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	NINE MILE POINT NUCLE	BAR STATION UNIT 2	H
	ELECTRICAL PREVENTIVE MA	AINTENANCE PROCEDURE	
a VBA	PROCEDURE NO. N2-	2 .	
ASSOC. EQUIP			
11-6-90	UPS INVERTER CLEANING	IG AND INSPECTION	
		DATE AND INITIALS	
APPROVALS	SIGNATURES	REVISION 1 REVISION 2 REVISION 3	•
<ul> <li>Site Superintenden</li> <li>Maintenance - Nucle</li> <li>K. A. Dahlberg</li> </ul>		work -	
Station Superintend NMPNS Unit 2			
R. B. Abbott	PB abbert		
General Superintend Nuclear Generation J. L. Willis	S million	7/21/20	
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	Summary of	Pages Co	
	Revision 1 (Effectiv	re 7/21/88 )	
	Pages	Date	
	5,8 4,6,7	July 1986 July 1988	
	*1-3 Periodic Review, 4/2/90, 1	April 1990 (Publication Change)	
پی تید	NIAGARA MOHAWK POWER	R CORPORATION	
		THIS PROCEDURE NOT TO BE USED AFTER April 1992 <sup>.</sup> SUBJECT TO PERIODIC REVIEW.	

9/205640302

CONTROLLED WORKING CUPY VERIFIED BY <u>To Le A, by</u> NOT TO BE USED AFTER <u>U/s/so 12730</u> DATEITIME



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#### N2-EPM-GEN-RF635

# UPS INVERTER CLEANING AND INSPECTION

- 1.0 PURPOSE
- 1.1 This procedure describes the steps necessary to perform cleaning and inspection of the Safety Related Uninterruptible Power Supply (UPS) Inverters.
- 1.2 <u>Applicability</u>

This procedure is applicable to the Safety Related UPS Inverters located as follows:

ALTERNATE POWER

BACKUP POWER

2838\*SWG002B

\*

2LAC\*PNL100A-19 2828YS\*SWG002A-3C

EQUIPMENT NORMAL POWER 2VBA\*UPS2A 2EJS\*PNL100A-7

2VBA\*UPS2B 2EJS\*PNL300B-7 2LAC\*PNL300B-19

LOCATION - CBS, EL. 261'

1.3 Frequency

This procedure should normally be performed only when inverters are taken out of service, or a refueling outage.

1.4 <u>Safety Classification</u>

Safety Related

- 1.5 <u>Safety Related Maintenance Requirementa</u>
- 1.5.1 The Safety Related UPS Inverters are qualified for a mild environment.
- 1.5.2 The safety-related maintenance requirements of EQMPOS-E035AAA Rev. 4 and E035AAB Rev. 4 are incorporated in this procedure, as applicable. \*
- 2.0 <u>REFERENCES</u>
- 2.1 NMPC Accident Prevention Rules
  - 2.2 AP-4.2 Control of Equipment Markups, Revision 04
  - 2.3 Elgar Corp. Instruction Manual, DOCNO: UPS-253-1-106, Access No: | \* 430002188, NMPC File Sequence No. N20349

N2-EPM-GEN-RF635 -1 April 1990

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- EOMPDS-E035AAA. E035AAB Revision: 4 2.4 12177-BE-001CB, 001CC, 001CM, and 001CN One Line Drawings 2.5 08MR - 169 2.6 SIL-343 2.7 3.0 TECHNICAL SPECIFICATIONS 3.1 Section 3/4.8.3, Onsite' Power Distribution 3.2 Section 3/4.8.2, DC Sources 4.0 MEASURING AND TEST EQUIPMENT. SPECIAL TOOLS. AND MATER 4.1 M&TE N/A 4.2 Special Tools 4.2.1 Vacuum cleaner with non-metallic wand and soft attachment. 4.3 Materials N/A 173 4.3.1 Air Filters
- 5.0 <u>PRECAUTIONS AND LIMITATIONS</u>
- 5.1 Prior to performing maintenance transfer the UPS to its alternate AC supply. If alternate AC supply circuit is energized entire alternate supply section in UPS is energized and output cables travel through inverter section of UPS.
- 5.2 Personnel shall comply with the requirements of NMPC Accident Prevention Rules.
- 5.3 If any reportable problems are determined while performing maintenance on the equipment, notify both the Assistant Maintenance Supervisor and SSS and determine if an Occurrence Report should be initiated.
- 5.4 Always wear rubber gloves when working with equipment that may possibly be energized.

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- 5.5 Voltage is present at many points inside the inverter even after the Advand DC breakers have been opened.
- 5.6 Deficiency damage UPS circuitry. If wiping is done be cautious of terminal connections and <u>DO NOT</u> wipe circuit cards. I.C. chips may be damaged.
- 6.0 <u>PREREOUISITES</u>
- 6.1 Plant Conditions Outage
- 6.2 System Conditions The inverter will be de-energized. The UPS will be fed from its alternate AC supply. If loose connections are found, UPS system including alternate supply must be de-energized in order to tighten.
- 6.3 Obtain permission from SSS to start work.

PLANT IMPACT: THE EQUIPMENT MARKED UP WILL NOT BE AVAILABLE FOR SERVICE. THE UPS LOADS WILL BE FED FROM ITS ALTERNATE. AC SUPPLY.

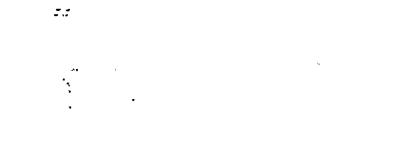
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- 6.4 Notify CSO of intent to perform maintenance
- 6.5 Mark-Ups Obtain mark-ups per AP-4.2. (equipment power supplies are instead in Section 1.2).
- 6.6 Notify QA an initial on data sheet.
- 6.7 Personnel performing this procedure have read it in its entirety and are thoroughly familiar with its contents.
- 7.0 PROCEDURE

#### WARNING:

VOLTAGE IS PRESENT AT MANY POINTS INSIDE THE INVERTER EVEN AFTER THE AC AND DC BREAKERS HAVE BEEN OPENED. METER CAN BE USED TO VERIFY AREAS INSIDE INVERTER THAT ARE ENERGIZED AND DE-ENERGIZED. NOTE: Use caution when cleaning the inside of the inverters not to damage components.

- 7.1 Ensure the inverter is de-energized and marked up.
- 7.2 Using a non-metallic vacuum wand and a soft bristle brush attachment, thoroughly clean the inside of the inverter.



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- 7.3 Clean or replace the air filters as necessary. (3 each per unit)
- 7.4 Instact the inverters internal components for signs of overheating or discoloration.
- 7.5 Inspect internal wiring for signs of discoloration or frayed insulation.
- 7.6 Check internal wiring for loose connections. Tighten as necessary.
- 7.7 Check large power wiring terminal connections for tightness. Tighten as necessary. Tightness can be verified by visually verifying that lockwashers (split lockwashers) are flat.

2.

8.0 RETURN TO NORMAL

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- 8.1 Surrender mark-ups to operations.
- 8.2 Operations notified equipment is available for fix test. The following tests are recommended:
- 8.2.1 Establish equipment operation per applicable operating procedur
- 8.2.2 Verify voltage, current, frequency, and temperature are formal
- 9.0 ACCEPTANCE CRITERIA
- 9.1 No corrective action required.
- 10.0 ATTACHMENTS
- 10.1 Single Phase Uninterruptible Power
- 10.2 Data Sheets

N2-EPM-GEN-RF635 -4 July 1988

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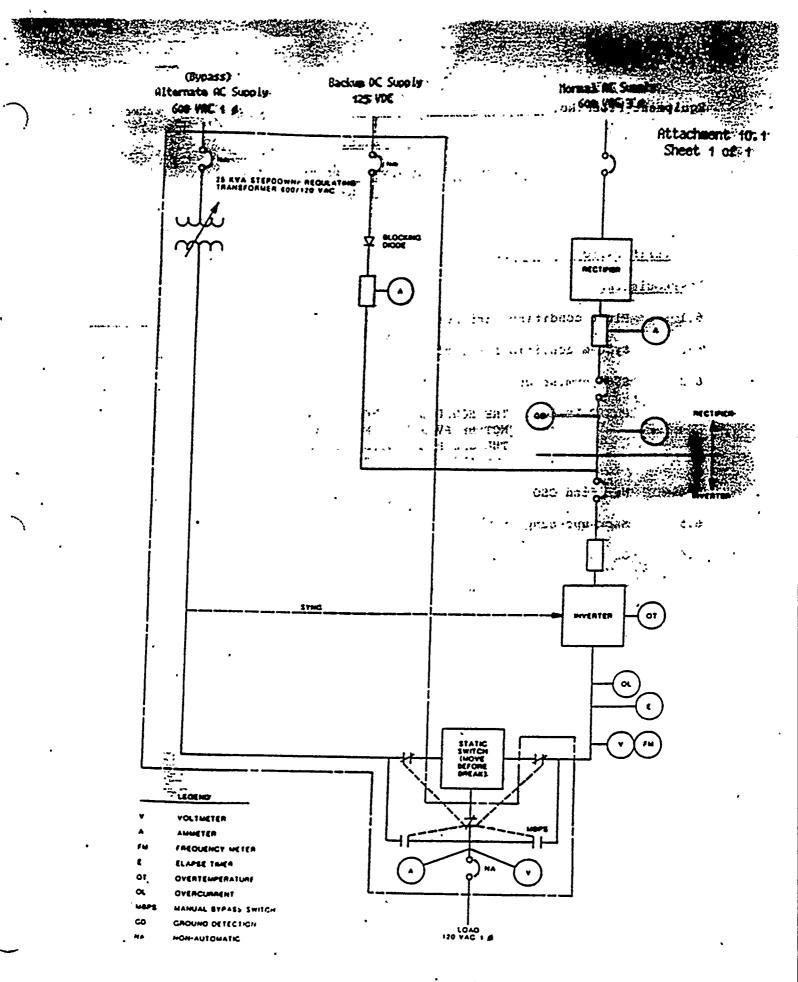
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N2-EFM-GEN-RF635 -5 July 1986

SINGLE PHASE UNINTERRUPTABLE POWER

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		·	AND INSPECTION	Initials/D	ate	

#### A. <u>VERIFICATION OF PROCEDURE STEPS:</u>

# Prerequisites

6.1	Plant condition	Maint.		
6.2	System conditio	су.	Maint.	
6.3	SSS permission.		ESL 90-766	sss
ş.		NOT BE AVAILAR	MARKED UP WILL BLE FOR SERVICE: WILL BE FED FROM AC. SUPPLY.	Ħ
6.4	Notified CSO.		2-90-01793	cso .
6.5	Mark-ups hung.		2-90-01793 2-90-01788 No?	Maint.
6.6	QA notified.			Maint.
6.7	Personnel famil	iar with proce	dure.	Maint.
7.0	Procedure	•		
7 1	<b>-</b>			

7.1 Inverter is de-energized. Maint. 7.2 Cleaned inside of inverter with Maint. non-metallic wand. 7.3 Cleaned or replaced air filters. Maint. Inspected components for signs of overheating/discoloration. 7.4 Maint. . Inspected internal wiring for discoloration/frayed insulation. 7.5 Maint. 7.6 Checked internal wiring connections for Maint.

tightness. Tightened as necessary.

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N2-EPM-GEN-RF635 -6 July 1988

is Militation 🗘 URAX 1105 Attachment: 10 Sheet 2 of 3 EZDATA: SHEET UPS .INVERTED .OLKANING AND INSPECTION NZ-EPH-GEN-RF635 . = Initials/Date A. VERIFICATION OF PROCEDURE STEPS: (Cont'd) 7.7 Checked large power wiring terminals Maint: connections for tightness. Tightened. as necessary. - 8.0 Return to Normal Mark-ups surrendered. ----- 8: 1-----··· Operations notified equipment is available ··· 8.2·· for post-maintenance test. 9.0 Acceptance Criteria 9.1· No corrective action required. Signature Table PRINTED NAME SIGNATURE INTTIALS in AT, ing 2h Performed by: nan Performed by: Performed by: Performed by: Performed by: 1 B. RESULTS: 1. **Acceptable** 2. Acceptable with comments. Work Request No. 3. ( ) Unsatisfactory, (Use Remarks section as necessary and initiate a Work Request). Work Request No.

N2-EPM-GEN-RF635 -7 July 1988

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<u>///8/</u>93 Date a. Asst./Maintenance Supervisor

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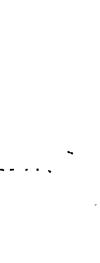
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Procedure Number N2-EPM-GEN-R635 is currently being revised. If there is any TCN's, Pub Changes, or performance problems, please contact Donna Collins (x7121) immediately. Thank you.











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# NINE MILE POINT NUCLEAR STATION UNIT 2

# ELECTRICAL PREVENTIVE MAINTENANCE PROCEDURE

# PROCEDURE NO. N2-EPM-GEN-RF635

# UPS INVERTER CLEANING AND INSPECTION

		DATE - A	ND INITIALS	
APPROVALS	SIGNATURES	REVISION 1	REVISION 2	REVISION 3
Site Superintenden Maintenance - Nucle K. A. Dahlberg		mDh		
Station Superintend NMPNS Unit 2 R. B. Abbott	lent <u>PBCcbbrt.Y</u>	ALL CONTRACTOR		
General Superintend Nuclear Generation J. L. Willis		7/21/8		
	Summary of 1	Pages	· eg	-
	Revision 1 (Effective	e 7/21/88	) <b>*</b>	
	Pages	Date	-	
	5,8 4,6,7 *1-3 Periodic Review, 4/2/90, 1	-		ion Change)
	NIAGARA MOHAWK POWER	CORPORATION		
		USED AI	ROCEDURE NOT TER April 19 T TO PERIODIC	92'

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#### N2-EPM-GEN-RF635

#### UPS INVERTER CLEANING AND INSPECTION

#### 1.0 <u>PURPOSE</u>

- 1.1 This procedure describes the steps necessary to perform cleaning and inspection of the Safety Related Uninterruptible Power Supply (UPS) Inverters.
- 1.2 <u>Applicability</u>

This procedure is applicable to the Safety Related UPS Inverters located as follows:

EQUIPMENT	NORMAL POWER	· ALTERNATE POWER	BACKUP POWER
2VBA*UPS2A	2EJS*PNL100A-7	2LAC*PNL100A-19	2BYS*SWG002A-3C
2VBA*UPS2B	2EJS*PNL300B-7	2LAC*PNL300B-19	2BYS*SWG002B-3C
LOCATION - CB	S,EL.261'		

# 1.3 Frequency

This procedure should normally be performed only when inverters are taken out of service, or a refueling outage.

1.4 <u>Safety Classification</u>

Safety Related

- 1.5 <u>Safety Related Maintenance Requirements</u>
- 1.5.1 The Safety Related UPS Inverters are qualified for a mild environment.
- 1.5.2 The safety-related maintenance requirements of EQMPOS-E035AAA Rev. 4 and E035AAB Rev. 4 are incorporated in this procedure, as applicable. \*

# 2.0 <u>REFERENCES</u>

- . 2.1 NMPC Accident Prevention Rules
- 2.2 AP-4.2 Control of Equipment Markups, Revision 04
- 2.3 Elgar Corp. Instruction Manual, DOCNO: UPS-253-1-106, Access No: \* 430002188, NMPC File Sequence No. N20349

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N2-EPM-GEN-RF635 -1 April 1990

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2.4 EQMPDS-E035AAA, E035AAB Revision 4

2.5 12177-EE-001CB, 001CC, 001CM, and 001CN One Line Drawings

\*

- 2.6 0&MR 169
- 2.7 SIL-343
- 3.0 <u>TECHNICAL SPECIFICATIONS</u>
- 3.1 Section 3/4.8.3, Onsite Power Distribution
- 3.2 Section 3/4.8.2, DC Sources
- 4.0 MEASURING AND TEST EQUIPMENT, SPECIAL TOOLS, AND MATERIALS
- 4.1 <u>M&TE</u>

N/A

- 4.2 <u>Special Tools</u>
- 4.2.1 Vacuum cleaner with non-metallic wand and soft bristle brush attachment.
- 4.3 <u>Materials</u>

N/A

- 4.3.1 Air Filters
- 5.0 PRECAUTIONS AND LIMITATIONS
- 5.1 Prior to performing maintenance transfer the UPS to its alternate AC supply. If alternate AC supply circuit is energized entire alternate supply section in UPS is energized and output cables travel through inverter section of UPS.
- 5.2 Personnel shall comply with the requirements of NMPC Accident Prevention Rules.
- 5.3 If any reportable problems are determined while performing maintenance on the equipment, notify both the Assistant Maintenance Supervisor and SSS and determine if an Occurrence Report should be initiated.
- 5.4 Always wear rubber gloves when working with equipment that may possibly be energized.

N2-EPM-GEN-RF635 -2 April 1990

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- Voltage is present at many points inside the inverter even after the 5.5 AC and DC breakers have been opened.
- 5.6 Static can damage UPS circuitry. If wiping is done be cautious of small terminal connections and <u>DO NOT</u> wipe circuit cards. I.C. chips may be damaged.
- 6.0 PREREOUISITES
- 6.1 Plant Conditions - Outage
- System Conditions The inverter will be de-energized. The UPS will 6.2 be fed from its alternate AC supply. If loose connections are found, UPS system including alternate supply must be de-energized in order to tighten.
- 6.3 Obtain permission from SSS to start work.

PLANT IMPACT: THE EQUIPMENT MARKED UP WILL NOT BE AVAILABLE FOR SERVICE. THE UPS LOADS WILL BE FED FROM ITS ALTERNATE AC SUPPLY. 

- 6.4 Notify CSO of intent to perform maintenance.
- Mark-Ups Obtain mark-ups per AP-4.2 (equipment power supplies are |\* 6.5 listed in Section 1.2).
- 6.6 Notify QA an initial on data sheet.
- Personnel performing this procedure have read it in its entirety and 6.7 are thoroughly familiar with its contents.
- 7.0 PROCEDURE

#### WARNING:

VOLTAGE IS PRESENT AT MANY POINTS INSIDE THE INVERTER EVEN AFTER THE AC AND DC BREAKERS HAVE BEEN OPENED. METER CAN BE USED TO VERIFY AREAS INSIDE INVERTER THAT ARE ENERGIZED AND DE-ENERGIZED.

- Use caution when cleaning the inside of the inverters not NOTE: to damage components.
- 7.1 Ensure the inverter is de-energized and marked up.
- 7.2 Using a non-metallic vacuum wand and a soft bristle brush attachment, thoroughly clean the inside of the inverter.

N2-EPM-GEN-RF635 -3 April 1990

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- 7.3 Clean or replace the air filters as necessary. (3 each per unit)
- 7.4 Inspect the inverters internal components for signs of overheating or discoloration.

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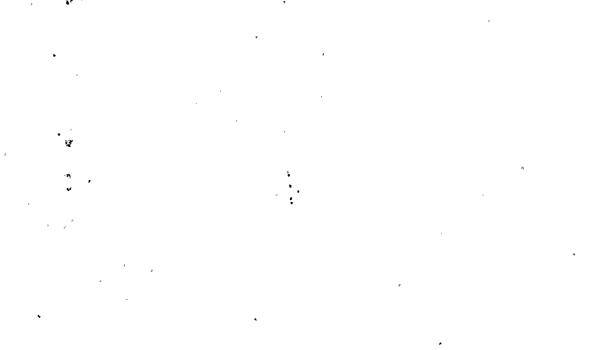
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- 7.5 Inspect internal wiring for signs of discoloration or frayed insulation.
- 7.6 Check internal wiring for loose connections. Tighten as necessary.
- 7.7 Check large power wiring terminal connections for tightness. Tighten as necessary. Tightness can be verified by visually verifying that lockwashers (split lockwashers) are flat.
- 8.0 RETURN TO NORMAL
- 8.1 Surrender mark-ups to operations.
- 8.2 Operations notified equipment is available for post-maintenance test. The following tests are recommended.
- 8.2.1 Establish equipment operation per applicable operating procedures. 3
- 8.2.2 Verify voltage, current, frequency, and temperature are normal.
- 9.0 ACCEPTANCE CRITERIA
- 9.1 No corrective action required.
- 10.0 ATTACHMENTS
- 10.1 Single Phase Uninterruptible Power
- 10.2 Data Sheets

N2-EPM-GEN-RF635 -4 July 1988

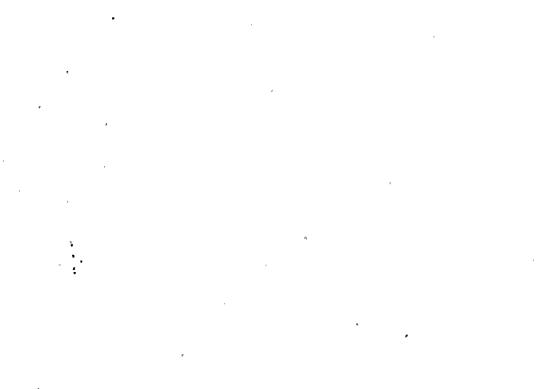


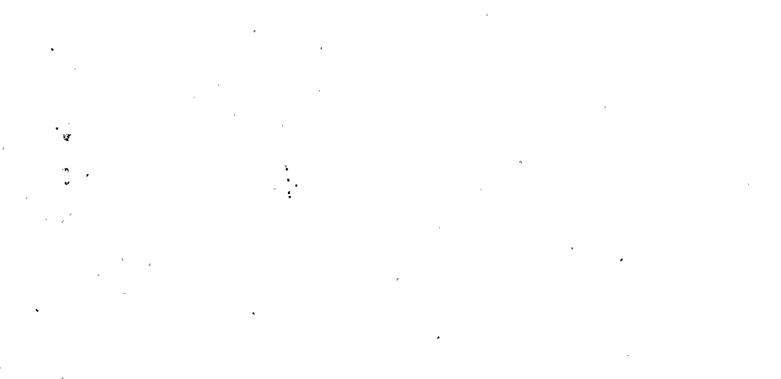
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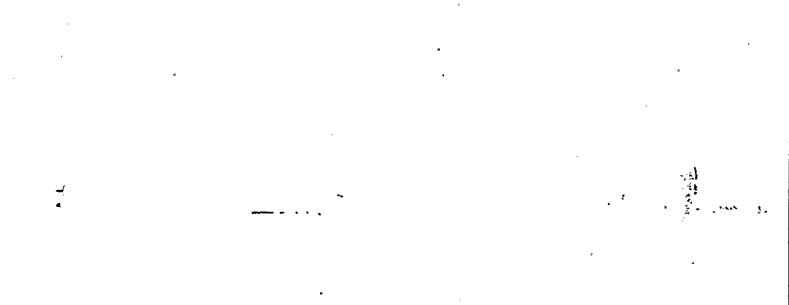
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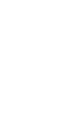


















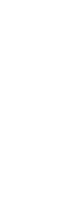






















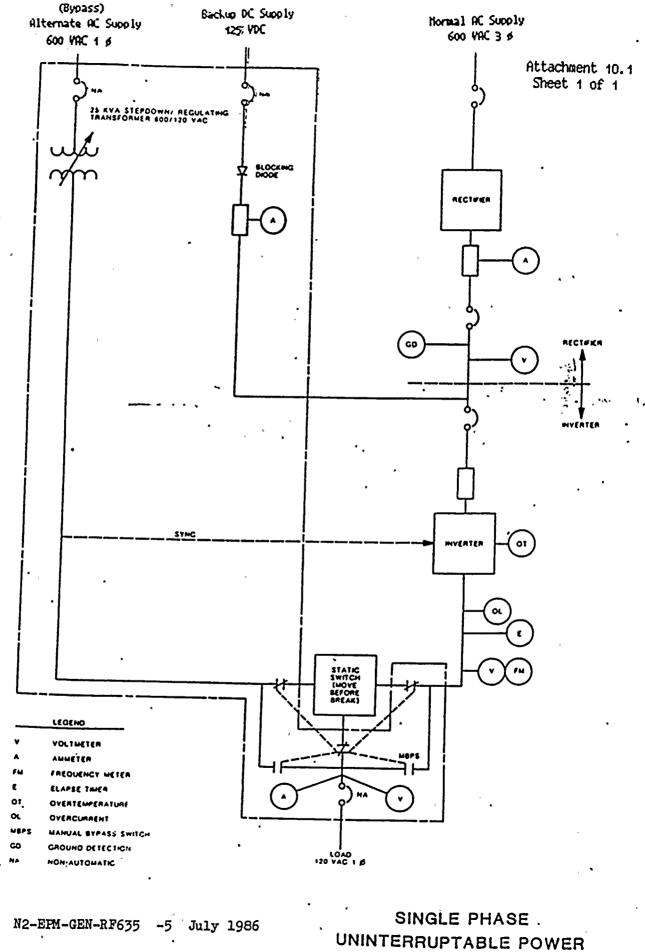






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SUPPLY SYSTEM (UPS)

# Equipment Piece No.

Attachment 10.2 Sheet 1 of 3

# DATA SHEET

# UPS INVERTER CLEANING AND INSPECTION N2-EPM-GEN-RF635

# Initials/Date

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Ľ,	A. VERI	FICATION OF PRO	CEDURE STEPS:		
	Prerequi	sites			
	6.1	Plant conditio	ons satisfactory.	Maint.	/
	6.2	System conditi	ons satisfactory.	Maint.	· /
	6.3	SSS permission	· ·	SSS	/ `
3		PLANT IMPACT:	THE EQUIPMENT MARKED UP WILL NOT BE AVAILABLE FOR SERVICE THE UPS LOADS WILL BE FED FR ITS ALTERNATE AC SUPPLY.	2.	
5	6.4	Notified CSO.	•	CSO	
Ť	6.5	Mark-ups hung.	No <sup>*</sup> •	_ Maint.	
	6.6	QA notified.		Maint.	<u> </u>
	6.7	Personnel fami	liar with procedure.	Maint.	
~ •	7.0	Procedure			
	7.1	Inverter is de	-energized.	Maint.	/
~	7.2	Cleaned inside non-metallic w	of inverter with and.	Maint.	/
	7.3	Cleaned or rep	laced air filters.	Maint.	
	7.4	Inspected composite overheating/dis	onents for signs of scoloration.	Maint.	/   
	7.5		rnal wiring for frayed insulation.	Maint.	/
,	7.6		al wiring connections for	Maint.	/

Equipment Piece No.

17.0

Attachment 10.2 Sheet 2 of 3

1.

# DATA SHEET

2

# UPS INVERTER CLEANING AND INSPECTION N2-EPM-GEN-RF635

						Initia	1s/Date	
A.	VERI	FICATION OF PR	OCEDURE STEPS:	(Cont'd)				
7.7		Checked large connections f as necessary.	power wiring ten or tightness. Ti	minals . ghtened	Maint.	•		
8.0		Return to Nor	nal	·				
8.1		Mark-ups surr	endered.		Maint.		/	
8.2		Operations not for post-main	cified equipment tenance test.	is available	Maint.		/ .}	,
9.0		Acceptance Cr	lteria					****
9.1		No corrective	action required.	•••		•		
		Signature Tabl	e		•	٠		
			INITIALS	SIGNATURE		PRINTED	NAME	
		Performed by: Performed by: Performed by: Performed by: Performed by:						 
в.	RESUI	LTS:						1
	1.	( ) Acceptabl	e					
	2.	( ) Acceptabl	e with comments.	Work Request	No			
	3.	( ) Unsatisfa Work Requ	ctory, (Use Remains est). Work Reque	cks section as est No	necessar	y and ini	tiate a	

N2-EPM-GEN-RF635 -7 July 1988

Equ	ipment Piece No DATA SHEET <u>UPS INVERTER CLEANING AND INSPECTION</u> <u>N2-EPM-GEN-RF635</u>	Attachment 10.2 Sheet 3 of 3
. C.	REMARKS:	
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*D.	REVIEW :	

Maintenance Man Date

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Asst./Maintenance Supervisor Date

N2-EFM-GEN-RF635 -8 July 1986

WINIT 2 P# 11642 10-21-90 NINE MILE POINT NUCLEAR STATION UNIT 2 ECTRICAL PREVENTIVE MAINTENANCE PROCEDURE 2 PROCEDURE NO. N2-EPM-GEN-RF635 UPS INVERTER CLEANING AND INSPECTION

	•	DATE A	ND INITIALS		
APPROVALS	SIGNATURES	REVISION 1	REVISION 2	REVISION 3	
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# N2-EPM-GEN-RF635

# UPS INVERTER CLEANING AND INSPECTION

#### PURPOSE 1.0

This procedure describes the steps necessary to perform cleaning and 1.1 inspection of the Safety Related Uninterruptible Power Supply (UPS) Inverters.

#### Applicability ' 1.2

This procedure is applicable to the Safety Related UPS Inverters located as follows:

NORMAL POWER EOUIPMENT

2EJS\*PNL100A-7 2VBA\*UPS2A 2EJS\*PNL300B-7 2VBA\*UPS2B

BACKUP POWER. ALTERNATE POWER . 2BYS\*SWG002A-3C 2LAC\*PNL100A-19 2BYS\*SWG002B-3C 2LAC\*PNL300B-19

LOCATION - CBS, EL. 261'

1.3 Frequency

> This procedure should normally be performed only when inverters are taken out of service, or a refueling outage. . . . . . .

Safety Classification 1.4

Safety Related

- Safety Related Maintenance Requirements 1.5
- The Safety Related UPS Inverters are qualified for a mild environment. 1.5.1
- The safety-related maintenance requirements of EQMPOS-E035AAA Rev. 4 1.5.2 and EO35AAB Rev. 4 are incorporated in this procedure, as applicable. 1\*

#### 2.0 REFERENCES ·

- 2.1 NMPC Accident Prevention Rules
- \* AP-4.2 Control of Equipment Markups, Revision 04 2.2
- Elgar Corp. Instruction Manual, DOCNO: UPS-253-1-106, Access No: | \* 2.3 430002188. NMPC File Sequence No. N20349





2.4 EQMPDS-E035AAA, E035AAB Revision 4

2.5 12177-EE-001CB, 001CC, 001CM, and 001CN One Line Drawings

- 2.6 05MR 169
- 2.7 SIL-343

1. See ...

### 3.0 <u>TECHNICAL SPECIFICATIONS</u>

3.1 Section 3/4.8.3, Onsite Power Distribution

- 3.2 Section 3/4.8.2, DC Sources
- 4.0 MEASURING AND TEST EQUIPMENT, SPECIAL TOOLS, AND MATERIALS
- 4.1 <u>M&TE</u>

N/A

# 4.2 <u>Special Tools</u>

4.2.1 Vacuum cleaner with non-metallic wand and soft bristle brushe attachment.

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1 time -

4.3 <u>Materials</u>

N/A

4.3.1 Air Filters

# 5.0 <u>PRECAUTIONS AND LIMITATIONS</u>

- 5.1 Prior to performing maintenance transfer the UPS to its alternate AC supply. If alternate AC supply circuit is energized entire alternate supply section in UPS is energized and output cables travel through inverter section of UPS.
- 5.2 Personnel shall comply with the requirements of NMPC Accident Prevention Rules.
- 5.3. If any reportable problems are determined while performing maintenance on the equipment, notify both the Assistant Maintenance Supervisor and SSS and determine if an Occurrence Report should be initiated.
- 5.4 Always wear rubber gloves when working with equipment that may possibly be energized.

- 5.5 Voltage is present at many points inside the inverter even after; these AC and DC breakers have been opened.
- 5.6 Static can-damage UPS circuitry. If wiping is done be cautious of small terminal connections and <u>DO NOT</u> wipe circuit cards. I.C. chips may be damaged.

# 6.0 <u>PREREOUISITES</u>

- 6.1 Plant Conditions Outage
- 6.2 System Conditions The inverter will be de-energized. The UPS will' be fed from its alternate AC supply. If loose connections are found, UPS system including alternate supply must be de-energized in order to tighten.
- 6.3 Obtain permission from SSS to start work.

PLANT IMPACT: THE EQUIPMENT MARKED UP WILL NOT BE AVAILABLE FOR SERVICE. THE UPS LOADS WILL BE FED FROM ITS ALTERNATE AC SUPPLY.

- 6.4 Notify CSO of intent to perform maintenance.
- 6.5 Mark-Ups Obtain mark-ups per AP-4.2 (equipment power supplies are in listed in Section 1.2).
- 6.6 Notify QA an initial on data sheet.
- 6.7 Personnel performing this procedure have read it in its entirety and are thoroughly familiar with its contents.
- 7.0 PROCEDURE

#### WARNING:

VOLTAGE IS PRESENT AT MANY POINTS INSIDE THE INVERTER EVEN AFTER THE AC AND DC BREAKERS HAVE BEEN OPENED. METER CAN BE USED TO VERIFY AREAS INSIDE INVERTER THAT ARE ENERGIZED AND DE-ENERGIZED.

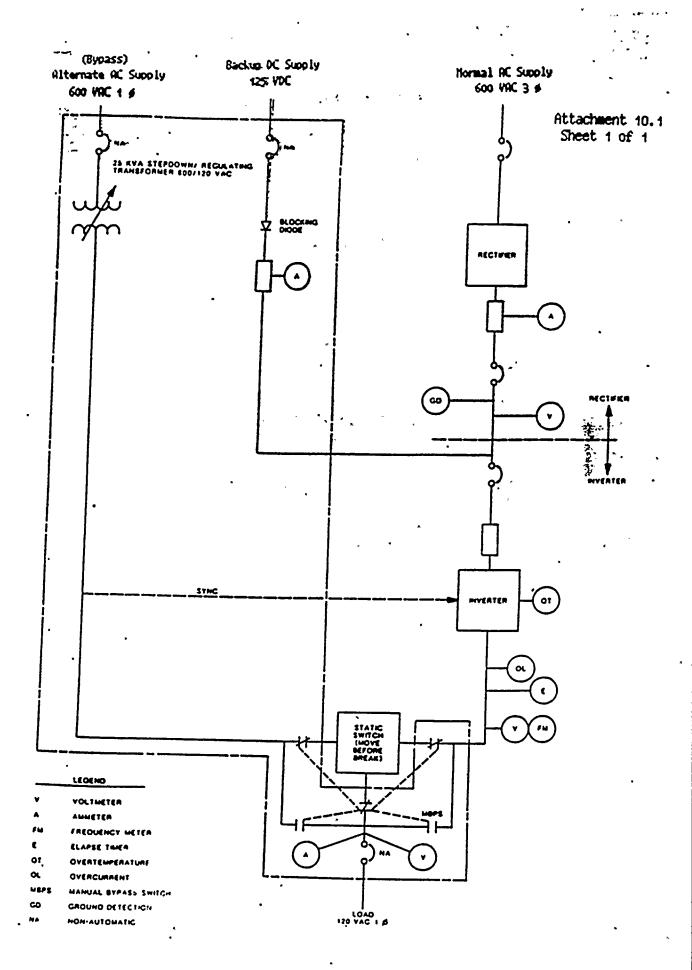
- NOTE: Use caution when cleaning the inside of the inverters not to damage components.
- 7.1 Ensure the inverter is de-energized and marked up.
- 7.2 Using a non-metallic vacuum wand and a soft bristle brush attachment, thoroughly clean the inside of the inverter.

- 7.3 Clean or replace the air filters as necessary. (3 each per unit)
- 7.4 Inspect the inverters internal components for signs of overheating or discoloration.

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- 7.5 Inspect internal wiring for signs of discoloration or frayed insulation.
- 7.6 Check internal wiring for loose connections. Tighten as necessary.
- 7.7 Check large power wiring terminal connections for tightness. Tighten as necessary. Tightness can be verified by visually verifying that lockwashers (split lockwashers) are flat.
- 8.0 <u>RETURN TO NORMAL</u>
- 8.1 Surrender mark-ups to operations.
- 8.2 Operations notified equipment is available for post-maintenance ... test. The following tests are recommended.
- 8.2.1 Establish equipment operation per applicable operating procedures.
- 8.2.2 Verify voltage, current, frequency, and temperature are normal.
- 9.0 ACCEPTANCE\_CRITERIA
- 9.1 No corrective action required.
- 10.0 ATTACHMENTS
- 10.1 Single Phase Uninterruptible Power
- 10.2 Data Sheets



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SINGLE PHASE UNINTERRUPTABLE POWER

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	.Equipmen	DATA SHEET UPS INVERTER CLEANING AND INSPENDEN- N2-EPM-GEN-RF635	CTION	Attachment 10.2 Sheet 1 of 3	
•	•			<u>Initials/Date</u>	
	A. <u>Veri</u>	FICATION OF PROCEDURE STEPS:		•	
	Prerequi	sites			
	6.1	Plant conditions satisfactory.	Maint.	89 110.18.91	3
•	6.2	System conditions satisfactory.	Maint.	20 110.18.9	0
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	<del>.</del>	PLANT IMPACT: THE EQUIPMENT MARKED UP WILL NOT BE AVAILABLE FOR SERVICE. THE UPS LOADS WILL BE FED FROM ITS ALTERNATE AC SUPPLY.	۲. ۲		- · ·
	6.4	Notified CSO. RED 2-90- 61592 01595 01593	CSO	Amth, 12/20/16	
	-6.5	Mark-ups hung. No.	Haint.	<u>/////////////////////////////////////</u>	
	6.6	QA notified.	Maint.	MOAL 110-21-9	
	6.7	Personnel familiar with procedure.	Maint.	Mon_ 1 10-81-94	2
	7.0	Procedure	•		
	7.1	Inverter is de-energized.	Maint.	Mon 10-21-	90
	7.2	Cleaned inside of inverter with non-metallic wand.	Maint.	MPm 1/0-21-4	ÎO
	7.3	Cleaned or replaced air filters.	Maint.	MM10-21-	2p1
	7.4 ,	Inspected components for signs of overheating/discoloration.	Maint.	/M/m /110.21-	to
	7.5	Inspected internal wiring for discoloration/frayed insulation.	Maint.	1101 10-21-4	<i>ю</i> .
	7.6	Checked internal wiring connections for tightness. Tightened as necessary.	Maint.	MDM. 10-21-	90
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Equipme	DATA SHEET UPS INVERTER CLEANING AND INSPECTION	Attachment 10.25 Sheet 2 of 3
A. <u>Ver</u>	<u>N2-EPM-GEN-RF635</u>	Initials/Date
7.7	Checked large power wiring terminals Maint. connections for tightness. Tightened as necessary.	. <u>MUKU 10-2</u> 1-90
8.0	Return to Normal	
8.1	Mark-ups surrendered. Maint.	Mon UD-29-98
8.2 ^	Operations notified equipment is available Maint. for post-maintenance test.	MM 10 2 90
9.01	Acceptance Criteria	2000 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 -
9.1	No corrective action required.	
	Signature Table	
	INITIALS     SIGNATURE       Performed by:	PRINTED NAME MMCCONMM
B. <u>RESU</u>	(X) Acceptable	
· 2. 3.	<ul> <li>(~ ) Acceptable with comments. Work Request No.</li> <li>( ) Unsatisfactory, (Use Remarks section as necessar Work Request). Work Request No.</li> </ul>	cy and initiate a

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Equipment Piece No. 2035×02528

Attachment 10.2 Sheet 3 of 3

DATA SHEET

UPS INVERTER CLEANING AND INSPECTION N2-EPM-GEN-RF635 REMARKS: C. . , . Ŷ A ST CA CANADA . . . 3 . .

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Asst./Maintenance Supervisor

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