

Mr. G. R. Horn
 Sr. Vice President of Energy Supply
 Nebraska Public Power District
 1414 15th Street
 Columbus, NE 68601

May 22, 1998

SUBJECT: ISSUANCE OF EXEMPTION FROM THE REQUIREMENTS OF 10 CFR 70.24
 COOPER NUCLEAR STATION, (TAC NO. MA1164)

Dear Mr. Horn:

By letter dated February 23, 1998, Nebraska Public Power District requested an exemption from the requirements of 10 CFR 70.24 concerning criticality monitors.

Based upon the information provided, there is reasonable assurance that irradiated and unirradiated fuel will remain subcritical; furthermore, you maintain radiation monitors in accordance with General Design Criterion (GDC) 63. The low probability of a criticality together with your adherence to GDC 63 constitute good cause for granting an exemption from 10 CFR 70.24.

The U.S. Nuclear Regulatory Commission, pursuant to 10 CFR 70.14, has issued the enclosed exemption for Cooper Nuclear Station. A copy of the exemption is being forwarded to the Office of Federal Register for publication.

Sincerely,

ORIGINAL SIGNED BY:

James R. Hall, Senior Project Manager
 Project Directorate IV-1
 Division of Reactor Projects III/IV
 Office of Nuclear Reactor Regulation

Docket No. 50-298

Enclosure: Exemption

cc: See next page

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NAME	MGamberoni	JHall JH	CHawes CMH	JHannon	TCollins TC
DATE	4/17/98	4/23/98	4/17/98	4/23/98	4/29/98
COPY	YES/NO	YES/NO	YES/NO	YES/NO	YES/NO

OFC	OGC	DDRPW	ADP#1 S12	DMRR
NAME	JAH	EAdensam	BBoger B2	TCollins
DATE	5/1/98	5/1/98	5/11/98	5/13/98
COPY	YES/NO	YES/NO	YES/NO	YES/NO

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

May 22, 1998

Mr. G. R. Horn
Sr. Vice President of Energy Supply
Nebraska Public Power District
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Sincerely,

A handwritten signature in cursive script that reads "James R. Hall".

James R. Hall, Senior Project Manager
Project Directorate IV-1
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Docket No. 50-298

Enclosure: Exemption

cc: See next page

Mr. G. R. Horn
Nebraska Public Power District

Cooper Nuclear Station

cc:

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

May 22, 1998

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FOR - per
James
Hall

MEMORANDUM TO: Rules and Directives Branch
Division of Administrative Services
Office of Administration

FROM: Office of Nuclear Reactor Regulation

SUBJECT: **NEBRASKA PUBLIC POWER DISTRICT - COOPER NUCLEAR STATION**

One signed original of the *Federal Register* Notice identified below is attached for your transmittal to the Office of the Federal Register for publication. Additional conformed copies **FIVE**) of the Notice are enclosed for your use.

- Notice of Receipt of Application for Construction Permit(s) and Operating License(s).
- Notice of Receipt of Partial Application for Construction Permit(s) and Facility License(s): Time for submission of Views on Antitrust matters.
- Notice of Consideration of Issuance of Amendment to Facility Operating License. (Call with 30-day insert date).
- Notice of Receipt of Application for Facility License(s); Notice of Availability of Applicant's Environmental Report; and Notice of Consideration of Issuance of Facility License(s) and Notice of Opportunity for Hearing.
- Notice of Availability of NRC Draft/Final Environmental Statement.
- Notice of Limited Work Authorization.
- Notice of Availability of Safety Evaluation Report.
- Notice of Issuance of Construction Permit(s).
- Notice of Issuance of Facility Operating License(s) or Amendment(s).
- Order.
- Exemption.
- Notice of Granting Exemption.
- Environmental Assessment.
- Notice of Preparation of Environmental Assessment.
- Receipt of Petition for Director's Decision Under 10 CFR 2.206.
- Issuance of Final Director's Decision Under 10 CFR 2.206.
- Other: _____

DOCKET NO. **50-298**

Attachment(s): As stated

Contact: **J. Shaw**
Telephone: **415-1336**

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Chawes
05/27/98

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)
)
NEBRASKA PUBLIC POWER)
DISTRICT) Docket No. 50-298
)
)
(Cooper Nuclear Station))

EXEMPTION

I.

The Nebraska Public Power District (the licensee) is the holder of Facility Operating License No. DRP-46, which authorizes operation of the Cooper Nuclear Station. The license provides, among other things, that the licensee is subject to all rules, regulations, and orders of the Commission now or hereafter in effect.

The facility consists of one boiling-water reactor at the licensee's site located in Nemaha County, Nebraska.

II.

Section 70.24 of Title 10 of the CODE OF FEDERAL REGULATIONS, "Criticality Accident Requirements," requires that each licensee authorized to possess special nuclear material (SNM) shall maintain a criticality accident monitoring system in each area where such material is handled, used, or stored. Subsections (a)(1) and (a)(2) of 10 CFR 70.24 specify detection and sensitivity requirements that these monitors must meet. Subsection (a)(1) also specifies that all areas subject to criticality accident monitoring must be covered by two

detectors. Subsection (a)(3) of 10 CFR 70.24 requires licensees to maintain emergency procedures for each area in which this licensed SNM is handled, used, or stored and provides that (1) the procedures ensure that all personnel withdraw to an area of safety upon the sounding of a criticality accident monitor alarm, (2) the procedures must include drills to familiarize personnel with the evacuation plan, and (3) the procedures designate responsible individuals for determining the cause of the alarm and placement of radiation survey instruments in accessible locations for use in such an emergency. Subsection (b)(1) of 10 CFR 70.24 requires licensees to have a means to identify quickly personnel who have received a dose of 10 rads or more. Subsection (b)(2) of 10 CFR 70.24 requires licensees to maintain personnel decontamination facilities, to maintain arrangements for a physician and other medical personnel qualified to handle radiation emergencies, and to maintain arrangements for the transportation of contaminated individuals to treatment facilities outside the site boundary. Paragraph (c) of 10 CFR 70.24 exempts Part 50 licensees from the requirements of paragraph (b) of 10 CFR 70.24 for SNM used or to be used in the reactor. Paragraph (d) of 10 CFR 70.24 states that any licensee who believes that there is good cause why he should be granted an exemption from all or part of 10 CFR 70.24 may apply to the Commission for such an exemption and shall specify the reasons for the relief requested.

III.

The SNM that could be assembled into a critical mass at Cooper Nuclear Station is in the form of nuclear fuel; the quantity of SNM other than fuel that is stored on site in any given location is small enough to preclude achieving a critical mass. The Commission's technical staff has evaluated the possibility of an inadvertent criticality of the nuclear fuel at Cooper Nuclear Station, and has determined that it is extremely unlikely for such an accident to occur if the licensee meets the following seven criteria:

1. Only three new assemblies are allowed out of a shipping cask or storage rack at one time.
2. The k-effective does not exceed 0.95, at a 95% probability, 95% confidence level in the event that the fresh fuel storage racks are filled with fuel of the maximum permissible U-235 enrichment and flooded with pure water.
3. If optimum moderation occurs at low moderator density, then the k-effective does not exceed 0.98, at a 95% probability, 95% confidence level in the event that the fresh fuel storage racks are filled with fuel of the maximum permissible U-235 enrichment and flooded with a moderator at the density corresponding to optimum moderation.
4. The k-effective does not exceed 0.95, at a 95% probability, 95% confidence level in the event that the spent fuel storage racks are filled with fuel of the maximum permissible U-235 enrichment and flooded with pure water.
5. The quantity of forms of special nuclear material, other than nuclear fuel, that are stored on site in any given area is less than the quantity necessary for a critical mass.
6. Radiation monitors, as required by General Design Criterion 63, are provided in fuel storage and handling areas to detect excessive radiation levels and to initiate appropriate safety actions.
7. The maximum nominal U-235 enrichment is limited to 5.0 weight percent.

By letter dated February 23, 1998, the licensee requested an exemption from 10 CFR 70.24. In this request the licensee addressed the seven criteria given above. The Commission's technical staff has reviewed the licensee's submittals and has determined that Cooper Nuclear Station meets the applicable criteria. Criteria 2 and 3 are not applicable to the Cooper Nuclear Station since the fresh fuel storage racks are not currently in use and administrative controls

prevent their use. Therefore, the staff has determined that it is extremely unlikely for an inadvertent criticality to occur in SNM handling or storage areas at Cooper Nuclear Station.

The purpose of the criticality monitors required by 10 CFR 70.24 is to ensure that if a criticality were to occur during the handling of SNM, personnel would be alerted to that fact and would take appropriate action. The staff has determined that it is extremely unlikely that such an accident could occur; furthermore, the licensee has radiation monitors, as required by General Design Criterion 63, in fuel storage and handling areas. These monitors will alert personnel to excessive radiation levels and allow them to initiate appropriate safety actions. The low probability of an inadvertent criticality, together with the licensee's adherence to General Design Criterion 63, constitute good cause for granting an exemption to the requirements of 10 CFR 70.24.

IV.

The Commission has determined that, pursuant to 10 CFR 70.14, this exemption is authorized by law, will not endanger life or property or the common defense and security, and is otherwise in the public interest. Therefore, the Commission hereby grants the Nebraska Public Power District an exemption from the requirements of 10 CFR 70.24.

Pursuant to 10 CFR 51.32, the Commission has determined that the granting of this exemption will have no significant impact on the environment (63 FR 28012).

This exemption is effective upon issuance.

FOR THE NUCLEAR REGULATORY COMMISSION


Samuel J. Collins, Director
Office of Nuclear Reactor Regulation

Dated at Rockville, Maryland,
this 22nd day of May 1998