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JUN 17 1974

Docket No. 50-263

Northern States Power Company
ATTN: Mr. L. O. Mayer
Director of Nuclear
Support Services
414 Nicollet Mall
Minneapolis, Minnesota 55401

Gentlemen:

We have completed our review of your application dated August 31, 1973, as previously filed on December 21, 1972, for amendment to the byproduct materials authorized under Provisional Operating License No. DPR-22. Your application of August 31 requested: (1) an increase in the type and strength of the sealed antimony sources--specifically, an increase from 1250 curies to 5350 curies to account for the licensing of the parasite 122 along with the antimony 124, (2) an increase (from 27 microcuries to 5.5 millicuries) in the unrestricted form of cobalt 60 and the consolidation of the 0.5405 millicurie of cobalt 60 that was previously licensed in solution form, (3) a consolidation of the 2.702 millicuries of cesium 137 in solution form and the 1 millicurie of cesium that has no restriction as to form as 3 millicuries of cesium without form restriction, (4) the addition of 100 microcuries each of byproduct materials with atomic numbers 3 through 83, and (5) the deletion from licensing requirements of the sealed sources of cesium 137 and strontium 90 because you consider them to be within the exempt quantity limits of Section 30.18 of 10 CFR Part 30.

In connection with item 1 above, the license previously authorized possession of 10 sealed antimony 124 sources up to 1250 curies each. However, antimony 121 is present to the extent of 57% in natural antimony and the remainder is antimony 123. Activation of natural antimony therefore results in the formation of radioactive antimony 122 and 124. Revised calculational methods using more recent cross section data and Monticello neutron flux values have resulted in a slight increase of the curie content for the antimony 124 source which when combined with the parasitic antimony 122 results in a conservatively calculated limit of 5350 curies per source. The amendment merely makes this fact explicitly covered by the license provisions, and does not in any way affect safety considerations in connection with use or handling of these sources.

JUN 17 1974

For item 2 above, the license previously authorized 27 microcuries of cobalt in the unrestricted form and 0.5405 millicurie of radioactive cobalt in solution form. A larger inventory is desirable than previously allowed, 5.5 millicuries, because over a five-year period the inventory is reduced by disposing of small quantities of the cobalt after it has performed its function. The new limit represents the maximum amount that may be on hand, for example after receipt of a new shipment. (There is no requirement for, or benefit from, separately licensing 0.5405 millicurie in solution form.) Possession of the 5.5 millicuries of cobalt does not introduce new uses or alter procedures that have been previously followed and does not affect reactor operations hence there are no reactor safety considerations associated with the change.

✓
leave in?

The action requested in item 3 above imposes no safety considerations that are different from those previously reviewed in that you were previously authorized for a total of 3.702 millicuries partly in solution form and partly without restriction as to chemical or physical form.

The receipt, possession and use of 100 microcuries each of any one of the byproduct materials requested in item 4 above are within acceptable levels (as set forth in Regulatory Guide 1.70.3) and do not involve personnel safety considerations different than those considered for the other materials previously reviewed and licensed for this facility.

Since previously reviewed and authorized operation of the reactor is not changed by the use of these byproduct materials in the manner proposed, we find that there are no new reactor safety considerations. There is reasonable assurance that the health and safety of the public will not be endangered since the storage and use are consistent with, and within the scope of that previously authorized by the Regulatory staff and handling is by Northern States personnel familiar with such materials.

Since the sealed sources of cesium 137 and strontium 90 referenced in item 5 above fall within the 100 microcuries limit of the materials requested in item 4 above, it is not necessary to provide for an exemption pursuant to Section 30.18.

Based on the above, we have concluded that the issuance of a license amendment to authorize items 1 through 4 above will not be inimical to the common defense and security or to the health and safety of the public and that this action does not involve a significant hazards consideration.

Consequently, Amendment No. 4 to Provisional Operating License No. DPR-22 is enclosed authorizing your August 31 request, with the exception noted for the sealed sources of cesium and strontium.

OFFICE ➤					
SURNAME ➤					
DATE ➤					

JUN 17 1974

Further, it is currently possible that if your application dated September 1, 1972, for conversion of your provisional operating license (POL) to a full-term license (FTL) is updated to include the information set forth in the enclosed Regulatory Guide 1.70.3 entitled "Additional Information - Radioactive Materials Safety for Nuclear Power Plants" dated February 1974, we will consider licensing the materials used in connection with operation of your Monticello plant in the manner set forth in this guide.

The information required by Guide 1.70.3 should be provided as soon as possible so that we can review it for inclusion in any supplemental Safety Evaluation that might be issued in connection with the license conversion. Also, it is anticipated that a specification on source leakage testing and surveillance, and a reporting requirement related thereto will be included in the Technical Specifications for the facility. It is requested that all information provided pursuant to the above guide be submitted as a supplement to your application for conversion of the POL to a FTL with three signed and notarized originals and thirty-seven additional copies.

As required by Section 2.106 of 10 CFR Part 2, the enclosed notice relating to the issuance of Amendment No. 4 to the license is being filed with the Office of the Federal Register for publication.

Sincerely,

Original signed by:
Karl R. Goller

Karl R. Goller, Assistant Director
for Operating Reactors
Directorate of Licensing

Enclosures:

1. Amendment No. 4 to License No. DPR-22
2. Regulatory Guide 1.70.3
3. Federal Register Notice

cc w/encs:
See next page

OFFICE ▶	L:ORB-2 x7403	L:ORB-2	L:ORB-2	OGC	L:AD/ORs	
SURNAME ▶	RMDiggs:esp	JJShea	DLZiemann	SHL Lewis	KRG KRGoller	Mg
DATE ▶	6/12/74	6/12/74	6/15/74	6/13/74	6/14/74	

JUN 17 1974

cc w/enclosures:

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Vice President - Law
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Ken Dzugan, Director
City of St. Paul Pollution Control Services
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St. Paul, Minnesota 55102

Sandra S. Gardebring, Esquire
Minnesota Pollution Control Agency
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Roseville, Minnesota 55113

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Washington, D. C. 20036

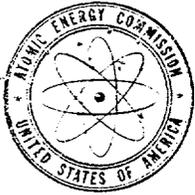
Environmental Library of Minnesota

Mr. D. S. Douglas, Auditor
Wright County Board of Commissioners
Buffalo, Minnesota 55313

cc w/enclosures and cy of NSP's
Appls. 12/21/72 & 8/31/73:
Warren R. Lawson, M. D.
Secretary & Executive Officer
State Department of Health
717 Delaware Street, S. E.
Minneapolis, Minnesota 55440

Mr. Gary Williams
Federal Activities Branch
Environmental Protection Agency
1 N. Wacker Drive, Room 822
Chicago, Illinois 60606

Dr. Ed Pryzina
Minnesota Pollution Control Agency
1935 W. County Road B2
Roseville, Minnesota 55113



UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

NORTHERN STATES POWER COMPANY

DOCKET NO. 50-263

AMENDMENT TO PROVISIONAL OPERATING LICENSE

Amendment No. 4
License No. DPR-22

The Atomic Energy Commission ("the Commission") has found that:

1. The application for license amendment dated December 21, 1972, as amended August 31, 1973, complies with the requirements of the Atomic Energy Act of 1954, as amended, and the Commission's regulations set forth in 10 CFR Chapter I;
2. There is reasonable assurance (i) that the activities authorized by the operating license, as amended, can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the rules and regulations of the Commission;
3. The receipt, possession, and use of byproduct and special nuclear materials as authorized by this license amendment will be in accordance with the Commission's regulations in 10 CFR Parts 30 and 70, including Sections 30.33, 70.23 and 70.31;
4. 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
5. Prior public notice of proposed issuance of this amendment is not required since the amendment does not involve a significant hazards consideration.

Provisional Operating License No. DPR-22, as amended, issued to Northern States Power Company for operation of its Monticello Nuclear Generating Plant is hereby amended to revise paragraph 2.C thereof in its entirety to read as follows:

JUN 17 1974

2.C. Pursuant to the Act and 10 CFR Part 30, "Rules of General Applicability to Licensing of Byproduct Material," to receive, possess, and use in connection with the operation of the facility:

- (1) antimony 122 and 124, ten sealed sources, not to exceed 5,350 curies per source;
- (2) americium 241, one sealed source, not to exceed 7 curies;
- (3) cobalt 60, four sealed sources, two not to exceed 350 microcuries per source, one not to exceed 500 millicuries, and one not to exceed 12.5 millicuries;
- (4) cobalt 60, 5.5 millicuries (without restriction as to chemical or physical form);
- (5) cesium 137, three millicuries (without restriction as to chemical or physical form);
- (6) americium 241 and strontium 90, each not to exceed one millicurie per nuclide (without restriction as to chemical or physical form), and
- (7) any byproduct material with atomic numbers 3 through 83, inclusive, not to exceed 100 microcuries per source (in any chemical or physical form).

This amendment is effective as of the date of issuance.

FOR THE ATOMIC ENERGY COMMISSION

Original signed by:
Karl R. Goller
Karl R. Goller
Assistant Director
for Operating Reactors
Directorate of Licensing

Date of Issuance: JUN 17 1974



REGULATORY GUIDE

DIRECTORATE OF REGULATORY STANDARDS

REGULATORY GUIDE 1.70.3

ADDITIONAL INFORMATION RADIOACTIVE MATERIALS SAFETY FOR NUCLEAR POWER PLANTS

A. INTRODUCTION

In October 1972, the Commission issued Revision 1 of the "Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants."¹ This document provides a standard format for the safety analysis reports required by the Commission's regulations and identifies the principal information needed by the Regulatory staff in order to conduct its safety evaluations.

In its review of recent applications for construction permits and operating licenses, the Regulatory staff has identified information that has often been missing from these safety analysis reports. To obtain the information needed to perform its evaluation, the staff has had to request this information by directing written questions to each applicant. The Foreword of the Standard Format states: "Any revisions of the Commission's needs for information will be conveyed to the industry and the public in various ways such as (1) amendments to the Standard Format, (2) in the Information Guide series, (3) as part of future Safety Guides, or (4) in Public Announcements." This guide identifies information related to radioactive materials safety that has often been missing from the applicant's safety analysis report at the operating license stage of review.

The Commission plans to revise the Standard Format within the next year to include this modification. In the interim, the information requested here should be included in safety analysis reports submitted for AEC review.

B. ADDITIONAL INFORMATION

The additional information requested should be incorporated into Chapter 12 of the safety analysis

¹ The "Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants" has been designated as Regulatory Guide 1.70.

report as indicated below. Section 12.4 should be added as follows:

12.4 Radioactive Materials Safety (FSAR)

12.4.1 Materials Safety Programs

Describe the program which will be implemented to assure the safe storage, handling, and use of sealed and unsealed special nuclear, source, and byproduct materials. Other sections of the FSAR may be referenced to the degree they are applicable.

12.4.2 Facilities and Equipment

Describe the laboratory facilities and equipment such as hoods, gloveboxes, filters, survey and measuring instruments, and monitoring devices. Other sections of the FSAR may be referenced to the degree they are applicable.

12.4.3 Personnel and Procedures

Describe the experience and qualifications of the key personnel responsible for handling and monitoring the materials. Identify and summarize the content of the radiation safety instructions to working personnel appropriate to the operations to be covered. Other sections of the FSAR may be referenced to the degree they are applicable.

12.4.4 Required Materials

Provide a listing of isotope, quantity, form, and use for all required byproduct, source, and special nuclear materials which exceed the amounts in Table 1.

USAEC REGULATORY GUIDES

Regulatory Guides are issued to describe and make available to the public methods acceptable to the AEC Regulatory staff of implementing specific parts of the Commission's regulations, to delineate techniques used by the staff in evaluating specific problems or postulated accidents, or to provide guidance to applicants. Regulatory Guides are not substitutes for regulations and compliance with them is not required. Methods and solutions different from those set out in the guides will be acceptable if they provide a basis for the findings requisite to the issuance or continuance of a permit or license by the Commission.

Published guides will be revised periodically, as appropriate, to accommodate comments and to reflect new information or experience.

Copies of published guides may be obtained by request indicating the divisions desired to the U.S. Atomic Energy Commission, Washington, D.C. 20545, Attention: Director of Regulatory Standards. Comments and suggestions for improvements in these guides are encouraged and should be sent to the Secretary of the Commission, U.S. Atomic Energy Commission, Washington, D.C. 20545, Attention: Chief, Public Proceedings Staff.

The guides are issued in the following ten broad divisions:

1. Power Reactors
2. Research and Test Reactors
3. Fuels and Materials Facilities
4. Environmental and Siting
5. Materials and Plant Protection
6. Products
7. Transportation
8. Occupational Health
9. Antitrust Review
10. General

Table 1

<u>Material</u>	<u>Form and Use</u>	<u>Possession Limit</u>
A. Any byproduct, source, and special nuclear material	As reactor fuel; as sealed neutron sources for reactor startup; as sealed sources for calibration of reactor instruments and radiation monitoring equipment; and as fission detectors	Amount required for reactor operation
B. Any byproduct material	Any form for sample analysis or instrument calibration	100 millicuries each isotope
C. Any source or special nuclear material	Any form for sample analysis or instrument calibration	100 milligrams each isotope

UNITED STATES ATOMIC ENERGY COMMISSION

DOCKET NO. 50-263

NORTHERN STATES POWER COMPANY

NOTICE OF ISSUANCE OF PROVISIONAL OPERATING LICENSE AMENDMENT

Notice is hereby given that the United States Atomic Energy Commission ("the Commission") has issued Amendment No. 4 to Provisional Operating License No. DPR-22 to the Northern States Power Company authorizing a change in the amount of byproduct material they may receive, possess, and use basically for reactor neutron sources and calibration of radiation monitoring equipment used in connection with operation of the Monticello Nuclear Generating Plant (the facility). The amendment, effective as of the date of issuance, authorizes (1) a change (from 1250 curies to 5350 curies) in the strength of individual sealed antimony sources used for reactor startup, (2) a change (from 27 microcuries to 5.5 millicuries) in the cobalt 60 sources, and (3) insignificant changes in other amounts of byproduct materials used for such purposes as instrument calibration. The Northern States Power Company is presently licensed to possess and operate its facility (located in Wright County, Minnesota) at power levels up to 1670 Mwt.

The Commission's Regulatory staff has found that the application complies with the requirements of the Atomic Energy Act of 1954, as amended, and the Commission's rules and regulations published in 10 CFR Chapter I, and that the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public. The staff also has concluded that this action does not involve a significant hazards consideration

since (1) the use of the materials in the manner proposed does not change the previously reviewed and authorized operation of the facility and thus no new safety considerations are involved, (2) the materials are being stored in previously reviewed and approved storage facilities, and (3) the quantities and types of materials pose no new personal safety considerations different than those considered for the other materials previously reviewed and licensed for this facility and materials will be handled by Northern States Power Company personnel familiar with the safe handling of numerous types and quantities of byproduct and special nuclear materials. Based upon the finding of no significant hazards consideration, public notice of proposed issuance of the amendment is not required.

Copies of the (1) application dated December 21, 1972, as amended August 31, 1973, (2) Amendment No. 4 to License No. DPR-22, and (3) the letter to Northern States Power Company (transmitting Amendment No. 4) which provides an evaluation of the request for the amendment are available for public inspection at the Commission's Public Document Room at 1717 H Street, N. W., Washington, D. C., and at the Environmental Library of Minnesota, 1222 S. E. 4th Street, Minneapolis, Minnesota 55414. Single copies of the license amendment may be obtained upon request addressed to the U. S. Atomic Energy Commission, Washington, D. C. 20545, Attention: Deputy Director for Reactor Projects, Directorate of Licensing.

Dated at Bethesda, Maryland, this *17th* day of *June* 1974.

FOR THE ATOMIC ENERGY COMMISSION

Original Signed by:

~~Richard G. ...~~ by: Dennis L. Ziemann

OFFICE ▶			Richard G. ...		
SURNAME ▶			Dennis L. Ziemann, Chief Operating Reactors Branch #2 Directorate of Licensing		
DATE ▶					

Jim -
DZ has copy
of memo
only.
CD
6/5

June 5, 1974

Note to Jim Shea

This note transmits certain suggested language additions and changes to the package on the amendment of the Monticello operating license with respect to amounts of byproduct materials. It also poses remaining unresolved questions.

1. On page 1 of the letter to NSP between the second and third sentences, add the following:

(X)
 However, instead
 of 121 is present
 to be about 57% and
 the remainder is antimony
 123. Antimony is
 natural antimony results
 in the formation of radiocobalt
 antimony 122 and 124.
 Revised calculations
 methods using more
 data and Monticello
 recent flux values have
 resulted in a
 slight increase in
 the antimony 124
 source which when
 combined with
 the parasitic
 antimony 122
 results in a
 conservatively calculated
 limit of 5350
 curies per source.

The license previously authorized possession of 10 sealed antimony 124 sources up to 1250 curies each. ^{Insert 1} The parasite daughter product antimony 122 accompanies the ^{formation} ~~disintegration~~ of antimony 124, so that a source containing 1250 curies of antimony 124, ^{could} ~~also~~ therefor contain a total quantity of antimony 124 and 122 in the amount of approximately 5350 curies. The amendment merely makes this fact explicitly covered by the license provisions, and does not in any way affect safety considerations in connection with use or handling of these sources.

The second change, simply increases the total amount of radioactive cobalt in unsealed sources from 27 microcuries each to 5.5 millicuries each ^{Insert 2} [give reason for change and explain why it presents no safety problem. Then proceed to itemize the remaining

changes, assigning reasons therefor and explaining why they present no safety problems.]

2. On page 1 of the letter in the present third sentence strike "and the procedures associated therewith", since the staff does not specifically review and authorize "procedures".

Done

3. In the last sentence of the first paragraph on page 1 of the letter, change the closing phrase to "it is not necessary to address the issue of exemption pursuant to Section 30.18."

Done
OK

4. Still on page 1 of the letter, add the word "further," at the beginning of the second paragraph.

OK!!
Not worth bringing in an amendment

5. In the Notice at the top of page 2 in explaining the reason for the finding of no significant hazards considerations, replace the present language with language indicating:

Rev?

1. the technical nature of the changes. (I know this holds for antimony, can we similarly characterize the other changes.)
2. the fact that previously approved plant operations are not being changed. You can continue to use the present language on this point.

6. In the last sentence of the continuation paragraph on page 2 of the Notice, change "Consequently" to "Based upon the finding of no significant hazards consideration,".

OK

7. The changes and additions suggested here are intended to clarify which of the items listed in paragraph 2.C. of the operating license constitute amendments, the reason for the various changes, and the basis for finding that there are no safety considerations involved.



• Stephen H. Lewis

Distribution

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WOMiller
DLZiemann, L:ORB #2

Docket No. 50-263

Northern States Power Company
ATTN: Mr. L. O. Mayer
Director of Nuclear
Support Services
414 Nicollet Mall
Minneapolis, Minnesota 55401

Gentlemen:

We have completed our review of your application dated August 31, 1973, as previously filed on December 21, 1972, for amendment to the byproduct materials authorized under Provisional Operating License No. DPR-22. Based on our review, we have concluded that the issuance of the enclosed amendment will not be inimical to the common defense and security or to the health and safety of the public. Since the storage and use of the byproduct material is consistent with, and within the scope of, that previously reviewed and approved by the Regulatory staff and there is no change in the previously authorized manner of operation of the Monticello facility ~~and the procedures associated therewith~~, we also have concluded that this action does not involve a significant hazards consideration. Consequently, Amendment No. 4 to Provisional Operating License No. DPR-22 is enclosed authorizing your request of August 31, 1973. Since the sealed sources of cesium and strontium 90 fall within the 100 microcurie limit of the materials licensed as atomic numbers 3 through 83 in item 7 of the enclosed amendment, ~~we are not addressing the issue of exemption pursuant to Section 30.18.~~ ^{IT IS NOT NECESSARY TO}

Warrant
AM-3
the 11/30/73
?

Further,

if your application dated September 1, 1972, for conversion of your provisional operating license (POL) to a full-term license (FTL) is updated to include the information set forth in the enclosed Regulatory Guide 1.70.3 entitled "Additional Information - Radioactive Materials Safety for Nuclear Power Plants" dated February 1974, we will consider licensing the materials used in connection with operation of your Monticello plant in the manner set forth in this guide. This means that only specific quantities will be enumerated in your license when they exceed the limits and uses set forth in Table 1 of the guide. No subsequent license amendments or evaluations for materials would be required as long as you do not exceed these limits and uses.

Warrant
this is
violation

SVarga
SLewis, OGC

BScharf (15)
RMDiggs
SKari

CHebron, DRA
NDube, L:OPS
MJinks (4)

since (1) the use of the materials in the manner proposed does not change the previously reviewed and authorized operation of the facility and thus no new safety considerations are involved, (2) the materials are being stored in previously reviewed and approved storage facilities, and (3) the quantities and types of materials pose no new personnel safety considerations different than those considered for the other materials previously reviewed and licensed ^{for this facility} ~~by the Commission and handling of the materials~~ will be handled by Northern States Power Company personnel familiar with the safe handling of numerous types and quantities ^{byproduct and special nuclear} of materials. Based upon the finding of no significant hazards consideration, public notice of proposed issuance of the amendment is not required.

Copies of the (1) application dated December 21, 1972, as amended August 31, 1973, (2) Amendment No. 4 to License No. DPR-22, and (3) the letter to Northern States Power Company (transmitting Amendment No. 4) which provides an evaluation of the request for the amendment are available for public inspection at the Commission's Public Document Room at 1717 H Street, N.W., Washington, D.C., and at the Environmental Library of Minnesota, 1222 S.E. 4th Street, Minneapolis, Minnesota 55414. Single copies of the license amendment may be obtained upon request addressed to the U. S. Atomic Energy Commission, Washington, D. C. 20545, Attention: Deputy Director for Reactor Projects, Directorate of Licensing.

Dated at Bethesda, Maryland,

FOR THE ATOMIC ENERGY COMMISSION

Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Directorate of Licensing