

Rope Ferry Rd. (Route 156), Waterford, CT 06385

Millstone Nuclear Power Station Northeast Nuclear Energy Company P.O. Box 128 Waterford, CT 06385-0128 (203) 444-4300 Fax (203) 444-4277

The Northeast Utilities System

Donald B. Miller Jr., Senior Vice President - Millstone

Re: 10CFR50.73 June 2, 1994 MP-94-378

U.S. Nuclear Regulatory Commission Document Control Desk Washington, D.C. 20555

Reference: Facility Operating License No. NPF-49 Docket No. 50-423 Licensee Event Report 94-008-00

Gentlemen:

This letter forwards Licensee Event Report 94-008-00 required to be submitted within thirty (30) days pursuant to 10CFR50.73(a)(2)(i)(B).

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

Donald B. Miller, Jr. Senior Vice President - Millstone Station

DBM/RLM:dir

Attachment: LER 94-008-00

CC: T. T. Martin, Region I Administrator
P. D. Swetland, Senior Resident Inspector, Millstone Unit Nos. 1, 2 and 3
V. L. Rooney, NRC Project Manager, Millstone Unit No. 3

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NRC Form 366 (5-92) LICE		U.S. NU	EPORT	EGULAT (LEF	rory co	DMMIS	SION	ESTIMATED B COLLECTION BURDEN EST BRANCH M WASHINGTON PROJECT (3 WASHINGTON	APPROV URDEN PER REQUEST IMATE TO 1 NBE 7714) L DC 2055 150-0104), L DC 20503	ED BY EXP RESPO 60.0 MR THE INFI U.S 5-0001, OFFIC	OMB NO. 3 IRES: 5/31/ INSE TO COMP RS FORWARI ORMATION ANI NUCLEAR RE AND TO THE AND TO THE CE OF MAN	1150-01 95 LY WITH TH D COMMEN D RECORD GULATORY PAPERWC AGEMENT	04 IS INFOR ITS REG S MANAG COMM RK RED AND B	MATION ARDING BEMENT ISSION UCTION JUDGET	
FACILITY NAME (1)	FACILITY NAME (1)						OCKET NUMBER (2) PAGE (3)								
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OPERATING	THIS P	REPORT IS BEI	NG SUBN	ITTED	PURSU	ANT TO	THE	REQUIREM	ENTS O	F 10 C	FR §: (Chec	k one or	more)	(11)	
MODE (?)	20.4	02(b)		20 405	(C)			50.73(a)	(2) (IV)			73.71 (b)			
POWER	20.4	05(a)(1)(i)		50 36(0	(1)			50.73(a)	(2) (v)			73.71(c)			
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	4	05(a)(1)(iv)		50.73(8	u) (2) (N)			50.73(a)	(2) (viii) (B)		Form	Form 366A)			
	20.4	05(a)(1)(V)	ENSEE C	50.73(e	1 (2) (41)	THISL	ED (10)	50.73(a)	(2) (x)						
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William	n J. Ter	mple, Site Lic	ensing								(203)	437-59	904		
CO	MPLETE	ONE LINE FOR	EACH C	OMPON	ENT FA	ILURE	DESC	RIBED IN T	HIS REP	ORT (13)				
CAUSE SYSTEM CO	MPONENT	MANUFACTURE	R REPO	RTABLE VPRDS			CAUSE	SYSTEM	COMPON	ENT	MANUFAC	MANUFACTURER		TO NPRDS	
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		SUPPLEMENT	AL REPO	RTEXP	ECTED	(14)				EN		MONTH	DAY	YEAR	
YES (If ves. complete EXP	ECTED SUB	MISSION DATE		T	X NO	2				SUB	MISSION (TE (15)		1		
ABSTRACT (umit to 1 On May 5, 199 deficiency in si cabinets. The bypass test fea bypass to the in The inadequat had low safety undetectable for operable and of The root cause improvement viconfiguration, normal alignmine verify bypass r	400 spaces 4, with t urveillar relay ca ature. T hormal i e survei signific ailure m capable of the vas mad The po ent was elay car	the plant in M noe testing fo ards support he normally alignment in illance is repr ance. Imme odes. Howe of performin condition wa de during pla ssibility of a not conside rd contact clo	5 single-spa Aode 1 a or the by the surv closed r the char orted as diate evi- over, test over, test over, test ag all cre s a prog ant consi normally ered. To osure.	a conicaluatio ing veri dited s gram fa truction close preve	intentines) 6 powe eature the testin ard con- inveilla dition p ns det rified th safety f illure w n, emp d relay nt recu	(re) er, Inst of Lea ng of I ntacts nces a prohib ermini- hat all function which r chasis / conta	rumer Id/Lag ead/la were and le ited b ed tha circuit ons. esulte was p act fail e the s	ntation & g (NLL) re ag compe- not verifie ad/lag su by the Tec at some c ts with th ed in a pro- placed on lure wher surveillar	Control lay card ensated ed to be irveillan chnical S ircuits v e lead/l ocedure safely n return nce proc	Is per ds in 1 I char e clos ces. Speci vould ag by e defii placir ing th cedur	sonnel ide Westingho nels by p ed when r fications. be susce pass feati ciency. W ng the cha he NLL byp es will be	entified buse 73 roviding eturnin The co ptible to ure wer /hen a c innels in bass to modifie	a 00 g a g the ndition e design nto a t the id to	n est	

U.S. NUCLEAR REGULATORY COMMISSION (5-92) LICENSEE EVENT REPORT (LER) TEXT CONTINUATION			APPROVED BY OMB NO. 3150-0104 EXPIRES: 5/31/95 ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST. 50:0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNSE 77:4), U.S. NUCLEAR REGULATORY COMMISSION WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503								
FACILITY	Y NAME (1)	DOCKET NUMBER (2)	A		LER NUMBER (6)	1	PAGE				
	Millstone Nuclear Power Station Unit 3	05000423		YEAR 94	- 008 -		02	OF	06		
TEXT	(If more space is required, use additional copies of NRC Form 366A) (17)	-		h		here and the set					
1.	Description of Event										
	On May 5, 1994, with the plant in Mode 1 deficiency in surveillance testing for the to 7300 cabinets. The relay cards support providing a bypass test feature. The nor when returning the bypass to the normal During plant construction, I&C personne Controls System test method for lead/lag provides a bypass of the lead/lag (NLL) of the NLL card (see attached Figure 1). The by allowing the I&C technicians to bypass testing. The NRC8 cards are enabled on possibility of inadvertently bypassing an Forty NLL cards have bypass capability. trips provide indication of any abnormal the 4 Low Pressurizer Pressure Reactor relay card contacts. Setpoint indicators Lead/Lag Compensated T – average to C monitor the status of the relay card conta must be placed across the contacts to we There are four utilized contacts on each NLL card and light the associated bistab used to provide a test channel for testing with the Solid State Protection System (S normal operation. Since they employ difference)	at 100% power, bypass feature of the surveillance te mally closed relay alignment in the recommended a compensated ch cards, using a rela e design change is the NLL cards fi ly when the instru- NLL card in an op Of these, twenty channel condition Trip channels; but provide indication ver Temperature acts. To verify con erify continuity afti- relay card: two (n- le when the switc of the NLL cards. SSPS) input chan- ferent sets of aux	Instrum Lead/Li esting o y card c channe i chang nanels ay (Wes improve or dyna ument lo berable have de they do nof any Delta T ntact co er the c ormally h is in te The nor hels to p illiary co	entationag (NL ag (NL f lead) contact l surver e to the chingho ed the mic te cop te instrui- etectal e 12 L conot co abnor chanren trinuit hanne open) ast. Tri mally provid intacts	on & Controls L) relay cards lag compens ts were not ve eillances and e Westinghous buse NRC8 ca surveillance sting to allow st logic is me ment loop. ole failure mo ow Steam Pro- tirectly monitor mal channel hels; but they y of the relay l is returned to contacts are wo (normally closed contacts e an actuation 5, 20 of the 40	personn s in Westi ated char erified to t lead/lag s use 7300 e approve ard) on bo testing of compara t. This pr des. Bist essure char condition do not di cards, a o an oper used to l closed) c cts are us n signal w	el ident nghous nels by be close surveilla Process ed desi the circ the circ tor trip events able se annels tus of th rectly voltmet rable st ontacts ed in lin /hile in s with N	ified se y ed ance: s and gn s of cuits the the e 4 er atus. the are ne ULL	a s. t		
	The investigation of the condition determ were not in full compliance with the requ	lined that the char irements of the Te	nnel su echnical	rveillar Spec	nce procedur ifications. Th	es for six e six func	function tions w	ns ere:			
	Low Steam Pressure										
	Steam Pressure – High Negative Rate										
	Lead/Lag Compensated Delta-T to	Bistables									
	High T-average Rate to Over Powe	er Delta – T									
	Lead/Lag Compensated T-average	e to Over Tempera	ature De	elta – T							
	Low Pressurizer Pressure Reactor T	rip									
	Technical Specification 4.3.2.1 requires t least once every 18 months. The channi closed relay contacts. These relay conta Westinghouse 7300 Process Protection	hat overlap testin el calibration proc acts are used to re sets, which provid	g be pe edures estore ti le input	orforme did ne he byp to the	ed as part of a ot verify closu bassed NLL c SSPS (see a	a channel ire of the ards in th ittached F	calibra normall e Figure 1	ition ly).	at		

(5-92) LICENSEE EVENT REPORT (LER) TEXT CONTINUATION				EXPIRES: 5/31/95 ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMAT COLLECTION REQUEST 50.0 HRS. FORWARD COMMENTS REGARD BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMI BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSI WASHINGTON DC 20555-0001, AND TO THE PAPERWORK REDUCT PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDG WASHINGTON DC 20503								
FACILIT	Y NAME (1)	DOCKET NUMBER (2)	L	LER NUMBER (6)		PAG	9E (3)					
	Millatone Nuclear Douger Ctation		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER							
	Unit 3	05000423	94	- 008 -	00	03	OF	06				
TEXT	(If more space is required, use additional copies of NRC Form 366A) (17)											
Ĥ.	Cause of Event											
	The root cause of the condition was a pr Westinghouse approved design was ma placing a lead/lag compensated circuit i contact failure when returning the NLL b	ogram failure which de during plant of nto test configurat ypass to the norm	ch resulted in onstruction, e tion. The pos al alignment	a procedure mphasis was sibility of a ne was not cons	deficienc placed of prmally clo idered.	y. Wh h safe bsed M	en th ly NRC8	θ				
HL.	Analysis of Event											
	The Inadequate surveillance is a condition possibility of a normally closed relay car alignment, was not considered in the pla surveillance. It is reported under 10CFR Specifications. Plant Technical Specifica least once every 18 months. Overlap ter with the circuits that have NLL card bypa	on that has historic d contact failure w ant design for perf (50.73(a)(2)(i)(B) a ation 4.3.2.1 requir sting was not adec ass capability.	cally existed s when returning orming chann is a condition res that a cha quate to test t	since initial pl g the NLL byp prohibited b nnel calibrati the relay card	ant startup bass to the ce and NL y the plan on be pen contacts	b. The norm L t's Tec forme assoc	hal hnica d at iated	al				
	The protection channels monitor safety in SSPS 24-volt DC input relays once the reached, a signal is processed by the SS The comparator trip switch provides a m protection channel may be tested without	related functions a setpoint is reache SPS to generate a leans of isolating t ut generating a trip	nd provide a d. If redunda ny required e the actuation o signal.	signal to ene ant channels i ngineered sa signal to SSF	rgize their ndicate a fety featur 2S in orde	respe setpo re actu r that f	ective int is lation the					
	The design change improved the surveil bypass the NLL cards for dynamic testin only when the instrument loop test logic NLL card in an operable instrument loop contacts on the NRC8 card. If a relay co the NLL cards operable.	lance testing of the og to allow compar- is met. This previous Additionally, the bil were to open, the	e circuits by rator trip testi ents the poss bypass is co ne channel wo	allowing the I ng. The NRC ibility of inad- onducted thro ould remain in	&C techni 8 cards a vertently b ugh norm n a safe co	cians re ena ypass ally op onditic	to bled sing a ben on wit	in th				
	Although the relay card contacts were no Department, testing in response to the co were operable. Additionally, response to each channel, verifies continuity of these there were two cases of contact failures circuits which had the NLL bypass desig addition, a search of the Nuclear Plant R relay card contact failure at another plan since 1980. Based on these factors, the channels as part the 18-month channel	ot tested on the 18 condition, verified t me testing, which e contacts. A revie in NRC8 cards, in m, and the failures eliability Data Sys at out of an industr failure to verify co I calibration did no	8 – month cha that the relay is performed wo f plant his 1990 and 19 were detect tem (NPRDS y population ontinuity of th ot result in an	annel calibrati card contacts at least once storical inform 92. These fa able at the tim showed that of approximate e relay card of y significant s	on freque s for each every 72 nation iden lures occi ne they occ t there wa tely 1225 ontacts in afety con	ncy, th chanr month htified urred curred s one relay the seque	ne I&0 nel that n d. In othei cards					
IV.	Corrective Action											
	As initial corrective action, all suspected performed which verified that all channe channel in an NRC8 card in the Steam G in Mode 1) exhibited minor degradation satisfactorily.	relay cards were is were operable a denerator #1 Low in contact resistar	tested, and a and there was Pressure Ste nce. The affe	n operability s no loss of s am Isolation cted card wa	evaluatior afety funct (which is r s replaced	i was tion. (not red t and t	Dne quirec teste	d				

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED BY OMB NO. 3150-0104 EXPIRES: 5/31/95

EXPIRES: 5/31/95 EXPIRES: 5/31/95 ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST 50.0 MRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MINBB 7714). U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3186-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503

FACEJTY NAME (1)	DOCKET NUMBER (2)		LER NUMBER (6)		PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Millstone Nuclear Power Station Unit 3	05000423	94	- 008 -	00	04 OF 06

TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

To prevent recurrence the surveillance procedures will be modified to verify bypass relay card contact closure. The quarterly analog channel operational test procedures and the 18-month channel calibration procedures will be modified to require continuity verification of the relay card contacts for the involved protection channels.

A review of other protection channel instrument loops did not identify any additional deficiencies. All manually operated circuit board switches within the Westinghouse 7300 protection cabinets were reviewed. This included all test logic, master test, and NLL bypass relay switches. A review of the work history on 7300 protection cabinets determined that there were no other modifications similar to the NLL bypass relay changes.

V. Additional Information

NRC For (5-92)

Previous LERs related to circuits that were not adequately tested due to inadequate surveillance procedures are listed below. Prior to LER 93-003, the deficiencies were addressed as individual items. A task force performed an integrated channel design review for resolution of LER 93-003. The integrated review identified the deficiencies reported in LER 93-003, LER 93-005, LER 93-010, and LER 93-017. The integrated review considered the interfaces between major functional systems and components, but did not include detailed evaluations of the specific relay card contacts used in the unique lead/ lag bypass feature in the 7300 cabinets.

LER 93-017, "Inadequate Response Time Testing."

LER 93-010, "Reactor Trip Due to Turbine Trip Interlock Not Adequately Tested."

LER 93-005, "Inadequate Overlap Testing."

LER 93-003, "Inadequate Testing of Slave Relays."

LER 93-001, "Failure to Verify Testing of NIS Inputs Into Westinghouse 7300 Process Control System Due to Procedural Deficiency."

- LER 92-031, "Failure to Test High Pressure Output Relay for Power Operated Relief Valves Due to Procedural Deficiency."
- LER 91-025. "Failure to Verify De-energization of Solid State Protection Input Relays for Cold Overpressure Protection Due to Procedural Deficiency."
- LER 91-022, "Failure to Adequately Perform Overlap Testing of the Containment Depressurization Actuation Loops Due to Management Deficiency."
- LEH 90-007, "Inadequate Load Shed Verification."
- LER 87-042, "Missed Intermediate Range/Power Range Surveillance Due to Procedural Inadequacy." Part of the corrective action was a comprehensive review of all Technical Specification surveillance procedures. This review completed in 1988, would not have identified the event discussed in this LER because the review scope did not target a channel design review.

U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

APPROVED BY OMB NO. 3150-0104 EXPIRES: 5/31/95

EXPIRES: 5/3/35 EXTINATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 77:4). U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (\$150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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Millstone Nuclear Power Station Unit 3	05000423	94	-	008	_	00	05	OF	06	

TEXT (It more space is required, use additional i opies of NRC Form 366A) (17)

A Nuclear Plant Reliability Data System (NPRDS) query identified that there was one other relay card contact failure at another plant, out of an industry population of approximately 1225 relay cards since 1980. It appears from a review of the NPRDS data and from discussions with similar vintage plants that the NLL bypass design improvement is unique to Millstone 3. Westinghouse has been notified of this condition.

EIIS Codes

NRC Form 366A (5-92)

> Systems Solid State Protection System – JC Engineered Safety Features Actuation System – JE

Components Auxiliary Actuation Contact Logic Card

The relay contact card is a Westinghouse Electric Corporation NRC8 style card, (reference no. 2837A87GO8).



NOTE: Closed Relay Contacts Indicate Lead/Lag Card In-Service

