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Docket No. 50-219

Jersey Central Power & Light Company
ATTN: Mr. I. R. Finfrock, Jr.
Vice President - Generation
Madison Avenue at Punch Bowl Road
Morristown, New Jersey 07960

Gentlemen:

The Commission has issued the enclosed Amendment No. 20 to Provisional Operating License No. DPR-16 for the Oyster Creek Nuclear Generating Station. This amendment consists of changes to the Technical Specifications and is in response to your application dated November 5, 1976.

The amendment consists of changes in the Technical Specifications that will permit resetting a reactor scram 20 seconds after the reactor has been placed in the shutdown mode.

Copies of the related Safety Evaluation and the Federal Register Notice also are enclosed.

Sincerely,

George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Enclosures:

1. Amendment No. 20 to License DPR-16
2. Safety Evaluation
3. Federal Register Notice

cc w/encls:
See next page

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DATE	1/26/77	1/26/77	1/3/77	1/4/77	1-26-97

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Brick Town, New Jersey 08723



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

JERSEY CENTRAL POWER & LIGHT COMPANY

DOCKET NO. 50-219

OYSTER CREEK NUCLEAR GENERATING STATION, UNIT NO. 1

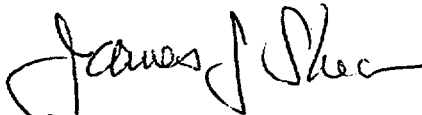
AMENDMENT TO PROVISIONAL OPERATING LICENSE

Amendment No. 20
License No. DPR-16

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Jersey Central Power and Light Company (the licensee) dated November 5, 1976, 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.
2. Accordingly, the license is amended by a change to the Technical Specifications as indicated in the attachment to this license amendment.

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

FOR THE NUCLEAR REGULATORY COMMISSION



George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors



Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 4, 1977

ATTACHMENT TO LICENSE AMENDMENT NO. 20
TO THE TECHNICAL SPECIFICATIONS
PROVISIONAL OPERATING LICENSE NO. DPR-16
DOCKET NO. 50-219

Replace pages 1.0-1 and 3.1-7 with the attached revised pages. Add page 3.1-3a. (No change has been made on page 3.1-3).

SECTION I

DEFINITIONS

The following frequently used terms are defined to aid in the uniform interpretation of the specifications.

1.1 OPERABLE

A system or component shall be considered operable when it is capable of performing its required function in its required manner.

1.2 OPERATING

Operating means that a system or component is performing its required function.

1.3 POWER OPERATION

Power operation is any operation when the reactor is in the startup mode or run mode except when primary containment integrity is not required.

1.4 STARTUP MODE

The reactor is in the startup mode when the reactor mode switch is in the startup mode position. In this mode, the reactor protection system scram trips initiated by condenser low vacuum and main steam line isolation valve closure are bypassed when reactor pressure is less than 600 psig; the low pressure main steamline isolation valve closure is bypassed; the IRM trips for rod block and scram are operable; and the SRM trips for rod block are operable.

1.5 RUN MODE

The reactor is in the run mode when the reactor mode switch is in the run mode position. In this mode, the reactor protection system is energized with APRM protection and the control rod withdrawal interlocks are in service.

1.6 SHUTDOWN CONDITION

The reactor is in a shutdown condition when the reactor mode switch is in the shutdown mode position. In this condition, the reactor is subcritical, a control rod block is initiated, all operable control rods are fully inserted, and specification 3.2-A is met.

1.7 COLD SHUTDOWN

The reactor is at cold shutdown when the mode switch is in the shutdown mode position, all operable control rods are fully inserted, and the reactor coolant system maintained at less than 212 F and vented.

TABLE 3.1.1 PROTECTIVE INSTRUMENTATION REQUIREMENTS

Function	Trip Setting	Reactor Modes in which Function Must Be Operable				Min. No. of Operable or Operating (Tripped) Trip Systems	Min. No. of Operable Instrument Channels Per Operable Trip Systems	Action Required*
		Shutdown	Refuel	Startup	Run			
A. Scram								
1. Manual Scram		X	X	X	X	2	1	Insert control rods
2. High Reactor Pressure	**		X	X	X	2	2	
3. High Drywell Pressure	≤ 2 psig		X	X	X	2	2	
4. Low Reactor Water Level	**		X	X	X	2	2	
5. High Water Level in Scram Discharge Volume	≤ 37 gal.		X(a)	X	X	2	2	
6. Low Condenser Vacuum	≥ 23" Hg		X(b)	X(b)	X	2	2	
7. High Radiation in Main Steamline Tunnel	≤ 10 x normal background		X	X	X	2	2	
8. Average Power Range Monitor (APRM)	**		X(c)	X(c)	X(c)	2	3	
9. Intermediate Range Monitor (IRM)	**		X(d)	X(d)		2	3	
10. Main Steamline Isolation Valve Closure	**		X(b)	X(b)	X	2	4	

assumed uniform rod withdrawal approach to the scram level, the rate of power rise is no more than five percent of rated per minute, and three operable IRM instruments in each trip system would be more than adequate to assure a scram before the power could exceed the safety limit. In many cases, if properly located, a single operable IRM channel in each trip system would suffice.

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. The probability of the trip system failing to perform its function when required under this configuration can be made commensurate with a like probability under its normal configuration by limiting the operating time in the test mode. An acceptable test duration to meet this criterion is computed to be one hour based on the following considerations:
- (a) the increased probability of an unsafe failure for a one-out-of-one trip system in comparison to a one-out-of-two trip system;
 - (b) the probability that the one channel being relied upon is itself inoperable at the beginning of the test;
 - (c) the probability that an event will occur that requires the trip system to function during the time spent in the test mode;
 - (d) an unsafe failure rate of $2.5 \times 10^{-6} \text{ hr}^{-1}$ (Sec. 4.1, p. 4.1-2) for the channel; and
 - (e) a test interval (time between tests) of one month."

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 particular protection instrument is not required; or the plant is placed in the protection or safe condition that the instrument initiates. This is accomplished in a normal manner without subjecting the plant to abnormal operating conditions. The action and out-of-service requirements apply to all instrumentation within a particular function, e. g., if the requirements on any one of the ten scram functions cannot be met then control rods shall be inserted.

The trip level settings not specified in Specification 2.3 have been included in this specification. The bases for these settings are discussed below.

The high drywell pressure trip is set at 2 psig. This trip will scram the reactor, initiate reactor isolation, initiate containment spray in conjunction with low reactor water level, initiate core spray, initiate primary containment



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 20 TO LICENSE NO. DPR-16

JERSEY CENTRAL POWER AND LIGHT COMPANY

OYSTER CREEK NUCLEAR GENERATING STATION

DOCKET NO. 50-219

Introduction

By letter dated November 5, 1976, Jersey Central Power and Light Company requested a change to the Technical Specifications appended to Facility Operating License No. DPR-16 for the Oyster Creek Nuclear Generating Station. The proposed change would permit resetting a reactor scram 20 seconds after the reactor has been placed in the shutdown mode. The benefit realized by this change is the removal of scram pressure from the control rod drive seals which will preclude their unnecessary wear and increase their lifetime. In addition, the control rod drive index tube will be less likely to deform due to the application of scram pressure when the reactor pressure is below 600 psig. The proposed change in circuitry would permit bypass of those protective function which contribute to the scram in the shutdown mode. Those include the manual scram and the automatic scrams associated with condenser low vacuum, main steam isolation valve closure (when the reactor is below 600 psi pressure), and dump volume high water level.

The changes were originally proposed by the licensee (Amendment No. 68, Supplement 6 to Facility Description and Safety Analysis Report, November 1973) as part of the application for conversion from a Provisional to a Full Term Operating License. They were also discussed with members of the licensee's staff at a meeting held in Bethesda, Maryland, on January 12, 1977. (1)

Evaluation

The mode switch provides appropriate protective functions for the condition in which the reactor is to be operated. When the mode switch is placed in the shutdown position, the reactor is already shutdown and all control rods are fully inserted. In addition, a rod block is initiated which prevents withdrawal of any control rod. The initiation of a reactor scram in the shutdown mode is merely to provide a mechanism whereby the manual control system can be de-energized; it is not considered a protective

function because it is not required to protect the fuel or nuclear system process barrier.

Reset of the manual scram signal after a short delay time (approximately 20 seconds), thereby restoring the normal valve lineup in the control rod drive hydraulic system, is considered an acceptable modification. The capability to reset the scram is similar to that employed by the Duane Arnold Energy Center (Docket No. 50-331) which was previously reviewed and approved. The time delay allows ample time for all signals to clear. It could be shorter or longer, but 20 seconds is a reasonable and acceptable value.

The condenser low vacuum trip of the reactor protection system is provided to protect the main condenser in the event that vacuum is lost. Under operating conditions a loss of condenser vacuum could cause the turbine stop valves to close, resulting in a turbine trip transient. In the shutdown mode, the condenser low vacuum trip serves no protection function; thus, bypass for purpose of resetting the scram to relieve scram pressure from the control rod drive index tubes, pistons and seals, is acceptable.

The main steam line isolation valve closure scram is intended to limit the release of fission products from the nuclear system upon conditions indicative of a steam line break. Thus, establishing a bypass around the scram associated with the main steam line isolation valve closure trip when the reactor protective system in the shutdown mode.

The scram for the dump volume-high water level shuts down the reactor while there is still sufficient free volume in the scram discharge system to receive the discharge water from the control rod drives. In the shutdown mode, the control rods are fully inserted; thus, bypass of this trip for purpose of resetting the scram is acceptable.

Similar bypasses are already provided for the "Refuel" and "Start-up" mode utilizing similar electrical components. All of these are annunciated in the control room.

At least one control rod drive system pump must be in operation in accordance with the technical specifications. The flow rate of approximately 40 gpm will provide sufficient cooling to prevent excessive control rod drive seal temperatures when the reactor temperatures are at or near operating values.

Environmental Consideration

We have determined that this amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and pursuant to 10 CFR §51.5(d)(4) that an environmental impact statement, or negative declaration and environmental appraisal need not be prepared in connection with the issuance of this amendment.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) 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 or to the health and safety of the public.

Date: February 4, 1977

Reference 1 - Minutes of Meeting, JCP&L and NRC, Bethesda, Maryland,
January 12, 1977

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-219

JERSEY CENTRAL POWER & LIGHT COMPANY

NOTICE OF ISSUANCE OF AMENDMENT

TO PROVISIONAL OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 20 to Provisional Operating License No. DPR-16 issued to Jersey Central Power & Light Company which revised Technical Specifications for operation of the Oyster Creek Nuclear Generating Station, located in Ocean County, New Jersey. The amendment is effective as of its date of issuance.

The amendment will change the Technical Specifications to permit resetting a reactor scram 20 seconds after the reactor has been placed in the shutdown mode.

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of this amendment was not required since the amendment does not involve a significant hazards consideration.

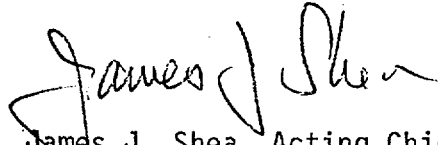
The Commission has determined that the issuance of this amendment will not result in any significant environmental impact and that pursuant to 10 CFR §1.5(d)(4) an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of this amendment.

For further details with respect to this action, see (1) the application for amendment dated November 5, 1976, (2) Amendment No. 20 to License No. DPR-16, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C. and at the Ocean County Library, Brick Township Branch, 401 Chambers Bridge Road, Brick Town, New Jersey 08723.

A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland, this 4th day of February 1977.

FOR THE NUCLEAR REGULATORY COMMISSION



James J. Shea, Acting Chief
Operating Reactors Branch #3
Division of Operating Reactors