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OCT 5 1976

Docket No. 50-346

MEMORANDUM FOR: D. B. Vassallo, Assistant Director for Light Water Reactors,
DPM
FROM: Richard H. Vollmer, Assistant Director for Site Analysis,
DSE
SUBJECT: REVISED AAB INPUT ON TURBINE MISSILES TO DAVIS-BESSE UNIT
NO. 1 SER

PLANT NAME: Davis-Besse Unit No. 1
LICENSING STAGE: OL
DOCKET NUMBER: 50-346
MILESTONE NUMBER: N/A
RESPONSIBLE BRANCH: LWR No. 1; L. Engle, LPM
REQUESTED COMPLETION DATE: N/A
REVIEW STATUS: AAB input complete

Attached is the Accident Analysis Branch revised SER input on turbine missiles. Our review indicates that a portion of the reactor containment building is vulnerable to destructive overspeed turbine missiles.

Based on information presently available to the staff, our best estimate is that the probability of consequences in excess of 10 CFR 100 dose guideline values, as a result of a turbine failure at Davis Besse 1 is 1.4×10^{-6} per year. This estimate was made in the absence of (1) a detailed analysis of the probability of penetrating the exposed area of the containment shield wall and primary containment wall (assumed to be unity in our estimate) and (2) a detailed analysis of the probability that a falling missile would cause a break in primary system piping or components (assumed to be 0.17 in our estimate). The value of 1.4×10^{-6} per year is considerably greater than our current acceptance criteria; we do not believe that a detailed analysis of the two areas indicated above would cause the probability estimate to be revised downward sufficiently to meet our current acceptance criteria. In our view the turbine missile-related risks can be shown to be significantly lower than our present estimate only if the gratings above the pressurizer and steam generators are designed to sustain the impact of a free-falling missile. This, if necessary, could be accomplished through structural up grading.

These findings are substantially different than those reached at the CP stage, due principally to a revised report by GE relating to the probability of containment penetration (at the CP stage the GE report supported a conclusion that penetration would not occur, the opposite conclusion results from the latest GE report).

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In view of the already low probability of the event, and the similarity of this design to operating units with respect to turbine missile risks, we believe that any further action on Davis Besse 1 can be best accomplished as a backfit, at such time as an overall policy on turbine missile risks is established.

A revised SER input on this subject is attached.

This review was coordinated by Charles Ferrell, Site Analyst, Section B, Accident Analysis Branch.

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Richard H. Vollmer, Assistant Director
for Site Analysis
Division of Site Safety and
Environmental Analysis

Enclosure:
AAB revised SER input for
Davis Besse Unit No. 1

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