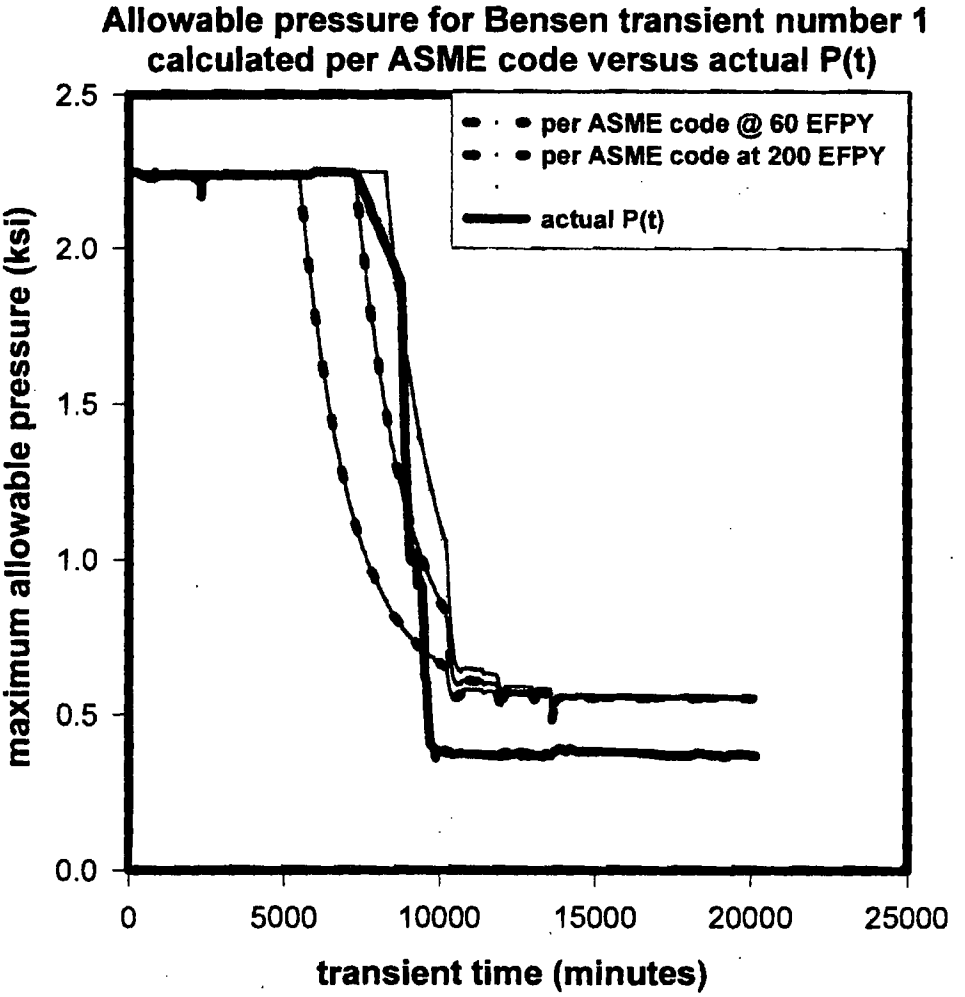


Figure 1 – using h = 10000: actual P(t) transgresses the maximum allowable pressure curve derived per ASME code for 60 and 200 EFPY, but appears to **nearly** comply with the maximum allowable pressure curve derive by the ASME method at 32 EFPY.

Instructions for method used by Terry Dickson to generate maximum allowable pressure time histories for Bensen transient number 1

Objective: Solve for maximum allowable pressure as a function of time as follows (see attached paper for more details).

$$P(t) = \{33.2 + 20.734 \exp [0.02 (T(t) - RT_{NDT} - \beta)] - K_{IT}(t) \} \times (t / R_i) \times (1 / \alpha) \times (1 / M_m)$$

Where:

RTNDT (t/4) = RTNDT at tip of (t/4) flaw where for Palisades, the following values were used:

RTNDT(t/4) @ 32 EFPY = 250.4 F

RTNDT(t/4) @ 60 EFPY = 281.2 F

RTNDT(t/4) @ 200 EFPY = 338.5 F

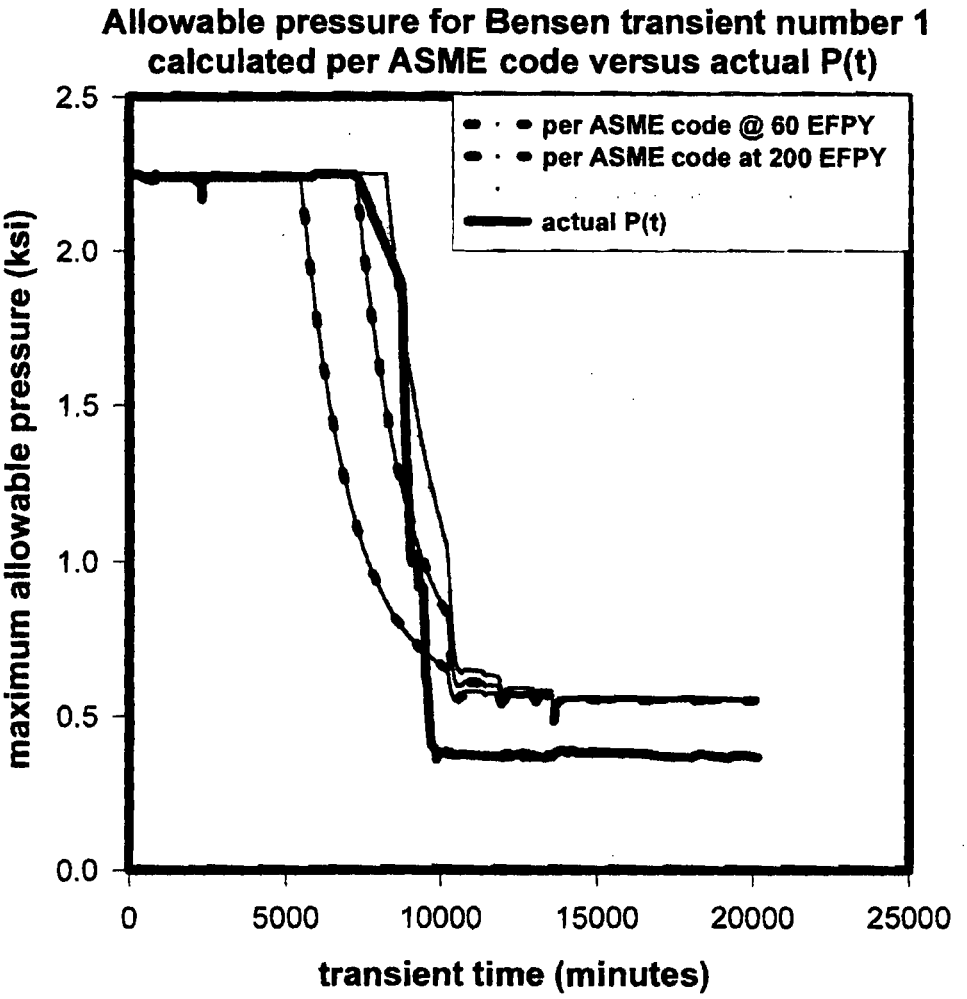
T(t) = temperature time history at crack tip of t/4 flaw and is determined by FAVOR when coolant time history of Bensen transient 1 is input into FAVLOAD input dataset.

***$K_{IT}(t)$* = $K_{IT}(t)$ due to thru-wall thermal gradient**

This is the KI time history at the crack tip for aspect ratio = 6 when the Bensen coolant temperature time history for transient 1 is input into FAVLOAD input dataset.

The FAVLOAD input dataset **Lb1cool.in** is attached. Note that the stress free temperature is set to be equal to the coolant temperature at time = 0 (530 F). Set pressure = 0 and turn off thru-wall weld residual stress. This insures that the load at t = 0 is zero.

The attached dataset **pax1.in** is the input file for FAVPFM. Note the IQA=1 on record LDQA. This activates the FAVOR deterministic option which allows the user to interrogate the load output file to generate time histories (IOPT-1), etc. IKIND = 1 and XVAR=2.1875 instructs FAVPFM to generate time histories for internal surface breaking flaw of depth 2.1875 which is t/4 flaw for Palisades (8.75 / 4).



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