TEXAS UTILITIES SERVICES INC.
2001 BRYAN TOWER · DALLAS, TEXAS 75201

Log # TXX-3423
File # 903.6

October 15, 1981

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

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION
FUNCTIONAL CAPABILITY OF ASME CODE CLASS 2 AND 3
STAINLESS STEEL ELBOWS

Dear Dr. Denton:

In response to the Safety Evaluation Report (SER) open item
concerning the functional capability of ASME Code Class 2 and 3
stainless steel elbows, CPSES proposes the following stress limits
be used to screen these elbows for acceptable functional capability:

$$B_1 \frac{P\, D_o}{2t} + B_2 \frac{Mj}{Z} \leq 1.8 \; Sy$$

where $\quad B_1 = (-0.1 + 0.4h)$ and $0 \leq B_1 \leq 0.5$

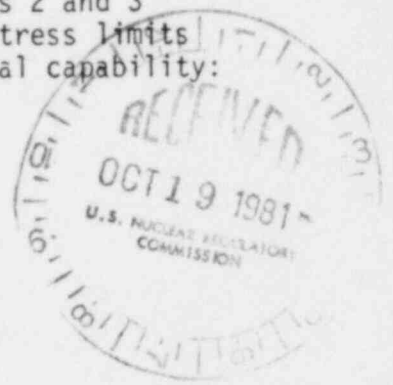and $\quad B_1 = 0.5$ for $B_2 = 1.0$

$$B_2 = \begin{cases} 1.3/(h^{2/3}) & \text{for } \alpha_o > 90^o \\ 0.895/(h^{0.912}) & \text{for } \alpha_o = 90^o \\ 1.0 & \text{for } \alpha_o = 0^o \\ \text{Linear interpolation for } 0 < \alpha_o < 90^o \end{cases} \quad \begin{array}{l} \text{but not less} \\ \text{than 1.0} \end{array}$$

where $\quad h = \dfrac{tR}{r^2}$ and α_o is the angle of the bend.

Other terms are as defined in NC/ND-3600 of Section III of ASME
Code.

There are no Class 2 and 3 stainless steel elbows or bends with
$D_o/t > 50$.

CPSES proposes to demonstrate that these stress limits have been satisfied by reevaluating the stresses using the above criteria for a random sample of Class 2 and 3 stainless steel elbows in the piping systems listed below:

> Safety Injection
> Chemical and Volume Control
> Residual Heat Removal
> Service Water
> Containment Spray

The sample will encompass the full temperature and size range of stainless steel piping. Twenty-five (25) percent of elbows in each system will be sampled. For those systems where twenty-five (25) percent of the elbows is less than five (5), a minimum of five (5) elbows will be evaluated.

It is anticipated that the summary report of the evaluation will be transmitted to the staff by April 1, 1982.

Should you have any questions, please contact me at (214) 653-4782.

Sincerely,

H. C. Schmidt

BSD:tls