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L-2018-037
10 CFR 50.4
10 CFR 50.36.b
EPP 4.1

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

RE: St. Lucie Units 1 and 2
Docket Nos. 50-335 and 50-389
Environmental Protection Plan Report
Event Dates: January 18, 2018, January 20, 2018, and February 10, 2018
Unusual or Important Environmental Event - Turtle Mortalities

On January 18, 2018, two dead juvenile green sea turtles (*Chelonia mydas*) were recovered from the St. Lucie Plant intake canal 8-inch turtle barrier net. Additionally, a dead green sea turtle was recovered from the 8-inch net on January 20, 2018, and another on February 10, 2018. All four turtles ranged from moderately to severely decomposed, thus necropsies were not possible. Therefore, the mortalities were conservatively determined to be causal to plant operation. 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 the reportable sea turtle mortalities.

Sincerely,

Michael J. Snyder
Licensing Manager
St. Lucie Plant

MJS/rcs

Attachment

CC: FDEP Siting Office
Briana A. Grange, U.S. Nuclear Regulatory Commission
Audra Livergood, National Marine Fisheries Service
Meghan Koperski, Florida Fish and Wildlife Conservation Commission

DESCRIPTION OF THE EVENT

On January 18, 2018, two dead juvenile green sea turtles (*Chelonia mydas*) were recovered from the St. Lucie Plant intake canal 8-inch turtle barrier net. On January 20, 2018, a dead green sea turtle was recovered from the 8-inch net. On February 10, 2018, a dead green sea turtle was recovered from the 8-inch net. All turtles ranged from moderately to severely decomposed, thus necropsies were not possible.

The 8-inch net is downstream of the 5-inch net, and it is uncommon for turtles to traverse beyond the 5-inch barrier net. However, the 5-inch net had been compromised due to the severe weather conditions experienced during Hurricane Irma, and the damaged net allowed smaller turtles to migrate further down the intake canal.

St. Lucie staff biologists increased efforts to monitor and remove the resident turtle population as quickly and as safely as possible. This included increased turtle monitoring and additional instructions for personnel that operate intake well debris rakes.

The damaged 5-inch net was replaced on February 9, 2018. In an effort to protect juvenile sea turtles by preventing them from travelling to the intake wells while the 5-inch net was degraded, a temporary 5-inch mesh overlay was placed on the 8-inch barrier net after Hurricane Irma, and the inspection frequency was increased between the 5-inch and 8-inch nets.

The turbidity of the intake canal created low visibility from the surface, and divers were being used to periodically inspect the 8-inch net. The turtles that were recovered on January 18, 2018, were recovered by divers performing a scheduled inspection of the 8-inch net and mesh overlay. The temporary mesh overlay was determined to be ineffective, and the station took immediate action to remove the 5-inch mesh overlay from the 8-inch net. The turtle that was recovered on January 20, 2018, was found during the removal of the temporary 5-inch mesh overlay. The turtle that was recovered on February 10, 2018, was found one day following the completion of the installation of the replacement 5-inch net.

Prior to this event, a cold stunning event also occurred in the intake canal earlier in January 2018. The time frame of the recent cold stunning event is consistent with the level of decomposition of the recent turtle mortalities, and it is probable that the turtles died one to two weeks earlier and during the cold stunning event.

CAUSE OF EVENT

While the ultimate cause of the mortalities cannot be conclusively determined without necropsies to provide factual data for acute causes, a juvenile turtle in a weakened cold-stunned condition may be small enough to get past the compromised 5-inch net. Although the one turtle that was recovered on February 10, 2018, was

too large to travel through the 5-inch net, there were gaps in net coverage during net replacement that apparently allowed the turtle to swim around the 5-inch net barrier.

These mortalities occurred after Hurricane Irma, as a result of damage to the intake canal's primary 5-inch barrier net. This allowed sea turtles to travel farther along the cooling canal to the 8-inch net that had a temporary 5-inch mesh overlay. The temporary configuration of the 8-inch net was intended to protect turtles from travelling through to the intake wells, but unlike the primary 5-inch barrier net, the 8-inch net is not designed to assist weakened turtles to the surface.

CORRECTIVE ACTION

The temporary 5-inch mesh overly was removed from the 8-inch barrier net. This will prevent small turtles from being held in the 8-inch net if they get past the 5-inch net.

ACTIONS TO PRECLUDE FUTURE EVENTS

The replacement of the 5-inch barrier net was expedited and is now complete. This involved hand dredging with divers and an airlift to uncover the bottom of the 5-inch net. During this activity and until the replacement net was fully tensioned, there were temporary gaps at the net perimeter that may have allowed turtles to pass through. These temporary gaps are now closed.

The station has prepared for turtles that may make their way past the spotters and past the 5-inch net to the intake wells. Until the nets were fully restored, the intake well debris cleaning rake system operation protocol was changed to operate in the manual mode. Intake wells are now inspected to verify the absence of turtles in the wells prior to and during operation of the system in manual mode.

AGENCIES NOTIFIED

The Florida Fish and Wildlife Conservation Commission (FWC) was notified on January 18, 2018, January 20, 2018, and February 10, 2018, in accordance with Marine Turtle Permit# MTP-125 and the Site Environmental Protection Plan.

Notifications were made to the NRC on January 18, 2018, January 20, 2018, and February 10, 2018, per the requirements of 10 CFR 50.72(b) (2) (xi).

Since the initial brief notifications, FPL Environmental Services has provided informal status updates to biologists from the NRC, FWC and National Marine Fisheries Service (NMFS). These status updates provided prompt information on the developing issue, answers to agencies' questions and the resolution plans presented above.