

NPDES REQUIRED ECOLOGICAL STUDIES Consolidated Edison Energy of Massachusetts, Inc. (CEEMI) West Springfield Station West Springfield, MA

Consolidated Edison's West Springfield Station contracted with Kleinschmidt to conduct multi-year impingement, entrainment, offshore ichthyoplankton, thermal plume mapping and benthic monitoring at their once-through cooling water station on the Connecticut River. This work is required by EPA under the Station's recently issued NPDES permit. In addition, Kleinschmidt was retained to provide 316(b) related expertise to CEEMI for interactions with the Massachusetts Department of Environmental Protection and the EPA. Our efforts resulted in successful settlement of a potential appeal of NPDES permit conditions covering ecological studies.



Kleinschmidt conducted a two year impingement study beginning in January 2005. According to the scope of work agreed upon by EPA, MA DEP, and CEEMI, sampling was conducted at each intake screen three times during a 24-h period once per week by collecting fish every eight hours. Processing of samples involved the identification, enumeration, and measuring of all fish and macrocrustacean species, as well as recording the physical condition (alive, dead, mutilated) of each organism.

On January 15, 2005 the first entrainment sample was collected at West Springfield Station. Samples were collected twice per month (bi-weekly) from October through March, and weekly from April through September. In addition, during the April through September sampling period, a night sample was collected on the same day of the week that the day entrainment and offshore samples were collected. Samples were taken back to Kleinschmidt's Connecticut office for fish larvae and egg identification.

Offshore ichthyoplankton samples were collected weekly from March through September. Paired samples were collected from three different stations in the river within the vicinity of the cooling water intake structure. As with entrainment, the samples were processed for fish larvae and egg identification.

The Thermal Plume Study was conducted by Kleinschmidt in August 2005 to determine the extent of the thermal plume within the Connecticut River that is generated by the discharge of cooling water. An ADCP unit was utilized to collect and record temperature, depth and velocity data in the vicinity of the station's cooling water discharge.

Benthic monitoring was conducted to characterize the impact of the thermal discharge on benthos. A total of 30 samples were collected each year from 2005 to 2007. The samples were processed in Kleinschmidt's Connecticut Office to identify individual organisms to species/taxa.

At the culmination of field studies each year, it was Kleinschmidt's responsibility to generate an annual report summarizing the data collected, as well as discussing the status of the project. In 2008, a final report was generated detailing all aspects of the study including an analysis of I&E impacts due to station operation.

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