

POOR ORIGINAL

August 2, 1979

Dr. Paul Eisele
Environmental Planning Coordinator
Detroit Edison Co.
2000 Second Ave.
Detroit, MI 48226

Re: Fermi II NPDES Permit MI 003028:
Part I.B.8, Water Intake Monitoring

Dear Dr. Eisele:

The 316 Review Committee, Michigan Department of Natural Resources, has reviewed the document entitled "Enrico Fermi Atomic Power Plant, Unit II, Entrainment and Impingement Study-Phase I and Phase II" and has recommended approval of the plan with modifications.

The study plan is hereby approved contingent upon inclusion of the modifications outlined in the attached memorandum (F. Horvath to R. Courchaine, July 30, 1979).

If you have any questions or need further clarification of this matter, please contact Frank Horvath, Biology Section, Water Quality Division.

Very truly yours,

WATER RESOURCES COMMISSION

Robert J. Courchaine
Executive Secretary

RJC/FH:sh

cc: F. Horvath/R. Basch
F. Baldwin/S. Ross
G. Milburn
T. Doyle/D. Jester
R. Schrameck

002
ES
11

7908300665

2032 356

POOR ORIGINAL

July 30, 1979

TO: Robert J. Courchaine, Chief, Water Quality Division
FROM: Frank J. Horvath, Aquatic Biologist, 316 Review Committee
SUBJECT: Impingement and Entrainment Study, Fermi II Power Plant
FILE: BIO-12-79-45

The 316 Review Committee has reviewed the document entitled "Enrico Fermi Atomic Power Plant, Unit 2, Entrainment and Impingement Study, Phase I and Phase II". The Detroit Edison Company has submitted the study plan in fulfillment of monitoring requirements imposed by MDNR, and as agreed to by the Company at an April 26, 1979 meeting. The study plan is not required by the NPDES Permit (MI 0030728), and is being conducted without modification of the permit (refer to summary of the April 26, 1979 meeting: File BIO-12-79-33-1).

After consideration of comments on the study plan received from the Nuclear Regulatory Commission via a July 19, 1979, letter, and consultation with Detroit Edison Company, the committee recommends approval of the study plan with the following additions and modifications:

- a. The proposed method for ichthyoplankton sampling is with a 505 micron mesh net since previous samples have used this mesh size. MDNR is attempting to standardize all Great Lakes ichthyoplankton sampling with the use of 351 micron mesh. This study should include sufficient sampling with 351 micron mesh to demonstrate if a statistically significant difference exists between the two mesh sizes and to derive a correction factor if differences are detected. The use of 351 micron may not be feasible, however, because of the high zooplankton and phytoplankton densities known to occur in western Lake Erie.
- b. Since the "lar-vac[#] I" sampler is a new (to Michigan) sampling device, the study should include conventional sampling to verify the "lar-vac" results. Verification data should be derived at this site during the study. In any case, the "lar-vac" results must be comparable to 1976-77 study data.
- c. In order to obtain 351 micron mesh samples and verify the "lar-vac" sample densities, Kenco Model 139 pump samples (pumping into 505 micron mesh nets) should be taken at the intake along with "lar-vac" samples. 351 and 505 micron mesh net tow samples should be taken at the same time and place as "lar-vac" samples at the mouth of the intake canal. The frequency of verification sampling should be at least approximately one-third that of the regular sampling program.
- d. The study plan proposes to identify and weigh impinged fish, or a subsample. The proposed subsampling routine is acceptable. However, all collections must be sorted by species before subsampling each species. All game fish should be weighed and measured individually, as proposed, and should not be subsampled. Separation by species before subsampling will ensure a census of all species impinged.

2032 557

July 30, 1979

- e. A subsample, at least, of all fish impinged should be examined by species for spawning condition. Such data should indicate whether areas adjacent to the intake are being used for spawning. Categories such as "immature", "ripe", "ripe running", "spent", etc. should be used.
- f. Physical and water quality data, as follows, should be collected during each monitoring period: 1) conductivity and temperature of water being discharged, at the intake, and at the mouth of Swan Creek. Conductivity need be measured at the discharge only during Phase II or whenever condenser cooling with blowdown is occurring. If, during Phase I, no differences in conductivity are noted between any sites after several measurements taken under a variety of meteorological and intake conditions, Detroit Edison should seek MDNR concurrence to suspend this activity. 2) Meteorological conditions-wind speed and direction, barometric pressure, cloud cover (approximate by direct observation), ambient air temperature; 3) Lake conditions-level (change in preceeding 24 hours; level at the start and end of each monitoring period), surface wave height and direction, ambient water temperature; 4) Intake current velocity-in front of the traveling screens (over a grid to describe the vertical and horizontal pattern), and at the lakeward end of the center of the intake canal. Current velocity profile data must describe the average and extreme velocities occurring during average and extreme lake level and intake volume. A program of frequent monitoring over a short period conducted during Phase II (stable plant operations) would be acceptable if an approximately total range of lake level and intake volume conditions were measured.; 5) Flant operating data-intake and blowdown volume during each monitoring.
- g. Analysis of phase I should produce monthly, seasonal, and an annual impingement/entrainment loss estimate. An estimate of production forgone using the equivalent adults approach or some similar technique should be included. A comparison of these losses to existing western basin ichthyoplankton and adult fish population distribution and abundance data should be included. Finally, rates of impingement and entrainment should be compared with physical conditions recorded during each monitoring period.
- h. Detroit edison should maintain close communication with the 316 Review Committee throughout the study. Informal review sessions at which trends, problems and predictions can be discussed are acceptable. A written progress report following the spring spawning season of Phase I and then Phase II must be submitted by August 1 of each monitoring year. The progress report should include a description of the program modification, preliminary trends, and a raw data summary.

sh

POOR ORIGINAL

2032 358