



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

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November 16, 1990

MEMORANDUM FOR: John W. Craig, Director  
License Renewal Project Directorate  
Division of Advanced Reactors  
and Special Projects  
Office of Nuclear Reactor Regulation

THRU: P. T. Kuo, Chief *PK*  
Technical Review Section  
License Renewal Project Directorate  
Division of Advanced Reactors  
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Office of Nuclear Reactor Regulation

FROM: Sam Lee, Senior Materials Engineer  
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Division of Advanced Reactors  
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Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF MEETING WITH NUMARC ON FATIGUE EVALUATION WITH  
RESPECT TO THE INDUSTRY REPORTS WHICH ADDRESS THE SUBJECT  
OF LICENSE RENEWAL

On Wednesday, November 14, 1990, members of the NRR and RES staff, and their consultants met with representatives from NUMARC to discuss the subject matter. The purpose of this meeting was to discuss the staff comments on fatigue evaluation as they pertain to Industry Reports (IRs) for use in license renewal applications. Prior to the meeting, by letter dated November 5, 1990, NUMARC provided the staff with a copy of the industry position on fatigue in relation to IRs (Enclosure 1).

Enclosure 2 is a list of attendees. Enclosure 3 is an agenda of the meeting prepared by NUMARC. Enclosure 4 contains a copy of NUMARC meeting handouts.

Based on the premises that the current licensing basis (CLB) is adequate and is suitable for license renewal, NUMARC contended that its program would effectively manage aging effects due to fatigue and would be applicable on a generic basis. NUMARC presented various options that could be adopted in a "pick-and-choose" manner by any IR. NUMARC presented examples of representative fatigue usage factors, fatigue reanalysis using similitude, inherent fatigue resistance of B31.1 designs, and continued operation of fatigue-critical components based on ASME Section XI procedures.

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At the conclusion of the meeting, the staff indicated to NUMARC that

- broad sweeping conclusions in the original versions of the IRs continue to cause difficulties in the staff evaluation and the forthcoming IR revisions should be more focussed to facilitate staff review,
- the meeting was useful in providing the staff with the thought process used in preparing the IRs,
- the limit of unity on the fatigue usage factor is the CLB and should not be exceeded,
- environmental effects on fatigue is an emerging technical issue and the IRs should state that environmental effects are not included in the fatigue evaluations,
- the IRs should address the effectiveness of inspection to detect and monitor fatigue cracks, and
- a potential separate IR addressing fatigue with supporting documentation should be considered.

NUMARC indicated the staff recommendation would be considered and proposed to continue a dialogue with the staff on the subject matter.

/s/

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cc: E. Griffing, NUMARC  
 K. Cozens, NUMARC

Enclosures:  
 As stated

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