



FISH EGG AND LARVAE ENTRAINMENT
AT THE DAVIS-BESSE NUCLEAR POWER
STATION DURING 1977

Environmental Technical Specifications
Sec. 3.1.2.a.5 Fish Egg and Larvae Entrainment

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Procedures

Fish egg and larvae (ichthyoplankton) entrainment at the Davis-Besse Nuclear Power Station was computed by multiplying the ichthyoplankton concentration observed at Station 8 (intake) by the intake flow (flow rate x time). Ichthyoplankton concentrations were those determined by the ichthyoplankton monitoring program, Section 3.1.2.a.4. The ichthyoplankton monitoring program consisted of duplicate surface and bottom samples on 14 dates (approximately 10 days apart) from April 20 through September 2 with a 0.75-m diameter heavy duty oceanographic plankton net (No. 00, 0.760 mm mesh).

Results

The Davis-Besse Nuclear Power Station was not operated at full load during 1977 and did not even reach 75% capacity until December 1977. However, to be consistent with the impingement monitoring program, Section 3.1.2.a.6, ichthyoplankton entrainment losses were estimated from 17 August through 31 December 1977.

Although sampling was performed on 12 August, 22 August and 2 September, no fish eggs or larvae were collected at Station 8 (intake). In fact no larvae or eggs appeared in samples from any of the stations on 12 August and 2 September, and only 4 late-stage emerald shiners were found on 22 August. The last samples containing larvae from Station 8 were collected on 27 July and these were emerald shiners. Therefore, no fish larvae or eggs were entrained by the Davis-Besse Nuclear Power Station from 17 August through 31 December 1977.

Analysis

The fact that no ichthyoplankters were entrained between 17 August and 31 December 1977 was typical for that time of year. Based on the results of previous years, ichthyoplankters will be entrained from mid-April to mid-August (Reutter and Herdendorf, 1977). Walleye and yellow perch will be the first to be entrained, but will be essentially absent after 1 June. Gizzard shad will be the next species entrained in significant numbers and will remain in samples until mid-July, with emerald shiners remaining into August.

LITERATURE CITED

Reutter, J.M. and C.E. Herdendorf. 1977. Pre-operational aquatic ecology monitoring program for the Davis-Besse Nuclear Power Station, Unit 1. Toledo Edison Company. Contract No. 1780. 205 p.