TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401

5N 157B Lookout Place

MAR 30 1990

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Gentlemen:

In the Matter of	)	Docket Nos. 50-327
Tennessee Valley Authority	)	50-328

SEQUOYAH NUCLEAR PLANT (SQN) - NUREG-0612 - REACTOR VESSEL HEAD (RVH) AND REACTOR VESSEL INTERNALS (RVI) LIFTING DEVICES - ALTERNATIVE TESTING

Reference: TVA letter from L. M. Mills to E. Adensam of NRC dated July 27, 1984, regarding NUREG-0612

The purpose of this letter is to inform NRC of an alternative test method regarding compliance with NUREG-0612, "Control of Heavy loads at Nuclear Power Plants." TVA's original commitment, as contained in the referenced letter, involved the performance of a nondestructive examination (NDE) of the critical load bearing welds on SQN's RVH and RVI lifting devices. TVA proposes to use alternative NDE test techniques (i.e., acoustic emission and/or ultrasonics) from those prescribed by NUREG-0612. TVA finds these alternative NDE techniques to be more practical for the configuration of SQN's lifting devices. TVA's position is that the use of acoustic emission and/or ultrasonics meets the intent of the NUREG-0612 requirements and TVA's original commitment.

Enclosure 1 contains TVA's justification for using the alternative NDE test method. Enclosure 2 contains diagrams of SQN's RVH and RVI lift devices.

Please direct questions concerning this issue to Don V. Goodin at (615) 843-7734.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

E. G. Wallace, Manager
Nuclear Licensing and
Regulatory Affairs

Enclosures
cc: See page 2

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U.S. Nuclear Regulatory Commission

MAR 30 1990

cc (Enclosures):
Ms. S. C. Black, Assistant Director
for Projects
TVA Projects Division
U.S. Nuclear Regulatory Commission
One White Flint, North
11555 Rockville Pike
Rockville, Maryland 20852

Mr. B. A. Wilson, Assistant Director
for Inspection Programs
TVA Projects Division
U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

NRC Resident Inspector
Sequoyah Nuclear Plant
2600 Igou Ferry Road
Soddy Daisy, Tennessee 37379

NUREG-0612 requires compliance with American National Standards Institute (ANSI) N14.6-1978, Section 5.3.1 to either perform (1) a 10-minute, 150 percent load test of the device in conjunction with a visual inspection for defects and deformation of critical areas and welds or (2) dimensional testing, visual inspection, and nondestructive examination (NDE) of major load carrying welds and critical areas of the device.

TVA originally committed to performing dimensional testing, visual inspection, and NDE of the major load carrying welds as stated in Item 2 above. This technique is now considered to be impractical at Sequoyah Nuclear Plant (SQN) for the following reasons:

1. A dimensional test of SQN's tripod lift rig configuration would be inconclusive because of the size, height, and pinned arrangement of the lift devices (14 feet in diameter and 30 feet in height). Refer to the diagrams provided in Enclosure 2.

2. Disassembly of the lifting devices for visual or surface examination would involve a significant hardship and man-hours and could result in alignment problems where tolerances are critical.

3. ANSI-N14.6-1978 specifies NDE inspections using liquid penetrant or magnetic particle examination. These surface examination techniques would require removal of paint over the weld surfaces. Removal of paint has the potential for introducing airborne contamination into the general area. TVA considers paint removal to be undesirable for maintaining radiation exposure as low as reasonably achievable (ALARA).

Proposed Alternative

TVA proposes to use acoustic emission testing to locate any active flaws in the lift rigs. Acoustic emission testing will be performed during actual lifts of the internals and reactor head. This will provide dynamic loading of the respective lifting during vertical acceleration and normal side swing. Acoustic emission sensor locations are shown in the diagrams provided in Enclosure 2. The acoustic emission test will be followed by a general visual examination. Ultrasonic examination of the pins is planned as an evaluation technique if indications are found from the acoustic emission testing. The acceptance criteria for the ultrasonic examination will be based on critical flaw size calculations and a suitable sensitivity used to detect critical size flaws.

ENCLOSURE 2

SEQUOYAH NUCLEAR PLANT (SQN)

DIAGRAMS OF SQN'S REACTOR VESSEL HEAD AND
REACTOR VESSEL INTERNALS LIFTING DEVICES

APPENDIX B
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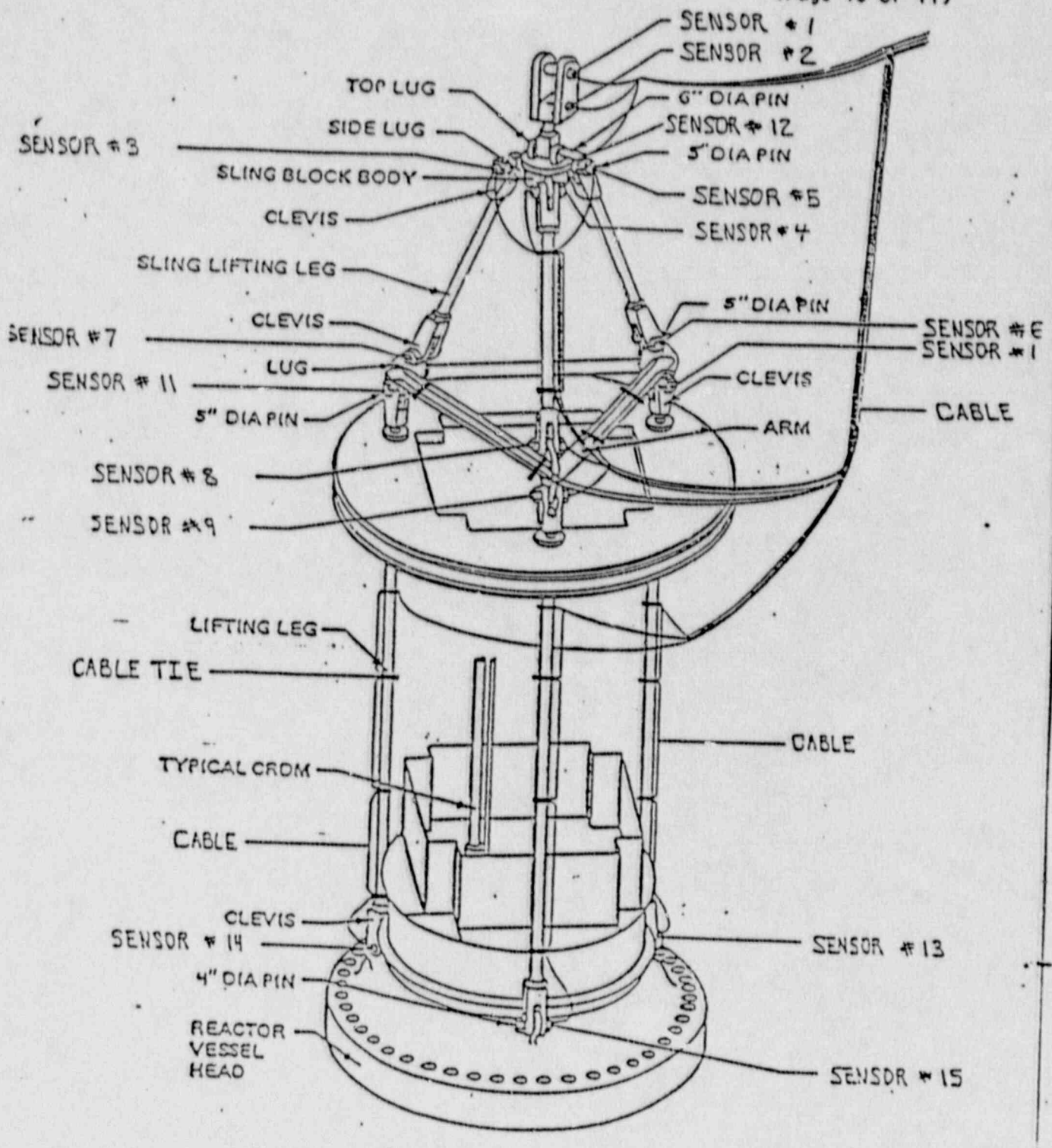

REACTOR VESSEL HEAD LIFT RIG WITH AE SENSORS AND CABLE INSTALLED

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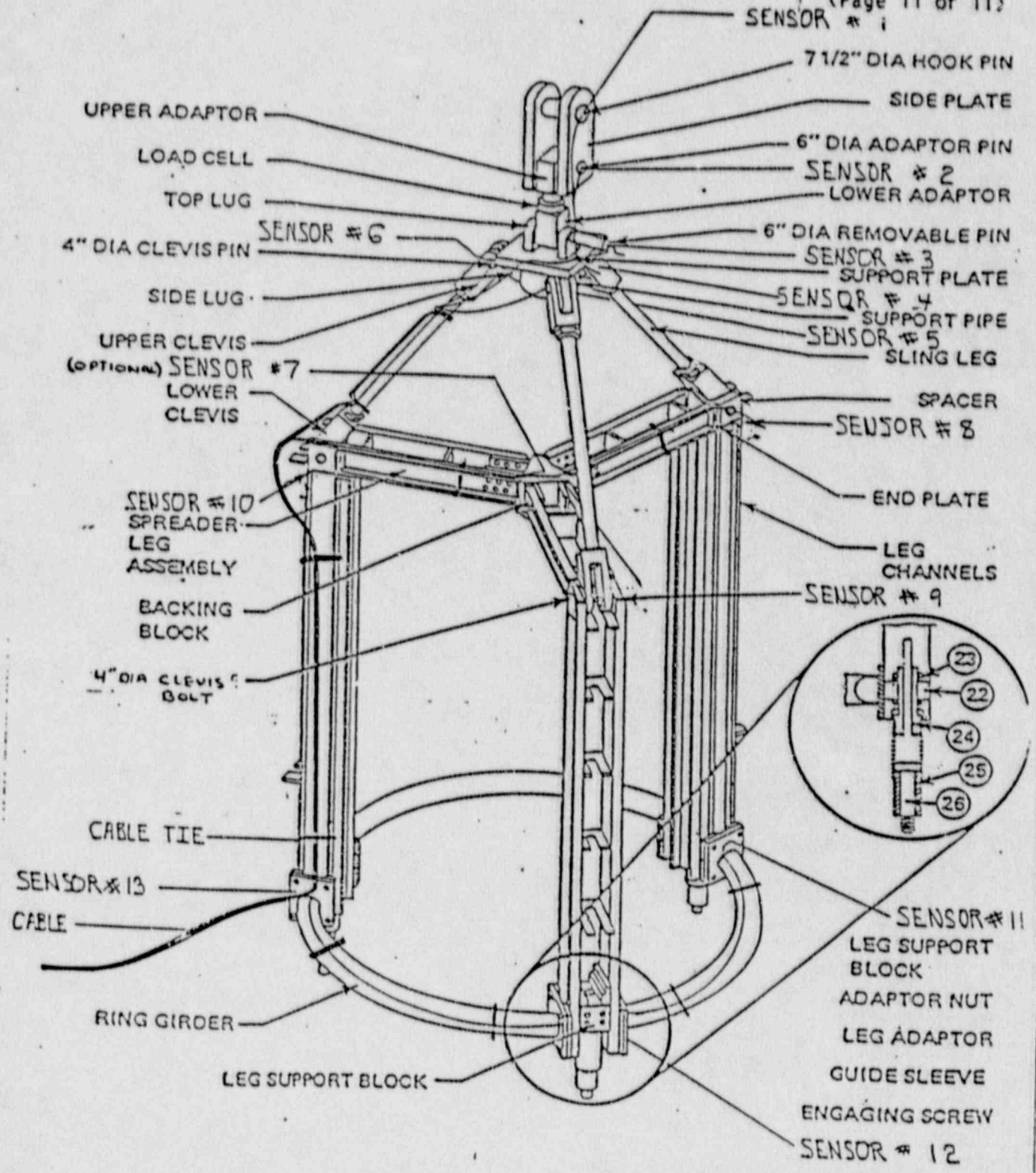

REACTOR VESSEL INTERNALS LIFT RIG WITH AE SENSORS AND CABLE INSTALLED