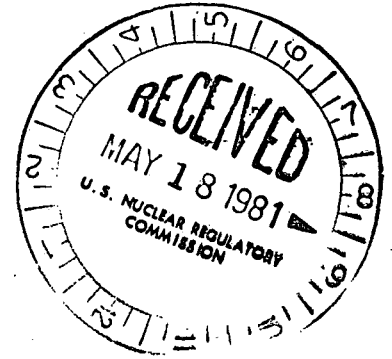




Commonwealth Edison
 One First National Plaza, Chicago, Illinois
 Address Reply to: Post Office Box 767
 Chicago, Illinois 60690



May 12, 1981

Mr. Dennis M. Crutchfield, Chief
 Division of Licensing
 U.S. Nuclear Regulatory Commission
 Washington, DC 20555

Subject: Dresden Station, Unit 2
 LP Turbine Wheel Ultrasonic Inspection
 Report of Findings
NRC Docket No. 50-237

Dear Mr. Crutchfield:

Attached is a summary of the findings of the ultrasonic examination of the shrunk-on wheels from the LPA, LPB and LPC rotors of Dresden Unit 2. These results were reported verbally to the NRC staff on March 16, 1981.

The wheel bore ultrasonic examination detected indications on the bore surfaces of the following wheels:

- LPA: 1-TA, 2-GA, 3-TA, 5-GA, 7-TA, 7-GA, 8-TA, 8-GA
- LPB: 2-GB, 3-GB, 5-GB, 6-GB, 8-GB
- LPC: 1-TC, 6-GC, 8-TC, 8-GC

All of the bore surface indications appeared to be very shallow and probably resulted from scratches on the bore and/or shaft surfaces. General Electric does not believe they affect the structural integrity of the wheels.

Keyway indications were detected on the following wheels:

- LPA: 5-TA, 6-TA
- LPB: 5-TB, 5-GB, 8-TB
- LPC: 4-TC, 5-TC, 5-GC, 6-TC

The keyway indications varied from less than 0.03 inches to a maximum of 0.29 inches. The attached Table 1 gives a complete description of the depths and locations of the keyway indications found.

The physical properties for those wheels with indications will be submitted by General Electric. The information is considered proprietary by General Electric and they prefer to convey the data directly in accordance with existing proprietary agreements.

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Visual and fiber optic examinations revealed water cutting in line with the keyways on several of the wheel hubs. Whereas it is impossible to determine with certainty the nature of the keyway ultrasonic indications without removing the wheels, the evidence of external water cutting suggests that water cutting is also present in the keyways. However, in performing calculations to determine the reinspection interval for these L.P. rotors we conservatively assumed that either stress corrosion cracks were present or that they initiated as soon as the unit was put back on line. The reinspection interval was based on the NRC criteria which states that a disc which contains indications must be reinspected in one half the time calculated to reach one half the critical crack size (ACR). We used General Electric's most recent ACR and the NRC's Upper Bound Crack Growth Rates Curve initialed by Warren Hazelton on June 16, 1980. The minimum reinspection interval was calculated to be 73 months based on the worst, or limiting, wheel.

Please address any questions concerning this matter to this office.

One (1) signed original and thirty-nine (39) copies of this transmittal are provided to your use.

Very truly yours,



Robert F. Danecek
Nuclear Licensing Administrator
Boiling Water Reactors

Attachment

cc: RIII Inspector, Dresden
C. Slusher, GE Oakbrook

2000N

TABLE #1

KEYWAY ULTRASONIC INDICATION SUMMARY

Customer: Commonwealth Edison Company

Station: Dresden #2

Tb. No./Rotor: 170X326/LPA, LPB and LPC

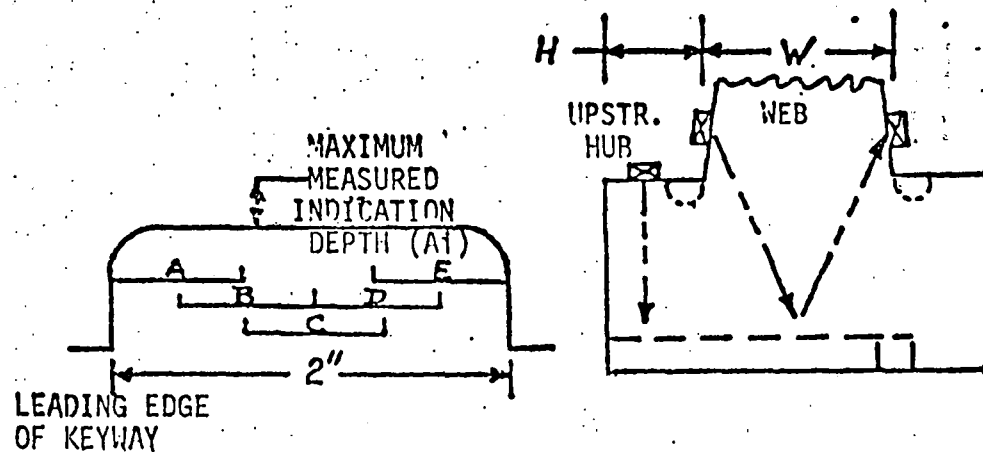
Inspection Date: 1/81

Shaft Serial No's as Inspected:

LPA = 3462V1

LPB = FD606

LPC = FD616



Wh1	H (In)	W (In)	Hub Test (HT)		Web Test (WT)		Comments
			Location Zone (A-E)	A ₁ (In)	Location Zone (A-E)	A ₁ (In)	
5-TA	2.23	5.5	B	.21	---	---	Indication appears deepest near web
6-TA	2.73	6.5	E	<.03	---	---	Indication appears deepest near web
5-TB	2.23	5.5	B	.22	---	---	Indication appears deepest near hub face
			D,E	.24	---	---	Indication appears deepest near web
5-GB	2.23	5.5	A	.29	---	---	Indication appears deepest near web
			E	.26	E	.23	Indication under hub appears deepest near web
8-TB	3.48	11.5	---	---	E	<.03	
4-TC	2.73	4.0	C	<.03	---	---	
5-TC	2.23	5.5	A	.23	---	---	Indication appears deepest near web
			E	.24	D	<.03	Indication under hub appears deepest near web
5-GC	2.23	5.5	B	.27	---	---	Indication appears deepest near web
			E	.24	D	<.03	Indication under hub appears deepest near web
6-TC	2.73	6.5	A	<.03	---	---	

SEE EXPLANATION OF TABLE #1 NEXT PAGE

EXPLANATION OF TABLE 1
KEYWAY ULTRASONIC INDICATION SUMMARY

Table 1 (Keyway Ultrasonic Indication Summary) contains the measured depths and locations of ultrasonic indications detected on the keyways of the subject shrunk-on wheels. The table includes the following information for each wheel with keyway ultrasonic indications.

H: Axial length of the upstream hub

W: Axial length of the web, at the hub diameter.

Location Zone (A-E): The approximate circumferential location of the indication relative to the leading edge of the keyway (as viewed with normal rotor rotation).

A_i: The maximum indication depth as measured with a radially directed ultrasonic beam.

Comments: Additional comments have been included as available.

In cases where indications detected by the hub and web tests appear to possibly be associated, they have been listed on the same line of the table.