

# **CIRCUIT CONNECT INC.**

## **ENVIRONMENTAL SYSTEMS MANAGEMENT LEVEL 1 DOCUMENT**

#### 4.1 GENERAL REQUIREMENTS:

As per our Policy, Circuit Connect plans, establishes, and maintains an Environmental, Health and Safety system as per the International Standard, ISO 14001, E, as described below.

The scope of this certification:

This document specifies requirements for an Environmental Management System where Circuit Connect, Inc.:

- a) Demonstrates its ability to consistently meets local and applicable regulatory requirements, and
- b) Addresses legal and regulatory requirements through the effective application of the system, including processes for continual improvement and the Prevention of Pollution and non compliance's, resource reduction where appropriate and planning for a cleaner environment.
- c) Circuit Connect was founded in 1990 as a manufacturing facility specializing in high end technology, state of the art single/double sided and multi-layer printed circuit boards, our products are used in the computer peripheral, telecommunications, networking, automotive, cabling and audio-video industries.

Circuit Connect's headquarters is located at 4 State Street in Nashua, New Hampshire The manufacturing facility in Nashua shall be covered by this standard.

In 1990, the Environment was the first item considered before building the company. It continues to be a priority.

In July 1995 we became the Alpha site for the newest formaldehyde free direct metalization, eliminating thousands of pounds of formaldehyde annually.

In October 1995, CCI was awarded two Safety Awards from the Governor, 1995 Best Record, and 1995 Most Improved

In October of 1996, CCI was awarded its second Governor's Award for Safety, another Best Record.

In December 1996 we were the first on the East Coast to offer the latest generation of flat, pure white tin surface finishes, eliminating the need for leaded solder, and aiding in the assembly of high end component placement.

In August 1997, Circuit Connect received the NH Governor's Award for Pollution Control and Prevention for the elimination of formaldehyde and saving over a hundred thousand gallons of water annually.

In April 1998, we were one of the few selected companies in the country to participate in the USEPA's *Design for the Environment: Substitute Assessment for Making Holes Conductive*. (Acknowledgment attached)

In February 2000, we were one of only a few board shops in the country to participate in the USEPA's *Design for the Environment: Implementing Cleaner Surface Finishes*. (Acknowledgment attached)

2003: Circuit Connect switched to a solder mask with both significantly reduced solvent emissions and lead free/halogen free formulations (Taiyo PSR-4000 HG/BN series).

2004 : Partnered with SIPAD Systems in modifying a proprietary SIEMENS process that lead to the introduction of the industry's first pre-pasted lead free printed circuit boards.

2005: Circuit Connect participated on the balloting committee in the formation of the IPC-1752 Materials Declaration Management Standard (launched in March of 2006).

2006: Circuit Connect made investments to expand it's UL Listing to include environmentally superior raw materials (e.g., Isola IS410)

2006: Circuit Connect introduced lead free hot air solder leveling.

2008 Will is selected by NH Speaker of the House to sit on NHDES – NHSBTDC Compliance Advisory Committee for small businesses.

2010, Will is asked to stay for another term on the NHB Complinace Advisory Panel by the NH Small Business Ombudsman..

2010: Will is a member of the Governor's Pollution Prevention Awards judges panel.

2010: Circuit Connect installs an Electroless Nickel, Immersion Gold (ENIG) for a lead free surface finish.

2011: Circuit Connect installs an Immersion Silver line for lead free alternatives.

2011: Will continues his judges seat on the Governor's P2 award panel.

2011: Circuit Connect is a Downstream Pilot Participant for the OECD Conflict Metals Guidance Program

2012: Circuit Connect is a participant in the OECD Due Dilligence Guidance for Responsible Supply Chains of Minerals from Conflict and High Risk Areas.

2012: Circuit Connect breaks the 20 tons of recycled materials threshold.

2013: Circuit Connect installs IXER system to prolong DI, and recycle water

## 4.2 ENVIRONMENTAL POLICY

*We do not inherit this world from our ancestors  
We borrow it from our children*

### CIRCUIT CONNECT ENVIRONMENTAL POLICY

Circuit connect is committed to a clean and healthy environment. We believe that a sound environmental policy contributes to our strength as a supplier, an employer, and as a neighbor, benefiting our customers, families and community.

#### TO ENSURE SUCH, WE WILL:

Comply fully with the intent and spirit of environmental laws

Strive to improve internal environmental policies, prevention methods and techniques, and controls to continuously improve environmental performance, through monitoring, and training, including products.

Fully consider environmental factors and performance during acquisition, use and disposal when making process changes and purchases

Continuously review our performance through the use of audits and Management reviews, setting goals and targets

Work with City, State and Federal organizations to comply with relevant legislation, and work with representatives thereof

Communicate these goals and policies to all employees and interested parties as well, through the use of a documented and controlled system

Continuously strive for a safer and healthy workplace

**PROCEDURE 4.3.1. ENVIRONMENTAL ASPECTS**

Circuit Connect continuously reviews the EHS aspects of its manufacturing operations and product to identify those aspects that could pose significant impacts to the Environment, Health and Safety of our employees and surrounding community. Future developments, plans and modifications to products are considered within this framework. These impacts are identified, reviewed, and evaluated and ranked using the system described below. Circuit Connect utilizes the NFPA code system for ranking and evaluation. (see attached ISO14KASPECTSHEET, 14-4.3.1)

**ENVIRONMENTAL ASPECTS FOR CONSIDERATION**

Aspects are considered for the following attributes:

**LINE:** The process or area of the material in question

**CONTAMINATE:** The component of the line being considered

**SOURCE:** Tank or bath where contaminate or material is found

**MANAGED:** Is this in a manageable (controlled, monitored, or analyzed) system?

**DISCHARGED OR TREATED:** Is the material treated before discharging, or is it OK to discharge w/out treatment

**EMISSION TYPE:** solid, liquid, gas

**RELEASE POTENTIAL:** What is the threat of a release in or out of the facility? Catastrophic release potential to be considered as well.

**INJURY POTENTIAL:** What is the potential for injury, health, chronic health, adverse acute effects, of CCI employees, adjacent facilities and neighbors.

**TRANSPORTED:** Is this waste transported over the road?

**ECO-SYSTEM IMPACT:** This addresses all the impacts to flora, fauna, ground water, surface water, air, and soils.

**PERMIT VIOLATIONS:** Does the material have the potential to violate any permit requirements, regulations or impact the local POTW (Nashua WTF) in any way?

**FACILITY IMPACT:** This should address Fire, explosion, property loss, loss of production capability/capacity, insurance and premiums, product flow and land owner interests.

**RECYCLABLE:** Can this material be recycled? Reused?

Using the NFPA labeling codes, materials should be rated the same, 0 being NO impact, or zero to very minimal risk, and 4 being Very High. These are to be considered and assigned by Process Engineering and Environmental Compliance Mgr. ( PEECM), Health and Safety officer (HSO), and Waste Treatment Operator (WTO).

## ENVIRONMENTAL ASPECTS OF CCI PRODUCTS

Circuit Connect's final products are bare printed circuit boards, when finished with solder, contain a percentage of Lead. The impact of this is the solder does not breakdown, stays for the life of the product, leaving lead to migrate into the soils, and surface and ground water via natural leaching if improperly disposed of.

PRODUCT: PCBs ASPECTS: Contains Lead,

POTENTIALS: Improper disposal, lead contamination,

PERMIT CONTROLLED?; Yes

ENV. IMPACT: SURFACE WATER? No

POTENTIAL? Low (disposal)

ENV. IMPACT: GROUND WATER? No

POTENTIAL? Low

POTENTIAL FOR UNCONTROLLED RELEASE? zero

ECO-SYSTEM IMPACT?

Circuit Connect Inc. has alternatives to the HASL lead. CCI prides itself on being one of the first companies to offer alternatives. In 1995 we became the alpha site for the latest generation of immersion tins, White Immersion Tin. Our offerings have increased since then. Circuit Connect is, however, driven by customer needs and tin/lead is still frequently called for.

Circuit Connect recycles all of its tin / lead scrap and frames.

## HEALTH AND SAFETY OF PRODUCTS

Again lead is the biggest issue, mostly resulting from poor handling and hygiene practices.

### 4.3.2. LEGAL REQUIREMENTS

Circuit Connect utilizes and maintains several sources and systems to stay informed of and to understand all the legal requirements pertaining to the manufacture of PWBs. Some of these resources include

A. New Hampshire Small Business Technical Development Center

B. Code of Federal Regulations (CFR) 29, OSHA\*

C. CFR 40 (EPA)\*

D. CFR 49 (DOT)\*

E. IPC (CCI is a member, access IPC technical literature at [www.IPC.org](http://www.IPC.org))

F. State of NH Hazardous Waste Certification courses, annually.

G. USEPA classes for LEPC, SARA 313, attended annually by EHS Mgr.

H. OSHA: [http://www.osha.gov/pls/oshaweb/owastand.display\\_standard\\_group?p\\_toc\\_level=1&p\\_part\\_number=1910](http://www.osha.gov/pls/oshaweb/owastand.display_standard_group?p_toc_level=1&p_part_number=1910)

I. State of New Hampshire Hazardous Waste Rules, current rev.

\* available on the Internet: [www.access.gpo.gov/nara/cfr/index.html#page1](http://www.access.gpo.gov/nara/cfr/index.html#page1), or at <http://www.epa.gov/epahome/cfr40.htm>

To help with the understanding of the role we play in the community, CCI shall attend a LEPC meeting annually.

Employees are informed as to legal and other requirements by several methods, including one or more of the following:

- Employee Company meetings
- Electronic mailings
- ISO meetings
- Production Meetings
- Revision controlled operating procedures, and manuals.

Environmental aspects are reviewed and determined how they may relate to legal requirements.

### **4.3.3 OBJECTIVES, TARGETS, AND 4.3.4, MANAGEMENT PROGRAMS**

Circuit Connect has established and maintains documented E.H. S. objectives, targets and management programs to designate responsibilities at pertinent levels, and establish schedules to achieve our objectives and targets. These are consistent with policies and commitments, legal and internal, considering significant environmental aspects, (See Environmental Aspects, 4.3.1). and comply with current laws. Objectives are defined and acted upon (see ISO14K Objectives and Targets, doc# 14-4.3.3-FRM)

The targets and objectives are to be reviewed at a minimum of annually. On going issues are reviewed at least monthly in EMS meetings and in Management meetings.

### **4.4.1 RESPONSIBILITIES AND STRUCTURE**

Circuit Connect has appointed specific individuals who, irrespective of their other responsibilities, have defined roles and authority for ensuring that EHS requirements are established, implemented and maintained in accordance with the ISO14000 standard, and have responsibility for reporting on performance to management, for review and improvement options.

Description of resources and responsibilities:

CEO: Top Management official at Circuit Connect

Environmental Compliance Manager/ Management Representative: The director of environmental services, and systems. This individual has responsibilities and authority regarding compliance for all environmental mediums, (including air, water and land) ensuring compliance with ISO 14000 and the overall EHS systems. Reports to management any findings, legal issues, or environmental compliance issues , compiles data for continuous improvement and chairs management review. This individual reports to the CEO.

Responsible for Health and Safety, loss prevention programs, and all Local, State and Federal programs. Responsibilities include reporting issues internally.

Waste Treatment Operator: Controls the day to day activities and ensures compliance of WWT systems, HazMat, and Hazardous waste coordination.

Quality Manager: Oversees document controls, corrective action database, helps with auditing, training and calibration.

Quality Systems Administrator: Implements document controls and reports on CAPA, and upkeep of revisions and communicated concerns.

#### **4.4.2 TRAINING, AWARENESS AND COMPETENCE**

Circuit Connect has established and maintains procedures for identifying training needs, and for the training of all personnel involved in activities which affect EHS during production.

Training programs include, as appropriate,  
New Employee Training (Orientation, RTK)  
On the Job Training (OJT)  
Special classes required by State and Local laws  
ISO 14000 training (tailored to specific functions)  
Required Safety classes (may include Confined Space, LOTO, CAT, amongst others)

Records of training are maintained by the Quality Systems Administrator.

EHS officer/ Compliance manager defines the need for training for individuals based on the employee's function with in CCI and the skills and education required.

EHS and / or SafeComm, is responsible for internal training activities.

Management shall ensure individuals conform to all training in EMS, Health and Safety. (see Safety Manual)

#### **4.4.3. COMMUNICATION**

Circuit Connect utilizes several methods to organize and collate internal communication between various levels of the organization, for receiving, documenting and responding to relevant communications from external parties, and responding to outside regulatory agency visits and correspondence. These include Management meetings and Company wide meetings (Monday meetings) and electronic notifications.

It is CCI's policy to communicate significant environmental aspects to interested external parties, on an as need basis, in response to written or electronic requests. ( See EHS-14006-SOP)



#### **4.4.4 DOCUMENT CONTROL**

The EHS system is documented, organized, and maintained within CCI. This summary (Level 1) document references the Document Control by

Collating the EHS Policy, objectives, targets

The location of the documents

The review, access, and approval for adequacy prior to issue by authorized personnel,

Documenting key roles and responsibilities

Providing current revisions to all areas where operations are essential to the functioning of EHS,

Management of the system of document control, revisions, and obsolete documents,

Identification and retention of documents for legal reasons, or knowledge preservation

Revision status is maintained

Specifying retention times

Maintaining procedures concerning the creation of new documents and modification of revisions

CCI maintains three levels of documents:

Level 1: EHS Policy Manual (including scope, elements, policy and objectives)

Level 2: EHS system procedures, similar to QP's as in ISO 9001

Level 3: EHS work, test or reporting instructions, logs, and forms, etc.

Quality Systems Administration is responsible for the controlling of the documents, the master list, and removal of obsolete documents.

#### **4.4.5 CONTROL OF DOCUMENTS**

Control of documents, internal and external (determined as necessary for management of the EMS), are established in the requirements of ISO9001

The procedure for review and issue, review and update, revision control and changes, point of use application, identification and maintenance of documents is also defined by ISO9001

#### **4.4.6 OPERATIONAL CONTROL**

CCI identifies those operations, procedures and activities that are related to the significant Environmental Aspects in line with our policies targets and objectives. (See 4.3.1). CCI uses, and plans these activities, including maintenance, to ensure they are properly carried out, by:

Establishing and maintaining documented procedures to cover situations where their absence could be detrimental to the EHS system, objectives, and targets

By stipulating operational criteria, and data collection in operation procedures (Level 2, and 3 documents)

And by establishing and maintaining processes and procedures aimed at the significant environmental aspects of products and processes used by CCI and communicating these relevant procedures to suppliers and contractors.

The Operational Control documents establish and address the following activities;

Operation and monitoring of the Waste Water pretreatment system

Operation of air control devices and monitoring of the same

The use of toxic chemicals

Hazardous Waste operations

Conservation of resources, materials, energy

Emergency response, incident reporting and follow up

Corrective Actions

Evaluation of new processes, equipment and chemistry

Health and Safety programs (PPE, safety glasses, LOTO, etc.)

#### **4.4.7 EMERGENCY PREPAREDNESS AND RESPONSE**

Circuit Connect establishes and maintains procedures to identify potential and for responding to accidents, and emergency situations, and for prevention of such, and mitigating the EHS impacts associated with such. CCI reviews these preparedness and response procedures in particular, after the occurrence of emergency situations.

CCI also tests these procedures where practicable.

### **4.5 CHECKING AND CORRECTIVE ACTION, PREVENTATIVE ACTION**

#### **4.5.1. MONITORING AND MEASUREMENT**

Documented procedures are established and maintained to monitor and measure on a regular basis, the essential characteristics of our operations and activities that may significantly impact the environment, health or safety. This includes performance tracking, operational controls relevant to the EMS, and conformance with the goals, objectives and targets.

Monitoring equipment is calibrated as per ISO9001 where practicable, and maintained and records of these are retained according to the Document Control Procedure, per ISO9001

CCI established and maintains a procedure for periodically evaluating compliance with environmental legislation and rules, internal programs, and legal requirements.

#### **4.5.2 EVALUATION OF COMPLIANCE**

Circuit Connect evaluates its commitment compliance periodically utilizing internal and external testing, auditing, and reviewing. Results of these are recorded and kept.

Evaluations of safety and health programs (and any other legal compliance requirements relating to EHS) are conducted and recorded.

### **4.5.3 NONCONFORMANCE, CORRECTIVE, AND PREVENTATIVE ACTIONS**

#### **4.5.3.1 CORRECTIVE ACTIONS**

Corrective Actions and the Corrective Action system addresses the identified causes of nonconformity in the EHS systems, audit results, typical daily operational deficiencies, health, safety, or chemical incidents, regulatory noncompliances, or excessive energy, water, or raw material consumption. Nonconformities, causes, actions taken, and recording results and implementation of actions are determined and are appropriate to the magnitude of the problems encountered. Upper management ensures the necessary changes resulting from the CAPAs are carried out.

As with the ISO9001 system, there are provisions for providing a timely, effective CAPA, evaluation of actions, preventing non conformities and implementing actions. See Section 8.5.2 in the CCI Quality Manual, and QP-14 (in ISO 9000) for further instructions.

#### **4.5.3.2 PREVENTATIVE ACTIONS**

Preventative Actions and the system, shall address the potential causes of non conformities based on information available from audits, employee suggestions and training sessions.

CORRECTIVE ACTIONS, and PREVENTATIVE ACTIONS are reviewed at prescribed intervals (monthly) by management during the weekly management meetings, and are dispositioned, communicated, initiated and confirmed at these meetings.

### **4.5.3 RECORDS**

Circuit Connect has established and maintains a matrix of records (see Quality Manual, QP16), which identifies EHS records, retrieval, the retention period, obsolete date and disposal , and storage areas. These records may be in electronic format, hard copies, or as signs. As per ISO9001, there are provisions for trace ability, retrieval, and proper maintenance of documents. These shall include as a minimum, Legislative and Regulatory data, Permits, training, inspection results, PM, calibration, monitoring, CAPAs, follow up actions, critiques of incidents, audits, and management reviews.

### **4.5.4 EHS MANAGEMENT SYSTEM AUDITS**

Circuit Connect has established a procedure for EHS auditing, and an associated committee (ISO14000 Team) for conducting audits, to verify EHS systems comply with the requirements of ISO 14000. This audit also determines the conformity to the requirements of the International Standard, and that the system has been properly implemented and maintained, and provides the information and results to management. Management has determined the responsibilities for planning and conducting audits, the criteria, reporting and distribution and retention of results. (See DOC# EHS-14017-SOP)

These audits, including an audit schedule, along with the frequency, are based upon the importance the activities (see EHS Aspects, 4.3.1). Audit procedures are determined and implemented. Audit results are reviewed, and CAPA are initiated as required based on the audit results. Records of these are maintained.

As with ISO9001 the auditors shall remain impartial to ensure objectivity.  
(See QP17 in ISO9001 QMS)

#### **4.6 MANAGEMENT REVIEW**

Management Reviews of the entire EHS system are held at least annually. Daily, weekly and on going items are reviewed and conducted during the monthly management meeting, or as needed.

**WEEKLY:** Items which are reviewed weekly may include overall performance to the EHS, CAPA and follow ups, review of compliance, legal aspects, community complaints, manufacturing process changes, review of incidents, public perception, changing laws, changing market trends and status of projects. **ATTENDEES:** Management Team, input from WWT Operator, Safety Officer.

**ANNUAL:** Items which are reviewed at least annually: Achievements, continuous improvements, effectiveness, and suitability of the system. **ATTENDEES:** Management Review Team.

The output from these reviews shall include decisions and actions to continuously improve the EMS, including policy and objective changes to further enhance commitment the EMS.

## **ISO 14001- 2015 requirements versus 2004 CLAUSE AND ELEMENT**

### **EMS MANUAL ADDENDUM**

#### **Clause 4. Context of the organization:**

- What issues and conditions are relevant? SEE: 4.1, 4.2, 4.3.1,
- What are our compliance obligations? SEE 4.3.2,
- What external issues affect our business? CCI INTERESTED PARTIES form
- What internal issues affect our business and management system? 4.4.1

One of the most significant changes in 14001:2015 is that companies must evaluate the needs and expectations of their stakeholders. CCI INT. PARTIES

Just like you'd consider what your customers want in a new product, you'll have to consider what needs they want met in terms of your environmental performance.

All these considerations go into determining the scope of your EMS and the structure of the management system itself.

#### **Clause 5. Leadership:**

ISO 14001:2015 environmental policy SEE 4.2

roles, responsibilities, SEE 4.4.1 and authorities throughout the company 4.4.1

LEADERSHIP ROLES 4.4.1

Instead of one person wearing the "environmental management representative" hat, top management will be held responsible for the effectiveness of the EMS across the board. SEE RCRA SITE C REPORT for NHDES/USEPA

In order to comply with ISO 14001's leadership requirement, CCI has demonstrated that their leaders know your environmental objectives and are working to create a culture of continual environmental improvement. SEE 4.2

**Clause 6. Planning:**

Under ISO 14001-2015, companies must identify and plan for any activity that could impact the environment SEE 4.3.1

To meet this requirement, you'll need to identify significant environmental aspects and impacts  
SEE NEW DOC FOR RISK ASSESSMENT

- Water usage
- air emissions : See RTAP program
- GHG emissions:
- water pollution: NWTF, semi annuals, WT docs
- waste management, TRADEBE, Waste Determinations

Identify compliance obligations, like state and local regulations RULES, REGS, LISTS  
contained in LEGAL REQ'S BOOK.

**Clause 7. Support:**

This clause looks at your resources, communication, and documentation for your EMS.

SEE 4.3.3, 4.4.1, 4.4.2, 4.4.3

**Clause 8. Operation:**

This clause requires you to identify which of your activities might impact the environment, and define operational controls to minimize that impact.

SEE: CONTINGENCY PLAN, also 4.4.4, 4.4.5, 4.4.6, 4.4.7

**Clause 9. Performance evaluation:**

SEE 4.5.1, 4.5.2, 4.5.3, 4.6

**Clause 10. Improvement:**

SEE 4.5.3, 4.5.3.2, 4.5.4, 4.6

## Revision History

<b>Revision</b>	<b>Description</b>	<b>Requestor</b>	<b>Date</b>
010616	Removed 2008 references to ISO 9001:2008	J.Gagnon	01/06/16
060916	Removed office locations in Atlanta Georgia and West Palm Beach Florida.	B. Lazzara	05/09/16
070517	Update policy statement and Remove references to ISO 14001/ 2004	J.Gagnon	07/05/17
050818	Add EMS Addendum	W.Whalen	05/08/18