

## NRR-PMDAPEm Resource

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**From:** Wang, Alan  
**Sent:** Friday, October 31, 2014 8:38 AM  
**To:** WILLIAMS, JOE D; Milster, Leia Elizabeth  
**Cc:** Burkhardt, Janet; Orenak, Michael  
**Subject:** Waterford Steam Generation Station, Unit 3 Pressurizer Heater Function License Amendment Request (TAC No. MF3058)  
**Attachments:** Human factors RAls for pressurizer heater LAR.docx

By letter [Joe](#) and Leia, by letter dated November 11, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13316C052) Entergy Operations Inc. (the licensee) requested a licensing basis change to the Updated Final Safety Analysis Report to clarify the function of the pressurizer heaters during a Loss of Off-site Power (LOOP). The [US Nuclear Regulatory Commission](#) staff has determined that additional information is required to complete its review. The request for [additional](#) information is attached.

This request was discussed with Ms. Leia Milster on October 30, 2014, and it was agreed that a response would be provided within 45 days of receipt of this email. If circumstances result in the need to revise the requested response date, please contact me at (301) 415-1445 or via e-mail at [Alan.Wang@nrc.gov](mailto:Alan.Wang@nrc.gov).

Alan Wang  
Project Manager (Waterford Steam Electric Station, Unit 3)  
Nuclear Regulatory Commission  
Division of Operating Reactor Licensing  
[Alan.Wang@NRC.gov](mailto:Alan.Wang@NRC.gov)  
Tel: (301) 415-1445  
Fax: (301) 415-1222

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**From:** Wang, Alan

**Created By:** Alan.Wang@nrc.gov

**Recipients:**  
"Burkhardt, Janet" <Janet.Burkhardt@nrc.gov>  
Tracking Status: None  
"Orenak, Michael" <Michael.Orenak@nrc.gov>  
Tracking Status: None  
"WILLIAMS, JOE D" <JWILL13@entergy.com>  
Tracking Status: None  
"Milster, Leia Elizabeth" <lmilste@entergy.com>  
Tracking Status: None

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REQUEST FOR ADDITIONAL INFORMATION  
WATERFORD STEAM ELECTRIC STATION, UNIT 3,  
REGARDING LICENSE AMENDMENT REQUEST FOR  
LICENSE BASIS CHANGES TO CLARIFY PRESSURIZER HEATER FUNCTION  
DURING LOSS OF OFF-SITE POWER (TAC NO. MF3058)

The Nuclear Regulatory Commission (NRC) staff reviewed the Waterford, Unit 3, License Amendment Request (LAR), dated November 11, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13316C052) concerning the license basis changes required to clarify the function of the pressurizer heaters during a Loss of Off-site Power (LOOP). The NRC staff has determined that the following additional information is required to complete its review.

In the November 11, 2013, submittal the licensee states that if a specific common circuit breaker is open at the time of onset of a LOOP, manual actions must be taken outside the control room to re-energize the pressurizer heaters.

1. It appears from the past tense of some of the wording that this change is a reflection of current practices, and is not an incorporation of any new operator actions. For example, on page 5 of 11 of Attachment 1, the licensee stated, "Emergency Procedures and training have been developed and implemented..." Please clarify whether any operator actions are being added, changed, or deleted to support the LAR, or whether the operator actions described in the LAR just reflect current practices, procedures, and training.
2. Was a review of operating experience performed; for example, was a review of corrective actions related to natural circulation or pressurizer heaters done? If not, why not?
3. Describe the sequence of operator tasks, beginning with how the operators recognize the common circuit breaker, CVCEBKR014AB-13 is open or closed, and ending when the pressurizer heaters are confirmed operable, or when exit conditions for the procedure in effect have otherwise been satisfied. Include the following:
  - a. the cue to initiate the action(s),
  - b. procedure(s) in effect,
  - c. instrument or method used to monitor progress,
  - d. feedback that the action is working,
  - e. any required tools,
  - f. possible environmental hazards, e.g. high heat exacerbated by use of "flash suit"
  - g. communications devices,
  - h. how long the action takes,
  - i. the number and kind of personnel required, and
  - j. the frequency of performing or training on the action.

Enclosure

4. In Attachment 2 of the licensee's submittal, Inserts 2A and 3 include a statement to the effect of: *Operator actions to power the Pressurizer Heaters are not time critical.* However, in UFSAR 5.4.10, Pressurizer, it is stated that single phase natural circulation can be maintained at hot standby conditions with a 50°F sub-cooled margin indefinitely by energizing 150kW of heater capacity thirty minutes after the loss of offsite power.
  - a. Is thirty minutes a self-imposed time limit for energizing pressurizer heaters?
  - b. Is this time limit included in the controlling procedure?
  - c. Is this limit addressed in the associated training?
  - d. Is this limit used as a pass/fail measure?
  - e. Was this limit used during validation of the task feasibility and reliability?
5. Describe the process used to verify and validate the ability of your operators to accomplish the tasks required for the proposed LAR. In lieu of a description, you may provide the relevant administrative procedure(s) for verification and validation. Did the Validation include a representative sample of operators, and was it done with Technical Specification (TS) minimum staffing and nominal staffing?
6. Describe the process that will be used to monitor the manual actions to ensure that they remain feasible and reliable over the long term, and are not degraded because of design changes, inadequate training, or other mechanisms.