



Nuclear Management Company, LLC
Point Beach Nuclear Plant
6610 Nuclear Road
Two Rivers, WI 54241

NPL 2000-0526

December 5, 2000

Document Control Desk
U.S. NUCLEAR REGULATORY COMMISSION
Mail Station P1-137
Washington, D.C. 20555

10 CFR 50.73

Ladies/Gentlemen:


DOCKET NO. 50-301
LICENSEE EVENT REPORT 301/2000-004-00
UNPLANNED ENGINEERED SAFETY FEATURE ACTUATION
POINT BEACH NUCLEAR PLANT UNIT 1

Enclosed is Licensee Event Report 301/2000-004-00 for the Point Beach Nuclear Plant Unit 2. This report is provided in accordance with 10 CFR 50.73(a)(2)(iv) as, "any event or condition that resulted in a manual or automatic actuation of any Engineered Safety Feature (ESF)." This report documents the inadvertent automatic start of a standby emergency diesel generator while restoring power to a safeguards bus following maintenance on that bus. The plant equipment and systems required to operate following this actuation worked as designed. The emergency diesel generator was secured in accordance with plant procedures and remained available to the Unit 1 safeguard busses at all times.

New corrective action commitments are identified with italics in this report.

Please contact us if you require additional information concerning this event.

Sincerely,


A. J. Cayia
Plant Manager

Enclosure

CWK/jlk

cc: NRC Resident Inspector
NRC Regional Administrator
NRC Project Manager
PSCW
INPO Support Services



LICENSEE EVENT REPORT (LER)(See reverse for required number of
digits/characters for each block)ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH
THIS INFORMATION COLLECTION REQUEST: 50.0 HRS.
REPORTED LESSONS LEARNED ARE INCORPORATED INTO
THE LICENSING PROCESS AND FED BACK TO INDUSTRY.
FORWARD COMMENTS REGARDING BURDEN ESTIMATE
TO THE INFORMATION AND RECORDS MANAGEMENT
BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY
COMMISSION, WASHINGTON, DC 20555-0001, AND TO
THE PAPERWORK REDUCTION PROJECT**FACILITY NAME (1)**

Point Beach Nuclear Plant, Unit 2

DOCKET NUMBER (2)

05000301

PAGE (3)

1 of 4

TITLE (4)

Unplanned Emergency Safety Features Actuation During Safeguards Bus Restoration

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 NAME	DOCKET NUMBER
11	05	2000	2000	004	00	12	05	2000		05000
			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)							
OPERATING MODE (9)			20.2201(b)			20.2203(a)(2)(v)			50.73(a)(2)(i)	50.73(a)(2)(viii)
POWER LEVEL (10)			20.2203(a)(1)			20.2203(a)(3)(i)			50.73(a)(2)(ii)	50.73(a)(2)(x)
			20.2203(a)(2)(i)			20.2203(a)(3)(ii)			50.73(a)(2)(iii)	73.71
			20.2203(a)(2)(ii)			20.2203(a)(4)			X 50.73(a)(2)(iv)	OTHER
			20.2203(a)(2)(iii)			50.36(c)(1)			50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A
			20.2203(a)(2)(iv)			50.36(c)(2)			50.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER (12)**NAME**

Charles Wm. Krause, Senior Regulatory Compliance Engineer

TELEPHONE NUMBER (Include Area Code)
(920) 755-6809**COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)**

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On November 5, 2000, an inadvertent Engineered Safety Features (ESF) actuation resulted in the start of the G03 Emergency Diesel Generator (EDG). This actuation occurred while restoring power to 4.16 KV busses 2A04 and 2A06 following a bus maintenance outage. The signal was generated when the fuses for the under voltage relays were installed. With the 2A06 bus still deenergized, the under voltage relays energized and generated a fast start signal to the G03 EDG. G03 started but did not sequence on to, and energize, the 2A06 bus since its output breaker to that bus was in pull out in accordance with the bus maintenance tag out. At the time of this event Point Beach Nuclear Plant Unit 2 was shutdown and defueled for a scheduled refueling and maintenance outage. The EDG was secured in accordance with plant procedures. An evaluation has been initiated to establish the contributing factors and root cause for this event. Based on the plant conditions at the time and the proper functioning of equipment following the ESF actuation, the safety significance of this event was minimal.

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Point Beach Nuclear Plant, Unit 2	05000301	2000	- 004	- 00	2 OF 4

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

Event Description:

On November 5, 2000, at approximately 1407 CST, an inadvertent start of the G03 Emergency Diesel Generator (EDG) occurred while restoring power to 4.16 KV busses 2A04 and 2A06. The EDGs are considered to be Engineered Safety Features (ESF) at the Point Beach Nuclear Plant (PBNP). At the time of this event PBNP Unit 2 was shutdown and defueled for a scheduled refueling and maintenance outage. PBNP Unit 1, which was not directly involved in this event, was operating at full power.

Bus 2A04, the Unit 2 Train B 4160 Volt bus and normal power supply to the 2A06 Unit 2 Train "B" 4160 Volt safeguards bus, had been deenergized on November 3, 2000, to facilitate routine bus maintenance and cleaning. Bus 2A06 was also deenergized. On the day of this event, operations personnel were in the process of partial removal of the danger tags for this bus outage to facilitate power restoration to the busses and to permit post maintenance testing of the normal supply breaker to 2A04 and the tie breaker from 2A04 to 2A06. The overall bus restoration was being controlled in accordance with procedure 2-SOP-4KV-A04; however, the exact sequence of tag removal to accommodate the breaker testing was not specified in the procedure. At approximately 1200 hours the Senior Reactor Operator (SRO) qualified operator (Operator 1) in overall charge of the bus outage asked a second SRO qualified operator (Operator 2) to look over the tag-out for bus recovery. At that time the operators discussed the need to replace fuses associated with the 2A04 bus because they had been cleared as removed. It was Operator 1's understanding that the 2A04 fuses would be replaced later in the restoration process as specified in the SOP. Subsequent to this discussion, Operator 2 was assigned to oversee the removal of the tag series. While clearing tags at the request of maintenance personnel to permit testing of the 2A04 to 2A06 supply breaker, Operator 2 thinking that the 2A06 bus was energized, changed the tag series to replace the fuses for the UV relay circuit. Upon the installation of the fuses, the UV condition on the deenergized 2A06 bus was detected, the UV relay energized and an ESF actuation signal was generated for fast start of the G03 and G04 EDGs. This signal caused the G03 EDG to start (CR 00-3546). The G03 EDG did not sequence on to the 2A06 bus because its output breaker was in pull out in accordance with the bus outage procedure. The G04 EDG was out of service and did not start at this time because its control and support power had been disabled as part of the 2A06 outage. Through out this sequence, the G03 EDG remained available to the Unit 1 Train "B" safeguards bus. There were no abnormal conditions or indications observed during this event.

The G03 EDG was secured in accordance with procedure OP-11B at 1822. A four hour ENS notification to the NRC was completed at 1530 CST (Event # 37490) in accordance with 10 CFR 50.72. The 2A04 bus was energized at 0045 CST on November 6, 2000, and the 2A06 energized from 2A04 at 0120 CST on that date.

Cause:

The proximate cause of this event was human error in not recognizing that installation of the fuses would generate the under voltage EDG start signal. Contributing factors included inadequate guidance on removal of tags and replacement of fuses, less than adequate turn over of information concerning the bus outage status, and the perception that the bus recovery was time critical for other outage activities.

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

Corrective Actions:

Appropriate cautions will be added to the bus recovery procedures to identified the consequences of installing the fuses in the bus under voltage fuse blocks.

Caution labels have been ordered for installation on the fuse cabinets to warn operators that installation of UV fuses will auto start the EDG if it is aligned to the associated dead bus.

A thorough evaluation to determine the root cause for this event has been initiated. Additional corrective actions identified as a result of this evaluation will be assigned and tracked to completion under the licensee's corrective action program

Component and System Description:

The majority of electrical loads, used for both safety and non-safety related applications, at PBNP are powered by the 480V AC system. The 4.16KV system provides the primary means to interconnect onsite and offsite power sources and distribute the power to the 480V AC system.

The 4.16KV system is comprised of six buses per unit (A01 through A06), the unit auxiliary transformer (X02), and the low voltage auxiliary transformer (X04). FSAR Figure 8.4-1 shows the 4.16KV distribution system. Two buses per unit, A03 and A04, are connected to the 13.8KV system via bus supply breakers to the independent windings of the low voltage station auxiliary transformer (X04). Buses A03 and A04 serve the safeguards buses A05 and A06 respectively as well as buses A01 and A02 during startup, shutdown, and after reactor trip. Buses A05 and A06 are connected to buses A03 and A04 using manually closed tie breakers. A05 and A06 supply all of the safety-related loads (4.16KV and 480V transformers).

The normal source of power to safety related 4.16 KV and 480V buses is from offsite through the station low voltage auxiliary transformers. If this normal source should fail, the standby source of emergency power is the diesel generating (DG) system. The DG system is composed of four emergency diesel generators (EDGs) that can directly supply the safety related 4.16 KV electrical distribution system. Each diesel engine is supported by its own dedicated auxiliary systems for maintaining the start readiness, starting, and continued operation. The independent design of the EDGs and auxiliary systems precludes any single failure from preventing the DG system from performing its intended safety related function.

Each EDG is capable of sequentially starting and supplying the power requirement of one complete set of safeguards equipment for one reactor unit and providing sufficient power to allow the second reactor unit to be placed in a safe shutdown condition. Each EDG will be started upon the receipt of an under voltage condition signal on either its primary or opposite unit same train 4160 volt bus, and re-energize its 4160 volt bus on under voltage. All four EDGs will start when a safety injection (SI) signal is received from either unit.

Additional information concerning the 4.16KV and diesel generator systems may be found in FSAR Sections 8.4 and 8.8 respectively.

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Safety Assessment:

The plant response during and following this inadvertent ESF actuation was normal. The plant systems and components involved in this event performed as designed. As noted previously, Unit 2 was shutdown and defueled during this event. The G03 EDG remained available as the emergency standby power supply for the Unit 1 Train "B" safeguards bus at all times. The safety and welfare of the public and the plant staff was not affected by this event. Other than an inadvertent challenge of an installed safety feature, the safety significance of this event was negligible. There was at no time a loss of equipment or system related safety function; therefore, this event did not involve a safety system functional failure.

System and Component Identifiers:

The Energy Industry Identification System component function identifier for each component/system referred to in this report are as follows:

Component/System**Identifier**

Medium Voltage Power System - Class 1E	EB
Emergency Onsite Power Supply System	EK
ESF Actuation System	JE
Relay, Under Voltage	27
Fuse	FU
Fuse Block	FUB
Breaker	BKR
Bus	BU

Similar Occurrences:

A review of recent LERs (past three years) identified the following similar event involving inadvertent ESF or RPS actuation:

LER Number**Title**

266/99-013-00	Inadvertent ESF Actuation During Post Maintenance Testing
266/98-024-00	Inadvertent Emergency Diesel Generator Start
266/98-014-00	Emergency Safety Feature Actuation Automatic Start Of A Service Water Pump
266/98-006-00	Unanticipated Partial Service Water System Isolation During A Special Test
266/98-002-00	Failure Of The High Voltage Station Auxiliary Transformer