Letter to N. C. Moseley from Duke Power Company dated May 14, 1975.

50-269
50-270
50-287
Reply to IEB - 75-05

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A. C. THIES
SENIOR VICE PRESIDENT
PRODUCTION AND TRANSMISSION

May 14, 1975

Mr. Norman C. Moseley, Director
U. S. Nuclear Regulatory Commission
Suite 818
230 Peachtree Street, Northwest
Atlanta, Georgia 30303

Re: IE:II:NCM
50-269, -270, -287

Dear Mr. Moseley:

With regard to your letter of April 14, 1975, which forwarded IE Bulletin No. 75-05 concerning the operability of Category I Hydraulic Shock and Sway Suppressors, please find attached our response for Oconee Nuclear Station.

Very truly yours,

A. C. Thies

ACT:vr

Attachment

RESPONSE TO IE BULLETIN NO. 75-05

1.a

The design requirements which various suppressors are intended to meet, such as velocity, acceleration, load, etc., also indicate the margin available between the design requirements specified for purchase of these components.

RESPONSE

The design data for hydraulic shock and sway suppressors used on Category I piping systems at the Oconee Nuclear Station are summarized in the chart below. Duke Power Company specifies a margin of zero between design requirements and purchase requirements because design loads are determined by detailed computerized piping analysis. In most cases, a margin does exist between the design load and the maximum allowable design load of the suppressor supplied since

1. Suppressors are manufactured for a relatively small number of load ranges; therefore, each suppressor size covers many possible loadings.

2. Suppressors supplied for the Oconee Nuclear Station clearly envelope the design load required for the particular restraint application.

Size (In)		Activation Threshold		Maximum * Allowable Design Load (lbs)	Ultimate Load (lbs)
Bore	Stroke	Acceleration	Velocity In/Min.		
1½	5	Not	8	3,000	4,000
1½	10	Applicable	8	1,100	1,500
2½	5 and 10		10	11,000	25,700
3¼	5 and 10	Insensitive	8	21,000	43,500
4	5 and 10	To Acceleration	8	32,000	66,000
5	5 and 10		8	50,000	103,000
6	5 and 10		5	72,000	148,000
8	5		3	130,000	-

*Actual allowable load may be less than specified depending on length of strut assembly.

1.b

Describe the testing of the hydraulic suppressors conducted by you or your supplier(s) prior to installation to assure their operation in accordance with design requirements.

RESPONSE

Pre-installation tests of the hydraulic suppressors were performed by the vendor. The testing of the snubber valves varies according to valve type. All shock suppressor assemblies were subjected to the same testing. A description of these tests is provided below:

Shock Suppressor Assembly

After assembly, each completed shock suppressor was mounted in a fill and test facility. During the fill and purge operations, this equipment verified that the suppressor rod was free to move through its full stroke. After filling, the equipment verified that the suppressor would snub and that it was free of air (i.e., movement to snub was not excessive).

Snubber Valve - Test 1

a. All parts were visually inspected for cleanliness and for complete deburring.

b. After assembly, the valve was placed in flow test facility. Locking velocity was set to the required value; then, after locking, bleed rate under load was set to the required value.

c. The test uses the fluid with which the snubbers were filled. Still wet with this fluid, the valves were capped for stock.

Snubber Valve - Test 2

a. All parts were inspected for cleanliness and for complete deburring.

b. Valve was assembled without springs and subject to low flow, high pressure test. This test verified that the pool would move freely to the closed position in each direction and that bypass flow in the closed position was within acceptance limits.

c. Following this test, the springs were installed and the valves were prepared for stock.

1.c

Describe the surveillance (including testing) programs now underway or planned by you to assure continued operability of the hydraulic suppressors under the design conditions throughout the life of the facility.

RESPONSE

Oconee maintenance procedure MP/0/A/3000/12 describes the annual inspection of hydraulic suppressors and restraints. This procedure fulfills the visual

inspection required by Technical Specification 4.1.2. In addition, normal preventative maintenance recommended by the manufacturer is performed to assure continued operability of the hydraulic suppressors under the design conditions throughout the life of the facility.