

March 3, 1999

Mr. Oliver D. Kingsley, President
Nuclear Generation Group
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 500
Downers Grove, IL 60515

SUBJECT: ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT
RELATING TO REQUEST FOR EXEMPTION FROM 10 CFR 70.24 - BYRON
STATION, UNIT 1 (TAC NO. MA0889)

Dear Mr. Kingsley:

Enclosed for your information is a copy of an "Environmental Assessment and Finding of No Significant Impact." This assessment relates to your application of October 16, 1997, which requested an exemption from certain requirements of 10 CFR 70.24, "Criticality Accident Requirements."

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

Sincerely,

ORIG. SIGNED BY
John B. Hickman, Project Manager
Project Directorate III-2
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. STN 50-454

Enclosure: Environmental Assessment

cc w/encl: See next page

DISTRIBUTION:

| | | | |
|-----------------|-------------|-------------|---------------------|
| Docket File | PUBLIC | PDIII-2 r/f | J. Zwolinski/SBlack |
| S. Richards | C. Moore | J. Hickman | T. Essig, PGEB |
| M. Jordan, RIII | OGC, O15B18 | ACRS, T2E26 | |

*see previous page for concurrence

9903180257 990303
PDR ADOCK 05000454
P PDR

NRG FILE CENTER COPY

DOCUMENT NAME: G:\CM\BYRON\BY0889.EA

To receive a copy of this document, indicate in the box: "C" = Copy without enclosures "E" = Copy with enclosures "N" = No copy

| | | | | | | | | |
|--------|-------------|----------|------------|----------|------------|----------|-----------|-----------|
| OFFICE | PM:PDIII-2 | <i>E</i> | LA:PDIII-2 | <i>e</i> | (A)BC:PGEB | OGC | D:PDIII-2 | <i>C</i> |
| NAME | JHICKMAN:sp | | GMOORE | | *TESSIG | *SMARTZ | SRICHARDS | <i>SR</i> |
| DATE | 02/25/99 | | 02/20/99 | | 10/20/98 | 10/23/98 | 02/3/99 | |

OFFICIAL RECORD COPY

3

CP-1

Mr. Oliver D. Kingsley, President
 Nuclear Generation Group
 Commonwealth Edison Company
 Executive Towers West III
 1400 Opus Place, Suite 500
 Downers Grove, IL 60515

SUBJECT: ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT
 RELATING TO REQUEST FOR EXEMPTION FROM 10 CFR 70.24 - BYRON
 STATION, UNIT 1 (TAC NO. MA0889)

Dear Mr. Kingsley:

Enclosed for your information is a copy of an "Environmental Assessment and Finding of No Significant Impact." This assessment relates to your application of October 16, 1997, which requested an exemption from certain requirements of 10 CFR 70.24, "Criticality Accident Requirements."

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

Sincerely,

John B. Hickman, Project Manager
 Project Directorate III-2
 Division of Reactor Projects - III/IV
 Office of Nuclear Reactor Regulation

Docket No. STN 50-454

Enclosure: Environmental Assessment

cc w/encl: See next page

DISTRIBUTION:

| | | | |
|-----------------|-------------|-------------|------------------|
| Docket File | PUBLIC | PDIII-2 r/f | E. Adensam, EGA1 |
| S. Richards | C. Moore | J. Hickman | T. Essig, PGEB |
| M. Jordan, RIII | OGC, O15B18 | ACRS, T2E26 | |

DOCUMENT NAME: G:\CM\BYRON\BY0889.EA

To receive a copy of this document, indicate in the box: "C" = Copy without enclosures "E" = Copy with enclosures "N" = No copy

| | | | | | | | |
|--------|-------------|--------------|------------|----------|------------|----------------|-----------|
| OFFICE | PM:PDIII-2 | <i>E</i> | LA:PDIII-2 | <i>R</i> | (A)BC:PGEB | OGC <i>N/D</i> | D:PDIII-2 |
| NAME | JHICKMAN:sp | <i>MOORE</i> | CMOORE | | TESSIG | <i>MARTIN</i> | SRICHARDS |
| DATE | 10/15/98 | | 10/15/98 | | 10/20/98 | 10/23/98 | 10/ /98 |

OFFICIAL RECORD COPY



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

March 3, 1999

Mr. Oliver D. Kingsley, President
Nuclear Generation Group
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 500
Downers Grove, IL 60515

SUBJECT: ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT
IMPACT RELATING TO REQUEST FOR EXEMPTION FROM 10 CFR 70.24 -
BYRON STATION, UNIT 1 (TAC NO. MA0889)

Dear Mr. Kingsley:

Enclosed for your information is a copy of an "Environmental Assessment and Finding of No Significant Impact." This assessment relates to your application of October 16, 1997, which requested an exemption from certain requirements of 10 CFR 70.24, "Criticality Accident Requirements."

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

Sincerely,

A handwritten signature in cursive script, appearing to read "John B. Hickman".

John B. Hickman, Project Manager
Project Directorate III-2
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. STN 50-454

Enclosure: Environmental Assessment

cc w/encl: See next page

O. Kingsley
Commonwealth Edison Company

Byron Station
Units 1 and 2

cc:

Regional Administrator, Region III
U.S. Nuclear Regulatory Commission
801 Warrenville Road
Lisle, Illinois 60532-4351

Mrs. Phillip B. Johnson
1907 Stratford Lane
Rockford, Illinois 61107

Illinois Department of Nuclear Safety
Office of Nuclear Facility Safety
1035 Outer Park Drive
Springfield, Illinois 62704

Attorney General
500 S. Second Street
Springfield, Illinois 62701

Document Control Desk-Licensing
Commonwealth Edison Company
1400 Opus Place, Suite 400
Downers Grove, Illinois 60515

Commonwealth Edison Company
Byron Station Manager
4450 N. German Church Road
Byron, Illinois 61010-9794

Ms. C. Sue Hauser, Project Manager
Westinghouse Electric Corporation
Energy Systems Business Unit
Post Office Box 355
Pittsburgh, Pennsylvania 15230

Commonwealth Edison Company
Site Vice President - Byron
4450 N. German Church Road
Byron, Illinois 61010-9794

Joseph Gallo
Gallo & Ross
1025 Connecticut Ave., N.W., Suite 1014
Washington, DC 20036

Mr. David Helwig
Senior Vice President
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 900
Downers Grove, Illinois 60515

Howard A. Learner
Environmental Law and Policy
Center of the Midwest
35 East Wacker Drive
Suite 1300
Chicago, Illinois 60601

Mr. Gene H. Stanley
PWR Vice President
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 900
Downers Grove, Illinois 60515

U.S. Nuclear Regulatory Commission
Byron Resident Inspectors Office
4448 North German Church Road
Byron, Illinois 61010-9750

Mr. Christopher Crane
BWR Vice President
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 900
Downers Grove, Illinois 60515

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

Chairman, Ogle County Board
Post Office Box 357
Oregon, Illinois 61061

O. Kingsley
Commonwealth Edison Company

- 2 -

Byron Station
Units 1 and 2

Mr. R. M. Krich
Vice President - Regulatory Services
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 500
Downers Grove, Illinois 60515

Commonwealth Edison Company
Reg. Assurance Supervisor - Byron
4450 N. German Church Road
Byron, Illinois 61010-9794

Ms. Pamela B. Stroebel
Senior Vice President and General Counsel
Commonwealth Edison Company
P.O. Box 767
Chicago, Illinois 60690-0767

Mr. Bill Franz (5)
Environmental Review Coordinator
77 W. Jackson Blvd.
Chicago, Illinois 60604-3590

UNITED STATES NUCLEAR REGULATORY COMMISSIONCOMMONWEALTH EDISON COMPANYDOCKET NO. STN 50-454BYRON STATION, UNIT NO. 1ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of an exemption from certain requirements of its regulations for Facility Operating License No. NPF-37, issued to Commonwealth Edison Company (ComEd, the licensee), for operation of Byron Station, Unit 1, located in Ogle County, Illinois.

ENVIRONMENTAL ASSESSMENTIdentification of Proposed Action:

The proposed action would exempt ComEd from the requirements of 10 CFR 70.24, which require a monitoring system that will energize clear audible alarms if accidental criticality occurs in each area in which special nuclear material is handled, used, or stored. The proposed action would also exempt the licensee from the requirements to maintain emergency procedures for each area in which this licensed special nuclear material is handled, used, or stored to ensure that all personnel withdraw to an area of safety upon the sounding of the alarm, to familiarize personnel with the evacuation plan, and to designate responsible individuals for determining the cause of the alarm, and to place radiation survey instruments in accessible location for use in such an emergency.

The proposed action is in accordance with the licensee's application for exemption dated October 16, 1997.

9903180261 990303
PDR ADOCK 05000454
P PDR

The Need for the Proposed Action:

The purpose of 10 CFR 70.24 is to ensure that if a criticality were to occur during the handling of special nuclear material, personnel would be alerted to that fact and would take appropriate action. At a commercial nuclear power plant, the inadvertent criticality with which 10 CFR 70.24 is concerned could occur during fuel handling operations. The special nuclear material that could be assembled into a critical mass at a commercial nuclear power plant is in the form of nuclear fuel; the quantity of other forms of special nuclear material that is stored on site in a given location is small enough to preclude achieving a critical mass. Because the fuel is not enriched beyond 5.0 weight percent Uranium-235 and because commercial nuclear plant licensees have procedures and design features that prevent inadvertent criticality, the staff has determined that it is unlikely that an inadvertent criticality could occur due to the handling of special nuclear material at a commercial power reactor. The requirements of 10 CFR 70.24, therefore, are not necessary to ensure the safety of personnel during the handling of special nuclear materials at commercial power reactors.

Environmental Impacts of the Proposed Action:

The Commission has completed its evaluation of the proposed actions and concludes that there is no significant environmental impact to Byron. Inadvertent or accidental criticality will be precluded through compliance with the Byron Station Technical Specifications (TSs), the design of the fuel storage racks providing geometric spacing of fuel assemblies in their storage locations, and administrative controls imposed on fuel handling procedures. TSs requirements specify reactivity limits for the fuel storage racks and minimum spacing between the fuel assemblies in the storage racks.

Appendix A of 10 CFR Part 50, "General Design Criteria for Nuclear Power Plants," (GDC) Criterion 62, requires that criticality in the fuel storage and handling system shall be prevented by physical systems or processes, preferably by use of geometrically-safe configurations. This is met at Byron Station, as identified in the Updated Final Safety Analysis Report (UFSAR). Byron Station UFSAR Section 9.1.1.1, New Fuel Storage - Design Basis, states that, "...the new fuel storage racks are designed such that the effective multiplication factor does not exceed 0.95 with fuel of a maximum enrichment of 5.00 wt% u-235 in place, assuming the stored assemblies are completely submerged in unborated water at a conservative water temperature and with no credit for neutron poison in the fuel assembly." NUREG-0876, "Safety Evaluation Report Related to the Operation of Byron Station, Units 1 and 2," dated February 1982, determined that the design of the Byron new fuel storage racks satisfied the requirements of GDC 62.

The proposed exemption would not result in any significant radiological impacts. The proposed exemption would not affect radiological plant effluents nor cause any significant occupational exposures since the TSs, design controls (including geometric spacing of fuel assembly storage spaces), and administrative controls preclude inadvertent criticality. The amount of radioactive waste would not be changed by the proposed exemption.

The proposed exemption does not result in any significant nonradiological environmental impacts. The proposed exemption involves features located entirely within the restricted area as defined in 10 CFR Part 20. It does not affect non-radiological plant effluents and has no other environmental impact. Accordingly, the Commission concludes that there are no significant non-radiological environmental impacts associated the proposed action.

Alternatives to the Proposed Action:

Since the Commission has concluded that there is no measurable environmental impact associated with the proposed action, any alternatives with equal or greater environmental impact need not be evaluated. As an alternative to the proposed exemption, the staff considered denial of the requested exemption. Denial of the request would result in no change in current environmental impacts. The environmental impacts of the proposed action and the alternative are similar.

Alternative Use of Resources:

The action does not involve the use of any resources not previously considered in the "Final Environmental Statement Related to the Operation of Byron Station, Units 1 and 2" dated April 1982.

Agencies and Persons Consulted:

In accordance with its stated policy, on February 24, 1999, the staff consulted with the Illinois State official, Mr. Frank Niziolek, Head, Reactor Safety Section, Division of Engineering, Illinois Department of Nuclear Safety, regarding the environmental impact of the proposed action. The State official had no comments.

FINDING OF NO SIGNIFICANT IMPACT

Based upon the environmental assessment, the Commission concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the Commission has determined not to prepare an environmental impact statement for the proposed action.

For further details with respect to the proposed action, see the licensee's letter dated October 16, 1997, which is available for public inspection at the Commission's Public Document

Room, which is located at the Gelman Building, 2120 L Street, NW., Washington, D.C., and at the local public document room located at the Byron Public Library District, 109 N. Franklin, P.O. Box 434, Byron, Illinois 61010.

Dated at Rockville, Maryland, this 3rd day of MARCH 1999.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read 'SAR', with a large, sweeping flourish extending upwards and to the right.

Stuart A. Richards, Director
Project Directorate III-2
Division of Licensing Project Management
Office of Nuclear Reactor Regulation