See Correction Letter of 5-11-84

February 6, 1984

TAC 51402

Docket No. 50-219
LS05-84-02-014

DISTRIBUTION

Docket File	OELD
NRC PDR	ELJordan
Local PDR	JMTaylor
NSIC	ACRS (10)
ORB #5 Reading	TBarnhart (4)
DCrutchfield	RDiggs
HSmith	LJHarmon (2)
JLombardo	WJones
BSheron	RWHouston
CGraves	

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: OPERABILITY OF ISOLATION CONDENSER ISOLATION VALVES

Re: Oyster Creek Nuclear Generating Station

The Commission has issued the enclosed Amendment No. 72 to Provisional Operating License No. DPR-16 for the Oyster Creek Nuclear Generating Station. This amendment consists of changes to the Technical Specifications in response to your application dated March 31, 1983.

The amendment authorizes changes to the Appendix A Technical Specifications pertaining to operability of the isolation valves for the isolation condensers.

A Notice of Consideration of Issuance of Amendment to License and Proposed No Significant Hazards Consideration Determination and Opportunity for Hearing related to the requested action was published in the Federal Register on November 22, 1983 (48 FR 52814). No request for hearing and no comments were received.

A copy of our related Safety Evaluation is also enclosed. This action will appear in the Commission's Monthly Notice publication in the Federal Register.

Sincerely,

Original signed by

Dennis M. Crutchfield, Chief
Operating Reactors Branch #5
Division of Licensing

Enclosures:
1. Amendment No. 72 to License No. DPR-16
2. Safety Evaluation

cc w/enclosures:
See next page

DL: ORB #5	DL: ORB #5	OELD	DSI: RSB	DSI: RSB	DSI: ADRSB
HSmith:cc	JLombardo	CWoodhead	CGraves	BSheron	RWHouston
1/20/84	1/20/84	1/25/84	1/30/84	1/30/84	1/31/84

DL: ORB #5	DL: AD/SA
DCrutchfield	FMiraglia
2/1/84	2/1/84

8402070328 840206
PDR ADOCK 05000219
P PDR

SE01
1/1

DSY Code 5E 51

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

February 6, 1984

Docket No. 50-219
LS05-84-02-014

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: OPERABILITY OF ISOLATION CONDENSER ISOLATION VALVES

Re: Oyster Creek Nuclear Generating Station

The Commission has issued the enclosed Amendment No. 72 to Provisional Operating License No. DPR-16 for the Oyster Creek Nuclear Generating Station. This amendment consists of changes to the Technical Specifications in response to your application dated March 31, 1983.

The amendment authorizes changes to the Appendix A Technical Specifications pertaining to operability of the isolation valves for the isolation condensers.

A Notice of Consideration of Issuance of Amendment to License and Proposed No Significant Hazards Consideration Determination and Opportunity for Hearing related to the requested action was published in the Federal Register on November 22, 1983 (48 FR 52814). No request for hearing and no comments were received.

A copy of our related Safety Evaluation is also enclosed. This action will appear in the Commission's Monthly Notice publication in the Federal Register.

Sincerely,

Dennis M. Crutchfield

Dennis M. Crutchfield, Chief
Operating Reactors Branch #5
Division of Licensing

Enclosures:
1. Amendment No. 72 to
License No. DPR-16
2. Safety Evaluation

cc w/enclosures:
See next page

cc:
G.F. Trowbridge, Esquire
Shaw, Pittman, Potts and Trowbridge
1800 M Street, N.W.
Washington, D.C. 20036

J.B. Lieberman, Esquire
Berlack, Isreals & Lieberman
26 Broadway
New York, New York 10004

Dr. Thomas E. Murley
Regional Administrator
Nuclear Regulatory Commission
Region I Office
631 Park Avenue
King of Prussia, Pennsylvania 19406

Jim Knubel
BWR Licensing Manager
GPU Nuclear
100 Interplace Parkway
Parsippany, New Jersey 08625

Deputy Attorney General
State of New Jersey
Department of Law and Public Safety
36 West State Street - CN 112
Trenton, New Jersey 08625

Mayor
Lacey Township
818 Lacey Road
Forked River, New Jersey 08731

U.S. Environmental Protection Agency
Region II Office
ATTN: Regional Radiation Representative
26 Federal Plaza
New York, New York 10007

Licensing Supervisor
Oyster Creek Nuclear Generating Station
Post Office Box 388
Forked River, New Jersey 08731

Resident Inspector
c/o U.S. NRC
Post Office Box 445
Forked River, New Jersey 08731

Commissioner
New Jersey Department of Energy
101 Commerce Street
Newark, New Jersey 07102

Frank Cosolito, Acting Chief
Bureau of Radiation Protection
Department of Environmental
Protection
380 Scotch Road
Trenton, New Jersey 08628

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

GPU NUCLEAR CORPORATION

AND

JERSEY CENTRAL POWER & LIGHT COMPANY

OYSTER CREEK NUCLEAR GENERATING STATION

AMENDMENT TO THE AMENDED PROVISIONAL OPERATING LICENSE

Amendment No. 72
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 March 31, 1983, 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 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. 72, 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

Dennis M. Crutchfield

Dennis M. Crutchfield, Chief
Operating Reactors Branch #5
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 6, 1984

ATTACHMENT TO LICENSE AMENDMENT NO. 72

PROVISIONAL OPERATING LICENSE NO. DPR-16

DOCKET NO. 50-219

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised pages are identified by the captioned amendment number and contain vertical lines indicating the area of change.

PAGES
3.1-10
3.1-14
3.8-1
3.8-2
3.8-3 (new page)

TABLE 3.1.1 PROTECTIVE INSTRUMENTATION REQUIREMENTS (Continued)

Function	Trip Setting	Reactor Modes in Which Function Must be Operable: Shutdown	Refuel	Startup	Run	Min. No. of Operable or Operating (Tripped) Trip Systems	Min. No. of Operable Instrument Channels Per Operable Trip Systems	Action Required*
2. Low-Low-Low Reactor Water Level	≥4'8" above top of active fuel	X(v)	X(v)	X(v)	X	2	2	See note h
3. AC Voltage	NA			X(v)	X	2	2	Prevent auto depressurization on loss of AC power. See note i
H. Isolation Condenser Isolation								
1. High Flow Steam Line	≤20psig P	X(s)	X(s)	X	X	2	2	Isolate Affected isolation condenser, comply with Spec. 3.8 See Note cc
2. High Flow Condensate line	≤27" P H_2O	X(s)	X(s)	X	X	2	2	
I. Offgas System Isolation								
1.High Radiation In Offgas Line (e)	≤10 x Stack Release limit (See 3.6-A.1)	X(s)	X(s)	X	X	1	2	Isolate reactor or trip the Inoperable instrument channel
J. Reactor Building Isolation and Standby Gas Treatment System Initiation								Isolate Reactor Bldg. & Initiate Standby Gas Treatment System, Manual Surveillance for not more than 24 hours (total for all Instruments under J) In any 30-day period
1. High Radiation Reactor Building Operation Floor	≤100 Mr/Hr	X(w)	X(w)		X	1	1	
2. Reactor Bldg. Ventilation Exhaust	≤17 Mr/Hr	X(w)	X(w)	X	X	1	1	
3. High Drywell Pressure	≤2 psig	X(u)	X(u)	X	X	1(k)	2(k)	
4. Low Low Reactor Water Level	≥7'2" above top of active fuel	X	X	X	X	1	2	

TABLE 3.1.1 (Cont'd)

v. These functions not required to be operable when the ADS is not required to be operable.

w. These functions must be operable only when irradiated fuel is in the fuel pool or reactor vessel and secondary containment integrity is required per specification 3.5.B.

y. The number of operable channels may be reduced to 2 per Specification 3.9-E and F.

z. The bypass function to permit scram reset in the shutdown or refuel mode with control rod block must be operable in this mode.

aa. Pump circuit breakers will be tripped in 10 seconds $\pm$ 15% during a LOCA by relays SK7A and SK8A.

bb. Pump circuit breakers will trip instantaneously during a LOCA.

cc. If an isolation condenser inlet (steam side) isolation valve becomes or is made inoperable in the open position during the run mode comply with Specification 3.8.E. If an AC motor-operated outlet (condensate return) isolation valve becomes or is made inoperable in the open position during the run mode comply with Specification 3.8.F.

3.8 ISOLATION CONDENSER

Applicability: Applies to operating status of the isolation condenser.

Objective: To assure heat removal capability under conditions of reactor vessel isolation from its normal heat sink.

Specification:

A. The two isolation condenser loops shall be operable during power operation and whenever the reactor coolant temperature is greater than 212°F except as specified in C, below.

B. The shell side of each condenser shall contain a minimum water volume of 22,730 gallons. If the minimum volume cannot be maintained or if a source of makeup water is not available to the condenser, the condenser shall be considered inoperable.

C. If one isolation condenser becomes inoperable during the run mode the reactor may remain in operation for a period not to exceed 7 days provided the motor operated isolation and condensate makeup valves in the operable isolation condenser are demonstrated daily to be operable.

D. If Specification 3.8.A and 3.8.B are not met, or if an inoperable isolation condenser cannot be repaired within 7 days, the reactor shall be placed in the cold shutdown condition.

E. If an isolation condenser inlet (steam side) isolation valve (V-14-30, 31, 32 or 33) becomes or is made inoperable, in the open position during the run mode, the redundant inlet isolation valve shall be demonstrated operable. If the inoperable valve is not returned to service within 4 hours declare the affected isolation condenser inoperable, isolate it and comply with Specification 3.8.C.

F. If an AC motor-operated isolation condenser outlet (condensate return) isolation valve (V-14-36 or 37) becomes or is made inoperable in the open position in the run mode, return the valve to service within 4 hours or declare the affected isolation condenser inoperable, isolate it and comply with Specification 3.8.C.

Basis:

The purpose of the isolation condenser is to depressurize the reactor and to remove reactor decay heat in the event that the turbine generator and main condenser is unavailable as a heat sink.(1) Since the shell side of the isolation condensers operate at atmospheric pressure, they can accomplish their purpose when the reactor temperature is sufficiently above 212°F to provide for the heat transfer corresponding to reactor decay heat. The tube side of the isolation condensers form a closed loop with the reactor vessel and can operate without reducing the reactor coolant water inventory.

Each condenser containing a minimum total water volume of 22,730 gallons provides 11,060 gallons above the condensing tubes. Based on scram from a reactor power level of 1950 MWt (the design basis power level for the isolation condensers) the condenser system can accommodate the reactor decay heat (2,3) (corrected for U-239 and NP-239) for 1 hour and 40 minutes without need for makeup water. One condenser with a minimum water volume of 22,730 gallons can accommodate the reactor decay heat for 45 minutes after scram from 1950 MWt before makeup water is required. In order to accommodate a scram from 1950 MWt and cooldown, a total of 107,500 gallons of makeup water would be required either from the condensate storage tank or from the fire protection system. Since the rated reactor power is 1930 MWt, the above calculations represent conservative estimates of the isolation condenser system capability.

The vent lines from each of the isolation condenser loops to the main steam lines downstream of the main steam lines isolation valves are provided with isolation valves which close automatically on isolation condenser actuation or on signals which close the main steam isolation valves. Radiation monitors on the condenser shell side vents and the associated alarms in the control room are provided to alert the operator of a tube leak in the isolation condenser. High temperature sensors in the isolation condenser and pipe areas cause alarm in the control room to alert the operator of a piping leak in these areas.

Specification 3.8.E allows reduction in redundancy of isolation capability for isolation condenser inlet (steam side) isolation valves. Reasonable assurrance of isolation capability is provided by testing the operability of the redundant valve. Specification 3.8.F allows short term inoperability of the AC motor-operated isolation condenser outlet (condensate return) valve. It is not necessary to test the redundant DC motor-operated valve as this valve is normally in the closed position. These specifications permit troubleshooting and repair as well as routine maintenance, such as valve stem packing addition or replacement, to be performed during reactor operation without reducing the redundancy of the isolation condenser heat sink function. The out of service time of 4 hours is consistent with that permitted for primary containment isolation valves. (5)

Either of the two isolation condensers can accomplish the purpose of the system. If one condenser is found to be inoperable, there is no immediate threat to the heat removal capability for the reactor and reactor operation may continue while repairs are being made. Therefore, the time out of service for one of the condensers is based on considerations for a one out of two system.(4) The test interval for operability of the valves required to place the isolation condenser in operation is once/month (Specification 4.8). An acceptable out of service time, T, is then determined to be 10 days. However,if at the time the failure is discovered and the repair time is longer than 7 days the reactor will be placed in the cold shutdown condition. If the repair time is no more than 7 days the reactor may continue in operation, but as an added factor of conservatism, the motor operated isolation condenser and condensate makeup valves on the operable isolation condenser are tested daily. Expiration of the 7 day period or inability to meet the other specifications requires that the reactor be placed in the cold shutdown condition which is normally expected to take no more than 18 hours. The out of service allowance when the system is required is limited to the run mode in order to require system availability, including redundancy, at startup.

References:

(1) FDSAR, Volume I, Section IV-3.
(2) K. Shure and D.J. Dudziak, "Calculating Energy Release by Fission Products", U.S. AEC Report, WAPD-T-1309, March 1961.
(3) K. Shure, "Fission Product Decay Heat", in U.S. AEC Report, WAPD-BT-24, December 1961.
(4) Specification 3.2, Bases.
(5) Specification 3.5.3.a.1.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 72 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 March 31, 1983, GPU Nuclear Corporation (GPU) (the licensee) requested an amendment to Provisional Operating License No. DPR-16 for the Oyster Creek Nuclear Generating Station. This amendment would authorize changes to the Technical Specifications pertaining to operability of the isolation valves for the isolation condensers.

A Notice of Consideration of Issuance of Amendment and Proposed No Significant Hazards Consideration Determination and Opportunity for Hearing related to the requested action was published in the Federal Register on November 22, 1983 (48 FR 52814). A request for hearing and public comments were not received.

2.0 DISCUSSION AND EVALUATION

The proposed Technical Specification changes would clarify the existing Technical Specifications, and permit an acceptable out-of-service time for the isolation valves for routine maintenance while keeping the affected isolation condenser operable to perform its intended function. During 1982, an enforcement issue, which was attributed to lack of clarity in the Technical Specifications (TS) for the isolation condensers, developed at Oyster Creek. In NRC Inspection Report 50-219/82-22, dated December 7, 1982, GPU was cited for violation of TS 3.1A, Table 3.1.1.H and 3.8 which require that an operable trip system be available to cause isolation of an isolation condenser during power operation when reactor water temperature is above 212°F. As noted in a letter from NRC Region I to GPU dated December 3, 1981, NRC Inspection Report 50-219/82-22 reported that on September 27, 1982, the isolation trip system for isolation condenser "B" was not capable of closing one of the two redundant valves (valve V-14-32) in the inlet steam line for 6 hours. The valve had been electrically defeated in the open position while packing was added. For isolation condenser "A", a similar condition existed for 8 hours on September 29, 1982 when packing was added to inlet steamline valve V-14-31. The interpretation of the existing specifications would have required that the affected isolation condensers be declared inoperable and valved off during these times.

In a letter dated January 7, 1983 GPU did not take exception to this violation. They did, however, question the intent of the specification for the isolation condensers and stated their plans to submit a Technical Specification Change Request to clarify the issue. On March 31, 1983, GPU submitted a Technical Specification Change Request to clarify the existing specifications, and to permit an acceptable out-of-service time for applicable isolation condenser isolation valves for routine valve maintenance while maintaining the affected isolation condenser operable to perform its intended function. A note added to Table 3.1.1.4 addresses isolation valve operability and references the limiting conditions for operation in Section 3.8.

The added specifications, 3.8.E and 3.8.F are discussed in an addition to the bases for Section 3.8.

Specification 3.8.E is proposed to allow a maximum out-of-service time of four hours for an isolation condenser inlet (steam side) isolation valve providing the redundant valve is tested operable. Specification 3.8.F is proposed to allow a four hour out-of-service time for the AC motor-operated outlet isolation valve located within the drywell. Upon initiation of the IC the normally closed DC motor-operated condensate return line isolation valve opens, concurrent with the closing of the IC vent lines. This valve is operability tested once a month together with the other isolation valves, vent valves and condensate (to condenser shell side) make-up valve. Inoperability of the normally closed DC outlet valve renders the isolation condenser inoperable because the valve will open on an initiation signal. For this reason allowable out-of-service time for the DC outlet valve is not appropriate. In the case of the steam side valves, Specification 3.8.E would require the redundant valve to be tested for operability (i.e., stroked) prior to maintenance activity proceeding on the other valve. This ensures isolation capability. In the case of the condensate line valves (Specification 3.8.F) the outside containment DC powered valve is closed during normal operation so the need to ensure isolation capability by cycling is not necessary as the valve is already closed. The DC powered condensate line valve receives the initiation signal and opens to actuate the isolation condenser. If this valve were to become inoperable, it would render its associated isolation condenser inoperable. Therefore, specifications to allow inoperability of the DC powered condensate line valve are not proposed.

Oyster Creek has two full capacity isolation condensers, each capable of removing about 3% of rated power (equivalent to decay heat load at about 5 minutes after scram). Piping and valves connecting to the reactor allow each condenser to function independently. The steam line from the reactor to each condenser contains two isolation valves which are normally open. The condensate return line from each condenser to the reactor contains two isolation valves, one normally open and one normally closed. The system, which operates under natural circulation conditions, is actuated by opening the normally closed valve in the condensate return line. High flow in either the inlet or return lines for a given condenser results in closure signals to all the isolation valves for that condenser. The operability of

the isolation valves for the isolation condensers affects the availability of the system for its intended heat removal function and affects the system isolation capability in the event of a system break. In view of the low probability of a system break, the system redundancy and the short time periods involved in valve maintenance, the specification changes result in a negligible increase in risk due to failure to isolate. A slight decrease in risk is expected because of the increase in system availability during routine valve maintenance.

Although the condensers and their associated piping are part of the reactor coolant pressure boundary and the piping penetrates primary containment, the isolation valves do not receive containment isolation signals. The proposed four hour maximum out-of-service time, however, was chosen by the licensee to be consistent with that permitted for containment isolation valves.

The staff has reviewed the proposed technical specification change request and the results of the supporting analysis and conclude that the proposed action does not involve a reduction in a margin of safety. Based on the above, the staff finds the proposed technical specification change acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

The staff has determined that the 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, the staff has 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 impact appraisal need not 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 or to the health and safety of the public.

5.0 ACKNOWLEDGEMENT

This evaluation was prepared by C. Graves.

Dated: February 6, 1984