

HORSESHOE CRAB CONGREGATION IMPACT MITIGATION PSEG Power Connecticut LLC New Haven Harbor Station

PSEG Power Connecticut, LLC (PSEG) owns and operates the New Haven Harbor Station (NHHS) located on the eastern shore of New Haven Harbor in Long Island Sound. The steam-electric power station consists of a single generating unit which utilizes a once-through non-contact condenser cooling water system. The cooling water intake structure (CWIS) is protected by trash racks to prevent impingement of large debris and/or organisms on the traveling screens. In addition, a 7-foot high and 3-foot wide vertical wall surrounds the entrance to the CWIS which was originally erected to minimize impingement of demersal fish species.

In June 2006, an estimated 11,000 horseshoe crabs were found congregating at the CWIS in between the fish barrier and the trash racks. The NHHS's NPDES permit included a requirement to perform an investigation to determine if horseshoe crab congregation at the CWIS causes mortality, adversely affects spawning behavior, and/or otherwise adversely affects the local horseshoe crab population. In addition, the permit required that if the Connecticut Department of Environmental Protection (CTDEP) determined that there is an adverse impact to horseshoe crabs and mitigation is warranted, then PSEG was to submit a report describing a list of alternatives for mitigating impacts to the CTDEP for review. Subsequent to the field study which determined that potential impacts may be occurring, Kleinschmidt was contracted by PSEG to identify and evaluate alternatives for mitigating the potential impacts to horseshoe crabs as a result of their congregation at the CWIS.

Kleinschmidt conducted a desktop investigation and provided four alternative strategies to resolve the issues related to horseshoe crab in the vicinity of the CWIS; two options attempted to physically exclude the horseshoe crabs from entering the intake, and two options attempted to provide solutions for eliminating the congregation of horseshoe crabs once they have entered the confined area inside the fish barrier. For each option, Kleinschmidt considered feasibility of implementation, construction cost, operation and maintenance cost, anticipated permit approvals, and schedules for implementation. These options, as well as identification of the preferred alternative, were outlined in a report and presented to PSEG for consideration.

