



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

October 6, 2008

Mr. Larry Meyer
Site Vice President
FPLE Point Beach
6610 Nuclear Road
Two Rivers, WI 54241

SUBJECT: POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2 - GSI-191/GL 2004-02
ADDITIONAL EXTENSION REQUEST APPROVAL (TAC NOS. MC4705
AND MC4706)

Dear Mr. Meyer:

The U.S. Nuclear Regulatory Commission (NRC) staff has evaluated the information provided in FPL Energy's (the licensee) letter dated September 8, 2008 (Agencywide Document Access and Management System (ADAMS) Accession No. ML082530196), supporting a request for an extension of the Point Beach Nuclear Plant (PBNP), Units 1 and 2 sump clogging corrective actions due date of September 30, 2008, for PBNP Units 1 and 2, as approved by the NRC by letter dated July 1, 2007 (ADAMS Accession No. ML08179053B).

The NRC has determined that for PBNP Units 1 and 2, it is acceptable to extend the due date for completion of strainer chemical effects testing and in-vessel and ex-vessel downstream effects evaluations as described in the enclosed NRC staff evaluation of the extension request, until June 30, 2009. However the staff recognizes that for PBNP Unit 2, the approved due date is intended to be an interim extension period to allow the NRC staff time to determine if there is the need for additional regulatory action (e.g., license conditions). The PBNP Unit 2 requested extension period to December 31, 2009, will remain under staff evaluation, until a final decision has been reached. Enclosed is the staff's evaluation.

If you have any questions, please contact me at (301) 415-1424.

Sincerely,

A handwritten signature in black ink, appearing to read "Jack Cushing".

Jack Cushing, Senior Project Manager
Plant Licensing Branch III-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-266 and 50-301

Enclosure:
As stated

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

EVALUATION OF EXTENSION REQUEST FOR CONTAINMENT SUMP

CORRECTIVE ACTIONS ASSOCIATED WITH

GENERIC LETTER 2004-02

POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

DOCKET NOS. 50-266 AND 50-301

By letter dated September 8, 2008 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML082530196), FPL Energy (the licensee), requested an extension to the U.S. Nuclear Regulatory Commission (NRC) Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation During Design-Basis Accidents at Pressurized-Water Reactors," corrective action due date for Point Beach Nuclear Plant (PBNP) Units 1 and 2. The licensee requested an extension for the remaining corrective actions to June 30, 2009, for PBNP Unit 1 and December 31, 2009, for PBNP Unit 2. The stated intent of this extension was to allow the licensee additional time to complete installation of three strainer modules to each independent train A and B strainer section, and the addition of debris interceptors and replace the cylindrical portion of the pressurizer insulation in both units during each of the respective unit's upcoming refueling outage. In addition, testing will be conducted during the first quarter of 2009, to demonstrate that the final debris interceptor installation achieves the required debris retention.

Previously, by letter dated June 9, 2008, (Adams Accession No. ML081620337), the licensee requested an extension to allow additional time to complete chemical effects head loss testing, analysis of potential chemical precipitants, and evaluation of both in-vessel and ex-vessel downstream effects. The licensee requested an extension to September 30, 2008, for completion of these activities and the submittal of the final results to the NRC. The NRC approved an extension for completion of PBNP Units 1 and 2 sump clogging corrective actions from the GL 2004-02 due date of June 30, 2008, until September 30, 2008 (NRC letter dated July 1, 2008, ML081790538).

The licensee stated in a letter date June 23, 2008 (ADAMS Accession No. ML081760129), that based on the demonstrated efficacy of debris interceptors tested for other facilities, the installation of additional debris interceptors was anticipated to be the most appropriate modification to obtain near-term closure of GL 2004-02 at PBNP Units 1 and 2.

The licensee's September 8, 2008, letter, states that large flume testing was conducted by FPL Energy Point Beach, AREVA and Alden Research Laboratory during July 2008, using the refined test protocols. During this testing, it was determined that the containment sump strainer configuration of 11 strainer modules per train currently installed in the PBNP Unit 1 and Unit 2 emergency core cooling system (ECCS) did not meet test acceptance criteria. Further testing indicated that three additional strainer modules per train, for a total of 14 strainer modules, along with the addition of debris interceptors with an assumed net effective debris reduction of 75 percent would meet GL 2004-02 design-basis accident conditions.

The September 8, 2008, letter revises the following FPL regulatory commitment stated in the licensee's letter dated June 9, 2008 as follows:

FPL Energy Point Beach will complete actions to resolve GSI-191 at PBNP by June 30, 2009, for Unit 1, and by December 31, 2009, for Unit 2.

The NRC has based its reviews for granting extensions to the due date for completion of GL 2004-02 corrective actions on the criteria stated in SECY-06-0078. Specifically, an extension may be granted if:

- the licensee has a plant-specific technical/experimental plan with milestones and schedule to address outstanding technical issues with enough margin to account for uncertainties, and
- the licensee identifies mitigative measures to be put in place prior to December 31, 2007, and adequately describes how these mitigative measures will minimize the risk of degraded ECCS and containment spray system functions during the extension period.

The SECY also states that for proposed extensions beyond several months, a licensee's request will more likely be accepted if the proposed mitigative measures include temporary physical improvements to the ECCS sump or materials inside containment to better ensure a high level of ECCS sump performance.

With regard to the first extension criterion, the licensee has provided, as described in the September 8, 2008, extension request letter, a plant-specific technical/experimental plan, with milestones and schedules, to complete the GL 2004-02 corrective actions. The licensee stated in its letter dated September 8, 2008, that for PBNP Unit 1 it will revise the debris generation calculations, transport calculations and computational fluid dynamic (CFD) analysis. The letter states that the licensee will install three additional strainer modules to each of train of strainers which will increase strainer area in each train from approximately 1500 ft² to approximately 1900 ft². The letter states that debris interceptors will be installed so ECCS break flow will be diverted from the sub-compartments through the debris interceptors. Based upon industry testing of similar interceptors, the licensee anticipates that the debris interceptors will result in a net effective debris reduction of 75 percent. The debris interceptors, along with the installation of the additional strainers, were determined to be acceptable during the July 2008 test program. The licensee has determined that the cylindrical portion of the current pressurizer insulation system will be replaced with a jacketed Nukon or equivalent system that will provide additional margin for the final design. These modifications will be performed during the upcoming fourth quarter 2008 refueling outage. Final testing to confirm that the PBNP Units 1 and 2 debris interceptor design achieves the required debris retention will be performed during the first quarter of 2009. The licensee stated that a revised comprehensive final report, that demonstrates compliance with GL 2004-02 for Unit 1 will be submitted to the NRC by June 30, 2009.

For PBNP Unit 2, the licensee stated, in its September 8, 2008, letter, that it will revise the debris generation calculations, transport calculations and CFD analysis. The licensee will install three additional strainer modules to each of train of strainers, which will increase strainer area in each train from approximately 1500 ft² to approximately 1900 ft². Debris interceptors will be installed so ECCS break flow will be diverted from the sub-compartments through the debris interceptors. The letter states that the cylindrical portion of the current insulation system on the Unit 2 pressurizer will also be replaced with a jacketed Nukon system or equivalent system, which will provide additional margin for the final design. The licensee plans to perform these modifications during the fourth quarter 2009 refueling outage. Additionally, the licensee stated that a revised comprehensive final report, that demonstrates compliance with GL 2004-02 for Unit 2, will be submitted to the NRC by December 31, 2009.

Therefore, FPL Energy anticipates the following contingency testing:

1. A design-basis debris load test, with the debris introduction sequenced to demonstrate both thin bed performance and full design loading performance.
2. In the event of an unsatisfactory result during the first test, a second test run including a debris interceptor located upstream of the test strainer. This test should be sufficient to demonstrate the effectiveness of a debris interceptor with the PBNP Units 1 and 2 specific debris loading and flow velocities.

The licensee stated that, if needed, the design and installation of debris interceptors would proceed expeditiously for PBNP Units 1 and 2. Specifically, the licensee stated in its June 23, 2008, letter, that it anticipates that the PBNP Unit 1 installation could be expedited to occur during the fall 2008 refueling outage, and that the PBNP Unit 2 installation could occur during the fall 2009 refueling outage.

With regard to the second extension criterion, the information provided in the licensee's letter dated September 8, 2008, indicates that the bases for a reasonable assurance of operability with the installed replacement strainers is unchanged from that detailed in its letter dated June 23, 2008, and that further bases are provided in the licensee's supplemental response to GL 2004-02, dated February 29, 2008. The licensee's letter dated June 23, 2008, states that mitigative measures that were described in the November 16, 2007 (ADAMS Accession No. ML073230345), letter, remain in effect.

The staff evaluation of the previous extension request concluded that the licensee had put mitigation measures in place to adequately reduce risk for the previous requested extension period (September 30, 2008), as stated in the NRC extension approval letter cited above. The installation of larger surface area sump strainers on both units is the most significant of these mitigative measures. Redundant 1500 ft² strainers replaced the 21 ft² sump screens. The licensee indicated that the July 2008, test program that credited installation of three new strainers per train and debris interceptors, also demonstrated that there were minimal chemical effects on the sump net positive suction head. The September 8, 2008, letter, states that final details of downstream effects analysis will be provided in the final submittals for each unit.

With regard to the third extension criterion, the significant modifications discussed in the licensee's September 8, 2008, extension request, in particular the installation of large

replacement strainers in both units, satisfies this extension criterion. Additionally, the licensee's September 8, 2008, letter, provides plant risk evaluations for PBNP Units 1 and 2. The staff has not reviewed the analysis in detail but agrees with the licensee's conclusion that the impact on risk for the requested extension period for actions to address chemical effects beyond the December 31, 2007, implementation date specified in GL 2004-02 do not pose a significant increase based on the mitigative measures identified in this document.

The NRC staff held a phone conference with the licensee on September 29, 2008. In summary, the NRC and the licensee reached mutual understanding that:

The PBNP Unit 2 corrective action due date extension request will remain under staff evaluation in order to allow the NRC time to determine if there is the need for additional regulatory approach (e.g., license conditions). The NRC will grant an interim extension for PBNP Unit 2 until June 30, 2009. The staff has not identified any issues with the PBNP Unit 2 corrective action plan and expects the licensee to follow the outlined planned for PBNP Unit 2 as described in the September 8, 2008, letter. Based on the information provided in the licensee's letter dated September 8, 2008, the staff has not identified any issues with the PBNP Unit 2 corrective action plan.

The NRC staff believes that the licensee has a reasonable plan for PBNP Unit 1 that should result in the completion of final GL 2004-02 corrective actions that provide acceptable strainer function with adequate margin for uncertainties. The additional time requested for PBNP Unit 1 in the September 8, 2008, letter, is considered to be of low safety concern given the mitigation measures and plant improvements already in place. Based on the licensee having satisfactorily addressed the NRC GL 2004-02 due date extension criteria as discussed above, the NRC staff finds it is acceptable to extend the completion date for GL 2004-02 corrective actions associated with strainer performance testing, final analysis and related licensing activities, as described in this enclosure, for PBNP Units 1, from September 30, 2008, to June 30, 2009.

Additionally the NRC staff finds it acceptable to extend the GL 2004-02 corrective action due date for PBNP Unit 2 from September 30, 2008, to June 30, 2009. This interim extension is intended to allow the NRC time to determine if there is the need for an additional regulatory approach for PBNP Unit 2. The staff considers the granted interim extension period to be of low safety concern given the mitigation measures and plant improvements already in place and expects the licensee to follow the corrective action plan for PBNP Unit 2 as described in the licensee's letter dated September 8, 2008. The NRC expects PBNP Units 1 and 2 to place a high priority on completing remaining actions and updating the plants' licensing bases as soon as possible.

October 6, 2008

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Site Vice President
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If you have any questions, please contact me at (301) 415-1424.

Sincerely,

/RA/

Jack Cushing, Senior Project Manager
Plant Licensing Branch III-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

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