

Part 21 (PAR)

Event # 52269

<b>Rep Org:</b> WECTEC LLC	<b>Notification Date / Time:</b> 09/28/2016 14:57 (EDT)
<b>Supplier:</b> CB&I LAURENS	<b>Event Date / Time:</b> 09/28/2016 (EDT)
	<b>Last Modification:</b> 03/15/2017
<b>Region:</b> 1	<b>Docket #:</b>
<b>City:</b> CHARLOTTE	<b>Agreement State:</b> Yes
<b>County:</b>	<b>License #:</b>
<b>State:</b> NC	
<b>NRC Notified by:</b> CURTIS CASTELL	<b>Notifications:</b> BINOY DESAI R2DO
<b>HQ Ops Officer:</b> VINCE KLCO	PART 21/50.55 REACTORS EMAIL
<b>Emergency Class:</b> NON EMERGENCY	
<b>10 CFR Section:</b>	
21.21(d)(3)(i) DEFECTS AND NONCOMPLIANCE	

52-025/026  
52-027

## PART 21 REPORT REGARDING PIPE SPOOL FLANGES FOR VOGTLE UNIT 3

The following was excerpted from an email received from WECTEC LLC:

"Nature of the defect or failure to comply and the safety hazard which is created or could be created by such defect or failure to comply.

"The two flanges identified with deviations on Passive Core Cooling System pipe spools for the Vogtle Unit 3 AP1000® project had incorrect raised-face dimensions. This appears to have been caused by the two flanges being transposed due to an inadvertent fabrication error that occurred at the pipe spool supplier's facilities (CB&I Laurens). The error was subsequently discovered after delivery to the fabrication facility (Aecon Industrial).

"This error resulted in conditions where the two flanged connections would not have met the design configuration. If the flanged connections had been assembled in the delivered configuration, it is not known if system integrity and operability would have been maintained during operation. The incorrect configuration could have also led to subsequent failure after installation and operation. Hydrostatic testing of these connections is required, but had not yet been performed because the condition was discovered prior to the assembly and testing of these portions of the system. The condition is being corrected prior to the performance of that hydrostatic testing, therefore it is not known if the flanges in the incorrect configuration would have been able to pass hydrostatic testing.

"Due to the possibility that system integrity and operability could have been impacted by the use of the incorrect flanges, it has been conservatively concluded that this condition should be reported under 10 CFR Part 21. This conservative conclusion is based on the possibility that the Passive Core Cooling System could have been adversely impacted by the identified deviations, if the deviations had been left uncorrected.

IE19  
NRD

"The corrective action which has been, is being, or will be taken; the name of the individual or organization responsible for the action; and the length of time that has been or will be taken to complete the action.

". . . The flange configuration was corrected and the Q223 Mechanical Module was delivered to the Vogtle Unit 3 site on September 23, 2016. A corrective action report has been entered into the Westinghouse/WECTEC system to further evaluate the circumstances that led to the identified deviations."

\*\*\* UPDATE FROM DAVID DURHAM TO HOWIE CROUCH VIA EMAIL AT 1535 EDT ON 3/15/17 \*\*\*

WECTEC LLC determined that additional pipe spools with incorrect flange configurations were fabricated for V.C. Summer Unit 3 and Vogtle Unit 4. None of the pipe spools were installed in either of the facilities. Corrective actions have been taken to prevent re-occurrence.

Notified R2DO (Ehrhardt) and Part 21 group via email.

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10 CFR 21.21

March 15, 2017

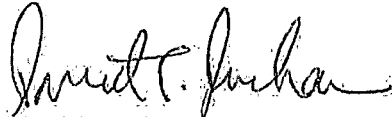
U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555-0001

**SUBJECT: UPDATED 10 CFR PART 21 REPORT REGARDING DEVIATIONS OF PIPE  
SPOOL FLANGES FOR VOGTLE AND V. C. SUMMER AP1000® PROJECTS**

The attachment to this letter provides a report in accordance with 10 CFR 21.21 pertaining to deviations of flanges on pipe spools for the Vogtle and V. C. Summer AP1000® projects. This is an update of the report submitted by letter dated September 28, 2016 (Accession No. ML16285A241, Log No. 2016-46-00). This update provides additional information as a result of completion of extent of condition reviews performed in response to the identified conditions.

If you have any questions pertaining to this information, please contact Curtis Castell, Licensing Manager, at 980-859-6373.

Sincerely,



David Durham  
President  
WECTEC LLC

cc: Regional Administrator, USNRC, Region II

Attachment

UPDATED 10 CFR PART 21 REPORT REGARDING DEVIATIONS OF PIPE SPOOL  
FLANGES FOR VOGTLE AND V. C. SUMMER AP1000® PROJECTS

This updated report is being provided in accordance with 10 CFR 21.21. This is an update of the report submitted by letter dated September 28, 2016 (Accession No. ML16285A241, Log No. 2016-46-00). This update provides additional information as a result of completion of extent of condition reviews performed in response to the identified conditions.

(i) Name and address of the individual or individuals informing the Commission.

David Durham  
President  
WECTEC LLC  
3735 Glen Lake Drive  
Charlotte, NC 28208

(ii) Identification of the facility, the activity, or the basic component supplied for such facility or such activity within the United States which fails to comply or contains a defect.

The basic components being supplied are two flanges on Passive Core Cooling System pipe spools for the Vogtle Unit 3 AP1000® project. The pipe spools are identified as SV3-PXS-PLW-02X-2 and SV3-PXS-PLW-02Y-1. Based on subsequent extent of condition reviews, two additional piping spools were found that had incorrect flanges. Pipe spool VS3-PXS-PLW-02X-2 for V. C. Summer Unit 3 and pipe spool SV4-PXS-PLW-010-1B for Vogtle Unit 4 were found to have flanges that did not correspond to the design requirements for raised face dimension.

(iii) Identification of the firm constructing the facility or supplying the basic component which fails to comply or contains a defect.

The pipe spools and flanges were supplied by CB&I Laurens, 366 Old Airport Road, Laurens, SC 29360. The procurement of the affected material is being conducted by WECTEC LLC, 3735 Glen Lake Drive, Charlotte, NC 28208. The affected pipe spools and flanges were delivered to Aecon Industrial, 150 Sheldon Drive, Cambridge, Ontario, N1R 7K9 Canada, for use in fabrication of Mechanical Modules Q223 and Q233 for the Passive Core Cooling System.

(iv) Nature of the defect or failure to comply and the safety hazard which is created or could be created by such defect or failure to comply.

The two flanges identified with deviations on Passive Core Cooling System pipe spools for the Vogtle Unit 3 AP1000® project had incorrect raised-face dimensions. This appears to have been caused by the two flanges being transposed due to an inadvertent fabrication error that occurred at the pipe spool supplier's facilities (CB&I Laurens). The error was subsequently discovered after delivery to the fabrication facility (Aecon Industrial). Based on subsequent extent of condition reviews, two additional piping spools were found that had incorrect flanges. Pipe

spool VS3-PXS-PLW-02X-2 for V. C. Summer Unit 3 and pipe spool SV4-PXS-PLW-010-1B for Vogtle Unit 4 were also found to have flanges that did not correspond to the design requirements for raised face dimensions.

This error resulted in conditions where the flanged connections would not have met the design configuration. If the flanged connections had been assembled in the delivered configuration, it is not known if system integrity and operability would have been maintained during operation. The incorrect configuration could have also led to subsequent failure after installation and operation. Hydrostatic testing of these connections is required, but had not yet been performed because the condition was discovered prior to the assembly and testing of these portions of the system. The condition is being corrected prior to the performance of that hydrostatic testing, therefore it is not known if the flanges in the incorrect configuration would have been able to pass hydrostatic testing.

Due to the possibility that system integrity and operability could have been impacted by the use of the incorrect flanges, it has been conservatively concluded that this condition should be reported under 10 CFR Part 21. This conservative conclusion is based on the possibility that the Passive Core Cooling System could have been adversely impacted by the identified deviations, if the deviations had been left uncorrected.

(v) The date on which the information of such defect or failure to comply was obtained.

The evaluation for reportability of the initially identified conditions was completed on September 21, 2016, and the WECTEC Responsible Officer was informed on September 28, 2016. Reportability evaluation of the additional conditions that were discovered via subsequent extent of condition reviews was completed on March 13, 2017, and the WECTEC Responsible Officer was informed on March 15, 2017.

(vi) In the case of a basic component which contains a defect or fails to comply, the number and location of these components in use at, supplied for, being supplied for, or may be supplied for, manufactured, or being manufactured for one or more facilities or activities subject to the regulations in this part.

The affected basic components are two pipe spools with incorrect flanges. Those pipe spools, identified as SV3-PXS-PLW-02X-2 and SV3-PXS-PLW-02Y-1, were physically located at the Aecon Industrial fabrication facilities in Cambridge, Ontario Canada, at the time of discovery of the described conditions. The spool SV3-PXS-PLW-02X-2 is associated with the Vogtle Unit 3 In-containment Refueling Water Storage Tank and Containment Recirculation to Direct Vessel Injection "B" and is an 8-inch nominal pipe size. The spool SV3-PXS-PLW-02Y-1 is associated with Vogtle Unit 3 Residual Heat Removal System to Direct Vessel Injection "B" and is an 8-inch nominal pipe size.

The additional pipe spools found with incorrect flange configuration were VS3-PXS-PLW-02X-2 for V. C. Summer Unit 3 and pipe spool SV4-PXS-PLW-010-1B for Vogtle Unit 4. Similar to the conditions reported in the September 28, 2016 report, these nonconformances were found at

the Aecon Industrial fabrication facilities in Cambridge, Ontario Canada. These pipe spools are also Passive Core Cooling System components and 8-inch nominal pipe size.

(vii) The corrective action which has been, is being, or will be taken; the name of the individual or organization responsible for the action; and the length of time that has been or will be taken to complete the action.

The actions necessary to correct the identified conditions have been established and are tracked to completion through the use of the associated nonconformance and disposition (N&D) reports. The flange configuration identified in the September 28, 2016 report was corrected and the Q223 Mechanical Module was delivered to the Vogtle Unit 3 site on September 23, 2016. A corrective action report was entered into the Westinghouse/WECTEC system to further evaluate the circumstances that led to the identified deviations. A root cause analysis has been completed for the identified conditions and two additional circumstances of incorrect flanges were found during extent of condition reviews.

The root cause analysis determined that the inspection plans did not include sufficient inspection attributes to ensure the physical dimension of the flanges were correct. This has been corrected, which restores compliance with 10 CFR 50 Appendix B, Criterion VII, which in part states, "Measures shall be established to assure that purchased material, equipment, and services, whether purchased directly or through contractors and subcontractors, conform to the procurement documents..."

(viii) Any advice related to the defect or failure to comply about the facility, activity, or basic component that has been, is being, or will be given to purchasers or licensees.

These conditions were identified prior to installation of the affected components and the components have been and are being corrected. Therefore, there is no additional action or advice needed for the affected licensees at this time.

These conditions are associated with construction of the Vogtle and V. C. Summer AP1000® projects and therefore are also considered to be reportable under 10 CFR 50.55(e) for those sites. 10 CFR 50.55(e)(8) states, "The requirements of § 50.55(e) are satisfied when the defect or failure to comply associated with a substantial safety hazard has been previously reported under part 21 of this chapter..." Therefore, this report under 10 CFR Part 21 is expected to satisfy the requirements of 10 CFR 50.55(e) for the Vogtle and V. C. Summer combined license holders.

(ix) In the case of an early site permit, the entities to whom an early site permit was transferred.

Not applicable.