JUL 1 6 1979

Docket No. 50-331

MEMORANDUM FOR: Norman C. Moseley, Director Division of Reactor Operations Inspection

FROM:

SUBJECT:

E. L. Jordan, Assistant Director for Technical Programs

SUMMARY OF MEETING WITH IOWA ELECTRIC LIGHT AND POWER COMPANY (DUANE ARNOLD) ON JULY 6, 1979 - RESULTS OF CONCRETE EXPANSION ANCHOR BOLT TESTING

A meeting with representatives of NRC, Iowa Electric Light and Power Co., Bechtel, EDS Nuclear and Lowenstein, et al. (law firm) was held in Bethesda, Maryland on July 6, 1979. The purpose of the meeting was to discuss the results obtained so far in the testing of concrete expansion anchor bolts and evaluation of base plates as required by IE Bulletin 79-02, Revision No. 1. The attendees are listed in Enclosure 1 (see enclosure). The following summarizes the highlights of the meeting.

As of the meeting date, 34 piping supports had been tested (a total of 146 anchor bolts). Shell type anchor bolts were used almost exclusively at Duane Arnold. The testing results indicate that of the 34 supports tested so far (out of a total of 546 supports described by the Bulletin), 25 supports had a factor of safety between the calculated design load and the ultimate capacity greater than 2, 5 supports had 2 or more anchor bolts not meeting the licensee's acceptance criteria (these supports are in effect inoperable). Four supports had one anchor bolt not meeting the acceptance criteria (reanalysis is necessary to determine support operability). The licensee's representative stated that the proposed plan would be to discontinue the present testing program and proceed with a 100% replacement program. The replacement would be with wedge type anchor bolts. The plan was chosen as an expedient method to bring those safety related systems affected up to the Bulletin recommended factors of safety. 50-331 Jenene The reactor coolant pressure boundary is not affected because the systems inside primary containment do not use concrete expansion anchors.

In the analyses for base plate flexibility, 501 out of 546 supports have been reviewed by the licensee with the following results: 21 supports have a factor

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of safety between 2 and 5 and 7 supports have a factor of safety less than 2. There was no correspondence made between supports in the base plate flexibility analysis and those in the field testing program.

2.

During a recent inspection at Duane Arnold the inspector identified that the same shell type expansion anchors were used to attach safety-related piping to concrete-filled, concrete block walls. The acceptability of this type of installation is questionable. The licensee's representative stated that Core Spray Loop "& was one system affected, but few, if any other systems are likewise affected. The licensee will review other safety-related systems to determine whether other systems are similarly attached.

At the conclusion of the meeting it was agreed that by Tuesday, July 10 the licensee would: evaluate the operability of the safety-related systems as defined as the system's ability to perform its intended function (by addressing design conservatisms, evaluating the significance of the inoperable supports, or performing a visual inspection for readily apparent improper installation); consider the effects on system operability of anchor bolts in concrete block walls; and report the evaluation to the Region III office. An Immediate Action Letter was to be issued to confirm these commitments.

> Edward L. Jordan, Assistant Director for Technical Programs Division of Reactor Operations Inspection

Enclosure: As stated

cc: See next page

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