



Log # TXX-90039
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Ref # NRCB 88-05

January 26, 1990

William J. Cahill, Jr.
Executive Vice President

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

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NOS. 50-445 AND 50-446
REQUEST FOR ADDITIONAL INFORMATION ON RESPONSE TO
NRC BULLETIN 88-05 AND SUPPLEMENTS 1 AND 2

- REF: 1) TU Electric letter from Mr. W. J. Cahill, Jr. to
U. S. NRC dated January 11, 1989, TXX-89005
- 2) TU Electric letter from Mr. W. J. Cahill, Jr. to
U. S. NRC dated March 31, 1989, TXX-89163

Gentlemen:

TU Electric responded to NRC Bulletin 88-05, "Nonconforming Material Supplied by Piping Supplies, Inc. (PSI) at Folsom, New Jersey and West Jersey Manufacturing Company (WJM) at Williamstown, New Jersey" as modified by Supplements 1 and 2, by TXX-89005, dated January 11, 1989 and TXX-89163, dated March 31, 1989.

In recent discussions, the NRC staff requested additional information regarding our response to NRC Bulletin 88-05, and Supplements 1 and 2. The following additional information is provided in the response to that request:

- 1) The attached table provides the requested information for the twelve non-conforming flanges received and installed in the noted safety-related systems.
- 2) No chemical test data is available for the heat numbers representing these twelve low hardness flanges from the NUMARC/Bechtel data base.

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- 3) TU Electric will conduct a chemical test on one flange per each of the three heat numbers represented in the attached table. The flanges selected for chemical testing may be from Unit 1 or Unit 2. The results of this chemical test will be available for NRC review at CPSES site after February 5, 1990.

Sincerely,

William J. Cahill, Jr.

William J. Cahill, Jr.

By: *Roger D. Walker*

Roger D. Walker

Manager, Nuclear Licensing

MCP/vld

Attachments

c - Mr. R. D. Martin, Region IV
Resident Inspectors, CPSES (3)

TABLE
NRC Bulletin 88-05 CPSES Unit 1 Installed Material (Nonconforming) - Flanges

Heat/Code Number	Mfg/Supplier	System	Insitu Hardness (Notel) (BHN)	Converted Tensile (KSI) A370/NUMARC (Note 3)	Analyzed Stresses	Allowable Stresses	Lab Tensiles (Note 2)	Material Type	Code Class	System Design Pressure/Temp.
342X	WJM/ Gulf alloy	Ventilation	133	64.3/74.1	See Item	No. 1	None	12" 150# Blind Flange SA105	3	50/250°
6027838/ 83701	WJM/ Gulf alloy	Main Steam	141	68/77.2	See Item	No. 2	None	2" 900# Blind Flange SA350 LF2	2	1185/600°
6027838/ 83701	WJM/ Gulf alloy	Main Steam	118	57.5/68	See Item	No. 3	None	2" 900# RFSW Flange SA350 LF 2	2	1185/600°
6027838/ 83701	WJM/ Gulf alloy	Main Steam	117	57/67.6	See Item	No. 4	None	2" 900# RFSW Flange SA350 LF 2	2	1185/600°
6027838/ 83701	WJM/ Gulf alloy	Main Steam	137	66/75.6	See Item	No. 5	None	2" 900# Blind Flange SA 350 LF 2	2	1185/600°
6027838/ 83701	WJM/ Gulf alloy	Main Steam	116	56/67.1	See Item	No. 6	None	2" 900# RFSW Flange SA 350 LF 2	2	1185/600°
6027838/ 83701	WJM/ Gulf alloy	Main Steam	136	65.5/75.2	See Item	No. 7	None	2" 900# Blind Flange SA 350 LF 2	2	1185/600°

TABLE
NRC Bulletin 88-03 CPSES Unit 1 Installed Material (Nonconforming) - Flanges

Heat/Code Number	Mfg/Supplier	System	Insitu Hardness (Notel) (BHN)	Converted Tensile (KSI) A370/NUMARC (Note 3)	Analyzed Stresses	Allowable Stresses	Lab Tensiles (Note 2)	Material Type	Code Class	System Design Pressure/Temp.
6027838/ 83701	WJM/ Gulf alloy	Main Steam	140	67.5/76.8	See Item	No. 8	None	2" 900# Blind Flange SA 350 LF 2	2	1185/600 ^o
6027838/ 83701	WJM/ Gulf alloy	Main Steam	121	59/69.2	See Item	No. 9	None	2" 900# RF8W Flange SA 350 LF 2	2	1185/600 ^o
M551701	WJM/ P.X. Engr.	Diesel Gen. Start Air	127	62/71.9	See Item	No. 10	None	1 1/2" 300# RF8O Flange SA105	3	300/150 ^o
M551701	WJM/" P.X. Engr.	Diesel Gen. Start Air	136	65.5/75.2	See Item	No. 11	None	1 1/2" 300#" RF8O Flange SA105	3	300/150 ^o
M551701	WJM/ P.X. Engr.	Diesel Gen. Start Air	133	64.3/74.1	See Item	No. 12	None	1 1/2" 300# RF8O Flange SA105	3	300/150 ^o

Note 1: <137 BHN for SA105, <147 BHN for SA 350 LF 2 (No minimum hardness value is given for SA 350 LF2, CPSES assumed <147 as nonconforming since 147 BHN converts to 70KSI and 70KSI is the minimum tensile for SA 350 LF 2.

Note 2: No spare flanges of these heats were available for lab testing.

Note 3: Converted tensile (KSI) A370/NUMARC - Valves are based on ASTM A370 Table B and best fit curve of lab results on WJM/PSI/CLM material developed by Bechtel for NUMARC (EQUOTIP - tensile correlation $UTS = 265 \times L_d - 29,891$) which was published in NUMARC's Final Report (NUMARC 88-01)

ITEM-1

<u>SERVICE LOADING CONDITION</u>	<u>ACTUAL ANALYZED STRESS (psi)</u>	<u>REDUCED ALLOWABLE STRESS (psi)</u>
DESIGN	*	*
NORMAL/UPSET	*	*
EMERGENCY	*	*
FAULTED	*	*
<u>NORMAL</u>	*	*

PRESSURE RATING QUALIFICATION

<u>MAXIMUM DESIGN PRESSURE (psi)</u>	<u>REVISED RATED WORKING PRESSURE (psi)</u>
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50

260

- * For all flanges on Free-ended cantilevered branch connection, e.g., blind flanges, moment loads/bending stresses are negligible. Only pressure stress need be considered, which is less than 5000 psi in all cases versus an allowable minimum stress of 12000 psi.

ITEM-2

SERVICE LOADING CONDITION	ACTUAL ANALYZED STRESS (psi)	REDUCED ALLOWABLE STRESS (psi)
DESIGN	*	*
NORMAL/UPSET	*	*
EMERGENCY	*	*
FAULTED	*	*
NORMAL	*	*

PRESSURE RATING QUALIFICATION

MAXIMUM DESIGN PRESSURE (psi)	REVISED RATED WORKING PRESSURE (psi)
1185	1775

- * For all flanges on Free-ended cantilevered branch connection, e.g., blind flanges, moment loads/bending stresses are negligible. Only pressure stress need be considered, which is less than 5000 psi in all cases versus an allowable minimum stress of 12000 psi.

ITEM-3

SERVICE LOADING CONDITION	ACTUAL ANALYZED STRESS (psi)	REDUCED ALLOWABLE STRESS (psi)
DESIGN	*	*
NORMAL/UPSET	*	*
EMERGENCY	*	*
FAULTED	*	*
<u>NORMAL</u>	*	*

PRESSURE RATING QUALIFICATION

MAXIMUM DESIGN PRESSURE (psi)	REVISED RATED WORKING PRESSURE (psi)
1185	1775

- * For all flanges on Free-ended cantilevered branch connection, e.g., blind flanges, moment loads/bending stresses are negligible. Only pressure stress need be considered, which is less than 5000 psi in all cases versus an allowable minimum stress of 12000 psi.

ITEM-4

SERVICE LOADING CONDITION	ACTUAL ANALYZED STRESS (psi)	REDUCED ALLOWABLE STRESS (psi)
DESIGN	*	*
NORMAL/UPSET	*	*
EMERGENCY	*	*
FAULTED	*	*
NORMAL	*	*

PRESSURE RATING QUALIFICATION

MAXIMUM DESIGN PRESSURE (psi)	REVISED RATED WORKING PRESSURE (psi)
1185	1775

- * For all flanges on Free-ended cantilevered branch connection, e.g., blind flanges, moment loads/bending stresses are negligible. Only pressure stress need be considered, which is less than 5000 psi in all cases versus an allowable minimum stress of 12000 psi.

ITEM-5

<u>SERVICE LOADING CONDITION</u>	<u>ACTUAL ANALYZED STRESS (psi)</u>	<u>REDUCED ALLOWABLE STRESS (psi)</u>
DESIGN	*	*
NORMAL/UPSET	*	*
EMERGENCY	*	*
FAULTED	*	*
NORMAL	*	*

PRESSURE RATING QUALIFICATION

<u>MAXIMUM DESIGN PRESSURE (psi)</u>	<u>REVISED RATED WORKING PRESSURE (psi)</u>
1185	1775

- * For all flanges on Free-ended cantilevered branch connection, e.g., blind flanges, moment loads/bending stresses are negligible. Only pressure stress need be considered, which is less than 5000 psi in all cases versus an allowable minimum stress of 12000 psi.

ITEM-6

SERVICE LOADING CONDITION	ACTUAL ANALYZED STRESS (psi)	REDUCED ALLOWABLE STRESS (psi)
DESIGN	*	*
NORMAL/UPSET	*	*
EMERGENCY	*	*
FAULTED	*	*
NORMAL	*	*

PRESSURE RATING QUALIFICATION

MAXIMUM DESIGN PRESSURE (psi)	REVISED RATED WORKING PRESSURE (psi)
1185	1775

- * For all flanges on Free-ended cantilevered branch connection, e.g., blind flanges, moment loads/bending stresses are negligible. Only pressure stress need be considered, which is less than 5000 psi in all cases versus an allowable minimum stress of 12000 psi.

ITEM-7

SERVICE LOADING CONDITION	ACTUAL ANALYZED STRESS (psi)	REDUCED ALLOWABLE STRESS (psi)
DESIGN	*	*
NORMAL/UPSET	*	*
EMERGENCY	*	*
FAULTED	*	*
NORMAL	*	*

PRESSURE RATING QUALIFICATION

MAXIMUM DESIGN PRESSURE (psi)	REVISED RATED WORKING PRESSURE (psi)
1185	1775

- * For all flanges on Free-ended cantilevered branch connection, e.g., blind flanges, moment loads/bending stresses are negligible. Only pressure stress need be considered, which is less than 5000 psi in all cases versus an allowable minimum stress of 12000 psi.

ITEM-8

SERVICE LOADING CONDITION	ACTUAL ANALYZED STRESS (psi)	REDUCED ALLOWABLE STRESS (psi)
DESIGN	*	*
NORMAL/UPSET	*	*
EMERGENCY	*	*
FAULTED	*	*
NORMAL	*	*

PRESSURE RATING QUALIFICATION

MAXIMUM DESIGN PRESSURE (psi)	REVISED RATED WORKING PRESSURE (psi)
1185	1775

- * For all flanges on Free-ended cantilevered branch connection, e.g., blind flanges, moment loads/bending stresses are negligible. Only pressure stress need be considered, which is less than 5000 psi in all cases versus an allowable minimum stress of 12000 psi.

ITEM-9

SERVICE LOADING CONDITION	ACTUAL ANALYZED STRESS (psi)	REDUCED ALLOWABLE STRESS (psi)
DESIGN	*	*
NORMAL/UPSET	*	*
EMERGENCY	*	*
FAULTED	*	*
NORMAL	*	*

PRESSURE RATING QUALIFICATION

MAXIMUM DESIGN PRESSURE (psi)	REVISED RATED WORKING PRESSURE (psi)
1185	1775

- * For all flanges on Free-ended cantilevered branch connection, e.g., blind flanges, moment loads/bending stresses are negligible. Only pressure stress need be considered, which is less than 5000 psi in all cases versus an allowable minimum stress of 12000 psi.

ITEM-10

SERVICE LOADING CONDITION	ACTUAL ANALYZED STRESS (psi)	REDUCED ALLOWABLE STRESS (psi)
DESIGN	2788	13285
NORMAL/UPSET	6190	15943
EMERGENCY	6190	23914
FAULTED	8961	31886
NORMAL	5779	19929

PRESSURE RATING QUALIFICATION

MAXIMUM DESIGN PRESSURE (psi)	REVISED RATED WORKING PRESSURE (psi)
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300

656

ITEM-11

SERVICE LOADING CONDITION	ACTUAL ANALYZED STRESS (psi)	REDUCED ALLOWABLE STRESS (psi)
DESIGN	2919	14250
NORMAL/UPSET	6663	17100
EMERGENCY	6663	25650
FAULTED	9929	34201
NORMAL	5184	21375

PRESSURE RATING QUALIFICATION

MAXIMUM DESIGN PRESSURE (psi)	REVISED RATED WORKING PRESSURE (psi)
300	656

ITEM-12

<u>SERVICE LOADING CONDITION</u>	<u>ACTUAL ANALYZED STRESS (psi)</u>	<u>REDUCED ALLOWABLE STRESS (psi)</u>
DESIGN	1980	13779
NORMAL/UPSET	7044	16534
EMERGENCY	8019	24802
FAULTED	8019	33069
<u>NORMAL</u>	<u>671</u>	<u>20668</u>

PRESSURE RATING QUALIFICATION

<u>MAXIMUM DESIGN PRESSURE (psi)</u>	<u>REVISED RATED WORKING PRESSURE (psi)</u>
300	656