



**BOSTON EDISON**  
25 Braintree Hill Office Park  
Braintree, Massachusetts 02184

E. J. Wagner  
Vice President  
Nuclear Engineering

April 14, 1992  
BECO 5.92-046

NPDES Program Operations Section (WCP)  
Environmental Protection Agency  
P. O. Box 3127  
Boston, MA 02114

Massachusetts Division of Water Pollution Control  
Lakeville Hospital  
Lakeville, MA 02346

DISCHARGE MONITORING REPORT

Dear Sirs:

Enclosed is the Discharge Monitoring Report for Pilgrim Nuclear Power Station (PNPS), NPDES Permit Number MA0003557 (Federal) and Number 359 (State).

The period covered by this report is March 1992.

*E. J. Wagner*  
for E. J. Wagner

RDA/cab/6438

Attachments: 1. Summary  
2. Discharge Monitoring Report

cc: U. S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555

U. S. Nuclear Regulatory Commission  
Region I  
475 Allendale Road  
King of Prussia, PA 19406

Senior NRC Resident Inspector  
Pilgrim Nuclear Power Station

9204200206 920331  
PDR ADOCK 05000293  
R PDR

*IEAB*  
11

ATTACHMENT 1 TO BECO LETTER 5.92-046

SUMMARY

PILGRIM I DISCHARGE MONITORING REPORT

In accordance with the Federal Clean Water Act, as amended (33USC 1251 et seq: the "CWA"), and the Massachusetts Clean Water Act, as amended (M.G.L.; Chap. 21, 26-53), regarding effluent limitations, monitoring requirements and other conditions set forth in the Pilgrim NPDES Permit (Federal Permit Number MA0003557, and State Permit Number 359), parts I and II, the following information is submitted for the period March 1992.

I. Discharge Points Covered in this Report

<u>Discharge Point</u>	<u>Discharge Identification</u>
001	Condenser Cooling Water
002	Thermal Backwash for Biofouling Control
003	Intake Screen Wash
004, 005, 006, and 007	Yard Drains (April and September)
010	Service Cooling Water
011	Makeup Water and Demineralizer Waste Discharge

II. Summary and Notes of Discharge Report

- A. The flow at points 001 and 010 are calculated from system pump capacity and are equal to the total for all pumps in each system running at full capacity for a 24-hour period. The flow at point 011 is measured by noting sump levels before and after discharge. Flow at point 002 is a conservative figure obtained by calculating flow if backwashing took place for 24 hours. Flow at point 003 is calculated from system pump capacity and mean operating time.
- B. The temperatures at points 001 and 002 are measured by resistance temperature detectors (RTD's).
- C. Periodically, total residual chlorine (TRC) concentration in the service cooling water (010) exceeds Permit requirements (0.50 ppm daily average TRC and 1.00 ppm daily maximum TRC) prior to mixing with any other stream, primarily because of the number of service water pumps in operation. Chlorine injection levels are lowered as a corrective measure. The dilution provided by the FNPS circulating water flow keeps total residual chlorine concentrations discharged to Cape Cod Bay below the NPDES Permit limit of 0.1 ppm.

- D. For stormwater outfalls 004, 005, 006 and 007, Sigma 800 SL Portable Composite Samplers are utilized. The samplers are equipped with a "liquid level activator" that commences the sampling when the liquid reaches a predetermined level. This assures a sample is taken "within the first hour of the start of a significant storm event." The intake and collection assemblies of the samplers conform to U.S. EPA requirements for collecting oil and grease samples. No additional inputs to these stormwater outfalls occur downstream of the composite samplers' sampling locations.
- E. Intake traveling water screens were operated without dechlorination pumps operating on March 20 (1) and 23 (1).
- F. The following boron and sodium nitrite discharges (ppm) occurred in March 1992 from discharge point #001. All discharges were below NPDES Permit limits prior to entering Cape Cod Bay.

<u>Date Discharged</u>	<u>Gallons Discharged</u>	<u>Concentration Before Discharge</u>	<u>Concentration Discharged</u>
Boron			
3/02	7,682	<0.05	<0.001
3/07	8,851	<0.05	<0.001
3/26	12,358	<0.05	<0.001
Sodium Nitrite			
3/02	7,682	<20.00	<0.030
3/07	8,851	<20.00	<0.030
3/26	12,358	<20.00	<0.030

- G. Sawdust was applied to seek and seal PNPS condenser leaks on March 19 (90 pounds), 21 (90 pounds), 23 (90 pounds), 26 (240 pounds) and 27 (150 pounds).

ATTACHMENT 2 TO BECO LETTER 5.92-046

DISCHARGE MONITORING REPORT

PERMITTEE NAME: ADDRESS (Include Facility Name/Location if different)  
 NAME: BOSTON ED #1 PILGRIM PLANT  
 ADDRESS: ROCKY HILL ROAD  
 RFD #1  
 PLYMOUTH MA 02360  
 FACILITY  
 LOCATION

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
 DISCHARGE MONITORING REPORT (DMR)  
 (2-16) (17-19)  
 MA0003557 PERMIT NUMBER  
 001 1 DISCHARGE NUMBER  
 MONITORING PERIOD  
 FROM YEAR MO DAY TO YEAR MO DAY  
 92 03 01 TO 92 03 31  
 (12-21) (22-23) (24-25) (26-27) (28-29) (30-31)

MAJOR Facility Approved.  
 (SUBR 5) On: No. 2040-0004.  
 F = FINAL Approval expires 6-30-91.  
 CONDENSER COOLING WATER

\*\*\* NO DISCHARGE [ ] \*\*\*  
 NOTE: Read instructions before completing this form.

ATTN: E.S. KRAFT, PLANT MANAGER

PARAMETER (32-37)	SAMPLE MEASUREMENT	QUANTITY OR LOADING (46-53)			QUALITY OR CONCENTRATION (46-53)			NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-65)	SAMPLE TYPE (69-70)
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM			
TEMPERATURE, WATER DEG. FAHRENHEIT 00011 1 0 0	*****	*****	( )	*****	*****	67.7	( 15 ) OF	0	99/99	RC
EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	*****	*****	****	*****	102	DEG.F			CONTINRCORR UOUS
OXIDANTS, TOTAL RESIDUAL 34044 1 0 0	*****	*****	( )	*****	0.02	0.05	( 19 ) MB/L	0	WH/DS	GR
EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	*****	*****	****	0.1	0.1	MG/L			WHEN GRAB DISCHR
FLOW, IN CONDUIT OR THRU TREATMENT PLANT 50050 1 0 0	*****	415.8	446.4	( 03 ) MGD	*****	*****	( )	0	99/99	ES
EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	447.0	510.0	MGD	*****	*****	****			CONTINVESTINA UOUS
TEMP. DIFF. BETWEEN INTAKE AND DISCHARGE 61576 1 0 0	*****	*****	( )	*****	*****	30.1	( 15 ) OF	0	99/99	CA
EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	*****	*****	****	*****	32	DEG.F			CONTINCALCTD UOUS
	SAMPLE MEASUREMENT									
	PERMIT REQUIREMENT									
	SAMPLE MEASUREMENT									
	PERMIT REQUIREMENT									
	SAMPLE MEASUREMENT									
	PERMIT REQUIREMENT									

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER  
 E.S. KRAFT  
 PLANT MANAGER  
 TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT SEE 18 USC § 1001 AND 33 USC § 1319. Penalties under these statutes may include fines up to \$10,000 and/or maximum imprisonment of between 6 months and 3 years.

W. M. [Signature] for ESK  
 SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE: 508 747-8100  
 DATE: 92 04 09  
 AREA CODE NUMBER YEAR MO DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)  
 PH SHALL NOT VARY MORE THAN 0.5 PH STANDARD UNITS FROM INTAKE WATER. SEE PERMIT PAGE 5 PARAGRAPHS M&N FOR BOPON AND SODIUM NITRATE REPORTING REQUIREMENTS. ATTACH ALL RELATED REPORTS TO THIS FORM. A BARRIER SHALL BE MAINTAINED AT THE THERMAL END OF DISCHARGE CANAL AT ALL TIMES.

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if different)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGE MONITORING REPORT (DMR)

NAME BOSTON ED #1 PILGRIM PLANT

ADDRESS ROCKY HILL ROAD

RFD #1

PLYMOUTH MA 02360

FACILITY

LOCATION

MA0003557  
PERMIT NUMBER

002 1  
DISCHARGE NUMBER

MAJOR Form Approved.  
(SUBR S) OMB No. 2040-0004.  
F - FINAL Approval expires 6-30-91.  
THERMAL BACKWASH

MONITORING PERIOD

FROM	YEAR	MO	DAY	TO	YEAR	MO	DAY
	92	03	07		92	03	31
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

\*\*\* NO DISCHARGE \*\*\*  
NOTE: Read instructions before completing this form.

ATTN: E. S. KRAFT, PLANT MANAGER

PARAMETER (32-37)	SAMPLE MEASUREMENT	(3 Card Only) QUANTITY OF LOADING (45-51)			(4 Card Only) QUALITY OR CONCENTRATION (54-61)				NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
TEMPERATURE, WATER DEG. FAHRENHEIT 00011 1 0 0	*****	*****	( )	*****	*****	*****	*****	*****	*****	*****	*****
EFFLUENT GROSS VALUE FLOW, IN CONDUIT OR THRU TREATMENT PLAN 50050 1 0 0	*****	9.3	( 03 )	*****	*****	*****	*****	*****	*****	*****	*****
EFFLUENT GROSS VALUE	*****	255.0	M&D	*****	*****	*****	*****	*****	*****	*****	*****
		DAILY MX	MGD								

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER <u>E. S. KRAFT</u> <u>PLANT MANAGER</u>	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT (SEE 18 USC § 1001 AND 33 USC § 1319). Penalties under these statutes may include fines up to \$100,000 and/or maximum imprisonment of between 6 months and 3 years.	TELEPHONE	DATE			
		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT <u>W. Stuy M&amp;E</u>	508 747-8100	92	04	09

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)  
THE PH SHALL NOT VARY MORE THAN 0.5 STANDARD UNITS FROM THAT OF THE INTAKE WATER. FLOW RATE IS TO BE ESTIMATED AS IF BACKFLUSHING TOOK PLACE FOR 24 CONTINUOUS HOURS. SEE PERMIT PAGE 8 FOR CONDITIONS REGARDING TH

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if different)

NAME GOSTON EQ #1 PILGRIM PLANT  
 ADDRESS ROCKY HILL ROAD  
RFD #1  
PLYMOUTH MA 02360  
 FACILITY \_\_\_\_\_  
 LOCATION \_\_\_\_\_

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
 DISCHARGE MONITORING REPORT (DMR)

MA0003557 (2-16) PERMIT NUMBER  
 003 A (17-19) DISCHARGE NUMBER

MAJOR Form Approved.  
 (SUBR S) OMB No. 2040-0004.  
 F - FINAL Approval expires 6-30-91.  
 INTAKE SCREEN WASH

MONITORING PERIOD  
 FROM YEAR MO DAY TO YEAR MO DAY  
 92 03 01 TO 92 03 31  
 (20-21) (22-23) (24-25) (26-27) (28-29) (30-31)

\*\*\* NO DISCHARGE \*\*\*  
 NOTE: Read instructions before completing this form.

ATTN: E.S. KRAFT, PLANT MANAGER

PARAMETER (52-57)	SAMPLE MEASUREMENT	(3 Card Only) QUANTITY OR LOADING (46-53)			(4 Card Only) QUALITY OR CONCENTRATION (54-61)				NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
FLOW IN CONDUIT OR THRU TREATMENT PLANT 50050 1 0 0 EFFLUENT GROSS VALUE		0.342	1.51	( 03 ) MGD	*****	*****	*****	( )	0	01/01	ES
	PERMIT REQUIREMENT	2.1 MONTH AVG	2.1 DLY MAX	MGD	*****	*****	*****	****		DAILY	ESTIMA
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER: E.S. KRAFT PLANT MANAGER  
 I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION I BELIEVE THE SUBMITTED INFORMATION IS TRUE ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT SEE 18 USC § 1001 AND 33 USC § 1319. (Fines under these statutes may include fines up to \$10,000 and/or maximum imprisonment of between 6 months and 5 years.)  
 SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT: [Signature]  
 TELEPHONE: 508 747-8100  
 DATE: 92 04 09

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here):  
 THE TEMPERATURE OF THIS DISCHARGE SHALL AT NO TIME EXCEED THE TEMPERATURE OF THE INTAKE WATER.  
 ALL FISH SHELLFISH AND OTHER ORGANISMS COLLECTED OR TRAPPED ON INTAKE SCREEN SHOULD BE RETURNED TO WATER.  
 DISTAN FROM INTAKE STRUCTURES TO PREVENT REIMPINGEMENT.

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if different)  
 NAME BOSTON ED #1 PILGRIM PLANT  
 ADDRESS ROCKY HILL ROAD  
RFQ #1  
PLYMOUTH MA 02360  
 FACILITY  
 LOCATION

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
 DISCHARGE MONITORING REPORT (DMR)

MA0003557 PERMIT NUMBER  
 010 A DISCHARGE NUMBER

MAJOR Form Approved.  
 (SUBR 5) OMB No. 2040-0004.  
 F - FINAL Approval expires 6-30-91.  
 PLANT SERVICE COOLING WATER

MONITORING PERIOD  
 FROM YEAR 92 MO 03 DAY 01 TO YEAR 92 MO 03 DAY 31  
 (20-21) (22-23) (24-25) (26-27) (28-29) (30-31)

\*\*\* NO DISCHARGE \*\*\*  
 NOTE: Read instructions before completing this form.

ATTN: E.S. KRAFT, PLANT MANAGER

PARAMETER (32-37)	SAMPLE MEASUREMENT	(3 Card Only) QUANTITY OR LOADING (46-53)			(4 Card Only) QUALITY OR CONCENTRATION (46-53)				NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-65)	SAMPLE TYPE (69-70)
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
OXIDANTS, TOTAL RESIDUAL 34044 1 0 0	*****	*****	( )	*****	0.25	0.52	( 19) mg/L	0	99/99	RC	
EFFLUENT GROSS VALUE	*****	*****	****	*****	0.5 Mnth Avg	1.0 Dly Max	MG/L			CONTINUOUS	
FLOW, IN CONDUIT OR THRU TREATMENT PLANT 50050 1 0 0	5.3	*****	( 03) MBD	*****	*****	*****	( )	0	99/99	ES	
EFFLUENT GROSS VALUE	19.4 Mnth Avg	*****	MGD	*****	*****	*****	****			CONTINUOUS	
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER: E.S. KRAFT PLANT MANAGER  
 I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION I BELIEVE THE SUBMITTED INFORMATION IS TRUE ACCURATE AND COMPLETE I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT SEE 18 USC § 1001 AND 33 USC § 1319. Penalties under these statutes may include fines up to \$100,000 and/or maximum imprisonment of between 6 months and 3 years.  
 SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT: [Signature]  
 TELEPHONE: 508 747-8100  
 DATE: 92 04 09

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments by #)  
 CONTINUOUS CHLORINATION OF SERVICE WATER SYSTEM MAY BE USED FOR MACROINVERTEBRATE CONTROL. FLOW RATE SHALL BE ESTIMATED FROM PUMP CAPACITY CURVES AND OPERATIONAL HOURS.



PERMITTEE NAME: ADDRESS (Include Facility Name/Location if different)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

(2-16) (17-19)

NAME BOSTON ED #1 PILGRIM PLANT

ADDRESS ROCKY HILL ROAD

RFD #1

PLYMOUTH MA 02360

FACILITY LOCATION

ATTN: E.S. KRAFT, PLANT MANAGER

MA0003557  
PERMIT NUMBER

011 A  
DISCHARGE NUMBER

MAJOR Form Approved.  
(SUBR S) OMB No. 2040-0004.  
F - FINAL Approval expires 6-30-91.  
MAKE UP WATER AND DEMINERALIZE

MONITORING PERIOD							
FROM	YEAR	MO	DAY	TO	YEAR	MO	DAY
	92	03	01		92	03	31
	(19-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

\*\*\* NO DISCHARGE  \*\*\*  
NOTE: Read instructions before completing this form.

PARAMETER (37-37)	SAMPLE MEASUREMENT	(3 Card Only) QUANTITY OR LOADING (34-61)			(4 Card Only) QUALITY OR CONCENTRATION (34-61)				NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
SOLIDS, TOTAL SUSPENDED	*****	*****	( )	*****	0.70	1.00	( 19 )	0	01/BA GR		
EFFLUENT GROSS VALUE	*****	*****	****	*****	30	100	MG/L		ONCE/ GRAB BATCH		
FLOW, IN CONDUIT OR THRU TREATMENT PLAN	*****	*****	( 03 )	*****	*****	*****	( )	0	WH/DS ES		
EFFLUENT GROSS VALUE	*****	*****	****	*****	*****	*****	*****	****	WHEN ESTIMA DISCHR		

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER  
E.S. KRAFT  
PLANT MANAGER  
TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. Penalties under these statutes may include fines up to \$100,000 and/or maximum imprisonment of between 6 months and 3 years.

William H. Esic  
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE: 508 747-8100  
DATE: 92 04 09  
AREA CODE NUMBER YEAR MO DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)  
SEE PAGE 3 OF PERMIT PARAGRAPH N FOR SODIUM NITRATE REPORTING REQUIREMENTS. ATTACH ALL RELATED REPORTS TO THIS FORM

00403/911231-1539