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Palisades Nuclear Plant: 27780 Blue Star Memorial Highway, Covert, MI 49043

February 10, 1994

G B Slade
General Manager

Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

DOCKET 50-255 - LICENSE DPR-20 - PALISADES PLANT - LICENSEE EVENT REPORT
93-013-01 - LOSS OF EMERGENCY ONSITE AC POWER DUE TO BOTH EMERGENCY DIESEL
GENERATORS BEING SIMULTANEOUSLY INOPERABLE - SUPPLEMENTAL REPORT

Licensee Event Report (LER) 93-013-01 is attached. This supplemental report adds information gained as the result of our review of events which occurred during the past two years and had the potential to be similar to the event reported in LER 93-013. The review revealed that one other event related to simultaneous diesel generator inoperability similar to the event reported in LER 93-013 occurred in 1992 and was not reported to the NRC in accordance with 10CFR50.73. As discussed with the Palisades Senior Resident Inspector, a separate LER will not be generated for this 1992 event since it is included in this supplemental LER.

This event was reported in accordance with 10CFR50.73(a)(2)(i)(B) as a condition prohibited by plant technical specifications in that both emergency diesel generators were simultaneously inoperable.


Gerald B Slade
General Manager

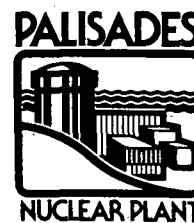
CC Administrator, Region III, USNRC
NRC Resident Inspector - Palisades

Attachment

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LICENSEE EVENT REPORT (LER)

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TITLE (4) **LOSS OF EMERGENCY ONSITE AC POWER DUE TO BOTH EMERGENCY DIESEL GENERATORS BEING SIMULTANEOUSLY INOPERABLE - SUPPLEMENTAL REPORT**

EVENT DATE (6)			LER NUMBER (8)			REPORT DATE (8)			OTHER FACILITIES INVOLVED (8)		
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES		
04	27	93	93	013	01	02	10	94	N/A		
									0 5 0 0 0		
									N/A		
									0 5 0 0 0		

OPERATING MODE (9) N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 3: (Check one or more of the following) (11)									
POWER LEVEL (10) 1 0 0	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)						
	<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.38(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)						
	<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.38(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> OTHER (Specify in Abstract below and in Text, NRC Form 388A)						
	<input type="checkbox"/> 20.405(a)(1)(iii)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)							
	<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)							
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)								

LICENSEE CONTACT FOR THIS LER (12)		TELEPHONE NUMBER	
NAME Cris T. Hillman, Staff Licensing Engineer		AREA CODE 6 1 6	7 6 4 - 8 9 1 3

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)									
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)			EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input type="checkbox"/> YES <i>If yes, complete EXPECTED SUBMISSION DATE</i>			<input checked="" type="checkbox"/> NO			

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (18)

On April 27, 1993, at 0428 hours, with the plant operating at 100% power, diesel generator (DG) 1-1 was test started and loaded to approximately 500KW prior to removing DG 1-2 from service to perform preventive maintenance. After approximately 5 minutes of operation, the load on DG 1-1 dropped to zero and DG 1-1 was declared inoperable. In accordance with our technical specifications, DG 1-2 was started and loaded to verify operability; however, by paralleling DG 1-2 to the electrical distribution grid to accept load, DG 1-2 was also rendered inoperable for a period of five minutes. Therefore, both DGs were simultaneously inoperable, Technical Specification 3.0.3 (plant shutdown within 1 hour) was entered, and an Unusual Event was declared in accordance with our emergency operating procedures.

The cause of this event was paralleling DG 1-2 to the electrical distribution grid and rendering it inoperable while DG 1-1 was also inoperable. Paralleling DG 1-2 was determined to be necessary to verify there was no common mode failure and to ensure DG 1-2 operability. A similar event which occurred in 1992 and was not reported to the NRC is discussed in the body of this LER.

Corrective action for this includes submitting a revision to the electrical section of our technical specifications which will emulate the NUREG 1432, "Standard Technical Specifications for CE Plants," electrical section.

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EVENT DESCRIPTION

On April 27, 1993, at 0428 hours, with the plant operating at 100% power, diesel generator [EK] (DG) 1-1 was test started prior to removing DG 1-2 from service to perform preventive maintenance as required by Palisades Technical Specification 3.7.2i. Diesel generator 1-1 was successfully started and loaded to approximately 500KW. After approximately 5 minutes of operation, the control room operator observed that the load on DG 1-1 was dropping from 500KW. The control room operator attempted to restore load but could not. The control room DG "raise limit" alarm actuated with zero KW on DG 1-1. The control room operator then opened the DG 1-1 output breaker.

In accordance with Technical Specification 3.7.2i, with DG 1-1 inoperable, DG 1-2 must be started to verify operability and then shutdown, with the controls left in the automatic mode. Therefore, DG 1-2 was started as required. In addition, DG 1-2 was paralleled to the electrical distribution grid to verify the DG would accept and maintain an electrical load to assure that no common mode failure existed for the two diesel generators. This was considered necessary to assure operability as required by Technical Specification 3.7.2i.

By paralleling DG 1-2 to the grid, DG 1-2 was rendered inoperable in accordance with our Standard Operating Procedure (SOP) 22, "Emergency Diesel Generators." When a DG is paralleled to the grid, the DG is incapable of performing its intended safety function. Therefore, while DG 1-2 was in the parallel mode, both DGs were simultaneously inoperable. There is no action statement in the Palisades Technical Specifications for both diesel generators being simultaneously inoperable, therefore, the plant implemented the requirement of Technical Specification 3.0.3, and an Unusual Event (UE) was declared in accordance with Emergency Implementing Procedure (EI) 1, "Activation of the Site Emergency Plan/Emergency Classification." The UE was declared at 0428 hours on April 27, 1993 because of the loss of on-site emergency AC power. The UE was terminated five minutes later at 0433 when DG 1-2 was declared operable after it was no longer paralleled to the electrical distribution grid. The plant also exited the Technical Specification 3.0.3 action requirement.

This event is reportable in accordance with 10CFR50.73(a)(2)(i)(B) as a condition prohibited by plant technical specifications in that both emergency diesel generators were simultaneously inoperable.

CAUSE OF THE EVENT

The cause of this event was paralleling DG 1-2 to the electrical distribution grid and rendering it inoperable while DG 1-1 was also inoperable. Paralleling DG 1-2 was determined to be necessary to verify there was no common mode failure and to ensure DG 1-2 operability.

ANALYSIS OF THE EVENT

Palisades Standard Operating Procedure (SOP) 22, "Emergency Diesel Generators," provides direction to the operators concerning diesel generator test starting and electrical loading. In that procedure, the operators are given options regarding the starting and loading of a diesel generator depending upon whether or not one of the DGs is inoperable. DG 1-1 had been successfully started to verify operability and was being electrically loaded when it failed. In accordance with the technical specifications and

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the procedure, the opposite DG (DG 1-2) was started to verify operability. Since DG 1-1 failed when it was accepting electrical load, the operators followed SOP 22, Step 4.1.lc, which requires that DG 1-2 be test started, paralleled to the electrical distribution grid, electrically loaded, and declared inoperable. In accordance with SOP 22, Step 4.1.lc.2, DG 1-2 was declared inoperable because it was paralleled to the grid. Therefore, with DG 1-1 inoperable because it failed to maintain electrical load and DG 1-2 inoperable because it was paralleled to the electrical distribution grid, both diesel generators were simultaneously inoperable.

For this event, the operators could not confirm whether the inability of DG 1-1 to maintain load was a diesel generator problem or an electrical distribution system problem, therefore, simply starting DG 1-2 would not have verified its operability. In this instance, starting and loading of DG 1-2 was procedurally required to verify that a common mode failure did not exist.

Subsequent investigation as to the cause of the DG 1-1 failure determined that the fuel oil booster pump had experienced excessive wear. The wear on the fuel oil booster pump caused reduced pumping capacity and air intrusion into the pump casing, resulting in starving DG 1-1 as it became loaded.

NUREG 1432, "Standard Technical Specifications for CE Plants," Section 3.8.1 discusses diesel generator LCOs. In the "Required Actions" section, with one DG inoperable, the plant would have had 24 hours to determine whether the second DG was inoperable because of a common mode failure. Therefore, had Palisades implemented standard technical specifications, we would have had 24 hours to perform the common mode failure testing, would not have entered the Technical Specification 3.0.3 action statement, and would not have a reportable occurrence. In addition, the Standard Technical Specifications allow for the (simultaneous) inoperability of two DGs, with a required action to restore one DG to operable status within 2 hours. Again, had we implemented standard technical specifications, we would have had 2 hours to restore the second DG to operable status, would not have entered the Technical Specification 3.0.3 action statement, and would not have a reportable occurrence.

Safety Significance

The safety significance of this event is small because the operators were aware that DG 1-2 would be rendered inoperable by their actions, in accordance with SOP 22. The plant was in a stable, operating condition at the time of the event, and there were no unplanned activities in progress. DG 1-2 had been verified operable with no apparent common mode failure, therefore, DG 1-2 could have been restored to an "operable" status in accordance with SOP 22.

CORRECTIVE ACTION

A corrective action for this event is to submit a revision to the electrical section of the Palisades Technical Specifications. One of the changes that will be included is a revision to the action statement(s) regarding diesel generator operability which emulates NUREG 1432, "Standard Technical Specifications for CE Plants," Section 3.8.1.

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The cover letter to LER 93013 stated that we would review other potential Licensee Event Reports over the last two years to determine if an NRC required report had been missed. Our review revealed that one other event related to simultaneous diesel generator inoperability occurred on May 6, 1992 and was not reported as required by 10CFR50.73. The event is summarized below:

On May 6, 1992, during the performance of TSSP MO-7A-1, "Emergency Diesel Generator," DG 1-1 was declared inoperable because of voltage control problems. In accordance with SOP 22, DG 1-2 was test started, loaded onto its respective bus, and was also declared inoperable. Therefore, both DGs were simultaneously inoperable and Technical Specification 3.0.3 was entered.

The May 6, 1992 event was not reported to the NRC because an incorrect determination was made that this event was a "planned evolution" and was, therefore, not reportable. The determination was apparently made without further review of 10CFR50.72 which clearly indicates that "pre-planned sequences" are applicable to ESF actuations. Although the starting of the EDG is considered an ESF actuation, rendering it inoperable and having a condition with both diesel generators simultaneously inoperable is not within the scope of that reporting condition.

Guidance in Draft NUREG-1022, Rev. 1, pertaining to 10CFR50.72(b)(1)(ii) (which, although it is draft guidance, is considered applicable for this event) indicates that entry into Technical Specification 3.0.3, or its equivalent, is a condition that is considered outside the bounds of the plant design basis and, therefore, a non-emergency one-hour report is required. A 30-day report is also required in accordance with 10CFR50.73(a)(2)(ii).

An additional corrective action resulting from the discovery of this second unreported event is that, beginning January 1, 1994, the plant Licensing group will review all corrective action documents for 10CFR50.72 and 10CFR50.73 reportability.

ADDITIONAL INFORMATION

Licensee Event Report (LER) 93001 reported a similar occurrence of both diesel generators being simultaneous inoperable. The cause of the event reported in LER 93001 was personnel error and is not related to the event reported herein.