ARKANSAS POWER & LIGHT COMPANY
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August 18, 1981

2CAN088111

Mr. K. V. Seyfrit, Director
Office of Inspection & Enforcement
U.S. Nuclear Regulatory Commission
Regic
611 R.. Plaza Drive, Suite 1000
Arlington, Texas 76011

SUBJECT: Arkansas Nuclear One - Unit 2
Docket No. 50-368
License No. NPF-6
IE Bulletin 81-01 Response
(File: 2-1510.1)

Gentlemen:

The subject IE Bulletin entitled, "Surveillance of Mechanical Snubbers", requested certain schedules and inspection reports to be provided on AP&L's safety-related system mechanical snubbers. As outlined in the Bulletin, no response is necessary on Items 1 and 2 as AP&L has no INC type mechanical snubbers installed at ANO-2.

Item 3 of the Bulletin requested that a schedule be provided for an inspection program covering mechanical snubbers produced by other manufacturers (than INC). Also, a minimum requirements list was outlined for this program. AP&L has completed the inspection program for ANO-2 during the recent refueling outage. The results are attached in a separate report. The inspections were designed to meet the minimum requirements set forth as Item 3 and:

a. Include all snubbers installed on safety-related systems;

b. Include the visual examination and manual test described in Item 1(a) above for all snubbers;

c. Snubbers which have been examined and tested in a manner comparable to Item 3(b) above within the last twelve months may be exempted;

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d. Require the corrective action and evaluations described in Items(1)d and 2(d) above; and

e. Be completed prior to the completion of the next refueling outage. Plants which are currently in a refueling outage should perform the visual examination and manual test of inaccessible mechanical snubbers before resumption of operations unless some other basis for assurance of snubber operability is provided to the NRC.

The above completes our response to Item 3 of IE Bulletin 81-01.

Item 4 of the subject Bulletin requested the results of the inspections performed in accordance with Item 3. AP&L has completed the ANO-2 inspections and attached the requested report information with this letter.

Very truly yours,

David C. Trimble

David C. Trimble
Manager, Licensing

DCT:LDY:kb

cc: Director of the NRC Office
of Inspection & Enforcement
Washington, D. C. 20555

STATE OF ARKANSAS)
) SS
COUNTY OF PULASKI)

I, DAVID C. TRIMBLE, being duly sworn, subscribe to and say that I am the Manager of the Licensing Section, for Arkansas Power & Light Company; that I have full authority to execute this oath; that I have read the foregoing 2CAN088111 and know the contents thereof; and that to the best of my knowledge, information and belief the statements made in it are true.

David C. Trimble
DAVID C. TRIMBLE

SUBSCRIBED AND SWORN TO before me, a Notary Public in and for the County and State above named, this 21 day of August, 1981.

Henry A Thomas
NOTARY PUBLIC

MY COMMISSION EXPIRES:

12-20-82

REPORT ON THE SURVEILLANCE OF MECHANICAL SNUBBERS AT ANO-2 PER IE BULLETIN 81-01 REQUIREMENTS

AUGUST 10, 1981

INTRODUCTION

AP&L was requested in a January 27, 1981 NRC IE Bulletin 81-01 document to inspect all safety-related mechanical snubbers and to submit a report within sixty (60) days after the completion of the inspection. The report contents were outlined as follows:

a. A description of the visual examinations and tests performed.

b. Number of snubbers examined and tested. Grouping by manufacturer name, model number, and size is acceptable.

c. Number of failures identified; manufacturer name, model number, size, mode of failure, cause of failure, corrective action, snubber location, effect of failure on plant and system safety, and justification for continuing or resuming operation.

d. The above information shall also be provided for the snubbers exempted by Items 1(c), 2(c), and 3(c) above.

Item (d) does not apply to AP&L as no previous inspections have been done within the past 12 months. All mechanical snubbers were inspected during the recent refueling outage.

A special work plan was made up to ensure proper examinations were performed and documented per the IE Bulletin requirements. The remainder of this report will be directed toward a point-by-point description of what was done to fulfill the requirements of IE Bulletin 81-01.

DISCUSSION

Item A - A description of the visual examinations and tests performed.

AP&L prepared a Mechanical Snubber Inspection Work Plan that required both a visual and manual stroke test as outlined in IE Bulletin 81-01. Specifically, the work plan called for a "visual inspection of the external parts for damage and (to) document findings ...". Also, the work plan required that personnel "Disconnect snubber from the pipe. Push (compression) inward to its full travel, then outward (tension) to its full travel". These examinations and tests were performed on all safety-related mechanical snubbers as listed in the work plan.

Item B - Numbers of snubbers examined and tested.
- Grouping by manufacturer name, model number, and size.

ANO-2 has 284 mechanical snubbers that are installed on safety-related systems and non-safety related systems. All of these snubbers are of Pacific Scientific manufacture and include 34 Model PSA-100 snubbers, 52 Model PSA-35 snubbers, 59 Model PSA-10 snubbers, 52 Model PSA-3 snubbers, 26 Model PSA-1 snubbers and 61 Model PSA-1/2 snubbers.

Item C - Number of failures identified; manufacturer name, model number, size, mode of failure, cause of failure, corrective action, snubber location, effect of failure on plant and system safety, and justification for continuing or resuming operation.

AP&L identified fifteen (15) failures of the Pacific Scientific Model PSA-1/2 snubbers. Ten of the fifteen failures were attributed to installation problems or external abuse. There were signs that they might have been forced into position during installation, twisted, painted over or stepped on. The other five (5) were rusty and wet (standing water) in the inertia mass area. It appears that moisture was introduced to the snubbers during one of two containment spray events that have been experienced at ANO-2. All of the fifteen snubbers were replaced with new snubbers of the same design.

A tabulation of the hanger number, system and brief problem description is given in Attachment #1 for general locations of the snubbers that failed on the safety related systems. In all cases the snubbers malfunctioned in a mode that prevented pipe movement. Therefore, the pipe would have been restrained in the event of an earthquake, and as such, posed no safety concern. The only problems that could have resulted from snubber malfunction would have been generated by thermal expansion. A new thermal analysis was done on the affected piping assuming that the snubbers were either locked or restrained the piping to their measured breakaway friction. Aside from the two cases listed below there was no piping system where the thermal stress range exceeded code allowables and no pipe support that did not meet code allowables. The two exceptions are:

1. Pipe support 2EBC-1-H4 could have experienced thermal loads that would have exceeded the normal allowable load for the anchor bolts. However, the operability limit of the bolts was not exceeded.

2. The cumulative usage factor on the 4" x 4" x 2" Tee connecting the pressurizer auxiliary spray line to the main spray line increased beyond a value that would be allowed for the life of the plant. This will necessitate replacing the fitting and revising the stress report. However, the replacement would not have to occur for approximately 15 years based on the frequency of cyclic occurrences assumed in the stress report. Specifically, the fitting has 190 startup and shutdown cycles remaining in its design life as of the date of the IE Bulletin 81-01 inspection.

Based on the replacement of damaged snubbers and the above analyses on system design, no deleterious impact may be postulated on public health and safety by continued operation.

CONCLUSION

AP&L has determined by the inspections and analyses mentioned above that all the mechanical snubbers presently installed in safety related systems at ANO-2 meet the requirements of IE Bulletin 81-01 and as such pose no hazard to the health and safety of the public.

ATTACHMENT 1

ANO-2
MECHANICAL SNUBBERS

SAFETY RELATED

	HANGER	SYSTEM	PROBLEM
1.	2CCA-15-H27	Reactor Coolant	Rust & wet in the inertia mass area
2.	2CCA-16-H1	Chemical & Volume Control	Rust & wet in the inertia mass area
3.	2CCA-16-H7	Chemical & Volume Control	Rust & wet in the inertia mass area
4.	2CCA-16-H11	Chemical & Volume Control	Rust & wet in the inertia mass area
5.	2CCA-26-H2	Chemical & Volume Control	Rust & wet in the inertia mass area
6.	2CCA-38-H1	Reactor Coolant Drain	Bent screw shaft
7.	2DBB-4-H2	Emergency Feedwater	Bent Rods
8.	2DBB-4-H3	Emergency Feedwater	Bent Rods
9.	2DBB-4-H5	Emergency Feedwater	Bent Rods
10.	2EBC-2-H7	F.W. Pump Turbine Driver	Bent screw shaft
11.	2EBC-1-H9	Main Steam to Emergency F.W. Pump	Bent screw shaft
12.	2EBC-1-H26	" " "	Bent screw shaft
13.	2EBC-1-H30	" " "	Bent rods
14.	2EBC-1-H31	" " "	Bent screw shaft
15.	2HCB-4-H176	Containment Spray	Paint on shaft and inside sleeve area