FPL Energy
Seabrook Station

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October 6, 2003

Docket No. 50-443

NYN-03082

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Seabrook Station
Boral Spent Fuel Pool Test Coupons
Report Pursuant to 10 CFR Part 21.21

On September 15, 2003, FPL Energy Seabrook, LLC (FPLE Seabrook) reported a condition involving Boral spent fuel pool test coupons (Event #40159). Specifically, inspection of test coupons revealed bulging or blistering of the aluminum cladding. The spent fuel pool racks were built by Westinghouse Electric Corporation using Boral material manufactured by AAR Inc of Livonia, MI. In accordance with the requirements of 10 CFR 21.21(d)(3), Attachment A provides the 30-day written report of an identified defect potentially associated with a substantial safety hazard

Should you have any questions regarding this letter, please contact Mr. James M. Peschel, Regulatory Programs Manager, at (603) 773-7194.

Very truly yours,

FPLE Energy Seabrook, LLC

Mark E. Warner
Site Vice President

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cc: H. J. Miller, NRC Regional Administrator
V. Nerses, NRC Project Manager, Project Directorate I-2
G. T. Dentel, NRC Senior Resident Inspector

Attachment A

10CFR21.21(d)(4) requires that the written report required by this paragraph shall include, but need not be limited to, the following information, to the extent known:

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

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(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.

Boral Spent Fuel Storage Racks

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

The spent fuel pool racks were supplied by Westinghouse Electric Corporation using Boral material manufactured by AAR Inc. of Livonia, MI.

(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.

FPLE Seabrook has identified an abnormality of a Boral test coupon which was removed from the Spent Fuel Pool for inspection. Boral test coupons (Boron carbide & Aluminum Composite Material) have been located in the Spent Fuel Pool as monitoring specimens to assess the performance of similar Boral neutron poison material incorporated into the Spent Fuel Pool Racks.

The boron-10 areal density in the Boral has been measured via neutron attenuation testing. This testing determined that areal density was within specification and no loss of control material existed. Furthermore, the impact of the blistering on the flux trap has been determined to be small and within bounds of the criticality analysis. Thus, the Boral is presently performing its design function.

However, the rate of blister formation and the long-term effects of these blisters on the criticality analysis are not known.

Because of the uncertainty in the future state of the Boral, Seabrook will implement a Boral Monitoring program and add a blistering allowance in the Spent Fuel Pool criticality curves.

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

The 10CFR 21.21 reportability evaluation was completed on September 15, 2003

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

Six Boral racks constitute 576 of the 1236 storage cells in the spent fuel pool. The spent fuel storage racks are freestanding self-supporting modules.

(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.

FPLE Seabrook has completed an analysis and review of industry operating experience related to defects detected on Boral monitoring coupons. As a result of this evaluation, FPLE Seabrook has determined that a substantial safety hazard does not currently exist in the Seabrook spent fuel racks. This conclusion is based on the fact that boron-10 areal density in the Boral has been measured and determined to be within specification and the impact of the blistering on the flux trap has been determined to be small and within the bounds of the criticality analysis.

However, the rate of blister formation and the long-term effects of these blisters on the criticality analysis are not known.

Because of the uncertainty in the future state of the Boral used to manufacture the spent fuel racks, FPLE Seabrook will implement a Boral-monitoring program and add a blistering allowance in the SFP criticality curves. Both of these actions are currently under development and are anticipated to be in place by September 30, 2003.

(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.

None.