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Vice President - Nuclear  
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November 13, 1995

Docket Nos. 50-321  
50-366

HL-5058

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555

Edwin I. Hatch Nuclear Plant  
Update Concerning the Cracked Motor Shafts on  
Designated Motor-Operated Valves

Gentlemen:

This letter provides Georgia Power Company's update concerning the cracked motor shafts on designated motor-operated valves (MOVs) at the Edwin I. Hatch Nuclear Plant. Based upon inspection results obtained, GPC believes that motor shafts on motors rated at 80 ft-lb of torque at 3400 rpm with a 215 frame, supplied by Limitorque and manufactured by Reliance Motors, represent a common potential for cracking problems. Limitorque has been made aware of this concern.

The results obtained are based on the inspection of 33 MOV shafts. The inspections included MOVs on both Unit 1 and Unit 2 and were performed using dye penetrant examinations. The list of 33 MOV shafts to be inspected was compiled based upon a 10 CFR 21 report submitted by another nuclear plant indicating that stem speeds in excess of 50 in./min may cause motor shaft cracking, combined with information from a research laboratory indicating that high impact loads could pose a problem. All cracked or broken motor shafts have been replaced and the associated valves returned to service. Table 1 of the enclosure is a descriptive list of each valve and the inspection results obtained. A summary of the results is provided below.

1. Twenty-four shafts showed no indication of cracks.
2. Seven shafts were cracked
3. One shaft was broken.
4. One shaft was clean but had a sheared key made of mild steel AISI 1018.U.S.

As shown in Table 1, seven of the eight cracked or broken shafts were on motors having a rating of 80 ft-lb of torque at 3400 rpm. The crack in the only shaft not having a motor rated at 80 ft-lb of torque at 3400 rpm is believed to have resulted from the method used to "stake" the key in place. Efforts to confirm this conclusion are continuing. As indicated in Table 2, the seven cracked motor shafts on motors with a rating of 80 ft-lb of

ADD 1

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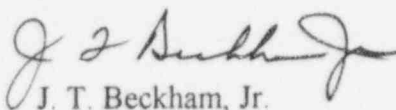
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torque at 3400 rpm were purchased within the 1980 to 1982 time frame. This fact offers the possibility that a batch(s) of flawed motor shafts were manufactured during a 2-year period.

Table 3 identifies the remaining 12 Unit 1 motors for which inspections will be performed during the Spring 1996 refueling outage. As an interim measure, an operability assessment for each valve with a potentially susceptible motor shaft has been performed.

Should you have any questions in this regard, please contact this office.

Sincerely,

  
J. T. Beckham, Jr.

OCV/eb

Enclosure: Status of MOVs with Cracked Motor Shafts -  
Summary of Inspection Results

cc: Georgia Power Company  
Mr. H. L. Sumner, Nuclear Plant General Manager  
NORMS

U.S. Nuclear Regulatory Commission, Washington, D.C.  
Mr. K. Jabbour, Licensing Project Manager - Hatch

U.S. Nuclear Regulatory Commission, Washington, D.C.  
Mr. S. D. Ebnetter, Regional Administrator  
Mr. B. L. Holbrook, Senior Resident Inspector - Hatch

# Enclosure

## Edwin I. Hatch Nuclear Plant Status of MOVs with Cracked Motor Shafts Summary of Inspection Results

Table 1

### Motor Shafts Inspected

Valve MPL No. <sup>(a)</sup>	Operator	Valve Size (in.)	Hammer Blow	RPM	Stem Speed (in./min)	Motor Torque (ft/lb)	Inspection Results
2E21-F005A	SB3	10	No	3400	76.2	100	Clean
2E21-F005B	SB3	10	No	3400	76.2	100	Clean
2E21-F004A	SB3	10	No	3400	76.2	100	Clean
2E21-F004B	SB3	10	No	3400	76.2	100	Clean
2E11-F048A	SMB4	24	Yes	1700	3.83	150	Clean
2E11-F048B	SMB4	24	Yes	1700	3.83	150	Clean
2E11-F008	SB3	20	No	1900	49.45	150	Clean
2E41-F006	SB3	14	No	1900	39.4	150	Clean
2E41-F007	SB3	14	No	1900	39.4	150	Clean
2E11-F016A	SB3	16	No	3400	47.93	150	Clean
2E11-F016B	SB3	16	No	3400	47.93	150	Cracked <sup>(b)</sup>
2E11-F068A	SMB0	10	No	1700	8.2	25	Clean
2E11-F068B	SMB0	10	No	1700	8.2	25	Clean
2E11-F028A	SB1	16	No	3400	38.46	40	Clean
2E11-F028B	SB1	16	No	3400	41.19	40	Clean
2E41-F001	SMB1	10	Yes	1900	34.93	60	Clean
2B31-F031A	SB2	28	No	3400	43.11	60	Clean
2B31-F031B	SB2	28	No	3400	43.11	60	Clean
2E11-F009	SB2	20	Yes	3400	45.96	60	Clean
2B31-F023A	SB2	28	Yes	3400	43.11	60	Clean
2B31-F023B	SB2	28	Yes	3400	43.11	60	Clean
2E11-F024A	SMB3	16	Yes	1700	4.01	80	Clean
2E11-F024B	SMB3	16	Yes	1700	4.01	80	Clean
1E11-F028A	SB2	16	No	3400	40.95	60	Clean
1E11-F028B	SB2	16	No	3400	40.95	60	Clean
1E11-F015A	SB3	24	Yes	3400	51.66	80	Sheared Key
1E11-F015B	SB3	24	Yes	3400	51.66	80	Broken Shaft
1E21-F005A	SB2	10	No	3400	61.17	80	Cracked
1E21-F005B	SB2	10	No	3400	61.17	80	Cracked
2E11-F015A	SMB4	24	Yes	3400	58.84	80	Cracked
2E11-F015B	SMB4	24	Yes	3400	58.84	80	Cracked
2E11-F021A	SB2	16	No	3400	66.54	80	Cracked
2E11-F021B	SB2	16	No	3400	66.54	80	Cracked

a. Prefix "2" indicates Unit 2 valve; prefix "1" indicates Unit 1 valve.

b. Cause is believed to be the method used by manufacturer to "stake" the key in place.

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Status of MOVs with Cracked Motor Shafts  
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Table 2

MOVs with Cracked/Broken Shafts on 80 ft-lb Motors

MPL No. <sup>(a)</sup>	Inspection Results	Shaft Purchase Date
1E11-F015B	Broken Shaft	1980
1E21-F005A	Cracked Shaft	1981
1E21-F005B	Cracked Shaft	1981
2E11-F015A	Cracked Shaft	1981
2E11-F015B	Cracked Shaft	1982
2E11-F021A	Cracked Shaft	1981
2E11-F021B	Cracked Shaft	1981

a. Prefix "2" indicates Unit 2 valve; prefix "1" indicates Unit 1 valve.

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Table 3

Remaining Unit 1 Motors to be Inspected in Spring 1996

Valve MPL No.	Motor Torque (ft/lb)	Operator
1E11-F017A	200	SMB5T
1E11-F017B	200	SMB5T
1E11-F016A	250	SMB4
1E11-F016B	250	SMB4
1E11-F021A	80	SMB2
1E11-F021B	80	SMB2
1E11-F119A	80	SMB3
1E11-F119B	80	SMB3
1E21-F004A	80	SMB2
1E21-F004B	80	SMB2
1B31-F023A	60	SMB2
1B31-F023B	60	SMB2