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Office of Nuclear Reactor Regulation, Director

SUBJECT: Responds to NRC 810720 litr requesting info on Unresolved Safety Issue A=44 re diesel generator operating experience. Completed questionaire encl.

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Northern States Power Company

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January 21, 1982

Director
Office of Nuclear Reactor Regulation
Attn: Document Control Desk
U S Nuclear Regulatory Commission
Washington, DC 20555

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



Questionnaire of Diesel Generator Operating Experience

Attached is our response to Mr T A Ippolito's letter dated July 20, 1981 concerning a request for information on Unresolved Safety Issue A-44. Our letter dated September 2, 1981 identified the reasons for the delay in submitting this response. Please call us if you have any questions concerning this response.

L O Mayer, PE

Manager of Nuclear Support Services

LOM/TMP/jh

Attachment

cc Director IE-III

NRC Resident Inspector

NRR Project Manager

G Charnoff

A001

Enclosure l	
Plant Name	Monticello
Dult No.	1

Pleast Generator Operations Data Calendar Year 19<u>76</u>

Reason for DG Operation, & acheduled Duration of Run	DG No.	Number of Starts	Humber of Fattures	Percent Loading of DG (KW)	Duration of Run Before Stop For Each DG Fallure	Identification of Failure (Refer to attached LERs or Table 3)
Tech. Spec Req'd Test					MOUNT DO INTINES	Angier to arrached bars of labre 3)
Monthly Surviellance (1 Hour)	11 12	12 12	1* 0	100		LER 2
(1 Start/Test)	12	12		1.00		the 2 start grater failed No. 1 start
						*No. 2 start system failed, No. 1 start system operable, therefore diesel was
	}- -		J			operable.
						operable.
M: M. 1 G	7.7	ļ ———		100	· · · · · · · · · · · · · · · · · · ·	
Misc. Tech. Spec.	11	1	0	100		
Required Tests (1 Hour)	_12_	3	0	100		
(1 Start/Test)						
					·	
						
		· · · · · · · · · · · · · · · · · · ·				
			lI			
DG Actual Demand Starts not for Testing						1
Demand Start	11		0	100		
(1 Hour)	12		0	100		
j					,	
ľ						
Miscellaneous Tests (Specify Type)					·	-
	11	4	0	100		
Test 0187, Start	12	2	0	100		
and Load Test· (1 Hour)						
(1 Start/Test)						
Verify Repairs					*****	
TOTTLY Nepalls						
]-						
-						1
	•			,		

•	
Enclosure	
Plant Name	Monticello
Pult No.	1

Diesel Generator Operations Data Calendar Year 19.77

Reason for DG Operation, & acheduled Duration of Run Tech. Spec Regid Test	DG No.	Number of Starts	Humber of Fatlures	Percent Loading of DG (KW)	Duration of Rou Defore Stop For Each DG Fallure	Identification of Fallure (Refer to attached LERg or Table 3)
Monthly Surveillance (1 Hour) (1 Start/Test)	11 12	12 12	0	100 100		
Misc. Tech. Spec. Required Tests (1 Hour) (1 Start/Test)	11 12	1 1	0 0	100		
DG Actual Demand Starts not for Testing Demand Start (0.60 Hour)	11 12	1	0	100		
Miscellaneous Tests (Specify Type) Test 0187, Start and Load Test (1 Hour) (1 Start/Test) Verify Repairs	11 12	2 1	0 0	100		

Diesel Generator Operations Data Calendar Year 19_78

Reason for DG Operation, & acheduled Durntion of Run Tech. Spec Req ¹ d Test	DG	Humber of Starta	Humber of Fallures	Percent Londing of DG (KW)	Duration of Run Before Stop For Each DG Fallure	Identification of Failure (Refer to attached LERs or Table 3)
Monthly Surveillance (1 Hour) (1 Start/Test)	11 12	12 12	0	100		
Misc. Tech. Spec. Required Tests (1 Hour) (1 Start/Hour)	11 12	2 4	0 0	100		
DG Actual Demand Starts not for Testing Demand Start	11 12		0 0	100 100		
Hiscellaneous Tests (Specify Type)						
Test 0187, Start and Load Test (1 Hour) (1 Start/Test) Verify Repairs	11 1,2	2	0	100		

Enclosure 1 - Page 1
Plant Name Monyicello
Unit No. 1

TABLE 1

Ofesel Generator Operations Data Calendar Year 1979

Reason for DG Operation, & scheduled	DG	Humber of	Number	Percent Londing of	Duration of Run Before Stop For	Identification of Failure
Duration of Run	No.	Starts	Fallures		Each DG Fallure	(Refer to attached LERs or Table 3)
Tech. Spec Regld Test			I HETHER			Theres to detached their of thore 3/
• •	ļ	İ				
	J	·				
Monthly Surveillance	11	12	0	100		
(1 Hour)	12	12	0	100		
(1 Start/Test)						
No Misc. Tech. Spec.	11					
Required Tests (1 Hour)	12					
(1 Start/Test)						
						,
1						
				·		
DG Actual Demand		·				
Starts not for				1		
Testing						
No Demand Starts	11					
-	_12_					
· .						
				· · · · · · · · · · · · · · · · · · ·		
Hiscellaneous Tests	l		1	İ		
(Specify Type)	ĺ		1			<u>-</u> *
i	11	1	0	100/110		
Test 0187, Start	12	1	0	100/110		
and Load Test (1 Start/Test)						
(22 hours at 100%)						
2 hours at 110%						
Verify Repairs	·					
		······································				
į.	1	1		1		

Enclosure 1 - Page 1 Plant Name <u>Monticello</u> Unit No. 1

Pleasi Generator Operations Data Calendar Year 19<u>80</u>

Reason for DG Operation, & acheduled	DG	Humber	Humber	Percent Loading of	Duration of Run Before Stop For	Identification of Failure
Duration of Run	tlo.	Storts	Fallure		Ench DG Fallure	(Refer to attached LERs or Table 3)
Tech. Spec Req d Test						And the second will of the second
			l			
Monthly Surveillance	11	12	0	100		
(1 Hour)	12	12	0	100		
(1 Start/Test)				100		
		·	·			
	ļ -	ļ	[
			·			·
Misc. Tech. Spec.	11	1	0	100		
Required Tests	12	2	0	100	1	
(1 Hour) (1 Start/Test)						
(1 Start/Test)			,			,
·			i			
DG Actual Demand						
Starts not for						
Testing						i 1
No Demand Starts	11					
Jemana Spares	_12					
Į.				·		
}						
1-						
Miscellaneous Tests	1	Į.		ĺ		
(Specify Type)		Į.		j		-
					· · · · · · · · · · · · · · · · · · ·	
Test 0187, Start	11	1	0	100		
and Load Test (1 Hour)	12	3		·		
(1 Start/Test)	14		0	100		
(I. Start/rest)	[
Verify Repairs						
-			_		· · · · · · · · · · · · · · · · · · ·	
-						
i i	ļ	- 1	- 1			

Diesel Generator Scheduled Downtime Record Calendar Year 19_76

					llours	of Down	rt Ime				
Neason for Downtime			tor shu		•		ctor n		tdown	:	Comments
	DG# 11	12	DCF	LDCL	DCA	11	DCI	DCI	DG#	DCA	
Scheduled Maintenance											
reventive Maintenance				:		192*	192*		٠.		Preventive maintenance of all components of air start system. *Only one set of start motors is inoperable at any time. Diesel is operable and available for emegency, manual start.
quipment Modification	0	0			e.	0.	0				
	:				: :						•
	·		·								
		, .							·		
					·						· · · · · · · · · · · · · · · · · · ·
Time DG is unavailable for emergency service because of required tests	0	0			!	9	9		1		Diesel is inoperable approximately ore half hour during test 0187, start and load test.
	.	.				l		,			

Diesel Generator Scheduled Downtime Record Calendar Year 1977

	<u> </u>				llours	of Dow	ntime			,	J
Reason for Downtine		Reactor shutdown						not shi			Comments
	11	12	DG	ncı	DCI	1077	12 12	1_pcr	DCI	DGD	
Scheduled Haintenance				-					-		,
ventive Maintenance	192*	192*				0	0				Preventive maintenance of all componer *Only one set of airstart motors is inoperable at any time. Diesel is open
			·								and available for emergency manual sta
ipment Modification	0	0		·	•	0	0				A modification was done to each diesel 7/77. Diesels were not inoperable durinstallation of modification
	1						·				
•		,									·
	i										T.
					:						•
										ĺ	
					•						
					-						
tme DG is unavailable or emergency service ecause of required ests	1	1				7	6		1		Diesel is inoperable approximately on half hour during test 0187, start and load test.

Diesel Generator Scheduled Downtime Record Calendar Year 1978

					lloura	of Dow	nt Ime	•					
Reason for Downtime	Reactor shutdown						actor i	or ahu	tdown		Comments		
	DGI	120	DCF	DCF	DCI	Dig	DCI 12	DCA	DCI	DCA			
Scheduled Haintenance							158						
reventive Maintenance	504	-504				0	0			;	Preventive maintenance of all components of air start system. Replacement of a cylinder head/liner seals and general inspection of diesel.		
quipment Modification	0	0				0	0						
				·			·						
						•							
			·										
		·											
											· · · · · · · · · · · · · · · · · · ·		
Time DG is unavailable for emergency service because of required tests	2.5	3				5.5	5		i	-	Diesel is inoperable approximately one half hour during test 0187, start and loa		

Dienel Generator Scheduled Downtime Record Calendar Year 1979

	l <u></u>				lloura	of Dow	nt Ime				
Reason for	Reactor shutdown					Re	nctor r	ot ahı	tdown	· · · · · · · · · · · · · · · · · · ·	Comments
Downt Ima	11	12	DC	DCI	DCF	DCA	12 12	DCI	DCI	DC#	
Scheduled Maintenance							1-1				
eventive Maintenance	0	0				192 *	192*		• -		Preventive maintenance of all component of air start system *Only one set of air start motors is inoperable at any time. Diesel is operable and available for emergency manual start.
uipment Modification	0	0				0	0				
							-				
			·				·				
											· *** :
fine DG is unavailable or emergency service ecause of required	0	0				6.5	6.5				Diesel is inoperable approximately one hour during test 0187, start and load te

Diesel Generator Scheduled Downtime Record Calendar Year $19\underline{80}$

					Loura	of Dow	nt Ime			:	
Reason for Downtine	Reactor shutdown					Reactor not shutdown					Comments
	11	12	DC#=	ם מעד	DCA		12 12	DGA		DC	Comments
Scheduled Maintenance		1-14-					12				
reventive Maintenance	160*	160*				48*	48*			ł	Preventive maintenance of all components of the air start system. *Only one set air start motors is inoperable at any tidesel is operable and available for emergency manual start.
quipment Modification	18	18									Alarm and Control circuitry modification
					·						
				:							•
_											
for emergency service because of required tests	2	1.5				5	5.6				Diesel is inoperable approximately one half hour during test 0187, start and load test.

Onaite Emergency Diesel Generator and Auxiliary Equipment Hodification Record

Auxiliary Equipment Hodification Record Unit No.								
Equipment or procedure modified	Date of Hod.	Reagon for Hodification and Degired Improvement	Description of Modification					
NVR Relay	7/77	Replace NVR relay that failed due to excessive heat caused by high voltage and current, and to prevent recurrence.	The failed NVR relay was replaced with a new type of relay. The system was redesigned to reduce voltage across the relay coils to prevent further failures. This was accomplished by installing a resistor in series with the coil of the relay.					
T-Beam	10/78	To provide a permanent lifting device above the diesel.	Normal pm of the diesel requires that the seals on each cylinder head/liner assembly be replaced on a 6-year interval. To enable this to be done, an I-Beam was installed above each bank of cylinders. This also involved re-arrangement of ventilation ducts in each diesel room to provide space.					
Alarm and Control Circuitry	3/80	To eliminate the problem of sharing of a single annunciator station by alarms that indicate both disabling and nondisabling conditions. To provide the control room with a positive indication of a disabling condition.	Rewiring was done to the alarm control circuit breaker, the start 1 and start 2 circuit breaker and the air compressor 1 and air compressor 2 switch alarm contacts. This is so that only diesel disabling conditions are alarmed in the control room at the respective "Diesel Generator Maintenance Lock-Out" alarms.					