

NSP**NORTHERN STATES POWER COMPANY**

MINNEAPOLIS, MINNESOTA 55401

March 20, 1974

Mr. J F O'Leary
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

Annual Report of Primary Coolant
Leakage to Drywell

This report is submitted in accordance with Section 6.7.C of Appendix A, Technical Specifications, of the Provisional Operating License for the Monticello Nuclear Generating Plant. It is a summary of coolant to drywell leakage rate measurements for the period of January 1 through December 31, 1973.

Drywell leakage is broadly classified as being from identified or unidentified sources. Identified leakage is piped from the recirculation pump seals, valve stem leak-offs, reactor vessel flange leak-off, bulkhead and bellows drains, and vent cooler drains to the drywell closed radwaste sump. All other leakage is collected in the drywell open radwaste sump and classified as unidentified leakage. Drywell leakage is calculated daily using flow integrators installed in the pump discharge line of each sump. Accuracy of measurement is better than $\pm 3\%$.

Table I is a summary of drywell coolant leakage measurements for 1973. As noted in the Table, all leakage remained well below the Technical Specification Limits of 5 GPM for unidentified leakage and 25 GPM for total leakage.

In our "Report of Performance of the Reactor Coolant Leakage System," which was submitted to the Directorate of Licensing on December 28, 1972, we described an improved system for giving rapid indication of increases in drywell coolant leakage. This system was installed in October 1973, and is currently in use. It performs as expected and earlier concerns about speed of response in leakage detection have been fully resolved. This system is independent of and in addition to all other installed equipment. Drywell identified and unidentified

NORTHERN STATES POWER COMPANY

Mr. J F O'Leary

- 2 -

March 20, 1974

Leakage is calculated periodically by the computer and printed out in the control room. Leak rates in excess of preset limits print out as alarms. The major components of the system are:

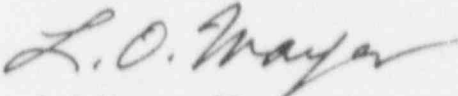
- a. Displacement type level transmitter mounted in a stilling well from the top of each drywell sump
- b. Recorders in the control room to continuously monitor sump level
- c. Input to plant process computer to calculate leak rate and generate alarms

The system provides the following functions:

- a. Alarms on unidentified leakage in excess of a preset limit (now set at 2.5 GPM) with a delay of 1 minute or less
- b. Alarms on identified leakage in excess of a preset limit (now set at 5 GPM) with a delay of 1 minute or less
- c. Provides graphic indication in the Control Room of drywell leakage trends

This system provides a timely method of detecting leakage from the reactor coolant boundary and no further modifications for this function are considered necessary.

Yours truly,



L O Mayer, PE
Director of Nuclear Support Services

LOM/DMM/lh

cc: J G Keppler
G Charnoff
Minnesota Pollution Control Agency
Attn: E A Pryzina

attachment

Table I Summary of Coolant Leakage to Drywell-1973

Month	Leakage from Known Sources (GPM)			Leakage from Unknown Sources (GPM)			Total Leakage (GPM)			Remarks
	Highest	Lowest	Avg	Highest	Lowest	Avg	Highest	Lowest	Avg	
JAN	1.66	1.04	1.34	0.91	0.25	0.59	2.28	1.51	1.93	Annual Outage 3/4/73 - 5/14/73
FEB	1.55	0.99	1.28	0.81	0.42	0.59	2.30	1.54	1.86	
MAR	1.38	0.55	1.01	0.70	0.16	0.47	1.95	0.71	1.48	
APR	----	----	----	----	----	----	----	----	----	
MAY	1.22	0.04	1.00	0.27	0	0.05	2.24	0.04	1.06	
JUN	1.30	0.12	1.03	0.38	0	0.20	1.68	0.12	1.23	
JUL	1.30	0.52	1.22	0.50	0.12	0.28	1.79	0.72	1.50	
AUG	1.78	0.01	1.23	1.13	0	0.09	2.91	0.01	1.32	
SEP	1.56	0.11	1.29	0.35	0	0.11	1.79	0.11	1.40	
OCT	2.77	0.15	1.99	0.32	0	0.06	2.80	0.13	2.05	
NOV	2.90	0.13	2.01	0.75	0	0.23	3.28	0.13	2.24	
DEC	2.46	1.46	1.77	0.39	0.24	0.33	2.84	1.71	2.10	
YEAR	2.90	0.01	1.38	1.13 (22.6*)	0.0	0.27 (5.4*)	3.28 (13.1*)	0.01	1.65 (6.6*)	

*Percentage of Technical Specification Limit.

AEC DISTRIBUTION FOR PART 50 DOCKET MATERIAL
(TEMPORARY FORM)

CONTROL NO: 2484

FILE:

FROM: Northern States Power Company Minneapolis, Minnesota L. O. Mayer		DATE OF DOC 3-20-74	DATE REC'D 3-25-74	LTR X	MEMO	RPT	OTHER
TO: J. F. O'Leary		ORIG	CC 40	OTHER	SENT AEC PDR XXX SENT LOCAL PDR XXX		
CLASS	UNCLASS XXX	PROP INFO	INPUT	NO CYS REC'D 40	DOCKET NO: 50-263		
DESCRIPTION: Ltr furn info re coolant to drywell leakage rate measurements...1-1-73 thru 12-31-73... trans the following...				ENCLOSURES: Attachment: Table 1-Summary of Coolant Leakage to Drywell 1973			
ACKNOWLEDGED				DO NOT REMOVE (40 cys att rec'd)			
PLANT NAME: MONTICELLO							

FOR ACTION/INFORMATION

3-25-74

GMC

BUTLER(L)	SCHWENCER(L)	✓ ZIEMANN(L)	REGAN(E)
W/ Copies	W/ Copies	W/ 6 Copies	W/ Copies
CLARK(L)	STOLZ(L)	DICKER(E)	
W/ Copies	W/ Copies	W/ Copies	W/ Copies
GOLLER(L)	VASSALLO(L)	KNIGHTON(E)	
W/ Copies	W/ Copies	W/ Copies	W/ Copies
KNIEL(L)	SCHEMEL(L)	YOUNGBLOOD(E)	
W/ Copies	W/ Copies	W/ Copies	W/ Copies

INTERNAL DISTRIBUTION

✓ REG FILE	TECH REVIEW	DENTON	LIC ASST	A/T IND
✓ AEC PDR	HENDRIE	GRIMES		BRAITMAN
OGC, ROOM P-506A	SCHROEDER	GAMMILL	✓ DIGGS (L)	SALTZMAN
✓ MUNTZING/STAFF	MACCARY	✓ KASTNER	GEARIN (L)	B. HURT
CASE	KNIGHT	BALLARD	GOULBOURNE (L)	PLANE
GIAMBUSSO	PAWLICKI	SPANGLER	LEE (L)	MCDONALD
BOYD	SHAO		MAIGRET (L)	DUBE w/Input
MOORE (L)(BWR)	✓ STELLO	ENVIRO	SERVICE (L)	INFO
DEYOUNG(L)(PWR)	HOUSTON	MULLER	SHEPPARD (E)	C. MILES
SKOVHOLT (L)	NOVAK	DICKER	SMITH (L)	B. KING
P. COLLINS	ROSS	KNIGHTON	TEETS (L)	
DENISE	IPPOLITO	YOUNGBLOOD	WADE (E)	
✓ PEG OPR	✓ TEDESCO	REGAN	WILLIAMS (E)	
FILE & REGION(3)	LONG	✓ PROJECT LDR	WILSON (L)	
✓ MORRIS	LAINAS	✓ BEVAN	S. REED (L)	
✓ STEELE	BENAROYA	HARLESS		
	VOLLMEK			

EXTERNAL DISTRIBUTION

✓ 1 - LOCAL PDR MINNEAPOLIS, MINN	(1)(2X10)-NATIONAL LAB'S	1-PDR-SAN/LA/NY
✓ 1 - DTIE(ABERNATHY)	1-ASLEP(E/W Bldg, Rm 529)	1-GERALD LELLOUCHE
✓ 1 - NSIC(BUCHANAN)	1-W. PENNINGTON, Rm E-201 GT	BROOKHAVEN NAT. LAB
1 - ASLB(YORE/SAYRE/	1-CONSULTANT'S	1-AGMED(Ruth Gussman)
WOODARD/"H" ST.	NEWMARK/BLUME/AGBABIAN	RM-B-127, GT.
✓ 16 - CYS ACRS W/ 40	1-GERALD ULRIKSON...ORNL	✓ 1-RD..MULLER..F-309 G
Sent to Lic Asst Diggs 3-25-74		