AEC DISTRIBUTION FOR PART 50 DOCKET MATERIAL
(TEMPORARY FORM)

CONTROL NO: 10254

FILE:

FROM: Duke Power Company Charlotte, N. C. 28201 A. C. Thies	DATE OF DOC 9-30-74	DATE REC'D 10-3-74	LTR X	TWX	RPT	OTHER
TO: N. C. Moseley	ORIG 1 cy	CC / OTHER	SENT AEC PDR XX SENT LOCAL PDR XX			

CLASS	UNCLASS	PROP INFO	INPUT	NO CYS REC'D	DOCKET NO:
	XX			1	50-287

DESCRIPTION:

Ltr trans the following:

Do Not Remove

ACKNOWLEDGED

ENCLOSURES:

REPORT: Unusual Event No. UE-287/74-1 on 8-18-74 re reactor coolant pump 3B2 reverse rotation

PLANT NAME: Oconee #3

(1 cy encl)

FOR ACTION/INFORMATION

LMB 10-12-74

BUTLER (L) W/ Copies	SCHWENCER (L) W/ Copies	ZIEMANN (L) W/ Copies	REGAN (E) W/ Copies
CLARK (L) W/ Copies	STOLZ (L) W/ Copies	DICKER (E) W/ Copies	LEAR (L) W/ Copies
PARR (L) W/ Copies	VASSALLO (L) W/ Copies	KNIGHTON (E) W/ Copies	W/ Copies
KNIEL (L) W/ Copies	PURPLE (L) W/ Copies	YOUNGBLOOD (E) W/ Copies	W/ Copies

INTERNAL DISTRIBUTION

REG FILE	TECH REVIEW	DENTON	LIC ASST	A/T IND
AEC PDR		GRIMES		BRAITMAN
OGC, ROOM P-506A	SCHROEDER	GAMMILL	DIGGS (L)	SALTZMAN
MUNTZING/STAFF	MACCARY	KASTNER	GEARIN (L)	B. HURT
CASE	KNIGHT	BALLARD	GOULBOURNE (L)	
GIAMBUSSO	PAWLICKI	SPANGLER	KREUTZER (E)	PLANS
BOYD	SHAO		LEE (L)	MCDONALD
MOORE (L) (BWR)	STELLO	ENVIRO	MAIGRET (L)	CHAPMAN
DEYOUNG (L) (PWR)	HOUSTON	MULLER	REED (E)	DUBE w/input
SKOVHOLT (L)	NOVAK	DICKER	SERVICE (L)	E. COUPE
GOLLER (L)	ROSS	KNIGHTON	SHEPPARD (L)	
P. COLLINS	IPPOLITO	YOUNGBLOOD	SLATER (E)	D. THOMPSON (2)
DENISE	TEDESCO	REGAN	SMITH (L)	KLECKER
REG OPR	LONG	PROJECT LDR	TEETS (L)	EISENHUT
FILE & REGION (3)	LAINAS		WILLIAMS (E)	
MORRIS	BENAROYA	HARLESS	WILSON (L)	
STEELE	VOLIMER			

EXTERNAL DISTRIBUTION

1 – LOCAL PDR Walhalla, S. C.		1 – PDR-SAN/LA/NY
1 – TIC (ABERNATHY) (1)(2)(10)	– NATIONAL LABS	1 – BROOKHAVEN NAT LAB
1 – NSIC (BUCHANAN)	1 – ASLBP(E/W Bldg, Rm 529)	1 – G. ULRIKSON, ORNL
1 – ASLB	1 – W. PENNINGTON, Rm E-201 GT	1 – AGMED (RUTH GUSSMAN) Rm B-127 GT
1 – Newton Anderson	1 – B&M SWINEBROAD, Rm E-201 GT	1 – R. D. MUELLER, Rm E-201 GT
5 – ACRS [redacted] SENT TO L/A SHEPPARD	1 – CONSULTANTS NEWMARK/BLUME/AGBABIAN	

BN

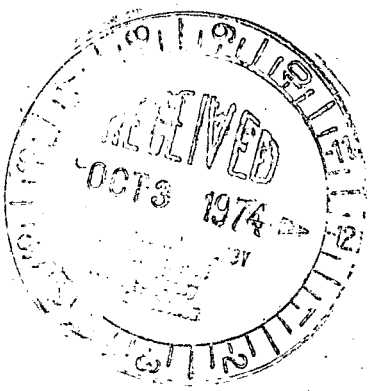
4

DUKE POWER COMPANY
POWER BUILDING
422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28201

Regulatory File Cy.

A. C. THIES
SENIOR VICE PRESIDENT
PRODUCTION AND TRANSMISSION

P. O. Box 2178



September 30, 1974

Mr. Norman C. Moseley, Director
Directorate of Regulatory Operations
U. S. Atomic Energy Commission
Region II - Suite 818
230 Peachtree Street, Northwest
Atlanta, Georgia 30303

Re: Oconee Unit 3
Docket No. 50-287

Dear Mr. Moseley:

Pursuant to Sections 6.2 and 6.6.2 of the Oconee Nuclear Station Technical Specifications, please find attached Unusual Event Report UE-287/74-1.

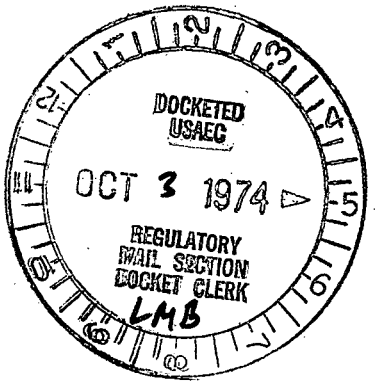
Very truly yours,

A. C. Thies

A. C. Thies

ACT:vr
Attachment

cc: Mr. Angelo Giambusso



10254

DUKE POWER COMPANY
OCONEE UNIT 3

Report No.: UE-287/74-1

Report Date: September 30, 1974

Event Date: August 18, 1974

Facility: Oconee Unit 3, Seneca, South Carolina

Identification of Event: Reactor Coolant Pump 3B2 Reverse Rotation

Conditions Prior to Event: Reactor Shut Down, Coolant Temperature 220°F, Pressure 480 psi

Description of Event:

On August 17, 1974, the 3B2 Reactor Coolant Pump for Oconee Unit 3 was stopped after completion of venting the Reactor Coolant System. A short time later, it was noted that the zero motor speed indicator showed the pump was not at zero speed and the AC oil lift pump had been energized. Since the reactor coolant pumps have devices which prevent reverse rotation, it was assumed that a malfunction of the zero motor speed switch had occurred, and hence, the AC oil lift pump had been energized.

At 0930 on August 18, 1974, it was determined by vibration and observation of the motor shaft that 3B2 Reactor Coolant Pump was rotating in the reverse direction at approximately 680 revolutions per minute. The AC oil lift pump was started and low pressure service water was supplied to the oil cooler. All other reactor coolant pumps were stopped in order to stop 3B2 Reactor Coolant Pump. Tests performed by running various pump combinations could not reproduce the reverse rotation in 3B2 Reactor Coolant Pump.

Designation of Apparent Cause of Event:

The reverse rotation device for this particular reactor coolant pump consists of eleven pawls mounted in the flywheel of the pump. One of the pawls is shown in Figure 1. The pawls are supported by cutouts in the flywheel and retainer plates along the periphery of the flywheel. When the flywheel is rotating in the correct direction, the pawls become horizontal due to centrifugal action. As the flywheel slows, the pawls become vertical and drop into a rachet plate to prevent reverse rotation. In RCP 3B2, the pawls contacted the retainer plate after the pump was started. The friction between the pawls and the retainer plates prevented the pawls from becoming vertical and preventing reverse rotation when the pump slowed.

Corrective Action:

Maintenance testing performed by using Prussian bluing determined that the pawls on 3B2 Reactor Coolant Pump were contacting the retainer plate on the

periphery of the flywheel. The retainer plates were modified by milling the area of contact, as shown in Figure 1, to ensure freedom of motion of the pawls. Subsequent testing has demonstrated that the pawls drop at 50 to 60 rpm, as designed.

There are 12 reactor coolant pump motors of two different designs at the Oconee Nuclear Station. Only two motors, 3B1 and 3B2, are of the earlier design and both have been modified to prevent interference by the retainer plate. The remainder of the pumps at Oconee are of the later design. The Unit 2 and 3 pumps have been satisfactorily tested. The Unit 1 pumps will be tested during the pending refueling outage.

A written standing order has been issued to Control Room operators to check for reverse rotation each time a reactor coolant pump is stopped. Indications which will be monitored are: pump speed, zero speed indication, and pump vibration.

FIGURE 1