



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATING TO ULTRASONIC TEST INDICATIONS IN THE FEEDWATER INLET

NOZZLE "A" BORE

NINE MILE POINT UNIT 1 NUCLEAR GENERATING STATION

NIAGARA MOHAWK POWER CORPORATION

DOCKET NO. 50-220

1.0 INTRODUCTION AND DESCRIPTION OF INDICATIONS

The staff has reviewed the licensee's submittal dated March 21, 1989 and additional details provided at the April 18, 1989 meeting and a May 5, 1989 submittal, including the inspection results and fracture mechanics analyses, for the "A" feedwater inlet nozzle to support the continued operation of the Nine Mile Point Nuclear Generating Station, Unit 1.

During the 1989 outage as part of plant restart activities, Ultrasonic Test (UT) examination was done on the full inside bore of the four feedwater nozzles. Previous UT of the feedwater nozzle bore was on the area near the nozzle radius to shell. In the 0.836 minimum wall portion of nozzle "A" near the safe end, the licensee identified 25 UT indications, six of which were recordable under the ASME Code Section XI requirements. For analysis purposes by the licensee, the six indications were considered to be cracks grouped as two indications, one 0.045" deep X 3/4" long and the other as 0.060" deep X 1" long. Indications were not identified on the other three feedwater nozzles.

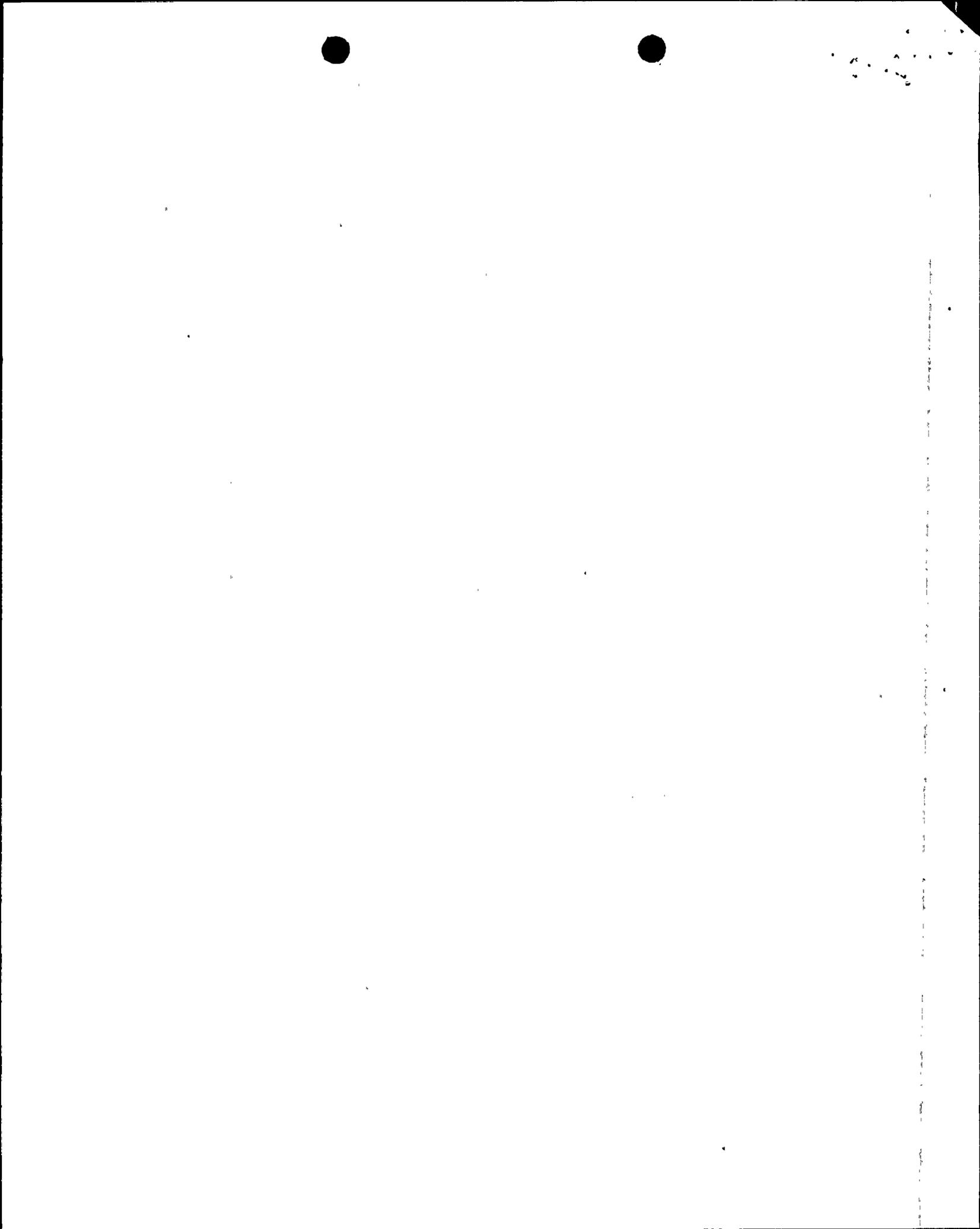
The NUREG-0619, paragraph 4.3.2.3, requires removal of the sparger and Dye Penetrant Surface (PT) examination of the nozzle bore if the indications are interpreted as cracks. The licensee requested deferment of removal of the sparger until the 1993 outage pending further UT examination of the nozzle bore in the 1991 planned outage.

2.0 DISCUSSION

Although the six indications were recordable under the ASME Code requirements, the sensitivity of the UT procedure exceeded that required by the Code in that the test block notch for adjusting the UT intensity was 5% rather than the larger 10% allowable by the Code. This is more conservative than required by the Code but results in recordable indications that may not be significant.

Fracture mechanics analysis by the licensee showed that the indications, if they are cracks, are unlikely to extend beyond the ASME Code Section XI limit during the next two operating cycles.

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The NRC staff position is to postulate the less conservative case of a crack initiating six operating years ago and progressing at ten mils per year. At this rate, the crack dimension would not exceed the limits of Table IWB-3514-1 of the 1983 ASME Code Section XI at the start of the next refueling outage in 1991.

The licensee has committed to performing ultrasonic examination of nozzle "A" in the bore areas 1, 2, 3, and 4 during the next refueling outage. This UT examination is to include reexamination and sizing of the six recordable indications discussed in this SER. Additionally, the licensee has proposed to remove the sparger from the feedwater nozzle "A" during the 1993 refueling outage per NUREG-0619.

3.0 CONCLUSION

Based upon the review of the licensee's submittal, the staff has concluded that there is reasonable assurance the facility can be safely operated during the next two cycles with the feedwater nozzle "A" in its current condition.

Should ultrasonic examination of this nozzle at the next (1991) refueling outage indicate measurable crack growth, or any additional indications are discovered, the licensee shall establish the required corrective action and the staff will reevaluate the need to pull the sparger.

