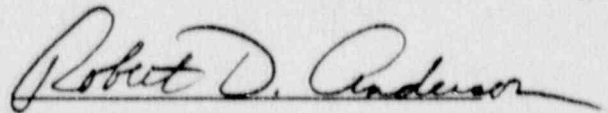


IMPINGEMENT OF ORGANISMS AT
PILGRIM NUCLEAR POWER STATION
(January - June 1990)

Prepared by:



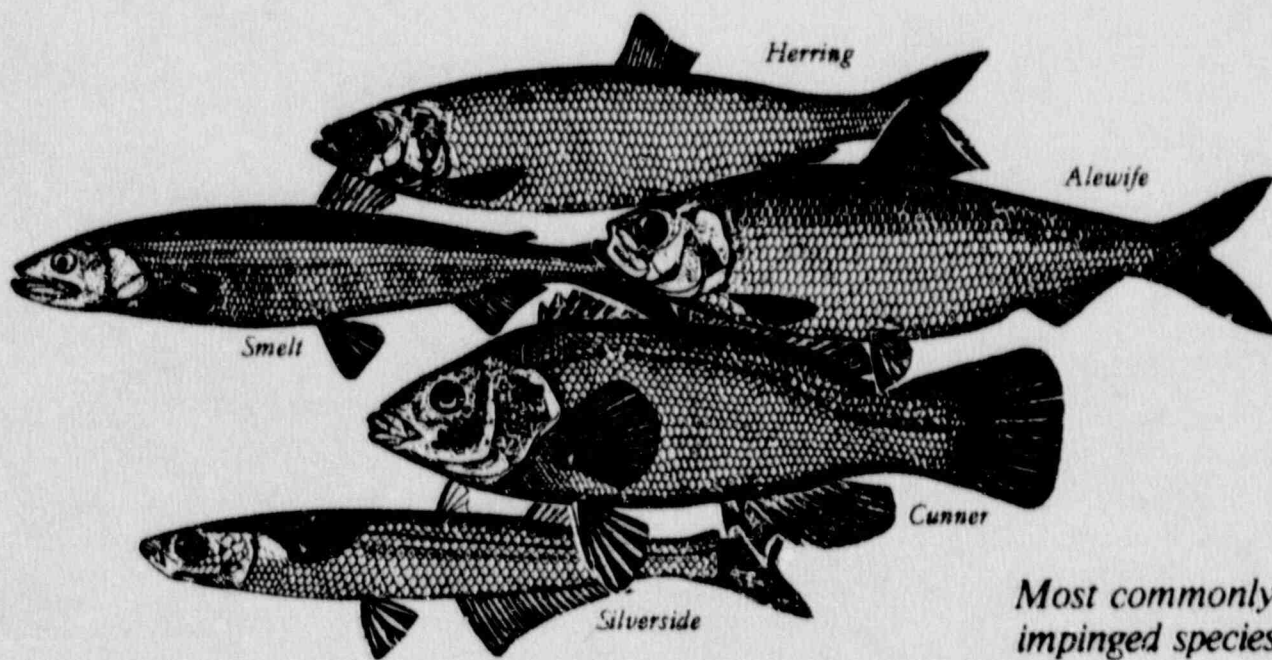
Robert D. Anderson

Senior Marine Fisheries

Biologist

Regulatory Affairs Department
Licensing Division
Boston Edison Company

October 1990



*Most commonly
impinged species*

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SECTION I

SUMMARY

Fish impingement averaged 0.52 fish/hour during the period January-June 1990. Atlantic silverside (Menidia menidia), grubby (Myoxocephalus aeneus), Atlantic herring (Clupea harengus harengus) and winter flounder (Pseudopleuronectes americanus) accounted for 78.0% of the fishes collected. Initial impingement survival for all fishes from static screen wash collections was approximately 26% and from continuous screen washes 5%.

The collection rate (no./hr.) for all invertebrates captured from January-June 1990 was 0.58. Sevenspine bay shrimp (Crangon septemspinosus) and longfin squid (Loligo pealeii) accounted for 60.5% of the invertebrates impinged. Mixed species of algae collected on intake screens amounted to 1,587 pounds.

The relatively high fish impingement rates from January-June 1989 (0.55) and 1990 (0.52), compared to the same period in 1988, reflected circulating water pumps operating during these entire periods. The relatively low invertebrate impingement was not as reflective of increased intake flow.

The Pilgrim Nuclear Power Station capacity factor was 67% from January - June 1990.

SECTION 2
INTRODUCTION

Pilgrim Nuclear Power Station (lat. 41°56' N, long. 70°34' W) is located on the northwestern shore of Cape Cod Bay (Figure 1) with a licensed capacity of 655 MWe. The unit has two circulating water pumps with a capacity of approximately 345 cfs each and five service water pumps with a combined capacity of 23 cfs. Water is drawn under a skimmer wall, through vertical bar racks spaced approximately 3 inches on center, and finally through vertical travelling water screens of 3/8 inch wire mesh (Figure 2). There are two travelling water screens for each circulating water pump.

This document is a report pursuant to operational environmental monitoring and reporting requirements of NPDES Permit No. 0003557 (EPA) and No. 359 (Mass. DWPC) for Pilgrim Nuclear Power Station, Unit I. The report describes impingement of organisms carried onto the vertical travelling water screens at Unit I. It presents analysis of the relationships between impingement, environmental factors, and plant operational variables.

The report is based on data collected from screen wash samples during January-June 1990.

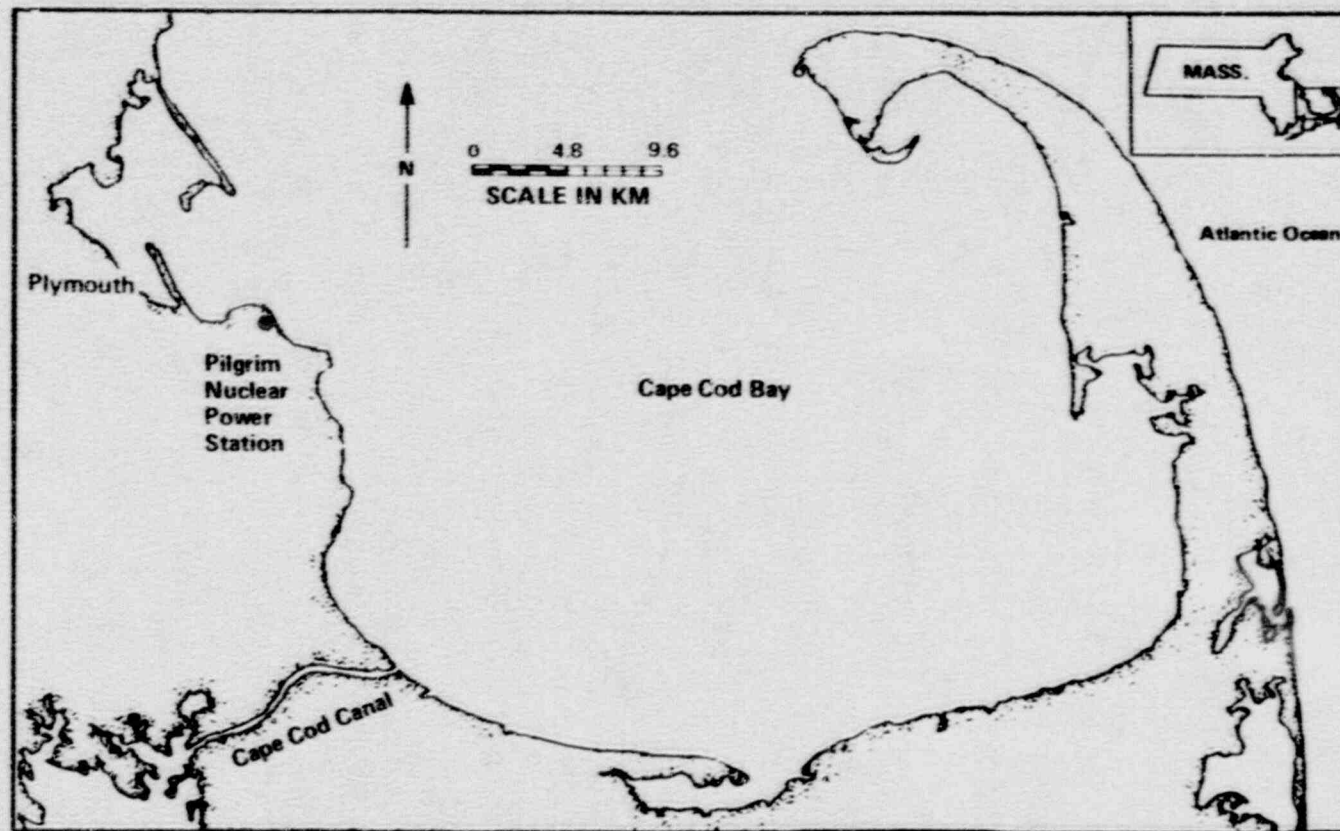


Figure 1. Location of Pilgrim Nuclear Power Station.

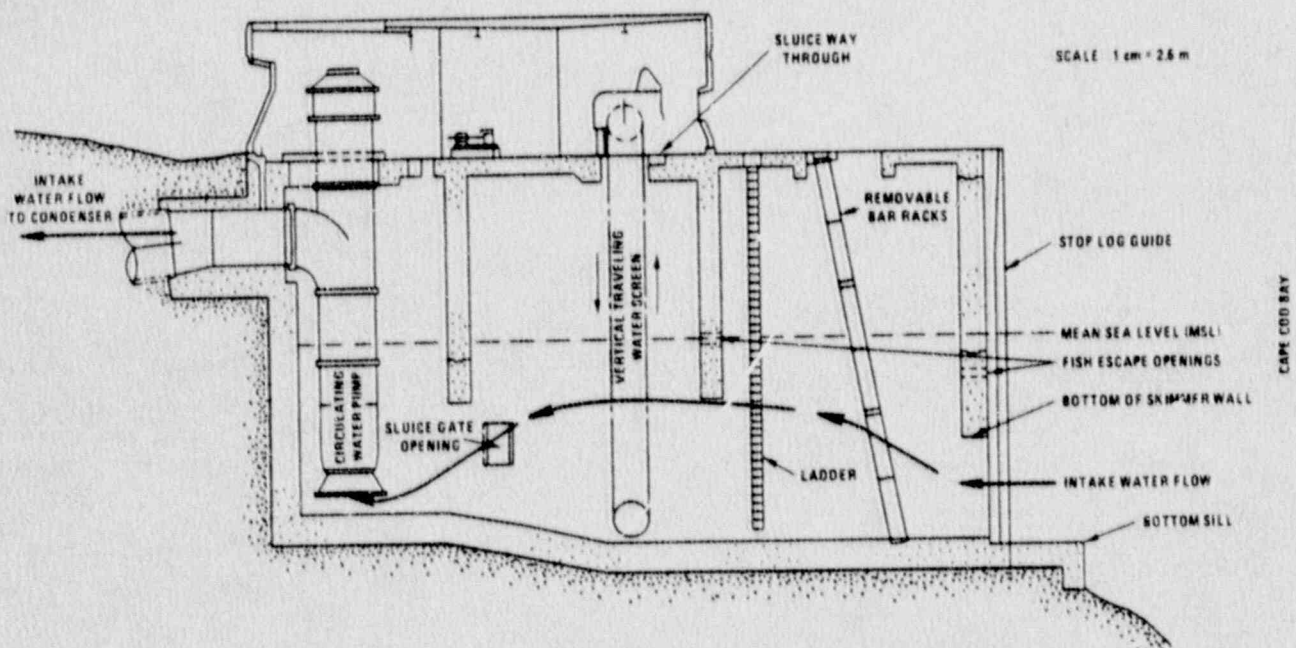


Figure 2: Cross-section of intake structure of Pilgrim Nuclear Power Station.

SECTION 3
METHODS AND MATERIALS

Three screen washings each week were performed from January-June 1990 to provide data for evaluating the magnitude of marine biota impingement and associated survival. The total weekly collection time was 24 hours (three separate 8-hour periods: morning, afternoon and night). Two collections represented dark period sampling and one represented light period sampling. At the beginning of each collection period, all four travelling screens were washed. Eight hours later, the screens were again washed (minimum of 30 minutes each) and all organisms collected. When screens were being washed continuously, one hour collections were made at the end of the regular sampling periods, and they represented two light periods and one dark period on a weekly basis.

Water nozzles directed at the screens washed impinged organisms and debris into a sluiceway that flowed into a trap. The original trap is made of galvanized screen (3/8-inch mesh) attached to a removable steel frame and collected impinged biota, in the screenhouse, shortly after being washed off the screens. A second trap was designed and used for sampling, in conjunction with sluiceway survival studies, consisting of a section of half 18" corrugated metal pipe with 3/16-inch nylon, delta mesh netting attached. Impinged biota sampled by this trap were collected at the end of a 300' sluiceway where initial, one-hour and latent (56-hour) fish survival were determined for static (8-hour) and continuous screenwash cycles.

Variables recorded for organisms were total numbers, and individual total lengths (mm) and weights (gms) for up to 20 specimens of each species. A random sample of 20 fish or invertebrates was taken whenever the total number for a species exceeded 20; if the total collection for a species was less than 20, all were measured and weighed. Field work was conducted by Marine Research, Inc.

Intake seawater temperature, power level output, tidal stage, number of circulating water pumps in operation, time of day and date were recorded at time of collections. The collection rate (#/hour) was calculated as number of organisms impinged per collecting period divided by the total number of hours in that collecting period. All common and scientific names in this report follow the American Fisheries Society (1980) and Smith (1964).

SECTION 4
RESULTS AND DISCUSSION

4.1 Fishes

In 441 collection hours, 231 fishes of twenty species (Table 1) were collected from Pilgrim Nuclear Power Station intake screens during January-June 1990. The collection rate was 0.52 fish/hour. Atlantic silverside (Menidia menidia) was the most abundant species accounting for 55.8% of all fishes collected (Table 2). Winter flounder (Pseudopleuronectes americanus), Atlantic herring (Clupea harengus harengus) and grubby (Myoxocephalus aeneus) accounted for 8.2, 7.8 and 6.1% of the total number of fishes collected. Atlantic silverside were impinged in highest numbers during February and March. These were primarily adult fish that averaged 102 mm total length. Winter flounder were mostly impinged in January, Atlantic herring in May and grubby during January. The January-June 1990 fish impingement rate was comparable to the same period in 1989 (0.55). This increase for the past two years from the 1988 rate (0.30) is possibly attributable to greater circulating water pump operating capacity in 1989 and 1990.

4.2 Invertebrates

In 441 collection hours, 256 invertebrates of 16 species (Table 3) were collected from Pilgrim Station intake screens between January-June 1990. The collection rate was 0.58 invertebrates/hour. Sevenspine bay shrimp (Crangon septemspinosus) and longfin squid (Loligo pealeii), accounted for 50.0 and 10.5%, respectively, of the total number of invertebrates collected.

Table 1. Monthly Impingement For All Fishes Collected From Pilgrim
Station Intake Screens, January-June 1990

Species	Jan.	Feb.	March	April	May	June	Totals
Atlantic silverside	33	45	45	5	1		129
Winter flounder	6	4	5	3	1		19
Atlantic herring				2	16		18
Grubby	4	3	3	1	3		14
Rainbow smelt	4	1	5	1			11
Atlantic tomcod	4		1		2	2	9
Windowpane	1			3	1		5
Cunner					4		4
Alewife			1	2			3
Rock gunnel			1	2			3
Seasnail		3					3
Threespine stickleback		2	1				3
Butterfish						2	2
Lumpfish		1	1				2
Atlantic menhaden					1		1
Northern pipefish			1				1
Pollock						1	1
Shorthorn sculpin		1					1
Smallmouth flounder			1				1
Tautog			1				1
TOTALS	52	60	66	18	29	5	231
Collection Time (hrs.)	85	54	149	40	61	52	441
Collection Rate (#/hr.)	0.61	1.11	0.44	0.45	0.48	0.10	0.52

Table 2. Species, Number, Total Length(mm), Weight(gms) and Percentage For All Fishes Collected From Pilgrim Station Impingement Sampling, January-December 1990

Species	Number	Length Range	Mean Length	Weight Range	Mean Weight	Percent of Total Fish
Atlantic silverside	129	47-145	102	0.3-14	5	55.8
Winter flounder	19	55-323	145	2-190	42	8.2
Atlantic herring	18	36-156	58	0.1-24	3	7.8
Grubby	14	53-140	78	2-35	8	6.1
Rainbow smelt	11	47-207	111	0.4-56	12	4.8
Atlantic tomcod	9	62-225	156	2-90	38	3.9
Windowpane	5	42-296	112	1-294	62	2.2
Cunner	4	70-148	114	4-63	28	1.7
Alewife	3	61-253	132	2-151	52	1.3
Rock gunnel	3	151-168	160	9-15	12	1.3
Seasnail	3	64-70	67	2-5	4	1.3
Threespine stickleback	3	56-72	63	2-4	3	1.3
Butterfish	2	62-63	63	3	3	0.9
Lumpfish	2	44-61	53	3-10	7	0.9
Atlantic menhaden	1	283	283	278	278	0.4
Northern pipefish	1	197	197	2	2	0.4
Pollock	1	90	90	6	6	0.4
Shorthorn sculpin	1	244	244	286	286	0.4
Smallmouth flounder	1	55	55	1	1	0.4
Tautog	1	108	108	18	18	0.4

Table 3. Monthly Impingement For All Invertebrates Collected From
Pilgrim Station Intake Screens, January-June 1990

Species	Jan.	Feb.	March	April	May	June	Totals
Sevenspine bay shrimp	89	19	15	5			128
Longfin squid					5	22	27
Horseshoe crab					8	13	21
American lobster					12	4	16
Rock crab	7		6		2	1	16
Blue mussel	8		1	1	2		12
Green seaurchin			1	2	4		7
Nemertea	4	3					7
Common starfish	1		2	1	2		6
Nereis sp.		1	4				5
Green crab		2		1	1		4
Gammarid shrimp			2				2
Hyas coartatus	1		1				2
Isopoda					1		1
Lady crab	1						1
Longwrist hermit	1						1
TOTALS	112	25	32	10	37	40	256
Collection Time (hrs.)	85	54	149	40	61	52	441
Collection Rate (#/hr.)	1.32	0.46	0.21	0.25	0.61	0.77	0.58

The collections of sevenspine bay shrimp occurred primarily in January, and longfin squid during June. In 1989 from January - June, blue mussels and mussel predators dominated possibly due to the lack of effective macrofouling controls then. Sixteen specimens of the commercially important American lobster (Homarus americanus) were captured which is high compared with previous years.

Approximately 1,587 pounds of mixed algae species were recorded during impingement sampling, or 3.6 pounds/hour. Like the January-June 1989 and 1990 fish impingement rates, the algal impingement rate for these years was notably higher than recorded for the same period in 1988.

4.3 Fish Survival

Fish survival data collected while impingement monitoring was conducted are shown in Table 4. Static screen wash collections provided much higher numbers of fishes and revealed higher initial impingement survival rates for most species. Continuous screen wash collections had low initial survival rates, although so few fishes were sampled that this is not a good indicator of continuous wash survival. After 1-hour and 56-hour holding periods data were limited because of survival pump freezing problems in the winter, or fishes being lost, or collected in the screenhouse where no survival facilities are located.

Table 4. Survival Summary for the Fishes Collected During Pilgrim Station Impingement Sampling, January-June 1990. Initial, One-Hour and Latent (56-Hour) Survival Numbers Are Shown Under Static (8-Hour) and Continuous Wash Cycles.

Species	Number Collected		Number Surviving						Total Length (mm)	
	Static Washes	Cont. Washes	Initial		1-Hour*		56-Hour *		Mean	Range
			Static	Cont.	Static	Cont.	Static	Cont.		
Atlantic silverside	119	10	21	0	-	0	-	0	102	47-145
Winter flounder	10	9	8	0	-	0	-	0	145	55-323
Atlantic herring	18	0	4	-	-	-	-	-	58	36-156
Grubby	14	0	6	-	-	-	-	-	78	53-140
Rainbow smelt	11	0	0	-	0	-	0	-	111	47-207
Atlantic tomcod	9	0	3	-	-	-	-	-	156	62-225
Windowpane	5	0	3	-	-	-	-	-	112	42-296
Cunner	4	0	3	-	-	-	-	-	114	70-148
Alewife	3	0	1	-	-	-	-	-	132	61-253
Rock gunnel	3	0	2	-	-	-	-	-	160	151-168
Seasnail	2	1	1	1	-	-	-	-	67	64-70
Threespine stickleback	2	1	0	0	0	0	0	0	63	56-72
Butterfish	2	0	0	-	0	-	0	-	63	62-63
Lumpfish	2	0	1	-	-	-	-	-	53	44-61
Atlantic menhaden	1	0	1	-	-	-	-	-	283	283
Northern pipefish	1	0	0	-	0	-	0	-	197	197
Pollock	1	0	0	-	0	-	0	-	90	90
Shorthorn sculpin	1	0	1	-	-	-	-	-	244	244
Smallmouth flounder	1	0	0	-	0	-	0	-	55	55
Tautog	1	0	0	-	0	-	0	-	108	108
All Species:										
Number	210	21	55	1	0	0	0	0		
(% Surviving)			(26.2)	(4.8)	(0.0)	(0.0)	(0.0)	(0.0)		

* Limited data for some species because survival pool was frozen, or fishes were lost or sampled in the greenhouse.

SECTION 5

CONCLUSIONS

1. The average Pilgrim collection rate for the period January-June 1990 was 0.52 fish/hour. The collection rate was comparatively lower in 1988, than in 1989 and 1990, possibly due to more circulating water pump capacity during the latter years.
2. Twenty species of fish were recorded in 441 impingement collection hours.
3. The major species collected and their relative percentages of the total collections were Atlantic silverside, 55.8%; winter flounder, 8.2%; Atlantic herring, 7.8%; and grubby, 6.1%.
4. The hourly collection rate for invertebrates was 0.58 with severspine bay shrimp 50.0% and longfin squid 10.5% of the catch. Sixteen American lobsters were caught. Impingement rates for invertebrates were higher and algae lower for this period in 1988 than in 1989 and 1990.
5. Initial impinged fish survival was relatively high for species during static screen washes, compared to continuous washes.

SECTION 6

LITERATURE CITED

American Fisheries Society. 1980. A list of Common and Scientific Names of Fishes From the United States and Canada. Spec. Pub. No. 12: 174 pp.

Smith, R. I. (Ed.). 1964. Keyes to Marine Invertebrates of the Woods Hole Region. Marine Biological Laboratory. Woods Hole, Massachusetts



PHILIP G. COATES
DIRECTOR

The Commonwealth of Massachusetts

Division of Marine Fisheries

18 Route 6A

Sandwich, Massachusetts 02563

888-1155

MEMORANDUM

TO: Members of the Administrative-Technical Committee,
Pilgrim Power Plant Investigations

FROM: Brian Kelly, Recording Secretary, Massachusetts
Division of Marine Fisheries

SUBJECT: Final Draft: Minutes of the 73rd meeting of the Pilgrim
Administrative-Technical Committee

DATE: August 1, 1990

The 73rd meeting of the Pilgrim Administrative-Technical (A-T) Committee was called to order by Acting Chairman Miller (EPA) on June 12, 1990 at 10:06 a.m. at the Richard Cronin Building, Massachusetts Division Fisheries and Wildlife Field Headquarters, Westboro, Massachusetts. Nine agenda items were addressed.

I. Minutes of the 72nd meeting

There were no comments on the minutes of the previous A-T meeting. Dr. Judith Pederson has replaced Nancy Maciolek as the Coastal Zone Management (CZM) A-T representative. New member Dr. Bruce Higgins gave the committee an overview of his professional fisheries experience with offshore oil and gas development and fisheries management.

II. Pilgrim Station 1989/90 operational review

Bob Anderson reviewed recent Pilgrim operational history, beginning with Nuclear Regulatory Commission permission to resume power generation in December 1988. By March 1989, Pilgrim was at 25% power, increased to 50% by August, and attained 100% for a brief period in mid-October before undergoing a planned one month outage. Since then, the plant has run at near 100% capacity for the majority of time. The 1989 year can thus be viewed as transitional in regards to operational status. Boston Edison (BECO) anticipates high operational years for Pilgrim in 1990/1991.

Jim Blake inquired regarding the number of circulating sea water (CSW) pumps operating during 1989. Bob explained that if a CSW pump is on for more than 15 days in a particular month, it is considered operational for the month in environmental analysis.

Bob mentioned that BECo will not likely consider increasing Pilgrim's maximum power generating capacity by 10% (60-70 MW_e) in the near future. There is no definitive timetable for this request. With an allowed T of 32°F above an ambient 70°F Intake temperature, Pilgrim has a maximum allowable discharge temperature by EPA permit of 102°F. In reality, discharge temperatures typically do not exceed the mid-90s in the warmer months. With a 10% increase in power generation, more cooling water would be needed with some concomitant change in the thermal plume to maintain current temperature limits.

III. Impingement/overflight monitoring results for 1989

Impingement sampling at the intake embayment followed the same schedule of previous years. In 1989, the first year since early 1986 of relatively consistent two pump operation, the impingement rate was 0.8 fish/hour for an extrapolated annual total of approximately 7,000 fish impinged. This was lower than the impingement average for 1973-89 of 17,000 fish/year. The rates for 1987 and 1988 were very low due to shutdown at times of both CSW pumps. In 1990/1991, with both CSW pumps in operation, impingement rates should increase. In the report, it is the initial survival of impinged fish that is stated. Latent survival (56 hours) studies of impinged fish in the holding pool have not been possible for some time; Mike Scherer explained that pump maintenance problems have curtailed the water supply to the holding pool. After some discussion, the Committee asked Ted Landry of EPA to officially inquire of BECo as to the repair status of intake sample pumps located by the intake wall and to express concern that latent impingement mortality presently cannot be measured. BECo should be allowed one month to rectify these pump deficiencies.

Don asked if the Fisheries subcommittee has investigated the sampling design of the impingement study to see whether the right questions are being asked, since Pilgrim may increase its capacity by 10% in the near future. Carolyn noted that with Mike now on that subcommittee, they will look closer at entrainment and impingement.

Bob Anderson mentioned that the overflight pilot sighted three large fish schools within one mile of Pilgrim Station in 1989, but regulators were not notified as the plant was operating at less than 50% thermal capacity at those times, hence the fish were at minimal risk to gas bubble disease.

IV. Marine Fisheries Monitoring Results for 1989

Bob Lawton stated that DMF is considering changing to a species approach in reporting its study results and would appreciate comments from the Fisheries subcommittee at their

meeting in July.

Brian Kelly noted that the DMF commercial lobster monitoring near PNPS showed a slight increase in the area-wide legal catch rate (CTH - catch per trap haul). The CTH increased in both the reference (36%) and impact (20%) quadrats.

Brian mentioned that 1989 was the fourth year of the research lobster study, and that the legal catch rate (CTHSOD - catch per trap haul per set-over day), weighted by soak time, increased slightly. The long-term outage (1986-1988) at Pilgrim provided a three year baseline period of no heat but some current, while 1989 was a transitional year relative to thermal output. Data analyses follow a design suggested by Thomas and van Voris (1978) for impact studies of a single site (treatment) compared with two control sites. The baseline period was used to establish the relationship (ratio) of the CTHSOD in the impact site versus the average of the two control sites. Size frequency differences of legal lobster will be compared between sites. With this study, DMF can control several variables (bait type and trap design, trap soak-time, and trap placement) which often confound data interpretation from studies of actual commercial lobsterman catches.

Vin Malkoski talked about DMF's cunner tagging initiative. Gillnet catches of cunner at the Pilgrim discharge area have declined since 1981. Cunner populations are typically very discrete, and hence may be especially susceptible to local environmental perturbations (overfishing or thermal impact). DMF is considering investigating the cunner in the discharge area in more detail. Potential cunner attraction to the discharge current is one facet that could be explored via tagging. Vin presented slides of DMF's preliminary cunner tagging operation.

Bob Lawton mentioned that the DMF final report on the Jones River Smelt Study is complete and the comments of reviewers have been incorporated. Bob presented a slide show highlighting the smelt sampling activities involved, and briefly described the evolution of the study. Smelt eggs, larvae, and adults were each focused upon in the study. Bob Anderson added that the smelt final report is the fourth in a series of Pilgrim Station Special Reports.

V. Marine Fish and Benthic Subcommittees, Membership and Schedules for 1990

Regarding the Fisheries subcommittee, Ted Landry suggested filling the EPA slot vacated by Mike Bilger with John Paar of the Lexington laboratory. Ted will send a letter to Chairman Szal notifying him that Paar will serve on the Committee. Fisheries subcommittee chairperson, Jack Finn, will contact Paar once Chairman Szal receives Ted's letter. Bob Maietta will talk with Steve Halterman to determine which one of them will be the DWPC representative. Fisheries subcommittee membership follows: 1. Jack Finn, Chairman, U Mass; 2. Bob Anderson, BECo; 3. John Paar, EPA; 4. Carolyn Griswold, NMFS; 5. Bruce Higgins, NMFS; 6. Steve Halterman, DWPC; 7. Mike Scherer, MRI (non-voting); and 8. Bob

Lawton, DMF (non-voting). Don Miller sees no problem with DMF being on the subcommittee if the membership is 'full' and it has fisheries expertise, which it will have with the addition of Paar and Higgins. Don cautioned about expanding the subcommittees as it intrinsically creates more work for those involved, and he recommended that the subcommittees invite the necessary contractors to meetings rather than formalizing the contractors as committee members. The Fisheries subcommittee will meet at 10 AM on Wednesday, July 18 at Pilgrim's I&S building.

The Benthic subcommittee needs a regulatory EPA representative with benthic experience; Chairman Miller is from the non-regulatory EPA Narragansett Lab. Ted Landry will talk to Lexington's Peter Nolan concerning a qualified candidate who can make the time commitment to serve on the subcommittee. Judith Pederson will replace Nancy Maciolek as the Coastal Zone Management representative. The Benthic subcommittee will meet at 10 AM on Tuesday, July 31 at the EPA Narragansett Lab. Bob Anderson reminded Committee members that he needs to submit budget requests by the first week of August in order to begin next year's monetary planning.

VI. Benthic Monitoring Results - 1989

Jim Blake described the extent of the Chondrus delineated denuded-stunted-normal zones off the plant discharge in 1989. These zones have been defined for years on the observations of Battelle diver, John Williams, who will be relocating to Vermont. Jim described SAIC efforts to keep diving observations consistent by sending two seasoned WHOI divers along with John on his last Pilgrim observational dive and to have divers bring algal samples back to the lab to archive. Jim briefly reviewed Battelle's 1989 Pilgrim report, stating that future data analyses by SAIC should concentrate more on long-term trends of dominant species (e.g., blue mussel) than on species diversity measures. SAIC will contract out one-half of its Pilgrim taxonomic work. Don mentioned Battelle's claim of being underfunded to do the annual Pilgrim benthic data analyses, and requested that Jim have the SAIC budget ready for the July Benthic subcommittee meeting. Jim has budgeted for a WHOI post-doctoral ecologist to assist in biological number crunching and data interpretation.

VII. Update on Benthic Monitoring Retrospective Analysis

Don Miller noted that of the two bid responses, the Benthic subcommittee chose that of Dr. Whitlatch (U Conn). Last week, the new contractor received the benthic database and Pilgrim annual reports; no purchase order had been sent yet. The Benthic subcommittee proposed for full Committee approval a conference in 1991 which will examine the quantitative benthic program and make recommendations for the future of the program. Don envisions a panel of from six to nine ecologists/statisticians who will investigate whether or not it is worth continuing to collect these

biological data. Bob Anderson will discuss a conference budget to incorporate into his 1991 fiscal plan with the subcommittee in their July meeting.

VIII. Entrainment Monitoring Results - 1989

Mike Scherer explained that MRI's entrainment sampling scheme remained the same as in previous years. Forty species were entrained in 1989. Data highlights included the paucity of cod eggs from January through March for the second year in a row, the abundance of fourbeard rockling, hake and mackerel eggs in May and June, and the low number of larval winter flounder observed in May. Data from 1989 follow the previously noted pattern of egg entrainment being relatively independent of circulating seawater pump operation. Entrained eggs are assumed to have zero survival; previous limited studies demonstrated a 45% survival for entrained labrid eggs, however.

IX. Other Business

Bob Anderson mentioned that BECo is considering dredging the Pilgrim Intake, but the permitting process will take about 12 months.

Judy Pederson noted that the Massachusetts Bays Program has been officially recognized by the Federal government, and should receive one million dollars/year for the next five years. During the last two years, \$1.2 million has been spent on physical oceanographic studies (hydrographic cruises and pollutant transport) and socioeconomic issues.

Bob Maietta expressed concern that with both the proposed Rocky Point sewage outfall and Pilgrim's potential 10% power increase impacting the same area, it would be difficult to differentiate cause of environmental changes/biological alterations. He will get an update on the Plymouth sewage outfall planned for Rocky Point before the September Committee meeting.

X. Adjournment

The meeting adjourned at 2:55 PM.

Pilgrim Administrative-Technical Committee Meeting Attendance

June 12, 1990

Donald C. Miller, Acting Chairman	EPA, Narragansett
Judith Pederson	Mass. CZM, Boston
Carolyn Griswold	NMFS, Narragansett
Jack Finn	U Mass, Amherst
Ted Landry	EPA, Boston
Robert Anderson	BEC0, Braintree
Bruce Higgins	NMFS, Woods Hole
Robert Maietta	Mass. DWPC, Westboro
Michael Scherer	MRI, Falmouth (guest)
James Blake	SAIC, Woods Hole (guest)
Robert Lawton	Mass. DMF, Sandwich
Vincent Malkoski	Mass. DMF, Sandwich (guest)
Brian Kelly	Mass. DMF, Sandwich (recording secretary)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

J.F. KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203-2211

September 19, 1990

E. J. Wagner
Vice President, Nuclear Engineering
Boston Edison
25 Braintree Hill Office Park
Braintree, Massachusetts 02184

Re: NPDES Permit MA0003557
Boston Edison, Pilgrim Station

Dear Mr. Wagner:

Your submittal on December 20, 1989, of the proposed 1990 Environmental Monitoring Programs and Plans has been received by this office.

Since the Pilgrim Administrative Technical Committee in formal session has accepted the submitted plan and after further review by this office, the proposed plan is approved as presented. The approved monitoring plan is incorporated into the referenced NPDES Permit in accordance with Paragraph I.A.7.d and becomes an enforceable element in that permit.

Should you have any questions, please contact T. E. Landry of this office at 617-565-3508.

Sincerely,

Edward K. McSweeney
Edward K. McSweeney, Chief
Wastewater Management Branch

cc: MA DEP/DWPC, Attn: Glenn Gilmore

