

August 25, 1987

Docket No. 50-354

Mr. Corbin A. McNeill, Jr.
Senior Vice President - Nuclear
Public Service Electric & Gas Company
P.O. Box 236
Hancocks Bridge, New Jersey 08038

Dear Mr. McNeill:

SUBJECT: MINIMUM CRITICAL POWER RATIO LIMITS (TAC NO. 65348)

Re: HOPE CREEK GENERATING STATION

The Commission has issued the enclosed Amendment No. 9 to Facility Operating License No. NPF-57 for the Hope Creek Generating Station. This amendment consists of changes to the Technical Specifications in response to your application dated April 30, 1987.

This amendment increases the minimum critical power ratio limits provided in Technical Specification Figure 3.2.3-1 for operable end-of-cycle recirculation pump trip and main turbine bypass systems.

A copy of our safety evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

/s/

George Rivenbark, Project Manager
Project Directorate I-2
Division of Reactor Projects I/II

Enclosures:

1. Amendment No. 9 to License No. NPF-57
2. Safety Evaluation

cc w/enclosures:
See next page

8709030149 870825
PDR ADOCK 05000354
P PDR

DISTRIBUTION:

Docket File
NRC PDR
Local PDR
PDI-2 Reading
WButler
3 → GRivenbark/RLO

MO'Brien (2)
OGC - Bethesda
DHagan
EJordan
JPartlow
TBarnhart (4)

Wanda Jones
EButcher
RGallo
ACRS (10)
CMiles, GPA/PA
RDiggs, ARM/LFMB

SVarga
BBoger
BClayton

LA: PDI-2:DRPI/II

NOV Brien

7/27/87

PM: PDI-2:DRPI/II

GRivenbark:ca

7/23/87

BC:RSB

WHodges

7/24/87

OGC:JL

E Chan

7/29/87

D: PDI-2:DRPI/II

WButler

8/24/87

7/30/87



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

August 25, 1987

Docket No. 50-354

Mr. Corbin A. McNeill, Jr.
Senior Vice President - Nuclear
Public Service Electric & Gas Company
P.O. Box 236
Hancocks Bridge, New Jersey 08038

Dear Mr. McNeill:

SUBJECT: MINIMUM CRITICAL POWER RATIO LIMITS (TAC NO. 65348)

Re: HOPE CREEK GENERATING STATION

The Commission has issued the enclosed Amendment No. 9 to Facility Operating License No. NPF-57 for the Hope Creek Generating Station. This amendment consists of changes to the Technical Specifications in response to your application dated April 30, 1987.

This amendment increases the minimum critical power ratio limits provided in Technical Specification Figure 3.2.3-1 for operable end-of-cycle recirculation pump trip and main turbine bypass systems.

A copy of our safety evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

A handwritten signature in cursive script, reading "George Rivenbark", is written over the typed name.

George Rivenbark, Project Manager
Project Directorate I-2
Division of Reactor Projects I/II

Enclosures:

1. Amendment No. 9 to
License No. NPF-57
2. Safety Evaluation

cc w/enclosures:
See next page

Mr. C. A. McNeill
Public Service Electric & Gas Co.

Hope Creek Generating Station

cc:

S. E. Miltenberger
Vice President - Nuclear Operations
Nuclear Department
P.O. Box 236
Hancocks Bridge, NJ 08038

Mr. B. A. Preston, Manager
Licensing and Regulation
Nuclear Department
P.O. Box 236
Hancocks Bridge, New Jersey 08038

Gregory Minor
Richard Hubbard
Dale Bridenbaugh
MHB Technical Associates
1723 Hamilton Avenue, Suite K
San Jose, California 95125

Susan C. Remis
Division of Public Interest Advocacy
New Jersey State Department of
the Public Advocate
Richard J. Hughes Justice Complex
CN-850
Trenton, New Jersey 08625

M. J. Wetterhahn, Esquire
Conner & Wetterhahn
Suite 1050
1747 Pennsylvania Avenue
Washington, D.C. 20006

Office of Legal Counsel
Department of Natural Resources
and Environmental Control
89 Kings Highway
P.O. Box 1401
Dover, Delaware 19903

R. Fryling, Jr., Esquire
Law Department - Tower 5E
80 Park Place
Newark, New Jersey 07101

Ms. Rebecca Green
New Jersey Bureau of Radiation
Protection
380 Scotch Road
Trenton, New Jersey 08628

Resident Inspector
U.S. Nuclear Regulatory Commission
P.O. Box 241
Hancocks Bridge, New Jersey 08038

Mr. Anthony J. Pietrofitta
General Manager
Power Production Engineering
Atlantic Electric
1199 Black Horse Pike
Pleasantville, New Jersey 08232

Richard F. Engel
Deputy Attorney General
Division of Law
Environmental Protection Section
Richard J. Hughes Justice Complex
CN-112P
Trenton, New Jersey 08625

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, Pennsylvania 19406

Mr. S. LaBruna
General Manager-Hope Creek Operations
Hope Creek Generating Station
P.O. Box 118
Hancocks Bridge, New Jersey 08038



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

PUBLIC SERVICE ELECTRIC & GAS COMPANY

ATLANTIC CITY ELECTRIC COMPANY

DOCKET NO. 50-354

HOPE CREEK GENERATING STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 9
License No. NPF-57

1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:
 - A. The application for amendment filed by the Public Service Electric & Gas Company (PSE&G) dated April 30, 1987, 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 set forth in 10 CFR Chapter I;
 - 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 Facility Operating License No. NPF-57 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 9, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. PSE&G shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

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

FOR THE NUCLEAR REGULATORY COMMISSION

/s/

Walter R. Butler, Director
Project Directorate I-2
Division of Reactor Projects I/II

Attachment:
Changes to the Technical
Specifications

Date of Issuance: August 25, 1987

LA: PDI-2:DRPI/II
MO: Brien
7/23/87

PM: PDI-2:DRPI/II
GR: Wenbark:ca
7/23/87

OGC
E. Chan
7/29/87
D: PDI-2:DRPI/II
WButler
8/24/87 WB

7/30/87

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

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in cursive script, reading "Walter R. Butler".

Walter R. Butler, Director
Project Directorate I-2
Division of Reactor Projects I/II

Attachment:
Changes to the Technical
Specifications

Date of Issuance: August 25, 1987

ATTACHMENT TO LICENSE AMENDMENT NO. 9

FACILITY OPERATING LICENSE NO. NPF-57

DOCKET NO. 50-354

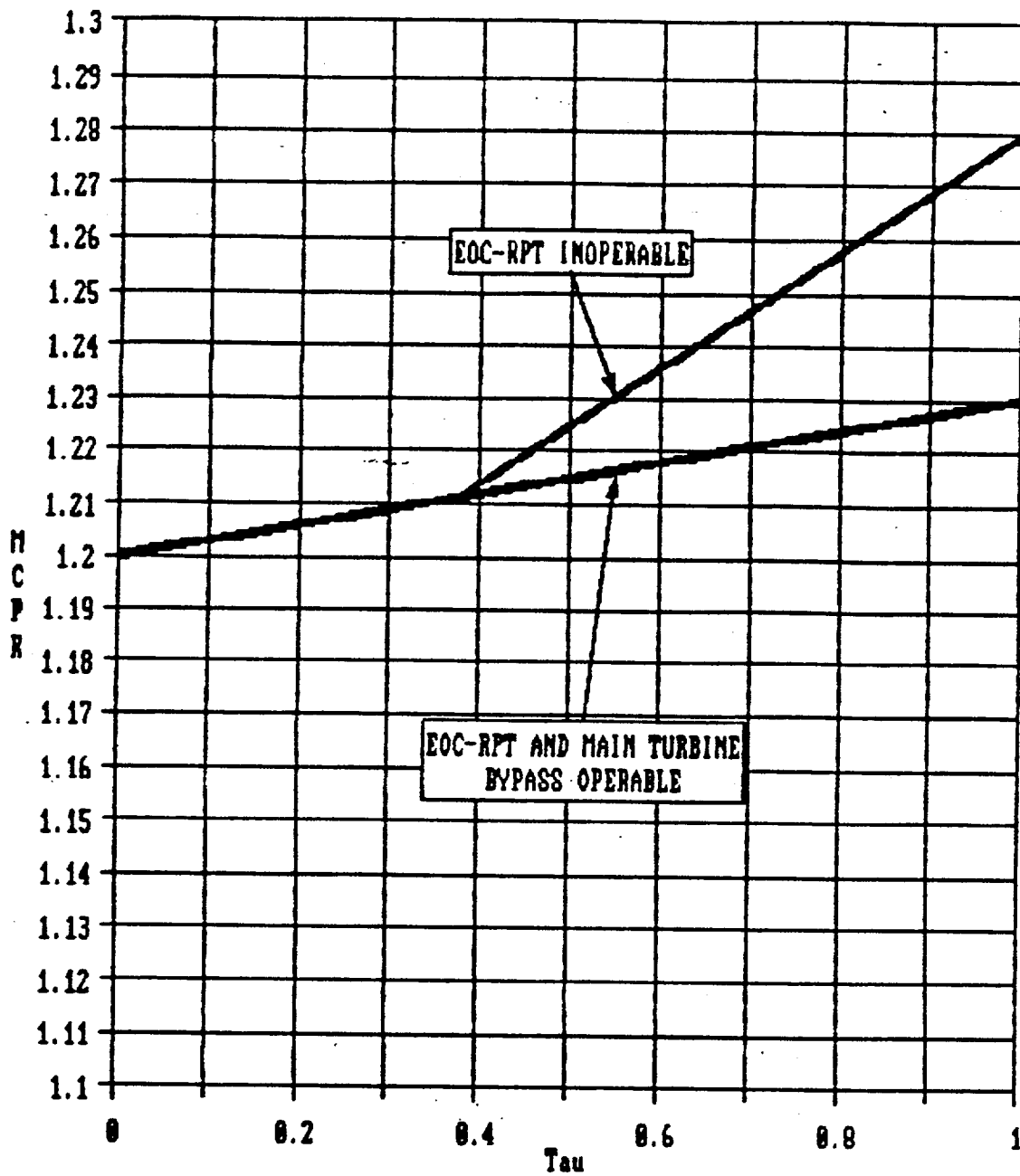
Replace the following page of the Appendix "A" Technical Specifications with the attached page. The revised page is identified by Amendment number and contains vertical lines indicating the area of change.

Remove

3/4 2-10

Insert

3/4 2-10



MINIMUM CRITICAL POWER RATIO (MCPR)
VERSUS TAU AT RATED FLOW
Figure 3.2.3-1



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 9 TO FACILITY OPERATING LICENSE NO. NPF-57
PUBLIC SERVICE ELECTRIC & GAS COMPANY
ATLANTIC CITY ELECTRIC COMPANY
HOPE CREEK GENERATING STATION
DOCKET NO. 50-354

1.0 INTRODUCTION

By letter dated April 30, 1987, Public Service Electric & Gas Company (the licensee) requested an amendment to Facility Operating License No. NPF-57 for the Hope Creek Generating Station. The proposed amendment would modify the Technical Specifications (TSs) to increase the minimum critical power ratio (MCPR) limits provided in Figure 3.2.3-1 for operable end-of-cycle (EOC) recirculation pump trip (RPT) and main turbine bypass systems. The change reflects a reanalysis of the MCPR limit using the measured recirculation flow coastdown. During the power ascension test program, the recirculation flow coastdown was found to be slower than assumed in the original MCPR analysis. Because the slower flow coastdown provides less core voiding than the previously assumed flow coastdown, it was determined that the current MCPR limits for operable EOC-RPT and main turbine bypass systems were nonconservative. Continued operation of the reactor, at that time, was made possible 1) by issuance of a TS change on an emergency basis (Amendment No. 1 to the license) that provided MCPR limits for operation with an inoperable EOC-RPT system, and modified the TS Action Statements to allow operation of the reactor with an inoperable EOC-RPT system and 2) by declaring the EOC-RPT system inoperable.

The licensee-proposed changes to increase the MCPR limits to reflect the measured recirculation flow coastdown will allow operation of the reactor without declaring the EOC-RPT system inoperable.

2.0 EVALUATION

The effect of the EOC-RPT is a negative reactivity insertion via rapid void formation which results when the tripped recirculation pumps coast down. This negative reactivity tends to offset the positive reactivity resulting from void collapse during pressurization transients. The EOC-RPT function is particularly important at the end of cycle when reactivity characteristics are least favorable. The operability of the EOC-RPT has no significant impact for non-pressurization events and does not affect LOCA analyses.

The licensee indicated that the limiting pressurization transients (load rejection without bypass and feedwater controller failure) have been re-analyzed by General Electric Company assuming a recirculation pump flow coastdown that bounds (is slower than) the flow coastdown measured during the power ascension test program. The analysis was performed using the ODDYN code which has been approved by the staff. The results show that the operating limit MCPR will vary from 1.20 to 1.23 depending upon measured scram times. The current MCPR limits, which are based on the originally assumed flow coastdown (known to be slightly nonconservative), are constant limits of 1.20 for all values of tau (scram times). The TS change resulting from the use of a slower flow coastdown in the analysis is an increase in the MCPR limit for tau greater than zero, linearly with increasing tau, with a maximum MCPR of 1.23 for tau equals 1. The licensee has also indicated that the analysis performed is specific to Hope Creek, and except for the use of a longer RPT delay to bound the slower flow coastdown, the assumptions used are the same as those used in the previously approved Hope Creek FSAR Chapter 15 licensing analyses, thus they incorporate the results of plant specific transient analyses which have been performed using an approved model.

On the basis of the above discussion, the staff concludes that the proposed changes to the MCPR limits are acceptable.

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. 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 or environmental assessment need be prepared in connection with the issuance of this amendment.

4.0 CONCLUSION

The Commission made a proposed determination that the amendment involves no significant hazards consideration which was published in the Federal Register (52 FR 24557) on July 1, 1987 and consulted with the State of New Jersey. No public comments were received and the State of New Jersey did not have any comments.

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.

Principal Contributor: G. Rivenbark

Dated: August 25, 1987

August 25, 1987

MEMORANDUM FOR: Sholly Coordinator

FROM: Walter R. Butler, Director
Project Directorate I-2
Division of Reactor Projects I/II

SUBJECT: REQUEST FOR PUBLICATION IN MONTHLY FR NOTICE - NOTICE OF
(TAC NO. 65348) ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE

Public Service Electric & Gas Company, Docket No. 50-354, Hope Creek

Generating Station, Salem County, New Jersey

Date of application for amendment: April 30, 1987

Brief description of amendment: The amendment increased the minimum critical power ratio limits provided in Technical Specification Figure 3.2.3-1 for operable end-of-cycle recirculation pump trip and main turbine bypass systems.

Date of issuance: August 25, 1987

Effective date: August 25, 1987

Amendment No. 9

Facility Operating License No. NPF-57. This amendment revised the Technical Specifications.

Date of initial notice in Federal Register: July 1, 1987 (52 FR 24557)

The Commission's related evaluation of the amendment is contained in a Safety Evaluation dated August 25, 1987

No significant hazards consideration comments received: No

Local Public Document Room location: Pennsville Public Library, 190 S. Broadway, Pennsville, New Jersey 08070

/s/

8709020029 870825
CF ADDCK 05000354
CF

Walter R. Butler, Director
Project Directorate I-2
Division of Reactor Projects I/II

DISTRIBUTION:
Docket File
PDI-2 Reading
GRivenbark/RLo
MO'Brien

PDI-2/LA
MO'Brien
7/23/87

PDI-2/MPM
GRivenbark:ca
7/23/87

PDI-2/D
WButler
8/24/87

OGC
E. Chan
7/29/87



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

August 25, 1987

MEMORANDUM FOR: Sholly Coordinator

FROM: Walter R. Butler, Director
Project Directorate I-2
Division of Reactor Projects I/II

SUBJECT: REQUEST FOR PUBLICATION IN MONTHLY FR NOTICE - NOTICE OF
(TAC NO. 65348) ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE

Public Service Electric & Gas Company, Docket No. 50-354, Hope Creek
Generating Station, Salem County, New Jersey

Date of application for amendment: April 30, 1987

Brief description of amendment: The amendment increased the minimum critical
power ratio limits provided in Technical Specification Figure 3.2.3-1 for
operable end-of-cycle recirculation pump trip and main turbine bypass
systems.

Date of issuance: August 25, 1987

Effective date: August 25, 1987

Amendment No. 9

Facility Operating License No. NPF-57. This amendment revised the Technical
Specifications.

Date of initial notice in Federal Register: July 1, 1987 (52 FR 24557)

The Commission's related evaluation of the amendment is contained in a Safety
Evaluation dated August 25, 1987.

No significant hazards consideration comments received: No

Local Public Document Room location: Pennsville Public Library, 190 S.
Broadway, Pennsville, New Jersey 08070

A handwritten signature in cursive script that reads "Walter R. Butler".

Walter R. Butler, Director
Project Directorate I-2
Division of Reactor Projects I/II