

October 27, 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: INOPERABLE PROTECTIVE INSTRUMENTATION CHANNELS (TSCR 153, TAC 62979)

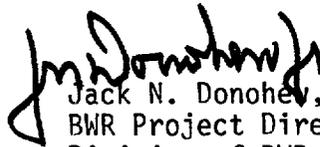
Re: Oyster Creek Nuclear Generating Station

The Commission has issued the enclosed Amendment No. 110 to Provisional Operating License No. DPR-16 for the Oyster Creek Nuclear Generating Station. This amendment is in response to your application dated September 5, 1986.

This amendment authorizes a revision to the footnote, marked with an asterisk "\*", to Table 3.1.1, Protective Instrumentation Requirements, of the Appendix A Technical Specifications (TS). The licensee may, with this change, have one channel of a protective instrument function made inoperable for up to 2 hours without tripping the channel's trip system.

A copy of our related Safety Evaluation is also enclosed. The Notice of Issuance 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. 110 to License No. DPR-16
2. Safety Evaluation

cc w/enclosures:  
See next page

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

Oyster Creek Nuclear  
Generating Station

cc:

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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. 110  
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 September 5, 1986, 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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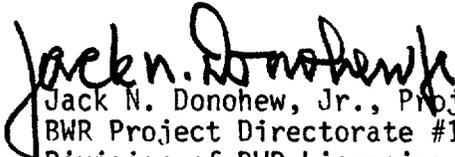
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and Paragraph 2.C.(2) of Provisional Operating License No. DPR-16 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 110, are hereby incorporated in the license. GPU Nuclear Corporation shall operate the facility in accordance with the Technical Specifications.

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

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: October 27, 1986

ATTACHMENT TO LICENSE AMENDMENT NO. 110

PROVISIONAL OPERATING LICENSE NO. DPR-16

DOCKET NO. 50-219

Revise Appendix A Technical Specifications by removing the pages identified below and inserting the attached pages. The revised pages are identified by the captioned amendment number and contain vertical lines indicating the area of change.

REMOVE

3.1-3  
3.1-16

INSERT

3.1-3  
3.1-16

4. When required for surveillance testing, a channel is made inoperable. In order to be able to test its trip function to the final actuating device of its trip system, the trip system cannot already be tripped by some other means such as a mode switch, interlock, or manual trip. Therefore, there will be times during the test that the channel is inoperable but not tripped. For a two channel trip system, this means that full reliance is being placed on the channel that is not being tested. A channel may be placed in an inoperable status for up to 2 hours for required surveillance without placing the trip system in the tripped condition provided at least one operable channel in the same trip system is monitoring that parameter.

Bypasses of inputs to a trip system other than the IRM and APRM bypasses are provided for meeting operational requirements listed in the notes in Table 3.1.1. Note a allows the "high water level in scram discharge volume" scram trip to be bypassed in the refuel mode. In order to reset the safety system after a scram condition, it is necessary to drain the scram discharge volume to clear this scram input condition. (This condition usually follows any scram, no matter what the initial cause might have been.) In order to do this, this particular scram function can be bypassed only in the refuel position. Since all of the control rods are completely inserted following a scram, it is permissible to bypass this condition because a control rod block prevents withdrawal as long as the switch is in the bypass condition for this function.

The manual scram associated with moving the mode switch to shutdown is used merely to provide a mechanism whereby the reactor protection system scram logic channels and the reactor manual control system can be energized. The ability to reset a scram twenty (20) seconds after going into the shutdown mode provides the beneficial function of relieving scram pressure from the control rod drives which will increase their expected lifetime.

To permit plant operation to generate adequate steam and pressure to establish turbine seals and condenser vacuum at relatively low reactor power, the main condenser vacuum trip is bypassed until 600 psig. This bypass also applies to the main steam isolation valves for the same reason.

The action required when the minimum instrument logic conditions are not met is chosen so as to bring plant operation promptly to such a condition that the

TABLE 3.1.1 (CONTD)

\* Action required when minimum conditions for operation are not satisfied. Also permissible to trip inoperable trip system. When necessary to conduct tests and calibrations, one channel may be made inoperable for up to two hours per Technical Specification required surveillance without tripping its trip system.

\*\* See Specification 2.3 for Limiting Safety System Settings.

Notes:

- a. Permissible to bypass, with control rod block, for reactor protection system reset in refuel mode.
- b. Permissible to bypass below 800 psia in refuel and startup modes.
- c. One (1) APRM in each operable trip system may be bypassed or inoperable provided the requirements of specification 3.1.C and 3.10.C are satisfied. Two APRM's in the same quadrant shall not be concurrently bypassed except as noted below or permitted by note.  
  
Any one APRM may be removed from service for up to one hour for test or calibration without inserting trips in its trip system only if the remaining operable APRM's meet the requirements of specification 3.1.B.1 and no control rods are moved outward during the calibration or test. During this short period, the requirements of specifications 3.1.B.2, 3.1.C and 3.10.C need not be met.
- d. The IRM shall be inserted and operable until the APRM's are operable and reading at least 2/150 full scale.
- e. Air ejector isolation valve closure time delay shall not exceed 15 minutes.
- f. Unless SRM chambers are fully inserted.
- g. Not applicable when IRM on lowest range.
- h. One instrument channel in each trip system may be inoperable provided the circuit which it operates in the trip system is placed in a simulated tripped condition. If repairs cannot be completed within 72 hours the reactor shall be placed in the cold shutdown condition. If more than one instrument channel in any trip system becomes inoperable, the reactor shall be placed in the cold shutdown condition. Relief valve controllers shall not be bypassed for more than 3 hours (total time for all controllers) in any 30-day period and only one relief valve controller may be bypassed at a time.
- i. The interlock is not required during the start-up test program and demonstration of plant electrical output but shall be provided following these actions.
- j. Not required below 40% of turbine rated steam flow.
- k. All four (4) drywell pressure instrument channels may be made inoperable during the integrated primary containment leakage rate test (See Specification 4.5), provided that the plant is in the cold shutdown condition and that no work is performed on the reactor or its connected systems which could result in lowering the reactor water level to less than 4'8" above the top of the active fuel.
- l. Bypass in IRM Ranges 8, 9, and 10.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 110 TO PROVISIONAL OPERATING LICENSE NO. DPR-16

GPU NUCLEAR CORPORATION AND

JERSEY CENTRAL POWER & LIGHT COMPANY

OYSTER CREEK NUCLEAR GENERATING STATION

DOCKET NO. 50-219

1.0 INTRODUCTION

By letter dated September 5, 1986, 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 revision to the footnote, marked with an asterisk "\*", to Table 3.1.1, Protective Instrumentation Requirements, of the Appendix A Technical Specifications (TS). The licensee may, with this change, have one channel of a protective instrument function made inoperable for up to 2 hours, to conduct tests and calibrations of the protective instrumentation channels, as required by the TS, without tripping the channel's trip system.

2.0 DISCUSSION AND EVALUATION

This amendment proposes to revise the period of time when a protective instrumentation channel listed in Table 3.1.1 of the TS may be made inoperable without tripping its associated trip system. In the existing TS, these channels may be taken out of service to perform tests and calibrations for up to 1 hour per month without tripping the associated trip system. The proposed amendment would change that to 2 hours but only for each required TS surveillance.

The frequency of TS-required surveillances is listed in Table 4.1.1 of the TS. The proposed amendment should be more restrictive than the existing TS for 22 out of the 27 separate parameter (e.g., drywell pressure, reactor water level low function, APRM level) channels listed in Table 4.1.1. Each parameter channel is actually four separate and independent channels measuring the same parameter.

For these 5 channels, the instrumentation is only taken out of service for a small fraction (about 1/10) of an hour and, therefore, this amendment would not lengthen the time these channels could be out of service in a month without the associated channel trip system being tripped (Ref. 3). These channels have built-in calibration equipment (3 channels) or the

time needed to perform the necessary work is shorter than an hour per month (2 channels). These are the Average Power Range Monitor (APRM) level, scram trips, and rod blocks and the high radiation in the main streamline reactor building, and air ejector offgas (Ref.3).

The licensee states that it expects that the time needed for the analog trip system channels for reactor water low level and low-low level in the reactor protection system to be taken out of service for TS required tests and calibration and then returned to service is greater than an hour. Therefore, with the existing TS, every time each of these analog channel is taken out of service for TS-required tests and calibration, the channel may have to have its associated trip system be placed in the tripped condition while the channel is still under surveillance. These analog channels result from a modification in the present outage to the reactor water level instrumentation system which replaced digital sensing devices with an analog trip system. Therefore, this situation did not exist before. This replacement is discussed in the staff's letter to the licensee dated August 22, 1981, on Amendment No. 95 and Static-0-Ring switches.

The channel performs its function by causing its associated trip system to trip in response to a safety setpoint being exceeded as, for example, high drywell pressure. A channel is tripped because it is inoperable, that is, not capable of actuating its associated trip system or because it is out-of-service too long and again is not capable of actuating its associated trip system. A channel is not tripped when it is taken out of service for tests or calibrations because putting it in the tripped condition increases the chances of spurious or inadvertent trips or scrams and thus unnecessary challenges to safety systems. In addition, for channels which are operable prior to being taken out of service for tests or calibrations, there is no reason to believe the other channels are inoperable. Placing a channel in the tripped condition when it is inoperable also increases the chance of spurious or inadvertent trips or scrams but the fact the channel was inoperable may mean the other channels are more likely to be inoperable.

In addition, placing a reactor water level low-low function channel in the tripped condition causes all four core spray pumps to unnecessarily start up. This channel is one of the analog channels discussed above. The proposed amendment would prevent starting up these pumps during required TS surveillance on these channels.

Surveillance testing is necessary to provide a high degree of reliability for the automatic actuation circuits of the protective instrumentation. To test the actuation circuit completely, it must be made inoperable but it does not have to have its associated trip system tripped. Tripping the channel rather than just making it inoperable during the required surveillance testing increases

the likelihood of spurious scrams or unnecessary challenges to safety systems. The licensee has stated that, given the tested reliability of the operational instrumentation, an increase in out of service time from 1 hour to 2 hours will have a negligible effect on the channel failure rate. The staff agrees.

Conservatively, the typical increase for a channel could be from 1 hour per month to 2 hours per month which is an increase of 12 hours per year or 0.137% per year. The worst increase is for one channel and is an increase of 1 hour per 3 days or 122 hours per year. This is an increase of 1.39% per year. These are worse case estimates because the actual time the channel may be out-of-service for TS tests and calibrations should be less than the 2 hours. The worse case is not realistic because, as described above, the 5 channels where the proposed amendment could be considered less restrictive, the amendment in fact does not lengthen the out-of-service time for TS surveillance for these channels.

The Standard Technical Specifications for General Electric Boiling Water Reactors (BWR-STs), NUREG-0213, Revision 3, specifies a 2-hour limit for TS required surveillance. This is in footnote (a) to Table 3.3.1-1, Reactor Protection System Instrumentation, on page 3/4 3-5 of the BWR-STs. This table is applicable to Oyster Creek. Therefore, the licensee's proposed amendment is in agreement with the BWR-STs.

The staff has reviewed and evaluated the licensee's proposed amendment dated September 5, 1986. Based on the above, the staff concludes that the proposed change to Table 3.1.1 is acceptable.

The licensee also proposed a change to the Bases for TS Section 3.1. This change has the Bases state the same as the proposed footnote "\*" to TS Table 3.1.1. The change removes the basis for the existing requirement of one hour per month from the Bases for Section 3.1. Therefore, this change is acceptable to the staff.

### 3.0 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 and a change to the surveillance requirements. 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.

#### 4.0 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.

#### 5.0 REFERENCES

1. Letter from P. B. Fiedler (GPUN) to J. A. Zwolinski (NRC), TSCR 153, dated September 5, 1986.
2. Standard Technical Specifications for General Electric Boiling Water Reactors (BWR/5), NUREG-0123, Revision 3, dated Fall 1980.
3. Phone conference between J. Donohew (NRC) and J. Rogers (GPUN) on October 6, 1986.

Principal Contributor: J. Donohew

Dated: October 27, 1986