NORTHEAST UTILITIES
THE CONNECTICUT LIGHT AND POWER COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
HOLYOKE WATER POWER COMPANY
NORTHEAST UTILITIES SERVICE COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

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September 17, 1984

Docket No. 50-423
B11315

Mr. Darrell G. Eisenhut, Director
Division of Licensing
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Reference: (1) Draft Environmental Statement related to the operation of Millstone Nuclear Power Station, Unit No. 3, Docket No. 50-423, NUREG-1064, U. S. Nuclear Regulatory Commission, July 1984.

Millstone Nuclear Power Station, Unit No. 3
Comments on the Draft Environmental Statement

Northeast Nuclear Energy Company (NNECO), as applicant for an operating license for Millstone Nuclear Power Station, Unit No. 3, herein submits the attached comments on the Draft Environmental Statement (DES) (Reference 1).

If the Staff has any questions or concerns related to the information contained herein, please contact our licensing representative. Ms. C. J. Shaffer, at (203) 665-3285. We remain available to meet with you to discuss any matter pertaining to the analysis of the environmental impact of Millstone Unit No. 3, and assist in facilitating the timely issuance of the Final Environmental Statement.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY, et. al
By Northeast Nuclear Energy Company,
their Agent

W. G. Counsil
Senior Vice President

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STATE OF CONNECTICUT)
) ss. Berlin
COUNTY OF HARTFORD)

Then personally appeared before me W. G. Counsil, who being duly sworn, did state that he is Senior Vice President of Northeast Nuclear Energy Company, a Applicant herein, that he is authorized to execute and file the foregoing information in the name and on behalf of the Applicants herein and that the statements contained in said information are true and correct to the best of his knowledge and belief.

Lorraine J. D'Amico
Notary Public

My Commission Expires March 31, 1988

NORTHEAST NUCLEAR ENERGY COMPANY'S
COMMENTS ON
DRAFT ENVIRONMENTAL STATEMENT
RELATED TO THE OPERATION OF
MILLSTONE NUCLEAR POWER STATION
UNIT NO. 3 (NUREG-1064)

DOCKET NO. 50-423

SEPTEMBER 17, 1984

GENERAL CONCLUSIONS

Northeast Nuclear Energy Company (NNECO) has reviewed the Draft Environmental Statement (DES) related to the operation of Millstone Nuclear Power Station, Unit No. 3 and, in general, concurs with the findings of the NRC Staff. In addition, NNECO understands and commits to adhere to the conditions outlined in Section 6.1 for the protection of the environment, with the clarification presented by our comments on paragraph 6.1(2).

The accompanying attachments provide our detailed comments on the DES.

INSTRUCTIONS

The comments are presented in DES section order. Suggested word changes or additions within the text of the DES have been identified by underlining them. Attachment 1 provides comments of a substantive nature which may impact the accuracy of the DES. Attachment 2 identifies typographical and editorial errors noted in the DES.

Attachment 1

DES Section - Summary and Conclusions

- page vi, paragraph 4(e)

  This paragraph does not present the revised information on chemical wastes discharged to Long Island Sound provided in revised Table 3.6-1 in Amendment 7 to the Environmental Report submitted in April 1984. The first two sentences of this paragraph should state; "Chemical wastes discharged from Unit 3 to Long Island Sound will average about 222.8 x 10^3 kg/yr (245.3 tons/yr). About 64.7 x 10^3 kg/yr (71.3 tons/yr) will come from the makeup water demineralization system; about 2.8 kg/yr (3 tons/yr) from biocide additions to cooling water and 155.3 x 10^3 kg/yr (171.2 tons/yr) from the condensate treatment system."

  Amended Table 3.6-1 and the calculations of the above chemical waste quantities are attached.

- page vii, paragraph 4(n)

  This applicant has requested in a letter dated August 30, 1984, that the State Historic Preservation Officer formally notify NRC that he has reviewed and approved the Millstone Unit 3 transmission line construction.

- page ix, paragraph 4(u), line 3

  This sentence should read "The addition of the unit will add 1154 MW of capacity to the applicants' systems (Section 6)".

- page ix - paragraph 8(b)

  Millstone Unit 3 will not have an "Environmental Protection Plan." Additionally, only the requirement to implement a Radiological Environmental Monitoring Program will be incorporated into the Technical Specifications. The requirements of the program will be incorporated into the Radiological Effluent Monitoring and Offsite Dose Calculation Manual (REMODCM). This document will require review by the NRC prior to implementation. It is recommended that this sentence be revised to read:

  "The applicant will carry out the environmental monitoring programs outlined in Section 5 of this statement, as modified and approved by the staff, and incorporated as appropriate into the Technical Specifications and Radiological Effluent Monitoring and Offsite Dose Calculation Manual."

- page 1-1, paragraph 2, line 10

  "February 1975" should be "February 1974"

TABLE 3.6-1

CHEMICAL ADDITIONS TO WATER USED FOR STATION OPERATION

Chemical Use and System Involved	Reason for Use or Source of Chemical	Estimated Monthly Quantities (lb/mo) Addition to System Average	Addition to System Maximum	Station Discharge Average	Station Discharge Maximum	Frequency of Chemical Addition	
Boron (as B):							
Reactor coolant system	Soluble neutron adsorber	20,000 lb/yr	NA	0.86	0.17 lb/day	NA	
Chromates (as K_2CrO_4):							
Neutron shield tank cooling	Corrosion control	10 lb/yr	NA	None	None	NA	
Ammonia (as NH_3) (25%):							7
Auxiliary steam and condensate	Corrosion control	6	12	None	None	Continuous	
Steam and power conversion	Corrosion control	26,100	27,900	None	None	Continuous	
Hydrazine (as N_2H_4) (40%):							
Reactor plant component cooling water, charging pumps cooling, safety injection pumps cooling	Corrosion control	90 lb/yr	NA	None	None	NA	7
Auxiliary steam and condensate	Corrosion control	62.5	125	None	None	Continuous	
Steam and power conversion	Corrosion control	735	870	None	None	Continuous	
Chilled water system	Maintain pH; control O	7.5	12.5	None	None	Once per day	
Chlorine (as Cl_2):							
Service water system	Biofouling control	507.6	1268.7	507.6	1268.7	3 times per day	

TABLE 3.6-1 (Cont)

Chemical Use and System Involved	Reason for Use or Source of Chemical	Estimated Monthly Quantities (lb/mo) Addition to System Average	Addition to System Maximum	Station Discharge Average	Station Discharge Maximum	Frequency of Chemical Addition	
Sodium Hypochlorite (as Cl_2) (15%):							
Makeup ultrafiltration system	Ultrafiltration cleaning cycle	1,070	4,270	1,070	4,270	Once per day	
Sulfuric Acid (as H_2SO_4) (100%):							
Makeup demineralizer equipment	Regeneration of ion exchange resins	7,962	15,924	*	*	Once every 3 days	7
Condensate polishing mixed bed	Regeneration of ion exchange resins	19,110	38,220	*	*	6 times per week	7
Sodium Hydroxide (as NaOH) (50%):							
Makeup demineralizer equipment	Regeneration of ion exchange resins	13,650	27,300	*	*	Once every 3 days	7
Condensate polishing mixed bed	Regeneration of ion exchange resins	32,760	65,520	*	*	6 times per week	7
Makeup ultra-filtration system	pH adjustment	NA	NA	NA	NA	As necessary	
Lime (as $Ca(OH)_2$) (100%):							
Condensate polishing mixed bed	Regeneration of ion exchange resins	400	3,200	400	3,200	Once every 4 days	7
Dow Binder:							
Radioactive solid waste	Waste solidification agent	32,500 lb/yr	40,000 lb/yr	None	None	Once per year	
Dow Catalyst:							
Radioactive solid waste	Waste solidification agent	800 lb/yr	1,000 lb/yr	None	None	Once per year	

TABLE 3.6-1 (Cont)

Chemical Use and System Involved	Reason for Use or Source of Chemical	Estimated Monthly Quantities (lb/mo) Addition to System Average	Addition to System Maximum	Station Discharge Average	Station Discharge Maximum	Frequency of Chemical Addition
Dow Promoter:						
Radioactive solid waste	Waste solidification agent	32 lb/yr	40 lb/yr	None	None	Once per year

NOTES:

NA = Not available

* = At the addition rates of 27,072 lb/mo average and 54,144 lb/mo maximum of sulfuric acid and 46,410 lb/mo average and 92,820 lb/mo maximum of sodium hydroxide, Millstone 3 will discharge an average of 39,325 lb/mo of sodium sulfate (Na_2SO_4) and a maximum of 78,650 lb/mo

7

CALCULATION SUMMARY

A5010.62

J.O./W.O./CALCULATION NO.	REVISION	PAGE
12179.13/W270	0	3 OF 6

CLIENT/PROJECT: NUSCO / MILLSTONE UNIT 3

QA CATEGORY / CODE CLASS: II

SUBJECT/TITLE: Amount of chemical wastes discharged from water treatment and condensate polishing demineralizer systems

OBJECTIVE OF CALCULATION

Calculate average annual amount of chemical wastes discharged from water treatment and condensate polishing demineraliger systems

CALCULATION METHOD/ASSUMPTIONS

See text of calc

SOURCES OF DATA / EQUATIONS

References:

1. ER-OLS, Amendment 7 Table 3.6-1, page 2 of 3 (Attachment 1)

CONCLUSIONS

Average annual amount of chemical waste from:

1. Water treatment system 64.7×10^3 kg/yr (71.3 tons/yr)
2. condensate polishing demineraliger system 155.3×10^3 kg/yr (171.2 tons/yr)

REVIEWER(S) COMMENTS

PREPARER: M. Epstein		DATE: 9-6-84
REVIEWER/CHECKER: H. Finel		DATE: 9-11-84
INDEPENDENT REVIEWER: N/A		DATE

▲ SW10.55

CALCULATION IDENTIFICATION NUMBER				
J.O. OR W.O. NO.	DIVISION & GROUP	CALCULATION NO.	OPTIONAL TASK CODE	PAGE 4 of 6
12179.13	Envir. (421	W 270	—	

1. Water Treatment System Waste

a) Makeup Ultrafiltration System Waste

From Ref. 1, ^average 1070 lb/mo, 15% sodium hypochlorite will be discharged from the makeup ultrafiltration system.

The ^average amount of sodium hypochlorite discharged per year will be.

$$1070 \times 0.15 \times 12 = 1926 \text{ lb/yr}$$ ✓

b) Makeup Demineralizer System Waste

The main constituent of the regeneration waste is sodium sulfate resulting from the use of sulfuric acid and sodium hydroxide as the regeneration chemicals

From Ref. 1, ^average 7762 lb/mo of 100% H_2SO_4 and 13650 lb/mo of ^NaOH ~ 50% will be used

The ^average annual amount of sodium sulfate will be:

$$\left(7962 \times \frac{96}{98} + 13650 \times 0.5 \times \frac{23}{40}\right) \times 12 = 140\,536.62 \text{ lb/yr} \checkmark$$

where 96 lb — lb-mole of SO_4^{2-}
98 lb — lb-mole of H_2SO_4
23 lb — lb-mole of Na^+
40 lb — lb-mole of $NaOH$

c) Total Water Treatment System Waste

$1926 + 140\,636.62 = 142,512.62$ lb/yr =
$= \underline{64.7 \times 10^3 \text{ kg/yr}} \checkmark = \underline{71.3 \text{ tons/yr}}$ ✓

2 Condensate Polishing Demineralizer System Waste

Similar to makeup demineralizer system, the main constituent of the regeneration waste is sodium sulfate — average

From Ref. 1, 17110 lb/mo of 100% H_2SO_4 and 32760 lb/mo of 50% NaOH will be used. The annual amount of sodium sulfate will be:

CALCULATION IDENTIFICATION NUMBER				PAGE 5a of 6
J.O. OR W.O. NO. 12179.13	DIVISION & GROUP Envir (421)	CALCULATION NO. W270	OPTIONAL TASK CODE —	

$$\left(19\,110 \times \frac{96}{98} + 32\,760 \times 0.5 \times \frac{23}{40}\right) \times 12 = 337\,662 \text{ lb/yr}$$

In addition about 400 lb of lime is discharged monthly with condensate polishing waste.

So, the total average annual amount of chemical waste from the condensate polishing demineralizer system will be

$$337\,662 + 400 \times 12 = 342,462 \text{ lb/yr} =$$

$$= \underline{155.3 \times 10^3 \text{ kg/yr}} = \underline{171.2 \text{ tons/yr}}$$

DES Section 4.2.3 - Water Use and Treatment

- page 4-2, paragraph 3, line 6

  NNECO questions the derivation of "13,300 m^3/day (5.4 cfs)". ER-OL Section 3.3.2.3 states that 29.5 m^3/year of water are consumed for radioactive waste processing, and 13.2 m^3/day are consumed for potable and sanitary purposes. Total consumption of water for radioactive waste processing, potable and sanitary purposes is then calculated to be 13.3 m^3/day or .005 cfs.

  $$29.5\ m^3/\text{year} + 13.2\ m^3/\text{day}$$

  $$= \frac{29.5}{365}\ m^3/\text{day} + 13.2\ m^3/\text{day}$$

  $$= 0.0808\ m^3/\text{day} + 13.2\ m^3\text{day}$$

  $$= 13.3\ m^3/\text{day}$$

  $$= 0.005\ \text{cfs}$$

  Therefore, this sentence should state "Approximately 13.3 m^3/day (0.005 cfs) will be consumed for sanitary and potable use and for radioactive solid waste processing (ER-OL Section 3.3.2.3)".

- pages 4-2 and 4-3, paragraph 6, line 3

  This paragraph should be revised to read, "...The rate of chlorine addition is monitored by grab samples to ensure that the free available chlorine concentration at the confluence with the circulating water discharge tunnel is equal to or less than 0.25 ppm. The chlorination system will be operated continuously as part of a study for macroinvertebrate control. Subject to the results of the study, service water will be continuously chlorinated at concentrations to be specified but not to exceed 0.25 ppm at the confluence with the circulating water."

  This updates information presently contained in the ER-OL, Section 3.4.2 of Amendment 8 to the ER-OL, scheduled for submittal in early November 1984, will provide this revised information.

DES Section 4.2.6 - Nonradioactive Waste Management

- page 4-6, paragraph 2, line 2.

  This paragraph should be revised to present revised information as follows: "Under normal operating conditions, chemical regeneration of one of the two trains is required approximately every three days. The total regeneration waste volume per train is approximately 190,000 L (50,000 gallons).

This is based on information provided in revised Table 3.6-1 submitted to NRC in Amendment 7 to the ER-OL in April, 1984.

- page 4-6, paragraph 5, line 9

  Reference to ER-OL Table 4.2-6 should be deleted. There is no Table 4.2-6 in the ER-OL.

- page 4-7, paragraph 1

  The following is offered as a suggested revision of this paragraph.

  The service water system is a once-through cooling system that provides cooling water to the engineered safety features building, control building, auxiliary building, turbine building and other unit structures. The service water system is treated by gaseous chlorine solution to control biofouling. Service water will be chlorinated continuously for control of macroinvertebrates. The chlorination rate is monitored by periodic grab sample analysis (NPDES Permit, Appendix G) to ensure that concentration of free available oxidant is maintained at 0.25 ppm or less, at the point of confluence with the circulating water. The free residual oxidant in the service water is reduced after it is mixed with the circulating water by the oxidant demand of that system. No more than 15,000 kg/yr (33,000 lbs/yr) of oxidant (as Cl_2) due to service water chlorination will be discharged to the quarry by the Unit 3 system. The NPDES permit restricts the amount of chlorine to be discharged by the Unit 3 system to a daily maximum of 1386 kg/day (3000 lb/day) and the daily maximum free residual oxidant concentration is limited to .25 mg/L. The concentration of total residual oxidant is expected to be reduced from a maximum daily concentration of 0.25 mg/L at the point of discharge to less than 0.05 mg/L (detection limit) after mixing with water in the quarry. In any case, the quarry cut discharge will meet the NPDES limit of 0.1 mg/L total residual oxidant.

  This information will be contained in Amendment 8 to the ER-OL, scheduled for submittal in November, 1984.

- page 4-8, first full paragraph, line 1

  "closed-loop reactor coolant" system should be changed to "component cooling" system.

DES Section 4.2.6 - Sanitary Waste

- page 4-8, first full paragraph, line 3

  The sanitary waste will be conveyed to the Waterford Municipal Sewage System. Figure 4.3 should also be revised to show this information.

  Amendment 8 to the ER-OL will contain this revision and a revised Figure 3.3-1.

DES Section 4.2.7 - Power Transmission System

- page 4-8, paragraph 7, line 8

  This sentence should be revised to read, "The new circuit will be added on new or existing arms on existing 345-kV structures or carried on new H-frames built to one side or between existing 345-kV H-frames."

DES Section 4.3.1.1 - Coastal Waters

- page 4-9, paragraph 3, line 5

  "0.83 m" should be"0.82 m"

- page 4-9. Table

  "1.9 m (6.3 feet)" should be "1.9 m (6.2 feet)"

DES Section 4.3.5.1 - Terrestrial Resources

- page 4-12, 4th full paragraph, line 13

  The applicant maintains five nesting platforms for osprey: two of these have been used each year since their construction.

DES Section 4.3.7 - Community Characteristics

- page 4-15, paragraph 7, line 2

  Subsequent to discussions with the NRC staff, population data were revised in Amendment 9 to the FSAR. This revised information will be provided in Amendment 8 to the ER-OL. The DES should sta' "The applicant estimates the 1980 population within 16 km (10 miles) of the plant to have been 109,230 and projects it will be 127,123 in the year 2020.

Table 4.1 Station Water Use, page 4-24

Based on information provided in revised ER-OL Table 3.6-1 (Amendment 7, April 1984) the average use for water treating waste should be changed from 3.2 ppm to 12 gpm, making the average total circulating water discharge 941,479 gpm.

NOTES: The second note should be changed to read as follows:

*Item numbers correspond to the numbers on Figure 4.3.

Table 4.3, page 4-26 through 4-28

Table 3.6-1 of the ER-OL was revised in Amendment 7 to the ER-OL, submitted to NRC in April 1984.

Additional corrections and revisions have been noted since that amendment and will be included in the Amendment 8 to the ER-OL, as follows:

"Chromates (as K_2CrO_7)" should be "Chromates (as $K_2 CrO_4$)"

Ammonia (as NH_3(25%) should be (as NH_3)(28%)

Hydrazine (as N_2H_4)(40%) should be (35%)

Chlorine (as Cl_2) frequency of chemical addition to the service water system should be changed from "3 times per day" to "continuous".

DES Section 5.3.1.2 - Thermal Effects

- page 5-3, paragraph 2

  The DES states that the staff's calculated directions of the thermal plume under flood and ebb tide differed from that calculated by the applicant in ER-OL, Section 5.1. The applicant did not know that there was a difference in the calculations of the staff and the applicant and consequently requests that a copy of the Staff's calculations be provided to the applicant for analysis.

DES Section 5.3.1.3 - Water Quality

- page 5-4, paragraph 1, line 2

  Based on information provided in revised Table 3.6-1 of Amendment 7 to the ER-OL, (April 1984) the sentence should be revised as follows: "An average of approximately 443,000 L (117,000 gpm) a week of regeneration wastes from the makeup demineralizer system....".

- page 5-4, paragraph 3, line 3

  This sentence should read, "The service water system is, however, chlorinated with the chlorination rate monitored by grab samples to ensure that the residual oxidant concentration at the discharge to the confluence with the circulating water is maintained at a maximum of .25 ppm."

  Section 3.4.2 of the ER-OL will be revised in Amendment 8, scheduled for submittal in November, 1984.

- page 5-4, paragraph 4, line 1

  Millstone Unit 3 uses titanium condenser tubes.

DES Section 5.3.3 - Floodplain

- page 5-6, paragraph 4

  Figure 5.3 does not show the preconstruction 100-year floodplain. The sentence should be concluded after the reference to Figure 5.3.

DES Section 5.5.1.2 - Transmission Line Effects

- page 5-7, paragraph 6

  Fences, in order to deliver shocks, need to be hundreds of feet long, parallel to lines, well into the right-of-way, and constructed on nonmetallic posts that offer electrical insulating qualities while at the same time preventing the fence strands from touching ground or vegetation. The reference cited, Lee et al., 1982, is referring to electric fences and the very long wood-post fences common in the wide open spaces of the Pacific Northwest.

  In addition, the applicant routinely grounds existing objects such as fences on the right-of-way during the line construction. Since the new transmission line is all on existing right-of-way this has already been done.

DES Section 5.5.2 - Aquatic Resources

- page 5-9, fourth full paragraph, line 4

  "The volume of water withdrawn for <u>three-unit operation</u> constitutes approximately 4% of the tidal exchange."

- page 5-10, paragraph 3

  The total number of lobster larvae collected annually, not per 24 hour sample, ranged from 19 to 71 (1976-1981). Because of these low numbers, total entrainment estimates are inappropriate. We could not find a basis in Phillips, Cobb, and Georgia (1980) of the stated survival rate of 64%.

  Total entrainment estimates for lobster larvae based on the methods used for entrained ichthyoplankton are unreliable. The present ichthyoplankton monitoring sampling was not designed for lobster larvae studies. These samples were collected with a 1 x 3.6 m neuston net (.333 mm mesh) and an average of 400 m3 of cooling water was sampled in each replicate.

  In May 1984, the applicant implemented a lobster larvae study to specifically address the issue of entrained lobster larvae prior to Unit 3 operation. This study uses methods established for collecting lobster larvae at coastal power plant installations (Collings, Cooper-Sheehan, Hughes and Buckley, 1981). Eight lobster larvae samples are collected each week from May to October at either Unit 1 or 2

discharge canals with a 1 x 6 m neuston net (1 mm mesh) and an average of 4000 m3 of cooling water is sampled in each replicate. This study was approved by the State of Connecticut's Department of Environmental Protection and should provide a more realistic entrainment estimate for lobster larvae.

It is recommended that this paragraph be revised to read:

"...Lobster larvae, primarily Stage I, are entrained from May to July. Lobsters produce from 5000 to 115,000 eggs per female (Phillips, Cobb, and George, 1980). Lobster larvae survival rates vary; Lund and Steward (1970) estimated 52% survive from Stage I to Stage IV in Long Island Sound. The annual total number of lobster larvae collected in entrainment samples for Units 1 and 2 ranged from 19 to 71 (1976-1981). Because of the relatively small number of lobster larvae entrained in the intake and the short period during which lobster larvae are susceptible (3 to 6 weeks) and subject to entrainment, there should be minimal impact to the lobster population from operation of Unit 3.

- page 5-10, paragraph 4

The 14 taxa selected for discussion in the ER-OL were selected based on a number of criteria. It is true that anchovies, sand lance, grubby, cunner, tautog and winter flounder account for a large fraction of the total fish taxa entrained and they were selected because of this. However, of the eight remaining taxa selected for discussion, striped bass, and bluefish have never been entrained (these species do not spawn locally) and killifish and silversides have only rarely been entrained because although they spawn locally, it is in habitats (marshes) remote from the intakes. Menhaden, striped bass and bluefish were selected primarily because of their commercial/sport value and it is incorrect to say that these species contributed to entrainment. The conclusions of the paragraph are, however, basically correct, but the paragraph should be corrected.

DES Section 5.9.3.1 - Radiation Exposure Pathways: Dose Commitments

- page 5-20, paragraph 2, last line

Shellfish are a predominant dose pathway at Millstone. For clarity, the last line should read, "... and eating fish and shellfish caught near the point of discharge of liquid effluent."

DES Section 5.9.3.4.2 - Radiological Monitoring-Operational

- o page 5-28, paragraph 2

  The first sentence is misleading. The applicant is not deleting all fruit, vegetable and gamma samples, nor are these critical exposure pathways. We suggest deletion of the words "--such as increasing milk sampling frequency and deletion of fruit, vegetable, soil, and gamma radiation survey samples".

- o page 5-28, paragraph 3

  Only the requirement to implement a Radiological Environmental Monitoring Program will be incorporated into the Technical Specifications. The requirements of the program will be incorporated into the Radiological Monitoring and Offsite Dose Calculation Manual (REMODCM). This document will require approval by the NRC.

  It is recommended that "Radiological Technical Specifications" be replaced with "Radiological Effluent Monitoring and Offsite Dose Calculations Manual".

DES Section 5.12 - Noise Impacts

- o page 5-65, paragraph 6 and page 5-66, paragraph 1

  The actual number of loudspeakers and the level of activity over the loudspeakers is much greater during plant construction than it is expected to be during plant operation. Therefore, the solutions identified by the NRC staff may not be necesary given the expected infrequent use of the outdoor public address system. However, if complaints about the public address system are received after the plant is operational, the NRC recommendations will be evaluated and appropriate actions taken.

DES Section 5.14.2.2 - Aquatic Monitoring - Ecological

- o page 5-67, paragraph 5

  It is recommended that this paragraph be revised as follows to accurately describe the entrainment study currently proposed as part of the operational monitoring program.

  "The entrainment study is designed to provide quantitative estimates of the number, seasonality and types of ichthyoplankton entrained in the condenser cooling system of Unit 3 concurrently with Units 1 and 2. An off-shore ichthyoplankton survey will be conducted in mid-Niantic Bay for comparison of the number of fish eggs and larvae with numbers entrained by the Millstone plant. The applicant proposes to modify the operational monitoring program for ichthyoplankton to include sampling of the Unit 3 discharge and to change

the entrainment sampling from a frequency of six samples (three day and three night) taken 3 days a week to a frequency that varies with season. From January though May two samples (one day and one night) will be taken 4 days per week. From June through September two samples (one day and one night) will be taken 3 days per week and from October through December two samples (one day and one night) will be taken one day each week. The applicant proposes to identify fish eggs in 6 samples per week taken from April through September, and fish larvae in all samples collected except during June. In this month only 2 samples per week will be analyzed for fish larvae. These schedules are proposed because of the seasonal pattern of ichthyoplankton occurence and the potential impact during periods of reduced analysis is low (ER-0L, Section 6.2.1.1). One day and one night sample from the discharge and mid-Niantic Bay will be analyzed each week for zooplankton."

Section 6.2.1.1 of the ER-OL will be revised in Amendment 8, scheduled for submittal in November, 1984.

DES Section 5.14.3 - Atmospheric Monitoring

- page 5-68, fourth full paragraph

  The height of the meteorological tower is 137 meters; however, the top of the tower is 142 meters above mean sea level. Wind speed and wind direction measurements are also taken at the 136 meter level. The vertical temperature difference is also taken between the 136 meter and 10 meter levels.

Table 5.4 - Page 5-105, Comparison of copper, nickel, and zinc concentrations at plant intake and discharge.

The quantity of 3.5 ug/L given as the total concentration of nickel at the plant outfall is actually dissolved nickel according to the Waslenchuk, 1980 report cited.

DES Section 6.1 - Unavoidable Adverse Impacts

- page 6-1, paragraph 6.1(2)

  Millstone Unit 3 will not have an "Environmental Protection Plan." Additionally, only the requirements to implement a Radiological Environmental Monitoring Program will be incorporated into the Technical Specifications. The requirements of the program will be incorporated into the Radiological Effluent Monitoring and Offsite Dose Calculation Manual (REMODCM). This document will require review by the NRC prior to implementation. It is recommended that this sentence be revised to read:

  "The applicant will carry out the environmental monitoring programs outlined in Section 5 of this statement, as modified and approved by the staff and incorporated as appropriate into the Technical Specifications and Radiological Effluent Monitoring and Offsite Dose Calculation Manual."

DES Section 6.4 - Benefit-Cost Summary

- page 6-1, last paragraph, line 4

  This sentence should read, "The addition of the unit would also improve the applicants' ability to supply system load requirements by contributing a proportionate share of the 1154 MW of capacity to applicants bulk power supply systems."

Appendix D - Examples of Site-Specific Dose Assessment Calculations

- page 3 - Table D-1a - Column Headings

  The Millstone Unit 1 stack is 375 feet above grade, not 395 feet.

- pages 6, 7, 8, 13 and 14 - Tables D-2a, D-2b, D-3, D-6a, and D-6b

  The nearest meat animal is given here as 3.2 km ENE from Unit No. 3 site boundary. There are no commercial meat animals in the Millstone vicinity. If the NRC is assuming the potential consumption of a non-commercial animal it should be so stated. The nearest goat is at 3.2 km ENE and the nearest cow is at 9.5 km North.

  The distance to the nearest milk cow will be changed from 7.2 km WNW to 9.5 km North in Amendment 8 to the ER-OL to reflect updated information.

- page 13 - Table D-6-a - Doses

  The calculated doses due to Millstone Unit 3 appear to be too high for the direct radiation and ground deposition pathways. For example, Table D-6a gives 0.25 mrem/year as the total body dose at the nearest site boundary from direct radiation from the Millstone Unit 3 plume. Table D-6b gives 0.36 mrem/year as the total from Millstone Units 1, 2, and 3 at the same location implying that the maximum doses from Millstone Unit 2 would be 0.11 mrem. However, Tables D-1a give 560 Curies of noble gas from Millstone Unit 3 and 5600 Curies from Millstone Unit 2, ten times higher. Tables D-2a and D-2b show the X/Q's essentially the same. Hence, the doses from Millstone Unit 3 should be less than that from Millstone Unit 2. A dose of 0.25 mrem is much too high for a release of only 560 Curies, especially when over 90% is low energy Xe-133 and Kr-85.

  Additionally, the dose is calculated at a water boundary. For annual doses, the plume pathway should be calculated at the nearest land, because it is inappropriate to postulate an individual continuously occupying the water sectors.

Attachment 2

Typographical and Editorial Errors

	DES Section	Page	Error
o	Summary and Conclusions	page vi paragraph 4(d) line 3	change "stack" to "slack"
o	Table of Contents	page xiii Appendix J	change "sale" to "scale"
		page xv Table 5.1	should be "Millstone three-unit thermal discharge"
o	4.2.4.1	page 4-3 paragraph 3 line 1	"(16 feet)" should be "(16 feet - 1 inch)"
o	4.2.7	page 4-8 paragraph 7 line 5	change "considerd" to "considered"
o	4.3.5.2	page 4-13 paragraph 3 line 3	"(Myoxocephalus)" should be "(Myoxocephalus spp.)"
o	5.3.1.3	page 5-4 paragraph 4 line 3	change "Waslinchuk" to "Waslenchuk"
o	Table 5.2	page 5-103 line 5	change "note" to "not"
		line 19	change "order" to "odor"
o	Table 5.3	page 5-104 line 15	"ND**" should be "ND***"
		footnotes	*"(Section 2.4)" should be "(ER-OL Section 2.4)"
			Source should be ER-OL Table 5.3.-3
o	Table 5.4	line 11	change "Waslinchuk" to "Waslenchuk"