

U.S. NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT

Region I

Report No. 50-219/80-11

Docket No. 50-219

License No. DPR-16 Priority -- Category C

Licensee: Jersey Central Power and Light Company

Madison Avenue at Punch Bowl Road

Morristown, New Jersey 07960

Facility Name: Oyster Creek Nuclear Power Station

Inspection at: Toms River, New Jersey

Inspection conducted: March 18 and 19, 1980

Inspectors: R. L. Nimitz  
R. L. Nimitz, Radiation Specialist

2 May 80  
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date signed

Approved by: P. J. Knapp  
P. J. Knapp, Chief, Radiation Support Section  
Fuel Facility & Materials Safety Branch

2 May 80  
date signed

Inspection Summary:

Inspection on March 18 and 19, 1980 (Report No. 50-219/80-11)

Areas Inspected: Special, unannounced inspection by one regional based inspector of the licensee's actions and re-evaluations following a personnel contamination/intake event on March 2, 1980. Areas inspected included: intake estimates, air sampling, precautions and procedures, personnel monitoring, instruction to workers and radiation protection monitoring. The inspection involved 11 inspector-hours onsite by one regional based inspector.

Results: Of the six areas inspected, no items of noncompliance were identified in 2 areas; five items of noncompliance were identified in 4 areas (Infraction - failure to perform surveys in accordance with 10 CFR 20.201(b) to assure compliance with 10 CFR 20.103(a)(3), Paragraph 5.a; Infraction - failure to follow procedures pursuant to Technical Specification 6.11, Paragraph 6; Infraction - failure to use engineering controls or other precautions and procedures as required by 10 CFR 20.103(b), Paragraph 5.b; Infraction - failure to instruct workers in accordance with 10 CFR 19.12, Paragraph 7; Infraction - failure to establish and implement T.S. 6.8.1 procedure for Radioactive Work Permit, Paragraph 8.b).

Region I Form 12  
(Rev. April 77)

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## DETAILS

### 1. Persons Contacted

- \*D. Ross, Manager, Nuclear Generation - Jersey Central Power and Light Company
- \*J. Carroll, Jr., Station Manager, Oyster Creek Nuclear Generating Station (OCNGS)
- \*W. Garvey, Director Station Administration (OCNGS)
- \*D. Turner, Supervisor, Health Physics (OCNGS)

\* denotes those individuals attending the exit interview on March 19, 1980.

The inspector interviewed several other licensee employees including members of Radiation Protection, Maintenance and Operations staffs.

### 2. Inspection Scope

The purpose of this inspection effort was to review licensee actions and evaluations performed as a result of an event on March 2, 1980, at the Oyster Creek Nuclear Generating Station in which two individuals sustained intakes of radioactive materials while performing work on Control Rod Blade Handling Tools.

### 3. Event Description

On March 2, 1980 work was assigned to licensee maintenance personnel to remove, examine and repair as necessary Control Rod Blade Removal (CRBR) tools located on the Refueling Floor of the licensee's Oyster Creek Facility.

A new CRBR tool was removed from the spent fuel pool, washed, dried, repaired and placed back into the pool by the maintenance personnel on the morning of March 2, 1980, at 10:00 AM. A second, older CRBR tool was removed, washed, dried, examined and subsequently stored on the refueling floor by the maintenance personnel on the evening of March 2, 1980 at 8:00 PM. Licensee Radiation Protection personnel were in attendance and monitored the work activities.

Sometime, during the evening handling of the old tool, two licensee maintenance personnel sustained intakes of radioactive materials. The worker's intakes were identified via whole body counting done as a result of personnel contamination identified on the individuals during their "frisking" prior to exiting the licensee's monitoring and change room.

#### 4. Personnel Contamination and Intake Estimate

##### a. Personnel Contamination

The personnel exposure to radioactive materials was identified by personnel "frisking" at the monitor and change room as indicated in the previous paragraph.

The inspectors review of personnel contamination survey forms indicated the following:

TABLE 1

<u>Individual</u>	<u>Location</u>	<u>Before Decontamination (DPM)*</u>
A	Face	21,000
	Nasal Swab R	834
	Nasal Swab - L	469
	Personal Clothing Maximum	20,000
B	Mouth Area	4,000
	Nasal Swab - R	278
	Nasal Swab - L	450
	Personal Clothing Maximum	26,000
	Hands	20,000

The inspector reviewed the licensee's followup to the personnel contamination with respect to the following procedures:

- 905.10, "Personnel Contamination No Injury." Revision 4
- 905.14, "Potential Excessive Radioactive Material Inhalation," Revision 3

The inspector review indicated the licensee appeared to adhere to the requirements of the above procedures.

In reviewing the initial identification of personnel contamination, the inspector noted the personnel had frisked at the exit of the refueling floor, however, due to high frisker background, the contamination was not detected. The inspector expressed concern with the above particularly since this item had been discussed with licensee representatives during a previous inspection. During the previous inspection, licensee representatives indicated the problem was to be corrected with shielded frisking booths. The inspector noted that as a result of these high background problems and failure to detect the

\* Disintegrations Per Minute Beta-Gamma

personnel contamination of the above individuals, the licensee has since installed shielded frisking booths. Inspector review of the booth on the refueling floor on March 19, 1980 indicated a nominal background of 100 counts per minute.

b. Intake Estimate

The licensee's Radiation Protection Staff performed an initial intake evaluation of the two workers on March 3, 1980. The workers, Individual A and Individual B, were whole body counted by the licensee's whole body counting contractor at approximately three hours after the identification of personnel contamination. The licensee also performed subsequent whole body counts (WBC) to determine location and elimination rate of the radioactive material. Additionally, five individuals working in the vicinity of the control rod blade tool work area were also whole body counted. The WBC data of these five individuals indicated less than 1.0% of the allowable quarterly quantity limit for intake of Cobalt 60.

Calculations performed by the licensee indicated the following intakes for Individuals A and B:

Table 1(1)

<u>Individual</u>	<u>Radionuclide</u>	<u>Deposition</u>	<u>Intake</u>	<u>% of 10 CFR 20 Appendix B Quarter Quantity Limit (Intake)</u>
A(2)	Co-60	1257 + 63	1676	29
B(3)	Co-60	389 + 20	518	9

(1) Intake = amount entering nose or mouth (ICRP 10)  
 Deposition = amount present in the organ (total body) of reference  
 (ICRP 10)  
 Intake, Deposition specified in nanocuries

(2) March 3, 1980 WBC @ 6:15 p.m.

(3) March 3, 1980 WBC @ 6:10 a.m.

NOTE: Event occurrence March 2, 1980 at approximately 8:00 p.m.



The inspector noted that, based on the WBC data of the individuals and application of the ICRP retention model, the individuals did not sustain an intake of Cobalt-60 greater than the allowable 10 CFR 20 quarterly quantity limit.

In reviewing the contamination survey data of the tools, the inspector did note the tools to exhibit significant levels of alpha contamination, particularly the older tool. The inspector questioned licensee representatives as to the nature of alpha intake analysis performed on the individuals. Licensee representatives indicated that gross alpha counting of urine samples had been performed. The inspector noted the licensee has also reviewed previous air sample analyses to be used for possible alpha intake estimates by using the alpha ratios of these previous samples. Based on the analysis of excreta samples and review of previous air sample analyses, licensee representatives indicated no significant intake of alpha emitters had occurred. The inspector noted that depending on the transportability of the alpha emitter, the intake of the alpha emitter may or may not have been evidenced by analyses of urine. Additionally, the inspector noted the previous air samples taken and analyzed were from a different location and may not be representative (i.e., alpha ratio may be different) of the actual alpha ratio present in the material intake sustained by the two individuals.

The inspector noted the licensee has on March 21, 1980 sent a smear sample of the contamination from the tool to an independent contractor for analysis. This sample will be used to determine alpha ratios present in the material, the personnel were exposed to.

The inspector indicated that pending final review of the smear analysis, the question of intake of alpha emitters will remain an unresolved item (50-219/80-1105).

## 5. Respiratory Protection

### a. Air Sampling

10 CFR 20.103, "Exposure of individuals to concentrations of radioactive materials in air in restricted area" states in paragraph (a) (3) that, "For purposes of determining compliance with the requirements of this section the licensee shall use suitable measurements of concentrations of radioactive materials in air for detecting and evaluating airborne radioactivity in restricted areas and in addition, as appropriate, shall use measurements of radioactivity in the body, measurements of radioactivity excreted from the body, or any combination of such measurements as may be necessary for timely detection and assessment of individual intakes of radioactivity by exposed individuals".

Inspector examination of the radiation and contamination surveys associated with the new and old control rod blade handling tools (discussed in paragraph 2) indicated that the new tool (Survey No. 1522-80) exhibited beta-gamma removable contamination levels to 340,000 dpm/100 cm<sup>2</sup> beta-gamma and alpha removable contamination to 47 dpm/100 cm<sup>2</sup>. The old tool (Survey No. 1542-80) exhibited removable contamination to 850 millirad/hour beta per 100 cm<sup>2</sup> and 29 millirem/hour gamma per 100 cm<sup>2</sup> and alpha contamination to 390 dpm/100 cm<sup>2</sup>.

As discussed in paragraph 2, both tools were cleaned and examined while only the new tool was repaired. The cleaning operation performed, involved first, hosing down the tools as they came out of the spent fuel pool and then wiping the tools down with paper towels to remove the loose removable contamination (crud) and dry the tools.

Since the cleaning operations involved a significant potential to generate airborne radioactivity, as evidenced by the levels of removable contamination on the tools, the inspector requested job specific airborne radioactivity surveys for review. Inspector discussions with licensee representatives indicated no job specific airborne survey had been performed. The inspector noted that general area air surveys had been performed, however, these surveys were not representative of the actual airborne concentrations in the work area, in that these samples were taken at a minimum of 20 feet from the actual work location and were therefore not suitable for the purposes of determining compliance with 10 CFR 20.103.

The inspector expressed concern with the above and indicated to licensee representatives that failure to comply with the requirements of 10 CFR 20.103(a)(3) constitutes noncompliance with that requirement (50-219/80-11-01).

Additionally, the inspector noted this item of noncompliance to be recurrent with an instance identified during inspection no. 79-07.

b. Precautions and Procedures

10 CFR 20.103, "Exposure of individuals to concentration of radioactive materials in air in restricted areas," requires in paragraph (b)(1) that the licensee shall, as a precautionary procedure, use process

or other engineering controls, to the extent practicable, to limit concentrations of radioactive materials in air to levels below those which delimit an airborne radioactivity area as defined in § 20:203(d)(ii). Further, paragraph (b)(2) of 20.103 requires that, when it is impracticable to apply process or other engineering controls other precautionary procedures, such as increased surveillance, limitation of working times or the provisions of respiratory protective equipment shall be used to maintain intake of material below that which would result from the inhalation (intake) of such material for 40 hours at the Appendix B, Table 1 concentrations. Inspector review of radioactive material intake data indicated the individuals had exceeded the 40 hour control measure discussed above.

In reviewing the event with respect to the above, the inspector noted no process or engineering controls were used by the licensee, to limit concentrations of radioactive materials in air to levels indicated above. The licensee did place plastic sheeting over the control rod blade handling tools, however, in examining and cleaning the tools, the plastic was repeatedly lifted. The licensee representatives indicated the cleaning and removal of crud on the tools generated cleaning cloths with up to 48,000 millirads/hour removable contamination. Additionally, licensee survey data indicates the plastic, used to cover the blade tools, was in itself contaminated to 10,000 dpm/100 cm<sup>2</sup>. The inspector also noted, the refueling floor ventilation flow had been altered (i.e. reduced) for heat retention purposes.

The inspector expressed concern with the above and questioned licensee representatives as to the nature and extent of other precautionary procedures implemented as addressed above. Based on discussion with licensee representatives, no other precautionary procedures, such as limitation of working times, increased surveillance, or the provision of respiratory protection were implemented.

As a result, the inspector indicated to licensee representatives that failure to use engineering controls, to the extent practicable, or other precautionary procedures to limit intake of radioactive materials as required by 10 CFR 20.103(b) constitutes noncompliance with that requirement (50-219/80-11-02).

The inspector subsequently observed that the licensee had constructed and placed in operation a tent enclosed structure, ventilated via absolute filters, for work on high contamination items on the refueling floor.

## 6. Extremity Monitoring

Technical Specification (T.S.) 6.11, "Radiation Protection Program," states, "Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR 20 and shall be approved, maintained, and adhered to for all operations involved personnel radiation exposure."

Licensee Radiation Protection Procedure No. 915.7, Revision 0, "Personnel Monitoring," developed pursuant to the above, requires in paragraph 5.6 that extremity dosimetry shall be issued when the estimated extremity dose is expected to exceed four (4) times the estimated whole body dose. Additionally, the inspector noted 10 CFR 20.202(a) to require the licensee to supply appropriate personnel monitoring equipment and shall require the use of such equipment by each individual who receives or is likely to receive 25 percent of the applicable value specified in 10 CFR 20.101(a).

In reviewing the radiation survey data associated with the control rod blade handling tools, the inspector noted the new tool to exhibit radiation dose rates up to 3,000 millirad/hour beta radiation and 60 millirem/hour gamma radiation on contact while the old tool exhibited dose rates of 48,000 millirad/hour beta radiation and 1,000 millirem/hour gamma radiation on contact. The inspector noted that the extremity doses were approximately 48 times the whole body dose using no protection factor for portions of the tool work.

Additional inspector review indicated that, depending on work time and protection factors associated with protective clothing, the workers were not likely to receive 25 percent of the applicable value for extremities specified in 10 CFR 20.101 during handling of the new tool. However, the individuals involved with the removal, examination, and cleaning of the old tool were likely to receive a dose to the extremities in excess of 25 percent of the applicable value specified in § 20.101. The inspector questioned licensee representatives as to the nature and extent of monitoring provided in this area. The discussions indicated that no appropriate personnel monitoring equipment was issued.

The inspector indicated to licensee representatives that failure to issue personnel monitoring as required by T. S. 6.11, Procedure 915.7 constitutes noncompliance with T. S. 6.11 (50-219/80-11-03).

Additionally, the inspector noted use of personnel monitoring and adherence to radiation protection procedures to be an area of inspector concern during inspection 80-03. The inspector also noted this item of noncompliance i.e., failure to follow radiation protection procedures to be recurrent with instances identified during inspection nos. 80-03 and 79-07.



7. Instructions to Workers

10 CFR 19.12, "Instructions to Workers", states, "All individuals working in or frequenting any portion of a restricted area shall be kept informed of the storage, transfer, or use of radioactive materials or of radiation in such portions of the restricted area; shall be instructed in the health protection problems associated with exposure to such radioactive materials or radiation, in precautions or procedures to minimize exposure, and in the purposes and functions of protective devices employed. The extent of these instructions shall be commensurate with potential radiological health protection problems in the restricted area."

In discussing and reviewing the licensee's preparation and planning for the work associated with the control rod blade tools, the inspector questioned licensee representatives, who had reviewed and examined the work up to and including the event, as to the nature and extent of the radiological instructions given the workers to prevent and/or minimize exposure to radioactive materials. The discussions indicated that, for the removal of the tools from the spent fuel pool, ...decontamination of the tools, and subsequent repair of at least one of the tools, instructions in precautions and procedures to minimize exposure, commensurate with the potential radiological health problems associated with this specific job, were not given. Specifically, instructions in use of engineering controls (i.e., portable ventilation etc.), wetting and maintaining tool wet during work, construction of glove boxes, etc were not given to the individuals for this particular job. Additionally, the inspector discussions with licensee representatives indicated no pre-planning meeting was held to discuss the radiological concerns associated with this specific job. The inspector noted that Radioactive Work Permit (RWP) No. 003780, "Refueling Activities Reactor Building 119 Ft. el.", which was used to provide radiological control for the control rod blade job, did include a check off for "Preplanning Meeting", however, this check off was not used for this particular RWP. The inspector further noted no procedures were in use specifically addressing radiological controls associated with this job i.e. a specific procedure addressing examination, cleaning and repair of the non-safety related control rod drive handling tools.

The above RWP did require Health Physics (H.P.) survey of equipment being removed from the refueling pools, and H.P. notification prior to the start of a specific job, however, no specific guidance was provided to ensure that workers were cognizant of the precautions and procedures associated with a specific job activity.

The inspector discussions with licensee representatives and review of data indicated that the two workers associated with the control rod blade handling tools sustained significant external radioactive contamination as a result of the above job activity and had also sustained intakes of radioactive material as discussed in paragraph 4.

The inspector expressed concern with the above and indicated to licensee representatives that failure to instruct workers in precautions and procedures commensurate with potential radiological health protection problems as required by 10 CFR 19.12 constitutes noncompliance with that requirement (50-219/80-11-04).

The inspector noted the above item to be recurrent in that an instance of failure to instruct workers was issued to the licensee during Inspection 79-07. The licensee's response to this item presented the holding of preplanning meetings as one method to be used to prevent recurrence.

## 8. Procedures

### a. Respiratory Protection

Inspector review of the event with respect to the licensee's Radiation Protection Procedure 915.5, "Respiratory Protection", Rev. 4 and the minimum requirements specified in Regulatory Guide 8.15 as referenced in 10 CFR 20.103(c) (see paragraph 5) indicated the following:

- (1) Regulatory Guide 8.15, Regulatory Position C.4.a requires air sampling and other surveys to evaluate individual exposures, and to permit proper selection of respiratory protection.

The inspector review of procedure 915.5 indicated no specific guidance was presented addressing the above. The inspector noted the procedure did address air sampling for airborne radioactivity, however, this guidance was not specific regarding action limits, job functions requiring respiratory protection etc.

- (2) Regulatory Guide 8.15, Regulatory Position C.4.e requires operational and administrative procedures for control, issuance, proper use, etc. of the respiratory protective equipment.

The inspector review of procedure 915.5 indicated no specific guidance was included which addressed issuance of respiratory equipment based on the airborne radioactivity hazard potential.

The inspector expressed concern with the above and questioned the licensee as to the exact nature of corrective actions to be taken for the above.

Licensee representatives indicated the following actions will be or have been taken:

- (a) Procedure 915.5 was given a Temporary Change Notice (TCN) on March 4, 1980 to incorporate specific contamination limits as to when respiratory equipment is to be worn.
- (b) All Radiation Protection Personnel will be instructed in the above.
- (c) Procedure 915.5 will be revised to incorporate specific guidance as to the areas, contamination limits and job functions requiring breathing zone air sampling.
- (d) Pending procedure revision by April 1, 1980, a memo has been issued by the Radiation Protection Manager to all Radiation Protection Personnel regarding the above.

b. Radioactive Work Permit (RWP)

Technical Specification 6.8, "Procedures," requires in Section 6.8.1 that written procedures be established, implemented and maintained that meet or exceed the requirements of Section 5.1 and 5.3 of American National Standard (ANSI) N18.7-1972 and Appendix "A" of Regulatory Guide 1.33, 1972.

Appendix "A" of Regulatory Guide 1.33 lists in Section G.5.e, Radioactive Work Permit Procedure as a procedure to be established, implemented and maintained pursuant to the above.

ANSI N18.17 Section 5.3.2, "Procedure Content," presents the significant aspects of the contents to be included in a procedure. These include: title, statement of applicability, references, prerequisites, precautions, limitations and actions, main body and checkoff lists.

Inspector review of the event with respect to the above indicated the licensee had on July 2, 1979 dropped the previously existing Radiation Work Permit (RWP) procedure and had incorporated some of the aspects of this procedure into procedure 915.1, "Access Control to Restricted Areas," Revision 3. The inspector review of the procedure indicated the current procedure in use, i.e. 915.1, was essentially a procedure for classifying areas within the protected area. Of the 13 page procedure, approximately 2-3 pages actually addressed the topic of Radiation Work Permits.

The review indicated Procedure 915.1 did not contain a precautions or a limitations and action section. Specifically, the following was omitted from the procedure:

- (1) Precautions, limitations or actions to be taken by personnel, including radiation protection technician actions such as termination of the RWP due to changing radiation conditions or actions to be taken as a result of a worker's failure to adhere to the requirements of the RWP;
- (2) Criteria to define the conditions for use of extended versus routine RWP;
- (3) Limitations to prevent the use of one RWP to cover multiple work activities; and,
- (4) Required action (based on radiological hazards present) such as holding a preplanning meeting prior to commencement of the work. The preplanning meetings would serve to instruct workers in the precautions and procedures to minimize exposure.

Additionally, the inspector noted the procedure in use, i.e. 915.1 did not present limiting criteria for an as low as reasonably achievable (ALARA) review prior to commencement of work.

The review also indicated that procedure 915.1 had been reviewed by the Plant Operations Review Committee (PORC) and was subsequently approved by an individual acting for the Station Manager.

The inspector review of the RWP (No. 00378) issued in accordance with Procedure 915.1 and in-effect during the event essentially permitted all refueling work on the Refueling Floor to be handled by this one RWP, regardless of radiological hazards present.



The inspector expressed concern with the above and indicated to licensee representatives that failure to establish, implement and maintain a Radioactive Work Permit procedure consistent with the requirements of Regulatory Guide 1.33 and ANSI N18.7 Section 5.3 as required by Technical Specification 6.8.1 constitutes noncompliance with that requirement (50-219/80-11-06).

The above item had been identified to the licensee during an inspection (No. 79-18) conducted during October and November of 1979. This inspection, performed by the NRC Performance Appraisal Branch indicated significant weaknesses in the RWP Procedure at this time.

The inspector noted the licensee halted all work on the Refueling Floor after the event and issued a special RWP for those jobs which involve significant radiological concerns. The inspector also noted licensee representatives to indicate that a separate RWP procedure would be established and implemented by April 15, 1980. In the interim, the RWP utilized for the refueling activities was terminated and a second RWP covering only refuel activities not requiring removal of equipment from the water was issued.

This item was noted by the inspector to be recurrent with an instance identified during inspection 79-18.

9. Radiation Protection Monitoring

The inspector reviewed the adequacy of radiation protection monitoring (i.e. continuous radiation protection coverage) during the control rod blade tool job including actions taken, awareness of changing conditions and overall monitoring adequacy.

The review indicated that based on discussions with licensee representatives on overall action taken, the radiation protection personnel "monitoring" the job activity did not recognize the potential radiological consequences associated with handling the highly contaminated control rod blade tools and as a result did not take necessary actions including halting of job for radiological re-evaluation purposes. The inspector noted this resulted in several of the items of noncompliance identified during this inspection.

Additionally, as noted during discussions with licensee representatives, monitoring personnel actually lifted the plastic sheeting away from the blade tools while maintenance personnel wiped down the tools.

The inspector expressed concern regarding the above. Licensee representatives indicated no apparent problem had been recognized since this type of job had been done previously and no problems were noted.

The inspector review of the above indicated licensee representatives had recognized the need for technician reinstruction following the incident and had re-instructed all radiation protection technicians in the necessity for air sampling, use of engineering controls and precautions and procedures. Additionally, the licensee issued a memo dated March 22, 1980 to all radiation protection personnel, addressing air sampling and use of respiratory protection.

The inspector noted the licensee has, in a letter to the Director, Region I, dated January 4, 1980, committed to the establishment of a formal training and retraining program for radiation protection technicians. This program is to be in place within one month after the current outage.

Additionally, as a result of the event, the licensee has committed, in a letter dated April 2, 1980 to the Director, Region I to only use Radiation Protection Technicians who meet or exceed ANSI-N18.1, 1971 qualifications for technicians in responsible positions. Those technicians acting in less responsible positions will be closely supervised. This action, as indicated in the letter will be implemented by April 7, 1980.

Further, as a result of the recurring problem of failure to follow Radiation Protection Procedures (identified by previous NRC inspections), the licensee's April 2, 1980 letter also indicates that each Radiation Protection Technician will be reinstructed, by April 3, 1980 in the necessity of verbatim procedure compliance (including procedure review if necessary). In the event a procedure cannot be followed exactly, the letter indicated work under that procedure shall be stopped and not commence again until the procedure has been corrected.

The inspector noted the individual performing the monitoring during the old tool handling did have two years of work experience as required by ANSI-N18.1, however, this individual was not being used in a responsible capacity due to failure to fully qualify in the licensee's qualification program. This individual was to have been working with a licensee exam and ANSI qualified individual, however, during the time of the event, the individual was acting alone and no licensee qualified individual was present as determined through discussions with licensee representatives.

Licensee representatives indicated the actions outlined in the April 2, 1980 letter will be used to prevent a recurrence (50-219/80-11-07).

#### 10. Additional Item

The inspector also reviewed the licensee estimates of dose received for the lens of the eye of one individual after his sustaining eye contamination on December 5, 1979.

The individual had received eye contamination as a result of failure of a pump to adequately draw a vacuum on a radioactive waste liner being de-watered. The individual disconnected the slightly pressurized liner and was splashed. The licensee has subsequently installed isolation valves at the disconnect points to prevent recurrence and has modified liner design to permit draining without need for a pump system.

The review indicated the licensee estimated the eye surface beta dose to have been less than 10 millirad. The gamma dose was estimated at approximately 1 millirem. These dose estimates were noted to be less than 1% of the allowable quarterly dose to the lens of the eye.

The inspector had no further questions regarding the above.

#### 11. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. One unresolved item is discussed in Paragraph 4.b.

#### 12. Exit Interview

The inspector met with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on March 19, 1980. The inspector summarized the scope and purpose of the inspection.

The licensee representatives stated the following:

- Radiation protection technicians will be qualified and utilized consistent with ANSI N18.1, 1971.
- An implementation date will be presented at a NRC/licensee management meeting tentatively scheduled for April 1980.
- Revised Radiation Work Permit Procedure will be established and implemented by April 15, 1980.
- Respiratory Protection Procedure 915.5 will be revised to include specific guidance for air sampling and use of respiratory protective equipment. This revision will be established and implemented by April 1, 1980.