

SAFETY EVALUATION OF THE
DYNAMIC EFFECTS OF POSTULATED PIPE
FAILURES OUTSIDE CONTAINMENT - SOUTH TEXAS PROJECT
UNITS 1 AND 2

In response to our concern of routing the steam lines near safety systems, the applicant submitted the report "Dynamic Effects of Postulated Pipe Failures Outside Containment - South Texas Project Units 1 and 2" for our review.

Our review covered the protective features provided for individual systems and a review of preliminary piping layout drawings. The applicant's original design of the main steam and feedwater piping systems proposed a break exclusion area for the piping in the main steam and feedwater valve rooms. This was based on meeting the low stress, "superpipe" requirements of Branch Technical Position MEB 3-1. However, the report showed that all four auxiliary feedwater pumps for the South Texas Project will be located below these valve rooms. For safety, in addition to the low stress piping, we required the applicant to design the valve rooms to withstand the environmental effects of a main steam or feedwater line break equivalent to the flow area of a single ended pipe rupture.

As a result, the applicant proposed to redesign his main steam and feedwater valve rooms with a vent area capable of venting the release of larger than one equivalent single ended pipe break and provided a subcompartment pressure analysis to show that the rooms would withstand the environmental effects of a break in this area.

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We have reviewed the results of the applicant's subcompartment pressure analysis and have also performed our own independent analysis of their new valve room design and find that the proposed design is now in accordance with our Branch Technical Position APCSB 3-1 and therefore acceptable.