



# Avid Application Note Operation and Maintenance Notes for Avid Extreme Inverter Upgraded Turbines

Document Title:	Operation and Maintenance Notes for Avid Extreme Inverter Upgraded Turbines
Document Number:	AAN-041-REV_00
Author(s):	Gary Pace
Status:	Unrestricted

## Approvals

  
 \_\_\_\_\_  
 Gary Pace – Author      NOV 15 2021  
 \_\_\_\_\_  
 Date

  
 \_\_\_\_\_  
 Kevin Williams – Approval      11/15/2021  
 \_\_\_\_\_  
 Date

## Confidential

The information contained in this Document and the Appendices hereto is disclosed in the strictest commercial confidence and on the understanding that no part thereof is to be presented or divulged to any party or copied, reproduced, distributed, stored or utilized without the prior express written permission of Avid Controls Inc.

## Contents

1.	Terms and Definitions .....	2
2.	References & Related Documents .....	2
3.	Document Purpose and Overview .....	2
4.	Controller (CDC) Replacement Procedure .....	3
4.1	Background .....	3
4.2	Apply Labels Provided with the Upgrade Kit .....	3
4.3	Procedure for Turbines Using CPT plus APU-E/F.....	4
4.4	Procedure for Turbines Using APU-G .....	5
5.	Reconnection of Medium-Voltage Distribution Supply .....	6
5.1	Background .....	6
5.2	Procedure.....	6
6.	Revision History.....	6

**IMPORTANT NOTICE**

Avid Application Notes are informal communications, drafted by technicians to share knowledge, procedures, or offer solutions to common issues. This information is strictly for informational sharing purposes only and in no way should replace information found in product Data Sheets or other technical manuals. Contact Avid Controls directly with any questions or if additional clarification is needed.

+1-281-640-8600 | info@avidcontrolsinc.com | www.avidcontrolsinc.com

## 1. Terms and Definitions

<u>CPT</u>	Control Power Transformer
<u>APU</u>	Auxiliary Power Unit
<u>AEI</u>	Avid Extreme Inverter

## 2. References & Related Documents

Document Number	Document Title
DTS-MID0012	Data Sheet – Avid Extreme Inverter, Types AEI900L to AEI1400L
DTS-MID0124	Data Sheet – Auxiliary Power Unit, Types AEI-APU-D-00, AEI-APU-E-00, AEI-APU-F-00
DTS-02175-ASY-A	Data Sheet – Auxiliary Power Unit, Type AEI-APU-G-00
DTS-01944-ASY-A	Data Sheet – Control Power Transformer for AEI Upgrade
DTS-01886-ASY-A	Data Sheet – AEI Upgrade Kit Type 01 for Type 28 2.3MW Turbines using CPT & AEI-APU-E&F
DTS-01894-ASY-A	Data Sheet – AEI Upgrade Kit Type 02 for Type 27 Class 2.3MW Turbines using CPT & AEI-APU-E&F
DTS-01776-ASY-A	Data Sheet – AEI Upgrade Kit Type 03 for Type 28 2.3MW Turbines, using AEI-APU-G-00
DTS-01804-ASY-A	Data Sheet – AEI Upgrade Kit Type 04 for Types 23 to 27 2.3MW Turbines, using AEI-APU-G-00

## 3. Document Purpose and Overview

- This Application Note details specific operation and maintenance issues and actions that are potentially different from a turbine equipped with GE Delta modules.

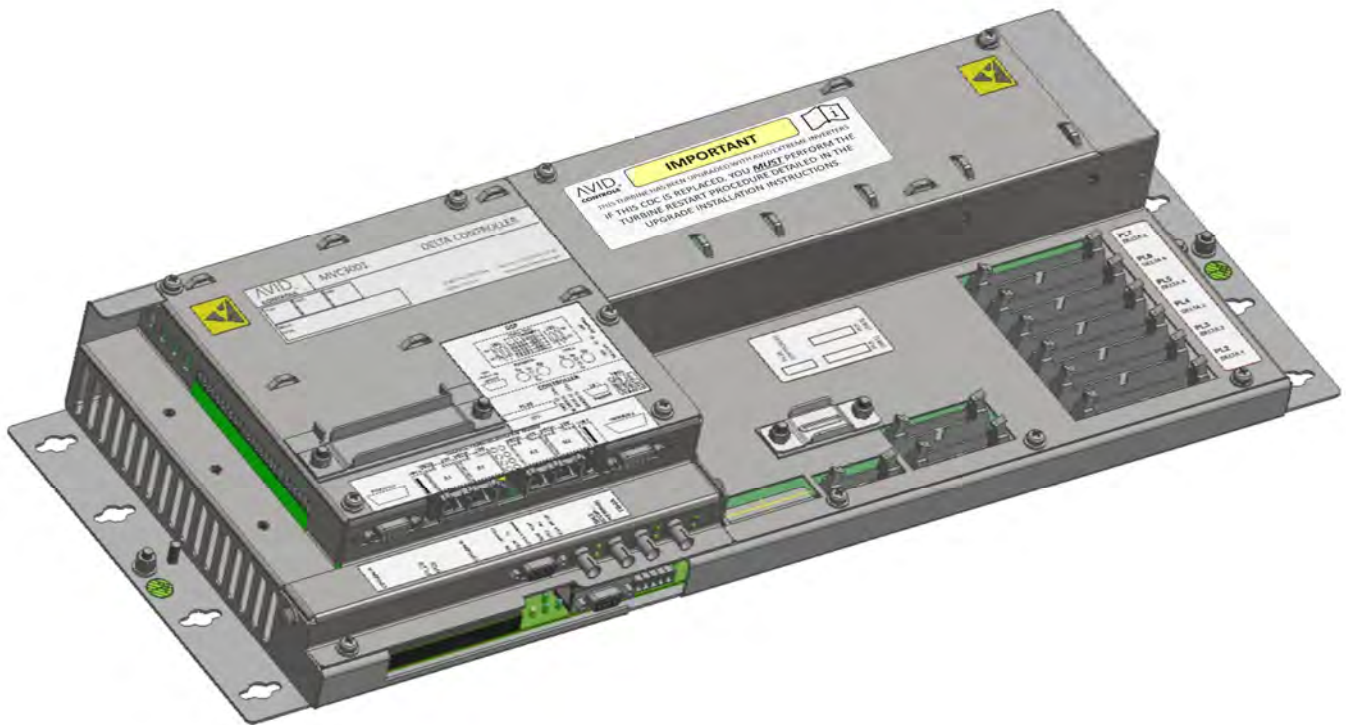
## 4. Controller (CDC) Replacement Procedure

### 4.1 Background

- During initial installation, both GRID and GENERATOR CDCs were configured to read identity, current rating and scaling information from the AEI modules.
- If either of the CDCs is replaced, these settings MUST also be made in the new CDC.
- The exact procedure depends upon the APU type used in the upgrade.

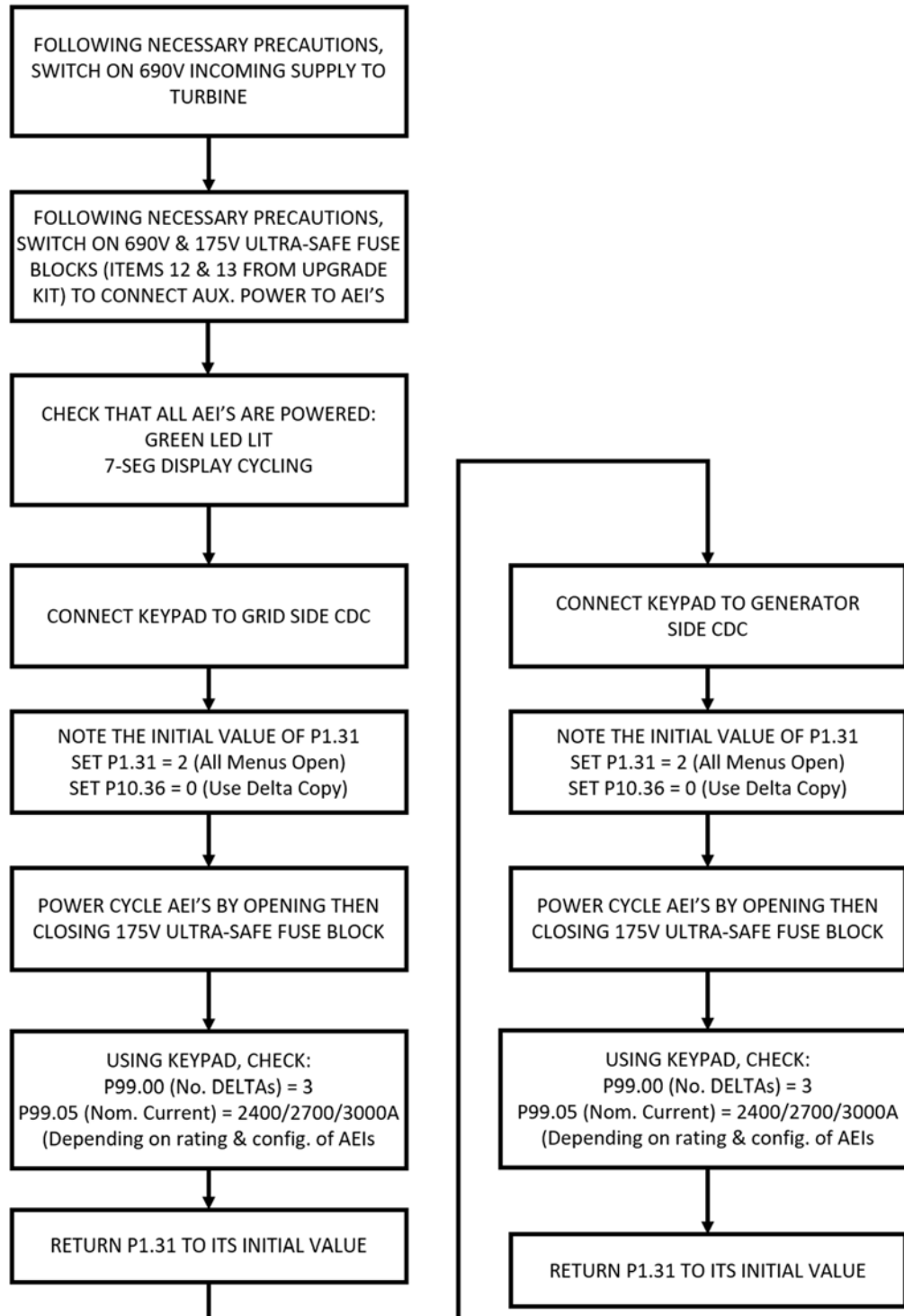
### 4.2 Apply Labels Provided with the Upgrade Kit

- The upgrade kit provided labels allowing the CDCs to be clearly labelled that this procedure is required:

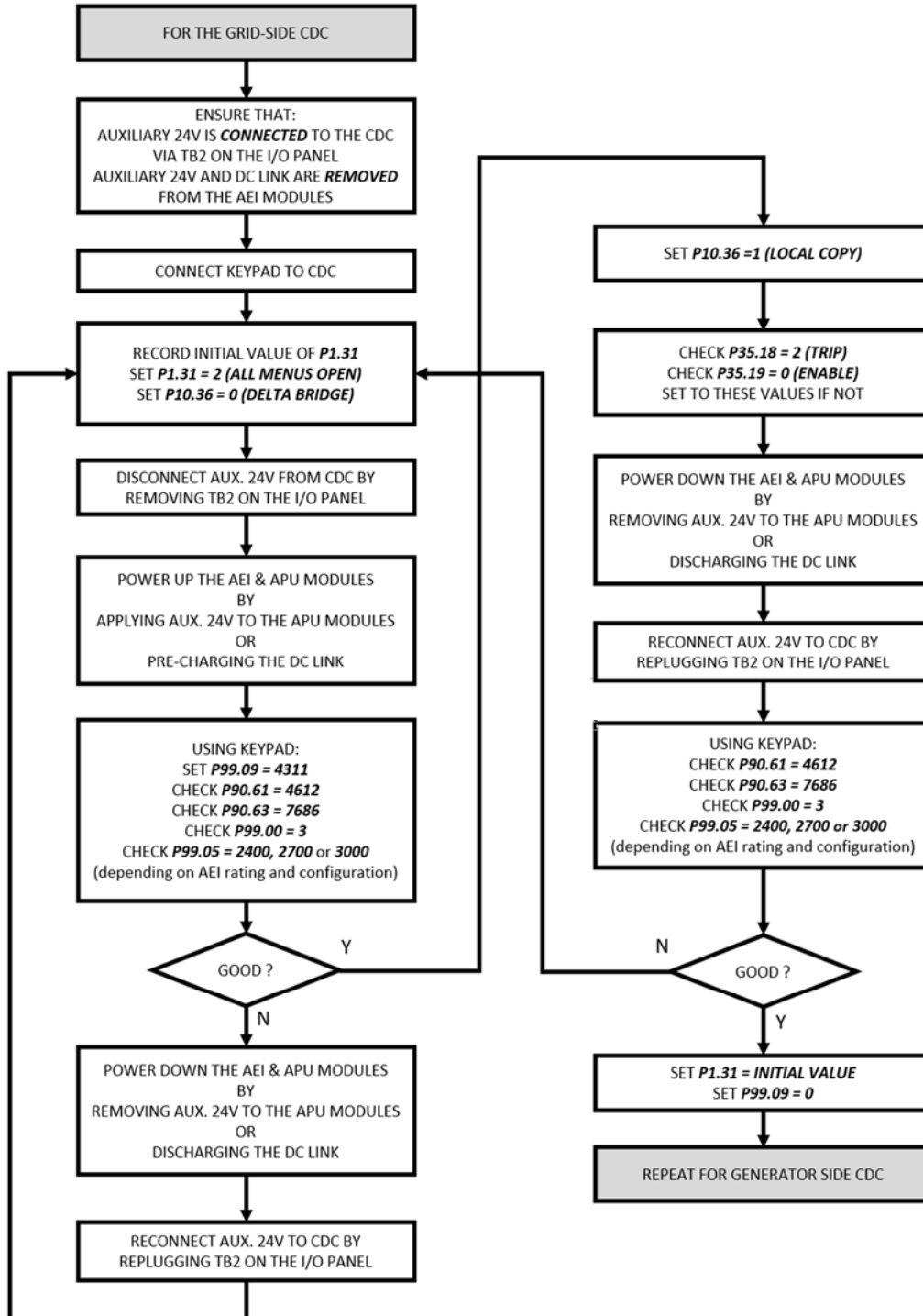


- If the Upgrade Kit installation instructions were followed, there will be a magnetic envelope on the control cabinet door that contains spare copies of this label.
- Apply one copy to the cabinet back plate underneath the removed CDC, and one copy to the replacement CDC as shown above.

**4.3 Procedure for Turbines Using CPT plus APU-E/F**



**4.4 Procedure for Turbines Using APU-G**



## 5. Reconnection of Medium-Voltage Distribution Supply

### 5.1 Background

- This requirement applies to turbines upgraded using the CPT and AEI-APU-E/F option.
- When the medium-voltage supply to the turbine pad transformer is reconnected after being disconnected at the sub-station, there is a possibility that line resonance can cause a transient over-voltage on the 690V supply to the turbine.
- This is not seen by equipment connected to the load side of the main breaker (which is open), but the AEI CPT is connected to the incoming side, and these transient over-voltages can damage both the APU and AEI modules.

### 5.2 Procedure

- When the medium-voltage distribution supply is powered down, you must disconnect the AEI CPT from the turbine 690V supply, prior to re-energizing the distribution voltage.
- This can be achieved by opening the breaker that was used to supply the CPT (usually the elevator circuit breaker), or by opening the ultra-safe fuse block that was installed with the upgrade.
- After the medium-voltage distribution supply is reconnected and stable, the CPT should be reconnected, and the turbine will start as normal.

## 6. Revision History

Rev.	Date	Author(s)	Changes
00	NOV 15 2021	Gary Pace	Document created from template AQS-TDC-REV_00