

Tennessee Valley Authority, Post Office Box 2000, Spring City, Tennessee 37381

June 30, 2016

10 CFR 50.73

ATTN: Document Control Desk U.S. Nuclear Regulatory Commission Washington, D.C. 20555-0001

> Watts Bar Nuclear Plant, Unit 1 Facility Operating License No. NPF-90 NRC Docket No. 50-390

## Subject: Licensee Event Report 390/2016-006-00, Undersized Room Cooler Fan Shaft Results in Loss of Centrifugal Charging Pump

This submittal provides Licensee Event Report (LER) 390/2016-006-00. This LER provides details concerning maintenance performed on a safety related room cooler which resulted in a reportable condition. This report is being submitted in accordance with 10 CFR 50.73(a)(2)(i)(B) and 10 CFR 50.73(a)(2)(v)(D).

Please direct any questions concerning this matter to Gordon Arent, WBN Licensing Director, at (423) 365-2004.

Respectfully,

Paul Simmons Site Vice President Watts Bar Nuclear Plant

Enclosure cc: See Page 2 U.S. Nuclear Regulatory Commission Page 2 June 30, 2016

cc (Enclosure):

NRC Regional Administrator - Region II NRC Senior Resident Inspector - Watts Bar Nuclear Plant

EVENT DATE     6. LER NUMBER     7. REPORT LATE     05000390     1 OF 6     1. OF 730, US Number     1. FACILITY NAME     Variate	Extended where are improved to correctly with the metany provide international international and the international internat	NRC FORM 366 U.S. NUCLEAR REGULATORY COMMISSION							APPROVED BY OMB: NO. 3150-0104 EXPIRES: 10/31/20					10/31/2018				
1. FACILITY NAME         2. DOCKET NUMBER         3. PAGE           Watts Bar Nuclear Plant, Unit 1         05000390         1 OF 6           4. TITLE         Undersized Room Cooler Fan Shaft Results in Loss of Centrifugal Charging Pump         8. OTHER FACILITIES INVOLVED           5. EVENT DATE         6. LER NUMBER         7. REPORT DATE         8. OTHER FACILITIES INVOLVED           05         13         2016         2016         0.00         0         3.0         2016         N/A         N/A           05         13         2015         2016         0.00         0         3.0         2016         N/A         N/A           9. OPERATING MODE         1. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR \$: (Check all that apply)         20.2201(b)         20.2203(a)(3)(b)         50.73(a)(2)(0)(A)         50.73(a)(2)(0)(A)           1         20.2201(b)         20.2203(a)(3)(b)         50.73(a)(2)(0)(A)         50.73(a)(2)(0)(A)         50.73(a)(2)(0)(A)           1         20.2203(a)(2)(b)         50.32(a)(1)(0)(A)         50.73(a)(2)(0)(A)         50.73(a)(2)(0)(A)         50.73(a)(2)(0)(A)         50.73(a)(2)(0)(A)           10. POWER LEVEL         20.2203(a)(2)(b)         50.373(a)(2)(0)(A)         50.73(a)(2)(0)(A)         50.73(a)(2)(0)(A)         50.73(a)(2)(0)(A)         50.73(a)(2)(0)(A) <td< td=""><td>1. FACLINY NAME         2. DOCKET NUMBER         3. PAGE           Watts Bar Nuclear Plant, Unit 1         05000390         1 OF 6           4. TITLE         Undersized Room Cooler Fan Shaft Results in Loss of Centrifugal Charging Pump         1 OF 6           5. EVENT DATE         6. LER NUMBER         7. 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Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington DC 20503. If a means used to impose an information collection does not display a currently valit OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.</td><td>st: 80 hours. k to industry. in Collections 5-0001, or by formation and Washington, currently valid ot required to</td></td<>	1. FACLINY NAME         2. DOCKET NUMBER         3. PAGE           Watts Bar Nuclear Plant, Unit 1         05000390         1 OF 6           4. TITLE         Undersized Room Cooler Fan Shaft Results in Loss of Centrifugal Charging Pump         1 OF 6           5. EVENT DATE         6. LER NUMBER         7. REPORT DATE         8. 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05         13         2016         2016         - 00         06         30         2016         PACLITY MAKE         N/A         NDOCETHUMER           9. OPERATING MODE         11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)	05         13         2016         2016         - 000         06         30         2016         PACULYY MAKE         N/A         N/A           9. OPERATING MODE         11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)	MONTH	DAY	YEAR	YEAR SEC	UENTIAL UMBER	REV NO.	MONTH	DAY	YEAR		FACILITY NAME	N/A			D N/A		TNUMBER
9. OPERATING MODE         11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)           1         20.2201(b)         20.2203(a)(3)(b)         50.73(a)(2)(i)(b)         50.73(a)(2)(i)(b)           20.2201(c)         20.2203(a)(3)(b)         50.73(a)(2)(i)(b)         50.73(a)(2)(i)(b)         50.73(a)(2)(i)(b)           20.2203(a)(1)         20.2203(a)(4)         50.73(a)(2)(i)(b)         50.73(a)(2)(i)(b)         50.73(a)(2)(i)(b)           20.2203(a)(2)(i)         50.36(c)(1)(i)(A)         50.73(a)(2)(i)(b)         50.73(a)(2)(i)(b)         50.73(a)(2)(i)(b)           10. POWER LEVEL         20.2203(a)(2)(ii)         50.36(c)(1)(i)(A)         50.73(a)(2)(V)(A)         50.73(a)(2)(V)(A)           10. 20.2203(a)(2)(ii)         50.36(c)(2)         50.73(a)(2)(V)(B)         73.77(a)(1)           10. 20.2203(a)(2)(v)         50.73(a)(2)(V)(B)         50.73(a)(2)(V)(D)         73.77(a)(2)(i)           10. 20.2203(a)(2)(v)         50.73(a)(2)(V)(B)         50.73(a)(2)(V)(D)         73.77(a)(2)(i)      <	9. OPERATING MODE         11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)           1         20.2201(b)         20.2203(a)(3)()         50.73(a)(2)(ii)(A)         50.73(a)(2)(ii)(A)           1         20.2201(a)         20.2203(a)(3)()         50.73(a)(2)(ii)(A)         50.73(a)(2)(iii)(A)           20.2203(a)(1)         20.2203(a)(3)(i)         50.73(a)(2)(ii)(A)         50.73(a)(2)(iii)(A)         50.73(a)(2)(iii)(A)           20.2203(a)(2)(i)         50.36(c)(1)(i)(A)         50.73(a)(2)(iii)(A)         50.73(a)(2)(iii)(A)         50.73(a)(2)(iii)(A)           10. POWER LEVEL         20.2203(a)(2)(ii)         50.36(c)(1)(i)(A)         50.73(a)(2)(iii)(A)         50.73(a)(2)(iii)(A)           10. 20.2203(a)(2)(iii)         50.36(c)(1)(i)(A)         50.73(a)(2)(iii)(A)         50.73(a)(2)(iii)(A)         73.77(a)(2)(ii)           100         20.2203(a)(2)(iii)         50.37(a)(2)(ii)(A)         50.73(a)(2)(iii)(D)         73.77(a)(2)(ii)           100         20.2203(a)(2)(iii)         50.73(a)(2)(ii)(A)         50.73(a)(2)(iii)         73.77(a)(2)(ii)           101         20.2203(a)(2)(iii)         50.73(a)(2)(ii)(C)         OTHER         Specific (I	05	13	2016	2016 - 00	- 6	00	06	30	2016	;	FACILITY NAME	N/A			D N/A		TNUMBER
1         20 2201(b)         20 2203(a)(3)(i)         50 73(a)(2)(ii)(A)         50 73(a)(2)(ii)(A)           1         20 2203(a)(1)         20 2203(a)(3)(i)         50 73(a)(2)(ii)(B)         50 73(a)(2)(ii)(B)           1         20 2203(a)(2)(i)         20 2203(a)(2)(ii)         50 73(a)(2)(iii)(B)         50 73(a)(2)(iii)(B)           1         20 2203(a)(2)(ii)         50 36(c)(1)(ii)(A)         50 73(a)(2)(iii)(A)         50 73(a)(2)(iii)(A)           10         POWER LEVEL         20 2203(a)(2)(iii)         50 36(c)(1)(iii)(A)         50 73(a)(2)(v)(A)         73 7.7(a)(2)(x)(A)           10         20 2203(a)(2)(iii)         50 36(c)(2)         50 73(a)(2)(v)(B)         73 7.7(a)(2)(i)           100         20 2203(a)(2)(v)         50 73(a)(2)(i)(A)         50 73(a)(2)(v)(D)         73 7.7(a)(2)(i)           100         20 2203(a)(2)(v)         50 73(a)(2)(i)(B)         50 73(a)(2)(vi)         73 7.7(a)(2)(i)           100         20 2203(a)(2)(v)         50 73(a)(2)(i)(C)         OTHER         System         73 7.7(a)(2)(i)           100         20 2203(a)(2)(v)         50 73(a)(2)(i)(C)         OTHER         System         73 7.7(a)(2)(i)           100         20 2203(a)(2)(v)         50 73(a)(2)(i)(C)         OTHER         System         72 3.77(a)(2)(i)           100	1         20 2201(b)         20 2203(a)(3)(b)         50.73(a)(2)(ii)(A)         50.73(a)(2)(iii)(A)           1         20 2201(c)         20 2203(a)(3)(b)         50.73(a)(2)(iii)(B)         50.73(a)(2)(iii)(B)           20 2203(a)(2)(i)         20 2203(a)(2)(i)         50.33(c)(2)(iii)(A)         50.73(a)(2)(iii)(B)         50.73(a)(2)(iii)(A)           10. POWER LEVEL         20 2203(a)(2)(iii)         50.36(c)(1)(ii)(A)         50.73(a)(2)(iv)(A)         73.71(a)(2)           10. POWER LEVEL         20 2203(a)(2)(iii)         50.36(c)(1)(ii)(A)         50.73(a)(2)(v)(B)         73.71(a)(2)           10. 20 2203(a)(2)(iii)         50.36(c)(2)         50.73(a)(2)(v)(B)         73.77(a)(2)(i)           10. 20 2203(a)(2)(iv)         50.46(a)(3)(ii)         50.73(a)(2)(v)(C)         73.77(a)(2)(i)           10. 20 2203(a)(2)(v)         50.73(a)(2)(i)(A)         50.73(a)(2)(v)(D)         73.77(a)(2)(i)           10. 20 2203(a)(2)(v)         50.73(a)(2)(i)(A)         50.73(a)(2)(v)(D)         73.77(a)(2)(i)           10. 20 2203(a)(2)(v)         50.73(a)(2)(i)(B)         50.73(a)(2)(v)(D)         73.77(a)(2)(i)           10. 20 2203(a)(2)(vi)         50.73(a)(2)(i)(B)         50.73(a)(2)(vi)(D)         73.77(a)(2)(i)           10. 20 2203(a)(2)(vi)         50.73(a)(2)(i)(B)         50.73(a)(2)(vi)(D)         73.77(a)(2)(i)	9. OPE	RATING	G MODE	11. THIS	REPORT IS	SUB		PURSUA	NT TO TH	IE I	REQUIREMEN	TS OF 10	CFR	§: (Check	all th	at a	pply)
1         20.2201(d)         20.2203(a)(3)(ii)         50.73(a)(2)(iii)(B)         50.73(a)(2)(iii)(B)           1         20.2203(a)(1)         20.2203(a)(4)         50.73(a)(2)(iii)         50.73(a)(2)(ix)(A)           20.2203(a)(2)(i)         50.36(c)(1)(i)(A)         50.73(a)(2)(ix)(A)         50.73(a)(2)(x)(A)           10. POWER LEVEL         20.2203(a)(2)(ii)         50.36(c)(1)(ii)(A)         50.73(a)(2)(ix)(A)         73.71(a)(4)           20.2203(a)(2)(iii)         50.36(c)(2)         50.73(a)(2)(ix)(B)         73.71(a)(1)           10         20.2203(a)(2)(iii)         50.46(a)(3)(ii)         50.73(a)(2)(ix)(B)         73.77(a)(1)           100         20.2203(a)(2)(iv)         50.73(a)(2)(i)(B)         50.73(a)(2)(ii)         73.77(a)(2)(ii)           100         20.2203(a)(2)(v)         50.73(a)(2)(i)(B)         50.73(a)(2)(ii)         73.77(a)(2)(ii)           100         20.2203(a)(2)(vi)         50.73(a)(2)(i)(B)         50.73(a)(2)(ii)         73.77(	1         20 2201(d)         20 2203(a)(3)(ii)         50 73(a)(2)(ii)(B)         50 73(a)(2)(ii)(B)           20 2203(a)(1)         20 2203(a)(2)         50 73(a)(2)(iii)         50 73(a)(2)(iii)         50 73(a)(2)(iii)           10. POWER LEVEL         20 2203(a)(2)(iii)         50 36(c)(1)(i)(A)         50 73(a)(2)(iv)(A)         73 71(a)(4)           10. POWER LEVEL         20 2203(a)(2)(iii)         50 36(c)(1)(i)(A)         50 73(a)(2)(v)(B)         73 71(a)(4)           10. 20 2203(a)(2)(iii)         50 36(c)(2)         50 73(a)(2)(v)(B)         73 71(a)(2)           10. 20 2203(a)(2)(iv)         50 36(a)(3)(ii)         50 73(a)(2)(v)(B)         73 71(a)(2)(i)           10. 20 2203(a)(2)(v)         50 73(a)(2)(v)(B)         50 73(a)(2)(v)(D)         73 77(a)(2)(i)           10. 20 2203(a)(2)(v)         50 73(a)(2)(v)(B)         50 73(a)(2)(v)(D)         73 77(a)(2)(i)           10. 20 2203(a)(2)(v)         50 73(a)(2)(v)(B)         50 73(a)(2)(vi)         73 77(a)(2)(ii)           10. 20 2203(a)(2)(v)         50 73(a)(2)(v)(C)         73 77(a)(2)(iii)         73 77(a)(2)(iii)           10. 20 2203(a)(2)(v)         50 73(a)(2)(v)(C)         73 77(a)(2)(iii)         73 77(a)(2)(iii)           10. 20 2203(a)(2)(v)         10 50 73(a)(2)(v)(D)         73 77(a)(2)(iii)         73 77(a)(2)(iii)           10. 20 2203(a)(2)(v) <td></td> <td></td> <td></td> <td>20.2201</td> <td>b)</td> <td></td> <td>20.2</td> <td>2203(a)(3</td> <td>3)(i)</td> <td></td> <td><b>50.73(a</b></td> <td>)(2)(ii)(A)</td> <td></td> <td>50</td> <td>).73(a)</td> <td>)(2)(</td> <td>viii)(A)</td>				20.2201	b)		20.2	2203(a)(3	3)(i)		<b>50.73(a</b>	)(2)(ii)(A)		50	).73(a)	)(2)(	viii)(A)
Image: Second state of the second state second state second state of the second state of the second state of the second state of the second state second state of the second state second s			1		20.2201	d)		20.2	2203(a)(3	<b>3)(ii)</b>		50.73(a)(2)(ii)(B)			50.73(a)(2)(viii)(B)			viii)(B)
<ul> <li>20 2203(a)(2)(i)</li> <li>50 36(c)(1)(i)(A)</li> <li>50 73(a)(2)(v)(A)</li> <li>50 73(a)(2)(v)(A)</li> <li>73 71(a)(A)</li> </ul> 10. POWER LEVEL          20 2203(a)(2)(iii)         50 36(c)(1)(ii)(A)         50 73(a)(2)(v)(A)         73 71(a)(A)                20 2203(a)(2)(iii)         50 36(c)(2)         50 73(a)(2)(v)(B)         73 71(a)(1)                100          20 2203(a)(2)(v)         50 46(a)(3)(ii)         50 73(a)(2)(v)(C)         73 77(a)(1)                100          20 2203(a)(2)(v)         50 73(a)(2)(v)(B)         50 73(a)(2)(v)(D)         73 77(a)(2)(i)                100          20 2203(a)(2)(vi)         20 50 73(a)(2)(v)(B)         50 73(a)(2)(vi)         73 77(a)(2)(i)                20 2203(a)(2)(vi)         20 50 73(a)(2)(v)(B)         50 73(a)(2)(vi)         73 77(a)(2)(i)                20 2203(a)(2)(vi)         20 50 73(a)(2)(v)(C)         OTHER         Specify in Abstract below or in NRC Form 366A                UCENSEE CONTACT               20 203(a)(2)(vi)         50 73(a)(2)(vi)         73.77(a)(2)(i)                21. LICENSEE CONTACT                Dean Baker, Licensing Engineer               TelePhone NUMBER (Include Area Code)	□ 20.2203(a)(2)(i)       □ 50.36(c)(1)(i)(A)       □ 50.73(a)(2)(v)(A)       □ 50.73(a)(2)(v)         10. POWER LEVEL       □ 20.2203(a)(2)(ii)       □ 50.36(c)(1)(ii)(A)       □ 50.73(a)(2)(v)(A)       □ 7.71(a)(4)         □ 20.2203(a)(2)(iii)       □ 50.36(c)(2)       □ 50.73(a)(2)(v)(B)       □ 7.71(a)(1)         □ 20.2203(a)(2)(v)       □ 50.46(a)(3)(ii)       □ 50.73(a)(2)(v)(C)       □ 7.77(a)(1)         □ 20.2203(a)(2)(v)       □ 50.73(a)(2)(i)(A)       □ 50.73(a)(2)(v)(D)       □ 7.77(a)(2)(i)         □ 20.2203(a)(2)(v)       □ 50.73(a)(2)(i)(B)       □ 50.73(a)(2)(v)(D)       □ 7.77(a)(2)(i)         □ 20.2203(a)(2)(v)       □ 50.73(a)(2)(i)(C)       □ 0 THER       Specify in Abstract below or in NRC Form 396A         10.       □ 20.2203(a)(2)(v)       □ 50.73(a)(2)(i)(C)       □ OTHER       Specify in Abstract below or in NRC Form 396A         12. LICENSEE CONTACT       □ 10.50.73(a)(2)(i)(C)       □ OTHER       Specify in Abstract below or in NRC Form 396A         UCENSEE CONTACT       □ 20.2203(a)(Z)(W)       □ 50.73(a)(2)(W)(C)       □ 7.77(a)(2)(W)       □ 42.3-452-4589         UCENSEE CONTACT       □ 10.10.10.10.10.10.10.10.10.10.10.10.10.1		I		20.2203(a)(1) 20.220			2203(a)(4	4)	<b>50.73(a)(2)(iii)</b>			50.73(a)(2)(ix)(A)			x)(A)		
10. POWER LEVEL       20.2203(a)(2)(ii)       50.36(c)(1)(ii)(A)       50.73(a)(2)(V)(A)       73.71(a)(4)         10.       20.2203(a)(2)(iii)       50.36(c)(2)       50.73(a)(2)(V)(B)       73.71(a)(1)         100       20.2203(a)(2)(V)       50.46(a)(3)(ii)       50.73(a)(2)(V)(D)       73.77(a)(1)         100       20.2203(a)(2)(V)       50.73(a)(2)(V)(B)       50.73(a)(2)(V)(D)       73.77(a)(2)(V)         20.2203(a)(2)(V)       50.73(a)(2)(V)(B)       73.77(a)(2)(V)       73.77(a)(2)(V)         20.2203(a)(2)(V)       50.73(a)(2)(V)(B)       73.77(a)(2)(V)       73.77(a)(2)(V)         20.2203(a)(2)(V)       20.	10. POWER LEVEL       20 2203(a)(2)(ii)       50.36(c)(1)(ii)(A)       50.73(a)(2)(V)(A)       73.71(a)(4)         10. POWER LEVEL       20 2203(a)(2)(iii)       50.36(c)(2)       50.73(a)(2)(V)(B)       73.71(a)(1)         10. 20 2203(a)(2)(iv)       50.46(a)(3)(ii)       50.73(a)(2)(V)(C)       73.77(a)(1)         10. 20 2203(a)(2)(v)       50.73(a)(2)(V)(B)       50.73(a)(2)(V)(D)       73.77(a)(2)(I)         20 2203(a)(2)(v)       50.73(a)(2)(V)(B)       50.73(a)(2)(V)(D)       73.77(a)(2)(V)(D)         20 2203(a)(2)(v)       20 2203(a)(				20.2203(	a)(2)(i)	50.36(c)(1)(i)(A			)(A)		50.73(a)(2)(iv)(A)			50.73(a)(2)(x)			
<sup>1</sup> 20 2203(a)(2)(iii) <sup>1</sup> 50.36(c)(2) <sup>1</sup> 50.373(a)(2)(v)(B) <sup>1</sup> 73.77(a)(1) <sup>1</sup> 100 <sup>1</sup> 20.2203(a)(2)(v) <sup>1</sup> 50.46(a)(3)(ii) <sup>1</sup> 50.73(a)(2)(v)(C) <sup>1</sup> 73.77(a)(1) <sup>1</sup> 20.2203(a)(2)(v) <sup>1</sup> 50.73(a)(2)(v)(D) <sup>1</sup> 73.77(a)(2)(i) <sup>1</sup> 20.2203(a)(2)(v) <sup>1</sup> 50.73(a)(2)(v)(D) <sup>1</sup> 73.77(a)(2)(i) <sup>1</sup> 20.2203(a)(2)(v) <sup>1</sup> 50.73(a)(2)(v)(D) <sup>1</sup> 20.2203(a)(2)(v) <sup>2</sup> 50.73(a)(2)(v)(D) <sup>1</sup> 20.2203(a)(2)(v) <td>100           20 2203(a)(2)(iii)           50 36(c)(2)           50 73(a)(2)(V)(B)           73 71(a)(5)             100           20 2203(a)(2)(V)           50 46(a)(3)(ii)           50 73(a)(2)(V)(C)           73 77(a)(1)             100           20 2203(a)(2)(V)           50 73(a)(2)(V)(D)           73 77(a)(2)(V)           73 77(a)(2)(V)             20 2203(a)(2)(V)           50 73(a)(2)(V)(B)           50 73(a)(2)(V)(D)             73 77(a)(2)(V)             20 2203(a)(2)(V)               50 73(a)(2)(V)(D)             73 77(a)(2)(V)                         73 77(a)(2)(V)                                   73 77(a)(2)(V)</td> <td>10. POV</td> <td>VER LE</td> <td>EVEL</td> <td>20.2203(</td> <td>a)(2)(ii)</td> <td colspan="3">50.36(c)(1)(ii)(A</td> <td>i)(A)</td> <td colspan="3">50.73(a)(2)(v)(A)</td> <td>Т</td> <td colspan="3">73.71(a)(4)</td> <td></td>	100           20 2203(a)(2)(iii)           50 36(c)(2)           50 73(a)(2)(V)(B)           73 71(a)(5)             100           20 2203(a)(2)(V)           50 46(a)(3)(ii)           50 73(a)(2)(V)(C)           73 77(a)(1)             100           20 2203(a)(2)(V)           50 73(a)(2)(V)(D)           73 77(a)(2)(V)           73 77(a)(2)(V)             20 2203(a)(2)(V)           50 73(a)(2)(V)(B)           50 73(a)(2)(V)(D)             73 77(a)(2)(V)             20 2203(a)(2)(V)               50 73(a)(2)(V)(D)             73 77(a)(2)(V)                         73 77(a)(2)(V)                                   73 77(a)(2)(V)	10. POV	VER LE	EVEL	20.2203(	a)(2)(ii)	50.36(c)(1)(ii)(A			i)(A)	50.73(a)(2)(v)(A)			Т	73.71(a)(4)			
Image: 100       Image: 100 <td>100       20.2203(a)(2)(w)       50.46(a)(3)(ii)       50.73(a)(2)(v)(C)       73.77(a)(1)         100       20.2203(a)(2)(w)       50.73(a)(2)(0)(A)       50.73(a)(2)(v)(D)       73.77(a)(2)(i)         20.2203(a)(2)(w)       50.73(a)(2)(0)(B)       50.73(a)(2)(v)(D)       73.77(a)(2)(i)         20.2203(a)(2)(w)       50.73(a)(2)(0)(C)       OTHER       Specify in Abstrad below or in NRC Form 386A         ILCENSEE CONTACT         Dean Baker, Licensing Engineer         ILCENSEE CONTACT FOR THIS LER         Dean Baker, Licensing Engineer         CAUSE       SYSTEM       COMPONENT FAILURE DESCRIBED IN THIS REPORT         CAUSE       SYSTEM       COMPONENT       FAILURE         CAUSE       SYSTEM       COMPONENT FAILURE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT         CAUSE       SYSTEM       COMPONENT       FAILURE       CAUSE         CAUSE       SYSTEM       COMPONENT       FAILURE       CAUSE         IS SYSTEM       COMPONENT       FAILURE       CAUSE         SYSTEM       &lt;td colspan="&lt;/td&gt;<td></td><td></td><td></td><td>20.2203</td><td>a)(2)(iii)</td><td colspan="3">2)(iii) 50.36(c)(2)</td><td></td><td colspan="3">50.73(a)(2)(v)(B)</td><td></td><td>7:</td><td>3.71(a)</td><td>)(5)</td><td></td></td>	100       20.2203(a)(2)(w)       50.46(a)(3)(ii)       50.73(a)(2)(v)(C)       73.77(a)(1)         100       20.2203(a)(2)(w)       50.73(a)(2)(0)(A)       50.73(a)(2)(v)(D)       73.77(a)(2)(i)         20.2203(a)(2)(w)       50.73(a)(2)(0)(B)       50.73(a)(2)(v)(D)       73.77(a)(2)(i)         20.2203(a)(2)(w)       50.73(a)(2)(0)(C)       OTHER       Specify in Abstrad below or in NRC Form 386A         ILCENSEE CONTACT         Dean Baker, Licensing Engineer         ILCENSEE CONTACT FOR THIS LER         Dean Baker, Licensing Engineer         CAUSE       SYSTEM       COMPONENT FAILURE DESCRIBED IN THIS REPORT         CAUSE       SYSTEM       COMPONENT       FAILURE         CAUSE       SYSTEM       COMPONENT FAILURE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT         CAUSE       SYSTEM       COMPONENT       FAILURE       CAUSE         CAUSE       SYSTEM       COMPONENT       FAILURE       CAUSE         IS SYSTEM       COMPONENT       FAILURE       CAUSE         SYSTEM       <td colspan="</td> <td></td> <td></td> <td></td> <td>20.2203</td> <td>a)(2)(iii)</td> <td colspan="3">2)(iii) 50.36(c)(2)</td> <td></td> <td colspan="3">50.73(a)(2)(v)(B)</td> <td></td> <td>7:</td> <td>3.71(a)</td> <td>)(5)</td> <td></td>				20.2203	a)(2)(iii)	2)(iii) 50.36(c)(2)				50.73(a)(2)(v)(B)				7:	3.71(a)	)(5)	
100       20.2203(a)(2)(v)       50.73(a)(2)(i)(A)       50.73(a)(2)(v)(D)       73.77(a)(2)(i)         20.2203(a)(2)(vi)       50.73(a)(2)(i)(B)       50.73(a)(2)(vii)       73.77(a)(2)(ii)         20.2203(a)(2)(vi)       50.73(a)(2)(i)(C)       OTHER       Specify in Abstract below or in NRC Form 386A         ILCENSEE CONTACT         Dean Baker, Licensing Engineer         TELEPHONE NUMBER (include Area Code)         A23-452-4589         13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT         CAUSE       SYSTEM       COMPONENT         A23-452-4589         13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT         CAUSE       SYSTEM       COMPONENT         A24-452-4589         14. SUPPLEMENTAL REPORT EXPECTED       CAUSE       SYSTEM       COMPONENT         ABSTRACT (Limit to 1400 spaces, i.e. approximately 15 single-spaced typewritten lines)       On May 13, 2016, Watts Bar Nuclear Plant Unit 1 (WBN1) determined that a condition prohibited by Technical         Specifications had previously occurred. During the Fail 2015 WBN1 outage, maintenance performed on the 1B-B         CCP was considered to be inopera	100       20.2203(a)(2)(v)       50.73(a)(2)(0)(A)       50.73(a)(2)(v)(D)       73.77(a)(2)(i)         20.2203(a)(2)(v)       50.73(a)(2)(i)(B)       50.73(a)(2)(vi)       73.77(a)(2)(i)         20.2203(a)(2)(v)       50.73(a)(2)(i)(B)       50.73(a)(2)(vi)       73.77(a)(2)(i)         20.2203(a)(2)(vi)       50.73(a)(2)(i)(C)       OTHER       Specify in Abstract below or in NRC Form 386A         ILICENSEE CONTACT         TELEPHONE NUMBER (Include Area Code)         Dean Baker, Licensing Engineer         TELEPHONE NUMBER (Include Area Code)         CAUSE       SYSTEM       COMPONENT         CAUSE       SYSTEM       COMPONENT       PACTURER       TELEPHONE NUMBER (Include Area Code)         CAUSE       SYSTEM       COMPONENT       PACTURER       COUSE         SYSTEM       COMPONENT				20.2203(	a)(2)(iv)	(iv) 50.46(a)(3)(ii)			i)		<b>50.73(a</b> )	)(2)(v)(C)	T	7:	3.77(a)	)(1)	
20.2203(a)(2)(vi)       50.73(a)(2)(i)(B)       50.73(a)(2)(vii)       73.77(a)(2)(ii)         1       1       50.73(a)(2)(i)(C)       0 THER       Specify in Abstract below or in NRC Form 386A         ILICENSEE CONTACT         Dean Baker, Licensing Engineer         TELEPHONE NUMBER (include Area Code)         A23-452-4589         13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT         CAUSE       SYSTEM       COMPONENT FACTURER         FAND       ELLIS       Y         ADVF       FAN       ELLIS       Y         MANU- FACTURER       COMPONENT FAILE FACTURER       CAUSE       SYSTEM       COMPONENT FACTURER FACTURER         CAUSE       SYSTEM       COMPONENT FALLEPONT EXPECTED         ISUBMISSION DATE       MONTH       DAY         ASSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)         On May 13, 2016, Watts Bar Nuclear Plant Unit 1 (WBN1) determined that a condition prohibited by Technical         Specifications had previously occurred. During the Fall 2015 WBN1 outage, maintenance performed on the	Image: Description of the second s		100		20.2203(	a)(2)(v)	50.73(a)(2)(i)(A			)(A)		50.73(a)	)(2)(v)(D)		7:	3.77(a)	)( <b>2</b> )(i	)
Image: Index of the second	IDENTIFY TO THE Specify in Abstract below or in NRC Form 386A         12. LICENSEE CONTACT FOR THIS LER         TELEPHONE NUMBER (include Area Code)         Dean Baker, Licensing Engineer         TELEPHONE NUMBER (include Area Code)         423-452-4589         13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT         CAUSE         SYSTEM         COMPONENT         FACTURER         REPORTABLE         CAUSE         SYSTEM         COMPONENT         FACTURER         REPORTABLE         CAUSE         SYSTEM         COMPONENT         FACTURER         PORTABLE         CAUSE         SYSTEM         COMPONENT         FACTURER         FACTURER         COMPONENT FAILUE         MANU-         COMPONENT FAILUE         COMPONENT FAILUE         TO EPIX         COMPONENT				20.2203(	a)(2)(vi)	50.73(a)(2)(i)(i			)(B)		<b>50.73(a</b> )	)(2)(vii)		7:	3.77(a)	)( <b>2</b> )(i	i)
12. LICENSEE CONTACT FOR THIS LER         TELEPHONE NUMBER (Include Area Code)         Dean Baker, Licensing Engineer         TELEPHONE NUMBER (Include Area Code)         423-452-4589         CAUSE       SYSTEM       COMPONENT       ARANU- FACTURER       REPORTABLE TO EPIX         CAUSE       SYSTEM       COMPONENT       ARANU- FACTURER       REPORTABLE TO EPIX         CAUSE       SYSTEM       COMPONENT       FARTURER       REPORTABLE TO EPIX         B       VF       FAN       ELLIS       Y         IS.EXPECTED       MANU- FACTURER       TELEPHORTABLE TO EPIX         MANU- FACTURER       COMPONENT FAILURE DESCRIBED IN THIS REPORT         MANU- FACTURER       COMPONENT FAILURE DESCRIBED IN THIS REPORT         B       VF       FAN       ELLIS       Y         14. SUPPLEMENTAL REPORT EXPECTED       MONTH       DAY       YEAR         YES (If yes, complete 15. EXPECTED SUBMISSION DATE)       <	12. LICENSEE CONTACT FOR THIS LER         TELEPHONE NUMBER (Indude Area Code)         Dean Baker, Licensing Engineer         TELEPHONE NUMBER (Indude Area Code)         423-452-4589         CAUSE       SYSTEM       COMPONENT       FACTURER       REPORTABLE TO EPIX         B       VF       FAN       ELLIS       Y         III. SUPPLEMENTAL REPORT EXPECTED         MONTH       MANU- FACTURER       TEXPECTED         MONTH       MONTH       DATE         ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)       On May 13, 2016, Watts Bar Nuclear Plant Unit 1 (WBN1) determined that a condition prohibited by Technical         Specifications had previously occurr							50.7	<b>73(a)(2)(i</b>	)(C)	OTHER Specify in Abstract below or in NRC Form 366A				366A			
TELEPHONE NUMBER (Include Area Code)         Dean Baker, Licensing Engineer         13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT         CAUSE       SYSTEM       COMPONENT       MANU- FACTURER       TEPORTABLE TO EPIX         CAUSE       SYSTEM       COMPONENT       FACTURER       TEPORTABLE TO EPIX         CAUSE       SYSTEM       COMPONENT       FACTURER       TEPORTABLE TO EPIX         ABARY TERM COMPONENT       FAILURE DESCRIBED IN THIS REPORT         B       VF       FAN       ELLIS       Y         ILINE ON DATE       IS COMPONENT       FAILURE DAY       YEAR         ABASTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)       On May 13, 2016, Watts Bar Nuclear Plant Unit 1 (WBN1) determined that a condition prohibited by Technical         Specifications had previously occurred. During the Fail 2015 WBN1 outage, maintenance performed on the 1B-B         centrifugal charging pump (CCP) room cooling fan introduced a condition that resulted in a subsequent bearing failure of the room cooling fan on December 4, 2015. This condition would have prevented the 1B-B CC	TELEPHONE NUMBER (Include Area Code)         Dean Baker, Licensing Engineer         13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT         CAUSE       SYSTEM       COMPONENT       FACTURER       REPORTABLE TO EPIX         CAUSE       SYSTEM       COMPONENT       FACTURER       REPORTABLE TO EPIX         CAUSE       SYSTEM       COMPONENT       FACTURER       REPORTABLE TO EPIX         B       VF       FAN       ELLIS       Y         115. EXPECTED       MONTH       DAY       YEAR         MONTH       DAY       YEAR         YES (If yes, complete 15. EXPECTED       SUBMISSION DATE)       NO       DAY         ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)       On May 13, 2016, Watts Bar Nuclear Plant Unit 1 (WBN1) determined that a condition prohibited by Technical       Specifications had previously occurred. During the Fall 2015 WBN1 outage, maintenance performed on the 1B-B         Centrifugal charging pump (CCP) noom cooling fan introduced a condition that	1051055		-			12. LI	CENSEE		CT FOR	тн	IS LER						
	13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT         CAUSE       SYSTEM       COMPONENT       FACTURER       REPORTABLE       CAUSE       SYSTEM       COMPONENT       FACTURER       REPORTABLE       CAUSE       SYSTEM       COMPONENT       FACTURER       TO EPIX         B       VF       FAN       ELLIS       Y       CAUSE       SYSTEM       COMPONENT       FACTURER       TO EPIX         B       VF       FAN       ELLIS       Y       IS EXPECTED       MONTH       DAY         MILL       SUPPLEMENTAL REPORT EXPECTED       MONTH       DAY       YEAR         ABSTRACT       (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)       ON DATE         On May 13, 2016, Watts Bar Nuclear Plant Unit 1 (WBN1) determined that a condition prohibited by Technical       Specifications had previously occurred. During the Fall 2015 WBN1 outage, maintenance performed on the 1B-B         CCP was considered to be inoperable from Ocober 7, 2015 with outage, maintenance performed on the 1B-B       CCP was considered to be inoperable from October 7, 2015 until the fan was repaired and returned to service on       December 6	LICENSEE Dear	1 Bake	r er. Licen:	sina Enainee	r							TE	ELEPH		(Incluc	de Are	a Code)
CAUSE       SYSTEM       COMPONENT       MANU- FACTURER       REPORTABLE TO EPIX       CAUSE       SYSTEM       COMPONENT       MANU- FACTURER       REPORTABLE TO EPIX         B       VF       FAN       ELLIS       Y       Image: SYSTEM       COMPONENT       FACTURER       REPORTABLE TO EPIX         II. SUPPLEMENTAL REPORT EXPECTED       Y       Image: SYSTEM       COMPONENT       FACTURER       REPORTABLE TO EPIX         YES (If yes, complete 15. EXPECTED       SUBMISSION DATE)       NO       SUBMISSION DATE       Image: SUBMISSION DATE       Image: SUBMISSION DATE         ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)       NO       SUBMISSION DATE       Image: SUBMISSION DATE         On May 13, 2016, Watts Bar Nuclear Plant Unit 1 (WBN1) determined that a condition prohibited by Technical Specifications had previously occurred. During the Fall 2015 WBN1 outage, maintenance performed on the 1B-B centrifugal charging pump (CCP) room cooling fan introduced a condition that resulted in a subsequent bearing failure of the room cooling fan on December 4, 2015. This condition would have prevented the 1B-B CCP pump from performing its specified function for its designed mission time. Based on the reduced reliability of the fan, the 1B-B CCP was considered to be inoperable from October 7, 2015 until the fan was repaired and returned to service on December 6, 2015. During this time period, there were several short time periods when the 1A-A CCP was inoperable.         An investigation into the cause of the failure was completed o	CAUSE       SYSTEM       COMPONENT       RANU- FACTURER       REPORTABLE TO EPIX       CAUSE       SYSTEM       COMPONENT       MANU- FACTURER       REPORTABLE TO EPIX         B       VF       FAN       ELLIS       Y       Image: System       COMPONENT       FACTURER       REPORTABLE TO EPIX         14. SUPPLEMENTAL REPORT EXPECTED       Is. EXPECTED SUBMISSION DATE)       Image: Submission DATE       Image: Month       DAY       YEAR         ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)       No       SUBMISSION DATE       Image: Month       DAY       YEAR         On May 13, 2016, Watts Bar Nuclear Plant Unit 1 (WBN1) determined that a condition prohibited by Technical Specifications had previously occurred. During the Fall 2015 WBN1 outage, maintenance performed on the 1B-B centrifugal charging pump (CCP) room cooling fan introduced a condition that resulted in a subsequent bearing failure of the room cooling fan on December 4, 2015. This condition would have prevented the 1B-B CCP pump from performing its specified function for its designed mission time. Based on the reduced reliability of the fan, the 1B-B CCP was considered to be inoperable from October 7, 2015 until the fan was repaired and returned to service on December 6, 2015. During this time period, there were several short time periods when the 1A-A CCP was inoperable.         An investigation into the cause of the failure was completed on April 21, 2016. The cause of the fan bearing failure was an undersized fan shaft, resulting in the 1B-B CCP fan having excess shaft to bearing clearance which caused the bear				13. COMPLET		FOR	EACH C	OMPON	ENT FAIL	UR			REP	423-4	52-4	589	
B         VF         FAN         ELLIS         Y           14. SUPPLEMENTAL REPORT EXPECTED         15. EXPECTED         MONTH         DAY         YEAR           YES (If yes, complete 15. EXPECTED SUBMISSION DATE)         NO         SUBMISSION DATE         MONTH         DAY         YEAR           ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)         NO         DATE         MONTH         DAY         YEAR           ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)         On May 13, 2016, Watts Bar Nuclear Plant Unit 1 (WBN1) determined that a condition prohibited by Technical Specifications had previously occurred. During the Fall 2015 WBN1 outage, maintenance performed on the 1B-B centrifugal charging pump (CCP) room cooling fan introduced a condition that resulted in a subsequent bearing failure of the room cooling fan on December 4, 2015. This condition would have prevented the 1B-B CCP pump from performing its specified function for its designed mission time. Based on the reduced reliability of the fan, the 1B-B CCP was considered to be inoperable from October 7, 2015 until the fan was repaired and returned to service on December 6, 2015. During this time period, there were several short time periods when the 1A-A CCP was inoperable.           An investigation into the cause of the failure was completed on April 21, 2016. The cause of the fan bearing failure was an undersized fan shaft, resulting in the 1B-B CCP fan having excess shaft to bearing clearance which caused the bearing inner ring to loosen from the eccentric locking collar. These excessive clearances allowed the fan bearing inner ring to slide on the	B       VF       FAN       ELLIS       Y       Intervention       MONTH       DATE         14. SUPPLEMENTAL REPORT EXPECTED       YES (If yes, complete 15. EXPECTED SUBMISSION DATE)       NO       SUBMISSION DATE       MONTH       DAY       YEAR         ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)       NO       DATE       MONTH       DAY       YEAR         On May 13, 2016, Watts Bar Nuclear Plant Unit 1 (WBN1) determined that a condition prohibited by Technical Specifications had previously occurred. During the Fall 2015 WBN1 outage, maintenance performed on the 1B-B centrifugal charging pump (CCP) room cooling fan introduced a condition that resulted in a subsequent bearing failure of the room cooling fan on December 4, 2015. This condition would have prevented the 1B-B CCP pump from performing its specified function for its designed mission time. Based on the reduced reliability of the fan, the 1B-B CCP was considered to be inoperable from October 7, 2015 until the fan was repaired and returned to service on December 6, 2015. During this time period, there were several short time periods when the 1A-A CCP was inoperable. An investigation into the cause of the failure was completed on April 21, 2016. The cause of the fan bearing failure was an undersized fan shaft, resulting in the 1B-B CCP fan having excess shaft to bearing clearance which caused the bearing inner ring to loosen from the eccentric locking collar. These excessive clearances allowed the fan bearing inner ring to slide on the shaft. The sliding rotation of the inner ring on the shaft resulted in excessive heat being generated within the bearing leading to catastrophic failure.	CAUS	=	SYSTEM	COMPONENT	MANU	- FR	REPORTA	BLE	CAUSE		SYSTEM	COMPON	ENT	MANU-	R	REP	
14. SUPPLEMENTAL REPORT EXPECTED       15. EXPECTED       MONTH       DAY       YEAR         YES (If yes, complete 15. EXPECTED SUBMISSION DATE)       NO       DAY       YEAR         ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)       On May 13, 2016, Watts Bar Nuclear Plant Unit 1 (WBN1) determined that a condition prohibited by Technical Specifications had previously occurred. During the Fall 2015 WBN1 outage, maintenance performed on the 1B-B centrifugal charging pump (CCP) room cooling fan introduced a condition that resulted in a subsequent bearing failure of the room cooling fan on December 4, 2015. This condition would have prevented the 1B-B CCP pump from performing its specified function for its designed mission time. Based on the reduced reliability of the fan, the 1B-B CCP was considered to be inoperable from October 7, 2015 until the fan was repaired and returned to service on December 6, 2015. During this time period, there were several short time periods when the 1A-A CCP was inoperable.         An investigation into the cause of the failure was completed on April 21, 2016. The cause of the fan bearing failure was an undersized fan shaft, resulting in the 1B-B CCP fan having excess shaft to bearing clearance which caused the bearing inner ring to loosen from the eccentric locking collar. These excessive clearances allowed the fan bearing inner ring to slide on the shaft. The sliding rotation of the inner ring on the shaft resulted in excessive heat being generated within the bearing leading to catastrophic failure.	14. SUPPLEMENTAL REPORT EXPECTED       15. EXPECTED       MONTH       DAY       YEAR         ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)       NO       DATE       MONTH       DAY       YEAR         ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)       On May 13, 2016, Watts Bar Nuclear Plant Unit 1 (WBN1) determined that a condition prohibited by Technical         Specifications had previously occurred. During the Fall 2015 WBN1 outage, maintenance performed on the 1B-B       centrifugal charging pump (CCP) room cooling fan introduced a condition that resulted in a subsequent bearing failure       of the room cooling fan on December 4, 2015. This condition would have prevented the 1B-B CCP pump from         performing its specified function for its designed mission time. Based on the reduced reliability of the fan, the 1B-B       CCP was considered to be inoperable from October 7, 2015 until the fan was repaired and returned to service on         December 6, 2015. During this time period, there were several short time periods when the 1A-A CCP was inoperable.       An investigation into the cause of the failure was completed on April 21, 2016. The cause of the fan bearing failure was an undersized fan shaft, resulting in the 1B-B CCP fan having excess shaft to bearing clearance which caused the bearing inner ring to loosen from the eccentric locking collar. These excessive clearances allowed the fan bearing inner ring to slide on the shaft. The sliding rotation of the inner ring on the shaft resulted in excessive heat being generated within the bearing leading to catastrophic failure.         This event is being reported	В		VF	FAN	ELLI	s	Y										
YES (If yes, complete 15. EXPECTED SUBMISSION DATE)       NO       SUBMISSION DATE         ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)       On May 13, 2016, Watts Bar Nuclear Plant Unit 1 (WBN1) determined that a condition prohibited by Technical Specifications had previously occurred. During the Fall 2015 WBN1 outage, maintenance performed on the 1B-B centrifugal charging pump (CCP) room cooling fan introduced a condition that resulted in a subsequent bearing failure of the room cooling fan on December 4, 2015. This condition would have prevented the 1B-B CCP pump from performing its specified function for its designed mission time. Based on the reduced reliability of the fan, the 1B-B CCP was considered to be inoperable from October 7, 2015 until the fan was repaired and returned to service on December 6, 2015. During this time period, there were several short time periods when the 1A-A CCP was inoperable. An investigation into the cause of the failure was completed on April 21, 2016. The cause of the fan bearing failure was an undersized fan shaft, resulting in the 1B-B CCP fan having excess shaft to bearing clearance which caused the bearing inner ring to loosen from the eccentric locking collar. These excessive clearances allowed the fan bearing inner ring to slide on the shaft. The sliding rotation of the inner ring on the shaft resulted in excessive heat being generated within the bearing leading to catastrophic failure.	YES (If yes, complete 15. EXPECTED SUBMISSION DATE)       NO       SUBMISSION DATE         ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)       On May 13, 2016, Watts Bar Nuclear Plant Unit 1 (WBN1) determined that a condition prohibited by Technical Specifications had previously occurred. During the Fall 2015 WBN1 outage, maintenance performed on the 1B-B centrifugal charging pump (CCP) room cooling fan introduced a condition that resulted in a subsequent bearing failure of the room cooling fan on December 4, 2015. This condition would have prevented the 1B-B CCP pump from performing its specified function for its designed mission time. Based on the reduced reliability of the fan, the 1B-B CCP was considered to be inoperable from October 7, 2015 until the fan was repaired and returned to service on December 6, 2015. During this time period, there were several short time periods when the 1A-A CCP was inoperable. An investigation into the cause of the failure was completed on April 21, 2016. The cause of the fan bearing failure was an undersized fan shaft, resulting in the 1B-B CCP fan having excess shaft to bearing clearance which caused the bearing inner ring to loosen from the eccentric locking collar. These excessive clearances allowed the fan bearing inner ring to slide on the shaft. The sliding rotation of the inner ring on the shaft resulted in excessive heat being generated within the bearing leading to catastrophic failure.	14. SUP	PLEME	NTAL REI		ED	Ł					15. EXP	ECTED	-	MONTH	DAY		YEAR
ABSTRACT ( <i>Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines</i> ) On May 13, 2016, Watts Bar Nuclear Plant Unit 1 (WBN1) determined that a condition prohibited by Technical Specifications had previously occurred. During the Fall 2015 WBN1 outage, maintenance performed on the 1B-B centrifugal charging pump (CCP) room cooling fan introduced a condition that resulted in a subsequent bearing failure of the room cooling fan on December 4, 2015. This condition would have prevented the 1B-B CCP pump from performing its specified function for its designed mission time. Based on the reduced reliability of the fan, the 1B-B CCP was considered to be inoperable from October 7, 2015 until the fan was repaired and returned to service on December 6, 2015. During this time period, there were several short time periods when the 1A-A CCP was inoperable. An investigation into the cause of the failure was completed on April 21, 2016. The cause of the fan bearing failure was an undersized fan shaft, resulting in the 1B-B CCP fan having excess shaft to bearing clearance which caused the bearing inner ring to loosen from the eccentric locking collar. These excessive clearances allowed the fan bearing inner ring to slide on the shaft. The sliding rotation of the inner ring on the shaft resulted in excessive heat being generated within the bearing leading to catastrophic failure.	ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) On May 13, 2016, Watts Bar Nuclear Plant Unit 1 (WBN1) determined that a condition prohibited by Technical Specifications had previously occurred. During the Fall 2015 WBN1 outage, maintenance performed on the 1B-B centrifugal charging pump (CCP) room cooling fan introduced a condition that resulted in a subsequent bearing failure of the room cooling fan on December 4, 2015. This condition would have prevented the 1B-B CCP pump from performing its specified function for its designed mission time. Based on the reduced reliability of the fan, the 1B-B CCP was considered to be inoperable from October 7, 2015 until the fan was repaired and returned to service on December 6, 2015. During this time period, there were several short time periods when the 1A-A CCP was inoperable. An investigation into the cause of the failure was completed on April 21, 2016. The cause of the fan bearing failure was an undersized fan shaft, resulting in the 1B-B CCP fan having excess shaft to bearing clearance which caused the bearing inner ring to loosen from the eccentric locking collar. These excessive clearances allowed the fan bearing inner ring to slide on the shaft. The sliding rotation of the inner ring on the shaft resulted in excessive heat being generated within the bearing leading to catastrophic failure.		ES (If ye	es, comple	te 15. EXPECTE	D SUBMIS	SION	DATE)		)		SUBI	MISSION					
This event is being reported pursuant to 10 CFR 50.73(a)(2)(i)(B) and 10 CFR 50.73(a)(2)(v)(D)		ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) On May 13, 2016, Watts Bar Nuclear Plant Unit 1 (WBN1) determined that a condition prohibited by Technical Specifications had previously occurred. During the Fall 2015 WBN1 outage, maintenance performed on the 1B-B centrifugal charging pump (CCP) room cooling fan introduced a condition that resulted in a subsequent bearing failure of the room cooling fan on December 4, 2015. This condition would have prevented the 1B-B CCP pump from performing its specified function for its designed mission time. Based on the reduced reliability of the fan, the 1B-B CCP was considered to be inoperable from October 7, 2015 until the fan was repaired and returned to service on December 6, 2015. During this time period, there were several short time periods when the 1A-A CCP was inoperable. An investigation into the cause of the failure was completed on April 21, 2016. The cause of the fan bearing failure was an undersized fan shaft, resulting in the 1B-B CCP fan having excess shaft to bearing clearance which caused the bearing inner ring to loosen from the eccentric locking collar. These excessive clearances allowed the fan bearing inner ring to slide on the shaft. The sliding rotation of the inner ring on the shaft resulted in excessive heat being generated within the bearing leading to catastrophic failure.																

						Pag	ge 2 of 6		
NRC FORM	1 366A	U.S. NUCLEAR REGUL	ATORY COMMISSION	APPROVED BY OMB: NO. 31	50-0104	EXPIRE	S: 10/31/2018		
(11-2015)		NSEE EVENT RE CONTINUATION	PORT (LER) SHEET Estimated burden per response to comply with this manual lessons learned are incorporated into the licensing promotes regarding burden estimate to the FOIA, Privates F53), U.S. Nuclear Regulatory Commission, Washington Infocollects. Resource@nrc.gov, and to the Desk Officer, NEOB-10202, (3150-0104), Office of Management and B used to impose an information collection does not displate NRC may not conduct or sponsor, and a person is recollection.			nandatory collection request: 80 hours. Reported ag process and fed back to industry. Send Privacy and Information Collections Branch (T-5 ngton, DC 20555-0001, or by internet e-mail to cer, Office of Information and Regulatory Affairs, ad Budget, Washington, DC 20503. If a means isplay a currently valid OMB control number, the is not required to respond to, the information			
1. FACILITY	NAME		2. DOC	KET NUMBER		3. LER NUMBEI	R		
					YEAR		REV		
Watts Ba	r Nuclear Pla	ant, Unit 1	05000390		2016	- 006	- 00		
NARRATIVE					2010	- 000	- 00		
I.	PLANT OF		ONS BEFORE THE	EVENT					
	Watts Bar	Nuclear Plant (WBN)	Unit 1 was in Mode	e 1 at 100 percent rated	thermal	power (RTP).			
11.	DESCRIPT	ION OF EVENT							
	A. Ev	ent							
	ma inti far pe the rep shu (Cu in   Th	aintenance performed roduced a mechanica on December 4, 20 fforming is specified to fan, the 1B-B CCP we paired and returned to paired and returned to paired and returned to paired and returned to paired and returned to paired and returned to paired and paired to paired and paired to paired and paired to paired and paired to paired and paired to to to to to to to to to to to to to	on the 1B-B central condition that res 5. This condition of function for its designed was considered to b o service on Decen the 1A-A CCP was its bearing and ge orted pursuant to 10 (v)(D) as a condition	ifugal charging pump (C ulted in a subsequent b could have prevented th gned mission time. Bas be inoperable from Octo hber 6, 2015. During thi s inoperable due to low ar oil coolers and once O CFR 50.73(a)(2)(i)(B) on that could have preve	CP) roo earing fa e 1B-B ( ed on th ber 7, 20 s time p compon when the as a con ented the	m cooling fan {E illure of the roon CCP pump from e reduced reliab 015 until the fan eriod, there were ent cooling syste e 1A-A CCP was dition prohibited e fulfillment of a	IIS:FAN} n cooling was e several em s placed by TS safety		
	fur B Inc	operable Structures (	jate the consequen	ices of an accident. stems that Contributed (	to the Fi	vent			
	Th co C. Da	ere were no additiona oler that contributed t tes and Approximate	onents or systems othen	than th	e 1B-B CCP roo	m			
	Data	Time (EST)	Vent						
	9/27/15	N/A F	Preventative mainte	nance performed on the	e 1B-B C	CP room cooler			
	10/07/15 11/11/15	1 1543-1545 T 1555-1556 n	B-B CCP room coo he 1A-A CCP was	inoperable due to low C st of the 1B-B CCS pum	CS flow	while performin	ga		
	11/12/15	0108-0117 T	he 1A-A CCP was	inoperable due to low C	CS flow	while performin	g a		
	11/12/15	р 1215-1607 Т г	he 1A-A CCP was the 1A-A CCP was cull-to-lock for the C	inoperable as the result cold Overpressure Mitig	p. t of being ation Sve	g placed in			
	12/04/15	0300 F 1	Review of evidence B-B CCP room coo	(after the fact) determin oler is not performing its	ies this i safety f	s the time when unction.	the		
	12/04/15 12/04/15	1042 1 C	B-B CCP room coo Condition Report (C	oler found not cooling ar R) 1111791 generated	nd belts t to evalua	thrown ate fan failure ar	nd		

correct.

service.

Repairs completed on 1B-B CCP room cooler and fan returned to

0322

12/06/15

				Paç	je 3 of 6		
U.S. NUCLEAR REGULAT	TORY COMMISSION PORT (LER) SHEET	APPROVED BY OMB: NO. 31: Estimated burden per response to com lessons learned are incorporated int comments regarding burden estimate I F53), U.S. Nuclear Regulatory Comm Infocollects.Resource@nrc.gov, and to NEOB-10202, (3150-0104), Office of M used to impose an information collecti NRC may not conduct or sponsor, a collection.	<b>50-0104</b> uply with this m to the licensin to the FOIA, F ussion, Washir the Desk Offli Anagement an ion does not di and a person	EXPIRE andatory collection request: 8 g process and fed back to ?rivacy and Information Colle gton, DC 20555-0001, or by cer, Office of Information and d Budget, Washington, DC 2 splay a currently valid OMB is not required to respond	S: 10/31/2011 30 hours. Reporte 5 industry. Ser ctions Branch (T / internet e-mail I Regulatory Affaii 20503. If a mear control number, ti to, the informati		
1. FACILITY NAME	2. DOC	CKET NUMBER		3. LER NUMBER	<u> </u>		
Watts Bar Nuclear Plant, Unit 1	05000390		<b>year</b> 2016	SEQUENTIAL NUMBER - 006	REV NO. - 00		
NARRATIVE	-		, <b>8</b>		L		
Date Time (EST) Ev	vent						
1/26/16 A cc 3/06/16 C <sup>1</sup>	past operability expoler determines th R 1146474 generation	valuation associated with he fan was operable up ated to perform an equip	h the 1B until fail pment aj	-B CCP room ure. oparent cause			
4/21/16 CF 5/13/16 CF 6/23/16 Pa C	R 1146474 EACE R 1165380 detern ast Operability Eva CP approved.	Approved nines this issue to be re aluation associated with	portable the 1B-	to NRC. B CCP and 1A-A	٨		
D. Manufacturer and Model	Number of Comp	onents that Failed					
Ellis & Watts fan cooler,	Model ACH101.						
E. Other Systems or Secon	idary Functions Af	fected					
Other than the 1B-B CCF	CP and 1A-A CCP, no other systems or functions were affected.						
F. Method of discovery of e	ach Component o	r System Failure or Pro	cedural	Error			
The immediate failure of	the fan was disco	vered during operations	s tours.				
G. Failure Mode and Effect	of Each Failed Co	omponent					
The cause of the fan bea having excess shaft to be eccentric locking collar. the shaft. The sliding rol generated within the bea	aring failure was a earing clearance w These excessive tation of the inner aring leading to ca	n undersized fan shaft, which caused the bearin clearances allowed the ring on the shaft resulte tastrophic failure.	resulting ıg inner ı fan bear əd in exc	in the 1B-B CCI ring to loosen fro ring inner ring to essive heat being	<sup>&gt;</sup> fan m the slide on g		
H. Operator Actions							
Upon identifying the failu Specification Limiting Co	ure of the 1B-B CC andition of Operativ	P room cooler on Dece on (LCO) 3.5.2 was ent	mber 4, ered for	2015, the Techn the 1B-B CCP.	ical		
I. Automatically and Manua	ally Initiated Safet	y System Responses					
There were no automatic CCP inoperable, the 1A-	c or manual safety A CCP was place	v systems responses rec d in service.	วุuired. เ	Jpon declaring th	າe 1B-B		
III. CAUSE OF THE EVENT							
A. The cause of each comp	onent or system f	ailure or personnel erro	r, if knov	vn.			
The cause of the fan bea having excess shaft to be eccentric locking collar.	aring failure was a earing clearance v These excessive	n undersized fan shaft, which caused the bearir clearances allowed the	resulting ng inner fan bear	ı in the 1B-B CCI ring to loosen fro ring inner ring to	<sup>&gt;</sup> fan m the slide on		

NRC FORM	I 366A U.S. NUCLEAR REGULAT	ORY COMMISSION	APPROVED BY OMB: NO. 315	0-0104	EXPIRE	S: 10/31/2018	
(11-2015)	LICENSEE EVENT REP CONTINUATION S	ORT (LER) HEET	R) Estimated burden per response to comply with this mandatory collection request: 80 hour lessons learned are incorporated into the licensing process and fed back to indus comments regarding burden estimate to the FOIA, Privacy and Information Collections 6 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by intermin Infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regula NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. used to impose an information collection does not display a currently valid OMB control in NRC may not conduct or sponsor, and a person is not required to respond to, the collection.				
1. FACILITY	NAME	2. DOC	KET NUMBER		3. LER NUMBER	<u>؛</u>	
Watts Ba	r Nuclear Plant, Unit 1	05000390		YEAR	SEQUENTIAL NUMBER	REV NO.	
Wallo De				2016	- 006	- 00	
NARRATIV	E						
	the shaft. The sliding rota generated within the bear room cooler, procedures to be outside design spec	ation of the inner ing leading to cat associated with th ifications.	ring on the shaft resulted tastrophic failure. During ne bearing replacement	d in exce g mainte did not c	essive heat being nance on the 1E confirm the fan s	] }-B CCP haft size	
	B. The cause(s) and circums	stances for each l	human performance rela	ated root	cause.		
	There were no human pe	rformance cause:	s associated with this fai	ilure.			
IV.	ANALYSIS OF THE EVENT						
	On December 4, 2015 at 1042, W and not cooling. The reason the I bearing on the fan shaft of the coo WBN Unit 1 outage on Septembe preventative maintenance was pe fitting line to the flange of the bea the fan being returned to service. The fan failure on December 4, 20 repaired and returned to service of addressed this issue as a human the past operability evaluation for bearing manufacturer, the cause of generated CR 1146474 to perform 1B-B CCP room cooler fan failure undersized fan shaft.	<sup>7</sup> BN personnel dis belts were thrown bler. Preventative r 27, 2015 and re rformed in Octob ring assembly wa 015 was documer on December 6, 2 performance eve CR 1111791, We of the bearing failu f the bearing failu n an equipment a	scovered the 1B-B CCP a was discovered to be far emaintenance was perfor- turned to service on Oct er 2015, workers discov as missing. This grease inted in Condition Report 2015. The evaluation per- ent because of the missing BN concluded that, base ure was not the broken g are and to support a deter apparent cause evaluation ermined that the cause of	room cc ailure of ormed or tober 7, ered tha line was (CR) 1 <sup>2</sup> (CR) 1 <sup>2</sup> (C	oler with belts th the outboard flar the fan unit dur 2015. At the time at the remote gre not restored prior 111791, and the by CR 1111791 ie line. Subsequ eractions with the ine. on of reportability E) associated wif n bearing failure	rrown nge ing the e the ase or to fan was ently, in e r, WBN th the was an	
	The CCPs are a component of the head injection into the Reactor Co cool the reactor core as well as to The specified mission time for the cooler fan was unable to support to results of the EACE, the installed function. The room cooler fan wa October 7, 2015 until it was repair considered to be inoperable for the	Emergency Cor polant System (R0 provide additional CCPs is 100 day the mission time of fan had a mecha s determined to b red on December he same time peri	re Cooling System (ECC CS). The Specified Safe al shutdown capability for ys. Because the fan hac of the 1B-B CCP followir nical condition that impa be inoperable from the da 6, 2015. Accordingly, the od.	S){EIIS: ty Funct blowing I an und ng an ac incted the ate of its he asso	BQ}, providing h ion of the ECCS initiation of an ac ersized shaft, the cident. Based o fans specified s return to service ciated CCP is	igh is to ccident. e room n the afety e on	
	During the period of inoperability of remained operable except for four CCP experienced low CCS flow to minutes, 1 minute and 9 minutes. adequate flow, the pumps could h 12, 2015, with the 1B-B CCP in se for the cold overpressure mitigation	of the 1B-B CCP r specific limited to its associated be If proceduralized have failed to perf ervice, the 1A-A ( on system (COMS	(October 7 through Dece ime intervals. On Nover earing and gear oil coole d operator actions had n form their specified funct CCP was inoperable due S) in preparation for entry	ember 6 mber 11 ers for ti ot been ions. In to being y into M	, 2015), the 1A-A and 12, 2015, th me periods of 2 taken to restore addition, on Nov g placed in pull-t ode 4. If an acci	A CCP ne 1A-A vember o-lock dent	

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					0.0404	Ρας	ge 5 of 6		
NRC FORM (11-2015)		CENSEE EVENT REP CONTINUATION S	PORT (LER) SHEET SHEET NC 1222, (3150-0104), Office of Mu used to impose an information collection NRC may not conduct or sponsor, al collection.			ISO-0104 EXPIRES: 10/31/201 mply with this mandatory collection request: 80 hours. Repor to the licensing process and fed back to industry. Se to the FOIA, Privacy and Information Collections Branch ( nission, Washington, DC 20555-0001, or by internet e-mail o the Desk Officer, Office of Information and Regulatory Affa Management and Budget, Washington, DC 20503. If a meet tion does not display a currently valid OMB control number, and a person is not required to respond to, the information			
1. FACILITY	NAME		2. DOC			3. LER NUMBER	२		
Motto Bo		r Dlont, Linit 1	05000200		YEAR	SEQUENTIAL NUMBER	REV NO.		
vvalis Da	INUCIEA	r Flant, Onit T	00000390		2016	- 006	- 00		
NARRATIVE V.	A risk r availab during ASSES A. B.	curred at this time, without ected to occur prior to com eview was performed relate le to perform its safety func- this period, the core damage SMENT OF SAFETY CON Availability of systems or components and systems The 1A-A CCP and assoce during the period between flow the 1A-A CCP, while adequate CCS flow to the able to perform its functio During the time period wh a condition authorized by event of an accident, it is start the 1A-A CCP if requ For events that occurred of needed to shutdown the r control the release of radii Not applicable. For failure that rendered a from the discovery of the Based on review of the tim of the bearing failure, the December 4, 2015 at 030	operator action to pleting its mission ed to this condition ction. The risk re- ge frequency ass NSEQUENCES components that that failed during ciated room coole in October 7, 2018 not operable, wat a 1A-A CCP, there in had an accident then the 1A-A CCF TS which limited reasonable to co- uired. when the reactor reactor and maint ioactive material, a train of a safety failure until the train total time that the ion until December	o restore the 1A-A CCP n time. on. While the 1B-B CCF eview shows that with an ociated with the 1B-B C could have performed t g the event er remained operable ex 5 and December 6, 2018 as available. Considerin e is confidence that the nt occurred. P was in a pull-to-lock st operability of the charg nclude that operator act was shut down, availab tain safe shutdown cond or mitigate the conseque system inoperable, an o ain was returned to serv topped, and a calculatio e fan for the 1B-B CCP of r 6, 2015 at 0322, or 48	, a loss of P was inc Unavail CP rema he same cept for 5. Durin g operat 1A-A CC atus for ing syste ion woul ility of sy itions, re ences o estimate rice	of the 1B-B CCP operable, it was ability of five day ained below 1E-6 e function as the four short time p g the time period for responses to CP would have b COMS, the plan em to one pump. Id have been tak vstems or compo- emove residual h f an accident	would /s 5. heriods ds of low restore een t was in In the ten to benets heat, ime the time bm		
VI.	CORR	ECTIVE ACTIONS		, <u>10</u> , 10, 10, 10, 10, 10, 10, 10, 10, 10, 10					
	This ev tracked	rent was entered into the T I under CRs 1111791, 114	ennessee Valley 6474, 1165380, a	Authority (TVA) Correct and 1177072.	ive Actio	on Program and	is being		
	Α.	Immediate Corrective Act	ions						
		The failed CCP room coo	ler was repaired	and returned to service.					

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NRC FORM 366A	U.S. NUCLEAR REGULATOR	Y COMMISSION	APPROVED BY OMB: NO. 315	0-0104	EXPIRE	S: 10/31/2018
	CENSEE EVENT REPORT CONTINUATION SHI	RT (LER) EET	Estimated burden per response to complessons learned are incorporated into comments regarding burden estimate tr F53), U.S. Nuclear Regulatory Commis Infocollects.Resource@nrc.gov, and to NEOB-10202, (3150-0104), Office of Ma used to impose an information collection NRC may not conduct or sponsor, ar collection.	bly with this m the licensin the FOIA, P ssion, Washin the Desk Offic anagement an n does not dis id a person i	andatory collection request: 6 g process and fed back to rivacy and Information Colle gton, DC 20555-0001, or by zer, Office of Information and Budget, Washington, DC 2 splay a currently valid OMB of s not required to respond 1	30 hours. Reported to industry. Send ctions Branch (T-5 internet e-mail to Regulatory Affras, 20503. If a means control number, the to, the information
1. FACILITY NAME		2. DOC			3. LER NUMBER	2
Watts Bar Nuclear	r Plant, Unit 1	05000390		YEAR	SEQUENTIAL NUMBER	REV NO.
				2016	- 006	- 00
NARRATIVE						
В.	Corrective Actions to Prever	nt Recurrence				
	The procedure governing ma shaft size and validate again equipment will also be revise slipping.	aintenance of t nst design requ ed such that th	belt driven equipment wi irements. The tensionir e lowest tension will be	ill be rev ng requi used tha	rised to explicitly rements for belt o at does not resul	measure driven t in belt
VII. ADDITI	IONAL INFORMATION					
А.	Previous similar events at th	e same plant				
	On November 3, 1995, WBN damage under 10 CFR 50.5 cause of the fan shaft damag loose bearing to shaft fit, (2) (4) shaft material susceptible	V Unit 1 reporte 5(e). A final re ge was over te improper align e to deflection a	ed a construction deficie port was provided by T nsioning of the fan belts ment of shafts, (3) flexil and grooving with harde	ncy rela VA on D 5. Contr ble bear er materi	ted to cooler fan ecember 4, 1995 ibuting causes w ing support mou ials.	shaft 5. The ere (1) nts, and
В.	Additional Information					
	None.					
C.	Safety System Functional Fa	ailure Consider	ration			
	A safety system functional fa was inoperable and when th When considering reasonab CCP, however, there is conf the event of an accident.	ailure was pres e 1A-A CCP w le and procedu ïdence that the	ent during the time perion as inoperable for the sh aralized operator actions asafety system function	ods whe ort time associa would r	n both the 1B-B periods identifie ated with the 1A- not have been los	CCP d. A st in
D.	Scrams with Complications	Consideration				
	There was no scram associa	ated with this e	vent.			
VIII. COMM	ITMENTS					
None.						