



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

July 15, 1986

Docket No. 50-219

Mr. P. B. Fiedler  
Vice President and Director  
Oyster Creek Nuclear Generating Station  
Post Office Box 388  
Forked River, New Jersey 08731

Dear Mr. Fiedler:

SUBJECT: CONTROL ROOM HABITABILITY (TAC 46466, 57905)

Re: Oyster Creek Nuclear Generating Station

The Commission has issued the enclosed Amendment No. 105 to Provisional Operating License No. DPR-16 for the Oyster Creek Nuclear Generating Station. This amendment is in response to your application dated June 4, 1985.

This amendment changes the date in the Commission's Order dated March 14, 1983, when NUREG-0737 Item III.D.3.4, Control Room Habitability, is required to be completed. This date will remain the Cycle 11 Refueling (Cycle 11R) outage for the completion of the interim measures listed in Attachment I of your June 4, 1985, letter and will be changed to the Cycle 12R outage for the completion of the final measures listed in Attachment II of the same letter.

The enclosed Safety Evaluation (SE) for this action also addresses the staff's evaluation of your submittals on Control Room Habitability. Based on our review, the staff concludes that you meet the requirements in NUREG-0737 Item III.D.3.4 for radiological releases and for toxic gas (chlorine gas) releases. This is except for thyroid doses due to radioiodine inhalation in the control room during a design basis Loss-of-Coolant Accident (LOCA). The evaluation of thyroid doses due to radioiodine is pending the completion of the Commission's review of source terms for the LOCA.

This SE is based (1) on procedures for chlorine gas releases to have the control room on minimum air inflow and verify the operability and availability of breathing apparatus in the control room; and (2) on Technical Specifications (TS) for the chlorine detection system and its associated alarm in the control room and the control room ventilation system including the minimum air inflow. The procedures would require (1) above only prior to any onsite activities involving the chlorine facility. These activities include chlorine resupply, maintenance and repair of the facility. The control room would be notified before these activities would begin onsite. The chlorine tank car to resupply chlorine would be observed onsite and the control room would be immediately notified if there was a rupture of a chlorine cylinder away from the chlorine facility. The control room would be on minimum air inflow for the design basis radiological release event and chlorine release event.

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July 15, 1986

You are required to revise your plant procedures, provide the results of the minimum air inflow mode tests of the control room and submit appropriate TS on control room habitability before the restart from the Cycle 11R outage as you committed to do in your letter dated June 4, 1985. Acceptable TS for control room habitability are in Generic Letter 83-36 dated November 1, 1983. Based on your submittals, an acceptable minimum air inflow for the control room is a flowrate of not greater than 450 cfm.

In the meeting dated June 16 and 17, 1986, the status of the completion of the interim measures listed in Attachment I of your June 4, 1986, letter were discussed. Six of the eight measures have been completed: chlorine monitoring capability and alarm in the control room, preventative maintenance program implemented, weather stripping installed, switch installed, chlorine transport analysis submitted on August 16, 1985, and radiological transport analysis submitted on June 17, 1985. The analyses submitted on chlorine transport and radiological transport are addressed and accepted in the enclosed SE. The remaining two interim measures must be completed prior to the restart from the Cycle 11R outage: Technical Specifications, including the control room minimum air inflow rate, and radiation and chlorine response procedures. These were discussed above. In addition, you have met final measure number 3 listed in Attachment II of the same letter in that goggles and protective clothing are not needed to have the beta skin dose within the acceptable guidelines.

The Notice of Issuance of this amendment will be included in the Commission's biweekly Federal Register notices.

Sincerely,



Jack N. Donohew, Jr., Project Manager  
BWR Project Directorate #1  
Division of BWR Licensing

Enclosures:

- 1. Amendment No. 105 to License No. DPR-16
- 2. Safety Evaluation

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You are requested to revise your plant procedures, provide the results of the minimum air inflow mode tests of the control room and submit appropriate TS on control room habitability before the restart from the Cycle 11R outage as you committed to do in your letter dated June 4, 1985. Acceptable TS for control room habitability are in Generic Letter 83-36 dated November 1, 1983. Based on your submittals, an acceptable minimum air inflow for the control room is a flowrate of not greater than 450 cfm.

The Notice of Issuance of this amendment will be included in the Commission's biweekly Federal Register notices.

Sincerely,

Jack N. Donohew, Jr., Project Manager  
BWR Project Directorate #1  
Division of BWR Licensing

Enclosures:

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Mr. P. B. Fiedler  
Oyster Creek Nuclear Generating Station

Oyster Creek Nuclear  
Generating Station

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

GPU NUCLEAR CORPORATION

AND

JERSEY CENTRAL POWER & LIGHT COMPANY

DOCKET NO. 50-219

OYSTER CREEK NUCLEAR GENERATING STATION

AMENDMENT TO PROVISIONAL OPERATING LICENSE

Amendment No. 105  
License No. DPR-16

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by GPU Nuclear Corporation and Jersey Central Power and Light Company (the licensees) dated June 4, 1985, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

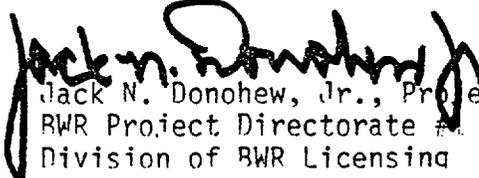
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2. Accordingly, Provisional Operating License No. DPR-16 is hereby amended by adding Paragraph 2.C.(8) to read as follows:

(8) The schedule given in the Attachments to the Commission's Order dated March 14, 1983, for the completion of NUREG-0737 Item III.D.3.4, Control Room Habitability, is changed to the completion of (1) the interim system upgrade measures in Attachment I of the licensee's letter dated June 4, 1985, by the restart from the Cycle 11 Refueling outage and (2) the final measures in Attachment II of the same letter by the restart from the Cycle 12 Refueling outage.

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

FOR THE NUCLEAR REGULATORY COMMISSION

  
Jack N. Donohew, Jr., Project Manager  
BWR Project Directorate #1  
Division of BWR Licensing

Date of Issuance: July 15, 1986



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 105 TO PROVISIONAL OPERATING LICENSE NO. DPR-16

CONTROL ROOM HABITABILITY (TAC 46466, 57905)

GPU NUCLEAR CORPORATION AND

JERSEY CENTRAL POWER & LIGHT COMPANY

OYSTER CREEK NUCLEAR GENERATING STATION

DOCKET NO. 50-219

1.0 INTRODUCTION

By letter dated June 4, 1985, GPU Nuclear (the licensee) requested an amendment to Provisional Operating License No. DPR-16 for the Oyster Creek Nuclear Generating Station (Oyster Creek). This amendment would authorize a change to the license which would extend the date imposed by Order of March 14, 1983, to fully implement NUREG-0737 Item III.D.3.4, Control Room Habitability. The date would remain the Cycle 11 Refueling (Cycle 11R) outage for the completion of the eight interim measures listed in Attachment I to this evaluation and will be extended to Cycle 12R outage for the three final measures listed in Attachment II. One of the three final measures has already been completed.

The staff has also reviewed the licensee's submittals dated October 8, 1982, and June 4, June 17 and August 16, 1985, to determine if the licensee has met the requirements in NUREG-0737 Item III.D.3.4. The staff's evaluation of the Oyster Creek control room habitability addresses the following issues: the accident radiation doses and the chlorine hazard. These are Sections 3.1. and 3.2, respectively.

2.0 DISCUSSION

In NUREG-0737, Clarification of TMI Action Plan Requirements, dated November 1980, the staff issued requirements on the habitability of the control room during accidents. These requirements are in Section III.D.3.4, Control Room Habitability, of NUREG-0737. These requirements were to assure that control room operators will be adequately protected against the effects of accidental release of toxic and radioactive gases, that the nuclear power plant can be safely operated or shut down under design basis accident conditions, and that the licensee met the habitability criteria in Criterion 19, "Control Room," of Appendix A, "General Design Criteria (GDC) for Nuclear Power Plants," to 10 CFR Part 50.

The staff issued the Commission's Order on March 14, 1983, to confirm that the modifications for this TMI Item III.D.3.4 would be completed by the restart from the Cycle 11R outage.

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The licensee has submitted letters dated June 4, June 17, and August 16, 1985 on control room habitability. These letters followed the meeting of March 19, 1985, between the staff and the licensee at the Oyster Creek site. The meeting was held to discuss control room habitability for Oyster Creek and to identify the interim and final control room modifications that are acceptable to the staff as meeting the requirements on control room habitability. The meeting summary for this meeting was issued by the staff on April 16, 1985.

In its letter dated June 4, 1985, the licensee identified the interim system upgrade measures for control room habitability, the final design objective measures for control room habitability and the licensee's response to the staff's request for additional information in the meeting of March 19, 1985. The interim measures are to be completed in the Cycle 11R outage and the final measures are to be completed in Cycle 12R outage. The Cycle 11R outage began in April 1986 and is scheduled to end in October 1986 and the Cycle 12R outage is scheduled for summer 1988. The interim and the final measures are listed in Attachments I and II, respectively, to this evaluation.

By letter dated June 17, 1985, the licensee submitted the results of its whole body and beta skin analysis of radiation exposure to control room operators during a design basis LOCA. This analysis completes item 8 in Attachment I. The licensee stated that the calculated doses are below the limits in Standard Review Plan (SRP) 6.4. The licensee also stated that the thyroid doses were not addressed because the Commission is currently evaluating industry data on the LOCA radioiodine source term. The thyroid dose would be addressed after completion of this review.

In its letter dated August 16, 1985, the licensee provided the results of its chlorine transport analysis. This analysis completes item 7 in Attachment I. The licensee stated that the control room operators have at least 2 minutes to respond to a chlorine leak alarm.

The chlorine monitoring system is five sensors located inside the chlorine facility which is adjacent to the turbine building and houses the chlorine storage tanks. There are 3 sensors with the storage tanks and 2 in an adjoining room which has the piping for the chlorine (Ref. 8).

### 3.0 EVALUATION

#### 3.1 Control Room Accident Radiation Doses

The licensee's June 17, 1985 control room habitability submittal contains the principal assumptions and the results of its analysis regarding design basis radiation doses to the Oyster Creek control room operators. The licensee estimates that the 30-day integrated gamma dose is 2.61 rem and the 30-day integrated beta dose is 25.8 rem. These values are within the 5 rem and 30 rem guidelines of GDC Criterion 19. The three airborne fission product release paths considered by the licensee are Main Steam Isolation Valve (MSIV) Bypass Leakage, Containment Leakage, and Engineered Safety Features (ESF) Leakage. We have reviewed the licensee's analysis and the assumptions used in the analysis and find them to be reasonable and acceptable. The licensee's calculations are based on a design minimum air inflow of 450 cfm into the control room.

In order to verify the licensee's analysis, we have made an independent analysis of the control room doses. Part of this analysis is based on the staff's previous analysis of the Exclusion Area Boundary and Low Population Zone LOCA doses which was reported in Section 2.1.2 of its Safety Evaluation, Containment Purging and Venting During Plant Operation, dated January 21, 1986. In our analysis, we have considered separately the ground release and stack release pathways. We have also allowed for contaminated air infiltration into the control room directly from within the turbine building. The control room X/Q values for external airborne pathways were estimated using the methodology in the staff's Standard Review Plan (SRP) 6.4, and Reference 6 of SRP 6.4.

Our findings indicate that the licensee's dose estimates are reasonable and are within the GDC Criterion 19 radiation exposure guidelines. Hence, we find that the Oyster Creek control room meets the radiation habitability requirements with respect to design basis radiation releases. This finding is limited to the whole body and beta skin dose from noble gases. The thyroid doses from iodine releases are deferred until the source term reevaluation by the Commission is completed and its results are made available. The licensee's radiological analysis did not require the control room operators to wear goggles and protective clothing to have the operators' beta skin dose within the GDC 19 guidelines. Therefore, the staff concludes that the licensee has met the final measure number 3 in Attachment II to this evaluation.

The licensee stated in its August 16, 1985, letter that it would be determining the limiting permissible minimum air inflow for the control room which applies to both the accident radiological release discussed above, and the chlorine release event discussed in Section 3.2 below. The control room would also be on the minimum air inflow mode during the chlorine release. An acceptable air inflow based on the licensee's submittal for the accident radiological release is a flow rate not greater than 450 cfm. The licensee committed to submit the limiting air inflow from tests on the control room before the restart from the Cycle 11R outage.

Technical Specifications are addressed in Section 3.4 below.

### 3.2 Chlorine Hazard

In its letter dated October 8, 1982, the licensee explained that there is no offsite manufacturing, storage or transportation of hazardous chemicals within a 5 mile radius of the plant. The licensee also provided the amount, size of container and closest distance from the control room intake of all hazardous material stored onsite. The only hazardous material that the staff must consider in its review of control room habitability is the possible release of chlorine gas from 1-ton tanks being stored in the chlorine facility onsite.

The licensee's August 16, 1985, control room habitability submittal contains the principal assumptions and the results of its analysis regarding the chlorine release hazard to the Oyster Creek control room operators. The licensee analyzed accidental chlorine releases due to storage, maintenance and operational activities at the onsite chlorine facility. The entire

The staff has made an independent analysis of a potential chlorine release at the Oyster Creek site. Our findings support the licensee's estimates of the minimum time available (at least 2 minutes) for donning breathing apparatus by the control room operators. The 2 minute value is acceptance criterion 7a. of SRP 6.4. We note that the basis for this finding is, to a large extent, due to the two principal assumptions listed above. That is, the control room is on minimum air inflow during any chlorine handling activity, there is chlorine detection at the chlorine facility and there is a control room alarm from that detection.

In view of the above considerations, we conclude that the chlorine hazard to the control room operators is acceptably low and is within the guidelines of GDC 19, provided that the following provisions are made by the licensee in its procedures and Technical Specifications (TS):

1. The control room is notified before start of any plant activities involving the chlorine facility, such as chlorine resupply, maintenance, and repair.
2. The control room ventilation system is on minimum air inflow prior to any activities described in Item 1 above.
3. The chlorine facility chlorine detection system, including the associated alarm in the control room, and the minimum air inflow mode are under limiting conditions for operations and surveillance requirements in the TS.
4. The functional operability and availability of breathing apparatus within the control room is verified prior to the activities described in Item 1 above.
5. The chlorine tank car would be observed onsite and the control room would be immediately notified if there is a rupture of a chlorine cylinder away from the chlorine facility.

The licensee stated in its August 16, 1985, letter that it will be determining the most limiting permissible minimum air inflow for the control room which applies to both the chlorine release event and the radiological release during the design basis event. The control room is also on the minimum air inflow mode during the design basis LOCA. The licensee committed to submit the limiting air inflow before the restart from the Cycle 11R outage. The licensee stated that this would be determined by tests of the minimum air inflow for the control room. An acceptable air inflow based on the licensee's submittal on chlorine releases is a flow rate not greater than 450 cfm.

Technical Specifications are addressed in Section 3.4 below.

### 3.3 Confirmatory Order Schedule

By a Confirmatory Order dated March 14, 1983, the licensee is required to have the NUREG-0737 Item III.D.3.4, Control Room Habitability, fully implemented before the restart from the Cycle 11 Refueling outage. This

inventory of a single 1-ton chlorine tank was conservatively assumed to be released into the atmosphere. The results of the analysis indicate that the control room operators would have at least 2 minutes to don breathing apparatus within the control room in the event of the postulated chlorine release. The analysis includes two principal assumptions:

1. The control room ventilation system is placed in the minimum air inflow mode of not greater than 450 cfm whenever there is any activity with the chlorine facility (e.g., chlorine resupply, maintenance repair), and
2. A chlorine detector at the storage site provides a signal to an alarm within the control room in the event of a release.

The licensee stated in its August 16, 1985, submittal that the control room would be placed in the "isolation mode" during chlorine system maintenance, tank delivery, and handling. Ventilation infiltration to the control room during the "isolation mode" was assumed to be the design value of 450 cfm.

In the meeting summary dated April 12, 1986, the licensee explained that the "isolation mode" is the control room on minimum air inflow. The licensee stated that procedures require the control room to be notified when a chlorine tank car comes onsite. This is done by the station security as it allows the car within the security fence. The car is escorted onsite and does not come closer to the control room intake than the chlorine tanks at the chlorine facility. The control room operators will put the control room ventilation on minimum air inflow. This is the design minimum air inflow for the control room and was assumed by the licensee for its calculation of the minimum time for the control room to reach toxic chlorine concentrations following rupture of a chlorine tank at the chlorine facility. This calculation was submitted by the licensee in its letter dated August 16, 1985. In the submittal, the licensee calculated that for 450 cfm inflow the minimum time for the chlorine gas to reach toxic gas concentrations was 194 seconds. The staff has reviewed the licensee's calculations and concludes that the methodology for the calculation of the minimum time to reach toxic gas concentrations in the control room is reasonable and acceptable.

Drawing 19702 of the plant drawings shows the chlorine facility which is at ground level on the opposite side of the turbine building from the control room. Chlorine gas is heavier than air and the control room intake is above the turbine building. Therefore, the licensee's analysis of the chlorine transport to the control room is conservative.

The licensee stated in its August 16, 1985, letter that its calculation for the time to reach the chlorine toxic concentration in the control room was based on the conservative assumption of a straight line path from the ruptured tank in the chlorine facility to the control room intake. This straight line path from the chlorine facility is through the turbine building. The calculations were also for the worst wind speed and wind stability class for lack of chlorine dispersion in transit to the control room intake. The licensee further stated that the operators would don protective clothing upon the alarm in the control room from the chlorine monitors.

outage began April 12, 1986. The licensee has requested, by its letter dated June 4, 1985, postponement of some Item III.D.3.4 requirements to Cycle 12 refueling outage. The Cycle 12 outage is expected in 1988.

The requirements to be deferred to the Cycle 12 outage to fully implement Control Room Habitability are the following: (1) perform a single failure analysis of the control room ventilation system and provide remedial measures, (2) assess existing diesel generator capability to provide backup power to the control room ventilation system and (3) meet the beta skin dose limits with the final control room ventilation system design.

The licensee's radiological analysis of the control room operators' exposures does not rely on the use of goggles or protective clothing to meet the GDC 19 beta skin dose guidelines. This analysis which was submitted June 14, 1985, was reviewed and approved by the staff and is discussed in Section 3.1 above. Therefore, the staff concludes that the licensee has met item (3) in the Cycle 11R outage.

The control room envelope consists of the control room panel area, the Shift Supervisor's office, toilet room, kitchen, and cable spreading rooms. Normal ventilation is provided by a system utilizing one supply fan with steam coils for heating and a three-stage refrigeration unit for cooling. The ability to recirculate air is provided, with recirculation varying from 0 to 100 percent.

The system is normally operated to maintain room air at 75 degrees F. Under normal operation of the turbine generator unit, the system cools during winter and summer. Heat to maintain 70 degrees F in these areas is anticipated to be required only during the winter when the turbine generator is not operating.

An emergency mode is provided for operation with 100 percent outside air to prevent the recirculation of smoke in the control room and to clear the area of smoke and fumes. As required by the Oyster Creek Fire Hazards Analysis, the system was modified to prevent smoke from other areas from entering the control room.

Major components of the system are the air conditioning unit and the two heating coils. The system does not include filters to reduce the intake of radioactivity or chlorine gas.

An analysis of control room shielding has been performed. As a result of this study, one significant source contributing to an elevated radiation dose rate in the control room has been identified. This source is the core spray booster pump suction and discharge piping located at El. 51 ft. in the Reactor Building. A shadow shield has been installed in the Reactor Building to reduce the control room dose to below the 10 CFR Part 50, Appendix A, GDC 19 limit.

In Sections 1.1 and 1.2 above, we have determined that the licensee has met GDC 19, Control Room, of Appendix A to 10 CFR Part 50. This is without the control room ventilation meeting the single failure criterion and backup power because the control room ventilation has no filters to reduce the radioactivity or toxic gases introduced in the control room during an accident. Therefore,

the loss of the control room HVAC does not change the analyses submitted by the licensee to document that it meets the GDC 19 criteria on radiation and toxic gas (chlorine gas) exposure. The control room operators have time to manually close dampers to isolate the control room and to provide heating or cooling to the control room from other sources if needed so that the proposed action does not significantly increase the consequences of a previously evaluated accident or create a new or different kind of accident.

The Cycle 11R outage is a major outage with large blocks of work which the licensee and the staff believe are of higher priority than the two final measures for meeting the requirements of control room habitability. This higher priority work includes the remaining fire protection modifications, activities to enhance the ability of the plant to be less susceptible to intragranular stress corrosion cracking and substantial work in the control room including computer hardware installation. The final measures are not needed to be completed in the Cycle 11R outage to have the operators within the GDC criterion 19 guidelines, but completion of the two final measures would significantly extend the outage for Cycle 11R.

Therefore, based on the above, we conclude that the licensee may complete the remaining Control Room Habitability modifications, those not completed in the Cycle 11R outage, in the Cycle 12R outage. Attachments 1 and 2 to this evaluation list the modifications to be completed in the Cycle 11R and Cycle 12R outages, respectively. We conclude that the schedule on the Confirmatory Order dated March 14, 1983, may be changed to a license condition stating that the NUREG-0737 Item III.D.3.4, Control Room Habitability, is to have the interim measures (Attachment I) completed by the restart from the Cycle 11R outage and the final measures (Attachment II) completed by the restart from the Cycle 12R outage. The measures required by the restart from the Cycle 11R outage are discussed in Section 3.5 below.

The finding for radiation dose estimates is limited to the whole body and beta skin doses from noble gases until the Commission completes its re-evaluation of the radioiodine source term for a design basis LOCA.

The question of natural phenomena and the control room is not being addressed in the present subject of control room habitability. This question is being addressed in the staff's Systematic Evaluation Program (SEP) in the following reviews: tornado missiles, SEP Topic III-4.A; seismic design considerations, SEP TOPIC III-6; wind and tornado loadings, SEP Topic III-2; and flooding potential and protective requirements, SEP Topic II-3.B. These reviews are discussed in the staff's Integrated Plant Safety Assessment Report for Oyster Creek, NUREG-0822, dated January 1983. These are active reviews before the staff and have not been completely resolved with the licensee.

### 3.4 Technical Specifications

The licensee committed to propose Technical Specifications (TS) for the control room ventilation system and the chlorine detection system including the TS listed in section 3.2 above, before the restart from the Cycle 11R outage. This is in its letter dated June 4, 1986, and is item 5 in Attachment I. This is in agreement with the staff's request in the staff's letter on Generic Letter 83-36, NUREG-0737 Technical Specifications dated November 22, 1985. Acceptable TS on control room habitability are in Generic Letter 83-36 dated November 1, 1983.

The TS on the control room ventilation system will include the minimum air inflow into the control room. This is discussed in Sections 3.1 and 3.2, above. The licensee has committed to do the tests to verify the minimum air inflow into the control room and propose the appropriate TS before the restart from the Cycle 11R outage. An acceptable value for the minimum air inflow is a flow rate not greater than 450 cfm. This is based on the licensee's submittals dated June 14 and August 16, 1985, as discussed in Sections 3.1 and 3.2 above.

### 3.5 Conclusion

We have reviewed the licensee's submittals dated June 4, June 17, and August 16, 1985, on Control Room Habitability. We have also had a meeting with the licensee on this subject on March 19, 1985, at the plant site. The meeting summary is dated April 16, 1985.

We have concluded, based on the discussions in Sections 3.1 to 3.3 above, that: (1) the licensee's dose analysis and chlorine analysis are acceptable, (2) the licensee's radiation dose estimates are within the GDC 19 guidelines, (3) the chlorine hazard to the control room operators is within the GDC 19 guidelines, and (4) it is acceptable to revise the schedule in Confirmatory Order dated March 14, 1983, to complete Control Room Habitability at Oyster Creek in the Cycle 12R outage. The interim measures in Attachment I are required to be completed by the restart from the Cycle 11R outage and the final measures in Attachment II are required to be completed by the restart from the Cycle 12R outage. The finding for radiation dose estimates is limited to the whole body and beta skin doses from noble gases until the Commission completes its reevaluation of the radioiodine source term for a design basis LOCA.

Our conclusion that the chlorine hazard to the control room operators is acceptable is based on (1) the minimum air inflow mode and (2) the procedures and TS to incorporate the five items in Section 3.2. The licensee is required by the proposed license condition to verify the actual minimum air inflow to the control room in tests and to revise its procedures and propose TS to incorporate these items. The licensee will be required to do this before the restart from the Cycle 11R outage as it committed to do in its letter dated June 4, 1985. Based on the licensee's submittals dated June 17 and August 16, 1985, an acceptable minimum air inflow to the control room is a flow not greater than 450 cfm.

The question of natural phenomena and the control room is not being addressed in the present subject of control room habitability. This question is being addressed in the staff's Systematic Evaluation Program (SEP) in the following reviews: tornado missiles, SEP Topic III-4.A; seismic design considerations, SEP TOPIC III-6; wind and tornado loadings, SEP Topic III-2; and flooding potential and protective requirements, SEP Topic II-3.B. These reviews are discussed in the staff's Integrated Plant Safety Assessment Report for Oyster Creek, NUREG-0822, dated January 1983. These are active reviews before the staff and have not been completely resolved with the licensee.

#### 4.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change to a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement nor environmental assessment need be prepared in connection with the issuance of this amendment.

#### 5.0 CONCLUSION

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security nor to the health and safety of the public. The State of New Jersey was notified of the proposed determination concerning no significant hazards considerations regarding this amendment. The State was contacted and had no comments.

#### 6.0 REFERENCES

1. Letter from P. Fiedler (GPUN) to D. G. Eisenhut (NRC) dated October 8, 1982.
2. Letter from P. Fiedler (GPUN) to J. A. Zwolinski (NRC) dated June 4, 1985.
3. Letter from P. Fiedler (GPUN) to J. A. Zwolinski (NRC) dated June 17, 1985.
4. Letter from P. Fiedler (GPUN) to J. A. Zwolinski (NRC) dated August 16, 1985.
5. Meeting Summary for March 19, 1985, meeting on control room habitability, dated April 16, 1985.
6. Meeting summary for March 26, 1986, meeting on the February 1986 Progress Review Meeting on Licensing Actions, dated April 12, 1986.
7. Staff's letter on Generic Letter 83-36, NUREG-0737 Technical Specifications, dated November 22, 1985.

8. Phone calls from D. Jerko (GPUN) to J. Donohew (NRC) on May 22 and 23, 1986.

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Dated: July 15, 1986

## Attachment I

### Interim System Upgrades for Control Room Habitability at OCNCS

1. The Licensee will install chlorine monitoring capability which will provide an alarm in the Control Room to alert operators in the event of a chlorine leakage condition.
2. The Licensee will develop and implement a preventive maintenance program on Control Room HVAC Ducts and Dampers to ensure system integrity is being maintained and that leakage remains low.
3. The Licensee will install weatherstrip material on the two doors which are not used for normal access into the Control Room.
4. In order to override the existing thermostatic controls, the Licensee will install a switch which will allow operators to either isolate the Control Room or place the Control Room HVAC system into the Recirculation Mode.
5. The Licensee will propose appropriate Technical Specifications for the Control Room HVAC System.
6. The Licensee will develop radiation and chlorine alarm response procedures for the control room operators to take the appropriate actions in response to either of these alarms.
7. The Licensee will provide a Chlorine Transport Analysis to demonstrate that the control room operators will have at least two minutes to respond to a chlorine leak alarm. This analysis will be submitted to the NRC by August 15, 1985.
8. The Licensee will provide calculations and analysis for whole body and beta skin doses using Regulatory Guide 1.3 source term. If necessary, procedural guidance for protective measures to be taken by the control room operators such as the usage of protective clothing and goggles will be developed. The results of these calculations and the assumptions and models for the analysis will be submitted to the NRC by June 14, 1985. Because the NRC staff is presently reviewing the iodine source term for the design basis LOCA accident, the thyroid exposure limit will not be addressed.

## Attachment II

### Long Term/Final Modification Design Objectives for the Control Room Habitability System at OCNGS

1. The Licensee will perform a Single Failure Analysis of the Control Room HVAC System, address all potential problem areas, and provide remedial measures. Any modifications will be implemented before the end of the Cycle 12 refueling outage and will be consistent with the criteria defined by the NRC staff at the March 19, 1985 meeting.
2. The Licensee will assess existing diesel generator capability in order to provide back up power to the final Control Room HVAC system design.
- 3\* The Licensee will meet the Beta skin dose limits with the final Control Room HVAC system design without protective clothing and goggles.

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\* This final design objective measure has been completed.