of Special Projects
> U.S. Nuclear Regulatory Commission
> 4350 East West Highway
> EWW 322
> Bethesda, Maryland 20018

> > 3

Browns Ferry Resident Inspector Browns Ferry Nuclear Plant Route 2, P. O. Box 311 Athens, Alabama 35611

Sequoyah Resident Inspector Sequoyah Nuclear Plant 2600 Igou Ferry Road Soddy Daisy, Tennessee 37379

Watts Bar Resident Inspector Watts Bar Nuclear Plant P. O. Box 800 Spring City, Tennessee 37381

Bellefonte Resident Inspector Bellefonte Nuclear Plant P. O. Box 2000 Hollywood, Alabama 35752

2

REFERENCE - ECPS131J-ECPS131C FREQUENCY - REQUEST ONP - ISSS - RWM CATEGORY: CO CONSTRUCTION-PROCESS						S	OFFIC Employe	VALLEY AUTHORITY NUCLEAR POWER NCERN PROGRAM SYSTEM (ECPS) E CONCERN INFORMATION MECHANICAL	PAGE RUN TIME RUN DATE		9 54:14 26/86	
				GI		RIC			e			
				_	AP		QTC/NSRS	P		REFERENCE		
CONCERN		SUB	PLT			SW	INVESTIGATION		CONCERN		ORY -	· CO
NUMBER	CAT	CAT	LOC	F	L	QВ	REPORT	R	DESCRIPTION	SUBCATEGO	RY -	- 171
IN-85-879-001 T50167	со	171	WBN	N	NI	NY		SR	AN INSPECTION WAS PERFORMED AROUND 1980 OR 1981 IN UNIT 1. ICE CONDEN- SER, AIR SUPPLY AND RETURN WALL DUCT. THIS INSPECTION REVEALED THAT A NUM- BER OF DUCTS WERE BLOCKED/RESTRICTED VARYING FROM 30% TO 100%. THE IN- SPECTION WAS TERMINATED WITH NO FOL- LOW UP ACTION. CONSTRUCTION DEPT. CONCERN. CI HAS NO MORE INFORMATION.	1.2.2 3.2.2 4.2.2 5.0		
IN-85-964-X06 T50179	CO	171	WBN	N	NI	NY	I-85-677-WBN	SR	CRAFT PERSONNEL USE "SUPERGLUE" IN- STEAD OF "PERMATEX" TO SEAL GASKETS TO FLANGES. C/I HAS NO MORE INFORM- ATION. CONSTRUCTION DEPARTMENT CON- CERN.	1.2.5 3.2.5 4.5.1 4.5.2 5.0		
IN-85-964-002 T50177	CO	171	WBN	N	NI	И У		SR	SUPERINTENDENT (NAME KNOWN) HAD TEMP- ORARY MATERIALS PUT INTO PERMANENT SERVICE IN THE INTAKE PUMPING STRUC- TURE. EXAMPLE: PLUMBING, C/S FIT- TINGS, SUCH AS ELLS AND TEES OF UN- KNOWN SIZES. CI HAS NO FURTHER IN- FORMATION.	1.2.5 3.2.5 4.5.1 4.5.2 5.0		

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

		<u> </u>											
REFERENCE - ECPS131J-ECPS131C PREQUENCY - REQUEST ONP - ISSS - RWM								OFFICE EMPLOYEE	ALLEY AUTHORITY NUCLEAR POWER ICERN PROGRAM SYSTEM (ECPS) CONCERN INFORMATION	PAGE RUN TIME RUN DATE	- 16: - 09/	54:14	
CATEGORY: CO	CONSI	RUCTIO	N-PROC	ESS	;		SU	BCATEGORY: 171		MECHANICAL			
CONCERN NUMBER	CAT	SUB Cat	PLT LOC	B	ENE AP B L	PL S I	W	QTC/NSRS INVESTIGATION REPORT	P S R	CONCERN Description	REFERENCE Categ Subcatego	ORY -	ON # CO 171
IN-85-982-003 T50111	CO	171 ,	WBN	N	N	N S	X	•	SR	SCHEDULE 80 PIPE WELDED TO SCH. 40 FITTINGS AND SCHEDULE 80 FITTINGS WELDED TO SCH. 40 PIPE ON "CLASS H" LINE (8" DIA) DONE IN MID-1970. ENTER T.B. #2 VIA RAIL DOOR, LOOK UP AND TO RIGHT. PIPE IS ABOUT 12' ABOVE 729' EL., NEAR HAND RAILING. NO FOLLOW UP REQUIRED.	1.2.5 3.2.5 4.5.1 4.5.2 5.0		
IN-86-055-002 T50114	со	171	WBN	N	N	N	Y	I-85-414-WBN	SR	LEAKING PIPE ON 692' ELEV., AUX. BLDG., UNIT #1. CI HAS NO MORE IN- FORMATION. TIME FRAME: CURRENT.	1.2.5 3.2.5 4.5.1 4.5.2	5.0	
IN-86-184-002 T50204	со	171	WBN	N	N	N	Y	I-85-680-WBN	SR	CLASSIFICATION OF STAINLESS STEEL PIP- ING SHOULD BE OF CONCERN. DIFFERENT GRADES AND DIFFERENT CLASS OF PIPE ARE ASSEMBLED IN THE SAME PIPING SYS- TEM. CONSTRUCTION DEPT. CONCERN. CI HAS NO ADDITIONAL INFORMATION.	3.2.5 4.5.1 4.5.2		

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

REFERENCE - ECPS131J-ECPS131C FREQUENCY - REQUEST ONP - ISSS - RWM CATEGORY: CO CONSTRUCTION-PROCESS							TÊNNES OFFIC Employe List of Emp UBCATEGORY: 17	PAGE RUN TIME RUN DATE	- 16	:14		
CONCERN NUMBER	CAT	SUB CAT	PLT LOC	GEN J B I F I	APP 3 S	L W	QTC/NSRS INVESTIGATION REPORT		CONCERN Description	REFERENCE CATEG SUBCATEGO	ORY	CO
IN-86-184-004 T50203	СО	171	WBN	N 1	N N	Y	I-85-680-WBN	SR	THERE ARE DIFFERENT SIZE (GAUGE) PIPE WELDED TOGETHER. THIS OCCURRED IN REACTOR #1 AND THE FEED WATER HEATER STORAGE TANK. CONSTRUCTION DEPT. CONCERN. CI HAS NO ADDITIONAL IN- FORMATION.	1.2.5 3.2.5 4.5.1 4.5.2 5.0		
IN-86-200-004 T50199	со	171	WBN		N N	Y		NO	10/15/85: CI OBSERVED 100'-150' RUN OF 30" O PIPE DROP 3"-4" WHEN STEAM- FITTERS REMOVED A HANGER (HANGER WAS BEING REMOVED IN ACCORDANCE WITH A WORK PACKAGE). LINE LOCATED IN TUR- BINE BUILDING, ELEV685', COLUMN T-14 AROUND "C" LINE. CONSTRUCTION DEPT. CONCERN. CI HAS NO ADDITIONAL INFOR- MATION.	1.2.5 3.2.5 4.5.1 4.5.2 5.0		
IN-86-205-001 T50148	CO CO	151 171	WBN				I-85-598-WBN		ABLE FOR SERVICE. ALL FOUR LINES WERE SUBJECTED TO STRESS DURING ORIGINAL BACKFILLING WITH IMPROPER METHODS (UNCONTROLLED DUMPING) DURING ORIGINAL INSTALLATION: ABOUT 1976. LATENT	3.2.5 4.5.1 4.5.2		
CONCERNS	AKE	GROUPED	BI FJ	1421	3	DIG	ITS OF SUBCATEG	URI	NUMBER. (CONTINUED)			

REFERENCE FREQUENCY ONP - ISSS CATEGORY: CO	- REQUES				SI	TENNES OFFIC Employe List of Empl Ubcategory: 17	RUN TIME -	- 16:5 - 09/2	54:14		
CONCERN NUMBER	SUB CAT CAT	PLT LOC	B	API B	RIC PL 5 W 2 B	QTC/NSRS Investigation Report	P S R	CONCERN DESCRIPTION	REFERENCE S CATEGOR SUBCATEGOR	RY -	ON # CO 171
IN-86-205-001 (Continued)								STRESS BECAME EVIDENT WHEN PIPE WAS EXCAVATED AND CUT FOR MORTAR LINING IN ABOUT 1982. BECAUSE THE PIPE MOVED UP TO 8" WHEN CUT. PIPE REQUIRED EXCESSIVE FORCE TO RE-INSTALL SEC- TIONS THAT HAD BEEN REMOVED. PRES- ENT LATENT PIPE STRESS LEVELS ARE NOT KNOWN. ALTHOUGH THE PIPE WAS CLEANED THOROUGHLY BEFORE BEING LINED WITH, MORTAR, THE MORTAR WAS SEEN TO BE STILL WET AND WAS ALREADY FLAKING OFF WHEN THE PIPE WAS TESTED SEVERAL.			

TIMES AT 600 PSI AND COULD HAVE BEEN DAMAGED BY EXCESSIVE TESTING. A DOWN-STREAM 90° ELBOW AND BUTTERFLY VALVE (BOTH 24" DIAMETER) HAVE BEEN REPLACED BECAUSE THEY HAD BEEN WORN THROUGH BY LOOSE FLAKES OF THE INTAKE LINES' MORTAR LINING. CONSTRUCTION DEPT. CONCERN. CI HAS NO FURTHER INFORMA-

TION. NO FOLLOW UP REQUIRED.

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

REFERENCE - ECPS131J-ECPS131C FREQUENCY - REQUEST ONP - ISSS - RWM CATEGORY: CO CONSTRUCTION-PROCESS							OFFIC Employe List of Emp	PAGE 13 RUN TIME - 16:54:14 RUN DATE - 09/26/86		
CONCERN NUMBER	CAT	SUB Cat	PLT LOC	E	AP B B		QTC/NSRS INVESTIGATION REPORT	S		REFERENCE SECTION # CATEGORY - CO SUBCATEGORY - 171
IN-86-205-002 T50148	CO MP	171 706	WBN	N		N Y		SR	BAD MANAGEMENT HAS CAUSED THE PROB- LEMS AT WBNP. EXAMPLES INCLUDE: INEPT ENGINEERING PERSONNEL WERE ALLOWED TO GIVE BAD TECHNICAL DIR- ECTION TO THE CRAFT ON UNIT #2 FEED- WATER HEATERS (#1 & #2, ON 692' EL.). BOTH WORK AND FINAL HARDWARE ADE- QUACY WERE AFFECTED BY TECHNICAL MIS- DIRECTION, INCLUDING INACCURATE , "SHOOTING IN" OF HEATER CENTERLINES- BY ENGINEERS (KNOWN). CRAFT WAS.NOT PERMITTED TO "FIELD RUN". NO FOLLOW UP REQUIRED.	3.2.3 4.3.2 5.0 5.1.3
IN-86-282-004 T50241	CO	171	WBN	J	Y	Y Y		SR	MANY VENDOR NPP-1 ASME CODE DATA FORMS FOR CONTAINMENT PENETRATIONS. THE PENETRATIONS WERE INSTALLED AND HYDRO TESTS WERE NEVER VERIFIED AND DOCUMENTED. ADDITIONAL INFORMATION KNOWN TO QTC, WITHHELD TO MAINTAIN CONFIDENTIALITY. NO FURTHER INFOR- MATION MAY BE RELEASED. CONSTRUCTION DEPARTMENT CONCERN. CI HAS NO FUR-	3.2.5 4.5.1 4.5.2 4.5.3 4.5.4 4.5.5 5.0 6.5

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER. 2515T

REFERENCE-ECPS131J-ECPS131CFREQUENCY-REQUESTONP -ISSS-RWMCATEGORY:CONSTRUCTION-PROCESS							TENNES OFFIC EMPLOYE LIST OF EMP SUBCATEGORY: 17	PAGE - 14 RUN TIME - 16:54:14 RUN DATE - 09/26/86				
CALEGORI. CO	00801				-							
					AP	RIC PL	QTC/NSRS	P	CONCERN	REFERENCE CATEGO		
CONCERN		SUB	PLT	_		SW			CONCERN	SUBCATEGO		
NUMBER	CAT	CAT	LOC	F	L	QB	REPORT	R	DESCRIPTION	SUBCALEGUE		1/1
IN-86-284-002 T50178	CO	171	WBN	N	N	NY		SR	VALVES V329 & V330 IN THE IN-CORE IN- STRUMENT BUILDING WERE PRESSURE-TESTED BY AIR IN 1980, BUT THESE VALVES SHOULD HAVE BEEN HYDRO-TESTED. CI STATED THAT THE VALVES WERE REPLACED (POSSIBLY AFTER TESTING). CI HAS NO FURTHER INFORMATION. CONSTRUCTION DEPT. CONCERN.	1.2.1 3.2.1 4.1.2 5.0		
IN-86-311-001 T50255	CO	171	WBN	N		NJ	٢	SR	BELLOWS WERE INSTALLED WITHOUT PROPER PAPERWORK IN THE ANNULUS AREA BEHIND THE NORTH FIRE ROOM, IN THE SUMMER OF 1985. NAMES AND DETAILS KNOWN TO QTC, BUT WITHHELD TO MAINTAIN CONFIDENTIAL- ITY. NO ADDITIONAL INFORMATION MAY BE RELEASED. CONSTRUCTION DEPT. CONCERN.	3.2.3 4.3.2 5.0		
PH-85-003-004 T50106	СО	171	WBN		i n	N S	Z	SR	THERE IS NO INSULATION BETWEEN PUMPS ON EL 692'. (NAMES KNOWN TO QTC AND RELEASE OF THIS INFORMATION WOULD JEOPARDIZE CI'S CONFIDENTIALITY) CI HAS NO MORE INFORMATION AVAILABLE. NO FOLLOW UP REQUIRED.	1.2.4 3.2.4 4.4.2 5.0	J	

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBERS.

REFERENCE - ECPS131J-ECPS131C FREQUENCY - REQUEST ONP - ISSS - RWH CATEGORY: CO CONSTRUCTION-PROCESS							SI	TENNES OFFIC Employe List of Emp JBCATEGORY: 17	PAGE RUN TIME RUN DATE		15 4:14 6/86		
					_								
				G	EN				_				
			~~~	_		PPI		QTC/NSRS	P	CONGEDN	REFERENCE		
CONCERN	CAT	SUB Cat	PLT LOC	_	B			INVESTIGATION REPORT	S R	CONCERN DESCRIPTION	CATEC SUBCATEGO		CO 171
PH-85-035-001	СО	171	WBN	N	I N	N	Y		SR	4" S.S. DRAIN LINE RUNNING FROM 676'	1.2.5		
T50194								•		ELEV TO 713' ELEV FROM THE COLLECTOR	3.2.5		
										TANK IN UNIT 1 SYSTEM 77 OR 26 WAS	4.5.1		
										INSTALLED AS A TEMPORARY LINE,	4.5.2		
										HOWEVER THE LINE WAS LEFT AS PERMAN-	5.0		
										ENT, WITH NO INSPECTION OR PAPERWORK			
										DOCUMENTED. CONSTRUCTION DEPT. CON-			
										CERN. CI HAS NO FURTHER INFORMATION.	승규는 것이 같아.		
										· · · · · · · · · · · · · · · · · · ·	성품을 알 주요.		
PH-85-035-004	CO	171	WBN		N	N	<b>Y</b>		SR	A TANK IN AUX BUILDING, ELEV. 713, IN			
T50194	-									UNIT 1 WAS OVER PRESSURIZED APPROXI-	3.2.3		
										MATELY 200 PSI. THIS CAUSED A BULGE	4.3.2		
										IN THE TANK AT ANGLE IRON BAND. CI	5.0		
										STATED, THE TANK WAS BOUGHT OFF BY			
										BY ENGINEERING, BECAUSE IT COULD NOT			
										BE REMOVED FOR REPAIR. CONSTRUCITON			
										DEPT. CONCERN. CI HAS NO FURTHER Information.			
BLN-										그는 것 같은 것 같			
QCP10.35-8-14	CO	171	BLN	N	Y	N	N		SS	INCORRECT SLOPE IN FPS PIPING	1.2.5	5.	0
											3.2.5		
											4.5.1		
										그는 것 같은 것은 것이 많은 것이 잘 잘 못했다.	4.5.5		
											지난 신간 가슴 가는		

Q.

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

REFERENCE - ECPS131J-ECPS131C FREQUENCY - REQUEST ONP - ISSS - RUM CATEGORY: CO CONSTRUCTION-PROCESS								TENNESS OFFICE Employee List of Empl	RUN TIME -	- 16 16:54:14 09/26/86		
CATEGORY: CO	CONST	RUCTIO	N-PROC	CESS	S		SU	JBCATEGORY: 17	1	MECHANICAL		
				GI		RI					BEEEBENAR C	POTTON A
				•		PL	-	QTC/NSRS	P		REFERENCE S	
CONCERN		SUB	PLT		-	S		INVESTIGATION		CONCERN	CATEGOR	
NUMBER BLN-	CAT	CAT	LOC	F	L	Q	B	REPORT	R	DESCRIPTION	SUBCATEGORY	- 171
QCP10.35-8-15	<b>CO</b>	171	BLN	N	v	N	N		SR	CI CONCERNED THAT AIR IN FPS PIPES	1.2.5	5.0
40110.33-0-13	00		U LAN		•				-	COULD REACT WITH WATER AND RUST PIPES	3.2.5	
										AND VALVES. HE FELT SYSTEM SHOULD BE	4.5.1	
										CHARGED WITH WATER AT ALL TIMES.	4.5.5	
BLN-												
QCP10.35-8-17	CO	171	BLN	N	Y	N	N		SR	SOME VALVES IN THE PLANT WERE RUSTED.	1.2.1	
40					•					HE SAID THEY WERE PROBABLY OK BUT	3.2.1	
										JUST LOOKED BAD.	4.1.5	
										····· · · ·	5.0	
										그는 그는 것 같은 것이 한 집 집중에 걸렸다. 가장	6.1	
				,						그는 것이 아직 것이 가슴에 걸려 가지? 한 분들이다.		
WI-85-053-012	CO	171	WBN	Y	Y	Y	Y		SR	BURIED PENETRATIONS HAVE VENDOR WELDS	1.2.5	4.5.5
T50134				-	-	-	-			THAT WERE NOT INSPECTED DURING HYDRO	3.2.5	5.0
										TESTS. CONSTRUCTION DEPT CONCERN.	4.5.1	6.5
										CI HAS NO FURTHER INFORMATION. NO	4.5.2	7.1.5
										FOLLOW UP REQUIRED.	4.5.3	7.2.5
											4.5.4	

43 CONCERNS FOR CATEGORY CO SUBCATEGORY 171

REFERENCE - ECPS131J-ECPS131C FREQUENCY - REQUEST ONP - ISSS - RWM CATEGORY: CO CONSTRUCTION-PROCESS						SI	OFFICE EMPLOYEE	NUCLEAR POWER	PAGE RUN TIME RUN DATE	] - 16:54 - 09/20	:54:14	
CONCERN NUNBER	CAT	SUB CAT	PLT LOC	B	NER APP B S L Q	L W	QTC/NSRS INVESTIGATION REPORT	P S R	CONCERN	REFERENCE CATEGO SUBCATEGOR	RY -	
WI-85-096-001 T50207	CO	171	WBN	N	N N	¥		SR		1.2.5 3.2.5 4.5.1 4.5.2 4.5.5	5.	0
XX-85-068-001 T50140	CO	171	BLN	N	TN	N	I-85-642-BLN	SR	BELLEFONTE - TWO PRESSURE GAGES WERE OVER PRESSURIZED PRIOR TO PERFORMANCE OF PHASE 2 OF HYDROSTATIC TEST IKC HOO1. THESE GAGES WERE NOT PROPERLY RECALIBRATED, AND PHASE 1 OF THE HYDROTEST WAS NOT REPERFORMED, DESPITE ANI REQUEST TO DO SO. NCR #3075 DIS- POSITIONED THIS TEST. DETAILS KNOWN TO QTC, WITHELD DUE TO CONFIDENTIALITY CONSTRUCTION DEPT CONCERN. C/I HAS NO FURTH& INFORMATION.			
XX-85-094-007 T50150	CO	171	BLN	Y	YJ	X	I-85-595-BLN	SR	BELLEFONTE: LINITORQUE VALVES WERE STORED AND INSTALLED WITH WRONG AL- TITUDE (UPSIDE DOWN) AND WERE NOT NAINTAINED (STROKED, ETC).CONSTRUC- TION DEPT. CONCERN. CI HAS NO FUR- THER INFORMATION. NO FOLLOW UP RE- QUIRED.	1.2.1 4.1.1 4.1.2 4.1.3 4.1.4 4.1.5 5.0	7.	.1 .1.1 .2.1

### TVA EMPLOYEE CONCERNS SPECIAL PROGRAM

REPORT NUMBER: 17100 **REVISION NUMBER: 3** 

PAGE 1 OF 1

## ATTACHMENT B

### LIST OF EVALUATORS

# Evaluator

## Issue(s) Evaluator

Mechanical Equipment M. B. Bailey Valves and Pipe/Fittings (SQN evaluator only) Mixed Structural Connections Insulation and HVAC Valves and Pipe/Fittings

• •

• .*

J. L. Howard G. L. Portwood M. B. Shirey J. K. Bryant

### TVA EMPLOYEE CONCERNS SPECIAL PROGRAM

REPORT NUMBER: 17100

C

**REVISION NUMBER: 3** 

PAGE 1 OF 2

# ATTACHMENT C

LIST OF CONCERNS BY ISSUE

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### VALVES

EX-85-034-001	
IN-85-055-N04	
IN-85-169-001	
IN-85-463-003	
IN-85-719-001	
IN-86-284-002	
BLN-QCP-10.35-	8-17
XX-85-094-007	

### HVAC

EX-85-046-001 IN-85-879-001

### MECHANICAL EQUIPMENT

IN-85-070-001 IN-85-559-001 IN-86-205-002 IN-86-311-001 PH-85-035-004

### INSULATION

IN-85-008-002 IN-85-186-001 PH-85-003-004

### TVA EMPLOYEE CONCERNS SPECIAL PROGRAM

**REPORT NUMBER: 17100** 

**REVISION NUMBER: 3** 

PAGE 2 OF 2

## ATTACHMENT C

LIST OF CONCERNS BY ISSUE

PIPE/FITTINGS

IN-85-089-007 IN-85-173-001 IN-85-210-001 IN-85-211-001 IN-85-211-002 IN-85-352-003 N-85-442-X10 IN-85-534-005 IN-85-793-003 IN-85-820-001 IN-85-364-002 IN-85-964-X06 IN-85-982-003 IN-86-055-002 IN-86-184-002 IN-86-184-004 IN-86-200-004 IN-86-205-001 IN-86-282-004 PH-85-035-001 BLN-QCP-10.35-8-14 BLN-QCP-10.35-8-15 WI-85-053-012 WI-85-096-001 XX-85-068-001

#### MIXED STRUCTURAL CONNECTIONS

IN-85-868-003