Consumers Power
POWERING MICHIGAN'S PROGRESS
Palisades Nuclear Plant: 27780 Blue Star Memorial Highway, Covert, MI 49043

G B Slade
General Manager

December 10, 1990

Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

DOCKET 50-255 - LICENSE DPR-20 - PALISADES PLANT -
Licensee Event Report (LER) 90-020 Loss of The 1C Bus During Start Up Breaker Testing

Licensee Event Report (LER) 90-020 (Loss of the 1C Bus During Start Up Breaker Testing) is attached. This event is reportable to the NRC per 10CFR50.73(a)(2)(iv).

Gerald B Slade
General Manager

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

Attachment

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NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

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TITLE (4)
LOSS OF 1C BUS DURING STARTUP BREAKER TESTING

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
									N/A	0 5 0 0 0
1 1	1 0	9 0	9 0	- 0 2 0	- 0 0	1 2	1 0	9 0	N/A	0 5 0 0 0

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	0 0 0	20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
W.L. Roberts, 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
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

ABSTRACT

On November 10, 1990, at 0300 hours, the Plant was in cold shutdown and the core was totally defueled for the replacement of the steam generators. Following completion of preventative maintenance on the 2400 volt startup breaker (152-106) in Bus 1C, the breaker was racked into the "test" position and test operated per Administrative Procedure 4.02. Racking the startup breaker (152-106) in the "test" position initiated the transfer control circuitry causing the station safeguards power breaker (152-105) to open. Under voltage relays on Bus 1C sensed the loss of voltage and initiated start signals to the emergency diesel generator, and re-energized the Bus 1C. The initiation of start signals to the diesel generators is considered an actuation of an engineered safety feature.

The operators placed the 1C bus back on station safeguards power(152-105), and tested the startup breaker (152-106) in the full racked in position with satisfactory results.

This event is attributable to inadequate procedures, which failed to provide the system requirements for returning the startup breaker (152-106) to service. Corrective actions are underway to revise the appropriate procedures and train the operators to prevent recurrence.

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TEXT *(If more space is required, use additional NRC Form 366A's)* (17)

EVENT DESCRIPTION

On November 10, 1990, at 0300 hours, the Plant was in cold shutdown and the core was totally defueled for the replacement of the steam generators. Following completion of preventative maintenance on the 2400 volt startup breaker (152-106) [EB;BKR] in Bus 1C [EB;BU], the breaker was racked into the "test" position and test operated per Administrative Procedure 4.02, "Control of Equipment Status", paragraph 10.3.1, "Electrical Breaker Testing". When the breaker is in the test position it is not attached to the bus. Racking of the startup breaker (152-106) in the "test" position resulted in the initiation of a transfer signal. The transfer control circuitry caused the other feed to the Bus 1C (152-105 Station Safeguards Power Breaker) to open. Since the startup breaker (152-106) was in the "test" position, it did not allow the startup transformer 1-2 to supply Bus 1C. The under voltage relays on the 1C Bus sensed the loss of voltage, and initiated start signals to both diesel generators [JE], [EK;DG] and load shedding on Bus 1C. Upon receipt of the start signal, diesel generator 1-1 started and supplied Bus 1C. Diesel generator 1-2 was running prior to the de-energization of Bus 1C due to the testing in progress, therefore the start signal sent to diesel generator 1-2 was redundant.

The operators placed the 1C bus back on safeguards power, and tested the startup breaker (152-106) in the full racked in position with satisfactory results.

CAUSE OF THE EVENT

The root cause for the loss of power to Bus 1C which resulted in the unplanned start of the diesel generator 1-1 was that the procedures did not adequately describe the system requirements for returning the startup breaker (152-106) to service. Administrative procedure 4.02, "Control of Equipment Status", failed to caution against closing the 2400 volt incoming stored energy breaker (152-106) while racked in the "test" position. Standard Operating Procedure (SOP) 30, "Station Power", Attachment 1, "System Testing" states that testing of 4160 and 2400 volt incoming breakers may be done in the test position, but only when the plant is shutdown and the bus can be isolated. This requirement was not discovered when the requirements for the breaker testing were reviewed.

CORRECTIVE ACTION

Standard Operating Procedure (SOP) 30, "Station Power", will be reviewed and revised to clarify the testing requirements of the 4160/2400 volt incoming breakers.

Administrative Procedure 4.02, "Control of Equipment Status", will also be reviewed and revised to clarify requirements for testing 4160/2400 volt stored energy breakers and 4160/2400 volt solenoid operated breakers.

Permanent Maintenance Procedure SPS-E-4, "Maintenance For 4160/2400 Volt Switchgear" will be reviewed and revised to refer to SOP 30, "Station Power", for testing.

Schemes for incoming breakers on Buses 1A, 1B, 1C, 1D, 1E, 1F and 1G will be reviewed to verify whether operation of the breakers in the "test" position is desired for testing of breaker features.

Operator training will be completed pertaining to the manual transfer scheme on 4160/2400 volt stored energy breakers. This will include instructions concerning a breaker in the "test" position.

ANALYSIS OF EVENT

The Maintenance Procedure SPS-E-4, "Maintenance For 4160/2400 Volt Switchgear", requires test operation of the breakers to be done at the outside of the switchgear, followed by turning over the breaker to operations for return to service. The testing is done at a test hook-up at the end of the switchgear and not with the breaker in place in its cubicle. After SPS-E-4 testing was completed the breaker was turned over to operations who determined that in accordance with Administrative Procedure 4.02, "Control of Equipment Status", Section 10.3.1, "Electrical breaker testing", the breaker shall be tested if the plant conditions permit. Standard Operating Procedure (SOP) 30, "Station Power", Attachment 1, "System Testing", states that testing of 4160 and 2400 volt incoming breakers may be done in the test position only when the plant is shutdown and the bus can be isolated. This requirement in SOP 30 was not discovered when the requirements for breaker testing were reviewed. However, neither procedure identified that a transfer signal would be generated when the breaker was test operated in the "Test" position. The proposed procedure revisions will assure that this event is not repeated.

All systems responded as designed including the automatic start of diesel generator 1-1 and sequenced loading of Bus 1C loads. As a result, this event did not adversely impact the operational safety of the plant or safety of the plant personnel or the general public.

This event is being reported under 10CFR50.73(a)(2)(iv) as an event that resulted in an automatic actuation of an Engineered Safety Feature (ESF).

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TEXT *(If more space is required, use additional NRC Form 366A's)* (17)

ADDITIONAL INFORMATION

A somewhat similar breaker event occurred and was reported in LER 86-006, "Inadvertent De-energizing at 2400 Volt Bus and Autostart of Diesel Generator".