



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

MAR 23 1984

MEMORANDUM FOR: James P. Knight, Assistant Director
for Components and Structures Engineering
Division of Engineering

THRU: George Lear, Chief
Structural and Geotechnical Engineering Branch
Division of Engineering

FROM: Harold Polk, Structural Engineer, SES-B
Structural and Geotechnical Engineering Branch
Division of Engineering

SUBJECT: INVESTIGATION OF ANONYMOUS ALLEGATIONS 158 THRU 165

62
3/23/84

Members of the staff, P. T. Kuo and Harold Polk, and their consultants, C. A. Miller and A. J. Philippacopoulos of Brookhaven National Laboratory, audited the calculations relating to the anonymous allegations designated 158 thru 165 in SECY Letter 84-61 dated February 6, 1984. The audit took place on February 28 and 29, 1984 in the offices of Bechtel Power Corporation in San Francisco.

Each of the allegations, numbered 158 thru 165 was investigated and in general, the allegations were without a firm basis except for allegations 162 and 163. The allegations determined to have no basis could be attributed to the lack of complete knowledge by the allexer. The staff found no evidence that would cause concern in allegations 158 thru 161 and 164 and 165. The allegations 162 and 163 were found to have some basis, however, the plant safety does not appear to be in jeopardy using the sample investigated.

Allegation 163, the effect of the thermal expansion due to simultaneous expansion of the concrete and steel, should be addressed by the licensee in furnishing the staff with the results of a parametric study that would address three items.

- 1) effect of global steel temperature changes that are different from the concrete temperatures. One example would be steel at elevated temperatures with the concrete at normal temperature. A second example would be the reverse situation;
- 2) the effect of thermal expansion from the local affect of heating due to heat paths from high temperature piping;
- 3) the effect of local heated areas and pressure from impingement to postulated pipe breaks.

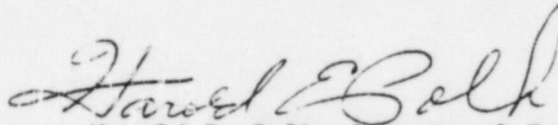
8404110423XA

zpp
3/9
[Redacted]

Allegation 162, changes by overall reviewer without consultation with original preparer and checker, was found to have a valid basis. Several pages in the calculations had the originator and/or checker name erased and another name inserted. The staff recommends that a general staff QA audit of the DCP calculation books be conducted to determine the extent and consequences of this practice, and to insure that proper QA procedures have been observed.

The information obtained during the audit will be used to respond to the allegations 158 thru 165 for the next supplement to the SER.

One additional item was discovered during the review of the Unit No. 1 connection calculations 2123C-5 page 86. This calculation used the 8th edition of the AISC code for qualification of A-325N bolts in an annulus steel structure bracing member. The FSAR commitment is the 7th edition of the AISC code. The actual field installation used a A-325X bolt. The allowable load for the A-325X bolt using the 7th edition of the code is higher than the 8th edition allowable for the A325N bolt. Although the misuse of the codes did not result in a serious error the entire Unit No. 2 connection calculations should be reviewed by the licensee to determine if this is an isolated or generic use of the 8th edition of the AISC code and report its findings to the NRC.



Harold E. Polk, Structural Engineer
Structural and Geotechnical
Engineering Branch
Division of Engineering

cc: R. Vollmer
G. Knighton
H. Schierling
B. Buckley
P. T. Kuo
M. Hartzman