

SAFETY EVALUATION
(NON-MODIFICATION)

SE No. 252
Addendum 1
Page 1 of 29

All Safety Evaluations for safety related changes and tests other than Modifications SHALL be submitted on this form.

TITLE: USED MOLDED CASE CIRCUIT BREAKERS INSTALLED IN SAFETY RELATED APPLICATIONS. (Addendum 1)

1. DESCRIPTION (Attach additional sheets as necessary)

See Attached.

2. YES | | TECHNICAL SPECIFICATION/LICENSE AMENDMENT OR UNREVIEWED
 NO | | SAFETY QUESTION

a. Amendment Request Transmittal DATE: _____

b. Authorizing Letter Received DATE: _____

PREPARED BY: S. K. McCloskey DATE: 5/10/89

REVIEWED BY: [Signature] DATE: 5/10/89

OPERATIONS COMMITTEE REVIEW: _____ DATE: 5-11-89

APPROVED BY: [Signature] DATE: 5-24-89
GEN SUPT PLT ENG & RAD PROT

COPY TO: General Supt of Training [Signature] DATE: 5-25-89
(GSPERP INIT.)

SAFETY AUDIT COMMITTEE REVIEW DATE: _____

(For Technical Specification/License Amendments or Unreviewed Safety Questions the SAC SHALL review the change prior to implementation).

ADDENDUM 1 TO SAFETY EVALUATION SE NO. 252

This addendum documents the examination of Molded Case Circuit Breakers (MCCBs) by experts of the General Electric Company as referenced on page 2 of the original safety evaluation SE 252.

The conclusion of the examination and testing states that no evidence of internal tampering, readjustment, or counterfeit parts (with the exception of labels) was found. This further supports the conclusions of the original evaluation SE 252 that MCCBs have not been modified from original factory specifications.

A copy of the subject report, "Results of Investigation of 8 Prairie Island Molded - Case Circuit Breakers (GE Proposal WT0518JB)" dated May 5, 1989 is included as part of this addendum.



17400 Trade Center Dr. Suite 304 Omaha NE 68154

G-EKO-9-084

May 5, 1989

cc: Prairie Island Nuclear Generating Plant
K. M. Beadell/w. att.
E. L. Watzl/w. att.
GE
R. N. Woldstad/w. att.

Mr. Terrence Silverberg
Northern States Power Company
Prairie Island Nuclear Generating Plant
1717 Wakonade Dr. East
Welch, MN. 55089

SUBJECT: Results of Investigation of 8 Prairie Island
Molded-Case Circuit Breakers (GE Proposal WT0518JB)

Reference: Northern States Power Co. (NSP) Purchase Order
PA 3678 MQ dated 4/17/89

Dear Mr. Silverberg:

In agreement with the reference purchase order, eight THEF 50-amp, 600-volt circuit breakers (Cat. No. THEF136050) were investigated in accordance with Proposal WT0518JB on April 20 and 21 at the General Electric - Atlanta, Georgia, Safety-Related Service Shop by W. Heerlein of GE's Electrical Distribution and Control. The breaker population consisted of seven circuit breakers taken from reserve stock and one breaker taken out of service.

During the investigation, all circuit breakers received a detailed, external inspection and were tested for thermal performance (4 units), calibration, and dielectric strength. Three breakers, the one that had been installed in the plant and two chosen based on test results, were opened and inspected internally for any signs of modification, tampering, or counterfeit parts.

The external examination revealed that, of the seven breakers from reserve stock, five had counterfeit rating labels and all seven had counterfeit U/L labels. On one circuit breaker, lockwashers were missing from some of the pressure connector (lug) mounting hardware.

With the exception of the above discrepancies, it is our best professional opinion that the three breakers investigated externally and internally have not been tampered with or readjusted and do not contain counterfeit parts.

Mr. Terrence Silverberg

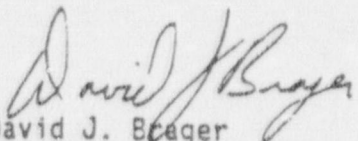
-2-

May 5, 1989

This letter also formally transmits the breaker inspection and test data sheets and the instrument record and calibration sheets completed during the investigation.

GE appreciates the opportunity to assist NSP. Please contact me or Mr. Woldstad with any questions you may have.

Sincerely,



David J. Beeger
Nuclear Services Manager
(402) 496-6919

Attachments

SE 252-1

PAGE 5 OF 29

PRAIRIE ISLAND THEF CIRCUIT BREAKER
INSPECTION AND TEST DATA SHEET

Customer: NORTHERN STATES POWER Date: 4-20-89
 Location: ATLANTA Science Shop Inspected By: [Signature]
 Circuit Breaker Model: THEF136050 Circuit Breaker S/N: NA
 ..date code -725

Test

EXTERNAL INSPECTION

Packaging:

- | | | |
|--------------------------------------------------------------------|-------------------------------------|--------------------------|
| | YES | NO |
| 1. Is carton in original GE container? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Is carton in good condition and has not been opened or retaped? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Is carton free from altered information on shipping label? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

A "NO" answer may suggest circuit breaker has been used or refurbished.

External CB Inspection:

	YES	NO		YES	NO
Excessive scratches/wear	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Non-original date code	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Damaged surface	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Missing GE logo on rating label	<input type="checkbox"/>	<input checked="" type="checkbox"/>
A used appearance <i>long screws</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Missing rating or UL label	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Missing terminal hardware	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Altered rating or UL label	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Inconsistent term. hardware	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Non-original rating label	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Missing datecode	<input type="checkbox"/>	<input checked="" type="checkbox"/>			

A "YES" answer may suggest circuit breaker has been used or refurbished.

INTERNAL INSPECTION ← NA ROL 4/21/89

S-Satisfactory R-Need Repair/Replace Y-Yes N-No N/A-Not Applicable

Condition	Comment
Contact Condition	_____
Hardware Tightness	_____
Cleanliness	_____
Lubrication	_____
Arc Chute Condition	_____
Workmanship	_____
Inconsistent rivets: cover to base	_____
Inconsistency: CB to CB	_____
Is CB 600V construction	_____
Current rating consistent with unit	_____
Was calibration been altered	_____

A negative response may suggest circuit breaker has been used or refurbished.

ELECTRICAL TEST

	A phase	B phase	C phase	Pass/Fail	
Contact Resistance (milliohms)	<u>1.499</u>	<u>1.447</u>	<u>2.61</u>	_____	<i>ELL 4:20</i>
Heatrise at Contacts (for resistance exceeding norm)	_____	<u>5°C</u>	_____	_____	
Trip Time (200% of rated current)	<u>178.72</u>	<u>218.00</u>	<u>185.65</u>	<u>Pass</u>	<i>ELL 4:20</i>
Hipot: Breaker Opened, Line to Load (2200Vac for 1 minute)	<u>OK</u>	<u>OK</u>	<u>OK</u>	<u>Pass</u>	<i>ELL 4:20</i>
	A - B	B - C	A - C	Pass/Fail	
Hipot: Breaker Closed (2200Vac for 1 minute)	<u>OK</u>	<u>OK</u>	<u>OK</u>	<u>Pass</u>	<i>ELL 4:20</i>

Comments: _____

INSTRUMENT RECORD AND CALIBRATION SHEET

1. INSTRUMENT: Proline Isolite 247000 3521
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: 6-23-88 6-23-89
 (Present) (Due)
 TECHNICIAN: Michael J. Powell 04/20/89
 (Signature) (Date)

2. INSTRUMENT: L-20+ Si Analytics 101-2.5 101491
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: 6-23-88 6-23-89
 (Present) (Due)
 TECHNICIAN: Michael J. Powell 04/20/89
 (Signature) (Date)

3. INSTRUMENT: MCE Tester E-7 MCE-400D 057644
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: 4-8-89 4-8-90
 (Present) (Due)
 TECHNICIAN: Michael J. Powell 04/20/89
 (Signature) (Date)

4. INSTRUMENT: _____
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: _____
 (Present) (Due)
 TECHNICIAN: _____
 (Signature) (Date)

5. INSTRUMENT: _____
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: _____
 (Present) (Due)
 TECHNICIAN: _____
 (Signature) (Date)

PRAIRIE ISLAND THEF CIRCUIT BREAKER
INSPECTION AND TEST DATA SHEET

Customer: NORTHGLEN STATES POWER Date: 4-20-89
 Location: 4th Ave. Service Bldg. Inspected By: [Signature]
 Circuit Breaker Model: T-5E136050 Circuit Breaker S/N: 114
 ..date code.. 545

EXTERNAL INSPECTION

- Packaging:
- | | | |
|--------------------------------------------------------------------|----------|----------|
| | YES | NO |
| 1. Is carton in original GE container? | <u>—</u> | <u>✓</u> |
| 2. Is carton in good condition and has not been opened or retaped? | <u>✓</u> | <u>—</u> |
| 3. Is carton free from altered information on shipping label? | <u>—</u> | <u>✓</u> |

A "NO" answer may suggest circuit breaker has been used or refurbished.

External CB Inspection:

	YES	NO		YES	NO
Excessive scratches/wear	<u>—</u>	<u>✓</u>	Non-original date code	<u>—</u>	<u>✓</u>
Damaged surface	<u>—</u>	<u>✓</u>	Missing GE logo on rating label	<u>—</u>	<u>✓</u>
A used appearance <i>by screws</i>	<u>✓</u>	<u>—</u>	Missing rating or UL label	<u>—</u>	<u>✓</u>
Missing terminal hardware	<u>—</u>	<u>✓</u>	Altered rating or UL label	<u>✓</u>	<u>—</u>
Inconsistent term. hardware	<u>—</u>	<u>✓</u>	Non-original rating label	<u>✓</u>	<u>—</u>
Missing datecode	<u>—</u>	<u>✓</u>			

A "YES" answer may suggest circuit breaker has been used or refurbished.

INTERNAL INSPECTION ← NO FIVE 4/29

S=Satisfactory R=Need Repair/Replace Y=Yes N=No 'N/A=Not Applicable

	Condition	Comment
Contact Condition	_____	_____
Hardware Tightness	_____	_____
Cleanliness	_____	_____
Lubrication	_____	_____
Arc Chute Condition	_____	_____
Workmanship	_____	_____
Inconsistent rivets: cover to base	_____	_____
Inconsistency: CB to CB	_____	_____
Is CB 600V construction	_____	_____
Current rating consistent with unit	_____	_____
has calibration been altered	_____	_____

A negative response may suggest circuit breaker has been used or refurbished.

ELECTRICAL TEST

	A phase	B phase	C phase	Pass/Fail	
Contact Resistance (milliohms)	<u>2.46</u>	<u>2.06</u>	<u>8.53</u>	_____	<u>RLC</u> <u>4/20/1</u>
Heatrise at Contacts (for resistance exceeding norm)	<u>Rating - see 10 min</u>	<u>12°C</u>	_____	_____	<u>RLC</u> <u>4/20/1</u>
Trip Time (200% of rated current)	<u>110-250 sec</u> <u>194.54</u>	<u>70.21</u>	<u>171.54</u>	<u>PASS</u>	<u>RLC</u> <u>4/20/1</u>
Hipot: Breaker Opened, Line to Load (2200Vac for 1 minute)	<u>OK</u>	<u>OK</u>	<u>OK</u>	<u>PASS</u>	<u>RLC</u> <u>4/20/1</u>
<i>RLC</i> <i>4/20/1</i> <i>2500</i>	A - B	B - C	A - C	Pass/Fail	
Hipot: Breaker Closed (2200Vac for 1 minute)	<u>OK</u>	<u>OK</u>	<u>OK</u>	<u>PASS</u>	<u>RLC</u> <u>4/20/1</u>
<i>RLC</i> <i>4/20/1</i> <i>2500</i>					

Comments: _____

INSTRUMENT RECORD AND CALIBRATION SHEET

- 1. INSTRUMENT: Ductro Boyle 247700 3521
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: 6-23-88 6-23-89
 (Present) (Due)
 TECHNICIAN: [Signature] 04/20/89
 (Signature) (Date)
- 2. INSTRUMENT: H sat Silvaco 101-2.5 101491
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: 6-23-88 6-23-89
 (Present) (Due)
 TECHNICIAN: [Signature] 04/20/89
 (Signature) (Date)
- 3. INSTRUMENT: MCI Tester E-1 MCI-400J 037644
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: 4-7-89 4-8-90
 (Present) (Due)
 TECHNICIAN: [Signature] 04/20/89
 (Signature) (Date)
- 4. INSTRUMENT: _____
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: _____
 (Present) (Due)
 TECHNICIAN: _____
 (Signature) (Date)
- 5. INSTRUMENT: _____
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: _____
 (Present) (Due)
 TECHNICIAN: _____
 (Signature) (Date)

PRAIRIE ISLAND THEF CIRCUIT BREAKER
INSPECTION AND TEST DATA SHEET

Customer: NORTHERN STATES POWER Date: 4-20-89
 Location: ALT. RT. - SERVICE TRIP Inspected By: [Signature]
 Circuit Breaker Model: THEF136050 Circuit Breaker SN: DA
 Date Code: 931

EXTERNAL INSPECTION

Packaging:

- | | | |
|--------------------------------------------------------------------|-------------------------------------|-------------------------------------|
| | YES | NO |
| 1. Is carton in original GE container? | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Is carton in good condition and has not been opened or retaped? | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Is carton free from altered information on shipping label? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

A "NO" answer may suggest circuit breaker has been used or refurbished.

External CB Inspection:

	YES	NO		YES	NO
Excessive scratches/wear	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Non-original date code	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Damaged surface	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Missing GE logo on rating label	<input type="checkbox"/>	<input checked="" type="checkbox"/>
A used appearance <i>by screw</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Missing rating or UL label	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Missing terminal hardware	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Altered rating or UL label	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Inconsistent term. hardware	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Non-original rating label	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Missing datecode	<input type="checkbox"/>	<input checked="" type="checkbox"/>			

A "YES" answer may suggest circuit breaker has been used or refurbished.

INTERNAL INSPECTION

S-Satisfactory R-Need Repair/Replace Y-Yes N-No N/A-Not Applicable

	Condition	Comment
Contact Condition	S	<i>Some P.T. 24</i>
Hardware Tightness	Y	
Cleanliness	S	
Lubrication	S	
Arc Chute Condition	S	<i>Some N.P. 2 P.M.S.C.</i>
Workmanship	S	
Inconsistent rivets: cover to base	N	
Inconsistency: CB to CB	N	
Is CB 600V construction	Y	
Current rating consistent with unit	Y	
Has calibration been altered	Y	

A negative response may suggest circuit breaker has been used or refurbished.

ELECTRICAL TEST

	A phase	B phase	C phase	Pass/Fail	
Contact Resistance (milliohms)	<u>3.73</u>	<u>1.93</u>	<u>3.02</u>	_____	OK 4.25
Heatrise at Contacts (for resistance exceeding norm)	_____	_____	_____	_____	
Trip Time (200% of rated current)	<u>138.33</u>	<u>110.54</u>	<u>111.23</u>	<u>PASS</u>	OK 4.25
Hipot: Breaker Opened, Line to Load (2200Vac for 1 minute)	<u>OK</u>	<u>OK</u>	<u>OK</u>	<u>PASS</u>	OK 4.25
	A - B	B - C	A - C	Pass/Fail	
Hipot: Breaker Closed (2200Vac for 1 minute)	<u>OK</u>	<u>OK</u>	<u>OK</u>	<u>PASS</u>	OK 4.25

Comments: _____

INSTRUMENT RECORD AND CALIBRATION SHEET

1. INSTRUMENT: Duine B. Co. Co 247000 3521
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: 6-23-88 6-23-89
 (Present) (Due)
 TECHNICIAN: [Signature] 04/20/89
 (Signature) (Date)
2. INSTRUMENT: H. 207 Stausler 101-2.5 101491
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: 6-23-88 6-23-89
 (Present) (Due)
 TECHNICIAN: [Signature] 04/20/89
 (Signature) (Date)
3. INSTRUMENT: MCB Tester ETA MCB-400D 03744
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: 4-8-89 4-8-90
 (Present) (Due)
 TECHNICIAN: [Signature] 04/20/89
 (Signature) (Date)
4. INSTRUMENT: _____
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: _____
 (Present) (Due)
 TECHNICIAN: _____
 (Signature) (Date)
5. INSTRUMENT: _____
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: _____
 (Present) (Due)
 TECHNICIAN: _____
 (Signature) (Date)

#4

PRAIRIE ISLAND TIEF CIRCUIT BREAKER
INSPECTION AND TEST DATA SHEET

Customer: NORTHERN STATES POWER Date: 4-20-89
 Location: EMERSON SERVICE CENT Inspected By: Arthur J. Powell
 Circuit Breaker Model: T-56050 Circuit Breaker S/N: NA
 Code date: 8/9

EXTERNAL INSPECTION

Packaging:

- | | | |
|--------------------------------------------------------------------|-----|----|
| | YES | NO |
| 1. Is carton in original GE container? | — | ✓ |
| 2. Is carton in good condition and has not been opened or retaped? | ✓ | — |
| 3. Is carton free from altered information on shipping label? | — | ✓ |

A "NO" answer may suggest circuit breaker has been used or refurbished.

External CB Inspection:

	YES	NO		YES	NO
Excessive scratches/wear	—	✓	Non-original date code	—	✓
Damaged surface	—	✓	Missing GE logo on rating label	—	✓
A used appearance <i>in screws</i>	✓	—	Missing rating or UL label	—	✓
Missing terminal hardware	—	✓	Altered rating or UL label	✓	—
Inconsistent term. hardware	—	✓	Non-original rating label	✓	—
Missing datecode	—	✓			

A "YES" answer may suggest circuit breaker has been used or refurbished.

INTERNAL INSPECTION *ENR 4/21/89*

S=Satisfactory R=Need Repair/Replace Y=Yes N=No N/A=Not Applicable

	Condition	Comment
Contact Condition	_____	_____
Hardware Tightness	_____	_____
Cleanliness	_____	_____
Lubrication	_____	_____
Arc Chute Condition	_____	_____
Workmanship	_____	_____
Inconsistent rivets: cover to base	_____	_____
Inconsistency: CB to CB	_____	_____
Is CB 600V construction	_____	_____
Current rating consistent with unit	_____	_____
Has calibration been altered	_____	_____

A negative response may suggest circuit breaker has been used or refurbished.

ELECTRICAL TEST

	A phase	B phase	C phase	Pass/Fail	
Contact Resistance (milliohms)	<u>2.86</u>	<u>2.54</u>	<u>1.48</u>	_____	OK 4/27
Heatrise at Contacts (for resistance exceeding norm)	_____	_____	_____	_____	
Trip Time (200% of rated current)	<u>175.55</u>	<u>250.54</u>	<u>236.93</u>	<u>Fail</u>	OK 4/27
Hipot: Breaker Opened, Line to Load (2200Vac for 1 minute)	<u>OK</u>	<u>OK</u>	<u>OK</u>	<u>PASS</u>	OK 4/27
	A - B	B - C	A - C	Pass/Fail	
Hipot: Breaker Closed (2200Vac for 1 minute)	<u>OK</u>	<u>OK</u>	<u>OK</u>	<u>PASS</u>	OK 4/27
	A - B	B - C	A - C	Pass/Fail	



OK
4-27-57, 2500

Comments: _____

INSTRUMENT RECORD AND CALIBRATION SHEET

1. INSTRUMENT: Duo-1 Sidac 247000 3521
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: 6-23-88 6-23-89
 (Present) (Due)
 TECHNICIAN: [Signature] 04/20/89
 (Signature) (Date)

2. INSTRUMENT: H-20+ Slaughter 101-2.5 101491
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: 6-23-88 6-23-89
 (Present) (Due)
 TECHNICIAN: [Signature] 04/20/89
 (Signature) (Date)

3. INSTRUMENT: MCE-20TR E-14 MCE-4002 03764.6
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: 4-2-89 4-2-90
 (Present) (Due)
 TECHNICIAN: [Signature] 04/20/89
 (Signature) (Date)

4. INSTRUMENT: _____
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: _____
 (Present) (Due)
 TECHNICIAN: _____
 (Signature) (Date)

5. INSTRUMENT: _____
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: _____
 (Present) (Due)
 TECHNICIAN: _____
 (Signature) (Date)

PRAIRIE ISLAND THEF CIRCUIT BREAKER
INSPECTION AND TEST DATA SHEET

Customer: NORTH STAR POWER Date: 4-20-89
Location: ATLANTA SERVICE SHOP Inspected By: [Signature]
Circuit Breaker Model: THEF136050 Circuit Breaker S/N: DA

on back
(7212)

date code NONE person [Signature]

EXTERNAL INSPECTION

- Packaging:
- | | | |
|--------------------------------------------------------------------|----------|----------|
| | YES | NO |
| 1. Is carton in original GE container? | <u>—</u> | <u>✓</u> |
| 2. Is carton in good condition and has not been opened or retaped? | <u>✓</u> | <u>—</u> |
| 3. Is carton free from altered information on shipping label? | <u>—</u> | <u>✓</u> |

A "NO" answer may suggest circuit breaker has been used or refurbished.

External CB Inspection:

	YES	NO		YES	NO
Excessive scratches/wear	<u>—</u>	<u>✓</u>	Non-original date code	<u>✓</u>	<u>—</u>
Damaged surface	<u>—</u>	<u>✓</u>	Missing GE logo on rating label	<u>—</u>	<u>✓</u>
A used appearance <u>long screws</u>	<u>✓</u>	<u>—</u>	Missing rating or UL label	<u>—</u>	<u>✓</u>
Missing terminal hardware	<u>—</u>	<u>✓</u>	Altered rating or UL label	<u>✓</u>	<u>—</u>
Inconsistent term. hardware	<u>✓</u>	<u>—</u>	Non-original rating label	<u>✓</u>	<u>—</u>
Missing datecode	<u>—</u>	<u>—</u>			

A "YES" answer may suggest circuit breaker has been used or refurbished.

INTERNAL INSPECTION

S=Satisfactory R=Need Repair/Replace Y=Yes N=No N/A=Not Applicable

	Condition	Comment
Contact Condition	<u>S</u>	<u>Never used</u>
Hardware Tightness	<u>S</u>	
Cleanliness	<u>S</u>	
Lubrication	<u>S</u>	
Arc Chute Condition	<u>S</u>	
Workmanship	<u>S</u>	
Inconsistent rivets: cover to base	<u>A</u>	
Inconsistency: CB to CB	<u>Y</u>	
Is CB 600V construction	<u>Y</u>	
Current rating consistent with unit	<u>Y</u>	
Has calibration been altered	<u>N</u>	

A negative response may suggest circuit breaker has been used or refurbished.

ELECTRICAL TEST

	A phase	B phase	C phase	Pass/Fail	
Contact Resistance (milliohms)	<u>2.03</u>	<u>1.67</u>	<u>2.33</u>	_____	OK 4-20-00
Heatrise at Contacts (for resistance exceeding norm)	_____	_____	_____	_____	
Trip Time <i>100-250 sec</i> (200% of rated current)	<u>253.86</u>	<u>166.35</u>	<u>148.07</u>	<u>Fail</u>	OK 4-20-00
Hipot: Breaker Opened, Line to Load <i>2200V</i> (2200Vac for 1 minute) <i>4-20-00</i>	<u>OK</u>	<u>OK</u>	<u>OK</u>	<u>Fail</u>	OK 4-20-00
	A - B	B - C	A - C	Pass/Fail	
Hipot: Breaker Closed <i>2200V</i> (2200Vac for 1 minute) <i>4-20-00</i>	<u>OK</u>	<u>OK</u>	<u>OK</u>	<u>Fail</u>	OK 4-20-00

Comments: _____

#5

INSTRUMENT RECORD AND CALIBRATION SHEET

1. INSTRUMENT: Ducire Bottle 247000 3521
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: 5-25-88 6-23-89
 (Present) (Due)
 TECHNICIAN: [Signature] 04/20/89
 (Signature) (Date)
2. INSTRUMENT: Hirt Siemens 101-25 101491
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: 6-27-88 6-23-89
 (Present) (Due)
 TECHNICIAN: [Signature] 04/20/89
 (Signature) (Date)
3. INSTRUMENT: MKB Type E-1 MKB-4000 037644
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: 4-8-89 4-9-90
 (Present) (Due)
 TECHNICIAN: [Signature] 04/20/89
 (Signature) (Date)
4. INSTRUMENT: _____
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: _____
 (Present) (Due)
 TECHNICIAN: _____
 (Signature) (Date)
5. INSTRUMENT: _____
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: _____
 (Present) (Due)
 TECHNICIAN: _____
 (Signature) (Date)

#6

PRAIRIE ISLAND THEF CIRCUIT BREAKER
INSPECTION AND TEST DATA SHEET

Customer: NORTHERN STARS POWER Date: 4-20-89
 Location: AT SITE SERVICE ST-1 Inspected By: [Signature]
 Circuit Breaker Model: T-FF136050 Circuit Breaker S/N: NA
 .date code 919

EXTERNAL INSPECTION

- Packaging:
- | | | |
|--------------------------------------------------------------------|----------|----------|
| | YES | NO |
| 1. Is carton in original GE container? | <u>—</u> | <u>✓</u> |
| 2. Is carton in good condition and has not been opened or retaped? | <u>✓</u> | <u>—</u> |
| 3. Is carton free from altered information on shipping label? | <u>—</u> | <u>✓</u> |

A "NO" answer may suggest circuit breaker has been used or refurbished.

External CB Inspection:

	YES	NO		YES	NO
Excessive scratches/wear	<u>—</u>	<u>✓</u>	Non-original date code	<u>—</u>	<u>✓</u>
Damaged surface	<u>—</u>	<u>✓</u>	Missing GE logo on rating label	<u>—</u>	<u>✓</u>
A used appearance / <u>1/4 screws</u>	<u>✓</u>	<u>—</u>	Missing rating or UL label	<u>—</u>	<u>✓</u>
Missing terminal hardware	<u>—</u>	<u>✓</u>	Altered rating or UL label	<u>✓</u>	<u>—</u>
Inconsistent term. hardware	<u>—</u>	<u>✓</u>	Non-original rating label	<u>—</u>	<u>✓</u>
Missing datecode	<u>—</u>	<u>✓</u>			

A "YES" answer may suggest circuit breaker has been used or refurbished.

INTERNAL INSPECTION ← NA RLL 4/21/89

S=Satisfactory R=Need Repair/Replace Y=Yes N=No N/A=Not Applicable

Condition	Comment
Contact Condition	_____
Hardware Tightness	_____
Cleanliness	_____
Lubrication	_____
Arc Chute Condition	_____
Workmanship	_____
Inconsistent rivets: cover to base	_____
Inconsistency: CB to CB	_____
Is CB 600V construction	_____
Current rating consistent with unit	_____
Was calibration been altered	_____

A negative response may suggest circuit breaker has been used or refurbished.

ELECTRICAL TEST

	A phase	B phase	C phase	Pass/Fail	
Contact Resistance (milliohms)	<u>1.65</u>	<u>1.59</u>	<u>1.90</u>	_____	RDK 4/21/87
Heatrise at Contacts (for resistance exceeding norm)	_____	_____	_____	_____	RDK 4/21/87
Trip Time <i>100-250 sec</i> (200% of rated current)	<u>192.73</u>	<u>157.31</u>	<u>169.51</u>	<u>PASS</u>	RDK 4/21/87
Hipot: Breaker Opened, Line to Load (2200Vac for 1 minute)	<u>OK</u>	<u>OK</u>	<u>OK</u>	<u>PASS</u>	RDK 4/21/87
<i>RDK</i> <i>4/21/87</i> 2500	A - B	B - C	A - C	Pass/Fail	RDK 4/21/87
Hipot: Breaker Closed (2200Vac for 1 minute)	<u>OK</u>	<u>OK</u>	<u>OK</u>	<u>PASS</u>	RDK 4/21/87
<i>RDK</i> <i>4/21/87</i> 200					

Comments: _____

INSTRUMENT RECORD AND CALIBRATION SHEET

1. INSTRUMENT: 7.00 TECH 247000 3521
 (Type) (Manufacturer) (Model Number) (S/N Number)

CALIBRATION DATES: 6-23-89 6-23-89
 (Present) (Due)

TECHNICIAN: [Signature] 04/21/85
 (Signature) (Date)
2. INSTRUMENT: 4.00 SLANTER 101-2.5 101491
 (Type) (Manufacturer) (Model Number) (S/N Number)

CALIBRATION DATES: 6-23-89 6-23-89
 (Present) (Due)

TECHNICIAN: [Signature] 04/21/85
 (Signature) (Date)
3. INSTRUMENT: MCE 7000 E-T MCE-4000 037644
 (Type) (Manufacturer) (Model Number) (S/N Number)

CALIBRATION DATES: 4-8-89 4-8-90
 (Present) (Due)

TECHNICIAN: [Signature] 04/21/85
 (Signature) (Date)
4. INSTRUMENT: _____
 (Type) (Manufacturer) (Model Number) (S/N Number)

CALIBRATION DATES: _____
 (Present) (Due)

TECHNICIAN: _____
 (Signature) (Date)
5. INSTRUMENT: _____
 (Type) (Manufacturer) (Model Number) (S/N Number)

CALIBRATION DATES: _____
 (Present) (Due)

TECHNICIAN: _____
 (Signature) (Date)

#7

PRAIRIE ISLAND THEF CIRCUIT BREAKER
INSPECTION AND TEST DATA SHEET

Customer: NORTHLEXN ST+75 POWER Date: 4-20-89
 Test Location: Atlanta Service Shops Inspected By: [Signature]
 Circuit Breaker Model: T-EE136050 Circuit Breaker S/N: NA
 date code S3(B)

EXTERNAL INSPECTION

- Packaging:
- | | | |
|--------------------------------------------------------------------|-----|----|
| | YES | NO |
| 1. Is carton in original GE container? | — | ✓ |
| 2. Is carton in good condition and has not been opened or retaped? | ✓ | — |
| 3. Is carton free from altered information on shipping label? | — | ✓ |

A "NO" answer may suggest circuit breaker has been used or refurbished.

External CB Inspection:

	YES	NO		YES	NO
Excessive scratches/wear	—	✓	Non-original date code	—	✓
Damaged surface	—	✓	Missing GE logo on rating label	—	✓
A used appearance	—	✓	Missing rating or UL label	—	✓
Missing terminal hardware	—	✓	Altered rating or UL label	✓	—
Inconsistent term. hardware	—	✓	Non-original rating label	✓	—
Missing datecode	—	✓			

A "YES" answer may suggest circuit breaker has been used or refurbished.

INTERNAL INSPECTION

S=Satisfactory R=Need Repair/Replace Y=Yes N=No N/A=Not Applicable

	Condition	Comment
Contact Condition	S	<u>Used / some fit</u>
Hardware Tightness	Y	
Cleanliness	S	
Lubrication	S	
Arc Chute Condition	S	
Workmanship	S	
Inconsistent rivets: cover to base	N	
Inconsistency: CB to CB	N	
Is CB 600V construction	Y	
Current rating consistent with unit	Y	
Has calibration been altered	N	

A negative response may suggest circuit breaker has been used or refurbished.

ELECTRICAL TEST

	A phase	B phase	C phase	Pass/Fail	LC
Contact Resistance (milliohms) *	<u>5.44</u>	<u>40.5</u>	<u>5.07</u>	_____	LC
Heatrise at Contacts (for resistance exceeding norm) <i>Rating for 30mm</i>	_____	<u>25°C</u>	_____	_____	LC
Trip Time (200% of rated current) <i>100-250 sec</i>	<u>137.24</u>	<u>147.16</u>	<u>150.30</u>	<u>PASS</u>	LC
Hipot: Breaker Opened, Line to Load (2200Vac for 1 minute) <i>120 4/17 2500</i>	<u>OK</u>	<u>OK</u>	<u>OK</u>	<u>PASS</u>	LC
	A - B	B - C	A - C	Pass/Fail	
Hipot: Breaker Closed (2200Vac for 1 minute) <i>120 4/17 2500</i>	<u>OK</u>	<u>OK</u>	<u>OK</u>	<u>PASS</u>	LC

Comments: *Contact resistance readings were very erratic from one closing to the next

INSTRUMENT RECORD AND CALIBRATION SHEET

- 1. INSTRUMENT: Quintec Rockwell 247000 3521
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: 5-23-88 6-23-89
 (Present) (Due)
 TECHNICIAN: Richard J. Powell 04/21/89
 (Signature) (Date)
- 2. INSTRUMENT: 6.21 Fluorite 101-2.5 101491
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: 6-23-88 6-23-89
 (Present) (Due)
 TECHNICIAN: Richard J. Powell 04/21/89
 (Signature) (Date)
- 3. INSTRUMENT: MCS Tester E-I MCE-400D 037144
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: 4-8-89 4-8-90
 (Present) (Due)
 TECHNICIAN: Richard J. Powell 04/21/89
 (Signature) (Date)
- 4. INSTRUMENT: _____
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: _____
 (Present) (Due)
 TECHNICIAN: _____
 (Signature) (Date)
- 5. INSTRUMENT: _____
 (Type) (Manufacturer) (Model Number) (S/N Number)
 CALIBRATION DATES: _____
 (Present) (Due)
 TECHNICIAN: _____
 (Signature) (Date)

#8

#8

PRAIRIE ISLAND THEF CIRCUIT BREAKER
INSPECTION AND TEST DATA SHEET

Customer: NEW JERSEY STATE POWER Date: 4-20-89
 Location: 41' 2nd Street Shop Inspected By: [Signature]
 Circuit Breaker Model: THEF-36050 Circuit Breaker S/N: Nri
 date code: R39

EXTERNAL INSPECTION

- Packaging:
- | | | |
|--------------------------------------------------------------------|-------------------------------------|-------------------------------------|
| | YES | NO |
| 1. Is carton in original GE container? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Is carton in good condition and has not been opened or retaped? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Is carton free from altered information on shipping label? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

A "NO" answer may suggest circuit breaker has been used or refurbished.

External CB Inspection:

	YES	NO		YES	NO
Excessive scratches/wear	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Non-original date code	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Damaged surface	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Missing GE logo on rating label	<input type="checkbox"/>	<input checked="" type="checkbox"/>
A used appearance <i>by screws</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Missing rating or UL label	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Missing terminal hardware	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Altered rating or UL label	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Inconsistent term. hardware	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Non-original rating label	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Missing datecode	<input type="checkbox"/>	<input checked="" type="checkbox"/>			

A "YES" answer may suggest circuit breaker has been used or refurbished.

INTERNAL INSPECTION *← Nri R39 4/20/89*

S-Satisfactory R-Need Repair/Replace Y-Yes N-No N/A-Not Applicable

	Condition	Comment
Contact Condition	_____	_____
Hardware Tightness	_____	_____
Cleanliness	_____	_____
Lubrication	_____	_____
Arc Chute Condition	_____	_____
Workmanship	_____	_____
Inconsistent rivets: cover to base	_____	_____
Inconsistency: CB to CB	_____	_____
Is CB 600V construction	_____	_____
Current rating consistent with unit	_____	_____
Has calibration been altered	_____	_____

A negative response may suggest circuit breaker has been used or refurbished.

ELECTRICAL TEST

	A phase	B phase	C phase	Pass/Fail	
Contact Resistance (milliohms)	<u>1.70</u>	<u>3.27</u>	<u>2.74</u>	_____	ROL 4'20"
Heatrise at Contacts (for resistance exceeding norm)	_____	<u>36°C TL</u> <u>11°C</u>	_____	_____	ROL 4'20"
Trip Time <i>100-250 sec</i> (200% of rated current)	<u>152.4!</u>	<u>137.36</u>	<u>184.76</u>	<u>PASS</u>	ROL 4'20"
Hipot: Breaker Opened, Line to Load (2200Vac for 1 minute)	<u>OK</u>	<u>OK</u>	<u>OK</u>	<u>PASS</u>	ROL 4'20"
<i>1.0k 4'20" 25X</i>	A - B	B - C	A - C	Pass/Fail	ROL
Hipot: Breaker Closed (2200Vac for 1 minute)	<u>OK</u>	<u>OK</u>	<u>OK</u>	<u>PASS</u>	ROL 4'20"
<i>ROL 4'20" 2500</i>					

Comments: _____

INSTRUMENT RECORD AND CALIBRATION SHEET

1. INSTRUMENT: Duc 02 Perle 247000 3521
(Type) (Manufacturer) (Model Number) (S/N Number)

CALIBRATION DATES: 6-23-88 6-23-89
(Present) (Due)

TECHNICIAN: [Signature] 04/20/89
(Signature) (Date)

2. INSTRUMENT: 1-20 Singer 101-2.5 101491
(Type) (Manufacturer) (Model Number) (S/N Number)

CALIBRATION DATES: 6-23-88 6-23-89
(Present) (Due)

TECHNICIAN: [Signature] 04/20/89
(Signature) (Date)

3. INSTRUMENT: MCB 125 ETA MCB-400D 037004
(Type) (Manufacturer) (Model Number) (S/N Number)

CALIBRATION DATES: 4-8-89 4-8-90
(Present) (Due)

TECHNICIAN: [Signature] 04/20/89
(Signature) (Date)

4. INSTRUMENT: _____
(Type) (Manufacturer) (Model Number) (S/N Number)

CALIBRATION DATES: _____
(Present) (Due)

TECHNICIAN: _____
(Signature) (Date)

5. INSTRUMENT: _____
(Type) (Manufacturer) (Model Number) (S/N Number)

CALIBRATION DATES: _____
(Present) (Due)

TECHNICIAN: _____
(Signature) (Date)