

**From:** Klett, Audrey  
**Sent:** Friday, June 5, 2020 7:18 AM  
**To:** Zamber, Maria  
**Subject:** NRC Request for Additional Information for Waterford LAR to Relocate  
Boration TSs (EPID L-2019-LLA-0203)  
**Attachments:** Waterford RAI L-2019-LLA-0203.docx

Hi Maria,  
Please see attached for the final RAI. NRC is requesting a due date of 30 calendar days of the date of this email (or next federal business day).

Thanks,  
Audrey

**Hearing Identifier:** NRR\_DRMA  
**Email Number:** 637

**Mail Envelope Properties** (MN2PR09MB47009184C0AA8D090B5E5AD987860)

**Subject:** NRC Request for Additional Information for Waterford LAR to Relocate Boration  
TSs (EPID L-2019-LLA-0203)  
**Sent Date:** 6/5/2020 7:17:49 AM  
**Received Date:** 6/5/2020 7:17:00 AM  
**From:** Klett, Audrey

**Created By:** Audrey.Klett@nrc.gov

**Recipients:**  
"Zamber, Maria" <mzamber@entergy.com>  
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Waterford RAI L-2019-LLA-0203.docx		35207

**Options**  
**Priority:** Normal  
**Return Notification:** No  
**Reply Requested:** No  
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**Expiration Date:**

REQUEST FOR ADDITIONAL INFORMATION  
BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
LICENSE AMENDMENT REQUEST  
ENTERGY OPERATIONS, INC.  
WATERFORD STEAM ELECTRIC STATION, UNIT 3  
DOCKET NO. 50-382

By letter W3F1-2019-0062 dated September 20, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18264A023), Entergy Operations, Inc. (the licensee) applied for a license amendment to Renewed Facility Operating License NPF-38 for the Waterford Steam Electric Station, Unit 3. Based on its review of the application, the U.S. Nuclear Regulatory Commission (NRC) staff determined that it needs a response to the following request for additional information (RAI) to complete its review. On June 1, 2020, NRC and licensee staff held a clarification call, which resulted in a revision to the RAI, shown in tracked changes below. Based on an email from Ms. Maria Zamber of the licensee's staff on June 4, 2020, the NRC requests the licensee to respond to this request within 30 days of the date of the communication transmitting this RAI.

**RAI**

In its application (Enclosure, Page 1), the licensee stated, "Although the Boration Systems provide a means of reactivity control through boron injection, none of these systems are required to mitigate any design bases accidents or transients."

A review of Chapter 15 of the Waterford 3 Updated Final Safety Analysis Report (UFSAR) identified (but are not limited to) the following instances where charging pumps were credited in response to a transient:

- Section 15.6.3.1, "Primary Sample or Instrument Line Break," subsection 15.6.3.1.2 states, "... the reactor coolant inventory is replenished by the safety injection pumps and by the charging pumps. Operation of [these] pumps ensures that the core will not uncover and prevents any significant increase in clad temperatures."
- Section 15.6.3.2, Steam Generator Tube Rupture, subsection 15.6.3.2.1.2 states "Following a tube rupture, the RCS pressure decreases. The drop in RCS pressure results in startup of all charging pumps and in a reactor trip due to the CPC [core protection calculator] hot leg saturation trip .... "Behavior of the systems varies depending upon the size of the rupture. For leak rates up to the capacity of the charging pumps, reactor coolant inventory is maintained, and an automatic reactor trip does not occur."

While the NRC staff recognizes that the charging pumps may not be needed for boration, it appears from the wording in ~~Section 15.6.3.1~~ various sections of the UFSAR that they are required for inventory control to ensure the core will not uncover. The staff requests the licensee to explain how 10 CFR 50.36(c)(2)(ii) Criterion 3 is not met for the Boration Systems (pumps, flow paths, and water sources) for all UFSAR Chapter 15 cases where charging pumps are used.