

Docket No. STN 50-455

NOV 6 1986

Mr. Dennis L. Farrar
Director of Nuclear Licensing
Commonwealth Edison Company
P.O. Box 767
Chicago, Illinois 60690

Dear Mr. Farrar:

SUBJECT: ISSUANCE OF FACILITY OPERATING LICENSE NPF-60 -
BYRON STATION, UNIT 2

The U. S. Nuclear Regulatory Commission (NRC) has issued the enclosed Facility Operating License NPF-60 Byron Station, Unit 2. License No. NPF-60 authorizes operation of Byron Station, Unit 2 at reactor power levels not in excess of 3411 megawatts thermal (100% rated power). Pending Commission approval, operation is restricted to power levels not to exceed five percent of rated power (170 megawatts thermal).

Enclosed is a copy of a related notice, the original of which has been forwarded to the Office of the Federal Register for publication.

Two copies of Amendment No. 5 to Indemnity Agreement No. B-97 which covers the activities authorized under License No. NPF-60 are also enclosed. Please return one signed copy to this office.

Safety Evaluation Report Supplement No. 7 (SSER 7) was prepared in support of issuing the enclosed license. Enclosed is a pre-printed copy of SSER 7. Twenty (20) bound copies of SSER 7 will be sent to you in the near future.

Sincerely,

Thomas M. Novak, Acting Director
Division of PWR Licensing-A
Office of Nuclear Reactor Regulation

Enclosures:

1. Facility Operating License NPF-60
2. Federal Register Notice
3. Amendment No. 5 to Indemnity Agreement No. B- 97
4. Supplement No. 7 to the Safety Evaluation Report

cc: See next page

PD#3 W
CVogan
10/29/86

PD#5
MRushbrook
10/29/86

PD#3
LOlshan
10/24/86

SP
IDinitz
10/2/86

OGC
S H Lewis
10/27/86

PD#3
Syarga
10/31/86

A/D: PWR-A
TNovak
11/14/86

NRR
HDenton
/ /86



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

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cc: See next page

Mr. Dennis L. Farrar
Commonwealth Edison Company

Byron Station
Units 1 and 2

cc:

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Atomic Power Distribution
Westinghouse Electric Corporation
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Pittsburgh, Pennsylvania 15230

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42nd Floor
Chicago, Illinois 60603

Mrs. Phillip B. Johnson
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Rockford, Illinois 61107

Dr. Bruce von Zellen
Department of Biological Sciences
Northern Illinois University
DeKalb, Illinois 61107

Mr. Edward R. Crass
Nuclear Safeguards & Licensing
Sargent & Lundy Engineers
55 East Monroe Street
Chicago, Illinois 60603

Mr. Julian Hinds
U. S. Nuclear Regulatory Commission
Byron/Resident Inspectors Offices
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Division of Engineering
Illinois Department of
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Springfield, Illinois 62704

Ms. Diane Chavez
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Regional Administrator, Region III
U. S. Nuclear Regulatory Commission
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Ms. Pat Morrison
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Rockford, Illinois 61107

Ms. Lorraine Creek
Rt. 1, Box 182
Manteno, Illinois 60950



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

COMMONWEALTH EDISON COMPANY
DOCKET NO. STN 50-455
BYRON STATION, UNIT 2
FACILITY OPERATING LICENSE

License No. NPF-60

1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:
 - A. The application for a license filed by Commonwealth Edison Company (the licensee) complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I, and all required notifications to other agencies or bodies have been duly made;
 - B. Construction of Byron Station, Unit 2 (the facility) has been substantially completed in conformity with Construction Permit No. CPPR-131 and the application, as amended, the provisions of the Act and the regulations of the Commission;
 - C. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the regulations of the Commission (except as exempted from compliance in Section 2.D. below);
 - D. There is reasonable assurance: (i) that the activities authorized by this operating license 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 (except as exempted from compliance in Section 2.D. below);
 - E. Commonwealth Edison Company is technically qualified to engage in the activities authorized by this license in accordance with the Commission's regulations set forth in 10 CFR Chapter I;
 - F. Commonwealth Edison Company has satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;

- G. The issuance of this license will not be inimical to the common defense and security or to the health and safety of the public;
 - H. After weighing the environmental, economic, technical, and other benefits of the facility against environmental and other costs and considering available alternatives, the issuance of Facility Operating License No. NPF-60, subject to the conditions for protection of the environment set forth in the Environmental Protection Plan attached as Appendix B to License No. NPF-37, issued February 14, 1985, is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied; and
 - I. The receipt, possession, and use of source, byproduct and special nuclear material as authorized by this license will be in accordance with the Commission's regulations in 10 CFR Parts 30, 40 and 70.
2. Based on the foregoing findings regarding this facility, Facility Operating License No. NPF-60 is hereby issued to Commonwealth Edison Company (the licensee) to read as follows:
- A. This license applies to Byron Station, Unit 2, a pressurized water reactor, and associated equipment (the facility) owned by Commonwealth Edison Company. The facility is located in north central Illinois within Rockvale Township, Ogle County, Illinois and is described in the Byron/Braidwood Station's Final Safety Analysis Report, as supplemented and amended, and in the licensee's Environmental Report, as supplemented and amended.
 - B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses:
 - (1) Commonwealth Edison Company (CECo), pursuant to Section 103 of the Act and 10 CFR Part 50, to possess, use and operate the facility at the designated location in Ogle County, Illinois, in accordance with the procedures and limitations set forth in this license;
 - (2) CECo, pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;
 - (3) CECo, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

SUBJECT: ISSUANCE OF FACILITY OPERATING LICENSE NO. NPF-60
FOR BYRON STATION, UNIT 2

INTERNAL DISTRIBUTION

Docket Files* ← 50-455
NRC PDR*
Local PDR*
PD#5 R/F
S. Varga
L. Olshan (2)*
MRushbrook (5)*
TNovak*
IDinitz,SP
OPR
HDenton
WLambe, P&RAB
RDiggs
JPartlow*
BGrimes*
EJordan*
LHarmon*
TBarnhart (4)*
IBailey*
S. Lewis, OGC*
JRutberg/B. Vogler, OGC
JScinto, OGC
ACRS (10)
C. Miles, PA
J. Halloway, Jr. D/LFMS
L. Solander, PPAS
J. Marvella Rodriquez, RM/AFO
C. Vogan

* w/Technical Specifications

Mr. Dennis L. Farrar
Commonwealth Edison Company

Byron Station (other)
Units 1 and 2

cc:

Attorney General
500 South 2nd Street
Springfield, Illinois 62701

ESI Review Coordinator
Environmental Protection Agency
Region V
230 S. Dearborn Street
Chicago, Illinois 60604

Chairman, Ogle County Board
P. O. Box 357
Oregon, Illinois 61061

- (4) CECO, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
 - (5) CECO, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

The licensee is authorized to operate the facility at reactor core power levels not in excess of 3411 megawatts thermal (100 percent rated power) in accordance with the conditions specified herein. The preoperational tests, startup tests and other items identified in Attachment 1 to this license shall be completed as specified. Attachment 1 is hereby incorporated into this license. Pending Commission approval, this license is restricted to power levels not to exceed five percent of rated power (170 megawatts thermal).

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A (NUREG-1113) and the Environmental Protection Plan contained in Appendix B, both of which were attached to License No. NPF-37, dated February 14, 1985, are hereby incorporated into this license. Attachment 2 contains revisions to Appendix A which are hereby incorporated into this license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) Fire Protection (Section 9.5.1, SSER 7)*

The licensee shall implement and maintain in effect all provisions of the approved fire protection program as described in the licensee's Fire Protection Report through Amendment 8 and the licensee's letter dated September 23, 1986, and as approved in the SER dated February 1982 through Supplement NO. 7, subject to the following provision:

*The parenthetical notation following the title of many license conditions denotes the section of the Safety Evaluation Report and/or its supplements wherein the license condition is discussed.

The licensee may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

(4) Initial Startup Test Program (Section 14)

Any changes to the Initial Startup Test Program described in Chapter 14 of the FSAR made in accordance with the provisions of 10 CFR 50.59 shall be reported in accordance with 50.59(b) within one month of such change.

(5) Detailed Control Room Design Review (DCRDR)

The licensee shall submit the final summary report for the DCRDR by December 1, 1986.

(6) Regulatory Guide 1.97, Revision 2 Compliance

The licensee shall submit by March 1, 1987, a preliminary report describing how the requirements of Regulatory Guide 1.97, Revision 2 have been or will be met. The licensee shall submit by September 1, 1987, the final report and a schedule for implementation (assuming the NRC approves the DCRDR by March 1, 1987).

(7) Reliability of Diesel-Generators (Section 9.5.4.1, SSER 5)

Prior to the startup of Byron Station, Unit 1, following its first refueling outage, the licensee shall demonstrate that the controls and monitoring instrumentation on the local control panels for Unit 2 are dynamically qualified for their location. Any hardware modifications required, such as installing the instrumentation on a free standing, floor mounted panel (including the use of vibration isolation mounts as necessary), shall be completed on Unit 2 during the first Unit 2 outage of sufficient duration following startup of Unit 1 from its first refueling outage, but no later than prior to the startup of Unit 2 following its first refueling outage.

- D. The facility requires exemptions from certain requirements of Appendices J and A to 10 CFR Part 50. These include (a) an exemption from the requirements of Paragraph III.D.2(b)(ii) of Appendix J, the testing of containment air locks at times when containment integrity is not required (SER Section 6.2.6); (b) an exemption from GDC-13 and GDC-17 of Appendix A,

the requirement that instrumentation be provided to monitor variables and systems over their anticipated ranges, and the requirement that provisions be included to minimize the probability of losing electric power (SSER 5, Section 9.5.4.1). These exemptions are authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense and security. These exemptions are hereby granted. The special circumstances regarding each exemption are identified in the referenced section of the safety evaluation report and the supplements thereto. These exemptions are granted pursuant to 10 CFR 50.12 (51 FR 37096 dated October 17, 1986). With these exemptions, the facility will operate, to the extent authorized herein, in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission.


An exemption was previously granted pursuant to 10 CFR 70.24. The exemption was granted with NRC materials license No. SNM-1916, issued March 4, 1985, and relieved the licensee from the requirement of having a criticality alarm system. Therefore, the licensee is exempted from the criticality alarm system provision of 10 CFR 70.24 so far as this section applies to the storage of fuel assemblies held under this license.

- E. The licensee shall fully implement and maintain in effect all provisions of the physical security, guard training and qualification, and safeguards contingency plans previously approved by the Commission and all amendments and revisions to such plans made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plans, which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Commonwealth Edison Company Byron Nuclear Power Station Physical Security Plan, Security Personnel Training and Qualification Plan, and Safeguards Contingency Plan"* with revisions submitted through September 26, 1986.
- F. Except as otherwise provided in the Technical Specifications or Environmental Protection Plan, the licensee shall report any violations of the requirements contained in Section 2.C of this license in the following manner: initial notification shall be made within 24 hours to the NRC Operations Center via the Emergency Notification System with written followup within thirty days in accordance with the procedures described in 10 CFR 50.73(b), (c), and (e).

*The Security Personnel Training and Qualification Plan and the Safeguards Contingency Plan are Appendices to the Security Plan.

- G. The licensee shall have and maintain financial protection of such type and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.
- H. This license is effective as of the date of issuance and shall expire at midnight on November 6 , 2026.

FOR THE NUCLEAR REGULATORY COMMISSION


Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Attachments:

- 1. Work Items to be completed
- 2. Revisions to Appendix A -
Technical Specifications (NUREG-1113)

Date of Issuance: NOV 6 1986

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FOR THE NUCLEAR REGULATORY COMMISSION

1/s/
Hugh L. Thompson, Jr.

for Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Attachments:

- 1. Work Items to be completed
- 2. Revisions to Appendix A -
Technical Specifications (NUREG-1113)

Date of Issuance: NOV 6 1986

* SEE PREVIOUS CONCURRENCE

PD#3
LOlshan*
10/24/86

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MRCVogan
10/29/86

RAB *WLL*
WLambe
10/29/86

SP *SP*
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10/29/86

SP *SP*
10/30/86

OGC
Rutberg*
10/28/86

OGC
SLewis*
10/27/86

OGC
JScinto*
10/29/86

FOB *VB*
VBenaroya
10/29/86

RSB *RSB*
CBerlinger
10/30/86

EB *EB*
RBattard
10/30/86

EICSB *FR*
FRosa
10/29/86

PSB *PSB*
Mithoan
10/29/86

PD#3
SVarga
10/29/86

AD: PWR-A
CROSS
10/30/86

A/D: PWR-A
TNovak
11/4/86

NRR *NRR*
RVollmer
11/6/86

NRR *NRR*
HDenton
11/6/86

- E. The licensee shall fully implement and maintain in effect all provisions of the physical security, guard training and qualification, and safeguards contingency plans previously approved by the Commission and all amendments and revisions to such plans made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plans, which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Commonwealth Edison Company Byron Nuclear Power Station Physical Security Plan, Security Personnel Training and Qualification Plan, and Safeguards Contingency Plan"* with revisions submitted through February 27, 1986.
- F. Except as otherwise provided in the Technical Specifications or Environmental Protection Plan, the licensee shall report any violations of the requirements contained in Section 2.C of this license in the following manner: initial notification shall be made within 24 hours to the NRC Operations Center via the Emergency Notification System with written followup within thirty days in accordance with the procedures described in 10 CFR 50.73(b), (c), and (e).
- G. The licensee shall have and maintain financial protection of such type and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.
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FOR THE NUCLEAR REGULATORY COMMISSION

Harold R. Denton, Director
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Attachments:

- 1. Work Items to be completed
- 2. Revisions to Appendix A -
Technical Specifications (NUREG-1113)

Date of Issuance:

*The Security Personnel Training and Qualification Plan and the Safeguards Contingency Plan are Appendices to the Security Plan.

Handwritten signature and date: 10/27/86

PD#3 LOlshan 10/24/86	PD#3 CVogan / /86	RAB WLambe / /86	SP IDinitz / /86	SP / /86	OGC Rutberg/Vogler 10/22/86	OGC SLewis 10/27/86
OGC JScinto / /86	FOB VBenaroya / /86	RSB CBerlinger / /86	EB RBallard / /86	EICSB FRosa / /86	PSB JMilhoan / /86	PD#3 SVarga / /86
AD:PWR-A CRossi / /86	A/D:PWR-A TNovak / /86	NRR RVo1lmer / /86	NRR HDenton / /86			

Handwritten note: JScinto's note satisfied 10/29/86

Attachment 1

This attachment identifies specific items which must be completed to the commission's satisfaction in accordance with the operational modes as identified below:

A. The preoperational tests and testing deficiencies in Attachments A and B, respectively, of the October 1, 1986, letter from D. L. Farrar to H. R. Denton as modified by Attachments A and B of the November 3, 1986, letter from K. A. Ainger to H. R. Denton, shall be completed in accordance with the schedule commitments contained in those attachments.

B. Until testing of the Unit 2 Auxiliary Building ventilation system is complete, including post test review and approval by PED, the licensee shall not operate Byron Unit 2 at power levels exceeding 30%, unless the Auxiliary Building ECCS leakage can be shown to be below the corresponding limit presented in Figure 1 of the October 24, 1986 letter S. C. Hunsader to H. R. Denton.

In the event total leakage is GREATER than the value for the corresponding power level, the licensee shall, within 1 hour, initiate ACTION to reduce the leakage to an acceptable value or reduce power in accordance with Figure 1 within the next 6 hours.

C. The following open and unresolved items must be resolved prior to entering the mode indicated:

1. Items Requiring Resolution Prior to Entering Mode 3

The licensee shall provide, and the staff shall have reviewed, the response required by I.E. Bulletin 83-005 regarding use of ASME Nuclear Code pumps and spare parts manufactured by Hayward Tyler Pump Company.

2. Items Requiring Resolution Prior to Entering Mode 2

The licensee shall complete, and the Staff shall have reviewed, actions to resolve construction deficiency report 10 CFR 50.55(e) (455/85003-EE) regarding High Energy Line Breaks in the Auxiliary Building.

3. Items Requiring Resolution Prior to Exceeding 5% Power

a. The licensee shall verify proper hose lengths on fire hose station standpipes and that adequate fire hose station coverage is provided.

b. The licensee shall seal all construction design penetration openings in designated fire barriers. Penetrations may be left unsealed to facilitate a requirement of a plant modification or plant maintenance requirement; however, the licensee shall provide compensatory measures.

- c. The licensee shall perform an engineering review of the Unit 2 fire detection system in areas having safe shutdown equipment.
- d. The licensee shall install the fire detection system in the Remote Shutdown Panel Room.



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

ATTACHMENT 2 TO LICENSE NPF-60
REVISIONS TO NUREG-1113

Revise Appendix A Technical Specifications (NUREG-1113) by removing the pages identified below and inserting the enclosed pages. Overleaf pages(*) have been provided to maintain document completeness.

<u>REMOVE</u>	<u>INSERT</u>
	3/4 3-61*
3/4 3-62	3/4 3-62
	3/4 4-33*
3/4 4-34	3/4 4-34
	3/4 4-35*
3/4 4-36	3/4 4-36
	3/4 6-1*
3/4 6-2	3/4 6-2
	3/4 7-19*
3/4 7-20	3/4 7-20
	3/4 9-3*
3/4 9-4	3/4 9-4

REFUELING OPERATIONS

3/4.9.3 DECAY TIME

LIMITING CONDITION FOR OPERATION

3.9.3 The reactor shall have been subcritical for at least the last 100 hours.

APPLICABILITY: During movement of irradiated fuel in the reactor vessel.

ACTION:

With the reactor subcritical for less than 100 hours, suspend all operations involving movement of irradiated fuel in the reactor vessel.

SURVEILLANCE REQUIREMENTS

4.9.3 The reactor shall be determined to have been subcritical for at least 100 hours by verification of the date and time of subcriticality prior to movement of irradiated fuel in the reactor vessel.

REFUELING OPERATIONS

3/4.9.4 CONTAINMENT BUILDING PENETRATIONS

LIMITING CONDITION FOR OPERATION

3.9.4 The containment building penetrations shall be in the following status:

- a.* The personnel hatch should have a minimum of one door closed at any one time and the equipment hatch shall be in place and held by a minimum of four bolts or the equipment hatch removed pursuant to Surveillance Requirement 4.9.4.2,
- b. A minimum of one door in the personnel emergency exit hatch is closed, and
- c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere shall be either:
 - 1) Closed by an isolation valve, blind flange, or manual valve, or
 - 2) Capable of being closed by an OPERABLE automatic containment purge isolation valve.

APPLICABILITY: During CORE ALTERATIONS or movement of irradiated fuel within the containment.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS or movement of irradiated fuel in the containment building.

SURVEILLANCE REQUIREMENTS

4.9.4.1 Each of the above required containment building penetrations shall be determined to be either in its closed/isolated condition or capable of being closed by an OPERABLE automatic containment purge isolation valve within 100 hours prior to the start of and at least once per 7 days during CORE ALTERATIONS or movement of irradiated fuel in the containment building by:

- a. Verifying the penetrations are in their closed/isolated condition, or
- b. Testing the containment purge isolation valves per the applicable portions of Specification 4.6.3.2.

*Not applicable to Unit 2 prior to initial Criticality

PLANT SYSTEMS

3/4.7.7 NON-ACCESSIBLE AREA EXHAUST FILTER PLENUM VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.7* Three independent non-accessible area exhaust filter plenums (50% capacity each) shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With one non-accessible area exhaust filter plenum inoperable, restore the inoperable plenum to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.7 Each non-accessible area exhaust filter plenum shall be demonstrated OPERABLE:

- a. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that operation occurs for at least 15 minutes;
- b. At least once per 18 months, or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the exhaust filter plenum by:
 - 1) Verifying that the exhaust filter plenum satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% when using the test procedure guidance in Regulatory Positions C.5.a, C.5.c and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the flow rate is 66,900 cfm \pm 10% for the train and 22,300 cfm \pm 10% per bank;
 - 2) Verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample from each bank of adsorbers of the train obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, for methyl iodide penetration of less than 1% when tested at the temperature of 30°C and a relative humidity of 70%;

*Not applicable prior to July 1, 1985.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- 3) Verifying a system flow rate of 66,900 cfm \pm 10% through the train and 22,300 cfm \pm 10% per bank through the exhaust filter plenum during operation when tested in accordance with ANSI N510-1980; and
 - 4) Verifying that with the system operating at a flow rate of 66,900 cfm \pm 10% through the train and 22,300 cfm \pm 10% per bank and exhausting through the HEPA filter and charcoal adsorbers, the total bypass flow of the system and the damper leakage is less than or equal to 1% when the system is tested by admitting cold DOP at the system intake and the damper leakage rate is determined by either direct measurements or pressure decay measurements at a test pressure of 2 inches of water and the auxiliary building exhaust fans are operating at their rated flow.
- c. After every 720 hours of charcoal adsorber operation, by verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained from each bank of adsorbers of the train in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, when the average for a methyl iodide penetration of less than 1% when tested at a temperature of 30°C and a relative humidity of 70%.
- d. At least once per 18 months by:
- 1) Verifying for each filter bank of the train that the pressure drop across the combined HEPA filters and charcoal adsorber banks of less than 6.0 inches Water Gauge while operating the exhaust filter plenum at a flow rate of 66,900 cfm \pm 10% through the train and 22,300 cfm \pm 10% per bank;
 - 2) Verifying that the exhaust filter plenum starts on manual initiation or Safety Injection test signal; and
 - 3)* Verifying that the system maintains the ECCS equipment rooms at a negative pressure of greater than or equal to 1/4 in. Water Gauge relative to the outside atmosphere during system operation while operating at a flow rate of 66,900 cfm \pm 10% through the train and 22,300 cfm \pm 10% per bank.
- e. After each complete or partial replacement of a HEPA filter bank, by verifying that the exhaust filter plenum satisfies the in-place penetration testing acceptance criteria of less than 1% in accordance with ANSI N510-1980 for a DOP test aerosol while operating at a flow rate of 66,900 cfm \pm 10% through the train and 22,300 cfm \pm 10% per bank; and

*Not applicable to Unit 2 until July 1, 1987.

3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 PRIMARY CONTAINMENT

CONTAINMENT INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.1.1 Primary CONTAINMENT INTEGRITY shall be maintained.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

Without primary CONTAINMENT INTEGRITY, restore CONTAINMENT INTEGRITY within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.1 Primary CONTAINMENT INTEGRITY shall be demonstrated:

- a. At least once per 31 days by verifying that all penetrations* not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions, except as provided in Table 3.6-1 of Specification 3.6.3;
- b. By verifying that each containment air lock is in compliance with the requirements of Specification 3.6.1.3; and
- c. After each closing of each penetration subject to Type B testing, except the containment air locks, if opened following a Type A or B test, by leak rate testing the seal with gas at a pressure not less than P_a , 44.4 psig, and verifying that when the measured leakage rate for these seals is added to the leakage rates determined pursuant to Specification 4.6.1.2d. for all other Type B and C penetrations, the combined leakage rate is less than $0.60 L_a$.

*Except valves, blind flanges, and deactivated automatic valves which are located inside the containment and are locked, sealed or otherwise secured in the closed position. These penetrations shall be verified closed during each COLD SHUTDOWN except that such verification need not be performed more often than once per 92 days.

CONTAINMENT SYSTEMS

CONTAINMENT LEAKAGE

LIMITING CONDITION FOR OPERATION

3.6.1.2 Containment leakage rates shall be limited to:

- a. An overall integrated leakage rate of:
 - 1) Less than or equal to L_a , 0.10% by weight of the containment air per 24 hours at P_a , 44.4 psig, or
 - 2) Less than or equal to L_t , 0.07% by weight of the containment air per 24 hours for Unit 1 (0.07% by weight of the containment air per 24 hours for Unit 2) at P_t , 22.2 psig.
- b. A combined leakage rate of less than $0.60 L_a$ for all penetrations and valves subject to Type B and C tests, when pressurized to P_a .

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With either the measured overall integrated containment leakage rate exceeding $0.75 L_a$ or $0.75 L_t$, as applicable, or the measured combined leakage rate for all penetrations and valves subject to Types B and C tests exceeding $0.60 L_a$, restore the overall integrated leakage rate to less than $0.75 L_a$ or less than $0.75 L_t$, as applicable, and the combined leakage rate for all penetrations subject to Type B and C tests to less than $0.60 L_a$ prior to increasing the Reactor Coolant System temperature above 200°F.

SURVEILLANCE REQUIREMENTS

4.6.1.2 The containment leakage rates shall be demonstrated at the following test schedule and shall be determined in conformance with the criteria specified in Appendix J of 10 CFR Part 50 using the methods and provisions of ANSI N45.4-1972:

- a. Three Type A tests (Overall Integrated Containment Leakage Rate) shall be conducted at 40 ± 10 month intervals during shutdown at a pressure not less than P_a , 44.4 psig, or P_t , 22.2 psig, during each 10-year service period. The third test of each set shall be conducted during the shutdown for the 10-year plant inservice inspection;

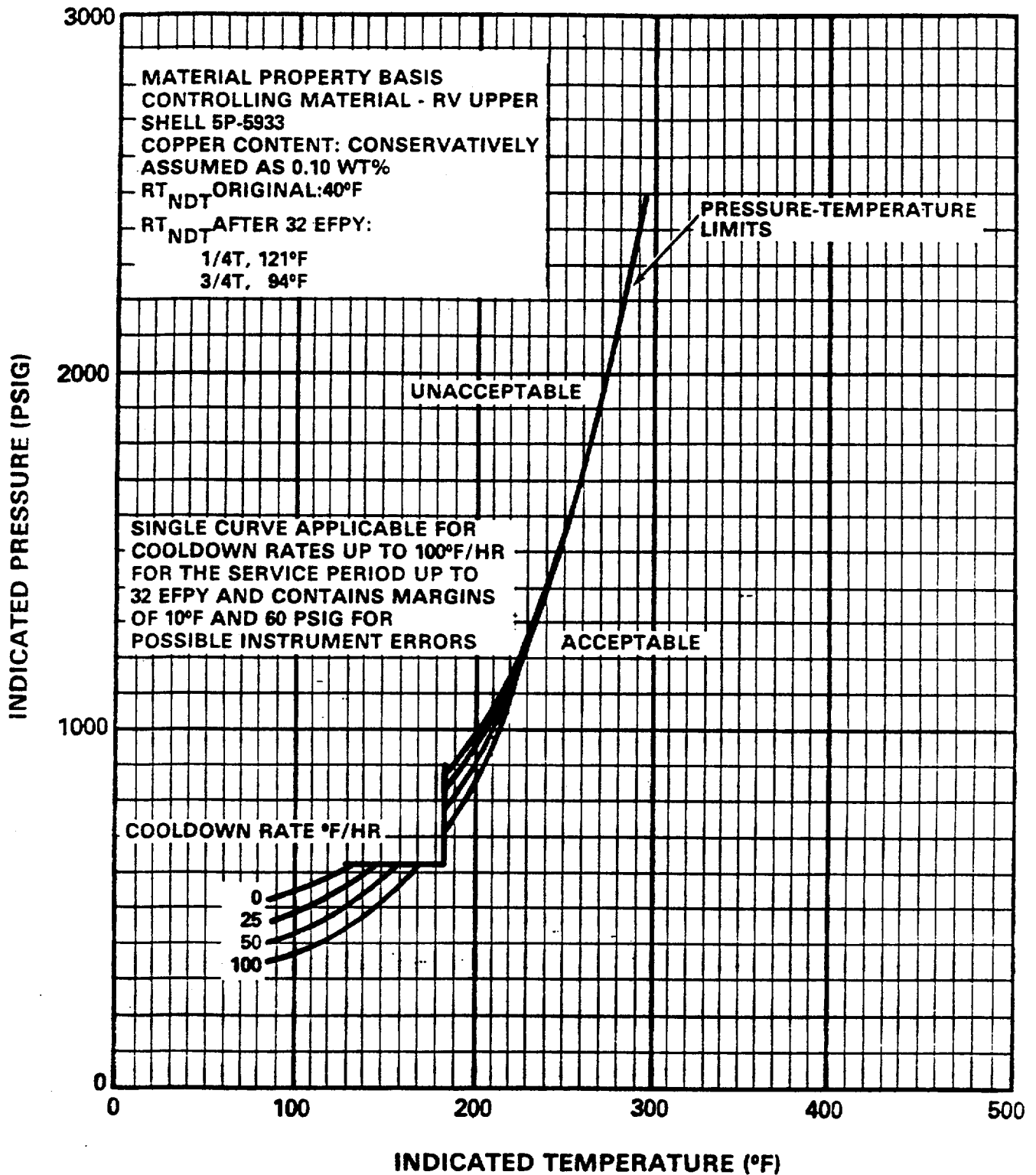


FIGURE 3.4-3a REACTOR COOLANT SYSTEM COOLDOWN LIMITATIONS APPLICABLE UP TO 32 EPY (UNIT 1)

MATERIAL PROPERTY BASIS :

Controlling Material : Weld Metal
 Copper Content : Conservatively assumed to be 0.08 WT%
 (actual content = 0.06 WT%)
 Phosphorus Content : 0.009 WT%
 Initial RT_{NDT} : Conservatively assumed to be 40°F
 (actual initial RT_{NDT} = 10°F)
 RT_{NDT} After 16 EFY : 1/4T, 82°F
 : 3/4T, 59°F

Curves applicable for cooldown rates up to 100°F/hr for the service period up to 16 EFY and contains margins of 10°F and 60 psig for possible instrument errors

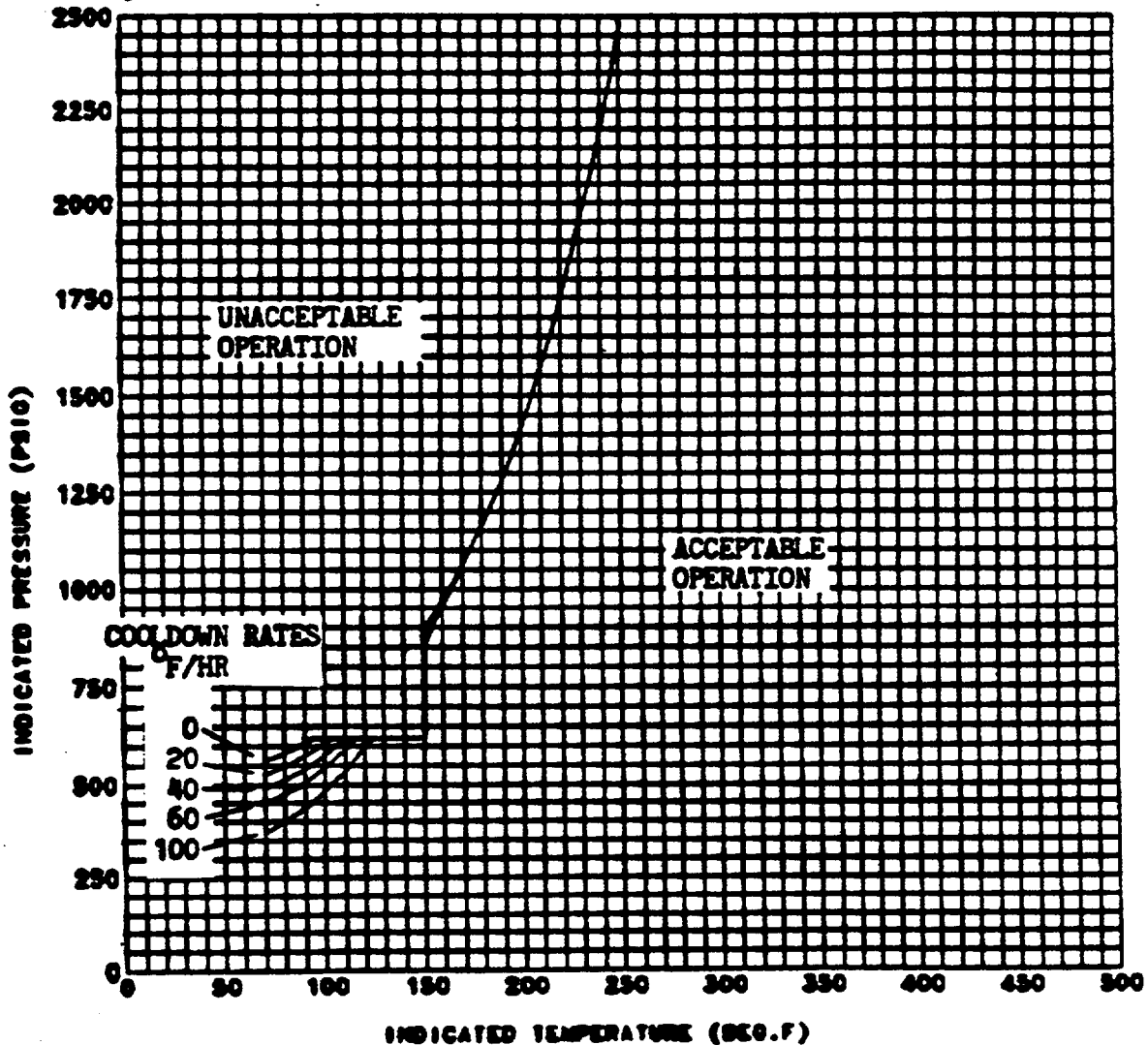


FIGURE 3.4-3b REACTOR COOLANT SYSTEM COOLDOWN LIMITATIONS APPLICABLE UP TO 16 EFY (UNIT 2)

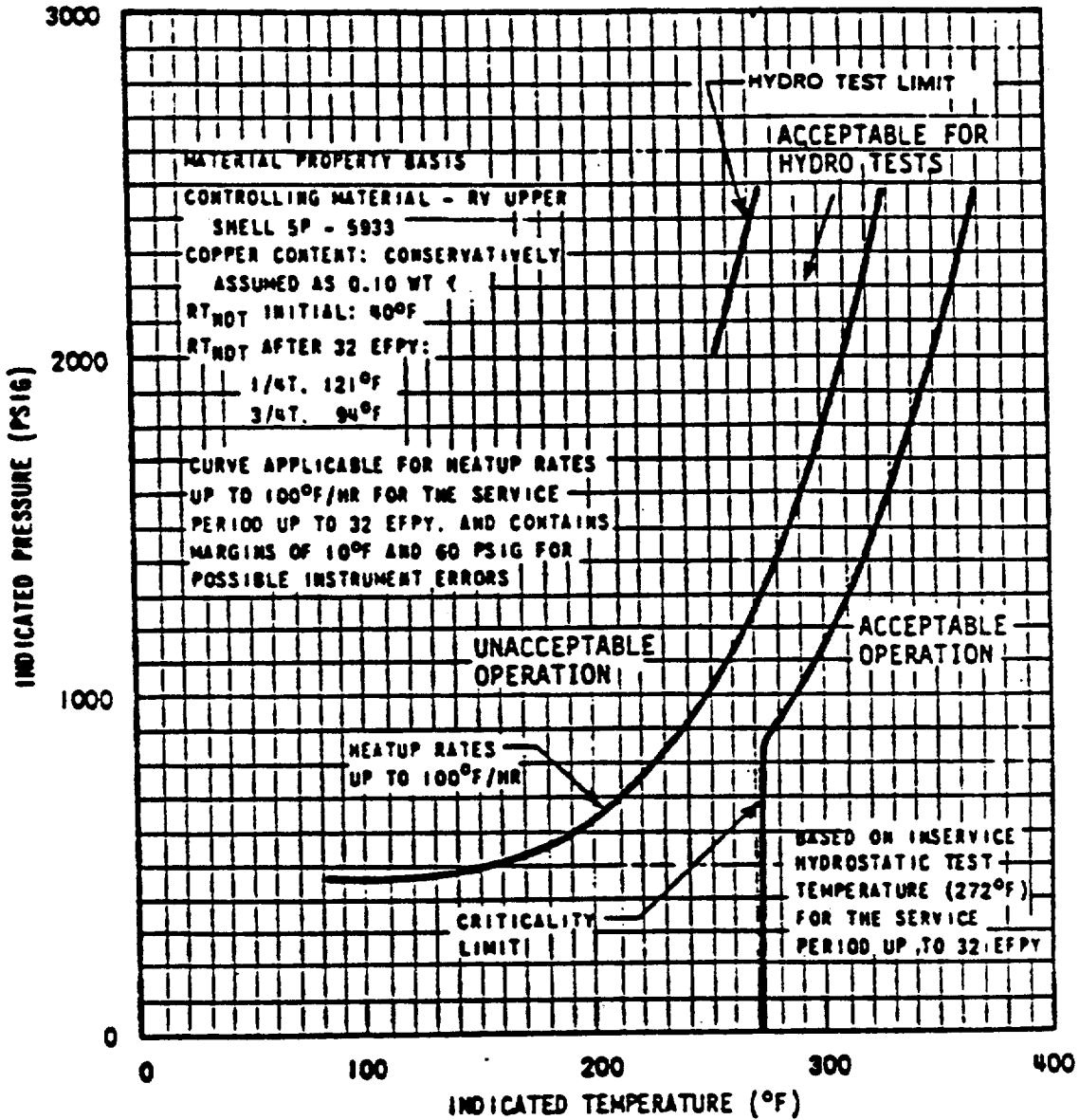


FIGURE 3.4-2a

REACTOR COOLANT SYSTEM HEATUP LIMITATIONS
 APPLICABLE UP TO 32 EFPY (UNIT 1)

MATERIAL PROPERTY BASIS :

- Controlling Material : Weld Metal
- Copper Content : Conservatively assumed to be 0.08 WT%
(actual content = 0.06 WT%)
- Phosphorus Content : 0.009 WT%
- Initial RT_{NDT} : Conservatively assumed to be 40°F
(actual initial RT_{NDT} = 10°F)
- RT_{NDT} After 16 EFPY : 1/4T, 82°F
: 3/4T, 59°F

Curve applicable for heatup rates up to 100°F/hr for the service period up to 16 EFPY and contains margins of 10°F and 60 psig for possible instrument errors

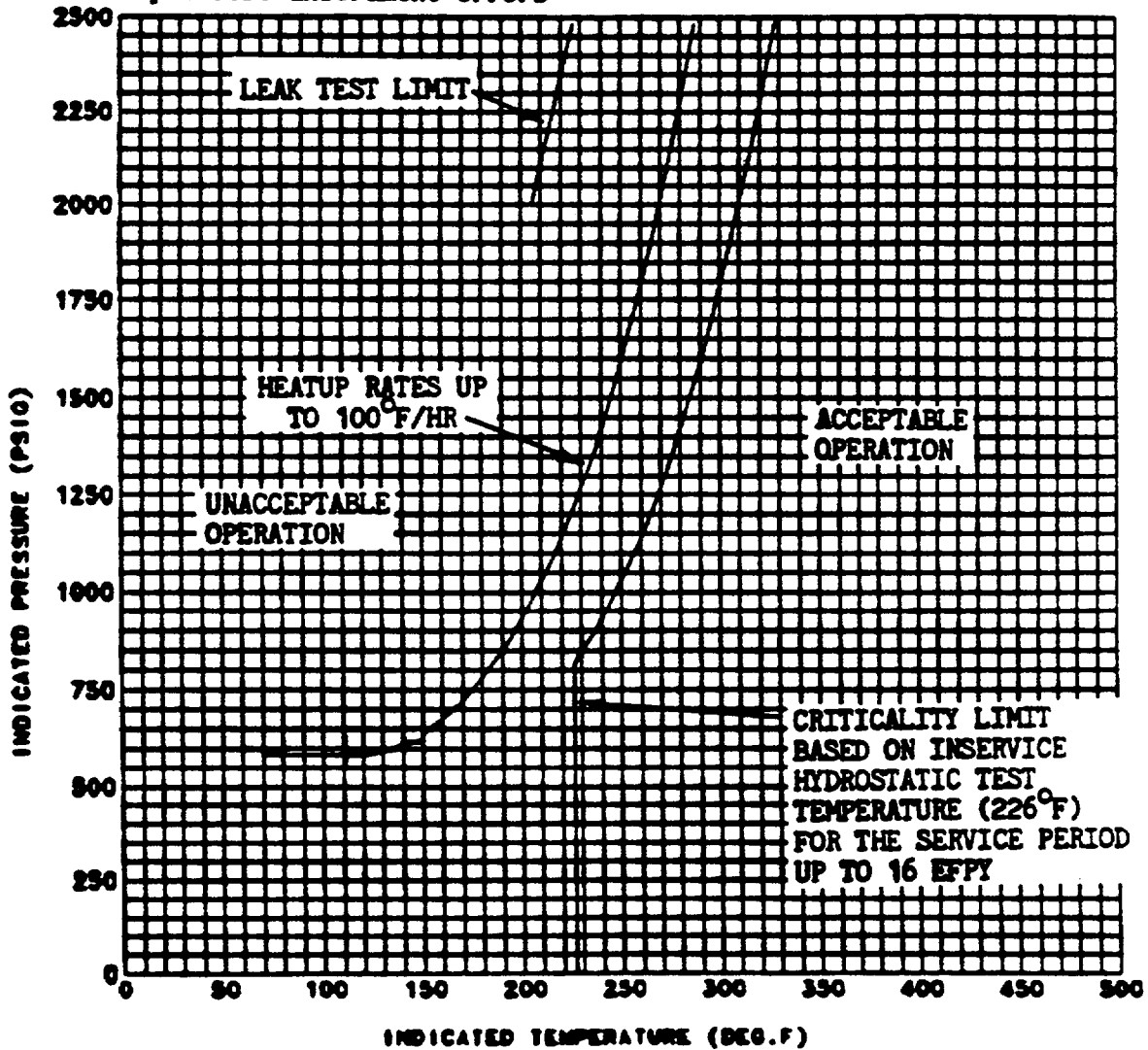


FIGURE 3.4-2b

REACTOR COOLANT SYSTEM HEATUP LIMITATIONS
APPLICABLE UP TO 16 EFPY (UNIT 2)

TABLE 3.3-11b

FIRE DETECTION INSTRUMENTS
(UNIT 2)

<u>INSTRUMENT LOCATION</u>	<u>INSTRUMENT TYPE*</u>	<u>TOTAL NUMBER OF INSTRUMENTS</u>		
		<u>Heat</u>	<u>Flame</u>	<u>Smoke</u>
1. Containment ***				
Zone 11 Elev 426	Suppression	1 **		
Zone 12 Elev 426	Suppression	1 **		
Zone 2 Elev 401	Detection			2
Zone 3 Elev 401	Detection			2
Zone 4 Elev 401	Detection			2
Zone 5 Elev 401	Detection			2
Zone 6 Elev 426	Detection			6
Zone 76 Elev 426	Detection			9
Zone 7 Elev 414	Detection			6
Zone 24 Elev 414	Detection			10
2. Control Room				
Zone 29 Elev 383 (Unit 1)	Detection			4
Zone 68 Elev 451	Detection			3
Zone 69 Elev 451	Detection			14
Zone 75 Elev 451 (Unit 1)	Detection			20
Zone 68 Elev 451 (Unit 1)	Detection			3
3. Switchgear Rooms				
Zone 66 Elev 451	Detection			6
Zone 77 Elev 426	Detection			9
Zone 78 Elev 426	Detection			9
4. Upper Cable Spreading Room				
Zone 41 Elev 463	Detection			4
Zone 42 Elev 463	Detection			4
Zone 43 Elev 463	Detection			8
Zone 44 Elev 463	Detection			8
Zone 45 Elev 463	Detection			9
Zone 46 Elev 463	Detection			9
Zone 47 Elev 463	Detection			5
Zone 48 Elev 463	Detection			5
Lower Cable Spreading Room				
Zone 49 Elev 439	Detection			8
Zone 50 Elev 439	Detection			8
Zone 51 Elev 439	Detection			19
Zone 52 Elev 439	Detection			19
Zone 53 Elev 439	Detection			11
Zone 54 Elev 439	Detection			11
Zone 55 Elev 439	Detection			6
Zone 56 Elev 439	Detection			6
5. Remote Shutdown Panel				
Zone 13 Elev 383 (Unit 1)	Detection			7

TABLE 3.3-11b (Continued)

FIRE DETECTION INSTRUMENTS
(UNIT 2)

<u>INSTRUMENT LOCATION</u>	<u>INSTRUMENT TYPE*</u>	<u>TOTAL NUMBER OF INSTRUMENTS</u>		
		<u>Heat</u>	<u>Flame</u>	<u>Smoke</u>
6. Station Battery Room Zone 67 Elev 451	Detection			6
7. Diesel Generator Room Zone 37 Elev 401 Zone 38 Elev 401 Zone 71 Elev 401 Zone 72 Elev 401	Suppression Suppression Detection Detection	4 4	1 1	
8. Diesel Fuel Storage Zone 39 Elev 401 Zone 40 Elev 401 Zone 27 Elev 383 Zone 28 Elev 383 Zone 10 Elev 383	Suppression Suppression Suppression Suppression Detection	1 1 3 3		6
9. Safety Related Pumps Zone 41 Elev 383 Zone 42 Elev 383 Zone 16 Elev 364 Zone 18 Elev 364 Zone 19 Elev 364 Zone 20 Elev 346 Zone 21 Elev 346 Zone 52 RSH (Unit 1) Zone 11 Elev 330	Suppression Suppression Detection Detection Detection Detection Suppression Detection	2 1 8		2 3 2 3 3 23
10. Fuel Storage Zone 39 Elev 401 (Unit 1) Zone 38 Elev 426 (Unit 1)	Detection Detection		3	26
11. Auxiliary Building Zone 17 Elev 346 Zone 40 Elev 346 Zone 22 Elev 467 Zone 62 Elev 451 Zone 14 Elev 401 Zone 15 Elev 401 Zone 64 Elev 401 Zone 65 Elev 401 Zone 61 Elev 439 Zone 70 Elev 451	Detection Detection Detection Detection Detection Detection Detection Detection Detection Detection			32 12 18 11 4 4 3 3 7 11

7590-01

COMMONWEALTH EDISON COMPANY

BYRON STATION, UNIT NO. 2

DOCKET NO. 50-455

NOTICE OF ISSUANCE OF FACILITY OPERATING LICENSE

Notice is hereby given that the U.S. Nuclear Regulatory Commission (the Commission or NRC), has issued Facility Operating License No. NPF-60 to Commonwealth Edison Company (the licensee) which authorizes operation of the Byron Station, Unit No. 2 (the facility) at reactor core power levels not in excess of 3411 megawatts thermal in accordance with the provisions of the license, the Technical Specifications and the Environmental Protection Plan with a condition currently limiting operation to five percent of full power (170 megawatts thermal). Authorization to operate beyond five percent of full power will require specific Commission approval.

Byron Station, Unit No. 2 is a pressurized water reactor located in north central Illinois, 2½ miles east of the Rock River, 3 miles south-south-west of the town of Byron, and 17 miles southwest of Rockford, Illinois. The station is within Rockvale Township, Ogle County, Illinois. The license is effective as of the date of issuance.

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P PDR

The application for the license complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations. The Commission has made appropriate findings as required by the Act and the Commission's regulations in 10 CFR Chapter I which are set forth in the license. Prior public notice of the overall action involving the proposed issuance of an operating license for the Byron Station was published in the Federal Register on December 15, 1978 (43 FR 58659).

The Commission has determined that the issuance of this license will not result in any environmental impacts other than those evaluated in the Final Environmental Statement and the Assessment of the Effect of License Duration on Matters Discussed in the Final Environmental Statement for the Byron Station, Units 1 and 2 (dated April 1982) since the activity authorized by the license is encompassed by the overall action evaluated in the Final Environmental Statement.

For further details with respect to this action, see (1) Facility Operating License No. NPF-60, with Revisions to Technical Specifications (Appendix A); (2) Facility Operating License NPF-37, dated February 14, 1985 with Technical Specifications, Appendix A, NUREG-1113 and the Environmental Protection Plan, Appendix B; (3) the report of the Advisory Committee on Reactor Safeguards, dated March 9, 1982; (4) the Commission's Safety Evaluation Report, dated February 1982 (NUREG-0876), and Supplements 1 through 7; (5) the Final Safety Analysis Report and Amendments thereto; (6) the Environmental Report and supplements thereto; (7) and the Final Environmental Statement, dated April 1982 (NUREG-0848).

These items are available for inspection at the Commission's Public Document Room located at 1717 H Street, N. W., Washington, D.C. 20555 and at the Rockford Public Library, 215 N. Wyman Street, Rockford, Illinois. A copy of Facility Operating License NPF-60 may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of PWR Licensing-A. Copies of the Safety Evaluation Report and Supplements 1 through 7 (NUREG-0876) and the Final Environmental Statement (NUREG-0848) may be purchased at current rates from the Superintendent of Documents, U. S. Government Printing Office, Post Office Box 37082, Washington, D.C. 20012-7982 or by calling (202) 275-2060 or (202) 275-2171.

Dated at Bethesda, Maryland this 6th day of November, 1986.

FOR THE NUCLEAR REGULATORY COMMISSION

15/
Steven A. Yarga, Director
Project Directorate #3
Division of PWR Licensing-A

* SEE PREVIOUS CONCURRENCE

PD#3
LO1shan*
10/24/86

PD#5
MRushbrook
/ /86

PD#3 *W*
CVogan
10/29/86

OGC
SLewis*
10/27/86

PD#3
*S*Yarga
10/15/86

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Dated at Bethesda, Maryland this day of 1986.

FOR THE NUCLEAR REGULATORY COMMISSION

Steven A. Varga, Director
Project Directorate #3
Division of PWR Licensing-A

LD PD#3
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10/24/86

PD#5
MRushbrook
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PD#3
CVogan
/ /86


OGC *AKZ*
SH Lewis
10/27/86

PD#3
SVarga
/ /86

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Dated at Bethesda, Maryland, this. th 6 day of November, 1986.

FOR THE NUCLEAR REGULATORY COMMISSION


Steven A. Varga, Director
Project Directorate #3
Division of PWR Licensing-A



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

Docket Nos. 50-454
50-455

AMENDMENT TO INDEMNITY AGREEMENT NO. B-97
AMENDMENT NO. 5

Effective November 6, 1986, Indemnity Agreement No. B-97, between Commonwealth Edison Company and the Nuclear Regulatory Commission, dated May 6, 1983, as amended, is hereby further amended as follows:

Item 3 of the Attachment to the indemnity agreement is deleted in its entirety and the following substituted therefor:

Item 3 - License number or numbers

- SNM - 1917 (From 12:01 a.m., May 6, 1983, to 12:00 midnight, October 30, 1984, inclusive)
- SNM - 1916 (From 12:01 a.m., March 4, 1985, to 12:00 midnight, November 5, 1986 inclusive)
- NPF - 23 (From 12:01 a.m., October 31, 1984, to 12:00 midnight, February 13, 1985, inclusive)
- NPF - 37 (From 12:01 a.m., February 14, 1985)
- NPF - 60 (From 12:01 a.m., November 6, 1986)

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

A handwritten signature in cursive script that reads "Darrel A. Nash".

Darrel A. Nash, Acting Assistant Director
State and Licensee Relations
Office of State Programs

Accepted _____, 1986

By _____
COMMONWEALTH EDISON COMPANY