

APR 24 1979

Docket Nos. 50-245
and 50-336

Mr. W. G. Council, Vice President
Nuclear Engineering and Operations
Northeast Nuclear Energy Company
Post Office Box 270
Hartford, Connecticut 06101

Dear Mr. Council:

The Commission has issued the enclosed Amendment No. 60 to Provisional Operating License No. DPR-21 and Amendment No. 51 to Facility Operating License No. DPR-65 for the Millstone Nuclear Power Station, Unit Nos. 1 and 2. The amendments are in response to your application dated March 21, 1978.

These amendments consist of changes to the (Common) Appendix B Environmental Technical Specifications (ETS) for both units. These changes will provide more flexibility in the sampling schedules and sample collection for aquatic monitoring and reflect improved techniques and modified program objectives. However, you are expected to make your best effort to obtain samples on the scheduled time. If samples cannot be obtained on the scheduled date, they should be collected at the first practical opportunity and the basis for the delays shall be recorded. This understanding applies to the following samples: 3.1.2.1.1, Exposure Panels; 3.1.2.1.4, Tissue and Seawater Metal Analysis; 3.1.2.1.6, Gill Netting; 3.1.2.1.7, Trawling; and 3.1.2.1.9, Entrainment Studies.

Also, note that our additions to ETS 3.1.2.1.3, 3.1.2.1.6, and 3.1.2.1.7 have been discussed with and agreed to by your representatives.

Since these amendments apply only to environmental sampling schedules and sample collection, these amendments do not involve significant new safety information of a type not considered by a previous Commission safety review of the facilities. They do not involve a significant increase in the probability or consequences of an accident, do not involve a significant decrease in a safety margin, and therefore, do not involve a significant hazards consideration. We have also concluded that there is reasonable

1905290607

CP 1
60

OFFICE >

SURNAME >

DATE >

APR 24 1979

assurance that the health and safety of the public will not be endangered by these actions and such actions will not be inimical to the common defense and security or to the health and safety of the public.

A copy of our related Environmental Impact Appraisal and the combined Notice of Issuance and Negative Declaration are also enclosed.

Sincerely,

Original Signed by:
Dennis L. Ziemann

Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Division of Operating Reactors

Enclosures:

- 1. Amendment No. 60 to DPR-21
- 2. Amendment No. 51 to DPR-65
- 3. Environmental Impact Appraisal
- 4. Notice of Issuance and Negative Declaration

DISTRIBUTION:
Docket 50-245
and 50-336

NRC PDR	OI&E(5)	Glear
Local PDR	BJones(8)	DDavis
ORB#2 RDG	BScharf(15)	TERA
NRR RDG	DBrinkman	JRBuchanan
VStello	AESteen	
DEisenhut	BHarless	
BGrimes	RIngram	
RVollmer	MConner	
TJCarter	RReid	
WRussell	ACRS(16)	
HSmith	OPA(CMiles)	
JShea	RDiggs	
OELD	HRDenton	

cc w/enclosures:
See next page

DOR:ORB#2	DOR:ORB#2
HSmith:sah	JJShea
8/ /79	4/ /79

OFFICE →	DOR:ORB#4	DOR:ORB#4	DOR:ORB#4	OELD	DOR:ORB#2	DOR:AD/S&P
SURNAME →	RIngram	MConner	RReid		DLZiemann	RVollmer
DATE →	4/ /79	4/ /79	4/ /79	4/ /79	4/ /79	4/ /79



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

April 24, 1979

Docket Nos. 50-245
and 50-336

Mr. W. G. Council, Vice President
Nuclear Engineering and Operations
Northeast Nuclear Energy Company
Post Office Box 270
Hartford, Connecticut 06101

Dear Mr. Council:

The Commission has issued the enclosed Amendment No. 60 to Provisional Operating License No. DPR-21 and Amendment No. 51 to Facility Operating License No. DPR-65 for the Millstone Nuclear Power Station, Unit Nos. 1 and 2. The amendments are in response to your application dated March 21, 1978.

These amendments consist of changes to the (Common) Appendix B Environmental Technical Specifications (ETS) for both units. These changes will provide more flexibility in the sampling schedules and sample collection for aquatic monitoring and reflect improved techniques and modified program objectives. However, you are expected to make your best effort to obtain samples on the scheduled time. If samples cannot be obtained on the scheduled date, they should be collected at the first practical opportunity and the basis for the delays shall be recorded. This understanding applies to the following samples: 3.1.2.1.1, Exposure Panels; 3.1.2.1.4, Tissue and Seawater Metal Analysis; 3.1.2.1.6, Gill Netting; 3.1.2.1.7, Trawling; and 3.1.2.1.9, Entrainment Studies.

Also, note that our additions to ETS 3.1.2.1.3, 3.1.2.1.6, and 3.1.2.1.7 have been discussed with and agreed to by your representatives.

Since these amendments apply only to environmental sampling schedules and sample collection, these amendments do not involve significant new safety information of a type not considered by a previous Commission safety review of the facilities. They do not involve a significant increase in the probability or consequences of an accident, do not involve a significant decrease in a safety margin, and therefore, do not involve a significant hazards consideration. We have also concluded that there is reasonable

Mr. W. G. Council

- 2 -

April 24, 1979

assurance that the health and safety of the public will not be endangered by these actions and such actions will not be inimical to the common defense and security or to the health and safety of the public.

A copy of our related Environmental Impact Appraisal and the combined Notice of Issuance and Negative Declaration are also enclosed.

Sincerely,



Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Division of Operating Reactors

Enclosures:

1. Amendment No. 60 to DPR-21
2. Amendment No. 51 to DPR-65
3. Environmental Impact Appraisal
4. Notice of Issuance and Negative Declaration

cc w/enclosures:
See next page

April 24, 1979

cc

William H. Cuddy, Esquire
Day, Berry & Howard
Counselors at Law
One Constitution Plaza
Hartford, Connecticut 06103

Anthony Z. Roisman
Natural Resources Defense Council
917 15th Street, N. W.
Washington, D. C. 20005

Northeast Nuclear Energy Company
ATTN: Superintendent
Millstone Plant
P. O. Box 128
Waterford, Connecticut 06385

Mr. James R. Himmelwright
Northeast Utilities Service Company
P. O. Box 270
Hartford, Connecticut 06101

Nuclear Regulatory Commission, Region I
Office of Inspection and Enforcement
ATTN: John T. Shedlosky
631 Park Avenue
King of Prussia, Pennsylvania 19406

Waterford Public Library
Rope Ferry Road, Route 156
Waterford, Connecticut 06385

First Selectman of the Town
of Waterford
Hall of Records
200 Boston Post Road
Waterford, Connecticut 06385

* Connecticut Energy Agency
ATTN: Assistant Director
Research and Policy
Development

Department of Planning and
Energy Policy
20 Grand Street
Hartford, Connecticut 06106

Director, Technical Assessment
Division
Office of Radiation Programs
(AW-459)
U. S. Environmental Protection
Agency
Crystal Mall #2
Arlington, Virginia 20460

U. S. Environmental Protection
Agency
Region I Office
ATTN: EIS COORDINATOR
JFK Federal Building
Boston, Massachusetts 02203

*(w/cpy of incoming dated March 21, 1978)



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20565

CONNECTICUT LIGHT AND POWER COMPANY
THE HARTFORD ELECTRIC LIGHT COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

DOCKET NO. 50-245

MILLSTONE NUCLEAR POWER STATION UNIT NO. 1

AMENDMENT TO PROVISIONAL OPERATING LICENSE

Amendment No. 60
License No. DPR-21

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Connecticut Light and Power Company, The Hartford Electric Light Company, Western Massachusetts Electric Company, and Northeast Nuclear Energy Company (the licensees) dated March 21, 1978, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

7905290012

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Provisional Operating License No. DPR-21 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 60, are hereby incorporated in the license. The licensees shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 24, 1979



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

CONNECTICUT LIGHT AND POWER COMPANY
THE HARTFORD ELECTRIC LIGHT COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

DOCKET NO. 50-336

MILLSTONE NUCLEAR POWER STATION UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 51
License No. DPR-65

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by the Connecticut Light and Power Company, The Hartford Electric Light Company, Western Massachusetts Electric Company, and Northeast Nuclear Energy Company (the licensees), dated March 21, 1978, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

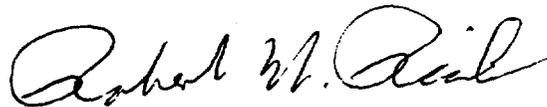
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-65 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 51, are hereby incorporated in the license. The licensees shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 24, 1979

ATTACHMENT TO LICENSE AMENDMENT NO. 60 TO
PROVISIONAL OPERATING LICENSE NO. DPR-21 AND
AMENDMENT NO. 51 TO FACILITY OPERATING LICENSE NO. DPR-65
DOCKET NOS. 50-245 AND 50-336

Replace the following pages of the Appendix "B" Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change.

<u>REMOVE</u>	<u>INSERT</u>
3.1-5	3.1-5
3.1-7	3.1-7
3.1-8	3.1-8
3.1-9	3.1-9
3.1-10	3.1-10
3.1-11	3.1-11
3.1-12	3.1-12
3.1-16	3.1-16

3.1.2 Biota

3.1.2.1 Aquatic

3.1.2.1.1 Exposure Panels

Objective

The objective of this study is to examine relative abundances of the various species of boring and fouling organisms and their successional patterns in relation to station operation.

Specification

A series of wood/transite panels will be exposed at six sites - White Point, Fox Island (north), Millstone Harbor, Unit 1 water intake, Millstone Quarry and Giant's Neck (Fig. 3.1-1). The panels shall be installed immediately below the low-tide level. Each month, two panels will be removed, one of which has been exposed for 12 months or the longest time if no panels have been exposed for a 12 month period. Deviations from this sampling schedule are permitted when panels or entire racks are lost due to storms, vandalism or deterioration caused by fouling organisms. Every effort will be made to position and maintain the racks such that these losses of data are minimized.

Panels will be kept damp until subsequent examination in the laboratory. A subjective determination of the percent of the panel covered by a given species is made (\pm 5 percent). Where possible, a detailed enumeration of all macroscopic biota is made.

Reporting Requirements

Reports shall be issued on a routine basis as described in Section 5.6.1. When gross changes in population species composition or abundance are evident, a non-routine report shall be submitted to NRC in accordance with Section 5.6.2.a.(2). Such a change is one that is beyond normal seasonal fluctuation. For example, among the green algae, Ulva lactuca has been observed on most of the panels as a fouling organism. Sudden disappearance of this form may indicate a change in species dominance and a need for further investigations. Similarly, among the Cnidaria, Sertularia pumila is clearly dominant. Sudden disappearance of this organism might indicate ecological perturbations in the area. Other typical dominant organisms include ectoprocts such as Cryptosula pallasiana and molluscs such as Mytilus edulis.

Bases

The bases for this program element is that boring and fouling organisms are good indicator species because they are sessile and cannot move to avoid stress areas. Literature exists on the environmental requirements of certain attaching forms and can be used for comparison of Millstone data with data from areas which are not thermally stressed.

3.1.2.1.3 Shore Zone Seining

Objective

The objective of this study is to gather information on the occurrences of small fish in the area both within and outside of the thermal plume.

Specification

Three 100-foot hauls shall be made with a 30-by-4 foot 1/4 inch mesh knotless nylon seine. The hauls shall be made parallel to the beach or in a semicircle. Seine hauls shall be conducted monthly from May to October and in December and February at White Point, Jordan Cove, Bay Point Beach, Giant's Neck, Crescent Beach near Black Point, and near Seaside Point (Figure 3.1-1). Habitat changes resulting from eroded or shifted sand and emergent rocks often render parts of existing seine locations unuseable. In such instances, alternate nearby locations will be sought. The fish collected shall be counted and representative numbers will be measured. Data from each haul shall be kept separate. The standard length from the tip of the snout to the last vertebra shall be utilized.

When subsampling is undertaken the following conditions shall apply:

1. Subsampled data shall be of a comparable quality with previously collected data;
2. Subsampled data shall be comparable with similar data collected from the traveling screens during impingement sampling;
3. Subsampled data shall be of a quality which will permit valid statistical analyses to be performed at a performance level comparable with previous analyses.

Reporting Requirement

Reports shall be made on a routine basis as discussed in Section 5.6.1. Any gross or marked changes in species composition or abundance other than seasonal variation shall be cause for submittal of a non-routine report in accordance with Section 5.6.2.a(2). Typical of the fish sampled by this method are Fundulus heteroclitus and Menidia menidia. These species are examples of fish that may be used as indicator species.

Bases

The basis for this program element is that fish populations are subject to impingement and entrainment as well as to possible thermal effects of the plume. Any marked decrease in numbers beyond natural variation or diversity will be cause for investigation to determine if there is any relation to plant operation.

3.1.2.1.4 Tissue and Seawater Metal Analysis

Objective

The objectives of this study are to determine the ambient levels of certain metals in Millstone Point waters, to determine what contributions, if any, the station is making to these concentrations, and to determine the uptake of selected metals by both "wild" shellfish (mussels) and "cultured" shellfish (oysters) that may be due to station operation.

Specification

Surface water samples are taken from Giant's Neck, Unit 1 intake, effluent quarry, and adjacent to Twotree Island channel during February, May, July, September, and December (Fig 3.1-1). The water is analyzed for lead, iron, chromate, zinc, and copper.

For tissue metal analyses, oysters are taken from trays in the effluent quarry, Fox Island (north), and Giant's Neck. Mussels are removed from the rocky shore areas of Fox Island (south), Fox Island (north) and Giant's Neck. Tissues are analyzed for iron, chromium, zinc and copper. Samples are taken on the same schedule as the seawater samples.

Deviations may occur in this sampling schedule if oysters are lost during storms or from vandalism or if mussels can no longer be found at a station. If a tray of oysters is lost between the time it is set out in February and the time of the July collection, new stock will be set out.

Reporting Requirement

A non-routine report specified in Section 5.6.2.a(2) shall be submitted to the NRC when concentrations of these metals in ambient seawater and tissue samples vary, as a result of station operation, more than the observed natural fluctuations. Otherwise reports shall be made on a routine basis as discussed in Section 5.6.1.

Bases

The relative concentrations of these metals in seawater samples and mollusk tissue can be used to determine the impact of plant operation on ambient metal concentrations and to provide information for possible shellfish culture operations in the effluent quarry.

DPR-21: Amendment No. 60
DPR-65: Amendment No. 51

3.1.2.1.5 Benthic Survey

Objective

The objective is to examine in detail the populations of benthic organisms in order to describe any plant effects.

Specification

During the months of March, June, September and December, benthic samples shall be taken at the stations shown in Figure 3.1-1. For the subtidal rocky substrate samples, divers descend to the station mooring block and record the general appearance of the plot. Five sampling quadrats are established at 2 foot intervals radiating outward from the center of the block; the first sample is taken 2 feet from the block; the diver swings approximately 72 degrees (1/5 of 360 degrees) and a second sample is taken 4 feet from the block; the process is repeated so that the five samples taken about 2, 4, 6, 8, and 10 feet from the block are approximately 72 degrees apart.

Each of the five quadrats, delineated by a frame with inside measurements of 25 by 25 centimeters, is scraped clean with a knife or diving tool. As the sample is scraped it is sucked through a tube, and delivered to a bag of fine mesh net material at the upper end of the tube. Air is provided by a standard SCUBA tank. When a quadrat has been scraped clean, the bag is removed and corked and a new bag is fitted into place for the next quadrat. The same methods are used for the intertidal rock substrate samples with the exception of SCUBA.

Upon return to the laboratory, all samples taken on rocky substrates are preserved until processed. Processing includes sorting, identifying, counting where possible, drying, and weighing to the nearest tenth of a gram. Due to the time involved in processing, the invertebrates, once sorted from the algae, are preserved in 70 percent ethanol. The algae are placed in seawater and refrigerated until identified and readied for drying. Identifications are made to the lowest taxon possible.

On subtidal sand stations ten core samples each 10 cm in diameter and 5 cm deep are taken within a 10-foot diameter quadrant established by the same methods described above for rocky substrates. Five samples are taken on intertidal sand stations.

All sand samples, upon return to the laboratory are preserved until ready for processing. Samples are sieved through a 1 millimeter mesh screen and the organisms are retained on the screen. Processing includes identification to the lowest practical taxon, counting, and recording the size range to the nearest millimeter for each species.

DPR-21: Amendment No. 60
DPR-65: Amendment No. 51

Deviations from the above program are permitted when changes in habitat occur at a station and the data are no longer comparable. In such instances a new station location will be found.

Reporting Requirement

A non-routine report shall be submitted to NRC in accordance with Section 5.6.2.a(2) when gross changes in population species composition or abundance are evident. Such a change is one that is beyond normal seasonal fluctuation. Otherwise reports shall be issued on a routine basis as described in Section 5.6.1.

Bases

The basis for this program element is to provide direct observation of the benthic conditions which exist in areas over which the plume passes as well as areas removed from the influence of the plume. This will assist in identification of any benthic impacts which might be associated with station operation.

DPR-21: Amendment No. 60
DPR-65: Amendment No. 51

3.1.2.1.6 Gill Netting

Objective

The objective of this study is to provide information on the occurrence, condition and distribution of pelagic fish relative to station operation.

Specification

Experimental gill nets made up of eight 25 foot panels with a stretch mesh ranging between 3/4 inch and 5 inch are set overnight once each month at Two Tree Island, off Bay Point, near the center of Niantic Bay and in Jordan Cove (Fig. 3.1-2). Fish caught will be identified and counted, and representative numbers will be measured.

When subsampling is undertaken the following conditions shall apply:

1. Subsampled data shall be of a comparable quality with previously collected data;
2. Subsampled data shall be comparable with similar data collected from the traveling screens during impingement samples;
3. Subsampled data shall be of a quality which will permit valid statistical analyses to be performed at a performance level comparable with previous analyses.

Deviations from the required sampling schedule are permitted when gill nets are lost as a result of adverse weather, boat traffic or vandalism. When possible, attempts will be made to reset the gill nets.

Reporting Requirement

Reports shall be made on a routine basis as described in Section 5.6.1. Marked or gross changes, beyond seasonal variations in species relative abundance, composition and distribution shall be cause for submitting a non-routine report in accordance with Section 5.6.2.(a).2. Disappearance of a previously common or abundant species shall also be cause for submitting a non-routine report.

Bases

Data on changes in the overall species compositions and abundances are necessary for determining the possible impact of the plant's operation on the regional biota.

DPR-21: Amendment No. 60
DPR-65: Amendment No. 51

3.1.2.1.7 Trawling

Objective

The objectives of this study are to provide information on the occurrence and distribution of the larger ground fish in the area and to obtain data on reproductive activity, and condition factors.

Specification

A 30-foot otter trawl with 1/4 inch cod-end liner shall be used to trawl six locations around Millstone Point every other week. (Stations 2, 5, 6, 8, 11, 14 (Fig. 3.1-2). Fish and selected invertebrates collected shall be identified and representative numbers will be measured. Efforts will be made to release uninjured individuals alive.

When subsampling is undertaken the following conditions shall apply:

1. Subsampled data shall be of a comparable quality with previously collected data;
2. Subsampled data shall be comparable with similar data collected from the traveling screens during impingement samples;
3. Subsampled data shall be of a quality which will permit valid statistical analyses to be performed at a performance level comparable with previous analyses.

Deviations from the required sampling schedule may occur when, for example, it is not possible to trawl in an area either because of ice or dense vegetation.

Reporting Requirement

Reports shall be issued on a routine basis as described in Section 5.6.1. Marked or gross changes, beyond seasonal variations, in species abundance will be cause for the submittal of a non-routine report in accordance with Section 5.6.2.a.(2). Disappearance of a previously common or abundant species (e.g. flounder) shall also be the cause for submitting a non-routine report.

Bases

The basis for this program element is that data on changes in overall species composition and abundances in the area are necessary for continuous monitoring of the plant's operation and surveillance of its effects, if any, on the regional biota.

3.1.2.1.9 Entrainment Studies

Objective

The objective of the entrainment studies is to quantify the zooplankton (including fish eggs and larvae) that pass through the plants in order to assess the proportion of the zooplankton population subject to the entrainment stresses.

Specification

Samples for zooplankton including fish eggs and larvae shall be collected at the plant discharges. Sampling shall be done weekly and alternately at Units 1 and 2 so that each unit is sampled every other week. Three samples shall be taken both day and night three days per week.

Deviations from this sampling schedule are permitted when all circulating water pumps are not operating at both units. The required number of weekly samples shall be obtained as long as the unit has at least one circulating pump operating.

Fish eggs and larvae shall be sorted and identified to the lowest practical taxonomic level in all samples. One day and one night sample per week shall be processed for the identification of all zooplankton.

Samples shall be collected using one meter diameter plankton nets with a 0.333 mm mesh size. Alternate types of gear were evaluated for sampling the condenser cooling system in an attempt to determine the sampling method and location in the cooling system that would provide the most representative quantitative estimates of organisms entrained. The method and location judged most suitable was then selected for the routine sampling.

Reporting Requirement

The number of fish eggs and larvae and other zooplankton entrained is directly related to the abundance in waters adjacent to the intake. A prompt report shall be submitted in accordance with Section 5.6.2.a(2) when a species or zooplankton group is entrained in numbers disproportionately large in relation to the local abundance. Reporting requirements shall be more easily defined when verification of the mathematical models is finalized. Otherwise data shall be reported on a routine basis as described in Section 5.6.1.

Bases

Entrainment studies utilizing stationary plankton nets and other techniques at Millstone Unit 1 intake, discharge and quarry cut have been conducted since initial operation of that plant in 1970. To date the studies have provided detailed information on the entrainment stresses to both phytoplankton and zooplankton.

The effects of condenser passage on phytoplankton



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

ENVIRONMENTAL IMPACT APPRAISAL BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NOS. 60 AND 51

TO LICENSE NOS. DPR-21 AND DPR-65

CONNECTICUT LIGHT AND POWER COMPANY
THE HARTFORD ELECTRIC LIGHT COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

MILLSTONE NUCLEAR POWER STATION, UNIT NOS. 1 AND 2

DOCKET NOS. 50-245 AND 50-336

Description of Proposed Action

By letter dated March 21, 1978, Northeast Nuclear Energy Company (the licensee) requested revision of the Appendix B Non-Radiological Environmental Technical Specifications (ETS) for Millstone Nuclear Power Station Unit Nos. 1 and 2 (the facilities). The licensee proposes to amend several of the aquatic monitoring programs in ETS Section 3.1.2.1 to provide more flexibility in sampling schedules and to reflect improved techniques and modified program objectives. The categories of proposed revisions are: I. deviations from sampling schedule due to uncontrollable events [exposure panels, tissue metal analysis, gill netting, trawling, entrainment studies]; II. deviations from sampling station due to uncontrollable events [seining, benthic survey]; III. subsampling of large catches of fishes [seining, gill netting, trawling]; IV. sampling or analytical methodology changes [exposure panels, benthic survey, and others], permanent changes in station location and sampling gear specifications [gill netting], and various associated wording changes. This appraisal reviews the licensee's justification for making the proposed revisions and provides an assessment of the ability of the monitoring programs to detect an environmental impact as a result of the revisions. Continuity of sampling and data collection are also considered. The proposed revisions are numbered in parentheses consistent with the licensee's letter of March 21, 1978.

7905290616

Environmental Impact of the Proposed Action

I. Deviations from Sampling Schedule due to Uncontrollable Events

A. Section 3.1.2.1.1 Exposure Panels

- (1) Deviations from the monthly examination of exposure panels are requested if they are lost due to storms, vandalism, or deterioration, with every effort being made to minimize the losses of data.

B. Section 3.1.2.1.4 Tissue and Seawater Metal Analysis

- (1) Deviations in the sampling schedule are requested if oysters are lost from their culture trays during storms or from vandalism or if mussels can no longer be found at a station.

C. Section 3.1.2.1.6 Gill Netting

- (5) Deviations in the sampling schedule are requested if samples are lost due to storms or vandalism and when efforts to retake lost samples are unsuccessful.

D. Section 3.1.2.1.7 Trawling

- (3) Deviations from the sampling schedule are requested to permit flexibility in the event that ice cover or dense aquatic vegetation make trawling at a station impossible.

E. Section 3.1.2.1.9 Entrainment Studies

- (1) Deviations from the sampling schedule are requested to provide for a termination of sampling when both units are not operating any circulating water pumps. As long as a unit has at least one circulating water pump operating, the required sampling will be conducted.

Evaluation

Numerous accounts of missing or vandalized oyster trays and exposure racks or panels during 1971-1977 have been noted by the licensee.^{1,2} During January and February 1977, severe weather and ice flows made gill net sampling difficult and swept nets from their station locations.² Due to large quantities of seaweed trawled in the Niantic River, trawling efficiency has been lower there,¹ and ice apparently has also been a problem in Niantic River.

Requirements for the conduct of year round ecological studies should allow for a temporary cessation of operations during periods when weather conditions make sampling impossible, dangerous, or when sampling efficiency is substantially reduced below the desired standard.

The ETS changes requested for the above five monitoring programs should be granted on the basis that the changes are in wording only, the intent of the ETS is not jeopardized, and actual monitoring will not be altered from the present routine. In granting the changes, the licensee should adhere to the following: (1) every effort should be made to obtain samples on schedule; (2) if the required schedule cannot be met, the factual basis for not doing so should be recorded and sampling should commence on the first practical date following the scheduled date.

II. Deviation from Sampling Station due to Uncontrollable Events

A. Section 3.1.2.1.3 Shore Zone Seining

- (1) Deviations in sampling locations are requested when seining cannot be undertaken due to habitat changes resulting from eroded or shifted sand and emergent rocks. In such instances, alternate nearby locations will be sought.

B. Section 3.1.2.1.5 Benthic Survey

- (4) Deviations in sampling locations are requested when habitat changes occur at a station which result in data which are no longer comparable with those of previous sampling. In such instances, a minor relocation of the station would occur.

Evaluation

Some accounts of changing habitat at shore zone seining stations have been reported by the licensee. During 1976, stream runoff at the White Point sampling site apparently continually altered the beach contour so that the seining site usually was not quite the same from one sampling period to the next. Changes in habitat at benthic sampling stations have occurred as a result of storm runoff in intertidal areas and from shifting sediments in the area of the cooling water effluent to a depth of 20 feet below mean low water.

The overall frequency of such habitat changes (and thus the necessity to modify sampling locations) appears to be small, thus such modifications should not impact this monitoring program. When such changes do occur which influence the sampling effort or the quality of the data, a minor relocation to nearby area appears to be appropriate. In doing so, consistency in data collection will be maintained. The intent of the ETS should not be jeopardized provided

that when new locations are chosen, control stations are still in control areas and stations subject to potential impact from operation of Millstone NPS are still within the "impact" zone. When benthic stations are relocated, the new stations should approximate, as nearly as possible, the sediment type and depth of the former location. When such station changes are made, the factual basis for doing so should be recorded and a determination made as to the relationship of the habitat change to operation of Millstone NPS. This should be presented in the next annual report.

Based on the above, we find these two proposed changes acceptable.

III. Subsampling of Fish Catches

A. Section 3.1.2.1.3 Shore Zone Seining

(2) and (3) Licensee requests that an unspecified number of fishes representative of a sample caught be retained for analysis when large numbers of fishes are caught. Licensee believes that adequate description of length distributions can be obtained with fewer than the 50 fish-requirement presently in the ETS.

B. Section 3.1.2.1.6 Gill Netting

(4) Licensee requests a more flexible scheme for measuring subsamples of large catches of fishes. Subsamples will be representative of the catch as a whole.

C. Section 3.1.2.1.7 Trawling

(2) Licensee requests a more flexible scheme for measuring subsamples of large catches of fishes and invertebrates. Subsamples will be representative of the catch as a whole. Licensee also requests that only selected invertebrates be identified rather than all of those collected.

Evaluation

During the course of the ecological studies at Millstone NPS, the following total numbers of fishes have been collected:

<u>Method</u>	<u>Inclusive Years</u>	<u>Numbers Caught</u>
Seine ^{1,2}	1969 - 1977	164,728
Trawl ²	1973 - 1977	65,568
Gill Net ²	1971 - 1977	4,694
Total (Netting)		234,990
Impinged ²	1972 - 1977	103,692

The farfield monitoring thus has captured more total numbers (regardless of species) than are estimated to have been impinged by operation of the power station. Such large numbers of individuals can create a burden to field or laboratory biologists who must enumerate and analyze them. Often far fewer than the total catch of fishes can be analyzed without undue loss of data precision. The present request to count the entire catch by species and then to subsample each for representative numbers to analyze appears justified. In doing so, an environmental benefit might be gained by quickly returning more captured fishes to the water, thereby reducing the potential for net-related mortalities.

It is anticipated that the intent of the ETS will not be jeopardized provided that the subsample data: (1) are comparable with previous data; (2) are comparable with impingement catches with respect to those parameters subsampled (lengths, weights, etc); (3) permit valid statistical analyses to be performed at a performance level comparable with previous analyses. However, when small numbers of fishes are caught (numbers comparable to a subsample from a large catch), the entire sample should be analyzed. These qualifications have been added to specifications 3.1.2.1.3, 3.1.2.1.6, and 3.1.2.1.7 and the licensee has agreed to these changes. Therefore, we find the proposed changes, as qualified, for subsampling during seine, gill net, and trawl operations acceptable.

Part of the requested revision to Section 3.1.2.1.7 (Trawling) is to identify and measure only "selected invertebrates" rather than all invertebrates caught. This request does not specify which invertebrates are to be analyzed and which are not. The licensee desires to expend little time analyzing invertebrates which are captured inefficiently by trawl. This request should be granted provided that the invertebrates "selected" for analysis are those which are either of economic or recreational importance or are subject to potential impact by operation of the facilities (e.g., impingement of crabs, squid, etc).

IV. Changes in Sampling Methodology

A. Section 3.1.2.1.1 Exposure Panels

- (2) Licensee requests a wording change to reflect more accurately the type of analyses being performed on growth rates for fouling and boring organisms.

Evaluation

The requested wording change will not result in changes in methodology or data collection and will not alter the intent of the ETS or the monitoring program. Therefore, the change is acceptable.

B. Section 3.1.2.1.5 Benthic Survey

- (1) Licensee requests a minor modification in the method of collecting benthic samples. The use of a 10-foot line radiating outward from a station mooring block for use in substation location has been found to be impractical and often dangerous. Therefore, the licensee wants to discontinue use of the line.

Evaluation

The deletion of the radiating-line method of determining substation location will not result in loss of samples or data. The stations will still be located by divers and samples will be collected in the same manner as in the past. The intent of the ETS will not be changed and the request is therefore acceptable.

- (2) and (3) Licensee requests a modification in preservation methodology for organisms collected from rocky and sandy substrates. The present ETS requirement is that samples be frozen until ready for processing. The requested change is to preserve the samples (exact method unspecified) until processing.

Evaluation

The licensee states that freezing samples damages delicate benthic organisms so that taxonomic identification becomes difficult. Preservation by formalin, for example, does not damage organisms and, therefore, results in decreased loss of information.

Prior to September 1976, samples were preserved by either freezing or placing in ethanol. These methods resulted in underestimating benthic faunal abundance by as much as an order of magnitude.² After September 1976, samples were preserved in 10% formalin. This technique has resulted in improved taxonomic capabilities, as evidenced by new species having been added to the list of known organisms from the site area.² This requested ETS change was

put into practice about three years ago and has resulted in improved information. We find the proposed change acceptable.

C. Section 3.1.2.1.6 Gill Netting

- (1) Licensee requests to revise the ETS objective to reflect that gill nets are not used for recapturing tagged fishes.

Evaluation

Presently, winter flounder (a benthic species) is the only fish being tagged at Millstone. The principal gear type used in that program is the otter trawl.² Gill nets are designed and operated to sample the pelagic portion of the fish community. This is emphasized by the fact that of the 4,694 fishes captured by gill net during the period 1971-1977, only 14 (< 1%) have been winter flounder.²

The requested change will not jeopardize the intent of the ETS since no sampling or data collection changes will occur as a result of the updating of the objective. We, therefore, find the proposed change acceptable.

- (2) Licensee requests a modification in gill net specifications including the addition of two 25-foot panels plus a wider range in mesh sizes to permit the capture of a wider size range of fishes.

Evaluation

Prior to May 1975, pelagic fishes were sampled by six-paneled gill nets with mesh sizes ranging from 0.75-2.5 inches. After May 1975, eight-paneled nets were used with mesh sizes of 0.75-5.0 inches.¹ This ETS change, therefore, was put into practice about four years ago. The wider range of mesh sizes offers data collection advantages over the previous method. We find the change acceptable.

- (3) Licensee requests to move the Black Point gill net sampling station from its present location to a nearby location toward the center of Niantic Bay, near the present sites sampled by otter trawl and ichthyoplankton net. It is stated that the combination of 3 sampling techniques at one location provides a more useful array of data with which to characterize the sampling station. It is also stated that water current patterns in the Black Point area often entangle the nets rendering the data collected of questionable value.

Evaluation

In June 1973, a gill net sampling station was added at Black Point to compliment the gill netting study which began in December 1971.¹ In February 1976, the Black Point station was discontinued¹ and was added again in October 1977.² It was sampled only twice during 1977.²

The licensee's bases for relocating the sampling station appear to be valid. Since the Black Point station has been sampled so irregularly, the long term data collected there are of questionable value, thus the termination of the station will not jeopardize the intent of the ETS. A permanent alternate station located toward the center of the Bay has existed since February 1975.¹ Since the ETS intent will not be compromised, we find the proposed change acceptable.

D. Section 3.1.2.1.9 Entrainment Studies

- (3) The licensee requests to change the context of selected paragraphs in the specification to reflect that the required sampling-gear-and-location comparative studies have indicated that the methods presently being used are providing the most representative and quantitative data.

Evaluation

The requested change relating to deviations from the sampling schedule and condenser cooling system samples reflects more accurately the present program and indicates that the present methodology is indeed acceptable. This change will not jeopardize the intent of the ETS and is, therefore, acceptable.

The licensee also requested removal of the requirement for identification of fish eggs for the following reasons: (a) almost 90% of the annual total number of fish eggs collected in the area fall into the category of labrid/yellowtail species which cannot be readily distinguished apart by egg morphometrics; (b) specific egg identification is of limited usefulness in assessing entrainment impact.

The labrid/yellowtail group of planktonic fish eggs falls into the category of "important species" since the group is abundant (~ 76% of all eggs collected during 1977²) and subject to power station entrainment. The licensee has stated that the potential impact of entrainment and impingement upon cunner (a labrid species), for example, is greater than for other abundant or migratory species, since cunner is a year-round resident near the bottom, along shore zones, and in estuaries.

It is probable that the labrids (cunner and tautog) constitute the vast majority of the species of eggs in this group, since yellowtail flounder have never been abundant in any life stage or in any sampling gear type at Millstone: none impinged through 1977²; only nine taken by trawl (0.006% of the catch) from

1973-1977²; yellowtail larvae < 1% of the total taken in the Millstone area between 1973-1977, with labrid larvae being ~ 30 times more abundant²; yellowtail larvae not reported from entrainment samples during 1973-1977². It is, therefore, reasonable to expect that the labrid species of eggs are those which are most susceptible to entrainment impact and not yellowtail flounder. Future identification of these eggs as "labrid/yellowtail", therefore, would be acceptable without further taxonomic efforts.

The licensee's justification for deletion of the requirement for fish egg identification, other than those classified as labrid/yellowtail, is inadequate because: (a) several species of fish other than labrid/yellowtail occur in the area, and some of those would be considered as "important species", and those species are readily identifiable; and (b) reasonable assumptions can be made regarding the identification of labrids and yellowtail eggs. Therefore, we find this proposed change unacceptable.

Additional justification and an assessment of the potential loss of information concerning entrainment effects on species other than those grouped as "labrid/yellowtail" to support the request to terminate identification of fish eggs must be provided by the licensee for us to reconsider this proposed change.

E. Section 3.1.2.1.3 Shore Zone Seining

- (4) The licensee desires a wording change to more accurately describe the seine station "near Black Point" which is actually located at "Crescent Beach."

Evaluation

The "Crescent Beach" station designation has been used in the two most recent annual reports describing the results of environmental monitoring.^{1,2} A change to this designation in the ETS is appropriate and would not change the intent of the ETS. We, therefore, find the proposed change acceptable.

F. Section 3.1.2.1.7 Trawling

- (1) and (4) Licensee desires wording change to reflect the present program. Since food habit studies and mark-and-recapture tagging studies have not been part of the general trawling program for several years, the licensee wants to delete these requirements from the ETS.

Evaluation

Food habit and tag recapture studies have not been part of the general trawling program for several years and were not reported in the two most recent annual reports.^{1,2} Since food habit studies have not been conducted for several years and since the tagging study is part of another ETS Section (4.4), the proposed changes more accurately reflect the present monitoring efforts. The wording change requested in part (4) is a deletion of "composition of feeding habits". In the ETS, the wording is "...composition or feeding habits" since the "composition" refers to "species composition." Therefore, only "or feeding habits" should be deleted so that the second sentence of the Reporting Requirement would read: "Marked or gross changes, beyond seasonal variations, in species abundance or composition, will be cause for the submittal of a non-routine report in accordance with Section 5.6.2a(2)."

These requested changes, as amended, will not jeopardize the intent of the ETS and are, therefore, acceptable.

Conclusion and Basis for Negative Declaration

On the basis of the foregoing analysis, it is concluded that there will be no environmental impact attributable to the proposed action other than that which has already been predicted and described in the Commission's FES for Millstone Unit Nos. 1 and 2. On this basis and in accordance with 10 CFR Part 51.5(c), the Commission has further concluded that no environmental impact statement for the proposed action need be prepared and a negative declaration to this effect is appropriate.

Dated: April 24, 1979

REFERENCES

1. Northeast Utilities Service Company, 1977, Annual Report, Ecological and Hydrographic Studies 1976, Millstone Nuclear Power Station, Hartford, Connecticut.
2. Northeast Utilities Service Company, 1978, Annual Report, Ecological and Hydrographic Studies 1977, Millstone Nuclear Power Station, Hartford, Connecticut.

UNITED STATES NUCLEAR REGULATORY COMMISSIONDOCKET NOS. 50-245 AND 50-336CONNECTICUT LIGHT AND POWER COMPANY
THE HARTFORD ELECTRIC LIGHT COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
NORTHEAST NUCLEAR ENERGY COMPANYNOTICE OF ISSUANCE OF AMENDMENTS TO OPERATING
LICENSESANDNEGATIVE DECLARATION

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 60 to Provisional Operating License No. DPR-21 and Amendment No. 51 to Facility Operating License No. DPR-65 to Connecticut Light and Power Company, The Hartford Electric Light Company, Western Massachusetts Electric Company, and Northeast Nuclear Energy Company, which revised the Technical Specifications for operation of the Millstone Nuclear Power Station, Unit Nos. 1 and 2 (the facilities), located in the Town of Waterford, Connecticut. The amendments are effective as of their date of issuance.

These amendments to the Environmental (Appendix B) Technical Specifications will provide more flexibility in the sampling schedules and sample collection for aquatic monitoring and reflect improved techniques and modified program objectives.

The application for the amendments complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendments. Prior

7905290019

- 2 -

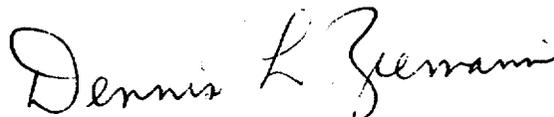
public notice of these amendments was not required since the amendments do not involve a significant hazards consideration.

The Commission has prepared an environmental impact appraisal relating to the action and has concluded that an environmental impact statement for this particular action is not warranted because there will be no significant environmental impact attributable to the action other than that which has already been predicted and described in the Commission's Final Environmental Statement for the facilities dated June 1973.

For further details with respect to this action, see (1) the application for amendments dated March 21, 1978, (2) Amendment Nos. 60 and 51 to License Nos. DPR-21 and DPR-65, respectively, and (3) the Commission's related Environmental Impact Appraisal. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C. and at the Waterford Public Library, Rope Ferry Road, Route 156, Waterford, Connecticut. A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland, this 24th day of April, 1979.

FOR THE NUCLEAR REGULATORY COMMISSION



Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Division of Operating Reactors