

March 19, 1991

Docket No. 50-440

Mr. Michael D. Lyster, Vice President
Nuclear - Perry
The Cleveland Electric Illuminating
Company
10 Center Road
Perry, Ohio 44081

DISTRIBUTION	Docket File
NRC & Local PDRs	PDII-3 Reading
JPartlow	Crossi
TMurley/FMiraglia	BBoger
JZwolinski	PKreutzer
JRHall	OGC
EJordan	GHill(4)
ACRS(10)	CPA/PA
OC/LFMB	PDIII-3 Gray
JWechselberger	

Dear Mr. Lyster:

SUBJECT: SCHEDULAR EXEMPTION TO 10 CFR 55.45 (b)(2)(iii) FOR SIMULATION FACILITY CERTIFICATION (TAC NO. 75335)

The Commission has issued the enclosed exemption from the requirements of 10 CFR 55.45(b)(2)(iii). The exemption allows for the submittal of NRC Form 474, "Simulation Facility Certification," after the March 26, 1991 deadline provided in the rule, but no later than June 28, 1991. The exemption is in response to your request dated November 21, 1989, as supplemented by letters dated January 30, 1990 and February 12, 1991.

Based on the considerations discussed in the exemption, we have concluded that the information provided and the actions described in the application form an acceptable basis for the granting of an exemption. The Commission has determined, pursuant to 10 CFR 55.11, that this exemption is authorized by law and will not result in undue hazard to life or property and is otherwise in the public interest. Furthermore, the Commission has determined, pursuant to 10 CFR 50.12(a), that the special circumstances of 10 CFR 50.12 (a)(2)(v) are applicable in that the exemption would provide only temporary relief from the regulation and you have made good faith efforts to comply with the regulation.

The exemption is being forwarded to the Office of the Federal Register for publication.

Sincerely,

Original signed by Anthony T. Gody, Jr. for

James R. Hall, Sr. Project Manager
Project Directorate III-3
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosure:
As stated

cc w/enclosure:
See next page

LA/PDIII-3
PKreutzer
3/1/91

PM/PDIII-3
JRHall:rc
3/1/91

BC/LOLB
RGallo
3/4/91

PD/PDIII-3
JHannon
3/6/91

#1 ADR3/DRP345
JZwolinski
3/19/91

D/PDIII-3
BBoger
3/19/91

DOCUMENT NAME:
SIM CERT EXEMPT-PERRY

NRC FILE CENTER COPY

CP-3

March 19, 1991

Docket No. 50-440

Mr. Michael D. Lyster, Vice President
Nuclear - Perry
The Cleveland Electric Illuminating
Company
10 Center Road
Perry, Ohio 44081

DISTRIBUTION	Docket File
NRC & Local PDRs	PDIII-3 Reading
JPartlow	CROSSI
TMurley/FMiraglia	BBoger
JZwolinski	PKreutzer
JRHall	OGC
EJordan	GHill(4)
ACRS(10)	CPA/PA
OC/LFMB	PDIII-3 Gray
JWechselberger	

Dear Mr. Lyster:

SUBJECT: SCHEDULAR EXEMPTION TO 10 CFR 55.45 (b)(2)(iii) FOR SIMULATION FACILITY CERTIFICATION (TAC NO. 75335)

The Commission has issued the enclosed exemption from the requirements of 10 CFR 55.45(b)(2)(iii). The exemption allows for the submittal of NRC Form 474, "Simulation Facility Certification," after the March 26, 1991 deadline provided in the rule, but no later than June 28, 1991. The exemption is in response to your request dated November 21, 1989, as supplemented by letters dated January 30, 1990 and February 12, 1991.

Based on the considerations discussed in the exemption, we have concluded that the information provided and the actions described in the application form an acceptable basis for the granting of an exemption. The Commission has determined, pursuant to 10 CFR 55.11, that this exemption is authorized by law and will not result in undue hazard to life or property and is otherwise in the public interest. Furthermore, the Commission has determined, pursuant to 10 CFR 50.12(a), that the special circumstances of 10 CFR 50.12 (a)(2)(v) are applicable in that the exemption would provide only temporary relief from the regulation and you have made good faith efforts to comply with the regulation.

The exemption is being forwarded to the Office of the Federal Register for publication.

Sincerely,

Original signed by Anthony T. Gody, Jr. for

James R. Hall, Sr. Project Manager
Project Directorate III-3
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosure:
As stated

cc w/enclosure:
See next page

LA/PDIII-3
PKreutzer
3/1/91

PM/PDIII-3
JRHall:rc
3/1/91

BC/LOLB
RGallo
3/4/91

OGC
CPW
3/7/91

PD/PDIII-3
JHannon
3/6/91

ADR3/DRP345
JZwolinski
3/19/91

D/DRP345
BBoger
3/19/91

DOCUMENT NAME:
SIM CERT EXEMPT-PERRY

Mr. Michael D. Lyster
Cleveland Electric Illuminating Company

Perry Nuclear Power Plant
Unit Nos. 1 and 2

cc:

Jay E. Silberg, Esq.
Shaw, Pittman, Potts & Trowbridge
2300 N Street, N.W.
Washington, D.C. 20037

David E. Burke
The Cleveland Electric
Illuminating Company
P. O. Box 5000
Cleveland, Ohio 44101

Resident Inspector's Office
U.S. Nuclear Regulatory Commission
Parmly at Center Road
Perry, Ohio 44081

Regional Administrator, Region III
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Frank P. Weiss, Esq.
Assistant Prosecuting Attorney
105 Main Street
Lake County Administration Center
Painesville, Ohio 44077

Ms. Sue Hiatt
OCRE Interim Representative
8275 Munson
Mentor, Ohio 44060

Terry J. Lodge, Esq.
618 N. Michigan Street
Suite 105
Toledo, Ohio 43624

John G. Cardinal, Esq.
Prosecuting Attorney
Ashtabula County Courthouse
Jefferson, Ohio 44047

Robert A. Newkirk
Cleveland Electric
Illuminating Company
Perry Nuclear Power Plant
P. O. Box 97 E-210
Perry, Ohio 44081

Mr. James W. Harris, Director
Division of Power Generation
Ohio Department of Industrial
Relations
P. O. Box 825
Columbus, Ohio 43216

The Honorable Lawrence Logan
Mayor, Village of Perry
4203 Harper Street
Perry, Ohio 44081

The Honorable Robert V. Orosz
Mayor, Village of North Perry
North Perry Village Hall
4778 Lockwood Road
North Perry Village, Ohio 44081

Attorney General
Department of Attorney General
30 East Broad Street
Columbus, Ohio 43216

Radiological Health Program
Ohio Department of Health
1224 Kinnear Road
Columbus, Ohio 43212

Ohio Environmental Protection
Agency
DERR--Compliance Unit
P. O. Box 1049
1800 Watermark Drive
ATTN: Zack A. Clayton
Columbus, Ohio 43266-0149

Mr. Phillip S. Haskell, Chairman
Perry Township Board of Trustees
Box 65
4171 Main Street
Perry, Ohio 44081

State of Ohio
Public Utilities Commission
East Broad Street
Columbus, Ohio 43266-0573

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)
THE CLEVELAND ELECTRIC ILLUMINATING) Docket No. 50-440
COMPANY, ET AL.)
(Perry Nuclear Power Plant, Unit 1))

EXEMPTION

I.

The Cleveland Electric Illuminating Company, Centerior Service Company, Duquesne Light Company, Ohio Edison Company, Pennsylvania Power Company and Toledo Edison Company (the licensees) are the holders of Facility Operating License No. NPF-58, which authorizes operation of the Perry Nuclear Power Plant, Unit No. 1 (the facility) at steady state reactor power levels not in excess of 3579 megawatts thermal. The license provides, among other things, that the plant is subject to all rules, regulations and orders of the Nuclear Regulatory Commission (the Commission) now or hereafter in effect. The facility is a boiling water reactor located at the licensee's site in Lake County, Ohio.

The revision to 10 CFR Part 55, "Operators' Licenses," which became effective on May 26, 1987, established requirements for the administration of operating tests on nuclear power plant simulators. These regulations, in conjunction with 10 CFR 50.54(i-1), require facility licensees to use simulation facilities when administering operating tests for initial licensing and requalification. These regulations further require that a certified or

NRC-approved simulation facility must be used to administer operating tests after May 26, 1991. By letter dated November 21, 1989, as supplemented by letters dated January 30, 1990, and February 12, 1991, the licensees requested an exemption concerning the schedular requirements for certification of a plant-referenced simulator.

II.

Section 55.45(b)(2)(iii) of 10 CFR Part 55 requires that facility licensees submit a certification for use of a simulation facility consisting solely of a plant-referenced simulator no later than 46 months after the effective date of this rule, that is, by March 26, 1991, by filing Form NRC-474, "Simulation Facility Certification." On November 21, 1989, as supplemented by letters dated January 30, 1990, and February 12, 1991, the licensees requested an exemption from the filing requirements of 10 CFR 55.45(b)(2)(iii) to allow for the submittal of Form NRC-474 after March 26, 1991.

The licensees intend to comply with 10 CFR 55.45(b) by certifying a plant-referenced simulator. The licensees propose to submit Form NRC-474 no later than June 28, 1991, following completion of vendor and licensee acceptance testing but prior to shipment of the simulator from the vendor facility.

The licensees initially planned to upgrade the existing Perry simulator to meet the certification requirements. However, after determining the required scope of the upgrade and evaluating vendor proposals, it was determined that these initial plans were not feasible. Based upon the certification requirements and Perry's training needs, the licensees decided

to replace the existing simulator and to delay certification until the new simulator is operational. The exemption was requested because the replacement simulator will not be ready for certification by March 26, 1991.

In August 1987, 3 months after the effective date of 10 CFR 55.45, a qualification plan for certification of the existing simulator was approved by the licensees. Within that plan, it was noted that the majority of the simulator discrepancies identified at that time were concerned with logic and human factors, rather than dynamic response.

The Perry plant completed start-up testing and began commercial operation in November of 1987. In December 1987, the licensees began the analysis of start-up test data for comparison to simulator performance and it soon became apparent that there were significant dynamic response differences between plant and simulator. Procedures for certification of the existing simulator were developed and in place by March 1988, and implementation of those procedures was underway.

As 1988 progressed, the following simulator discrepancies emerged from comparison of simulator performance to plant data: (1) Capability to accurately simulate required normal plant evolution dynamics was inadequate due to limitations in reactor kinetic/thermohydraulic and feed flow models and numerous deficiencies of lesser magnitude; (2) Substantial corrections to system logic were required but could not be implemented due to computer capacity limitations and; (3) The ability to accurately model malfunctions needed to simulate abnormal and emergency events was limited due to outdated model structures, computer processing time and capacity limitations, and the shortcomings of the reactor kinetics/thermohydraulic, feed flow response and containment/drywell models.

By mid-1988, the need for an extensive upgrade of the existing simulator was recognized and a specification for the upgrade was prepared. The scope of the upgrade included replacing the computer complex and the instructor station, correcting the simulation software deficiencies for the key system models and providing a Configuration Management System. A request for proposals was issued in October 1988, bids were returned in December 1988, and proposal evaluations were completed in February 1989.

During evaluation of vendor proposals for a simulator upgrade, factors emerged which prompted the licensees to re-evaluate the alternatives (upgrade vs replace) for meeting simulator certification requirements and training needs and ultimately resulted in the decision to replace the simulator. These factors included:

- certification risks associated with proposed upgrades,
- training downtime associated with proposed upgrades,
- outdated input/output devices and limited availability of spare parts,
- the cost of a simulator upgrade relative to the cost of simulator replacement, and
- two vendors refusing to bid based on the assertion that an upgrade could not be guaranteed to yield certifiable performance.

III.

The Commission has determined that pursuant to 10 CFR 55.11, this exemption is authorized by law and will not endanger life or property and is

otherwise in the public interest. Furthermore, the Commission has determined, pursuant to 10 CFR 50.12(a), that special circumstances of 10 CFR 50.12(a)(2)(v) are applicable in that the exemption would provide only temporary relief from the applicable regulation and the licensee has made good faith efforts to comply with the regulation. This exemption grants a temporary relief period of approximately 3 months from the March 1991 date for submittal of the Perry simulation facility certification. Good faith efforts to comply with the regulation were made as follows:

- (1) Prior to the re-evaluation of alternatives leading to the decision to replace the simulator, the licensees had planned and were working toward certification of the existing simulator.
- (2) In March 1989, replacement was recommended based on the re-evaluation of alternatives.
- (3) In April 1989, simulator replacement proposals were requested.
- (4) Bid evaluations were completed in May 1989.
- (5) On June 1, 1989, a contract was awarded and work on the replacement simulator was started with a schedule for completion in 26 months.
- (6) The replacement simulator will be available for use in the first operating tests scheduled after May 26, 1991. These tests are scheduled for February 1992. Therefore, no exemption is required from Section 55.45(b)(2)(iv), which states that "The simulation facility portion of the operating test will not be administered on other than a certified or an approved simulation facility after May 26, 1991."

The Commission hereby grants an exemption from the schedular requirements of 10 CFR 55.45(b)(2)(iii) for submittal of Form NRC-474, "Simulation Facility Certification." This exemption is effective until June 28, 1991.

Pursuant to 10 CFR 51.32 the Commission has determined that the issuance of this exemption will have no significant impact on the environment (56 FR 10579) March 13, 1991.

The licensee's initial exemption request dated November 21, 1989, the Commission's request for additional information dated January 12, 1990, the licensee's response to the request for additional information dated January 30, 1990, and the licensees' revised request dated February 12, 1991, are available for public inspection at the Commission's Public Document Room, 2120 L Street, N.W., Washington, D.C. and at the local public document room located at the Perry Public Library, 3752 Main Street, Perry, Ohio 44081.

This exemption is effective upon issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Bruce A. Boger, Director
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Dated at Rockville, Maryland
this 19th day of March 1991.