MAR 9 1978

50-460

MEMORANDUM FOR: T. H. Cox, Light Water Reactors Branch #3, DPM

FROM: R. J. Bosnak, Chief, Mechanical Engineering Branhb, DSS

SUBJECT: INQUIRY BY WPPSS CONCERNING THE USE OF BTP MEB 3-1 AND R.G. 1.46

The Mechanical Engineering Branch have reviewed the February 22, 1978 inquiry by WPPSS concerning the use of BTP MEB 3-1 and R.G. 1.46 which was forwarddd by your memorandum dated February 24, 1978.

A proposed reply is attached. This reply reflects the position contained in a proposed revision to BTP MEB 3-1 which is currently undergoing the final phases of management approval. As such, it contains the criteria by which the WPPSS 1 & 3 PSAR's will be judged when they are docketed.

R. J. Bosnak, Chief
Mechanical Engineering Branch
Division of Systems Safety

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DATE	3/7/78	3/9/78	3/9/78	3/7/78		

MECHANICAL ENGINEERING BRANCH
DIVISION OF SYSTEMS SAFETY
PROPOSED REPLY

MAR 9 1978

Your inquiry of February 22, 1978, requested permission to postulate pipe break locations in the RCS piping based on the criteria contained in Branch Technical Position MEB 3-1. This would be in lieu of using the criteria contained in Regulatory Guide 1.46 as committed to in the WNP-1/4 PSAR.

Since BTP MEB 3-1 only addresses ASME Class 1 piping within the containment penetration area, you proposed to apply several criteria applicable to ASME Class 2 and 3 piping as well.

The composite criteria proposed does not adequately cover two aspects which we feel are a necessary part of an acceptable postulated pipe break criteria for ASME Class 1 piping. Combining these aspects with your proposal yields the following acceptable criteria:

"In lieu of the postulated pipe break criteria contained in Regulatory Guide 1.46, breaks in the RCS piping should be postulated at the following locations in each piping run or branch run:

(a) At terminal ends of the run;

(b) At intermediate locations between terminal ends where the stress intensity range (including the zero load set) as calculated by equation(10) and either equation (12) or (13) in ASME Code Section III, Paragraph NB-3653 exceeds 2.4 S_m for normal and upset plant

conditions:

(c) At any intermediate locations between terminal ends where the cumulative usage factor derived from the piping fatigue analysis under the loadings resulting from plant normal, upset and testing conditions exceeds 0.1;

(d) In the event that two intermediate locations cannot be determined by the stress or usage factor limits described above, the two locations of highest stress, as calculated by equation (10) in ASME Code Section III, Paragraph NB-3653, which are separated by a change in direction of the pipe run shall be selected. If the piping run has only one change or no change of direction only one intermediate break need be postulated. A given elbow or other fitting (tee, reducer, etc.) shall be considered as a single break location regardless of the number of types of breaks postulated at the fitting."

Should you decide to use this criteria, this fact, along with the criteria, should be so stated in Section 3.6.2 of the WNP-1/4 FSAR.