UNITED STATES
ATOMIC ENERGY COMMISSION
DIRECTORATE OF REGULATORY OPERATIONS
REGION I
970 BROAD STREET
NEWARK, NEW JERSEY 07102

March [illegible], 197[illegible]

To Files:

TRIP TO OYSTER CREEK ON FEBRUARY 21, 1973

The purpose of this trip was to obtain split samples of off-gas, stack gas particulates and charcoal canisters as well as a monthly composite of liquid radwaste. This split was to be a second round of spliting under the state contracts program. As it turned out, the reactor was in the process of pulling control elements, therefore, it was decided that the off-gas sample would not be representative and the sampling was delayed until a week from Friday, March 2, 1973. The other samples will be obtained at the same time. I spent the afternoon in Trenton with Dave McCurdy discussing the analytical results from the split of the last quarter of 1972 as well as some spike filter samples that had been analyzed by McCurdy. The Trenton program appears to be in good shape with only one or two isotopes where analytical improvement is needed. Hopefully, we will resolve these minor differences within the next week or so.

Also discussed at Oyster Creek was the iodine release after startup which appeared to be slightly larger than normal. The licensee had taken several samples of the rate of iodine evolution and had documented these releases. McCurdy also picked up the iodine release on one of his nearby sampling stations. Also discussed at Oyster Creek was the recent fish kill. The fish kill appeared to have occurred prior to the reactor shutdown and it appears to be a combination of temperature as well as other unknown factors. A review of the temperature records revealed that the temperature did fall to 30° in the bay and this was documented on two separate recorders. The Oyster Creek people had a scheduled meeting with their consultant in regard to the fish kill to further investigate the causes behind the continuing fish kill. The fish kill was continuing when we were there on the twenty-first. Details upon request.

R. J. Everett
Radiation Specialist

cc: J. P. Stohr

B/306

MAR 1 1973

Docket No. 50-219

Jersey Central Power and Light
Company
ATTN: Mr. Donald A. Ross, Manager
Nuclear Generating Stations
Madison Avenue at Punchbowl Road
Morristown, New Jersey 07960

Gentlemen:

This will acknowledge receipt of your letter dated February 8, 1973, with attachments, reporting the exposure of three individuals to radiation on January 1, 1973. This matter was examined during an inspection of activities authorized under License No. DPR-16 on February 13-16, 1973.

It should be noted that Section 20.405 of 10 CFR Part 20 requires the submission of such reports within thirty days.

Your cooperation with us is appreciated.

Sincerely,

Original signed by
F. E. Kruesi

F. E. Kruesi, Director of
Regulatory Operations

bcc w/copy of memo dtd
February 8, 1973:

A. Giambusso, L
J. M. Hendrie, L
D. J. Skovholt, L
R. J. Schemel, L
P. A. Morris, RO
R. H. Engelken, RO
J. G. Keppler, RO
H. D. Thornburg, RO
J. P. O'Reilly, RO:I
J. G. Davis, RO:II
B. H. Grier, RO:III
J. W. Flora, RO:IV
R. W. Smith, RO:V
C. F. Eason, AWCRR (2)
DR Reading File
DR Central File
PDR
Local PDR
NSIC
DTIE
Incident File (H. Semmes)

8302230269
1p.

B/307

OFFICE ▶	RO (C)	RO	RO RHE	RO		
	DGKirkpatrick:mm	2-72				
SURNAME ▶	JGKeppler	GRoy	RHEngelken	FEKruesi		
DATE ▶	2/28/73	2/28	2/28/73	3/1/73		

Form AEC-318 (Rev. 9-53) AECM 0240 ☆ U.S. GOVERNMENT PRINTING OFFICE: 1972—466-983

Jersey Central Power & Light Company

MADISON AVENUE AT PUNCH BOWL ROAD • MORRISTOWN, N.J. 07960 • 539-6111

February 8, 1973

Mr. P. E. Kruesi
Director of Regulatory Operations
United States Atomic Energy Commission
Washington, D. C. 20545

Dear Mr. Kruesi:

Subject: Oyster Creek Station
Docket No. 50-219
Personnel Radiation Overexposure

The attached report details the information surrounding the overexposure of three of our personnel at the Oyster Creek Nuclear Generating Station on January 1, 1973 and is being submitted in accordance with the requirements of 10CFR20, paragraph 20.405(a)(1). Accordingly to the requirements in paragraph 20.405(c), each of the individuals named in Enclosure 1 will be notified regarding the nature and extent of overexposure.

Upon discovery of the condition, greater controls were immediately instituted to prevent a recurrence of the situation and more stringent requirements will be instituted with regard to sampling frequency and access control for future maintenance activities.

Very truly yours,

Donald A. Ross
Manager, Nuclear Generating Stations

pk

Attachments

cc: Mr. J. D. O'Reilly, Director
Directorate of Regulatory Operations, Region 1

8302230275 3pp.

REPORT OF OVEREXPOSURES

As a result of the reactor scram on December 29, 1972 and the attendant problems which were experienced, all five relief valves were being removed from the main steam lines for inspection and ultimate modification. During the initial stage of this maintenance period, three individuals were exposed to concentrations of radioactive material in excess of the amounts specified in Appendix B, Table 1, Column 1 of 10CFR20. A description of the incident follows:

On December 31, 1972, samples taken of containment airborne concentrations were such that access to the containment was unlimited (.66 hours) for the maintenance activities involved. A routine containment air sample taken at 8:15 a.m., January 1, 1973, indicated an increased airborne concentration over the previous day with the major contributor, and in fact the only contributor of significance, being Xe^{133}. Access was permitted to the containment but with a reduced stay time of 15.7 hours. Based upon this fact, an increased sampling frequency was initiated and an investigation commenced in an effort to determine the source of the activity. A second sample, taken nearly an hour later at 9:10 a.m., indicated the levels of Xe^{133} had measurably increased, reducing the stay time to 12.8 hours. It was decided at that time to count still a third sample after being in service for a shorter time interval. Tentative plans were made to stop all work if the results of the sample showed an increasing airborne level which would limit access to five hours or less. Forty minutes later, at 9:50 a.m., the sample was counted and it was discovered that the levels of Xe^{133} had again more than doubled; however, the subsequent access time was reduced to only 6.1 hours and maintenance activities were permitted to continue particularly in light of the fact that a work break was less than two hours away.

By this time, the source of activity had been determined to be originating from the open relief valve flanges which were being cleaned up by several mechanics. Preparations were made to start the condenser mechanical vacuum pump and to perform the valving required in the main steam system so that the gases coming out of the relief valve openings could be exhausted to the condenser instead of diffusing into the primary containment atmosphere. Directions were given to tightly cover any of the remaining open relief valve flanges and to insure that prior to proceeding to work on any open flange the flange would be checked to be [illegible]. In addition, [illegible] drawn through the relief valve and thereby through the condenser [illegible] being exhausted via its normal path. However, the fourth sample taken at 11:25 a.m. indicated a Xe^{133} concentration of 4.76×10^{-4} µc/ml which limited the allowable stay time to just less than one hour. By the time the results of this sample were calculated, the personnel in the containment had stopped work for their noon break.

At that time, access to the containment was restricted until further samples could be taken and the airborne activity found to have decreased to more acceptable levels. Preliminary calculations were made which indicated that three personnel were in the containment during the period of time involved so that the requirements of 10CFR20, paragraph 20.103(b) were not met. The extent of the occupancy time ranged from 5% to 50% above the allowable time limits. Instructions were given to prevent these affected personnel from gaining access to any area of the plant where airborne activity concentrations were of such a nature that access would not be unlimited. In addition, the increased containment air sampling frequency was maintained and a more strict criteria for access was instituted to insure that no additional personnel overexposures occurred as a result of abnormal concentrations of airborne activity. This, coupled with the operation of the mechanical vacuum pump, the covering of the relief valve flange openings, and the maintenance of the containment air lock interlock, prevented any further exposure problems during the progress of maintenance work in the containment.

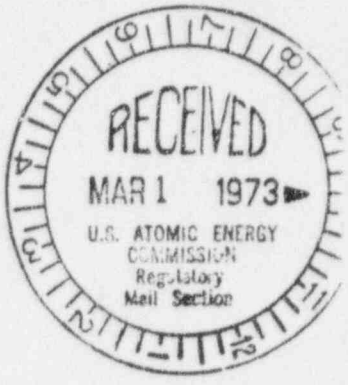
Enclosure 1 lists the personnel involved, the average concentrations of Xe^{133} and Xe^{135} to which they were exposed, the permissible stay times based on the average concentrations, the period of time actually within the containment, and the estimated extent of excessive exposure during this period.

Measures will be taken during future maintenance activities to sample airborne concentrations at a greater frequency when open flanges to the reactor coolant system exist and to make provisions, if possible, to insure that activity cannot diffuse into the surrounding atmosphere. Additionally, more stringent limits will be imposed on access criteria to areas of airborne radioactivity concentrations and plotting of any unanticipated changes in concentration will be initiated to permit basing access decisions on the anticipated future trend.

Jersey Central Power & Light Company

MADISON AVENUE AT PUNCH BOWL ROAD • MORRISTOWN, N.J. 07960 • 539-6111

February 27, 1973



Mr. A. Giambusso
Deputy Director for Reactor Projects
Directorate of Licensing
United States Atomic Energy Commission
Washington, D. C. 20545

Dear Mr. Giambusso:

Subject: Oyster Creek Station
Docket No. 50-219
Failure of Stack Gas Monitoring System

This event is considered to be an abnormal occurrence, as defined in the Technical Specifications, Paragraph 1.15.B. Notification of this event, as required by the Technical Specifications, Paragraph 6.6.B, was made to the AEC Region I, Directorate of Regulatory Operations, on February 12, 1973.

At the beginning of the day shift on February 12, it was recognized that low sample flow existed in the stack monitor system. The filters were inspected and found not to be the cause of the low flow. Warm air was blown back through the sample line but no improvement in sample flow was realized. At 11:10 a.m., an orderly shut down of the plant was initiated when it was determined the stack gas monitoring system was no longer functioning properly. Increased surveillance of the continuous off-gas monitor was used to infer stack release rates during the period.

Upon investigation, the cause of the monitor flow problem was determined to be moisture freezing in the sample line at the 262 foot elevation where the line runs external to the stack. The line was thawed out and heat traced to prevent future freezing. At 3:40 p.m., sample flow was reestablished and the stack monitor was determined to be functioning properly. The plant shutdown in progress was then terminated.

Upon further investigation into this occurrence by the Plant Operations Review Committee, it was recognized that on February 11 the stack gas filter had been changed due to noting a low sample flow rate. While the filter was being changed, the sample line was blown out with air. The monitor flow returned to normal; however, later that day the flow rate again decreased and technicians were called in to check out the monitoring system. At this time, for a period of approximately three hours, the gaseous stack releases were not being properly monitored.

1384

The safety significance attached to this event is associated with the temporary loss of gaseous effluent monitoring at the stack. However, during the time the stack gas sampling flow was reduced, the off-gas monitor continued to provide continuous, related gaseous release monitoring. At no time did the activity indicated by these monitors increase above what they were reading prior to the stack gas sample flow problem. Samples of off gas analyzed during this period showed the stack release rate to be 8×10^4 µci/sec. The I^{131} concentration, as determined by analysis of the charcoal cartridges in service during this period, showed an average release rate of .2 µci/sec.

To prevent a recurrence of this event, the external portion of the sample line has been insulated and heat traced. In addition, procedure 501, which covers the action required when receiving the stack gas sample system low flow alarm, will be expanded to clarify the operator action to be taken. This change will then be reviewed with all licensed personnel.

Very truly yours,

Donald A. Ross
Manager, Nuclear Generating Stations

pk

Enclosures (40)

cc: Mr. J. P. O'Reilly, Director
Directorate of Regulatory Operations, Region 1

FEB 26 1973

Charles A. Pelletier, Chief, Environmental Inspection Branch
Directorate of Regulatory Operations, HQ

OYSTER CREEK FISH KILL, JANUARY 1973 (RO INQUIRY REPORT NO. 50-219/73-02Q

Transmitted herewith for your information is a copy of a letter dated February 2, 1973 from J. W. Reintjes, Atlantic Estuarine Fisheries Center, which includes as attachments his "Additional Comments Relative to Oyster Creek Menhaden Kill, January, 1973" and two reports from Dr. Wurtz (Jersey Central Power & Light Company Consultant) to CPU dated January 11 and 17, 1973.

Per my request, Mr. Reintjes has included his professional evaluation of the incident and his suggestions of ways in which the plant might preplan their shut downs to lessen the effects of cold shock. Some of Mr. Reintjes' suggestions or extensions thereof might be considered for incorporation into Technical Specifications.

Also included for your information is a copy of a report by Mr. Reintjes, "Compilation and Correlation Analysis of Published and Unpublished Environmental Data with Distribution, Abundance and Movements of Young Menhaden in Mid-Atlantic Estuaries."

A grant was given to the Atlantic Estuarine Fisheries Center by Jersey Central Power & Light Company to pay for expenses involved in preparing the report.

Mr. Reintjes on February 22, 1973 attended a meeting with Jersey Central to discuss implications of this report as concerns methods of plant operation to avoid Menhaden kills. Discussions at the meeting indicated that Oyster Creek is considering modifying plant operation to avoid Menhaden kills.

Per telephone conversations with Leo Higginbotham on February 23 and 26, 1973, I am awaiting word on the appropriateness of designating people such as Mr. Reintjes as a RO:I Consultant. In the interim, I will consult with him but not designate him as a RO:I Consultant.

8302230057 1p.

B1309

J. P. Stohr, Senior
Radiation Specialist

OFFICE ▶	RO			
SURNAME ▶	Stohr/nvk			
DATE ▶	2-26-73			

Form AEC-318 (Rev. 9-53) U.S. GOVERNMENT PRINTING OFFICE : 1969 — O-364-598

FEB 20 1973

J. G. Keppler, Chief, Reactor Testing & Operations Br.
Directorate of Regulatory Operations, HQ

SPECIAL INSPECTION REGARDING ALLEGATION OF POOR RADIOLOGICAL CONTROL PRACTICES AT OYSTER CREEK, DOCKET NO. 50-219*

RO:I inspectors completed a special inspection at the Oyster Creek BWR facility during February 13 - 16, 1973. Although up to 30 violations and/or safety items were identified, the inspecoers' preliminary conclusions at the facility on February 16, 1973 were that no immediate threat to the health and safety of the public appeared to exist.

The Director of Region I personnally contacted the cognizant Jersey Central Power & Light Company Vice President regarding our concerns in this matter on February 14, 1973. RO:I is currently completing an evaluation of the violations and plan to meet with the licensee's corporate management on or about March 1, 1973 to discuss these matters.

The licensee at the facility began completing some corrective actions during the time of the RO:I inspection. This was visually observed by our inspectors.

The licensee's corporate level management reported via telephone on February 23, 1973 that approximately 70% of the violations had been corrected. We intend to verify the licensee's telephone report during planned RO:I followup inspections at the site.

---

*Reference to letter, J. P. O'Reilly to R. H. Engelken, dated February 14, 1973 regarding "Anonymous Allegations - Jersey Central Power & Light Co., Oyster Creek Nuclear Generating Station".

8/310

OFFICE ▶	RO					
SURNAME ▶	Caphton:sng					
DATE ▶	2/26/73					

Form AEC-318 (Rev. 9-53) AECM 0240

9607160192 xpp

Types of violations identified by RO:I inspectors included:

a. Failure to properly post (approximately 8) low radiation and (approximately 7) high radiation areas,

b. Failure to properly label (approximately 8) radioactive material containers and/or locations,

c. Excessive radiation levels in unrestricted areas,

d. Failure to make adequate surveys,

e. Failure to provide personnel monitoring,

f. Failure to inform personnel of the occurrence of radioactive materials or radiation levels in a restricted area,

g. Failure to report, within 30 days, exposure to personnel to excessive air concentrations,

h. Violation of Technical Specification requirement 6.2.B.2 relating to radiation control procedures,

i. Failure to control radiation exposure to one individual within the limits specified by plant procedures.

Types of safety items include:

a. Failure to establish a radiological protection retraining program for plant personnel,

b. Failure to make dose rate surveys prior to capping high level waste drums,

c. Failure of extended radiation work procedures to reflect the existing conditions, covering routine work in the reactor building,

d. Poor radiological housekeeping practices relative to storage and control of radioactive materials.

An inspection report is being prepared covering these matters. The report is being given Regional priority.

D. L. Caphton
Senior Reactor Inspector
Facility Operations Branch

bcc: J. P. O'Reilly
R. T. Carlson
P. R. Nelson
F. S. Cantrell