



June 28, 2024

NRC:24:014

U.S. Nuclear Regulatory Commission  
Document Control Desk  
11555 Rockville Pike  
Rockville, MD 20852

### 10 CFR 21 Notification of Existence of a Defect

This letter provides notification of a reportable defect in accordance with 10 CFR 21.21(d)(4). This defect was reported to the NRC Operations Center by email at 8:02 a.m. EDT on June 22, 2024, Event No. 57186.

The defect concerns the misload of two Burnable Poison Rod Assemblies. In accordance with the requirements of 10 CFR 21.21(d)(4), information regarding the defect is disclosed in Attachment 1.

If you have any questions related to this information, please contact me by telephone at (434) 832-3347, or by e-mail at [Gayle.Elliott@framatome.com](mailto:Gayle.Elliott@framatome.com).

Sincerely,

**ELLIOTT**  
**Gayle**

Digitally signed by  
ELLIOTT Gayle  
Date: 2024.06.28  
09:13:43 -04'00'

Gayle Elliott, Director  
Licensing & Regulatory Affairs  
Framatome Inc.

cc: N. Otto  
Project 728

Attachments:

- 1 Notification of 10 CFR 21 Defect

## Attachment 1

### Notice of 10 CFR 21 Defect

**Subject:**

Notification of 10 CFR 21 Defect

**Name and Address of Individual Informing the Commission:**

Gayle Elliott  
Director, Licensing & Regulatory Affairs  
Framatome Inc.  
3315 Old Forest Road  
Lynchburg, Va. 24501

**Title:**

Burnable Poison Rod Assembly Misload

**Identification of Basic Activity:**

Burnable Poison Rod Assembly

**Basic Activity Supplied By:**

Framatome Inc.

**Nature of Defect:**

Framatome Inc. (Framatome) was notified by Duke Energy Carolinas regarding unexpected high reactor peaking factor readings seen during start-up testing at Oconee Unit 3, Cycle 33 in a core location (H-5) that had a fresh fuel assembly of type 35A (UDPK01), fresh Burnable Poison Rod Assembly (BPRAs) (BGAA), and a new incore detector. It was determined that the unexpected high readings resulted from incorrect boron concentration of Al<sub>2</sub>O<sub>3</sub>-B<sub>4</sub>C pellets in two of the BPRAs. A second BPRAs (BGA9) was located in core location (D-7). During the fabrication process of the BPRAs, 0.2% boron concentration Al<sub>2</sub>O<sub>3</sub>-B<sub>4</sub>C pellets were inadvertently combined with the intended 2.0% boron concentration Al<sub>2</sub>O<sub>3</sub>-B<sub>4</sub>C pellets, which were then placed back into inventory labeled as 2.0%.

The BPRAs concentration is a critical characteristic of a core design. This non-conformance affects the safety function of these two BPRAs and could contribute to exceeding a reactor core safety limit, as defined in the technical specifications of the licensee, were it to remain uncorrected.

**Defect Determination Date:**

This issue was determined to be a 10 CFR 21 Defect on June 21, 2024.

**Number and Location of Basic Components:**

The identified defect is isolated to only one reactor, Oconee Unit 3 and only in Cycle 33. Two BPRAs were affected.

**Corrective Actions to Date:**

- Framatome Inc. replaced the two affected BPRAs with BPRAs fabricated correctly.
- A Root Cause Analysis has been initiated by Framatome Inc. and is scheduled for completion by July 31, 2024.

**Advice related to the Defect:**

Framatome replaced the two affected BPRAs and informed Oconee Unit 3 of the initiation of a Root Cause Analysis.