
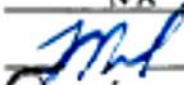
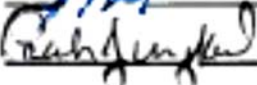



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<b>SOLDER TRAINING</b>			
Notes:			

**Approvals:**

Operations:	Print	<u>Matt Burg</u>	Signature		Date:	<u>7/10/19</u>
Engineering:	Print	<u>N/A</u>	Signature	<u>N/A</u>	Date:	<u>N/A</u>
Quality:	Print	<u>Lars Novak</u>	Signature		Date:	<u>7/17/19</u>
Process Owner:	Print	<u>Leah Jungkind</u>	Signature		Date:	<u>6/13/19</u>
Finance:	Print	<u>N/A</u>	Signature	<u>N/A</u>	Date:	<u>N/A</u>
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President:	Print	<u>N/A</u>	Signature	<u>N/A</u>	Date:	<u>N/A</u>
Other:	Print	<u>N/A</u>	Signature	<u>N/A</u>	Date:	<u>N/A</u>
Other:	Print	<u>N/A</u>	Signature	<u>N/A</u>	Date:	<u>N/A</u>
Other:	Print	<u>N/A</u>	Signature	<u>N/A</u>	Date:	<u>N/A</u>
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					Release Date (initial/date):	<u>42 7/18/19</u>

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## 1. PURPOSE:

This work instruction defines the requirements for Electrical and Electronic Solder Training.

## 2. SCOPE:

**2.1.** This instruction defines the requirements for training of personnel responsible for soldering of electrical and electronic products both new and overhauled.

**2.2.** This instruction includes the training requirements for operators and inspectors.

## 3. REFERENCES & DEFINITIONS:

### 3.1. Procedures

3.1.1. OP 18.1 –Training Program

3.1.2. OP 17.1 - Compliance Evaluation Audits

3.1.3. OP 16.1 - Control of Records

3.1.4. OP 10.1 – Inspection and Testing

3.1.5. BPC-283-73 – Soldering of Electrical and Electronic Equipment

3.1.6. QP-116 – Protection of ESD Sensitive Parts, Assemblies and Equipment

3.1.7. QP-162 – ESD Workstations - Certifications and Verification

3.1.8. QP-216 – Protection of ESD Within the Engineering Lab

### 3.2. Forms

3.2.1. N/A

### 3.3. Other Documents

3.3.1. N/A

### 3.4. Abbreviations and Definitions

3.4.1. ESD                      Electro Static Discharge

## 4. REGULATIONS & RESPONSIBILITIES:

### 4.1. Regulatory Requirements

4.1.1. ESD training shall be required bi-annually.

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## 4.2. Departmental Responsibilities

- 4.2.1. Operations is responsible for the implementation and requirements of this instruction in the Production, Engineering Laboratory, Inspection, Test, and O&R areas.
- 4.2.2. Area Supervisors are responsible for ensuring operators are in compliance with applicable requirements.

## 5. PROCEDURE:

### 5.1. TRAINING STANDARDS

- 5.1.1. Solder training shall be accomplished to the process control documents as specified herein.
- 5.1.2. Process Control Documents
  - 5.1.2.1. The controlling documents for soldering training and solder process inspection are defined within the Training Requirements of BPC-283-73, except where the contract specifies otherwise.

### 5.2. TRAINING REQUIREMENTS

- 5.2.1. Solder training will be accomplished using lesson plans developed from the specifications defined within the Training Requirements of BPC-283-73.
  - 5.2.1.1. Normally 24-40 hours is required for initial training of operators and/or inspectors. However, the length of the course may vary depending on which specification modules are being taught.
  - 5.2.1.2. Each student must obtain a proficiency with a score of 80% or greater on the final test and workmanship samples as applicable.
- 5.2.2. The Training requirements as defined by this procedure may be supplemented by special requirements imposed by customer contract and are outside the scope of this procedure. The method used to accomplish the additional requirements is to lecture and test to the differences between BPC-283-73 and the customer's requirements when applicable.
- 5.2.3. It is expected that all workmanship samples for solder personnel will provide a level of workmanship that is consistent with aerospace standards. Failure to

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produce workmanship samples of sufficient quality shall require retraining of personnel until workmanship samples achieve the required quality.

5.2.3.1. Workmanship samples are used to customize the training to the needs of the trainee. A successful workmanship sample will allow waiver of further workmanship training.

5.2.3.2. Sample tests may be used to customize lecture training prior to giving the final examination.

#### 5.2.4. Re-Certification

5.2.4.1. Re-certification is performed every 2 years, with a provision of extension for up to 30 days to allow for the development of a successful workmanship sample.

5.2.4.2. Certifications can be extended for up to 90 days before re-certification training due to scheduling conflicts, provided the student shows continued proficiency to the specification.

5.2.4.3. Normally 12-24 hours is required for the retraining of operators and/or inspectors. This may vary depending on which specification modules are being taught.

5.2.4.4. Re-certification shall include a written test and workmanship sample. A score of 80% or greater on the final test and workmanship samples (as applicable) is required.

5.2.5. Each student, both operator and inspector, must pass a basic visual acuity test annually in accordance with the requirements of OP10.1.

5.2.6. The performance of all employees certified to this plan shall be evaluated by supervisory and manufacturing engineering personnel as required. They will assure that the requirements specified herein are being met by periodically reviewing the work of all operators and inspectors.

5.2.6.1. Any certified operators and/or inspectors found not proficient in accordance with the requirements of this procedure will need to be re-certified immediately before continuing to solder or inspecting production hardware.

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### 5.3. ESD TRAINING

- 5.3.1. Either prior to and/or during soldering training each student must be trained in ESD Awareness procedures IAW QP-116 or QP-216.

### 5.4. Audits, Records, Training

- 5.4.1. Audits of this procedure shall be accomplished in accordance with the requirements of OP 17.1.
- 5.4.2. Records in support of this procedure shall be accomplished in accordance with the requirements of OP 16.1.
- 5.4.3. Training to support this procedure shall be accomplished in accordance with the requirements of OP 18.1.

## 6. REVISION HISTORY:

<b>REV</b>	<b>DATE</b>	<b>OWNER</b>	<b>DESCRIPTION OF CHANGE(S)</b>
E	10/3/2002	D. Brown	Update work instruction.
F	8/17/2012	R. Jacobsen	Rewrite and reformat in its entirety. No rev. bars used.
G	7/31/2014	L. Novak	Added sections 5.4, 4.2.2, 4.1.1, & 3.4.
H	7/13/2015	R. Jacobsen	Paragraphs 3.18, 5.3.1 & 5.3.2 were up-dated
J	6/12/2019	R. Jacobsen	Paragraphs 4.1.1, 5.2.1.1, 5.2.3.2, 5.2.4.3 were up-dated. Para. 5.3.2 was deleted.