



September 20, 2011

L-2011-397
10 CFR 50.4
10 CFR 50.36b
EPP 4.1

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

RE: St. Lucie Units 1 and 2
Docket No. 50-335 and 50-389
Environmental Protection Plan Report
Event Date: August 22, 2011
Unusual or Important Environmental Event – Reportable Fish Kill

The attached report is being submitted pursuant to the requirements of Section 4.1 of the St. Lucie Units 1 and 2 Environmental Protection Plans to provide the description of a reportable unusual fish kill event.

Sincerely,

A handwritten signature in black ink, appearing to read 'E. Katzman'.

Eric S. Katzman
Licensing Manager
St. Lucie Plant

ESK/kdr

Attachment

LE23

DESCRIPTION OF THE EVENT

The St. Lucie Plant experienced a massive intrusion of moon jellyfish (*Aurelia aurita*) in the St. Lucie Plant intake cooling water canal. The event commenced on August 20, 2011, and terminated on August 24, 2011.

The St. Lucie Plant intake cooling water pipes are approximately 1,600 feet in length. As sea water traverses the intake pipes it becomes quite turbulent and reaches a flow rate of 6.8 feet/second. During that turbulent journey the jellyfishes' stinging nematocysts are broken off and are then released into the water column. The heavy concentration of moon jellyfish and corresponding nematocysts in the water column finally reached a lethal concentration on August 22, 2011. These conditions were responsible for the mortality of an estimated 10,000 pounds of fish in a 24-hour period.

CAUSE OF THE EVENT

The fish in the intake cooling canal are in a confined area, and thus, could not escape the nematocysts in the water column. As the nematocysts accumulated on their gills the stinging action caused gross swelling which resulted in suffocation.

CORRECTIVE ACTION

Fish removal activities started immediately and lasted for approximately 48 hours. The peak concentration of moon jellyfish that caused the mortality lasted less than 24 hours. At the beginning of the event staff biologists were able to rescue ten goliath groupers (*Epinephelus itajara*), one nurse shark (*Ginglymostoma cirratum*), and 8 snappers (*Lutjanidae*) until they had to cease rescue activities due to the stinging effect of the nematocysts.

ACTIONS TO PRECLUDE FUTURE EVENTS

The entrainment of moon jellyfish is a natural event that occurs on a yearly cycle at St. Lucie Plant. Rarely do the moon jellyfish arrive in high enough numbers to produce these effects. Compensatory actions are to minimize the high fish mortality by the St. Lucie Fish Removal campaign to keep the entrained fish population as low as possible.

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L-2011-397
Attachment
Page 2 of 2

AGENCIES NOTIFIED

The Florida Fish and Wildlife Conservation Commission was notified of this event on August 22, 2011, in accordance with Site Environmental Protection Plan.

A notification was made to the U.S. Nuclear Regulatory Commission on August 22, 2011 per requirement of 10 CFR 50.72(b)(2)(xi).

cc: Mr. Michael Halpin - FDEP