APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-313/88-30
50-368/88-30

Operating Licenses: DRP-51
NPF-6

Dockets: 50-313
50-368

Licensee: Arkansas Power & Light Company (AP&L)
P.O. Box 551
Little Rock, Arkansas 72203

Facility Name: Arkansas Nuclear One (ANO), Units 1 and 2

Inspection At: ANO, Russellville, Arkansas

Inspection Conducted: September 12-16, 1988

Inspector: Claude E. Johnson — 10-11-88
C. E. Johnson, Reactor Inspector, Plant Systems Section, Division of Reactor Safety — Date

Approved: T. F. Stetka — 10/12/88
T. F. Stetka, Chief, Plant Systems Section
Division of Reactor Safety — Date

Inspection Summary

Inspection Conducted September 12-16, 1988 (Report 50-313/88-30)

Areas Inspected: Routine, announced inspection of testing of pipe supports and restraint systems.

Results: Within the area inspected, no violations or deviations were identified.

Inspection Summary

Inspection Conducted September 12-16, 1988 (Report 50-368/88-30)

Areas Inspected: No inspection of Unit 2 was conducted.

Results: Not applicable.

DETAILS

1. Persons Contacted

Principal Licensee Employees

*J. M. Levine, Executive Director, Nuclear Operations
*J. D. Vandergrift, Manager, Operations
*R. Lane, Manager, Engineering
*B. Baker, Manager, Modifications
*L. Humphrey, General Manager, Nuclear Quality
*J. McWilliams, Manager, Maintenance
*D. Howard, Manager, Licensing
*R. Wewers, Manager, Work Control Center
*P. Michalk, Licensing Engineer
J. GoBell, Mechanical Engineer

Wyle Laboratories Scientific Services (Wyle)

M. McInerney, Project Manager
J. Ortakales, Test Engineer
K. Buff, Test Technician
J. Messeh, Supervisor, Visual Examiner
W. Young, Visual Examiner
E. Hudson, Visual Examiner
D. Moore, Test Technician

NRC

*W. Johnson, Senior Resident Inspector
*R. Haag, Resident Inspector

*Denotes those individuals attending the exit interview.

2. Testing of Pipe Supports and Restraint Systems (70370)

The purpose of this inspection was to determine whether pipe support (hydraulic and mechanical snubbers) surveillances for safety-related piping and equipment are in conformance with the Technical Specifications (TS) and commitments and to determine whether required records are properly reviewed, evaluated, and maintained.

a. Procedure/Technical Specification Review

The NRC inspector reviewed TS Sections 3.16 and 4.16 which apply to all shock suppressors (snubbers). Section 3.16 gives the Limiting Condition for Operations (LCOs) for shock suppressors and Section 4.16 lists the surveillance requirements for the performance

of snubber inspections. The NRC inspector also reviewed the following two procedures pertaining to the snubber surveillance inspection and testing program:

- Procedure 1306.003, "Visual Inspections, VT-3 & VT-4L, of Snubbers," Revision 11, dated August 29, 1988

- Procedure 1306.023, "Snubbers Functional Testing Per VT-4," Revision 4, dated August 12, 1988

Procedure 1306.003 provides instruction on visual inspections of both mechanical and hydraulic snubbers (large and small bore). This procedure addresses those elements of the visual examination which would identify the following snubber conditions and deficiencies:

- Inoperability due to corrosion;

- Improper installation;

- Lack of lubrication;

- Overheating during welding;

- Excessive overloading; and

- Damage to mechanical snubbers resulting from water hammer effects, improper handling, or other mechanical abuse.

The procedure directs the performance of a detailed visual examination to detect the following:

- Proper support symbol/number correctness;

- Loose parts; i.e., clamps, slipping on pipe;

- Debris;

- Abnormal corrosion/corrosion products (such as boric acid or heavy rust);

- Wear and erosion;

- Physical damage;

- Integrity of welds;

- Correct orientation and configuration; and

- Pin-to-pin dimensions.

Procedure 1306.023 provides instruction and documentation for the functional testing of snubbers. This procedure is applicable for the following supports:

- Pacific Scientific (PSA) Mechanical Snubbers;
- Anchor-Darling (A-D) Mechanical Snubbers;
- ITT Grinnel Small Bore Hydraulic Snubbers (Cylinder Diameter less that 6 inches);
- Paul-Munroe Hydraulic PMH-2200 Snubbers; and
- Paul-Munroe Large Bore Hydraulic Snubbers.

Procedure 1306.023 provides test criteria for drag, acceleration, velocity, and bleed rate. Based on the actual test results, the snubber is determined to be either operable, degraded, or failed. Both procedures are generic and are used by Wyle at other sites. The NRC inspector's review determined that both procedures are adequate and were properly reviewed and approved by the licensee.

b. Observations

Surveillance Inspections

The visual inspections of seven pipe supports performed by Wyle visual examiners inside Unit 1 containment were observed by the NRC inspector. In each case, the examiners performed the visual inspections in accordance with established procedures. Any deficiencies identified were noted on the appropriate forms. Discussions with the visual examiners indicated that they were knowledgeable of the required inspection attributes.

The supports observed are designated below by the examination numbers established by Wyle and the original mark number.

Examination No.	Mark No.
32	HS-89
122	HS-67
61	LW-224-H3(A)
62	LW-224-H3(B)
65	LW-224-147
121	HS-66
140	HS-30

Functional Testing

The NRC inspector witnessed the in-place testing of two Paul-Munroe (hydraulic) large bore reactor coolant pump supports inside

containment. Observations indicated that the supports met all criteria except for bleed rate. There appeared to be spikes in the readings of the results. It was later determined by Wyle and the licensee that because of the low bleed rate of the snubber, that the results were on the low end of the flow span which could cause electrical spikes in the results. A decision was made by the licensee and Wyle to verify the results on the bench test machine set up in Wyle's trailer. During a subsequent telephone conversation held on September 19, 1988, with a licensee representative, the NRC inspector was informed that the test results were acceptable.

The functional testing of four mechanical snubbers was also observed by the NRC inspector. The results were within the acceptance criteria. The following supports were observed:

Examination No.		Mark No.
28		HS-48(A)
16		HS-6(B)
156	(did not witness 2nd test)	RCP-1(C)
157	(did not witness 2nd test)	RCP-2(C)

c. Review of Records

The NRC inspector reviewed calibration records of the test equipment used, qualification records of the personnel performing the inspections, and the visual examination reports (VT-3). Calibration records reviewed indicated that equipment utilized was in calibration. Ten personnel qualification records were reviewed. These records indicated that all personnel were certified as required by procedures for the job they performed. Eighteen VT-3 examination reports were reviewed to verify the following:

- Results were within the established acceptance criteria.
- Identified deficiencies were noted and documented.
- Adequate evaluation of deficiencies were noted by the VT-3 examiners.
- Corrective action was implemented as required.

Records Reviewed:

Calibration records

API#2 (In-Place Snubber Test System)

Instrument	Manufacturer	Model	Wyle	S/N
Data Acquisition	HP	3497A	103262	2629A19805
RTD Transmitter	Omega	TX58-PT2	103268	8608
Frequency Converter	Venture Tech		105130	FB007
Pressure Transducer	Heise	621	103265	S6-7215
Pressure Transducer	Heise	621	106696	S6-13957
Pressure Transducer	Heise	621	103267	S6-7216
Flow Meter	Stauff	VC 0.04	103270	210
Flow Meter	Stauff	VC 1.0	103269	352
Pressure Gage	Robertshaw	614-B	106802	N/A
Pressure Gage	Robertshaw	614-B	106804	N/A

Wyle Snubber Test Machine (S/N 108), Model 100, Wyle No. 100933

VT-3 Examination Report Nos.

46	83	39
78	28	
156	179	
157	190	
158	145	
16	142	
71	114	
42	90	

No violations or deviations were identified.

3. Exit Interview

The NRC inspector met with the licensee (denoted in paragraph 1) on September 16, 1988, and summarized the scope and findings of this inspection. No information was identified as proprietary.