UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

July 11, 1979

Docket No. 50-213

Connecticut Yankee Atomic Power Company
ATTN: Mr. W. G. Counsil
Vice President - Nuclear
Engineering and Operations
P. O. Box 270
Hartford, Connecticut 06101

Gentlemen:

The enclosed Bulletin No. 79-15 is forwarded to you for action. A written response is required. If you desire additional information regarding this matter, please contact this office.

Sincerely,

Boyce H. Grier
Director

Enclosures:
1. IE Bulletin No. 79-15 w/Attachments
2. Listing of IE Bulletins Issued in Last Twelve Months

cc w/encls:
R. Graves, Plant Superintendent
D. G. Diedrick, Manager of Quality Assurance
J. R. Himmelwright, Licensing Safeguards Engineer

ENCLOSURE 1

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C. 20555

DEEP DRAFT PUMP DEFICIENCIES

Description of Circumstances:

On October 20, 1978, Commonwealth Edison Company reported that manufacturing deficiencies had been identified in new high pressure core spray, low pressure core spray, and residual heat removal pumps manufactured by Ingersoll-Rand (I-R) Company, Cameron Pump Division.

Each of these pumps is a vertical turbine pump with impellers located in bowls in a sump or a self contained barrel. The motor (prime mover) is located at the highest pump elevation to take into account maximum flooding at the site or space considerations. The suction is at the lower end of the pump while the discharge head is just below the driver. Bearings supporting the vertical shaft segments (usually 5 to 10 segments) are either self lubricated, force fed (lubricated by fluid being pumped), or oil lubricated and maintained within their own isolated system. These pumps are designated as "Deep Draft". Figures 1&2 show typical outlines of such pumps.

The internal deficiencies, identified through dimensional and visual inspections were as follows:

Low Pressure Core Spray Pumps (I-R Model No. 29APKD-5) (Date of Manufacture - Feburary 1973)

. Loose impeller bolts and bolts improperly staked
. Loose key - keyway fit
. Excessive runout on pump shaft
. Bearing showed wear
. Bearing clearance exceeded recommended tolerance
. Coupling thread galled
. Wear ring clearance out-of-specification
. Impeller-to-shaft clearance out of specification
. Cracks found in second-and-third-stage impellers
. Stuffing box bushings were severely galled

High Pressure Core Spray Pumps (I-R Mo
September 1972)

. Bearing clearance exceeded recommen
. Wear ring clearance out-of-specific
. Bearings showed wear