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Braidwood Generating Station
Route #1, Box 84
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Tel 815-458-2801

ComEd

November 20, 1995
BW/95-0112

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

Gentlemen:

The enclosed Licensee Event Report from Braidwood Generating Station is being transmitted in accordance with the requirement of 10 CFR 50.73(a)(2)(i)(b), which requires a 30-day written report.

This report is number 95-014-00, Docket No. 50-456.

Yours truly,

T. J. Tulon
Station Manager
Braidwood Nuclear Station

TJT/BJM/dla
o:\corresp\zcsteno\bwdletrs

Enc: Licensee Event Report
No. 456-95-014-00

cc: NRC Region III Administrator
NRC Resident Inspector
INPO Record Center
ComEd Distribution Center
I.D.N.S.
I.D.N.S. Resident Inspector

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NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

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 (MNBB 7714), 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.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
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TITLE (4)
Diesel Generator Output Breaker would not close due to Equipment Failure

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
									Braidwood Unit 1	05000456
10	19	95	95	-- 014 --	00	11	17	95	FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9): 6
POWER LEVEL (10): 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)

	20.402(b)		20.405(c)		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
	20.405(a)(1)(iii)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		(Specify in Abstract below and in Text, NRC Form 366A)
	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 (Include Area Code)
D.M. Turner, Root Cause Team	(815)458-2801 x2476

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
X	EA	52	W120	Y					

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 15 single-spaced typewritten lines) (16)

Unit 1 was in Mode 6, defueled, on day 20 of Refuel Outage A1R05. During performance of surveillance 1BwOS 8.1.1.2.a-2, "Unit One 1B Diesel Generator Operability Monthly (Staggered) and Semi-Annual (Staggered) Surveillance", the Diesel Generator Output Breaker failed to close on demand. Investigation found the levering-in device to be worn. This degradation would allow the device to "spin free" prior to the breaker being fully racked-in. This "spin free" condition is the first indication the operator receives to determine the breaker is fully racked-in. Extensive testing reproduced the same results believed to have occurred in the original event. At the time of the initial failure, the breaker had all the known indications of being fully racked in, but the floor tripper mechanism was still engaged. This caused the breaker to go into a "trip free" condition, when the breaker attempted to close. The levering in device was replaced with an upgraded version manufactured by Westinghouse. A review of ComEd databases found no LERs involving breaker failures.

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

A. PLANT CONDITIONS PRIOR TO EVENT:

Unit: Braidwood 1; Event Date: October 19,1995;
Event Time: 0930;
Mode: 6 - Defueled; Rx Power: 0%;
RCS [AB] Temperature/Pressure: N/A

B. DESCRIPTION OF EVENT:

The 1A Diesel Generator being Out of Service for maintenance, thus rendering it inoperable, contributed to the severity of this event. Braidwood Unit 2 operated at or near full power during the duration of this event.

Unit 1 was in Mode 6, defueled, on day 20 of Refuel Outage A1R05. At approximately 0915, during the performance of 1BwOS 8.1.1.2.a-2," Unit One B Diesel Generator(DG)[EK] Operability Monthly(Staggered) and Semi-Annual(Staggered) Surveillance", the 1B DG Output Breaker (ACB 1423) would not close when the control switch was taken to the close position by the Nuclear Station Operator(Licensed Reactor Operator)(NSO). The NSO attempted to close the breaker a total of 3 times, then requested the Unit NSO to try to close the breaker. All attempts failed. The NSO dispatched an Equipment Operator (non-licensed)(EO) to the breaker to perform a visual inspection and check if any relay targets had come in, including the lockout relay. The EO reported the lockout relay was normal and no targets had come in. The Field Supervisor(Senior Reactor Operator)(FS) arrived at the breaker and verified what the EO had observed. The FS wanted to open the cabinet door to observe the cubicle; however, the NSO wanted the cabinet door to remain shut since a close signal had been initiated. The EO contacted the NSO to further discuss opening the cabinet door. The NSO then took the breaker control switch to PULL TO LOCK and placed the Auto Reclose Circuit Arm Switch to the NORM position. The EO and FS were then allowed to open the cabinet door to perform an inspection. The FS immediately noticed that the breaker chassis did not appear to be fully racked-in. He asked the EO for his opinion. The EO could not immediately identify that the breaker was not fully racked-in, so other cubicles were opened to check their position.

B. DESCRIPTION OF EVENT: (cont.)

At this point personnel from Operational Analysis Department(OAD)(non-licensed) and System Engineering(SE)(non-licensed) arrived at the breaker. After the FO performed a visual inspection of other cubicles he agreed ACB 1423 breaker did not appear to be fully racked-in. The FS requested the EO rack-out the breaker so they could look at the shutter and check if any foreign object was inhibiting the breaker from being fully racked-in.

The EO contacted the NSO with the request to rack-out the breaker. The NSO authorized this operation, and the breaker was racked-out. A visual inspection was performed on the shutter and rosettes. Nothing abnormal was noted. The breaker was then racked-in, the fuses installed and the charging spring charged. The breaker alignment was then compared to its "as found" state. The FS and EO stated the breaker chassis had inserted farther than it was initially found. At this time, OAD connected their equipment to verify the synchronization check relay was operating properly. Once OAD was ready, the EO contacted the NSO and requested he attempt to close the ACB 1423 breaker again.

When the NSO placed the control switch to the close position, the breaker closed normally. The OAD personnel verified that the synchronization check relay operated as expected. The surveillance continued with no further problems noted.

The Field Supervisor returned to his desk and began writing the Problem Identification Form (PIF) to document what had been found with the ACB 1423 breaker. At this time he realized he did not remember hearing the charging spring discharge as it should have when the breaker was removed from the cubicle. Calls were made to the other individuals present in the room when the breaker was racked-out to see if anyone remembered the charging spring discharging. Although no one could remember the spring discharge, they also noted they were not specifically listening for it.

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TEXT CONTINUATION

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

B. DESCRIPTION OF EVENT: (cont.)

A multi-disciplined investigation team was formed to review the event. A review of the operation of the ACB 1423 breaker revealed the last manipulation took place on 10-02-95 during 1BwOS 3.2.1.1.A-2, "Train B Manual Safety Injection Initiation." The operators that performed this manipulation were interviewed. They stated the breaker was fully racked-in as evidenced by the levering-in device spinning free and the charging spring charging when the fuses were placed in the "ON" position.

A breaker expert from Byron Station was called to assist in the investigation. This individual is considered a subject matter expert (SME) due to his experience with breaker problems at Byron Station. These problems had been reviewed by Braidwood Station at the time they occurred. At the time the breaker problems were evaluated and it was determined that Braidwood was not experiencing any similar problems. At the time the Byron events occurred, Braidwood personnel contacted the vendor, Westinghouse, to determine if any increased maintenance would be required. The vendor replied by letter, stating that the levering-in device should be inspected for any evidence of cracking and a small amount of lubricant should be present on the levering-in nut. Braidwood Station reviewed their preventative maintenance procedure and the recommended maintenance was being performed. Byron Station had made changes to their maintenance surveillance in response to one of their problems, the washer cupping, which required them to physically remove the Guide Tube portion of the levering-in device. With the Guide Tube removed, they noticed the keyway was becoming worn (rounded) and any cracking would be visible. Through this inspection Byron had begun replacing their levering-in device in many breakers. This information was either not transmitted from Byron Station to Braidwood Station, or the point that this could occur from normal operation was not clear.

On 10-24-95 the breaker in question was taken Out of Service (OOS) in the "racked-out" position as part of a maintenance outage for the 1B Diesel Generator. With the breaker OOS, an inspection of the breaker and the compartment was authorized.

B. DESCRIPTION OF EVENT: (cont.)

An EO removed the breaker from the compartment and System Engineering began to inspect the breaker with the Electrical Maintenance Department(EMD)(non-licensed), Root Cause Members, and the NRC in attendance. The inspection of the compartment found nothing unusual with the equipment: the housing pins appeared straight and level; the auxiliary contacts appeared to have no defects; and the levering-in screw was in good condition. Inside the breaker compartment, on the floor, a small lockwasher and spring were found. In a previous visual inspection of the racked-in breaker, a small piece of "bakelite" material was found on the floor of the cubicle. The breaker inspection began, concentrating on the levering in device. This component was inspected while in place, with nothing abnormal noted. EMD personnel then removed the levering in device. Upon removal, the levering in guide tube was found to be worn(rounded) where the guide key enters the tube and a through wall crack(not open), approximately 1 inch in length, was found. The hardened key, which is supposed to be squared, had one corner rounded. Based on the experience of the Byron subject matter expert, this rounded corner would be enough to prematurely "spin free" the levering-in device, thus giving the EO one of the indications the breaker was completely racked in. With this information, it was decided not to reinstall this levering-in device to test it, due to the fact it was worn and had a potential to become stuck. Instead, it was decided to take the levering in device to the Byron Training facility and attempt to recreate the sequence of events in a training breaker. The electricians were instructed to continue with their preventative maintenance(PM) surveillance to clean and inspect the breaker. During this surveillance the electricians noted that the piece of "bakelite" material, which had been found earlier, was from the compartment fuse block. The origin of the spring and lock washer found in the cubicle could not be determined.

On 10-25, four Braidwood individuals, two root cause members and two electricians, went to Byron to test the levering-in device in the Byron Training facility. Byron personnel observing this testing included EMD Master, EMD Supervisor, System Engineer, NRC Resident Inspector, along with the Byron SME. Once at Byron, the electricians removed the installed levering-in device and replaced it with the Braidwood levering-in device. With the damaged levering-in device, the training breaker was racked-in several times, operating properly. A condition was set where the levering-in device "spun free" prior to being racked-in completely.

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TEXT CONTINUATION

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B. DESCRIPTION OF EVENT: (cont.)

The bus was energized and an attempt was made to close the breaker electrically. Nothing happened with this attempt. This showed that the electrical connections were not made up. An attempt was made to manually close the breaker with the plunger located on the breaker. When this method was tried, the breaker "tripped free", discharging the closing spring, then the closing spring recharged. The act of "tripping free" physically moves the breaker. Due to this movement it was decided to attempt to close the breaker electrically again. This time the breaker went to a "trip free" condition, discharging, then recharging the closing spring. These actions revealed that there was enough movement when a trip free condition is experienced, caused by the closing spring discharging, to actually make or break connections. At this point the levering-in device would "spin free", indicating the breaker was fully racked in. The breaker was approximately 3/8 inch from the full racked-in position. The charging spring was manually charged and per design, opened the LS contacts in the charging motor circuitry. The breaker was then manually closed. The breaker went "trip free", the closing spring discharged, and the breaker physically moved out of the cubicle approximately 1/8 inch. Pin #5(the contact that charges the charging spring) lost physical contact which inhibited the charging motor from recharging the charging spring.

The testing performed with the ACB 1423 cubicle duplicated the facts and validated interview information that was compiled when the event occurred.

The investigation team also contacted the Westinghouse breaker Representative to discuss what had been found in the investigation and to receive clarification on information found in the vendor manual. The Westinghouse Representative concurred with the determination that the levering-in device was the root cause of this failure to close and our corrective actions thus far. A formal response from Westinghouse to the unresolved questions about the breaker is expected by 12-22-95. Receipt of this information will be tracked via Commitment 456-180-95-01401.

This event is being reported pursuant to 10CFR50.73(a)(2)(i)(b) - Any operation or condition prohibited by the plant's Technical Specification.

C. CAUSE OF THE EVENT:

The cause of the event was determined to be Equipment Failure. The levering-in device was worn enough to allow the guide shaft to "spin free" before the breaker was fully racked in. The following indications of a fully racked-in breaker were observed: levering-in device "spinning free", indicating lights "lit", and charging motor charging the closing spring.

A contributing cause of the event was inadequate problem identification, in that problems had been experienced on other breakers and not documented. During the investigation it was noted there were previous occurrences where a breaker would not operate on demand. The corrective action would be to rack-out then rack-in the breaker, and attempt to close the breaker again. This method was successful, leading the operating personnel to believe the cause was dirty contacts. It was the opinion of several operators interviewed that some breakers were more difficult to rack-in, and that the flash shield not being flush to the cubicle frame was being more frequently seen currently than had been in previous years. These changes in condition were not documented.

A failure in communications was also a contributing cause in this event. Byron Station had experienced levering-in device problems in 1988. This information was either not received by Braidwood Station or the extent of the problem was not understood by Braidwood personnel.

D. SAFETY ANALYSIS:

Braidwood Station Technical Specification Limiting Condition For Operation (LCO) 3.8.1.2 requires the following in Modes 5 and 6: As a minimum, the following AC electrical power sources shall be OPERABLE:

a. One class 1E 4160 volt bus capable of being powered from:
   1) Either transformer of the associated units System Auxiliary Transformer bank, or
   2) Either transformer of the other units System Auxiliary transformer bank, with the System Auxiliary Transformer bank supplying the 4160 volt bus energized from an off-site transmission circuit.

b. One diesel generator with:
   1) A day tank containing a minimum volume of 450 gallons of fuel,
   2) A fuel storage system containing a minimum volume of 44,000 gallons of fuel, and
   3) A fuel transfer pump.

NRC FORM 366A (5-92) U.S. NUCLEAR REGULATORY COMMISSION **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 (MNBB 7714), 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.

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D. SAFETY ANALYSIS (cont.):

Subsequent review has determined that the 1B DG breaker had not been fully racked-in (rendering the 1B DG technically inoperable) since October 2, 1995. Unit 1 was in Mode 5 (Cold Shutdown) at that time. The other Unit 1 DG (1A) was out-of-service for maintenance since October 3, 1995. Therefore, for the period of October 3 through October 19, 1995, there were no operable DGs for Unit 1. Unit 2 was at full power operation (Mode 1) throughout this time period.

With both Unit 1 DGs unavailable, power for the 4160 VAC ESF buses would be supplied via the Unit 2 to Unit 1 ESF bus cross-ties (powered by the Unit 2 System Auxiliary Transformers (SATs) if the Unit 1 SATs were unavailable). A detailed safety analysis was performed for the plant configurations during the period of October 2 through October 19, 1995. This analysis included an indepth probabilistic risk assessment (PRA) to determine the additional shutdown risk incurred due to the inoperability of the 1B DG. The details of this review were shared with the NRC Resident Inspectors and with the NRC Lead Engineering Assessment Performance administrator. A summary of this analysis is given below.

For the actual condition, power for the Unit 1 4160 VAC ESF buses was supplied by the Unit 1 SATs through the normal feed breakers. The reserve feeds from the Unit 2 4160 VAC ESF buses were available throughout this time period. No events occurred during this time period which required operation of either Unit 1 DG.

If the plant had experienced a total loss of offsite power during the period from October 3 to October 19, 1995, neither Unit 1 DG would have been immediately available to support safety related components. The situation where both DGs of one unit fail to start on a LOOP has been evaluated as part of the Station Blackout Analysis.

According to the Braidwood Station Blackout Analysis, upon a total loss of offsite power and failure of both Emergency Diesel Generators to start on one unit, either one of the other unit's Emergency Diesel Generators is capable of providing power for safe shutdown of both units for a four hour duration.

D. SAFETY ANALYSIS: (cont.)

With the 1B DG output breaker incapable of closing, and the 1A DG inoperable, no source of emergency AC power was immediately available to either Unit 1 4160 VAC ESF bus. However, the alternate AC power sources (Unit 2 DGs) remained available throughout the event. Existing station procedures address the loss of all AC power. Unit 1 to Unit 2 ESF Bus cross-tie would be accomplished utilizing existing station procedures 1BwOA ELEC-3 and/or 1BwOA ELEC-5 depending on actual conditions.

Availability of all equipment required to cross-tie Unit 1 and Unit 2 4160 VAC ESF buses has been confirmed throughout the specified time period with the exception of ≈7 hours on 10/04/95, ≈15 minutes on 10/05/95, ≈16 hours on 10/07/95, and the period from 10/10/95 to 10/13/95. During these periods of time, DC BUS 111 was fed from a temporary battery charger and therefore would be de-energized during a loss of offsite power event. Therefore, the DC control power required to close the Unit 1 division 11 (ESF bus 141 to ESF bus 241) cross-tie breaker (1414) was unavailable.

However, 125 VDC control power could have been restored via the Unit 1 (111) to Unit 2 (211) ESF battery cross-tie. In addition, manual closure (locally at bus 141) of the Unit 1 division 11 (141) to Unit 2 division 21 (241) 4160 VAC ESF bus cross-tie breaker (1414) was possible.

With both Unit 2 DGs operable, cross-tie of Unit 1 to Unit 2 4160 VAC ESF buses enables restoration of both of Unit 1 ESF buses.

During the period from October 3 to October 4, 1995 Unit 1 was in Mode 5 (Cold Shutdown) with the loop stop valves open. In this condition shutdown cooling was available through the Steam Generators. The Unit 1 4160 VAC ESF bus reserve feeds from the Unit 2 4160 VAC ESF buses (powered by the Unit 2 SATs) were available throughout this period. During the period of Battery 111 inoperability, 4160 VAC ESF bus remote cross-tie capability from the Main Control Room for Unit 1 division 11 (bus 141) to Unit 2 division 21 (bus 241) could be restored via the Unit 1 125 VDC ESF bus (111) to Unit 2 125 VDC ESF bus (211) cross-tie. Manual closure of the Unit 1 to Unit 2 4160 VAC ESF breaker (1414) was available locally at the ESF bus. In the event of a dual unit LOOP, Unit 1 shutdown cooling would be provided by the diesel driven Auxiliary Feedwater Pump and power to the 4160 VAC ESF buses would be supplied by manually cross-tying Unit 1 and Unit 2 4160 VAC ESF buses (powered by the Unit 2 DGs) through existing cross-tie breakers.

D. SAFETY ANALYSIS: (cont)

During the period from October 4 to October 9, 1995 Unit 1 was in Mode 5 or Mode 6 (Refueling) with the loop stop valves closed and the refueling cavity not flooded. In this condition Unit 1 Shutdown cooling was provided by the Residual Heat Removal (RH) system. The Unit 1 4160 VAC ESF bus reserve feeds from the Unit 2 4160 VAC ESF buses (powered by the Unit 2 SATs) were available throughout this period. In the event of a dual unit LOOP, with neither Unit 1 Emergency Diesel Generator available, the B train of RHR would be powered by cross-tying its ESF bus to the Unit 2 ESF bus from the Main Control Room. In addition, the A train of RHR was also available during this time frame although the cross-tie to the Unit 2 bus may have had to be performed locally. Cross-tie execution and ESF bus loading are administratively controlled per existing station procedures. If DC control power is unavailable, manual operation of 4160 VAC equipment feed breakers may be performed locally at the buses per procedure 1BwOA ELEC-5, "Loss of 4KV ESF Bus".

During the period from October 9 to October 19, Unit 1 was in Mode 6 with the refueling cavity flooded. In this condition, Unit 1 shutdown cooling was provided by the RH system. The Unit 1 4160 VAC ESF bus reserve feeds from the Unit 2 4160 VAC ESF buses (powered by Unit 2 SATs) were available throughout this period. In the event of a dual unit LOOP, with neither Unit 1 Emergency Diesel Generators available, the B train of RHR would be powered by cross-tying its ESF bus to the Unit 2 ESF bus. The inventory of water available in the cavity would have aided in allowing sufficient time to restore adequate cooling prior to core damage.

D. SAFETY ANALYSIS (cont.):

When it was identified as racked out, the inoperable breaker was returned to service in 34 minutes. Under an actual LOOP, it is anticipated that the time to restore the breaker to service would be less than 15 minutes. In addition, station equipment and procedures exist to mitigate the consequences of a potential loss of offsite power with both DGs of one Unit inoperable. Equipment and procedures required to perform the Unit 1 ESF bus to Unit 2 ESF bus cross-ties (restoration of Unit 1 ESF bus power) were available throughout the time period of concern.

A probabilistic risk assessment (PRA) evaluation to determine the additional shutdown risk incurred due to the inoperability of the 1B diesel generator output breaker was performed. The PRA analysis focused on the most risk significant time frame, which was the 162 hour period between the closure of the loop stop valves and removal of the upper internals after flooding of the reactor cavity. The total increase in the Core Damage Probability (CDP) from the planned case to the actual case was 8E-08. The PSA Applications Guide, for a one-time temporary situation such as this, characterizes any core damage probability increase of less than 1E-06 as non-risk significant.

Based on the above conclusions, this event is of minimal safety significance.

E. CORRECTIVE ACTIONS:

Immediately after the DG breaker closed in, the FS and EO performed a visual check of the other cubicles on bus 142 (racked-in and open) for any breakers obviously not racked-in, as was observed in the ACB 1423 breaker. During the following shift on 10-19, all remaining Unit 1 & 2 Engineered Safety Feature(ESF) breakers (racked-in and open) had the same visual check performed. No abnormalities were noted.

Upon determination that the cause of the event was the levering-in device, the Equipment Operators were instructed in an additional indication to ensure breakers are fully racked in. The indication of when the floor trip mechanism resets was shown to the EOs. All the ESF breakers that were in the "racked in" and "open" position were checked to verify this additional indication was reset No discrepancies were found.

E. Corrective Actions(cont.)

During the performance of surveillance BwHS 4002-071, "Inspection of Type DHP Switchgear and Switchgear Cubicles", on the ACB 1423 breaker, the worn levering-in device was replaced with an upgraded version. This replacement will continue on other breakers on an as-needed basis.

Surveillance BwHS 4002-071, "Inspection of Type DHP Switchgear and Switchgear Cubicles", has been revised to include removal of the levering-in device to allow for closer inspection and a light coat of lubricant to be applied.

Procedure BwOP AP-6, "Racking-In a 4160V or 6900V Air Circuit Breaker", has been revised to include verifying the floor trip mechanism is reset, and to check the front steel barrier is approximately 1/4" or less from the cubicle frame as observed at the lower left and right side of the breaker. This procedure was also revised to give direction when one of the required indications to ensure the breaker is fully racked-in is not received, or when the breaker appears abnormal. This direction includes the requirement to document the finding in a PIF.

Procedure BwOP AP-5, "Racking-Out a 4160V or 6900V Air Circuit Breaker to the Disconnect Position", has been revised to include actions to take if the rack-out is being performed due to a breaker not closing on demand. The actions include the requirement to generate a PIF to document the event.

The details of this event were given to the ComEd Part 21 committee for evaluation for reportability under 10CFR Part 21. This determination is currently underway.

The investigation findings were also published under the Operating Experience section of the INPO Nuclear Network as OE 7558 on 11/07/95.

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E. Corrective Actions (cont.)

Electrical Maintenance Personnel will be trained on the operation of the levering-in device and enhanced required maintenance. This action will be tracked to completion by Commitment 456-180-95-01402.

More detailed training will be provided to Equipment Operators and Field Supervisors in the operation of the DHP breakers. This will be tracked to completion by Commitment 456-180-95-01403.

Action Requests (AR) will be written against any ESF breaker that has not had the levering-in device removed and inspected. These ARs will require the levering-in device to be inspected the next time the breaker is racked-out for maintenance. This will be tracked to completion by Commitment 456-180-95-01404.

Operations personnel have developed a standard to determine when breaker functional tests will be performed. This standard is in the process of being incorporated into the appropriate operating procedures. This will be tracked to completion by Commitment 456-180-95-01405.

Regarding the interstation communication of plant experience, ComEd has recently formed 58 peer groups to enhance communications between the six ComEd stations. Peer groups are system specific, component specific, and process oriented. Some of these groups (such as diesel generators) have been meeting for a while, while others (service water, switchgear, and design control) are new. Each peer group is expected to share information on problems at each site, formulate positions on generic issues, and implement lessons learned.

F. PREVIOUS OCCURRENCES:

A review was performed of ComEd databases and no LERs involving breaker failure were found.

G. COMPONENT FAILURE DATA:

This event was the result of the following component failure.

MANUFACTURER	NOMENCLATURE	MODEL	MFG PART NO.
Westinghouse	Levering In Device	N/A	8068A62G02