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RECIP.NAME RECIPIENT AFFILIATION
YOUNGBLOOD,B.J. Licensing Branch 1

SUBJECT: Forwards response to Question 110.57 re visual or instrumented insp of essential instrumentation lines.

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APP 4

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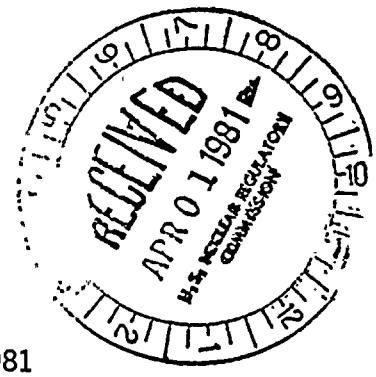

March 31, 1981

Mr. B.J. Youngblood, Chief
Licensing Branch No. 1
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Susquehanna Steam Electric Station
Response To Question 110.57
ER100450 File 841-2
PLA-699

Docket Nos. 50-387 and 50-388

Dear Mr. Youngblood,

Attached is the response to Question 110.57.

Very truly yours,

N.W. Curtis

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

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QUESTION 110.57

It is the staff's position that all essential safety-related instrumentation lines should be included in the vibration monitoring program during pre-operational or start-up testing. We require that either a visual or instrumented inspection (as appropriate) be conducted to identify any excessive vibration that will result in fatigue failure.

The essential instrumentation lines to be inspected should include the following:

a) Reactor pressure vessel level indicator instrumentation lines (used for monitoring both steam and water levels)

b) Main steam instrumentation lines for monitoring main steam flow (used to actuate main steam isolation valves during high steam flow)

c) Reactor core isolation cooling (RCIC) instrumentation lines on the RCIC steam line outside containment (used to monitor high steam flow and actuate isolation)

d) Control rod drive lines inside containment (not normally pressurized but required for scram).

RESPONSE

The essential instrumentation lines will be inspected as part of the pre-operational or startup testing for excessive vibrations levels although typically these lines do not experience high vibration levels.

a) Reactor pressure vessel level indicator instrumentation lines will be walked down after installation by cognizant design personnel to assure that the piping and constraints are such that the steady state vibratory effects of RPV induced vibration are minimized. The instrumentation lines and constraints in the cold condition will exhibit like vibratory behavior as in the hot condition. Therefore, a visual inspection of the RPV level instrumentation lines will be made during pre-operation or startup testing during a recirc pump flow. The acceptance criteria for the testing is as in FSAR Section 3.9.2.1b.2.

b) Main steam instrument lines for monitoring main steam flow will be walked down after initial operation by personnel to assure that the steady state vibratory effects will be minimized since the source of any vibration would be main steam flow, a visual inspection is impractical. Inspection using remote instrumentation and evaluation as outlined in FSAR Section 3.9.2.1b.2 will be performed or, if it can be demonstrated that the first mode vibration of the instrument line has a frequency greater than main steam line significant vibration mode freq., the instrumentation lines will be considered dynamically isolated from the main lines and, as such, require no vibration monitoring.

c) HPCI and RCIC instrument lines (to monitor high steam flow) will be walked down by cognizant design personnel after installation and prior to start-up to assure that steady state vibratory effects will be minimized. Any vibration in these lines will result from steady state vibrations of the large bore HPCI and RCIC turbines steam supply lines. These steam supply lines are included in the steady state power escalation testing. Remote instrumentation will be placed on these steam supply lines to assure that excessive vibration levels do not exist. The remote instrumentation would identify any large bore piping vibration which could cause excessive vibration in the instrument line. The test data will be evaluated as described in FSAR Subsection 3.9.2.1b.2.

d) Control rod drive inside containment will be visually inspected during cold recirc. pre-operational or startup flow testing for steady state vibratory effects and during pre-operation rod insertion/ withdrawal testing for dynamic transient effects. The acceptance criteria for the testing is in FSAR Subsection 3.9.2.1b.2.