

Part 21 (PAR)

Event # 52756

<b>Rep Org:</b> CURTISS WRIGHT FLOW CONTROL CO.	<b>Notification Date / Time:</b> 05/15/2017 18:55 (EDT)
<b>Supplier:</b> CURTISS-WRIGHT	<b>Event Date / Time:</b> 03/16/2017 (CDT)
	<b>Last Modification:</b> 05/31/2017
<b>Region:</b> 1	<b>Docket #:</b>
<b>City:</b> HUNTSVILLE	<b>Agreement State:</b> Yes
<b>County:</b>	<b>License #:</b> N/A
<b>State:</b> AL	
<b>NRC Notified by:</b> TONY GILL	<b>Notifications:</b> MIKE ERNSTES R2DO
<b>HQ Ops Officer:</b> JEFF HERRERA	PART 21/50.55 REACTORS EMAIL
<b>Emergency Class:</b> NON EMERGENCY	
<b>10 CFR Section:</b>	
21.21(a)(2) INTERIM EVAL OF DEVIATION	

PART 21 - POTENTIAL DEFECT IN GRAYBOOT SOCKET CONTACTS

The following information was received via email:

"This letter is issued to provide an interim notification of a potential defect in certain lots of Grayboot socket contacts supplied with EQ qualified Grayboot Connector Kits. On March 16, 2017, Curtiss-Wright, Nuclear Division, Huntsville Operations was contacted by Georgia Power Vogtle Nuclear Power Plant concerning a potential defect where the socket contact tines were in a relaxed state.

"Although we have completed some testing and verification activities, additional testing is in progress now and will provide necessary information to complete our evaluation. Current testing will be completed and final conclusions made by May 31, 2017.

"At this time, based on test results, evaluations and operating experience, Curtiss Wright is confident that any potentially affected Grayboot Assemblies will continue to perform their intended safety functions. As such, if the final recommendation is to replace the potentially defective socket contact, this can be accomplished during subsequent routine maintenance activities.

"This notification is being made to comply with 60 day interim reporting requirements as defined in 10 CFR 21.21(a)(2).

"For additional information, please contact Samuel Bledsoe, EGS Products Engineering Manager (1-256-690-7852) or Tony Gill, EGS and Trentec Quality Assurance Manager (1-256-426-4558)."

\*\*\* UPDATE PROVIDED BY TONY GILL TO JEFF ROTTON AT 1813 EDT ON 05/31/2017 \*\*\*

IE19  
NRR

The following information was provided via email:

"This letter is issued to provide final findings associated with a potential defect concerning GRAYBOOT socket contacts. This issue was initially identified in an interim report dated May 15, 2017. As documented previously, Curtiss-Wright, Nuclear Division, Huntsville Operations was contacted by Georgia Power Vogtle Nuclear Power Plant on March 16, 2017 concerning a potential defect wherein GRAYBOOT socket contact tines were in a relaxed state. This notification of a potential defect concerns model GB-1 GRAYBOOT kits supplied with two-tined, silver-plated, 12-14 AWG socket contacts.

"Based upon this scope, potentially affected kits/parts are: 1. GB-1(12-14) GRAYBOOT kits, 2. GB-1 (12-14/ 16-18) GRAYBOOT kits, and 3. GB-1-6 GRAYBOOT 12-14 AWG socket contacts.

"This issue does not affect the following: 1. Any GRAYBOOT 'A' kits/parts, 2. Any model GB-2 or GB-3 GRAYBOOT kits/parts, or 3. Any model GB-1 GRAYBOOT kits/parts with 16-18 AWG socket contacts.

"Our evaluation is documented in Report No. EGS-TR-880708-15 and is available for review at our facility in Huntsville, AL. The results identify the most likely root cause is improper heat treating of the socket contacts during manufacturing. Additional testing and analysis was performed to confirm that any affected GRAYBOOT assemblies can still preform their safety-related function and do not present a substantial safety hazard .

"The findings outlined in Report No. EGS-TR-880708-15 provide a high level of confidence that affected GRAYBOOT assemblies do not present a substantial safety hazard. This position is further validated by the lack of negative operating experience over the last 20 plus years from properly installed GRAYBOOT assemblies. However, this condition causes the contact to be more susceptible to damage from handling during connection and disconnection, and therefore the following actions are recommended:

"1. Any affected sockets in inventory should be replaced. Affected sockets in service should be replaced during routine maintenance activities.

OR

"2. In lieu of replacement, it is acceptable to perform the following [steps 1-3] to confirm a separation force greater than 0.19 lbs. This is consistent with existing Curtiss-Wright dedication acceptance criteria. It is recommended that any contacts not meeting this criteria be replaced. 1. Crimp a spare pin contact to an appropriate piece of wire. 2. Connect a force gage or 0.19 lbs. of static weight to the opposite end of the wire. 3. Insert the pin into the socket and confirm that the pin does not separate from the socket under a minimum load of 0.19 lbs.

"To confirm this deviation is not present in existing inventory or in future purchased lots, the following corrective actions have been or will be implemented by Curtiss-Wright: 1. Micro hardness testing was performed on all socket contact lots in inventory to verify their acceptability. Results confirmed that all lots were acceptable. 2. Acceptance criteria for dedication of socket contacts will be revised to include verification of acceptable contact hardness. This corrective action will be completed by June 9, 2017. No dedication of socket contacts will be performed until this corrective action is complete.

"A list of affected utilities and associated purchase orders is being developed and will be complete and submitted by June 9, 2017.

"For additional information, please contact Samuel Bledsoe, EGS Products Engineering Manager (1-256-690-7852) or Tony Gill, EGS and Trentec Quality Assurance Manager (1-256-426-4558)."

Notified R1DO (Bower), R2DO (Shaeffer), R3DO (Daley), R4DO (O'Keefe) and Part 21 Operating Reactors Group via email.

\*\*\*\*\*



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(File No.: CWNHuntsville10CFR21-2017-01)

May 31, 2017

To whom it may concern:

This letter is issued to provide final findings associated with a potential defect concerning GRAYBOOT socket contacts. This issue was initially identified in an interim report dated May 15, 2017 (see attached). As documented previously, Curtiss-Wright, Nuclear Division, Huntsville Operations was contacted by Georgia Power Vogtle Nuclear Power Plant on March 16, 2017 concerning a potential defect wherein GRAYBOOT socket contact tines were in a relaxed state. This notification of a potential defect concerns model GB-1 GRAYBOOT kits supplied with two-tined, silver-plated, 12-14 AWG socket contacts.

Based upon this scope, potentially affected kits/parts are:

1. GB-1(12-14) GRAYBOOT kits
2. GB-1(12-14/16-18) GRAYBOOT kits
3. GB-1-6 GRAYBOOT 12-14 AWG socket contacts

This issue does **not** affect the following:

1. Any GRAYBOOT "A" kits/parts
2. Any model GB-2 or GB-3 GRAYBOOT kits/parts
3. Any model GB-1 GRAYBOOT kits/parts with 16-18 AWG socket contacts

Our evaluation is documented in Report No. EGS-TR-880708-15 and is available for review at our facility in Huntsville, AL. The results identify the most likely root cause is improper heat treating of the socket contacts during manufacturing. Additional testing and analysis was performed to confirm that any affected GRAYBOOT assemblies can still perform their safety-related function and do not present a substantial safety hazard.

The findings outlined in Report No. EGS-TR-880708-15 provide a high level of confidence that affected GRAYBOOT assemblies do not present a substantial safety hazard. This position is further validated by the lack of negative operating experience over the last 20+ years from properly installed GRAYBOOT assemblies. However, this condition causes the contact to be more susceptible to damage from handling during connection and disconnection, and therefore the following actions are recommended.

1. Any affected sockets in inventory should be replaced. Affected sockets in service should be replaced during routine maintenance activities.

**OR**

2. In lieu of replacement, it is acceptable to perform the following to confirm a separation force greater than 0.19 lbs. This is consistent with existing Curtiss-Wright dedication acceptance criteria. It is recommended that any contacts not meeting this criteria be replaced.
  - Crimp a spare pin contact to an appropriate piece of wire
  - Connect a force gage or 0.19 lbs. of static weight to the opposite end of the wire
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(File No.: CWNHuntsville10CFR21-2017-01)

May 31, 2017  
(Continued)

To confirm this deviation is not present in existing inventory or in future purchased lots, the following corrective actions have been or will be implemented by Curtiss-Wright:

1. Microhardness testing was performed on all socket contact lots in inventory to verify their acceptability. Results confirmed that all lots were acceptable.
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A list of affected utilities and associated purchase orders is being developed and will be complete and submitted by June 9, 2017.

For additional information, please contact Samuel Bledsoe, EGS Products Engineering Manager (1-256-690-7852) or Tony Gill, EGS and Trentec Quality Assurance Manager (1-256-426-4558).

Sincerely,

Samuel Bledsoe  
Engineering Manager, EGS Products  
Curtiss-Wright Nuclear Division  
125 West Park Loop NW, Huntsville, AL 35806  
[sbledsoe@curtisswright.com](mailto:sbledsoe@curtisswright.com)

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May 15, 2017

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This letter is issued to provide an interim notification of a potential defect in certain lots of Grayboot socket contacts supplied with EQ qualified Grayboot Connector Kits. On March 16, 2017, Curtiss-Wright, Nuclear Division, Huntsville Operations was contacted by Georgia Power Vogtle Nuclear Power Plant concerning a potential defect where the socket contact tines were in a relaxed state.

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Engineering Manager, EGS Products  
Curtiss-Wright Nuclear Division  
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