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Senior Vice President



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November 30, 1970

Re: Docket No. 50-255

Dr. Peter A. Morris, Director  
Division of Reactor Licensing  
U.S. Atomic Energy Commission  
Washington, D. C. 20545

Dear Dr. Morris:

Enclosed are 15 copies of a summary report covering the inspection and repair activities on two control rod drive mechanisms and associated housings and closure nozzles. These activities were carried out after a crane failure incident which allowed a mechanism to fall on the vessel head. The inspections revealed no permanent damage to the associated components.

These reports are provided for informational purposes.

Yours very truly,

*R. C. Youngdahl*

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### CONTROL ROD MECHANISM DROP INCIDENT

Modification activities on the control rod drive mechanisms (CRDM) were made using the auxiliary hook on the polar crane in the containment building. To obtain adequate clearance over the vessel head and pressure housing extensions to remove the CRDM's from the CRDM housings, a bypass of the upper limit switches on the auxiliary crane hook was required. This bypass was by means of a push button on the crane pendant control. During one removal operation, the bypass was activated when the upper limit switch was reached and the load continued to raise until the upper part of the hook made contact with a beam on the crane bridge. This contact prevented further movement of the hook. The crane drum continued to rotate and increased cable tension until the cable parted allowing the hook and its load (CRDM No. 13 support tube and rack extension) to fall. The support tube and hook fell on top of mechanism housings No. 13 and No. 42.

An investigation was undertaken to determine if any damage had resulted from this incident. This investigation showed that closure head nozzle No. 12, supporting CRDM No. 42, had experienced an axial compression of approximately 0.100" and a diametral expansion of 0.010" to 0.015". Closure head nozzle No. 17, supporting CRDM housing No. 13, had experienced a lesser axial loading. Nondestructive testing indicated no structural defects. These tests included ultrasonic tests of the nozzle-to-flange girth welds, nozzles from the girth welds to the closure head, and approximately 50% of the closure head-to-nozzle "J" welds. In order to confirm structural integrity of the "J" welds it was necessary to remove CRDM housings No. 13 and No. 42 to allow removal of the associated thermal sleeves for full access to the "J" weld.

Subsequent to the removal of CRDM housings No. 13 and No. 42 additional inspections were made. An ultrasonic inspection of head nozzles No. 12 and No. 17 nozzle-to-head "J" weld was made from the nozzle inside diameter with 50% overlap. The results of this inspection met the acceptance standards of Section III, ASME Code. An ultrasonic inspection of head base material around penetrations No. 12 and No. 17 to a distance of approximately 7.5" from the centerline of the penetration

was made from the head outside and inside diameters with 50% overlap. The results of this inspection met the acceptance standards of Section III, ASME Code.

In addition, the removed CRDM housings No. 13 and No. 42 were returned to Combustion Engineering, Inc. at Windsor and given a comprehensive dimensional inspection. All welds were radiographed. The gouges in the upper ends caused by the impact were also removed. These housings met all original acceptance criteria and were returned to the site and reinstalled.

The internals of CRDM No. 13 were also returned to Combustion Engineering, Inc. shops where they were inspected, refurbished, assembled, and then given an operational test prior to their return to the site.

There are no further dimensional or nondestructive tests or inspections required to demonstrate the integrity or operational adequacy of the closure head, head nozzles, or CRDM housings. From the results of the inspections conducted it is concluded that the equipment suffered no permanent deleterious effects as a result of this accident.