

UNITED STATES OF AMERICA
ATOMIC ENERGY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
)
WISCONSIN PUBLIC SERVICE CORPORATION)
WISCONSIN POWER AND LIGHT COMPANY) Docket No. 50-305
AND)
MADISON GAS AND ELECTRIC COMPANY)
)
(Kewaunee Nuclear Power Plant))

AFFIDAVIT IN SUPPORT OF
MOTION FOR SUMMARY DISPOSITION

State of Maryland)
) ss
County of Montgomery)

The undersigned, E. W. Daniels, being first duly sworn, hereby deposes
and says as follows:

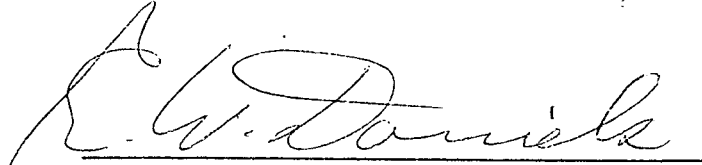
1. A statement of by background and qualifications has been filed and
is a part of the Docket in this matter .

2. Contention 6.3.8

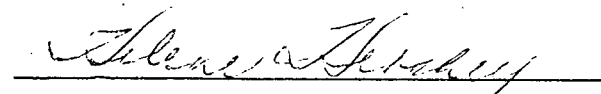
Since fish tend to be attracted to the thermal plume in cold weather ,
and since sudden chilling of acclimatized fish can be detrimental or
perhaps lethal if the rate of cooling is great enough, the possibility
of a fish kill exists, (FES, p. V-25-26.) However, sudden complete

shutdowns are infrequent and not anticipated. A gradual reduction in power and a consequent gradual lowering of the temperature gradient will occur during a scheduled shutdown. At the Point Beach Plant, 4 1/2 miles south, the unscheduled shutdowns which may be considerably faster than scheduled ones, have apparently not resulted in killing fish. (Testimony of Dr. Spigarelli at Point Beach Hearings, July 20, 1972, p. 3968-9 (FES: V-26), will not be present in the wintertime near the plume. Other abundant fish in the Plant area (brown and rainbow trout) will probably be present in the winter. Any fish, possible brown and rainbow trout, that are present in the plume during a winter shutdown will probably mitigate the effect of the temperature change by moving with the plume water as it cools, and by swimming more extensively than normal to slightly increase their body temperatures as they adapt to colder water. (Rad. Physics Div., Ann. Rept. 1971; ANL-7860, part III.) The larger fish cool more slowly than smaller ones (such as alewives), and are consequently less prone to die off. The majority of fishes regulate their body temperatures near their preferred temperature. It has not been established what combination of temperature change and rate of change is actually lethal to these species under field conditions.

In conclusion, it is my opinion that during scheduled shutdowns, there will be no fish die-offs at Kewaunee as a result of cold shock.


E. W. Daniels

Subscribed to and sworn before
me this 2nd day of February, 1973


My Commission expires 7/1/74