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Northern States Power Co Minneapolis, MN LO Mayer	8-16-74	8-19-74	X			

TO:	ORIG	CC	OTHER	SENT AEC PDR	SENT LOCAL PDR
JF O'Leary		40		XXX	XXX

CLASS	UNCLASS	PROP INFO	INPUT	NO CYS REC'D	DOCKET NO:
	XXX			40	50-263

DESCRIPTION:

Ltr re their 6-15-72 submittal trans the following.....

ENCLOSURES:

Suppl #2 to 6-15-72 License Conversion Appl...

ACKNOWLEDGED
DO NOT REMOVE

(40 cys encl rec'd)

PLANT NAME: MONTICELLO

FOR ACTION/INFORMATION 8-19-74 GMG

BUTLER (L) W/ CYS	SCHWENCER (L) W/ CYS	✓ZIEMANN (L) W/9 CYS	REGAN (E) W/ CYS
CLARK (L) W/ CYS	STOLZ (L) W/ CYS	DICKER (E) W/ CYS	W/ CYS
~~PARR (L)~~ W/ CYS	VASSALLO (L) W/ CYS	KNIGHTON (E) W/ CYS	W/ CYS
KNIEL (L) W/ CYS	PURPLE (L) W/ CYS	YOUNGBLOOD (E) W/ CYS	W/ CYS

INTERNAL DISTRIBUTION

✓REG FILE	TECH REVIEW	DENTON	LIC ASST	A/T IND
~~AEC PDR~~	HENDRIE	GRIMES	✓DIGGS (L)	BRAITMAN
✓OGC	SCHROEDER	GAMMILL	GEARIN (L)	SALTZMAN
MUNTZING/STAFF	MACCARY	KASTNER	GOULBOURNE (L)	B. HURT
CASE	KNIGHT	BALLARD	KREUTZER (E)	
GIAMBUSSO	PAWLICKI	SPANGLER	LEE (L)	PLANS
BOYD	SHAO		MAIGRET (L)	MCDONALD
MOORE (L)(LWR-2)	STELLO	ENVIRO	REED (E)	CHAPMAN
DEYOUNG (L)(LWR-1)	HOUSTON	MULLER	SERVICE (L)	DUBE w/input
SKOVHOLT (L)	NOVAK	DICKER	SHEPPARD (L)	E. COUPE
✓GOLLER (L)	ROSS	KNIGHTON	SLATER (E)	
P. COLLINS	IPPOLITO	YOUNGBLOOD	SMITH (L)	D. THOMPSON (2)
DENISE	TEDESCO	REGAN	TEETS (L)	KLECKER
✓REG OPR	LONG	PROJECT MGR	WILLIAMS (E)	EISENHUT
FILE & REGION (3)	LAINAS		WILSON (L)	
MORRIS	BENAROYA	HARLESS		
STEELE	VOLLMER			

EXTERNAL DISTRIBUTION

✓1 - LOCAL PDR MINNEAPOLIS, MN		
✓1 - TIC (ABERNATHY)	(1)(2)(10)-NATIONAL LABS	1-PDR-SAN/LA/NY
✓1 - NSIC (BUCHANAN)	1-ASLBP(E/W Bldg, Rm 529)	1-BROOKHAVEN NAT LAB
1 - ASLB	1-W. PENNINGTON, Rm E-201 GT	1-G. ULRIKSON, ORNL
1 - P. R. DAVIS	1-B&M SWINEBROAD, Rm E-201 GT	1-AGMED (RUTH GUSSMAN) Rm B-127 GT
✓16 - ACRS ~~HOLDING~~	1-CONSULTANTS	
SENT TO LIC ASST DIGGS 8-19-74	NEWMARK/BLUME/AGBABIAN	1-RD..MUELLER, Rm F-309 GT

NSP

NORTHERN STATES POWER COMPANY

MINNEAPOLIS, MINNESOTA 55401

August 16, 1974

Mr. J F O'Leary, Director
Directorate of Licensing
Office of Regulation
U S Atomic Energy Commission
Washington, DC 20545

Dear Mr. O'Leary:

MONTICELLO NUCLEAR GENERATING PLANT
Docket No. 50-263 License No. DPR-22

Submittal of Supplement No. 2 to June 15, 1972
License Conversion Application

Attached are 3 signed originals and thirty-seven conformed copies of a document entitled, "Supplement No. 2 to the June 15, 1972 Application for Conversion of Provisional Operating License DPR-22 to a Full Term Operating License." This information is provided in response to Mr. Karl E. Goller's letter dated June 17, 1974.

Yours very truly,

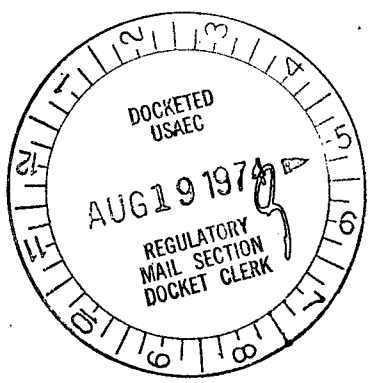
L. O. Mayer

L O Mayer, PE
Director of Nuclear Support Services

LOM/kn

REGULATORY DOCKET FILE COPY

cc: J G Keppler
G Charnoff
Minnesota Pollution Control Agency
Attn. E A Pryzina
MECCA
Attn. H J Vogel
City of St. Paul
Attn. D L Ficker
S J Gadler



8545

UNITED STATES ATOMIC ENERGY COMMISSION

NORTHERN STATES POWER COMPANY
MONTICELLO NUCLEAR GENERATING PLANT

Docket No. 50-263

Supplement No. 2 to the June 15, 1972 Application for Conversion of Provisional Operating License DPR-22 to a Full Term Operating License

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Northern States Power Company, a Minnesota corporation, hereby submits supplemental information to its June 15, 1972 Application for Conversion of Provisional Operating License DPR-22 to a Full Term Operating License, describing the capabilities, facilities and procedures for handling and storing special nuclear and byproduct material at the Monticello Nuclear Generating Plant.

This information is submitted in response to a June 17, 1974 letter from Mr. Karl R. Goller, Assistant Director for Operating Reactors, United States Atomic Energy Commission, to Mr. L O Mayer, Director of Nuclear Support Services, Northern States Power Company. This supplement contains no restricted or other defense information.

NORTHERN STATES POWER COMPANY

By Leo J Wachter
Leo J Wachter
Vice-President, Power Production
& System Operation

On this 16th day of August, 1974, before me a notary public in and for said County, personally appeared Leo J Wachter, Vice-President, Power Production and System Operation, and being first duly sworn asknowledged that he is authorized to execute this document in behalf of Northern States Power Company, that he knows the contents thereof and that to the best of his knowledge, information and belief, the statements made in it are true and that it is not interposed for delay.

David J. Fisher

DAVID J. FISHER
Notary Public, Hennepin County, Minn.
My Commission Expires Oct. 2, 1974

Radioactive Material Safety

1. Materials Safety Program

All areas designated for the normal storage of special nuclear material (SNM) are within the plant security area. A formal industrial security program has been established to protect the security area. The Engineer, Nuclear is responsible for the control and handling of SNM in the form of reactor fuel and fission chambers. The Radiation Protection Engineer is responsible for the control and handling of SNM in the form of sources.

Designated reactor fuel storage areas include the new fuel storage vault and the fuel storage pool. Both areas are accessible only from the reactor building refueling floor. The new fuel storage vault is designed for dry storage. Concrete plugs are provided to cover the vault. The fuel storage pool is designed for underwater storage of irradiated or unirradiated fuel.

The reactor building is controlled as a vital area. In addition, plant personnel periodically check the fuel storage areas. Plant operating personnel are required to be present in the area when fuel handling operations are in progress. Special fuel handling procedures are written for the receipt, transfer and off-site shipment of reactor fuel.

Sufficient passageways are available on the refueling floor such that heavy crane loads need not pass over fuel in designated storage areas. Fuel storage facilities are of concrete and steel construction and the storage and use of combustible materials in these areas is strictly controlled. Fire fighting equipment is available in the area.

Additional areas of the facility may be designated as interim reactor fuel storage and transfer areas during the receipt of new fuel. These areas may include available open floor space in the reactor building as well as fenced outside areas such as the substation yard. Fuel will not be removed from the shipping container until it is on the refueling floor in the vicinity of the new fuel inspection stand. Special procedures for fuel receipt will consider the security of the fuel and implement additional precautions as appropriate.

Small amounts of SNM are required for miniature in-core fission chambers. These devices are generally confined inside the reactor vessel with the exception of newly received replacement chambers and failed or depleted chambers awaiting shipment off-site. Provisions are also included in the license limit of SNM for larger, more sensitive fission chambers which would be necessary in the event that the core must be completely unloaded.

All SNM in the form of sources, such as the PuBe test and calibration source listed below, are under the control of the Radiation Protection Engineer. Storage, leak testing and physical inventory of SNM sources are done along with that of byproduct material as discussed below.

Accountability procedures define the methods used for SNM accountability and for the shipping and status report preparations in accordance with 10CFR Part 70. The accountability system is designed to meet the following criteria:

1) Location of each fuel assembly, detector and source having non-exempt quantities of SNM shall be known at all times.

2) It shall be possible to assemble a chronological history of each fuel assembly's movement on site.

3) SNM accountability to the AEC, fuel vendors and Northern States Power Company shall be satisfied.

Byproduct material is stored inside the plant security area. The formal industrial security program in effect therefore includes byproduct material storage areas. The Radiation Protection Engineer is responsible for the control and handling of all byproduct material. This includes reactor startup sources, sealed test and calibration sources and those sources unrestricted as to chemical or physical form used as test and calibration sources.

The standard Monticello startup sources consist of antimony pins which are normally housed in the reactor vessel. When the reactor cavity is flooded there is sufficient water shielding to readily transfer these sources to the new fuel storage pool for storage as desired. Provisions are also included in the license for an americium source which was used for initial core loading and testing; such a source is not normally kept on site. Special procedures are written for the handling of these sources.

The smaller fractional curie sealed sources of byproduct material used for calibration and sample analysis testing are stored in one of the following areas. The larger of these sources are stored in the source storage room in the reactor building. The key to this room is controlled by the Radiation Protection Engineer and the Shift Supervisor. Smaller sources are stored in the count room or the hot lab near their point of use. These areas are under the general supervision and control of the Radiation Protection Engineer.

All of the sealed sources discussed above are leak checked every six months with the exception of the reactor startup sources.

Sources not restricted as to chemical or physical form are stored in a shielded safe in the hot lab. Access to these sources is controlled by the Radiation Protection Engineer.

The byproduct material storage areas designated above are constructed of non-combustible materials. The use of combustible materials in the vicinity of sources is strictly controlled. A physical inventory of these sources is taken at six month intervals.

A number of fractional-microcurie sealed sources are used to provide a continuous operability verification of process radiation monitors. These sources are contained in devices mounted throughout the plant. Proper warning and identification is provided with each device.

2. Facilities and Equipment

Three laboratory facilities are available at the Monticello Nuclear Generating Plant. One facility is for "cold" chemistry work. Two pertinent facilities are the "hot lab" (radio-chemistry laboratory) and the sample counting room.

The count room ventilation exhausts to the hot lab. Two exhaust hoods in the hot lab discharge air through absolute filters to the reactor building plenum which is equipped with continuous monitoring and automatic isolation.

Survey and measuring instruments are described in Section 7.6.5 of the Monticello Final Safety Analysis Report (FSAR). The types of portable radiation instruments and the inspection and testing programs are also discussed.

The plant radiation monitoring devices are described in Section 7.6 of the FSAR.

3. Personnel and Procedures

The experience and qualifications of the personnel responsible for the handling, monitoring and control of byproduct and special nuclear material meet, at a minimum, the requirements for selection and training as described in ANSI N18.1-1971 for the supervisors in Radiation Protection and Reactor Engineering respectively.

Detailed instructions on radiation safety are prepared which set forth rules and procedures of radiation safety that must be followed by all personnel at the plant. In general, the instructions describe the following:

1) Radiation Safety Standards
2) Radiation Area Control
3) Monitoring
4) Personnel Control and Monitoring
5) Records and Reports
6) Equipment Control
7) Radioactive Materials Handling
8) Off-Site Shipment of Materials
9) Radiation Safety Training Manual
10) Investigation and Reporting of Radiation Incidences and Occurrences

Radiation areas are posted in accordance with the requirements of 10CFR 20.

In addition to the Radiation Monitoring System described in Section 7.6 of the FSAR, routine radiation and contamination surveys are conducted using portable and count room radiation monitoring equipment to continually monitor areas of the plant. In addition, specific surveys are made on request to evaluate and determine safe working conditions for personnel on specific jobs. Written procedures for conducting radiation and contamination surveys are provided.

All personnel, other than escorted visitors, are indoctrinated in radiological safety. Until personnel have been adequately indoctrinated in radiological safety they must obtain permission from the Radiation Protection Engineer or the Plant Manager and be assigned an escort to enter an area where radioactive materials are stored and handled.

Personnel exposure is determined using thermoluminescent devices or film badges and dosimeters. Exposure limits are established to conform with the requirements of 10CFR 20. Protective clothing and equipment are available to minimize personnel exposure to contamination. Personnel decontamination procedures are provided.

An emergency plan, defining actions to be taken in the event of a radiation occurrence, has been reviewed by the Operations Committee. The Safety Audit Committee has reviewed the plan.

4. Required Materials

The following table lists all the special nuclear material and byproduct material (in excess of 100 millicuries) that is used at the Monticello Nuclear Generating Plant.

Special Nuclear and Byproduct Material

Material	Form and Use	Possession Limit
Uranium - 235	Reactor Fuel Assemblies	2300 kilograms
Uranium - 235	Fission Chamber Detectors	50 grams
Plutonium - 239	Sealed Source for Instrument Calibration	16 grams
Antimony - 122 and 124	Sealed Reactor Startup Sources	10 sources; 5350 curies per source
Americium - 241	Sealed Reactor Startup Source	7 curies
Cobalt - 60	Sealed Source for Instrument Calibration	500 millicuries
Krypton - 85	Gaseous Source for Instrument Calibration	250 millicuries