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 AUTH. NAME: CURTIS, N.W. AUTHOR AFFILIATION: Pennsylvania Power & Light Co.
 RECIPIENT NAME: YOUNGBLOOD, B.J. RECIPIENT AFFILIATION: Licensing Branch 1

SUBJECT: Responds to IE: Bulletin 80-07, "BWR Jet Pump Assembly Failure" & Q112.10.8WR/4 beams, as presently designed & installed, are predicted to have longer life. Beams will be inspected periodically as part of inservice insp program.

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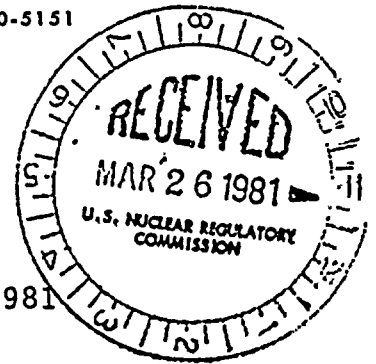
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NORMAN W. CURTIS
Vice President-Engineering & Construction-Nuclear
770-5381



March 25, 1981

Mr. B.J. Youngblood
Licensing Branch 1
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Susquehanna Steam Electric Station
Jet Pump Holddown Beam
ER100450 File 841-2
PLA-670

Docket Nos. 50-387 and 50-388

Dear Mr. Youngblood:

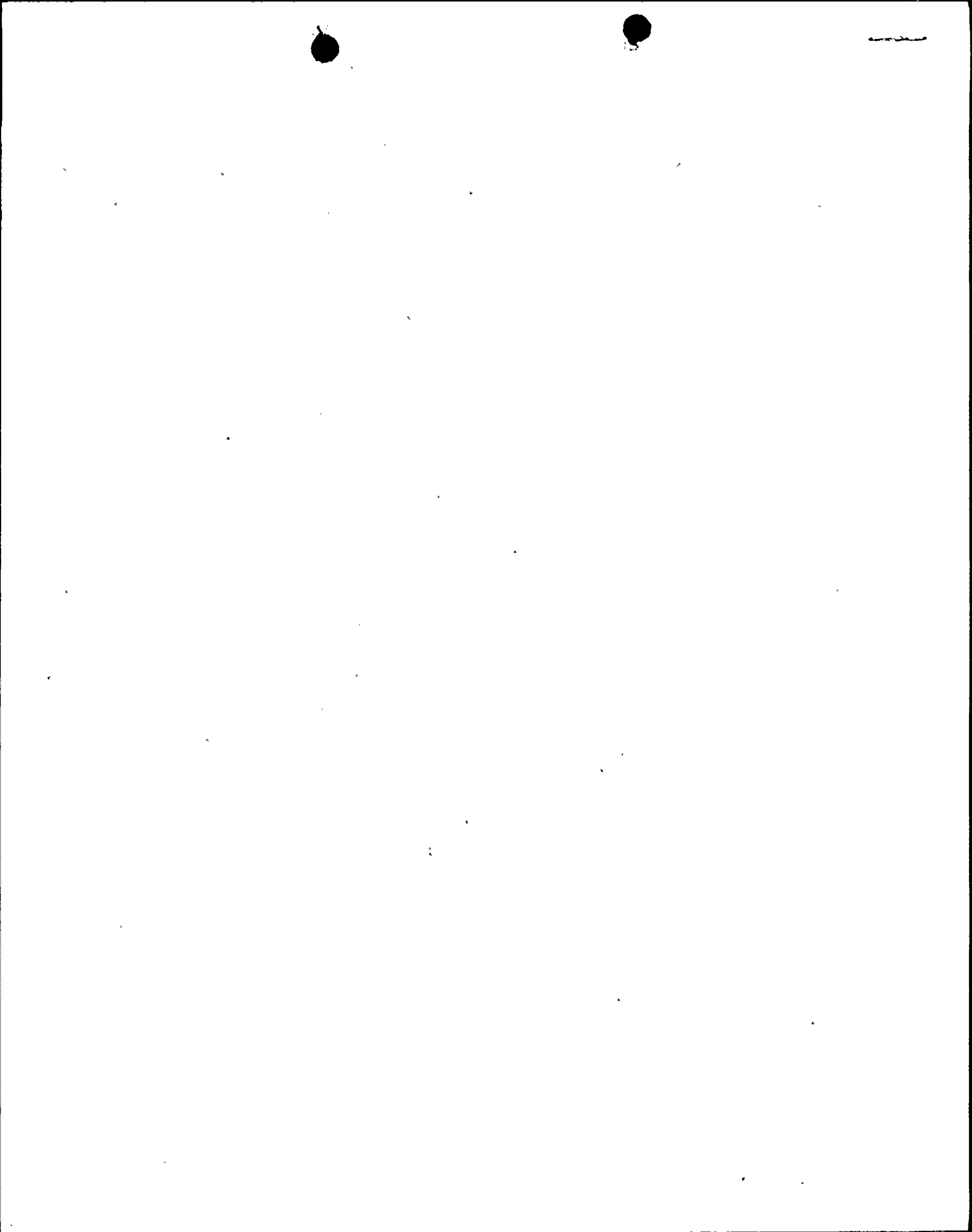
In regard to IE Bulletin 80-07 & Q112.10 please note the following:

1. The BWR/4 beam design used for Susquehanna operates at peak stresses less than the BWR/3 type beams which have failed (72 versus 86 KSI). Since time to failure is dependent on applied stress, the BWR/4 beams, as presently designed and installed are predicted to have a longer life.
2. Additionally we are proceeding with reducing the 30 KIP preload currently applied to our Susquehanna beam to 25 KIPs. This will result in a significant factor of improvement in predicted time to crack initiation (19 to 40 years). It is very possible that the Susquehanna beams may not crack or fail during their life. Additional tests by GE are scheduled through 1981 to make it possible to more accurately predict the expected life of beams with preload reduction.
3. We plan to conduct periodic inspections of the beams as part of our overall in-service inspection program. Recommended inspection frequencies will be developed in the future based on lead plant inspection results and the outcome of future testing at GE.
4. The following surveillance program shall be put into effect and an evaluation shall be undertaken to see if it is an indication of a jet pump degradation or failure when deviations are observed :

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- a. Initially, individual jet pump differential pressure readings should be recorded and used to establish a data base for expected characteristics of each jet pump. When the diffuser to lower plenum differential pressure reading on an individual jet pump exceeds the expected characteristics established.
 - b. The recirculation pump flow differs by more than 10% from the established speed-flow characteristics for that pump.
 - c. The indicated total core flow is more than 10% greater than the core flow value derived from established power-core flow relationships. If it is determined that a jet pump is inoperable or significantly degraded, the reactor shall be shut down in accordance with technical specification requirement.
5. We strongly believe that the above facts and steps taken are sufficient and do properly address the concern of IE Bulletin 80-07. However, additionally, we plan to procure X750 beam material with an improved heat treatment procedure. It has been shown that such a procedure results in improved resistance to IGSCC by at least a factor of two (2), and improved time to crack initiation by a factor of two (2). These factors apply when they are compared to current heat treatment processes at an equivalent applied stress ratio.

When and if it is established that a jet beam pump beam degradation or failure has taken place, steps will be taken to replace them with the ones with improved material.

Very truly yours,

N. W. Curtis/s

N.W. Curtis
Vice President-Engineering and construction-Nuclear

cc: R.M. Stark

bcc: N.W. Curtis
W.E. Barberich
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