

ATTACHMENT

INTERIM REPORT #2  
POST TENSIONING ANCHORHEAD FAILURE  
BYRON STATION UNIT 1

Commonwealth Edison Company submitted Nonconformance Reports No. 442, dated November 21, 1979; No. 451, dated November 28, 1979; and No. 478, dated January 18, 1980, for Byron Unit 1. These nonconformances concerned the failure of four (4) field anchorheads used in the post tensioning system for the Containment Building. The post tensioning system is a 170 wire BBRV system supplied by INRYCO, Inc. It is comprised of 120 dome tendons, 162 vertical tendons and 201 horizontal tendons for each Containment Building. Each tendon consists of 170, 0.250 inch diameter wires conforming to ASTM A-421, Grade BA steel. A steel anchorhead is provided at each end of the tendon to serve as termination and anchor point for the tendon.

Subsequent to the anchorhead failures reported in Commonwealth Edison Company's initial nonconformance report, two other field anchorheads failed. It has been noted that three of the four failed anchorheads came from the same steel mill heat and from the same heat treating lot within that mill heat. The fourth field anchorhead failed on January 18, 1980, and was from a different steel mill heat. However, the mill heats with failed anchorheads were supplied by the same steel fabricator. The fabricator provided five steel mill heats of field anchorheads and these five heats represent all the Unit 1 field anchorheads required of which anchorheads from four of these heats have been previously stressed.

These anchorhead failures are all associated with the horizontal tendon group. Both the dome and vertical tendons have been in the stressed state for several months, and approximately two-thirds of the horizontal tendons were stressed when the first anchorhead failure occurred.

After the second failure, immediate steps were taken in the field to detension other horizontal tendons with anchorheads from the same mill heat as the failed anchorheads. In addition, to minimize asymmetric loads on the Containment Building, additional horizontal tendons were detensioned using acceptable field procedures. Immediate steps were again taken after the fourth failure occurred to detension all tendons from the second failed anchorhead mill heat. Also, a third mill heat was identified as suspect from the structural test program completed to date and all tendons with anchorheads from this mill heat were detensioned. At this stage of detensioning, tendons from all three tendon groups (dome, horizontal and

vertical) were being affected.

INRYCO, Inc. is currently performing metallurgical and structural tests on all the steel mill heats of anchorheads provided for Byron Station. These tests are being conducted at their Inland Steel Laboratory and Battelle Laboratory in Ohio. Test Program progress has not yet reached a point where conclusive results are available.

Commonwealth Edison expects that final resolution will be completed by May 15, 1980. At that time, a final report will be submitted documenting the reason for the anchorhead failures, corrective action required, and corrective action to prevent future recurrence.