



Salem Nuclear Generation Station's License to Kill

Public Service Electric and Gas Co.(PSE&G) was granted permission by NJ Department of Environmental Protection and Energy (DEPE) (Draft Permit #NJ0005622 June,1993) to continue to kill an estimated 845 million fish per year as they get sucked into or onto the water intakes at the plant.

Why Are So Many Fish Killed by the Salem Plant?

Every day the Salem plant draws in 3.024 billion gallons of water from the Estuary. This is enough water to flood all of South Jersey, below Trenton one foot deep in a year (1104 billion gallons a year, operating at 70 percent capacity). The water is used for "once-through" cooling of the nuclear reactors and is discharged as heated water. Fish eggs, larvae, and juvenile fish are sucked onto or into the water intakes. This huge volume of water is habitat for many species of fish, making death inevitable for a certain percentage. If cooling towers were installed, fish impingement and entrainment would drop drastically since 95% less water would be needed for "closed-cycle" cooling.

How significant is this?

Versar Associates, a consultant hired by DEPE, estimated that the total annual fish kills at the Salem intakes translate into fish losses which are over four times the total drawn by commercial fishing (bay anchovy and weakfish) in the Delaware Estuary :

- 30,000,000 lb. per year of bay anchovy and weakfish were the losses due to entrainment and impingement at Salem
- 6,800,000 lb. per year was the total for commercial landings (1975-1980)

As explained in the Trenton Times (page one, 7.9.90):

"Enough eggs, larvae, and young fish are killed on the plant each year that the potential weakfish population, the most sought after species in the bay, is reduced by 7 percent each year. That is the equivalent of about 11.4 million pounds of weakfish. There would be 1.12 million more weakfish in the bay if the cooling system weren't destroying them."

What about the weakfish decline?

In recent years, the weakfish catch has declined remarkably on the East Coast. For instance, the Delaware Estuary News (Spring, 1993) reports that between 1986 and 1990, Delaware Estuary recreational catches of weakfish declined 85 percent. The following numbers from National Marine Fisheries and DE Fish and Wildlife illustrate the severity of the weakfish decline:

Year	Recreational Catch	Commercial Landings
1979-1987	5,456,542 (average lbs./yr.)	3,388,286 lbs.
1991	454,000 lbs.	434,710 lbs.
1992	347,754 lbs.	

Why does government limit the fishermen's take but not Salem's? Due to the decline in weakfish, all Atlantic States limit the numbers and size of fish commercial and recreational fishermen can take. The Weakfish Fishery Management Plan now limits size (13"), establishes a bag limit (10), and the method of taking. Penalties for violating the law: \$20.00/fish for exceeding size or amount; for violating the method of taking the penalty is \$100 to \$3000, first offense, \$200 to \$5000 subsequent offenses (NJSA 23:2b-6, NJAC 7:25-18.1(b), 18.12(a) and (b)).

PSE&G has killed billions of fish with impunity since Salem Unit I began operating in 1977 and Salem unit 2 in 1981. They will be able to continue to kill staggering numbers of fish for at least 10 more years if DEPE's draft permit is made final.

PSE&G has estimated a one-time cost of \$30 million for the salt marsh restoration experiment. Estimating 845 million fish killed each year, they will get a license to kill about 8 1/2 billion fish over the next decade. A weakfish bag limit violator could only get one and a half million fish for that same \$30 million!

Why did DEPE change its mind about the cooling towers?

PSE&G submitted new figures for fish kills and fish population loss caused by the present cooling technology at Salem and DEPE used them as the rationale for backing off their 1990 draft permit requiring cooling towers at Salem. These figures are UNSUBSTANTIATED CLAIMS since there has been no third-party review of PSE&G's 1991 submissions. The DEPE has acted to issue a new draft without obtaining any objective analysis as they did for the 1990 Draft by commissioning the Versar Report.

What's more, these figures are irrelevant. The Federal Clean Water Act does not ask for, or authorize, the submission of "proof" that there has been "no impact". The Clean Water Act requires that impact (ie. fish killed) be minimized by the use of best technology available(BTA). At this time, the standard for BTA is closed-cycle cooling.

Not only are PSE&G's numbers irrelevant, they are only estimates without validity. As stated in Electric Power Plants in the Coastal Zone: Environmental Issues (American Littoral Society, 1973): "The natural variations in abundance of biota from season to season , place to place, and year to year, coupled with the error levels intrinsic to sampling gear and methods, are such that changes caused by plants would not be detectable if they were anything less than catastrophic". And by then, it will be too late for the Delaware Estuary's fish.

Prepared by Tracy Carluccio, (215) 369-1188