LINCOLN ELECTRIC

Operator's Manual

CHECKPOINT ®

GENUINE LINCOLN PARTS™

Register your machine:
www.lincolnelectric.com/registration

Authorized Service and Distributor Locator:
www.lincolnelectric.com/locator

Save for future reference

Date Purchased

Code: (ex: 10859)

Serial: (ex: U1060512345)

Need Help? Call 1.888.935.3877
to talk to a Service Representative

Hours of Operation:
8:00 AM to 6:00 PM (ET) Mon. thru Fri.

After hours?
Use "Ask the Experts" at lincolnelectric.com
A Lincoln Service Representative will contact you no later than the following business day.

For Service outside the USA:
Email: globalservice@lincolnelectric.com

IM8005 | Issue Date Sep-23

THE LINCOLN ELECTRIC COMPANY
22801 St. Clair Avenue • Cleveland, OH • 44117-1199 • U.S.A.
Phone: +1.216.481.8100 • www.lincolnelectric.com

THANK YOU FOR SELECTING A QUALITY PRODUCT BY LINCOLN ELECTRIC.

PLEASE EXAMINE CARTON AND EQUIPMENT FOR DAMAGE IMMEDIATELY

When this equipment is shipped, title passes to the purchaser upon receipt by the carrier. Consequently, claims for material damaged in shipment must be made by the purchaser against the transportation company at the time the shipment is received.

SAFETY DEPENDS ON YOU

Lincoln arc welding and cutting equipment is designed and built with safety in mind. However, your overall safety can be increased by proper installation ... and thoughtful operation on your part. **DO NOT INSTALL, OPERATE OR REPAIR THIS EQUIPMENT WITHOUT READING THIS MANUAL AND THE SAFETY PRECAUTIONS CONTAINED THROUGHOUT.** And, most importantly, think before you act and be careful.

⚠ WARNING

This statement appears where the information must be followed exactly to avoid serious personal injury or loss of life.

⚠ CAUTION

This statement appears where the information must be followed to avoid minor personal injury or damage to this equipment.

KEEP YOUR HEAD OUT OF THE FUMES.

DON'T get too close to the arc. Use corrective lenses if necessary to stay a reasonable distance away from the arc.

READ and obey the Safety Data Sheet (SDS) and the warning label that appears on all containers of welding materials.

USE ENOUGH VENTILATION or exhaust at the arc, or both, to keep the fumes and gases from your breathing zone and the general area.

IN A LARGE ROOM OR OUTDOORS, natural ventilation may be adequate if you keep your head out of the fumes (See below).

USE NATURAL DRAFTS or fans to keep the fumes away from your face.

If you develop unusual symptoms, see your supervisor. Perhaps the welding atmosphere and ventilation system should be checked.

WEAR CORRECT EYE, EAR & BODY PROTECTION

PROTECT your eyes and face with welding helmet properly fitted and with proper grade of filter plate (See ANSI Z49.1).

PROTECT your body from welding spatter and arc flash with protective clothing including woolen clothing, flame-proof apron and gloves, leather leggings, and high boots.

PROTECT others from splatter, flash, and glare with protective screens or barriers.

IN SOME AREAS, protection from noise may be appropriate.

BE SURE protective equipment is in good condition.

Also, wear safety glasses in work area **AT ALL TIMES.**

SPECIAL SITUATIONS

DO NOT WELD OR CUT containers or materials which previously had been in contact with hazardous substances unless they are properly cleaned. This is extremely dangerous.

DO NOT WELD OR CUT painted or plated parts unless special precautions with ventilation have been taken. They can release highly toxic fumes or gases.

Additional precautionary measures

PROTECT compressed gas cylinders from excessive heat, mechanical shocks, and arcs; fasten cylinders so they cannot fall.

BE SURE cylinders are never grounded or part of an electrical circuit.

REMOVE all potential fire hazards from welding area.

ALWAYS HAVE FIRE FIGHTING EQUIPMENT READY FOR IMMEDIATE USE AND KNOW HOW TO USE IT.

SECTION A: WARNINGS

CALIFORNIA PROPOSITION 65 WARNINGS

WARNING: Breathing diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects, or other reproductive harm.

- Always start and operate the engine in a well-ventilated area.
- If in an exposed area, vent the exhaust to the outside.
- Do not modify or tamper with the exhaust system.
- Do not idle the engine except as necessary.

For more information go to www.P65 warnings.ca.gov/diesel

WARNING: This product, when used for welding or cutting, produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code § 25249.5 *et seq.)*

WARNING: Cancer and Reproductive Harm www.P65warnings.ca.gov

ARC WELDING CAN BE HAZARDOUS. PROTECT YOURSELF AND OTHERS FROM POSSIBLE SERIOUS INJURY OR DEATH. KEEP CHILDREN AWAY. PACEMAKER WEARERS SHOULD CONSULT WITH THEIR DOCTOR BEFORE OPERATING.

Read and understand the following safety highlights. For additional safety information, it is strongly recommended that you purchase a copy of "Safety in Welding & Cutting - ANSI Standard Z49.1" from the American Welding Society, P.O. Box 351040, Miami, Florida 33135 or CSA Standard W117.2. A Free copy of "Arc Welding Safety" booklet E205 is available from the Lincoln Electric Company, 22801 St. Clair Avenue, Cleveland, Ohio 44117-1199.

BE SURE THAT ALL INSTALLATION, OPERATION, MAINTENANCE AND REPAIR PROCEDURES ARE PERFORMED ONLY BY QUALIFIED INDIVIDUALS.

FOR ENGINE POWERED EQUIPMENT.

1.a. Turn the engine off before troubleshooting and maintenance work unless the maintenance work requires it to be running.

1.b. Operate engines in open, well-ventilated areas or vent the engine exhaust fumes outdoors.

1.c. Do not add the fuel near an open flame welding arc or when the engine is running. Stop the engine and allow it to cool before refueling to prevent spilled fuel from vaporizing on contact with hot engine parts and igniting. Do not spill fuel when filling tank. If fuel is spilled, wipe it up and do not start engine until fumes have been eliminated.

1.d. Keep all equipment safety guards, covers and devices in position and in good repair. Keep hands, hair, clothing and tools away from V-belts, gears, fans and all other moving parts when starting, operating or repairing equipment.

1.e. In some cases it may be necessary to remove safety guards to perform required maintenance. Remove guards only when necessary and replace them when the maintenance requiring their removal is complete. Always use the greatest care when working near moving parts.

1.f. Do not put your hands near the engine fan. Do not attempt to override the governor or idler by pushing on the throttle control rods while the engine is running.

1.g. To prevent accidentally starting gasoline engines while turning the engine or welding generator during maintenance work, disconnect the spark plug wires, distributor cap or magneto wire as appropriate.

1.h. To avoid scalding, do not remove the radiator pressure cap when the engine is hot.

1.i. Using a generator indoors CAN KILL YOU IN MINUTES.

1.j. Generator exhaust contains carbon monoxide. This is a poison you cannot see or smell.

1.k. NEVER use inside a home or garage, EVEN IF doors and windows are open.

1.l. Only use OUTSIDE and far away from windows, doors and vents.

1.m. Avoid other generator hazards. READ MANUAL BEFORE USE.

ELECTRIC AND MAGNETIC FIELDS MAY BE DANGEROUS

2.a. Electric current flowing through any conductor causes localized Electric and Magnetic Fields (EMF). Welding current creates EMF fields around welding cables and welding machines

2.b. EMF fields may interfere with some pacemakers, and welders having a pacemaker should consult their physician before welding.

2.c. Exposure to EMF fields in welding may have other health effects which are now not known.

2.d. All welders should use the following procedures in order to minimize exposure to EMF fields from the welding circuit:

2.d.1. Route the electrode and work cables together - Secure them with tape when possible.

2.d.2. Never coil the electrode lead around your body.

2.d.3. Do not place your body between the electrode and work cables. If the electrode cable is on your right side, the work cable should also be on your right side.

2.d.4. Connect the work cable to the workpiece as close as possible to the area being welded.

2.d.5. Do not work next to welding power source.

ELECTRIC SHOCK CAN KILL.

3.a. The electrode and work (or ground) circuits are electrically “hot” when the welder is on. Do not touch these “hot” parts with your bare skin or wet clothing. Wear dry, hole-free gloves to insulate hands.

3.b. Insulate yourself from work and ground using dry insulation. Make certain the insulation is large enough to cover your full area of physical contact with work and ground.

In addition to the normal safety precautions, if welding must be performed under electrically hazardous conditions (in damp locations or while wearing wet clothing; on metal structures such as floors, gratings or scaffolds; when in cramped positions such as sitting, kneeling or lying, if there is a high risk of unavoidable or accidental contact with the workpiece or ground) use the following equipment:

- Semiautomatic DC Constant Voltage (Wire) Welder.
- DC Manual (Stick) Welder.
- AC Welder with Reduced Voltage Control.

3.c. In semiautomatic or automatic wire welding, the electrode, electrode reel, welding head, nozzle or semiautomatic welding gun are also electrically “hot”.

3.d. Always be sure the work cable makes a good electrical connection with the metal being welded. The connection should be as close as possible to the area being welded.

3.e. Ground the work or metal to be welded to a good electrical (earth) ground.

3.f. Maintain the electrode holder, work clamp, welding cable and welding machine in good, safe operating condition. Replace damaged insulation.

3.g. Never dip the electrode in water for cooling.

3.h. Never simultaneously touch electrically “hot” parts of electrode holders connected to two welders because voltage between the two can be the total of the open circuit voltage of both welders.

3.i. When working above floor level, use a safety belt to protect yourself from a fall should you get a shock.

3.j. Also see Items 6.c. and 8.

ARC RAYS CAN BURN.

4.a. Use a shield with the proper filter and cover plates to protect your eyes from sparks and the rays of the arc when welding or observing open arc welding. Headshield and filter lens should conform to ANSI Z87. I standards.

4.b. Use suitable clothing made from durable flame-resistant material to protect your skin and that of your helpers from the arc rays.

4.c. Protect other nearby personnel with suitable, non-flammable screening and/or warn them not to watch the arc nor expose themselves to the arc rays or to hot spatter or metal.

FUMES AND GASES CAN BE DANGEROUS.

5.a. Welding may produce fumes and gases hazardous to health. Avoid breathing these fumes and gases. When welding, keep your head out of the fume. Use enough ventilation and/or exhaust at the arc to keep fumes and gases away from the breathing zone. **When welding hardfacing (see instructions on container or SDS) or on lead or cadmium plated steel and other metals or coatings which produce highly toxic fumes, keep exposure as low as possible and within applicable OSHA PEL and ACGIH TLV limits using local exhaust or mechanical ventilation unless exposure assessments indicate otherwise. In confined spaces or in some circumstances, outdoors, a respirator may also be required. Additional precautions are also required when welding on galvanized steel.**

5. b. The operation of welding fume control equipment is affected by various factors including proper use and positioning of the equipment, maintenance of the equipment and the specific welding procedure and application involved. Worker exposure level should be checked upon installation and periodically thereafter to be certain it is within applicable OSHA PEL and ACGIH TLV limits.

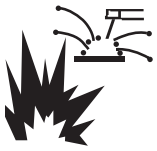
5.c. Do not weld in locations near chlorinated hydrocarbon vapors coming from degreasing, cleaning or spraying operations. The heat and rays of the arc can react with solvent vapors to form phosgene, a highly toxic gas, and other irritating products.

5.d. Shielding gases used for arc welding can displace air and cause injury or death. Always use enough ventilation, especially in confined areas, to insure breathing air is safe.

5.e. Read and understand the manufacturer’s instructions for this equipment and the consumables to be used, including the Safety Data Sheet (SDS) and follow your employer’s safety practices. SDS forms are available from your welding distributor or from the manufacturer.

5.f. Also see item 1.b.

WELDING AND CUTTING SPARKS CAN CAUSE FIRE OR EXPLOSION.



6.a. Remove fire hazards from the welding area. If this is not possible, cover them to prevent the welding sparks from starting a fire. Remember that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas. Avoid welding near hydraulic lines. Have a fire extinguisher readily available.

6.b. Where compressed gases are to be used at the job site, special precautions should be used to prevent hazardous situations. Refer to "Safety in Welding and Cutting" (ANSI Standard Z49.1) and the operating information for the equipment being used.

6.c. When not welding, make certain no part of the electrode circuit is touching the work or ground. Accidental contact can cause overheating and create a fire hazard.

6.d. Do not heat, cut or weld tanks, drums or containers until the proper steps have been taken to insure that such procedures will not cause flammable or toxic vapors from substances inside. They can cause an explosion even though they have been "cleaned". For information, purchase "Recommended Safe Practices for the Preparation for Welding and Cutting of Containers and Piping That Have Held Hazardous Substances", AWS F4.1 from the American Welding Society (see address above).

6.e. Vent hollow castings or containers before heating, cutting or welding. They may explode.

6.f. Sparks and spatter are thrown from the welding arc. Wear oil free protective garments such as leather gloves, heavy shirt, cuffless trousers, high shoes and a cap over your hair. Wear ear plugs when welding out of position or in confined places. Always wear safety glasses with side shields when in a welding area.

6.g. Connect the work cable to the work as close to the welding area as practical. Work cables connected to the building framework or other locations away from the welding area increase the possibility of the welding current passing through lifting chains, crane cables or other alternate circuits. This can create fire hazards or overheat lifting chains or cables until they fail.

6.h. Also see item 1.c.

6.I. Read and follow NFPA 51B "Standard for Fire Prevention During Welding, Cutting and Other Hot Work", available from NFPA, 1 Batterymarch Park, PO box 9101, Quincy, MA 022690-9101.

6.j. Do not use a welding power source for pipe thawing.

CYLINDER MAY EXPLODE IF DAMAGED.

7.a. Use only compressed gas cylinders containing the correct shielding gas for the process used and properly operating regulators designed for the gas and pressure used. All hoses, fittings, etc. should be suitable for the application and maintained in good condition.

7.b. Always keep cylinders in an upright position securely chained to an undercarriage or fixed support.

7.c. Cylinders should be located:

- Away from areas where they may be struck or subjected to physical damage.
- A safe distance from arc welding or cutting operations and any other source of heat, sparks, or flame.

7.d. Never allow the electrode, electrode holder or any other electrically "hot" parts to touch a cylinder.

7.e. Keep your head and face away from the cylinder valve outlet when opening the cylinder valve.

7.f. Valve protection caps should always be in place and hand tight except when the cylinder is in use or connected for use.

7.g. Read and follow the instructions on compressed gas cylinders, associated equipment, and CGA publication P-I, "Precautions for Safe Handling of Compressed Gases in Cylinders," available from the Compressed Gas Association, 14501 George Carter Way Chantilly, VA 20151.

FOR ELECTRICALLY POWERED EQUIPMENT.

8.a. Turn off input power using the disconnect switch at the fuse box before working on the equipment.

8.b. Install equipment in accordance with the U.S. National Electrical Code, all local codes and the manufacturer's recommendations.

8.c. Ground the equipment in accordance with the U.S. National Electrical Code and the manufacturer's recommendations.

Refer to http://www.lincolnelectric.com/safety for additional safety information.

Table of Contents

General Information

Introduction to CheckPoint®

CheckPoint is a full production monitoring solution, including powerful data collection and reporting tools, to help you maximize welding productivity and performance. There is no dedicated computer hardware or software required in your company to collect and store the data, as CheckPoint is cloud-based. Each piece of welding equipment requires a network connection and the Welding Power Source initiates the transfer of information through a firewall to the data center. Using your Internet-connected computer (Mac or Windows PC), or mobile devices (such as smartphones or tablets), and a web browser, CheckPoint enables you to monitor your Lincoln Electric® welders. CheckPoint allows you to:

- Identify the true cost of welding
- Evaluate the true quality of welding
- Deliver the true performance of welding.

There is low overhead and the CheckPoint application is updated and maintained on-line for all users. No upgrades or updates need to be downloaded or installed. Some of the most important features of the CheckPoint application include:

- Weld Logging: The logging of weld statistics is the backbone of the CheckPoint system. The data associated with each weld is commonly referred to as the weld summary, and contains values such as the minimum, maximum, and average Amps, Volts, Wire Feed Speed, and so forth. Depending on the type of Welding Power Source or collection device being used, these data points can vary.
- Electronic Notification: CheckPoint can send email notifications to multiple users. Each user's email address can be configured to receive messages upon any of several event conditions based on data from a Welding Power Source.
- Weld Profiles: CheckPoint has the ability to report on welds that violate or fall outside of user-defined limits. For more in-depth information about defining and using Weld Profiles, refer to the Power Wave® Manager Operators Manual.
- Traceability: CheckPoint provides a report on all welds made on a specific Production Station or by part or operator. Before a weld is made, operator and part numbers are sent to the Power Source. Users can generate a report looking for identifiers from all the system's Power Sources.
- WeldScore™: A feature available in all modern Welding Power Source models that can be used to support a weld quality control program is WeldScore, a score of 0% to 100% assigned to welds indicating the acceptability of the weld. The score is based on a comparison to previously trained welding conditions, and can be used independently on a Welding Power Source or together with CheckPoint. Refer to the *Power Wave® Manager Operators Manual* for details on WeldScore.

> **STOP | WeldScore is not a guarantee of quality and is not intended to replace a weld quality control system.**

Security and Data Storage

Each CheckPoint customer's data is stored in a data center. When viewing the CheckPoint software application, secure, industry-standard encryption is used. The hosting center environment is built with state-of-the-art equipment, technology investments, and operational expertise. There is an established disaster-recovery program with redundancy and fail-over to protect the information stored in the system.

Access Requirements

Each computer or mobile device must have Internet access to connect to CheckPoint. The web browsers officially supported (for example, for troubleshooting) are Google Chrome, Microsoft Edge (Chromium), Mozilla Firefox, and Apple Safari on macOS. All Welding Power Sources require Internet access to send data to the CheckPoint data center. Every Welding Power Source is identified by a unique device ID. This ID number is saved during registration and then sent with each Power Source data packet to store the data.

Accessing Data

Access to company data is limited to CheckPoint users assigned to a Company by that Company's Administrator. A user can be assigned to multiple Companies and will have access to each Company's data each time they log in. Depending on the User Role provided by the Company Administrator, the user may have access privileges for Equipment Configuration and User Management settings.

Data Retention

Production data including welds and connection data are stored in CheckPoint for 90 days. The data for the Activity Details graph only retains for 10 days. All data is deleted after the retention period. Before the end of the retention period, you need to export and store a backup copy of all production data that you require.

User Account Retention

In certain cases, CheckPoint will delete User Accounts that are incomplete or have been idle for a long period.

- If an Active User Account does not have a User Role assigned to it within 90 days after creation.
- If an Active User Account is idle (not used for login) over a two-year period.
- If a Pending User Account is not validated and added to a CheckPoint Company after 90 days.

In these cases, all related User Roles and Alert Subscriptions are also deleted.

Company Retention

In certain cases, CheckPoint will delete Companies that are incomplete.

- If a Company contains no User Accounts.
- If a Company is still in the Onboarding state 90 days after it was created.
- If a Company contains no registered Power Sources 90 days after updating an Equipment Role, Location, or Company.

In these cases, all related Welding Data, Assets, and Power Sources are also deleted.

Network Capacity

Networks and Internet connections have limited bandwidth for sending data. Each Welding Power Source uses a relatively small amount of bandwidth. To estimate the bandwidth use on your network, you can multiply the number of welding power sources by the quantity of data packets:

- Every 20 seconds, each Welding Power Source sends a status update to the CheckPoint data center; the size of this data packet is about 1 KB.
- If a Welding Power Source has completed a weld, or multiple welds, then every 92 seconds it will send the new data; each data packet is about 2 KB per weld.
- If there is a Welding Power Source event or fault, then every 66 seconds it will send the new data; the size of this data packet is 0.5 KB per event.

Most of the bandwidth used by CheckPoint is for the status updates, weld logs, and events. When estimating the total, overall system bandwidth usage, you should allow at least 10% for additional, occasional data traffic and other miscellaneous network communications.

If the network or Internet connection is lost, then the Welding Power Sources will continue to collect and buffer data until the network connection is re-established. Once the Internet connection is re-established, all the collected data is then sent on to the CheckPoint application.

- Only data from the last 2,000 welds is buffered; data for the oldest welds are lost.
- Only data from the last 200 state changes is buffered; data for the oldest state changes are lost.

An example of a state change is going from idle to weld or from weld to idle.

> **STOP | If the Welding Power Source is turned off before the Internet connection has been re-established, all the buffered data will be lost.**

Power Wave® Requirements

The Power Wave Welding Power Source that you want to connect to CheckPoint must meet the following requirements with an Ethernet port or Wi-Fi module:

- The Power Wave Series and all modern Welding Power Sources come standard with an Ethernet port; no additional equipment is needed.
- For Wi-Fi capability or for communication-port information on other current and legacy equipment, refer to the documentation for your equipment.

To use with the CheckPoint application, the firmware revision in the Welding Power Source must support Production Monitoring revision 5 or newer. You can check the firmware revision using Power Wave Manager software. The Welding Power Source software can be updated by downloading and applying the latest system update available from www.powerwavesoftware.com.

CheckPoint Sub-Modules

The CheckPoint application allows the licensing of additional sub-modules.

- Preventative Maintenance (Refer to Chapter 7: Preventative Maintenance)
- Weld Record ML

When a sub-module is licensed, additional configuration and reporting functionality will become available. Reach out to your local Lincoln representative to request a trial license of an interested sub-module.

After the trial period, if a purchase order is received for a CheckPoint sub-module, the contact person in the Lincoln Electric licensing portal will receive an email with license activation instructions for later use in CheckPoint. License activations will typically expire 1 year after entitlement creation.

Getting Started Using CheckPoint®

To use CheckPoint, certain basic requirements must be met. You need a working Internet connection, updated firmware for the Welding Power Source, and the latest Power Wave Manager software.

Requirements

Provide Access to the Internet

To implement CheckPoint, connect the Welding Power Source to your network. Refer to the *Power Wave® Manager Operators Manual* for instructions. Welding Power Sources require access to the Internet to transmit data to the cloud-based CheckPoint data server. The CheckPoint data server, accessible from the URL http://ws.LincolnCheckPoint.com, is located at the IP address 207.89.49.2. Opening outbound-only data traffic on port 80 in your network firewall allows each Welding Power Source to send data packets via HTTP.

> **TIP | Contact your local IT department for assistance in connecting Welding Power Sources to the Internet and with your network firewall configuration.**

Update the Welding Power Source Firmware

Firmware is the software within the Welding Power Source that is the control program for the machine. Making sure that you have the latest firmware ensures that you have the latest features available for the Welding Power Source and CheckPoint application software. Go to Powerwavesoftware.com. Refer to the *Power Wave® Manager Operators Manual* for more information on installing the latest firmware.

Install the Latest Power Wave Manager

Once you update the Welding Power Sources, you need to upgrade to the latest version of Power Wave Manager. Go to Powerwavesoftware.com. Refer to the *Power Wave® Manager Operators Manual*.

> **STOP | CheckPoint cannot be enabled without Power Wave Manager. Refer to the *Power Wave® Manager* Operators Manual.**

Enable CheckPoint for a Welding Power Source

Now that you have confirmed the upgraded firmware on the Welding Power Source, and installed the latest version of Power Wave Manager software on your computer, use Power Wave Manager to enable the CheckPoint application on the Welding Power Source.

Establish a Connection to the Welding Power Source

In order to enable CheckPoint for a Welding Power Source, you need to tell Power Wave Manager where to find the Welding Power Source on your network. Refer to the *Power Wave® Manager Operators Manual*.

Enable CheckPoint

Once you connect the Welding Power Source to Power Wave Manager, you can enable and set up CheckPoint for that Welding Power Source. Refer to the *Power Wave® Manager Operators Manual*.

Save the Production Monitoring Installation Key File

Save an Installation Key file for a Welding Power Source that you upload to CheckPoint when you create your company's account. Each individual Welding Power Source has a unique Installation Key file. Refer to the section in the *Power Wave® Manager Operators Manual* titled *Saving an Installation Key File*. Setting up the CheckPoint application for the Power Source is complete. Now you are ready to connect to CheckPoint.

> **TIP | Additional configuration may be required to enable CheckPoint on robotic installations. Refer to the *Power Wave® Manager* Operators Manual.**

Connect to CheckPoint

To log into and start using CheckPoint, visit www.lincolncheckpoint.com. Refer to Figure 2.1.

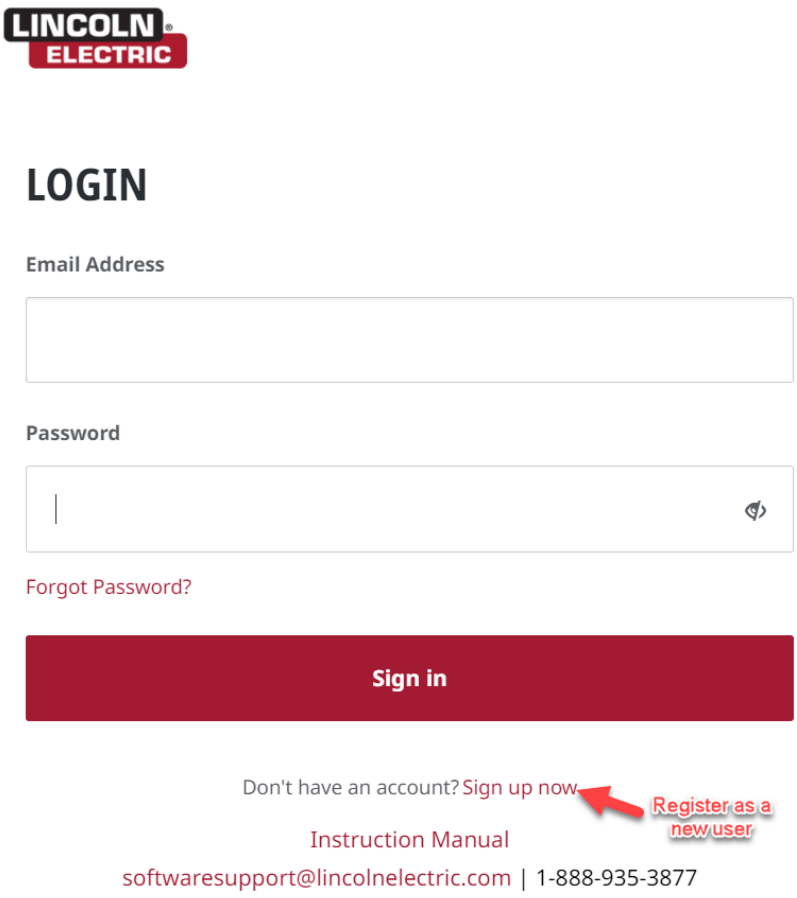


Figure 2.1 CheckPoint Login Page

Forgot Password

If you forget your password for CheckPoint, then you can use the *Forgot Password?* link on the *Login* screen to get another one. When a verified email address is entered, if that email already exists in the CheckPoint system, a verification email message will be sent to confirm that the password should be reset.

Create a New User Account

The first step in *Getting Started Using CheckPoint* is to create a new user account. To set up your company's first account, display the Login page. Click the *Sign up now* link to register as a new user. Refer to Figure 2.1. Enter the *Email Address* you want to use in the required field shown in Figure 2.2. Then click the **Send verification code** button, check the email account, and verify you have access to the email address.

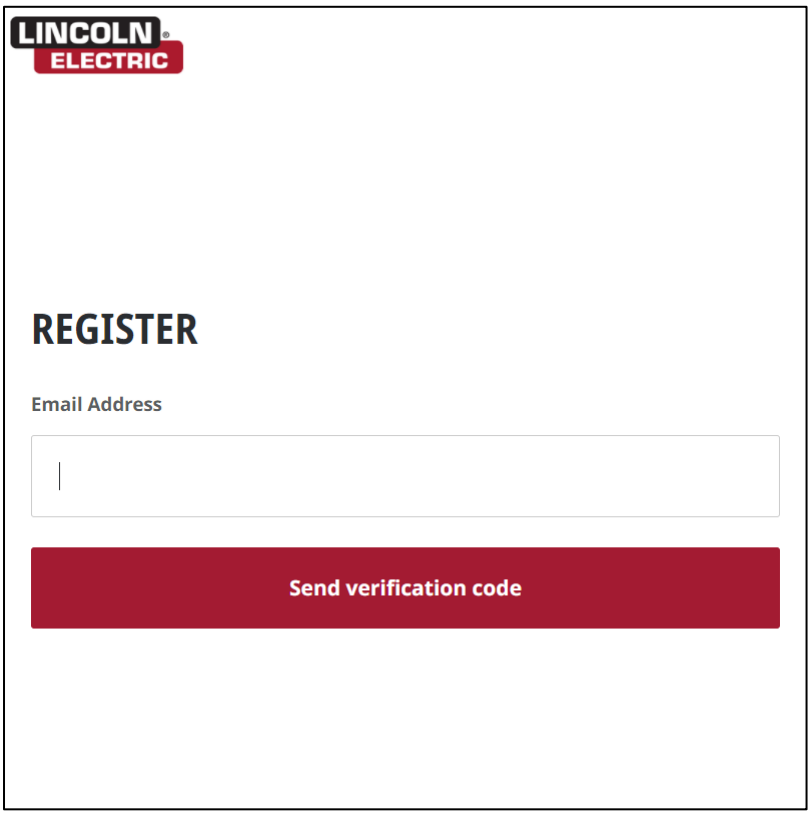


Figure 2.2 Register a New User Account

Procedure	Details
1. Click *Sign up now* on the *Login* page.	The *Register a User Account* page opens. See Figure 2.2

Procedure	Details
2. Enter the *Email Address* that you want to use for the CheckPoint application in the required field on this page.	Only after a new user's email address has been verified and then a CheckPoint account created, can that user create a Company and add Welding Power Source(s).
3. Click on **Send verification code**.	After you enter the email address, the CheckPoint system sends a message to it. Check the email account for this verification notice containing the code. Note that verifying your email address is required, but the new user account is not created until additional steps specified in this chapter have been fully completed.

Verify New User Email in CheckPoint

To verify your user email address, check your email account's inbox for a message sent from "Microsoft on behalf of Lincoln Electric CheckPoint." Open this email message and note or copy the verification code that is shown. Refer to Figure 2.3

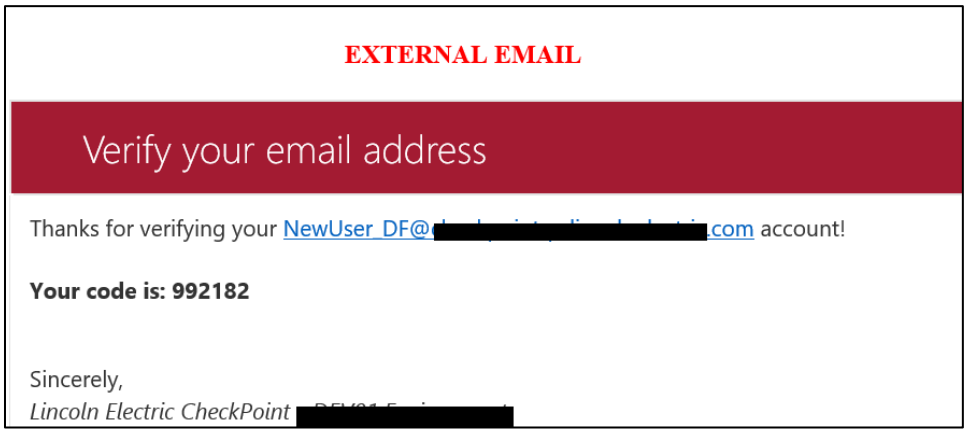


Figure 2.3 Verification Email

> **TIP | If you do not see the verification email, then try checking your Junk Mail or Spam folder for any message sent from the following email address: msonlineservicesteam@microsoftonline.com**

Procedure	Details
1. Open the email message and note or copy the Verification code shown.	Refer to Figure 2.3.

Procedure	Details
2. Type or paste the code in the field on the Register your Email Address screen and click the Verify code button.	Refer to Figure 2.4. If you never saw a verification message with a code appear in your email account, then you can click the **Send new code** button.
3. When you click on the link to open the *End User License Agreement*, or the checkbox to indicate you have read and accept the End User License Agreement, the *End User License Agreement* screen appears for your review.	Click the **Accept** button at the end of the agreement indicating that you have read and accept the agreement. You can also close the agreement without accepting it (see the details listed below for the next step).
4. If you accepted the agreement, then on the next screen you choose a password for the new user account and confirm the password. In addition, you enter your First and Last Names in the required fields.	Refer to Figure 2.5. (If you closed the *End User License Agreement* screen without accepting it in the preceding step, then the process of registering a new user account in CheckPoint is not complete.)
5. Then click on the **Create** button.	Next, the *Welcome to CheckPoint* screen appears. Refer to Figure 2.6.

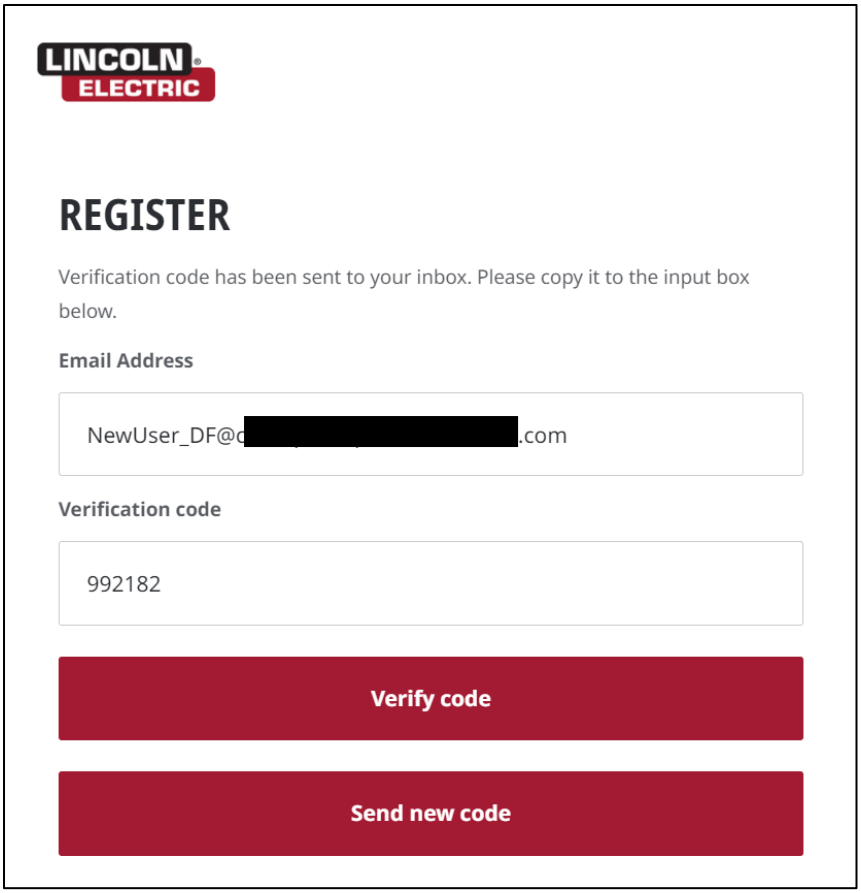


Figure 2.4 Enter code to verify email

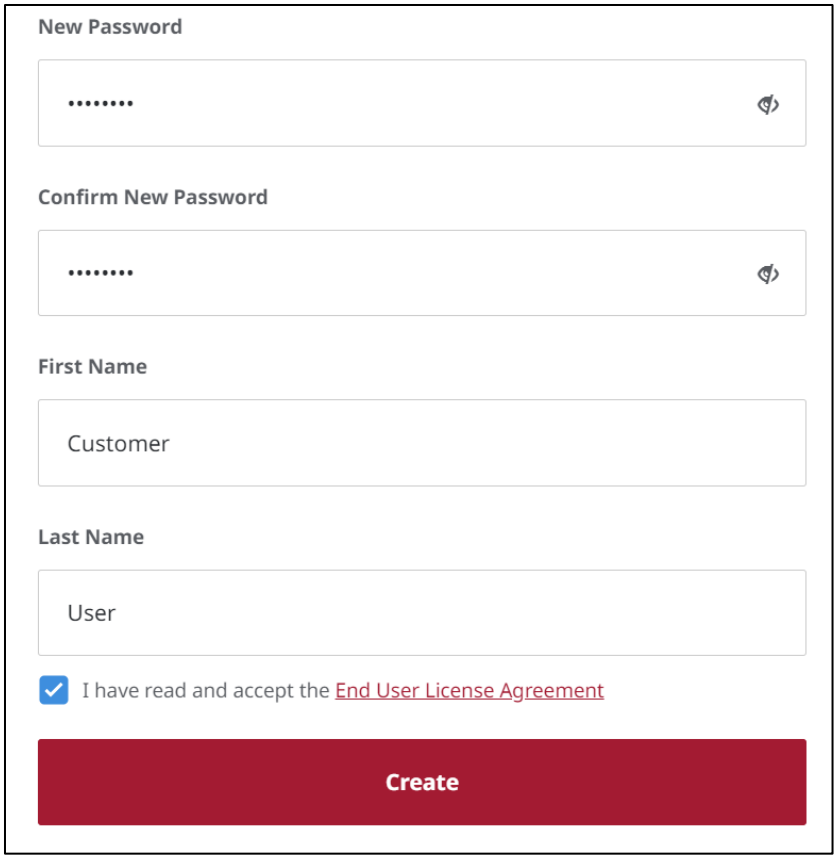


Figure 2.5 Create a new user screen

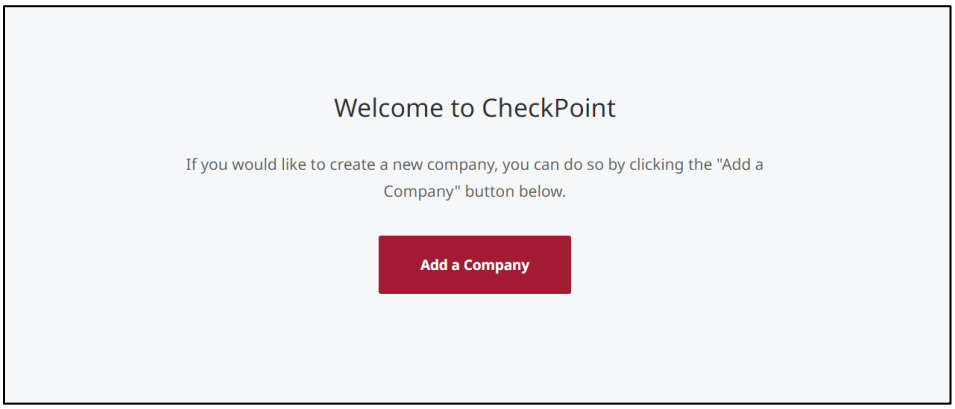


Figure 2.6 Welcome to CheckPoint screen

Register Your Company Assets

Once you have verified the email registration and created an account, you can log into CheckPoint (if you aren't logged in already) from the *Login* screen, using your verified email address and new password and you will begin the multi-step process for *Getting Started Using CheckPoint®* by registering your Company

and one Location. For a company with multiple production Locations, others can be created later; refer to *Chapter 3: Configuring CheckPoint®*, in this manual.

Add a Company

During your first login session, you can just click the **Add a Company** button on the *Welcome to CheckPoint* screen and begin the process of *Getting Started Using CheckPoint®*.

Complete the fields (all of which are required) on the *Company* screen that follows to create a Company in CheckPoint. Enter a name for the Company you are creating and then set the default *Display Units*, *Language & Region*, and *Time Zone* from the drop-down menus listing choices. Refer to Figure 2.7.

When you have completed the *Company* screen, click the **Next** button at the bottom of the screen.

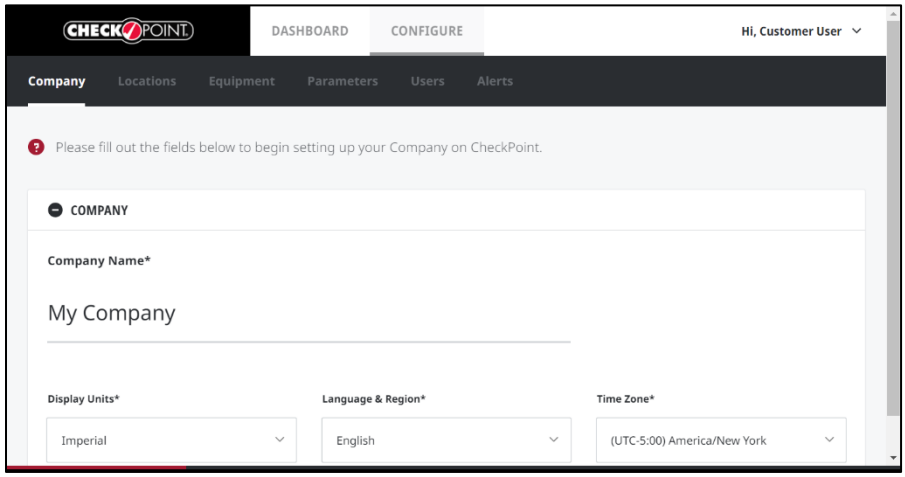


Figure 2.7 Add a new Company screen

Add a Location

The next step in the process of *Getting Started Using CheckPoint®* is to add the first Location for your new Company. You must enter a name ("My Location" is the example shown in the figure) and select a *Time Zone* for the Location from the drop-down menu (or you can click the link under the drop-down menu to *Copy* the time zone from the Company). You may also add a physical *Address* for the Location, although this field is optional when you are creating one or more new Location(s). When you have completed the *Location* screen, click the **Next** button. Refer to Figure 2.8.

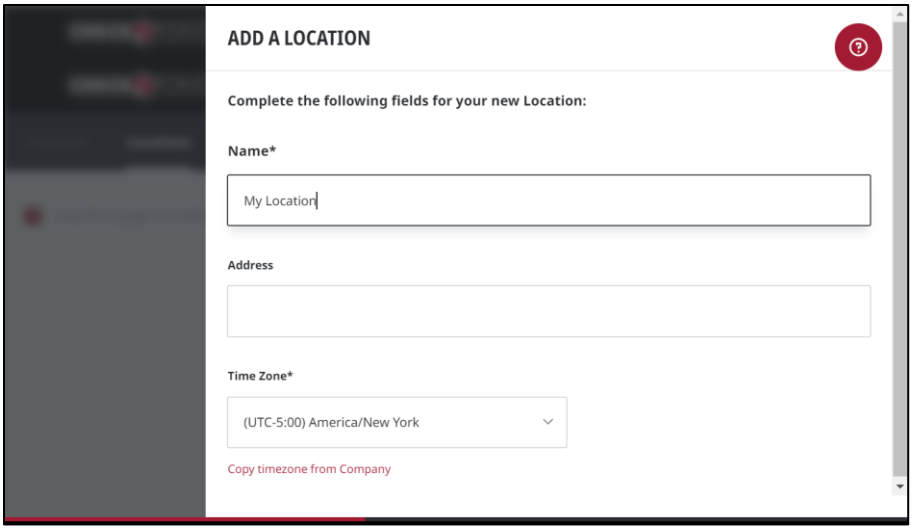


Figure 2.8 Add a new Location screen

Add a Production Station and Equipment Role

Then the next step of the process is to add the first Production Station to your new Location. First, you must choose where to add the production station in the hierarchical asset tree. The first Location that you just created for your Company is pre-selected by default as the position in the asset tree to add a production station. Click the **Next** button to proceed. Refer to Figure 2.9.

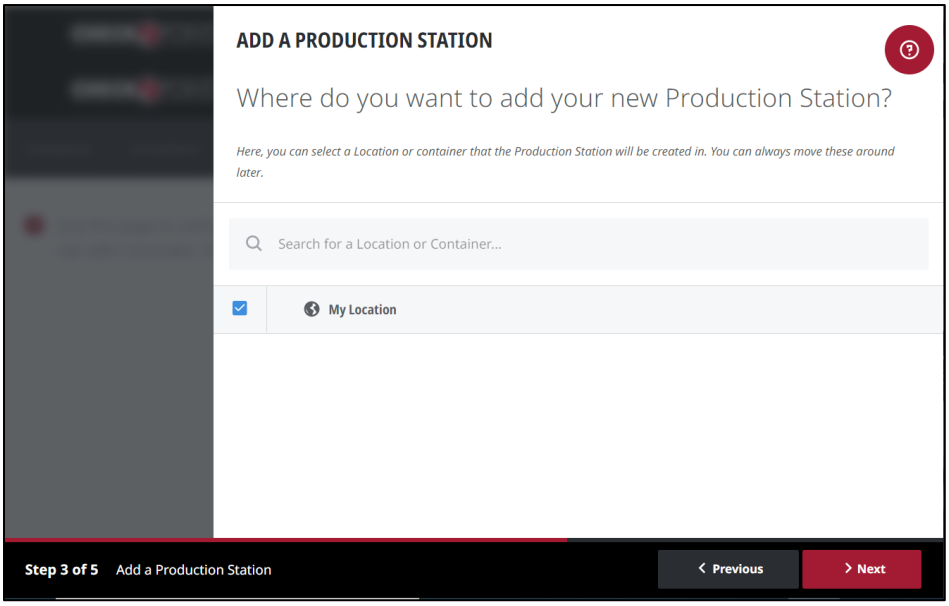


Figure 2.9 Add a Production Station screen

At the top of the screen that follows, you will see a glimpse of how your asset tree will look once you add this new production station. To continue the process of creating the station, you must complete the

required fields on this screen by entering a name for your new production station and a name for an equipment role for that station. Each production station requires at least one equipment role and the sample names of a station and equipment role shown in Figure 2.11 are "Station1" and "Lead1". If this production station needs to have more than one equipment role associated with it, you can click the *+ Add Equipment Role* link at the bottom of the screen. Refer to Figure 2.10.

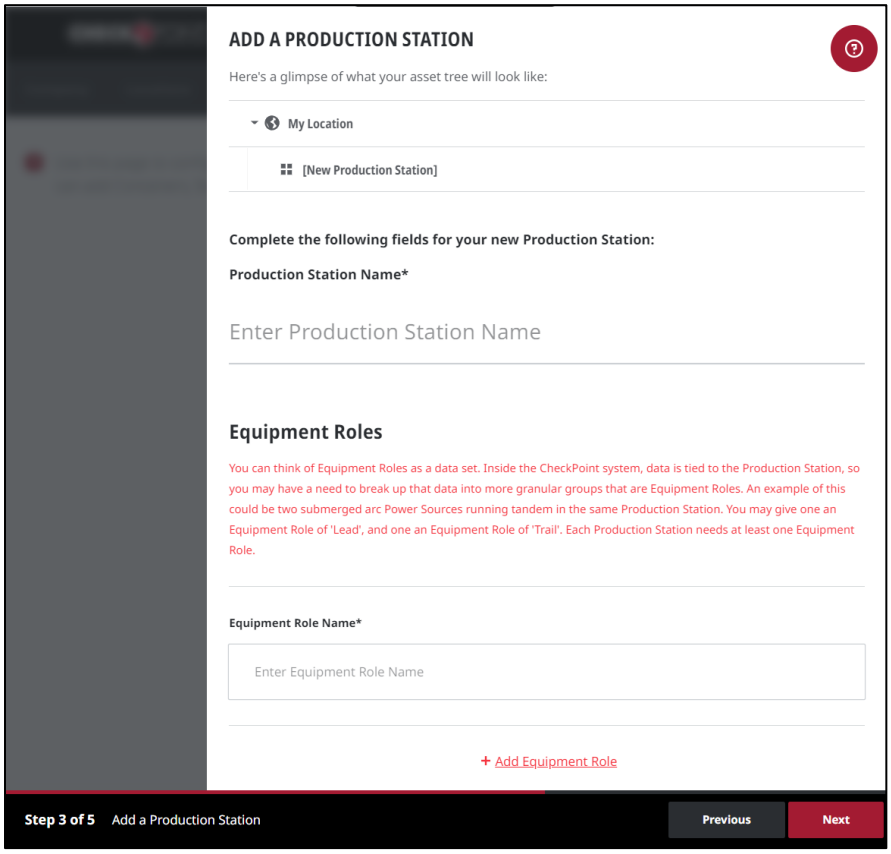


Figure 2.10 Add Production Station and Equipment Role

Add a Welding Power Source

After the production station and its equipment role(s) have been added to your asset tree, the next step of *Getting Started Using CheckPoint®* is to add a Welding Power Source for the station. The top of the next screen once again shows you a glimpse of how your asset tree will look once you add this new Power Source to the associated Equipment Role for your new Production Station. If you are still performing the steps of the process for *Getting Started Using CheckPoint®*, then you will see this has been pre-selected for where to add your first Welding Power Source. (Until the process of adding the Power Source is completed, it is labeled as *Unassigned* next to the Equipment Role in the asset tree.) Click the **Next** button to proceed. Refer to Figure 2.11.

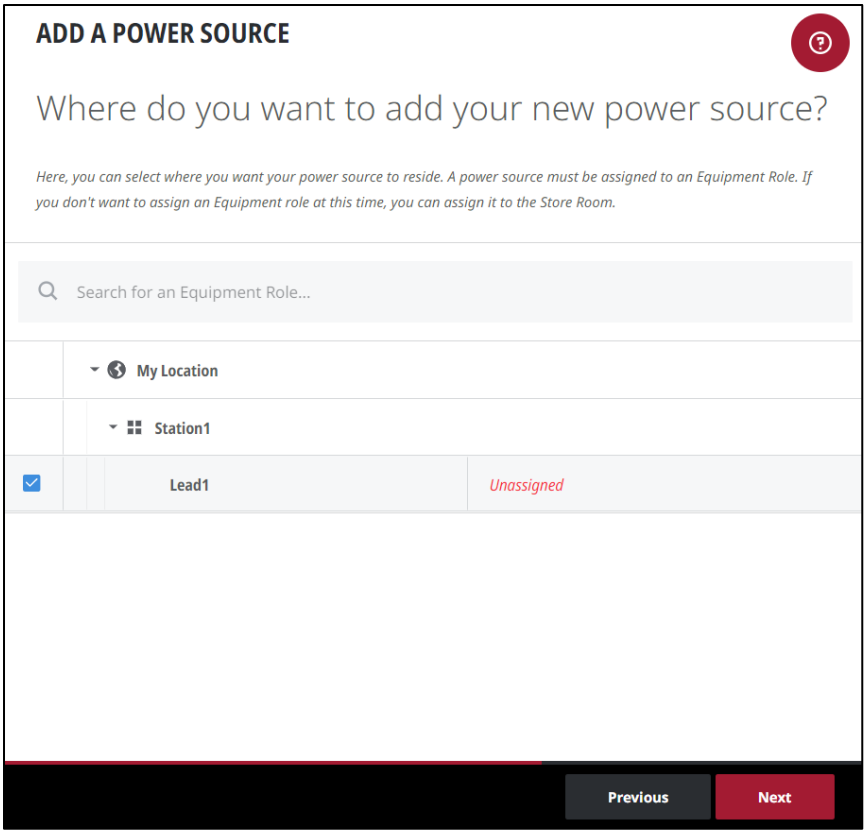


Figure 2.11 Add a Welding Power Source screen

You will need to register each Welding Power Source by uploading its Installation Key file.

To complete the registration of the Welding Power Source, find the Installation Key file that you created and saved for this Welding Power Source. (Refer to the section in the *Power Wave® Manager Operators Manual* titled *Saving an Installation Key File*.) The registered Welding Power Source is assigned to a new Production Station. Upload the contents of the Installation Key file, which includes a unique Welding Power Source Device ID.

Choosing the Equipment Name for the new Power Source and uploading its associated registration file are both required entries on the screen. Refer to Figure 2.12.

To upload the file automatically, you can drag and drop it into the target area shown on the screen. Instead of using drag and drop, you can click the link to browse your files and locate the Installation Key file, select the file, and then click the **Upload** button.

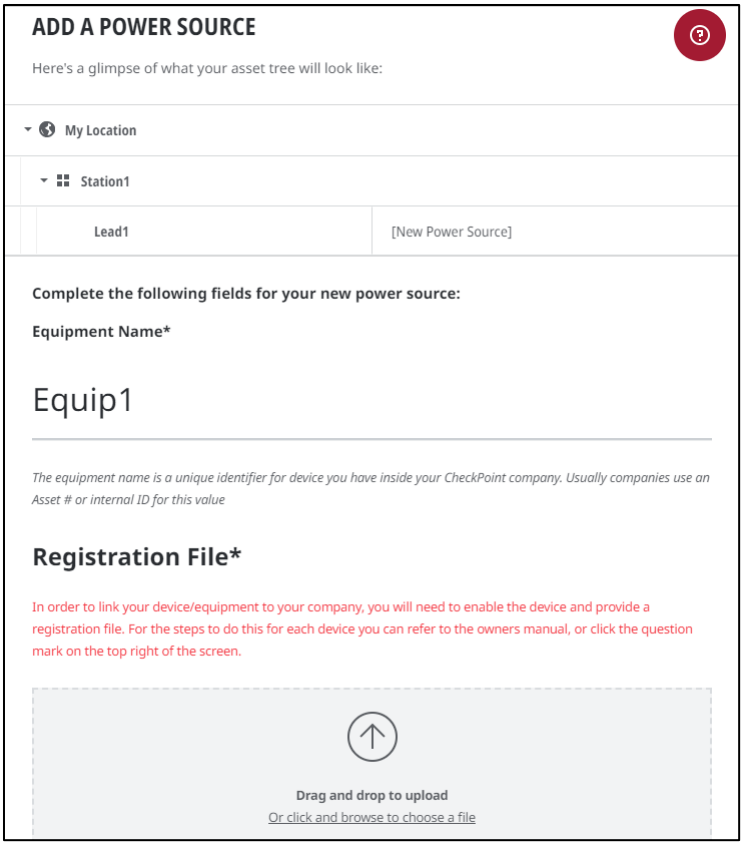


Figure 2.12 Add a new Registered Power Source

(After all steps in the Getting Started process have been completed, more Production Stations and/or Equipment Roles, as well as additional Welding Power Source(s), can be added later using the **Configure** tab; refer to Chapter 3, *Configuring CheckPoint®*, for more information.)

Add a Shift Schedule

Now that you have performed the initial steps in *Getting Started Using CheckPoint* to add a Company, a Location, a Production Station with associated Equipment Role(s), and the Welding Power Source(s) for the Equipment Role(s), you can add your first Shift Schedule.

If you want to skip this Getting Started step, then click the X to the left of the *Add a Shift Schedule* step. A screen is displayed to explain the implications of skipping this step. Click the red button to resume adding a Shift Schedule, or click the link below it to confirm skipping this step and exit the Getting Started process.

Similar to the process for adding several assets in CheckPoint, you must first choose where you want to add the new Shift Schedule. The *Location* that you added for your *Company* during previous steps will be selected as the default destination for the new Shift Schedule. Click the **Next** button to proceed. Refer to Figure 2.13.

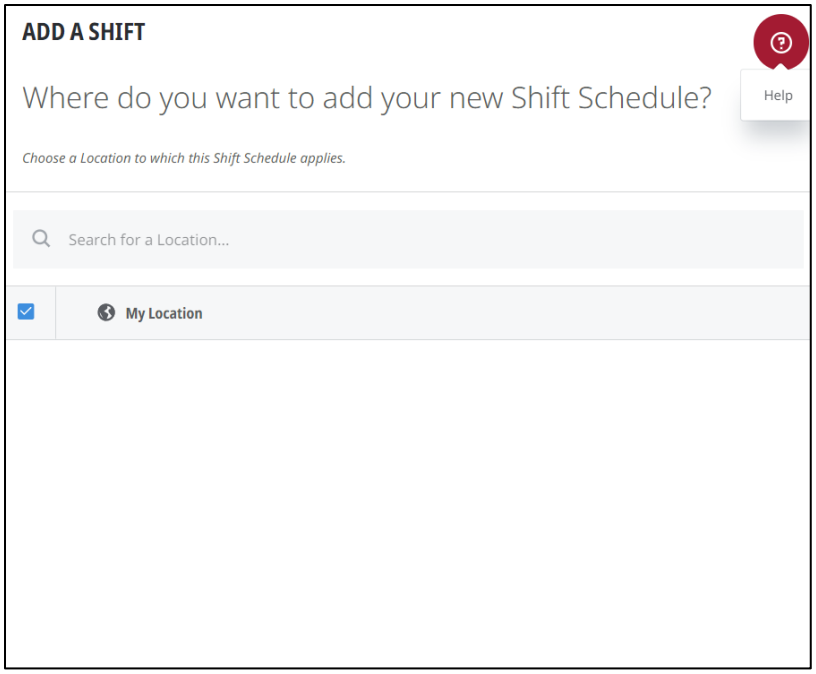


Figure 2.13 Add a new Shift Schedule

To complete the addition of the Shift Schedule, you add one or more shift(s) on the screen that follows. The fields required on this screen are the name of the Shift, the *Time Range* (from the start time to its end time), and a *Repeat Frequency* (the days of the week to which this Shift Schedule applies). The *Every Day* checkbox is a shortcut for selecting all seven days. Click the **Next** button to proceed. Refer to Figure 2.14.

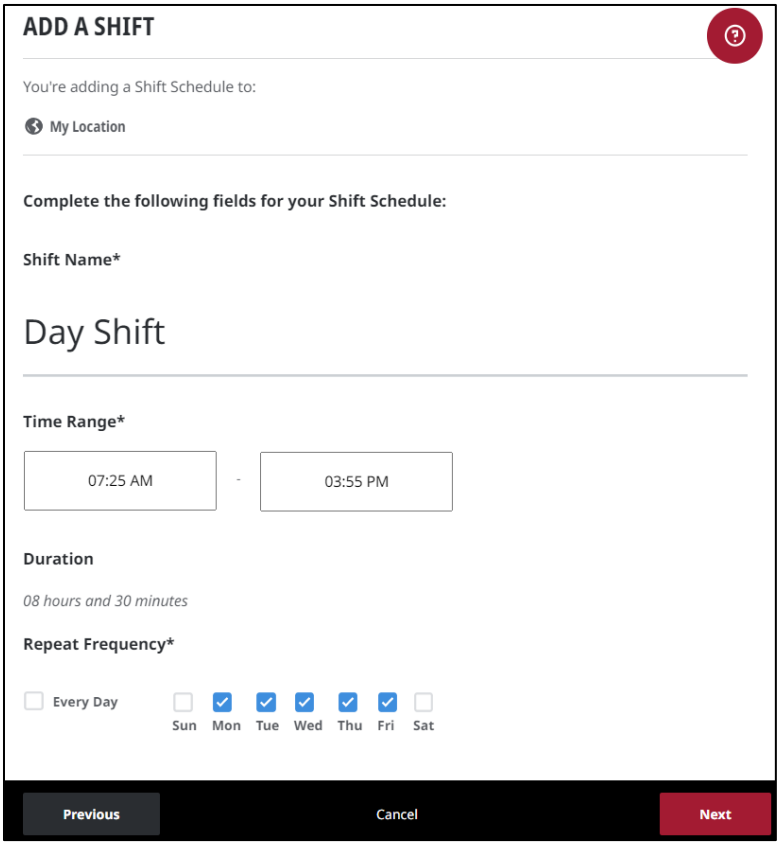


Figure 2.14 Add a Shift screen

When you have completed the steps in the process of *Getting Started Using CheckPoint®*, the next screen that appears will be your **Dashboard**. The left side of the screen displays the complete hierarchical asset tree that you have created for your Company; the right side displays the relevant production monitoring information and various calculations involving those assets. Refer to Figure 2.15.

If you did not complete all *Getting Started Using CheckPoint®*, then you will see a warning message displayed in a blue information box on the left. For example, if you exited without adding a Shift Schedule to a Location, a message explains this and provides a link for you to click to *Continue Adding Shifts*.

You can also click the **Configure** tab at the top of the screen and proceed to add additional Locations and other assets, as well as add or remove other Users if you are a *Company Administrator* or *Location Administrator*, to your existing company, or even to add another Company in the CheckPoint system.

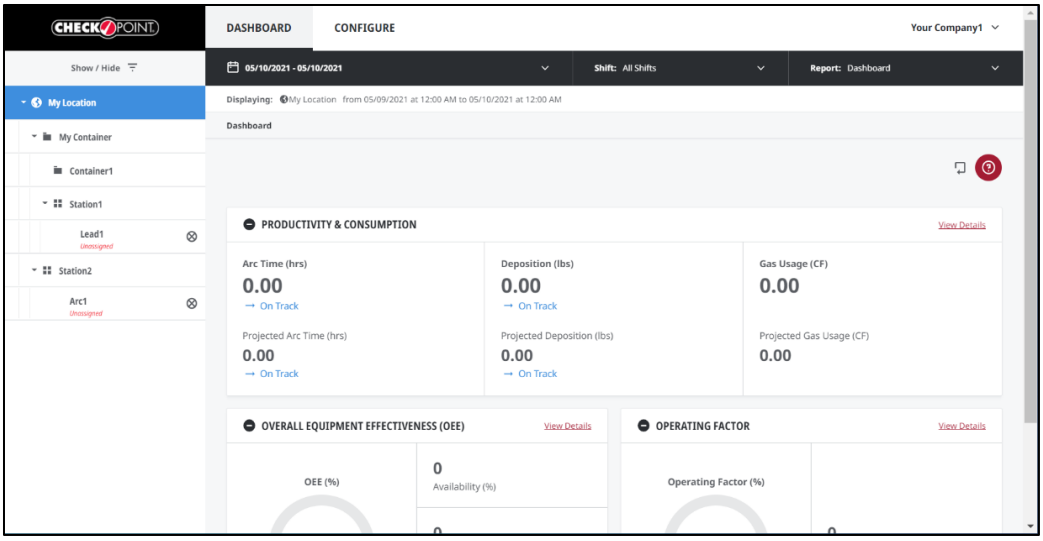


Figure 2.15 Dashboard screen

Configuring CheckPoint®

This chapter explains how to set up the logistical information for your company and its equipment. To effectively use the reports and data analysis, you need to configure CheckPoint for your own operation.

CheckPoint Concepts

Before you can properly configure CheckPoint, you need to understand the following concepts:

- Production Station
- Equipment Roles
- Shift Schedules
- Production Day
- User Roles

Production Station

A Production Station is a place where welding operations occur in a manufacturing facility. It may be a fixed location in an assembly line on the shop floor or it may be equipment that physically moves. A Production Station may be used to make parts repetitively, or be used for fabrication or repair.

A Production Station typically has one Equipment Role, which has a Welding Power Source assigned to it. Some Production Stations may have more than one Equipment Role, depending on the welding process. If there is more than one, each Welding Power Source is identified by the role it has in the welding process. For example, in a tandem weld setup, there is typically a lead arc and one or more trail arcs. Each arc has an Equipment Role in the Production Station and each Equipment Role has one Welding Power Source assigned to it.

Equipment Role

An Equipment Role is where the welding data is stored. The Welding Power Source assignments to the Equipment Roles can be changed. Equipment Roles cannot be moved; they comprise a Production Station.

Each Production Station and its associated Equipment Role(s) can be configured with its own set of parameters: Planned Downtime Schedule, Idle Time Threshold, Planned Arc Time, Planned Deposition, and Estimated Gas Flow Rate. The values of these parameters are used to compute the Key Performance Indicators (KPIs) for the Production Station's Equipment Role. To make KPI values meaningful, ensure that the welding operation values are properly configured in the Production Station's Equipment Role.

The Equipment Role allows Welding Power Sources and other equipment to be swapped out of the Production Station for scheduling, maintenance, or repairs. A suitable equipment replacement can be connected and assigned to the same Equipment Role without disrupting data collection and reporting.

Shift Schedules and a Production Day

A Shift Schedule is a user-defined period of time that identifies the start and end of a shift and the number of shifts per Production Day. A Shift Schedule identifies the start and stop times for the collection of data in CheckPoint reports. Shift Schedules also are location-specific. Adding a Shift Schedule is the last of the

steps for *Getting Started Using CheckPoint®*, and although technically this step is optional, it is recommended to get the most value that the CheckPoint application has to offer. Refer to *Add a Shift Schedule* in *Chapter 2*.

A Production Day for a Location is a unit of time defined by the Location's Shift Schedule. A Production Day starts at the beginning of the first shift of the day and ends at the end of the last of the shift(s) that started on that same day. Therefore, Production Days can start before midnight and end on the next calendar day. Most time periods in CheckPoint reports are defined in units of Production Days. For more information on the CheckPoint production-management reports, with data for a single production day or seven consecutive production days, refer to *Appendix C: Shift Schedule Examples* later in this manual.

User Roles

Five User Roles define the areas of responsibility and control for CheckPoint users. The *Company Administrator* has the highest level of access and control. The *Company Administrator* and *Location Administrator* are the roles that configure and manage other users' accounts. They add and remove users to the company or location, respectively, and set their access privileges. All users have access to the *My Account* and *My Alerts* features, as well as access to all reports. The User Roles in CheckPoint, in order of decreasing level of access privileges, are as follows:

- *Company Administrator* has the highest level of access privileges for a Company. This User Role allows access to all areas of CheckPoint, including modifying a Company, adding Locations, editing Equipment Layout, changing production Parameters, adding or removing other Users, and configuring Alerts.
- *Location Administrator* can add Users with access to the administrator's Location and set Alerts for Users within that Location. This User Role allows access to all areas of a specific Location, including Location modifications, the Equipment Layout, Parameters, Users, and Alerts.
- *Equipment Manager* can define the asset tree hierarchy and asset properties for a Location. This User Role allows access to the Equipment modification pages, including screens for the Equipment Layout and production Parameters.
- *Company User* can review the reports for all Locations within a Company, but a *Company User* has no privileges to add or administer items or any other Users in CheckPoint.
- *CheckPoint User* is the most basic user in CheckPoint. This User Role is able to review reports for a specific Location within a Company. No other administrative privileges apply to this User Role.

The context of items appearing and available on the **Configure** tab in CheckPoint is determined by the access a user has. For example, the *Equipment Manager* does not have access to view or modify Locations. The items that can be viewed and configured are specific to the manager's Location. Additionally, the *Company User* and *CheckPoint User* have access to reports, but not to any items on the **Configure** tab.

The Configure Feature

To access the CheckPoint Configure feature, click the **Configure** tab at the top of the screen. In the CheckPoint Configure feature, the headings across the top of the page access the settings. When it has been selected, a heading displays brighter and is underlined. *Company Administrator* access privileges are required to access the **Company**, **Locations,** and **Equipment** tabs. *Location Administrator* level access (or above) is required to make configuration changes to the **Locations** and **Equipment** tabs. *Equipment Manager* level access (or above) is needed to modify the **Equipment** tab. Most of the settings that are

displayed under the **Parameters** tab also require at least *Equipment Manager* level access privileges. A *Company Administrator* or *Location Administrator* level is needed to access the **Users** and **Alerts** tabs.

- The Company tab displays details of your Company.
- The Locations tab displays one or more Locations administered for your Company.
- The Equipment tab displays company assets by Location. Add, reassign, and remove assets including any optional Containers, Production Stations, and Welding Power Source.
- The Parameters tab shows several items pertaining to production that are specific to a Location, including Shift Schedules, Planned Downtime, Idle Time Threshold, Planned Arc Time, Planned Deposition, and Estimated Gas Flow Rate.
- The Users tab allows a *Company Administrator* or *Location Administrator* to add, delete, and modify the levels of access granted to other users.
- The Alerts tab allows a *Company Administrator* or *Location Administrator* to specify certain events or conditions to which they would like other users alerted. Some examples of these alert types include Disconnect, Power On, Weld Profile Limit Exceeded, and Wire Package Warning. (For more information on setting Weld Profile Limits, refer to the *Power Wave® Manager Operators Manual*.)

Company

Edit Existing Company

Company information can be modified by the *Company Administrator*. To configure a Company, click the **Configure** tab and then the *Company* heading. The screen that appears is very similar to the one used to add a Company during the process of *Getting Started Using CheckPoint®*, but it has a **Save** button on the lower part of the screen, rather than a **Next** button. Refer to Figure 2.7.

Add Another Company

There is a drop-down menu at the top right corner of the CheckPoint screen (either the **Dashboard** or **Configure** tab) labeled with the name of the Company you are currently viewing. Clicking to open the menu shows a linked list of the names of the companies you have access to. (Also in this menu, all users see links to access their own account information and to **Logout** of CheckPoint.) Click the *+ Add a Company* link at the bottom of this menu and then follow the instructions in *Chapter 2: Getting Started Using CheckPoint®*, to complete the fields on the screen (all are required) to add another Company. When done, click **Save**.

Locations

A Company can have multiple Locations where production takes place. The first Location is created when the Company is created. Refer to *Chapter 2: Getting Started Using CheckPoint®*. Location-specific information can be configured by either the *Company Administrator* or the *Location Administrator*. To configure new Location(s) or edit an existing Location, click the **Configure** tab and then the *Locations* heading.

Add a New Location

Only the *Company Administrator* has the ability to add a new Location to a Company. Click the **+ Add a Location** button and the screen that follows is very similar to the one used to add the first Location during

the *Getting Started Using CheckPoint®* process (refer to *Chapter 2*), but has a **Save** button on the lower left, rather than **Next** or **Previous** buttons. Refer to Figure 2.8.

Complete the required fields to add another Location to your Company in the CheckPoint system. When you are done, click the **Save** button.

Edit a Location

Any existing Location can be edited by the *Company Administrator*; *Location Administrators* can edit their specific Locations. For any Location, click the edit (pencil) icon to the right of the Location.

Modify the fields on the *Edit Location* screen for the name (and optionally, *Address*), then confirm its *Time Zone* or reset it from the drop-down list. Click the **Save** button when you are done. Refer to Figure 3.1.

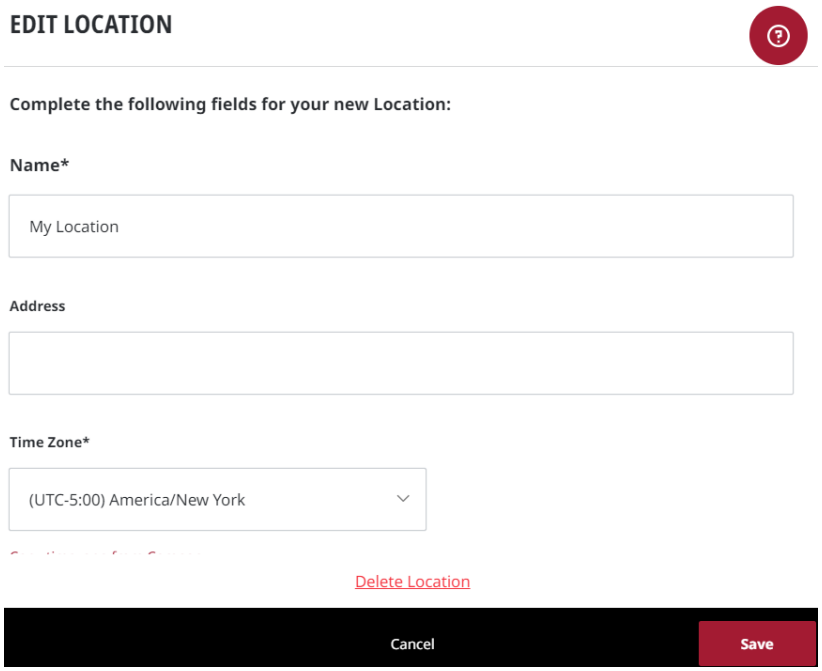


Figure 3.1 Edit Location screen

Delete a Location

If a Company has multiple Locations entered in the CheckPoint application, then the *Edit Location* screen for each Location has a link at the bottom to *Delete Location*. Click the link if you wish to remove it from your Company, and then **Confirm** the deletion of the Location on the popup window that appears.

> **STOP | Deleting a Location will remove any Containers, Production Stations and associated Equipment Roles (including welding data), and assigned Welding Power Sources. Once deleted, the Location's production data cannot be recovered.**

Repeat this procedure to delete another Location if you wish to remove multiple Locations. A Company is still required to have at least one Location, so when only a single Location remains for a Company, the *Delete Location* link is no longer present on its *Edit Location* screen.

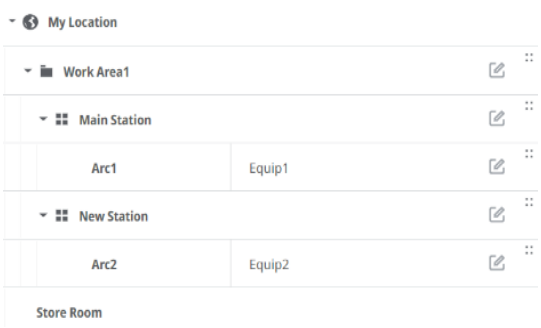
Equipment Layout

This section allows *Company Administrators*, *Location Administrators*, and *Equipment Managers* to organize the asset tree. Refer to Figure 3.2. Review the organization of your company before you begin. Determine the organization for the asset tree. For example, you might organize the assets as follows:

- By Shop Area--bay designation, north or south direction, or first floor.
- By Function--robot welders, production, part made, or maintenance.

The Company assets shown in the asset tree include its Locations, any optional Containers that have been created, the company's Production Stations with their associated Equipment Roles, and the Welding Power Sources. Company assets are structured in a hierarchy, as suggested in Table 3.1.

Table 3.1 Company Assets Hierarchy Explanation

Company Assets	Hierarchy Explanation for Example
	My Location: Is a Location at the highest level of the tree where the other components are organized. For example, a Location name may describe where your facility is located. Work Area1: Is an optional Container that is located under the Location. A Container can be organized, for example, by sections of your shop floor, or by the function of equipment. Main Station: Is a Production Station. The Production Station is any place in a production facility where welding occurs. Each station in the asset tree has an Equipment Role. Arc1: Is the Equipment Role associated with Main Station. Equip1: Is a Welding Power Source for Arc1. The Welding Power Source is the equipment used in making the welds. Store Room: Is an asset used to store non-production Power Sources. The Store Room usually holds Power Sources that are not suitable for production. For example, equipment may need recalibration or maintenance.

The changes to equipment layout that can be made depend on the access privileges a user has. For example, on the *Equipment Layout* screen for a Company, a *Company Administrator* can click the **+ Add** button to add a Container, Production Station, or Welding Power Source to any Location(s) shown.

On the *Equipment Layout* screen for one Location, the *Location Administrator* or *Equipment Manager* for that Location can click the **+ Add** button to add a Container, Production Station, or Welding Power Source to that Location.

Containers

Containers are optional items under a Location (or nested under another existing Container) in the asset tree. You can use a Container to organize and group Production Station assets or other Containers together. Containers cannot be created under Production Stations, Welding Power Sources, or Store Rooms. Refer to Figure 3.2.

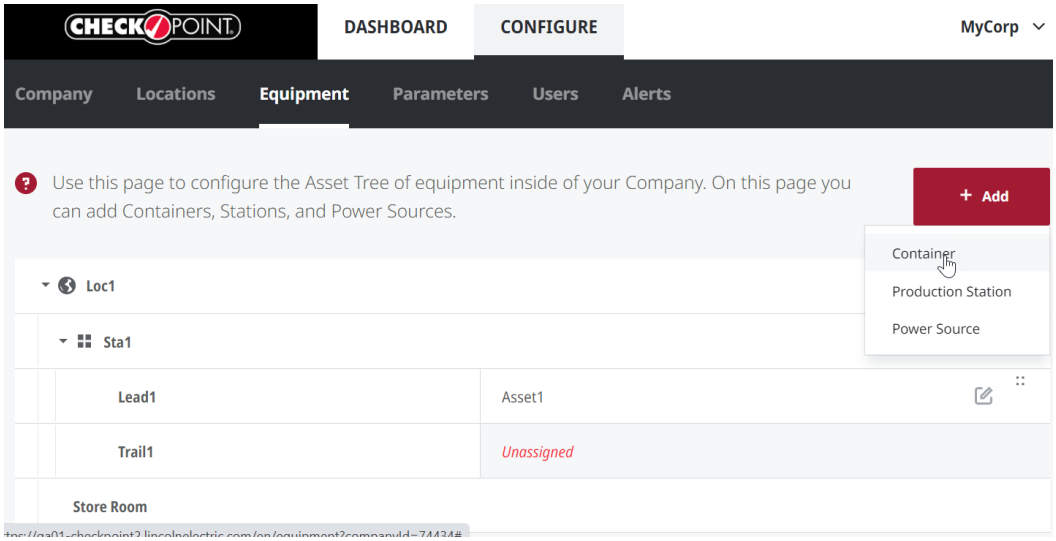


Figure 3.2 Equipment Layout for a Location

Add a Container

To create a new Container, click on the *Equipment Layout* heading under the **Configure** tab. Click the **+ Add** button and choose *Container* from the drop-down list of items that may be added. The screen that follows prompts you to choose where to add the new Container.

First, choose the parent Location (or another existing Container) to which to add this new Container. Refer to Figure 3.3. Click the **Next** button, and then you can optionally choose any existing asset(s) for that Location, such as Production Stations or other Containers, which you want moved into the new Container. Refer to Figure 3.4. If there are no assets you want to move into the container right now, then you can just click **Next** and an empty new Container will be created for later use. On the last of the screens to *Add a Container*, you must enter the name for the new Container. When you are done, click the **Save** button. Refer to Figure 3.5.

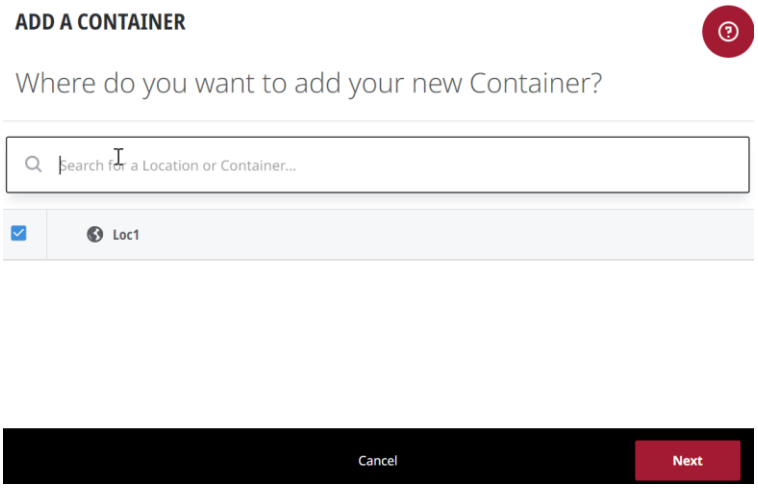


Figure 3.3 Add a Container screen

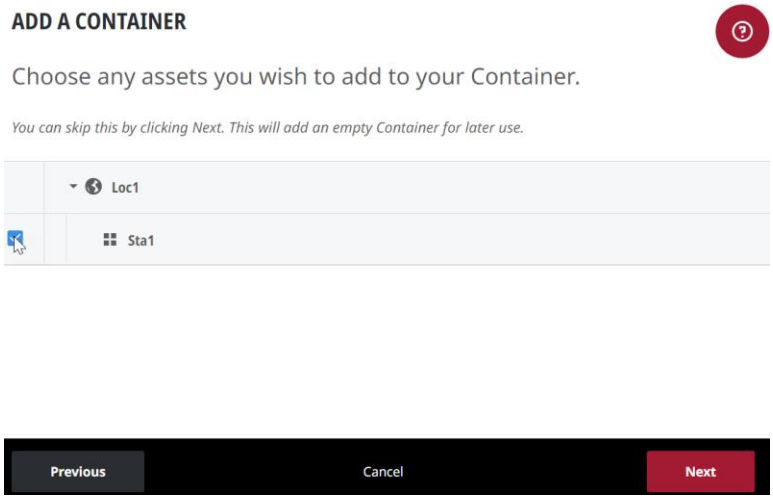


Figure 3.4 Add assets to new Container

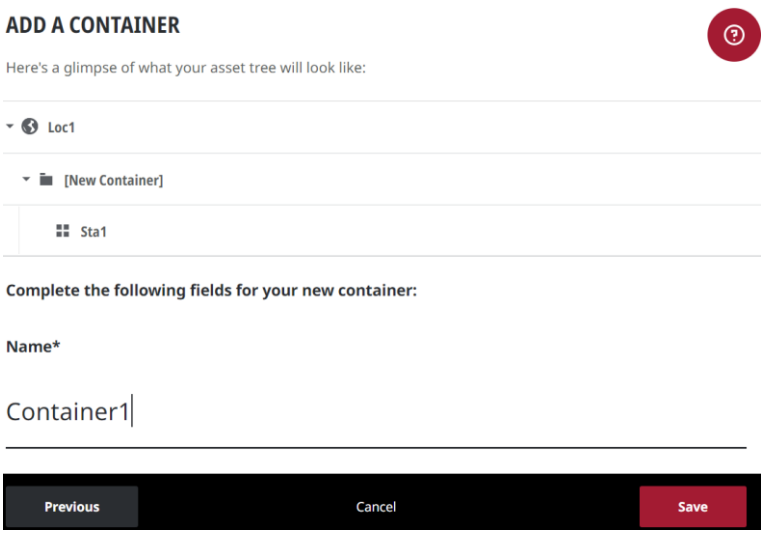


Figure 3.5 Add the named Container

Edit a Container

You can edit any optional Containers you have created under a Location. Click the edit (pencil) icon to the right of a Container. The *Edit a Container* screen allows you to change the name of the Container.

Delete a Container

The *Edit a Container* screen also allows you to click the link at the bottom to *Delete Container*. Click the link if you wish to remove this Container from this Location, and then **Confirm** the deletion of the Container on the popup window that appears.

> **STOP | Deleting a Container also removes any nested Containers, Production Stations and associated Equipment Roles (including welding data), and assigned Power Sources. Once deleted, the production data cannot be recovered.**

Production Stations

To create a new Production Station, click the *Equipment Layout* heading under the **Configure** tab. Then click the **+ Add** button and choose *Production Station* from the drop-down list of items that may be added. In the CheckPoint system, a Production Station is any place in a production facility where welding occurs. A Production Station has one or more associated Equipment Role(s). The production data is collected and displayed from the active Welding Power Source(s) assigned to the Equipment Role(s). Each Equipment Role has a single Power Source. If the Welding Power Source for an Equipment Role is removed or it is reassigned later to another Production Station, then its production data will be maintained.

Add a Production Station

After you click the **+ Add** button and choose Production Station from the drop-down list, the *Add a Production Station* screen is displayed. The screen is very similar to the one used to add a Production

Station during the process of *Getting Started Using CheckPoint®* (refer to *Chapter 2*), but this screen has a **Save** button at the bottom rather than a **Next** button.

Add an Equipment Role

Also on the *Add a Production Station* screen, you create an Equipment Role for the station and enter a name for it. If you need to add more than one Equipment Role to a Production Station, click the **+ Add Equipment Role** link at the bottom of this screen. When you are done, click **Save**. Refer to the *Add a Production Station and Equipment Role* subsection in *Chapter 2: Getting Started Using CheckPoint®* for more information. Refer to Figure 2.9 and Figure 2.10.

Remove an Equipment Role

An Equipment Role can only be removed if it is shown in the asset tree as being currently *Unassigned*. There is a label below the Equipment Role to indicate the last time that production data was received. Removing an Equipment Role will remove all the welding data, after which it cannot be recovered.

Edit a Production Station

To edit a Production Station, select the edit (pencil) icon to the right of the Production Station, enter a new value for the station name and/or associated Equipment Role(s), and then **Save** your changes.

Delete a Production Station

There is a link at the bottom of the *Edit Production Station* screen to *Delete Station*. Click the link if you wish to remove the station from this Location, and then **Confirm** the deletion of the Production Station on the popup window that appears.

> **STOP | Deleting a Production Station also removes the associated Equipment Role(s), including welding data, and the assigned Welding Power Sources. Welding data cannot be recovered.**

Welding Power Source

The Welding Power Source is the equipment used when making welds. A Welding Power Source is listed in the asset tree next to an Equipment Role. If more than one Equipment Role is associated with a Production Station, each Equipment Role will have its own assigned Power Source. To add a new Welding Power Source or edit an existing one in CheckPoint, click the *Equipment Layout* heading on the **Configure** tab.

Add a Welding Power Source

Click the **+ Add** button and choose *Power Source* from the drop-down list of items that may be added. First, you must choose the Equipment Role in the asset tree to which to add the new Power Source.

The screen is very similar to the one used to add a Power Source during the process of *Getting Started Using CheckPoint®* (refer to *Chapter 2*), but has a **Save** button rather than a **Next** button. Refer to the *Add a Welding Power Source* subsection in *Chapter 2: Getting Started Using CheckPoint* for more information. Refer to Figure 2.11 and Figure 2.12.

If an unassigned Equipment Role is associated with a Production Station, then the new Power Source can be added to it. Otherwise, new Power Sources can be added to the Store Room for the Location.

The next step in adding a new Power Source is to locate and upload the Installation File to provide your Welding Power Source Installation Key file. (Each Power Source has a unique Installation Key file. Refer to Figure 2.1 in this manual and to the *Saving an Installation Key File* section in the *Power Wave® Manager Operators Manual*.) Choose the Installation Key file you saved for this Power Source and click the **Upload** button, or drag-and-drop the file into the indicated area on the screen. This file specifies the Welding Power Source Device ID. Once the file upload is completed, **Save** your changes.

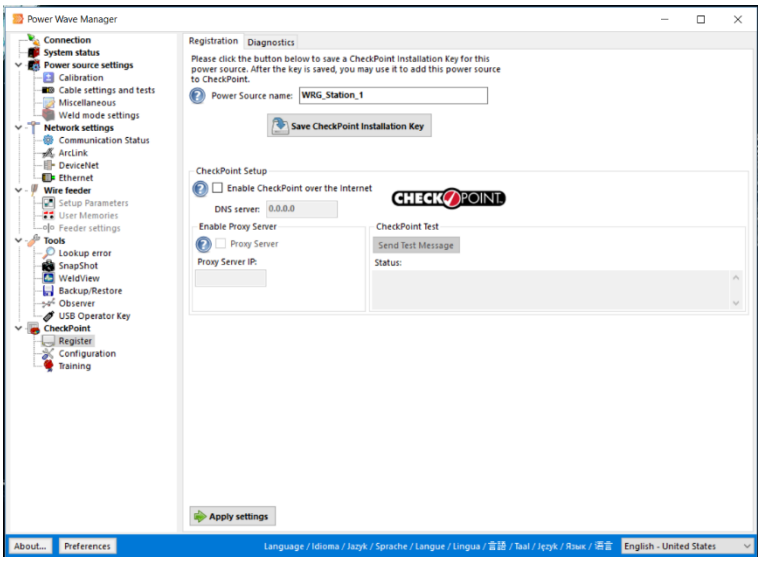


Figure 3.6 Power Wave Manager software screen

Edit a Power Source

To edit a Welding Power Source, select the edit (pencil) icon to the right of the Power Source, enter a new value for the name on the *Edit Power Source* screen, and then **Save** your changes.

Delete a Power Source

To delete a Welding Power Source, select the link at the bottom of the *Edit Power Source* screen to *Delete Power Source*. Then **Confirm** the deletion of the Power Source on the popup window that appears. An Equipment Role without a valid Welding Power Source will show as *Unassigned* in the asset tree on the left.

Store Room

When you need to temporarily remove a Welding Power Source from production, it can be moved to the Store Room. When a Power Source is in the Store Room, the link between it and the Equipment Role is disconnected. New data from any Welding Power Source in the Store Room are not included when viewing various CheckPoint reports.

Moving a Selected Asset

This section shows the rules for moving assets. Equipment changes such as moving Welding Power Sources and Production Stations are effective immediately. Assets can move in the Asset Tree using the Edit window after clicking the **Edit** icon.

Moving Locations or Store Rooms

Locations and Store Rooms cannot be moved. Once created, their placement is fixed.

Moving Containers

Containers can be moved only within the Location where they were created. Containers cannot be moved into the Store Room. Moving a selected Container will move all the child assets within that Container.

Moving Production Stations

Production Stations can be moved only within the Location or within Containers in the Location where they were created. Production Stations cannot be moved into the Store Room, another Production Station, or a Welding Power Source. Moving a Production Station will move the Welding Power Source(s) for the Equipment Role(s) that are associated with that selected Production Station.

Moving Equipment Roles

Equipment Roles cannot be moved from the Production Station they were associated with when created to any other Production Station. Consider moving the Production Station, which will also move its associated Equipment Role(s) along with it, to a different place in the asset tree.

Moving Welding Power Sources

To assign a Welding Power Source to an existing Equipment Role, click the Move Power Source link from the edit window. Welding Power Sources registered to a Company can only be assigned to Equipment Roles or Store Rooms. Welding Power Sources in CheckPoint can be moved from one Location to another.

Parameters

This section of CheckPoint supports the configuration of various production parameters by *Company Administrators*, *Location Administrators*, or *Equipment Managers*. Click *Parameters* under the **Configure** tab and a set of parameters appear as headings on the screen. These parameters are used in the process of data collection and making calculations for reports that are available in CheckPoint. Refer to Table 3.2.

Table 3.2 Parameter Definitions

Field	Description
Shift Schedules	A specified period in a day defining when data is to be collected.
Planned Downtime	An expected time range when production is stopped within a shift.

Field	Description
Idle Time Threshold	This is the amount of time that the Welding Power Source can be idle before the period of inactivity is to be counted as Unplanned Downtime.
Planned Arc Time	Enter the amount of time that the Welding Power Source assigned to an Equipment Role is expected to be welding in an hour.
Planned Deposition	Enter the amount of wire that you expect to use in an hour.
Estimated Gas Flow Rate	Enter the amount of gas that you expect to consume if there is missing gas sensor hardware. Checkpoint uses gas sensor values when they are available.

Shift Schedules

After a Company and Location have been created during the initial steps of the process of *Getting Started Using CheckPoint®*, you can then create a shift. One or more shifts comprise a Shift Schedule, and a Shift Schedule defines the plant Production Day. Refer to *Shift Schedules and a Production Day* in the preceding section of this chapter for more information.

Company Administrators can create new or edit existing Shift Schedules under any Location in a Company. *Location Administrators* can create or edit a Shift Schedule under their Location. *Equipment Managers* also can add or edit Shift Schedules.

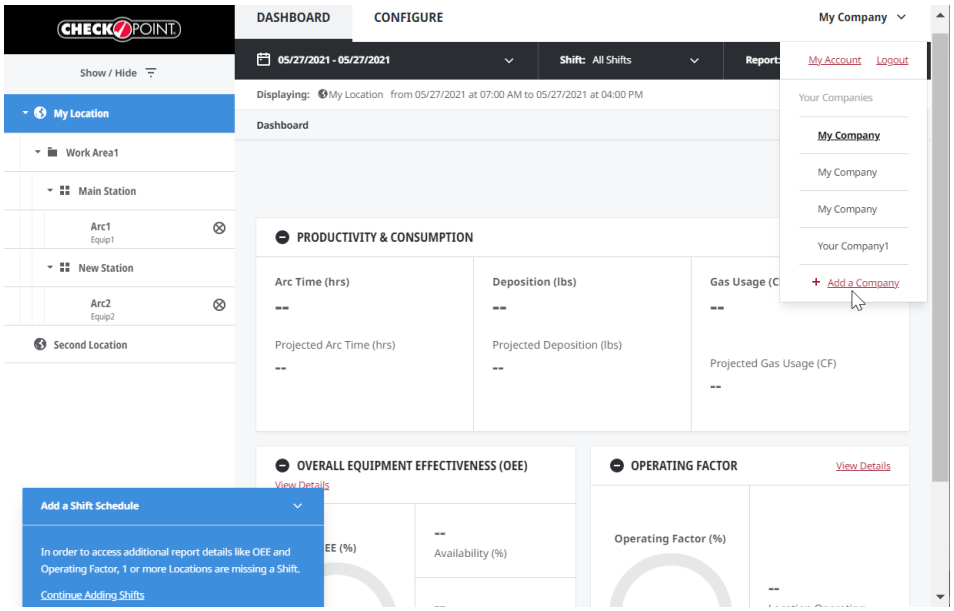


Figure 3.7 Company Drop-Down Menu

Because it is possible to exit the process for *Getting Started Using CheckPoint®* (refer to Chapter 2) without having successfully completed a Shift Schedule, it is possible that one may not have been added to a particular Location in your Company. In the example shown in Figure 3.7, a Shift Schedule has not been

added yet to one or more Locations within this Company, as indicated by the blue information box in the lower left corner of the **Dashboard** tab. A link to *Continue Adding Shifts* is provided at the bottom of the blue box. Clicking this link displays the *Shift Schedules* screen under *Parameters* on the **Configure** tab. (For more information about, and examples of, Shift Schedules, refer to the *Shift Data Collection* section in *Appendix C: Shift Schedule Examples* later in this manual.)

When you select a specific Location, the system displays the current, active shifts in the CheckPoint system. Basic shift information is displayed, such as the start and end times; and any overlapping shifts are highlighted in red so that the overlap can be resolved. Refer to Figure 3.8.

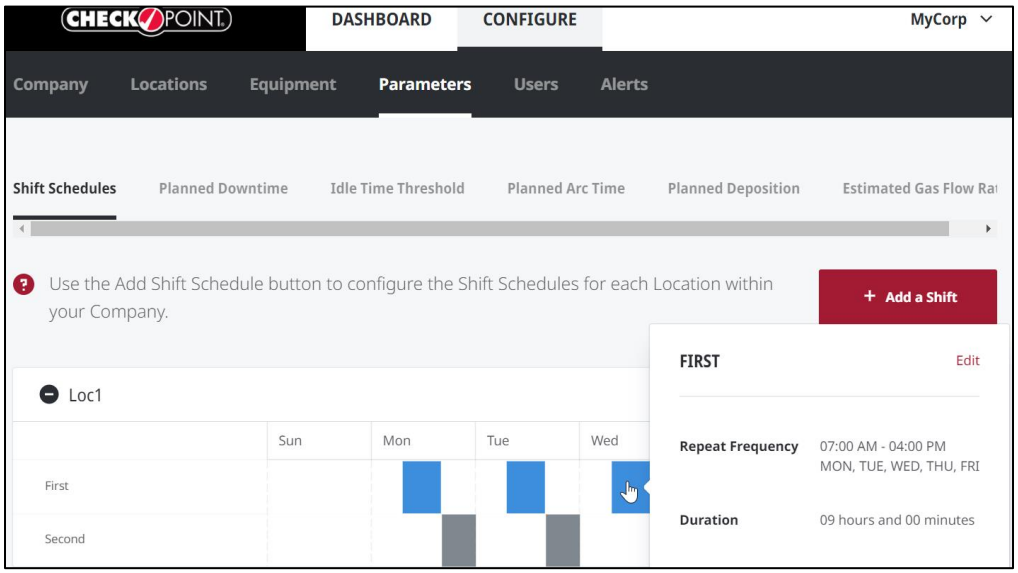


Figure 3.8 Shift Schedules screen

Shift Overlap

Shifts that temporarily overlap cannot be saved; a red box appears to warn you. Refer to Figure 3.9.

Shifts can get into an overlapping state, however, from the actions of either adding new and/or editing existing shifts in a Shift Schedule for a Location.

Shifts in the overlapping state will be shown highlighted in red, requiring additional modification to the shift(s) to correct the overlap. Refer to the *Edit a Shift Schedule* subsection later in this section.

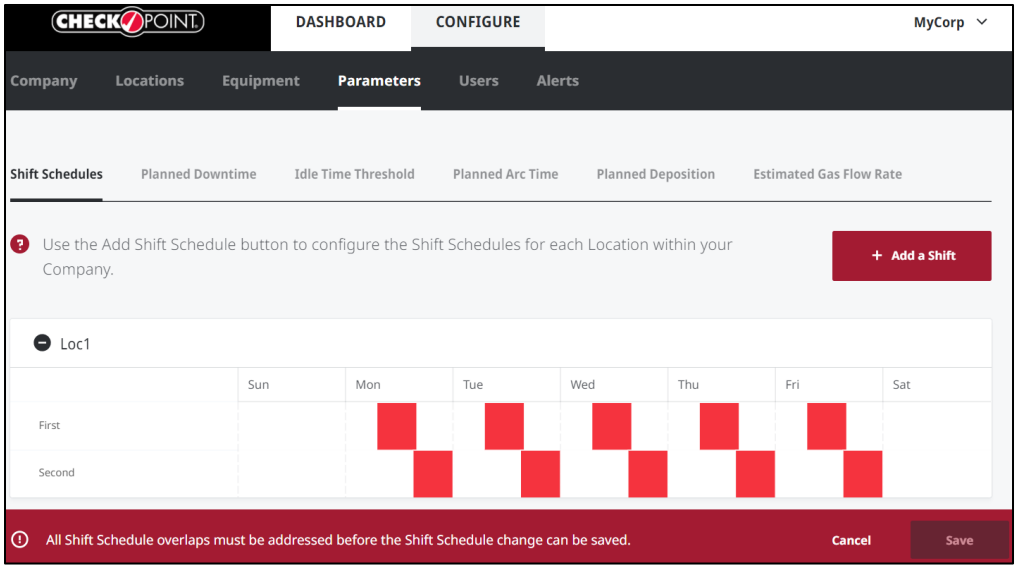


Figure 3.9 Overlapping Shifts screen

Add a Shift Schedule

Under the *Shift Schedules* heading on the *Parameters* screen on the **Configure** tab, click the **+ Add a Shift** button. On the screen that follows, choose a Location to which to add the Shift Schedule and click the **Next** button. The CheckPoint system then displays the *Add a Shift* screen.

The screen is very similar to the one used to add a Shift Schedule during the process of *Getting Started Using CheckPoint®* (refer to *Chapter 2*). Refer to Figure 2.13 and Figure 2.14. Enter a name for the Shift Schedule and a start and end time. Under *Repeat Frequency*, choose specific days to which the Shift Schedule applies. When you are done, click the **Next** button and your entries will be saved (temporarily), but are not yet applied.

When you click the **Next** button, the *Shift Schedules* screen displays the new entries; the new shifts are shown in yellow, and any overlap with existing shift(s) are highlighted in red. A message in the lower left of the screen informs you that these entries have not been saved yet. Refer to Figure 3.10. If you are satisfied with the new, non-overlapping Shift Schedule, click **Save** on the lower right of the screen.

Once saved successfully for a Location, the new Shift Schedule now will be shown in dark grey.

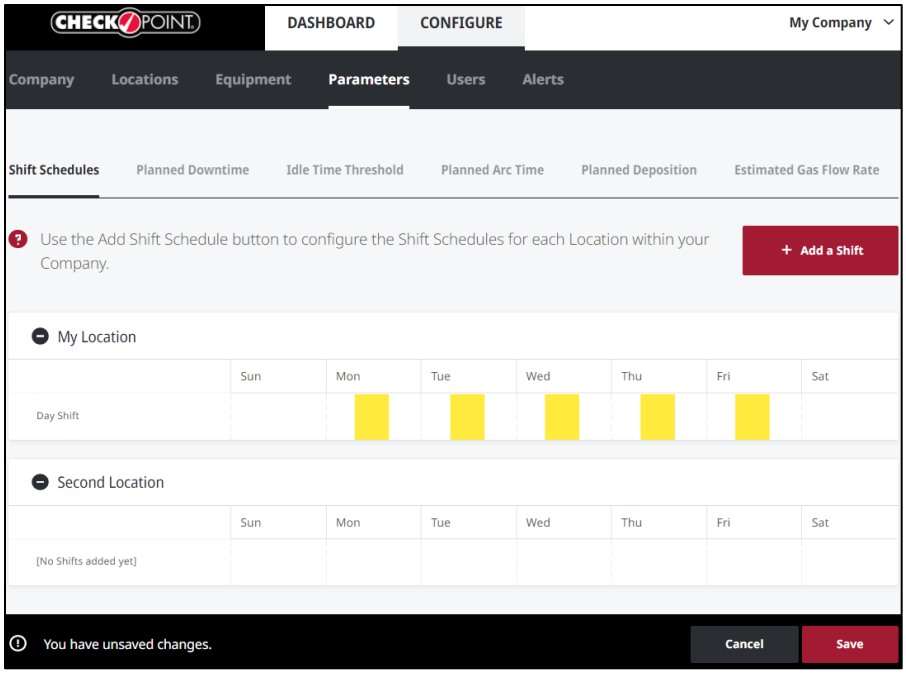


Figure 3.10 Save a new Shift Schedule

Edit a Shift Schedule

You can Edit existing Shift Schedule(s), or if there are multiple shifts for a Location, choose to Delete one. If there is only one Shift Schedule for a Location, you will not be able to delete that schedule.

To edit the details of a Shift Schedule, select any part of the shift for the Location (the selection is blue) on the *Shift Schedules* screen and choose the *Edit* link on the popup window that appears. Modify the shift information and **Save** your changes (temporarily). These edited shifts are shown in yellow, and any overlap with existing shift(s) is highlighted in red. Multiple shifts in a Shift Schedule can be edited before ultimately saving the results. Check for shift overlap and when you are satisfied with your Shift Schedule changes, click the **Save** button on the lower right of the screen. Refer to Figure 3.11.

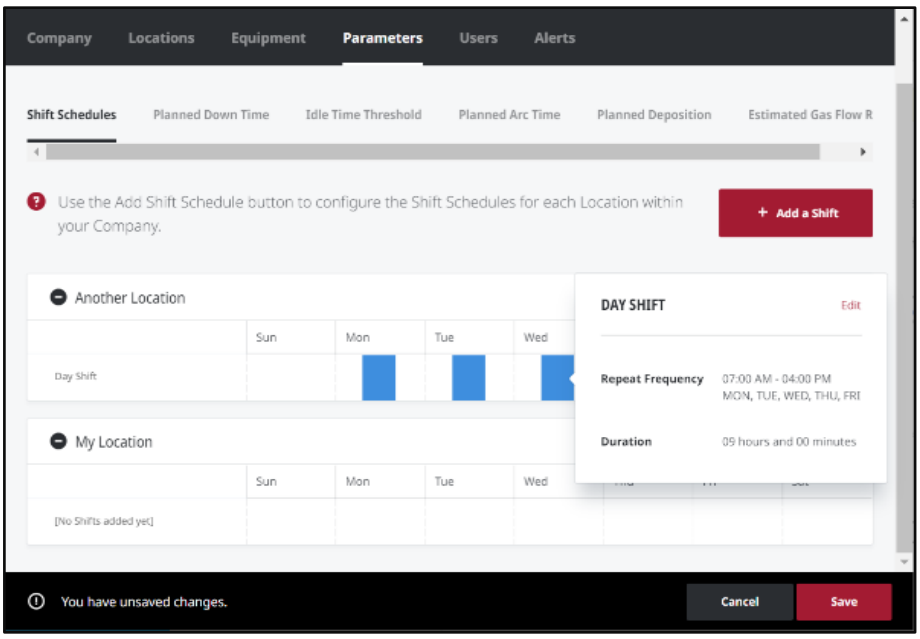


Figure 3.11 Edit a Shift Schedule screen

Delete a Shift Schedule

To delete a Shift Schedule, select any part of the shift, click the link in the popup window to *Edit* the schedule, and then the link at the bottom of the *Edit a Shift* screen to *Delete Shift Schedule*. Choose **OK** to confirm your action. If there is one Shift Schedule for a Location, then you cannot delete it.

Planned Downtime

Information about Planned Downtime events is stored with a Production Station. Planned Downtime is an expected time when production is stopped. When configuring a specific Planned Downtime event, select the Location and the Production Station to which the Planned Downtime applies. Then click the **Next** button. Refer to Figure 3.12.

> **NOTE | Planned Downtime Events may overlap each other. The amount of time these events overlap is counted only once.**

There are two types of Planned Downtime:

- *Reoccurring* Planned Downtime occurs at the same time every week. A daily cleanup period would be an example of reoccurring Planned Downtime.
- *Single occurrence* Planned Downtime occurs only once. Production shutdown over an annual holiday period would be an example of a single occurrence Planned Downtime.

For any specific asset under a Location, you can view any existing events for reoccurring Planned Downtime or single occurrence Planned Downtime by clicking the link for a Production Station on the left side of the *Planned Downtime* screen. When you are done viewing the Planned Downtime, click the **Done** button.

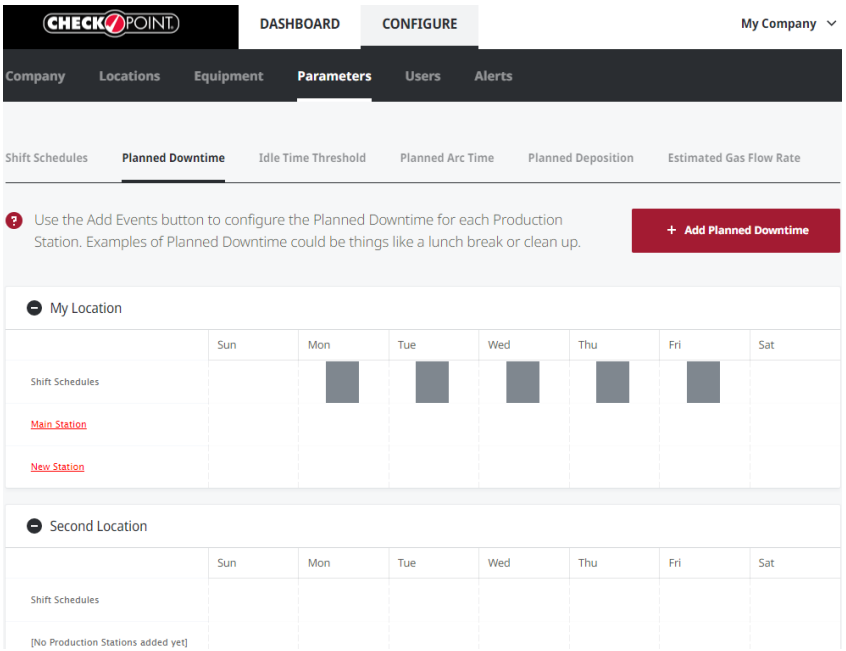


Figure 3.12 Planned Downtime screen

Add Planned Downtime

To create a new Downtime event, click **+ Add Planned Downtime**. First, choose a Location to which to add the Planned Downtime event. Then click **Next**. Refer to Figure 3.13. The next step is to choose the Production Station(s) to which to add the Planned Downtime. Multiple stations can be selected and the Planned Downtime will be linked to all of them. Click **Next**. Refer to Figure 3.14. Finally, once all required fields on the *Add Planned Downtime* screen have been completed, **Save** your changes. Refer to Figure 3.15.

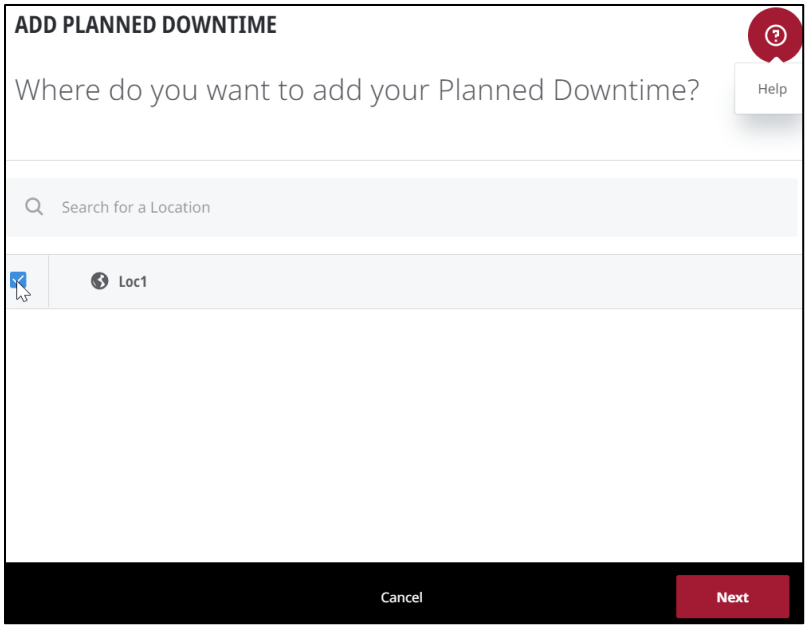


Figure 3.13 Add Planned Downtime event

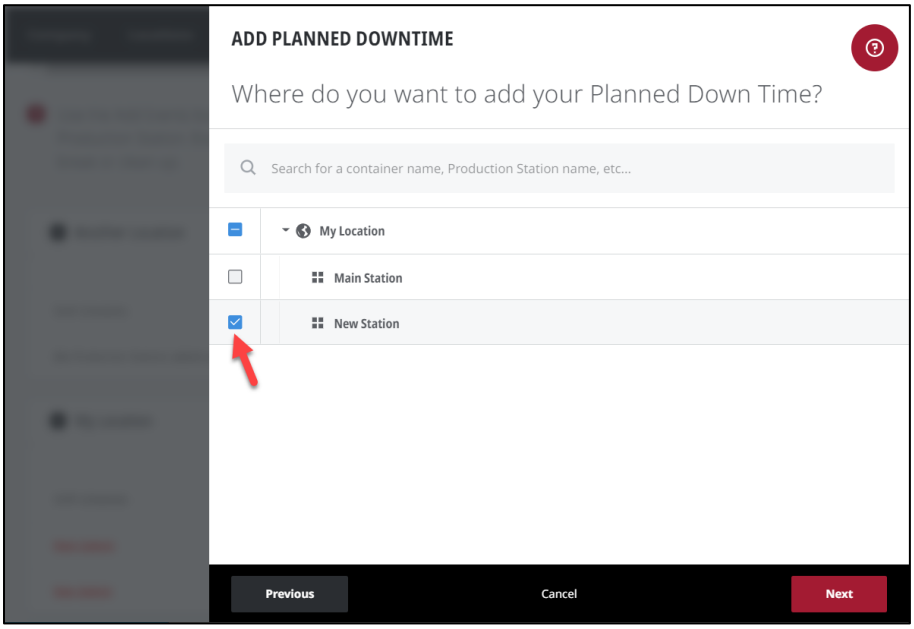


Figure 3.14 Add Downtime to Station(s)

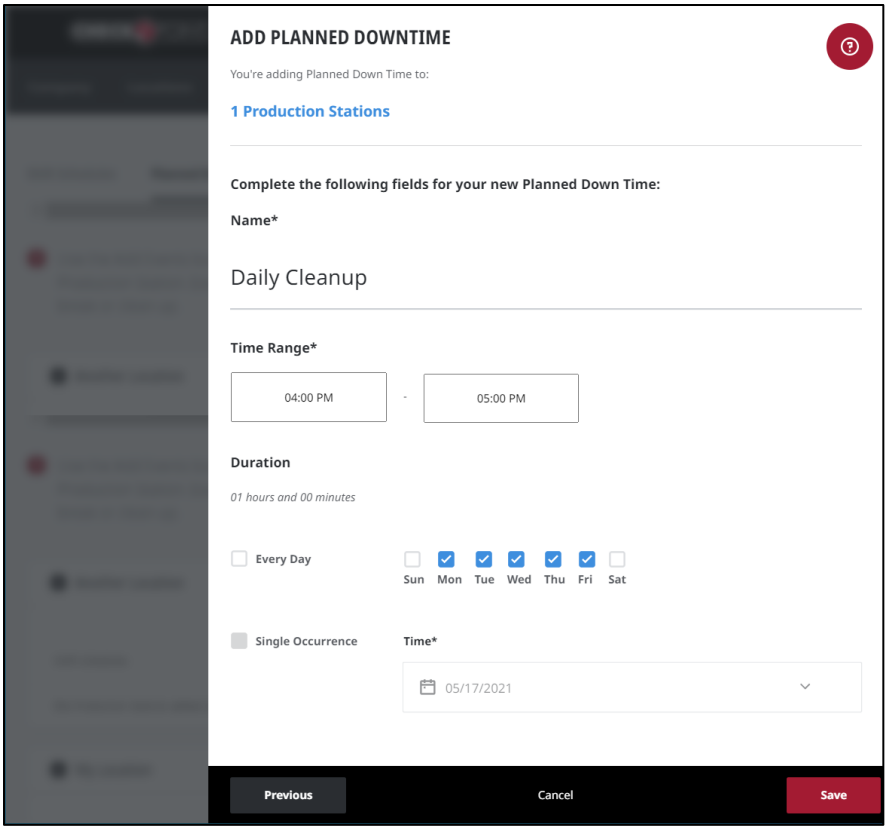


Figure 3.15 Save Planned Downtime event

Copy Planned Downtime

To copy existing Planned Downtime to additional Production Station(s), click the link listed on the left of the *Planned Downtime* screen for the name of the Production Station with the Planned Downtime to be copied. Refer to Figure 3.16. Then click on the Copy (chain-link) icon to the right of the station name to copy its Planned Downtime, and on the screen that follows, specify the other Production Station(s) to which the Planned Downtime should be copied (linked). When you are done, click the **Save** button. Refer to Figure 3.16 and Figure 3.17.

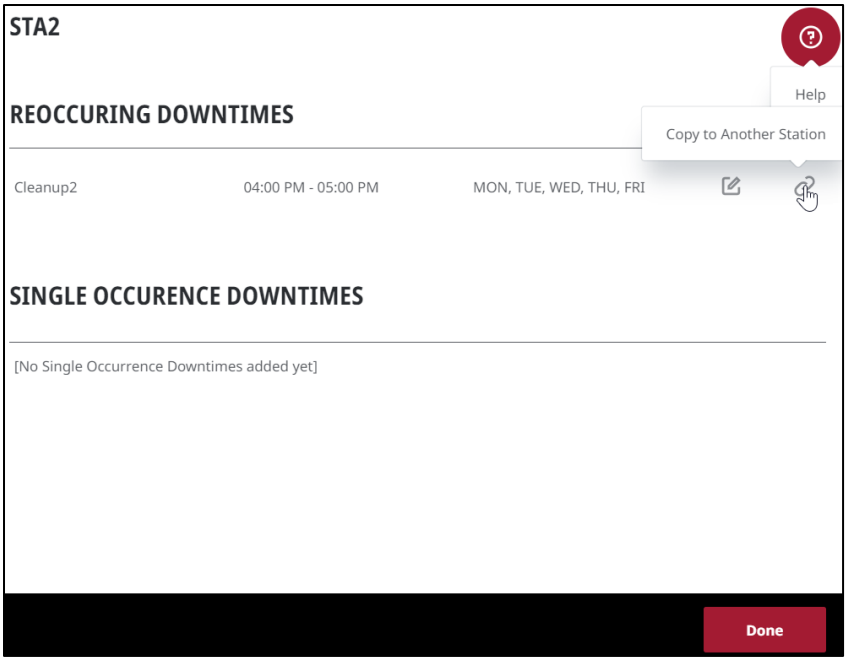


Figure 3.16 Copy Planned Downtime

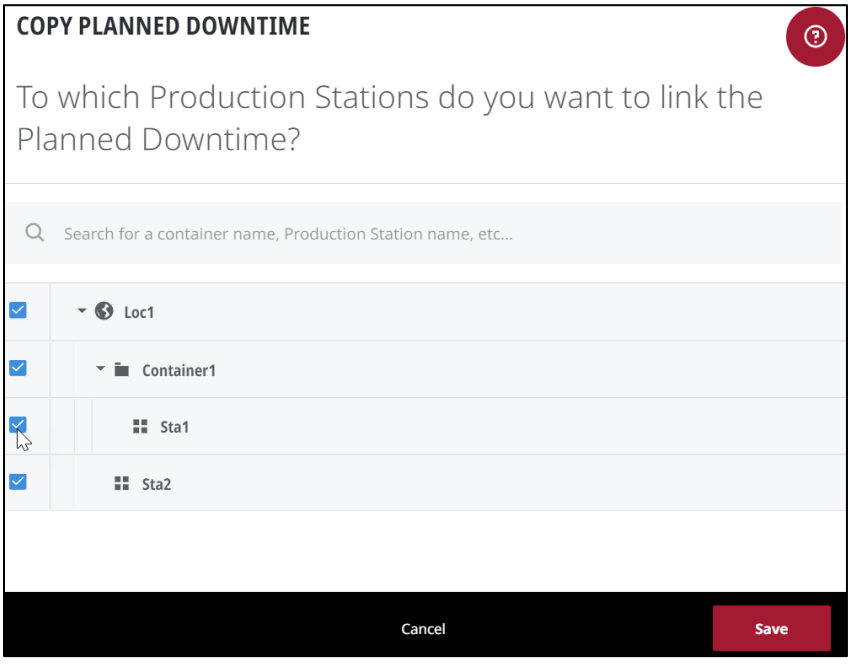


Figure 3.17 Save Planned Downtime

After clicking Save on the Copy Planned Downtime screen, a new screen appears asking you to choose if changes should be applied only to the selected Production Station, or to all Production Stations to which the existing Planned Downtime event is linked. Confirm your choice on the screen. For an example of a similar confirmation window, refer to Figure 3.19.

Edit Planned Downtime

To edit the details of a Planned Downtime event, select it on the *Planned Downtime* screen and then click *Edit* in the corner of the popup window that appears (or click the link for the Production Station name). Once you have revised the Planned Downtime field(s), **Save** the changes. Refer to Figure 3.18.

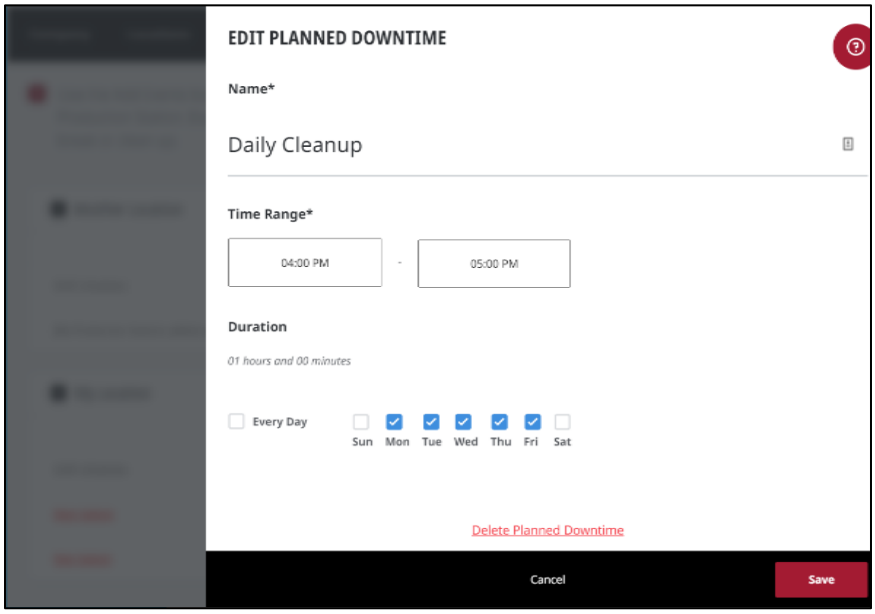


Figure 3.18 Edit Planned Downtime

After clicking **Save** on the *Edit Planned Downtime* screen, a new screen appears asking you to choose if your changes should be applied only to the selected Production Station, or to all Production Stations to which the edited Planned Downtime event is linked. **Confirm** your choice on the screen. For an example of a similar confirmation window, refer to Figure 3.19.

Delete Planned Downtime

To delete a Planned Downtime event from the system, select the downtime on the *Planned Downtime* screen and click the *Edit* link in the right corner of the popup window. Then click the link to *Delete Planned Downtime* that appears at the bottom of the *Edit Planned Downtime* screen. Similar to the confirmation window for applying editing changes to Planned Downtime, a screen then appears asking you to choose to delete the Planned Downtime only from the selected Production Station, or from all Production Stations to which this Planned Downtime event is linked. Refer to Figure 3.19.

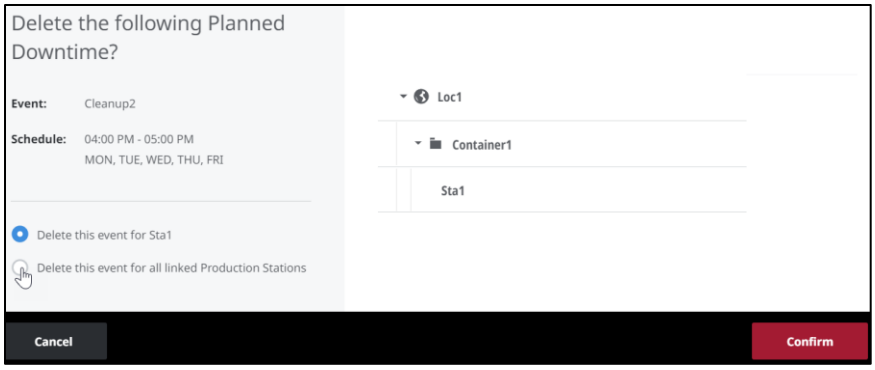


Figure 3.19 Confirm Planned Downtime Deletion

Idle Time Threshold

Periods of downtime when a Welding Power Source assigned to an Equipment Role in CheckPoint is idle can be categorized either as Planned or Unplanned Downtime. To designate certain time(s) when the Equipment Role is idle as Planned Downtime, refer to the preceding section of this chapter. *The Idle Time Threshold* parameter is used to designate how much idle time constitutes Unplanned Downtime.

To enter an amount of time, click the edit (pencil) icon to the right of an Equipment Role's assigned Power Source and use the + or – icons on the *Edit Idle Time Threshold* screen to adjust the number of minutes to be used as the value for this parameter. Click the **Save** button when editing of the time threshold is done.

Planned Arc Time

The amount of time per hour that the Welding Power Source assigned to an Equipment Role is expected to be welding is the Planned Arc Time.

If welding data exists for this Equipment Role, then the Average and Trend values are shown to help with determining an appropriate value for the Planned Arc Time parameter.

To enter an amount of time, click the edit (pencil) icon to the right of an Equipment Role's assigned Power Source and use the + or – icons on the *Edit Planned Arc Time* screen to adjust the number of minutes in an hour to be used as the value of this parameter. Click the **Save** button when you are done.

Planned Deposition

The amount of wire, measured by weight, which the Welding Power Source assigned to an Equipment Role is expected to use in a production hour of welding is Planned Deposition.

If welding data exists for this Equipment Role, then the Average and Trend values are shown to help with determining an appropriate value for the Planned Deposition parameter.

To enter an amount of wire, click the edit (pencil) icon to the right of an Equipment Role's assigned Power Source and use the + or – icons on the *Edit Planned Deposition* screen to adjust the weight of wire per hour to be used for this parameter. Click the **Save** button when you are done.

Estimated Gas Flow Rate

The amount of gas, measured in volume per hour, which you expect to consume if there is missing gas sensor hardware. The CheckPoint system will always use gas sensor values, whenever they are available.

To enter an estimated amount of gas, click the edit (pencil) icon to the right of an Equipment Role's assigned Power Source and use the + or – icons on the *Edit Estimated Gas Flow Rate* screen to adjust the volume of gas per hour to be used for the value of this parameter. Click **Save** when you are done.

Users

The **Users** tab allows the *Company Administrator* to set up new users and grant users access privileges to any Locations in the system, and the *Location Administrator* to set up users and grant access privileges to a specific Location in the system. Refer to *User Roles* at the beginning of this chapter. Refer to Figure 3.20.

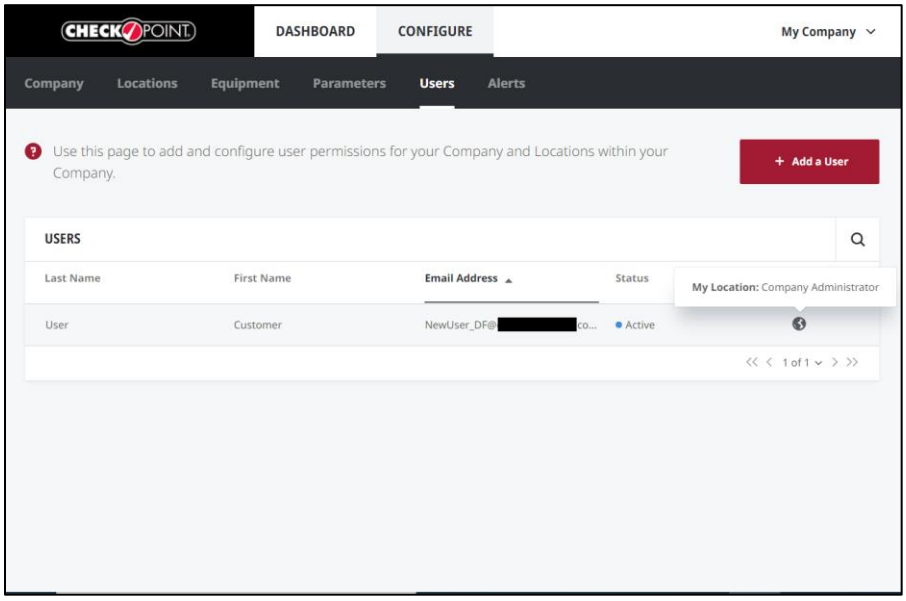


Figure 3.20 Configure Users

Under the *Users* heading on the **Configure** tab, a user's Status is indicated on screen as either:

- *Active*, and this verified user is able to log in to the CheckPoint system, or
- *Pending*, and the user is invited but not yet verified nor capable of logging in.

Add a New User

To add a new user account, click the **+ Add a User** button. The system displays the *Add a User* screen. Enter user information. When done, **Save** the information. Refer to Figure 3.21. When you save the user account, CheckPoint automatically sends to the designated *Email Address* a Verification message containing a link.

The Company Permissions and Location Permissions sections of the *Add a User* page ask you to specify the role of the new user. A *Location Administrator* can designate other users as either Location Administrators, Equipment Managers, or CheckPoint Users. A *Company Administrator* can designate other users as any of these user roles, as well as designate other Company Administrators or Company Users.

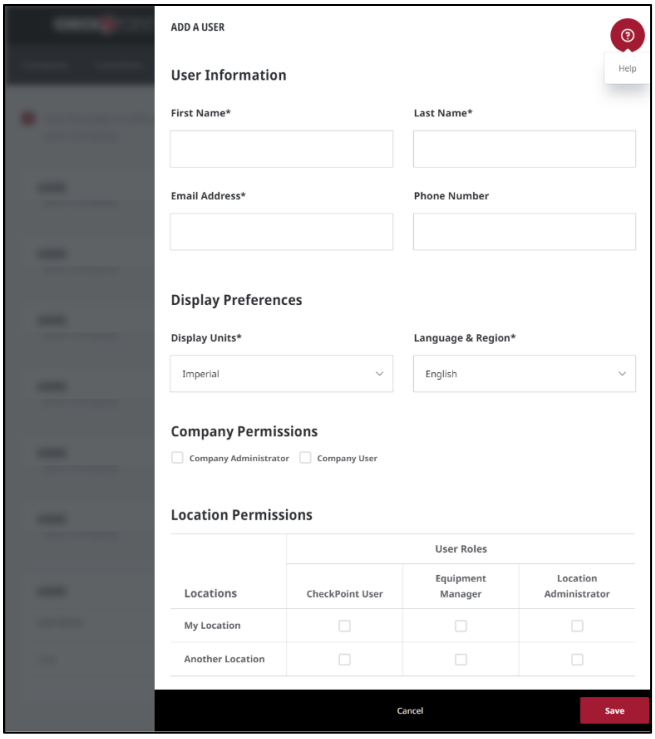


Figure 3.21 Add a new User Account

Finalize User Registration

When the *Company Administrator* or a *Location Administrator* creates a new account for a user in CheckPoint, the new user will receive an email message containing their new user name and a link to set a new password. Refer to Figure 3.22.

> **TIP | The email message will come from the following email address: no-reply@lincolnelectric.com. If you do not see it, then you can try checking your Junk Mail or Spam folder for any message sent from that address.**

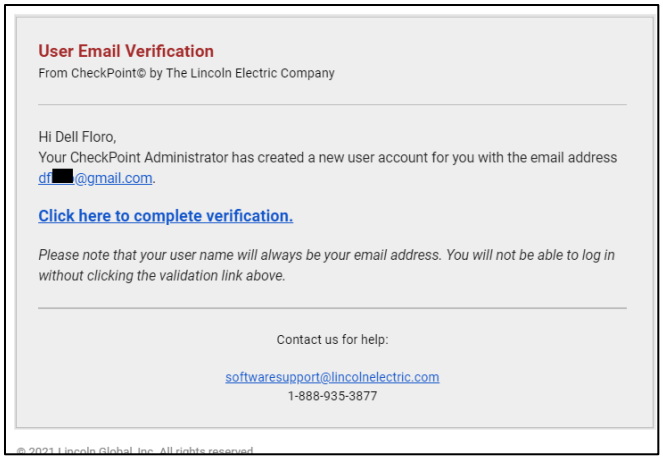


Figure 3.22 Example of a User Verification Email

Edit a User Account

To edit the account of a user, the *Company Administrator* or *Location Administrator* for the user's location selects the user and clicks the edit (pencil) icon to the right. The user's first and last name can be revised, along with User Roles. In addition, on this screen, you can click the button in the red box to resend the email invitation to the selected user. Refer to Figure 3.23.

> **TIP | To change a user's email address in the CheckPoint system, you must delete the user's current account, and then add a new user account with the new email address to which the invitation should be sent.**

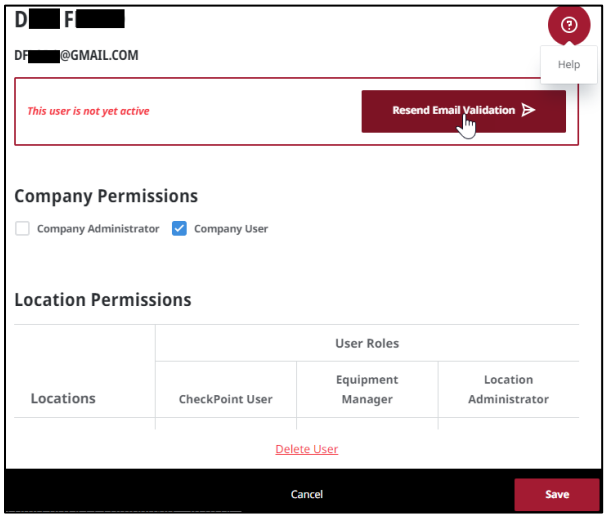


Figure 3.23 Edit a User Account

Delete a User

When a *Company Administrator* deletes a user, the user is still able to log into CheckPoint, but will no longer have access to the Company or Location(s).

When a *Location Administrator* deletes a user, the user will no longer have access to that specific Location, but is still able to access any other Locations in the Company that the *Location Administrator* does not administer.

To delete a user, select the user to be deleted and then click the *Delete User* link. When you delete a user account, you also remove all the Alert subscriptions set up for that user. The system displays a confirmation popup window to ensure that you want to delete the user. Click **OK** to confirm the deletion of the user.

Resend Invitations to CheckPoint

For users with Status still listed as *Pending* who have not responded to the email verification message, the *Company Administrators* and *Location Administrators* can resend the email message by clicking the resend (arrow) icon to the right in the list of users, or the button on their *Edit User* screen. Refer to Figure 3.23.

Filter Lists of Users in CheckPoint

Company Administrators and *Location Administrators* can click the magnifying glass icon to create a search filter. Click the drop-down list and choose how to filter user search results to narrow the list to only those users whom you want to see. You can filter users by: Name, Email Address, Location, User Role, or Status. Refer to Figure 3.24.

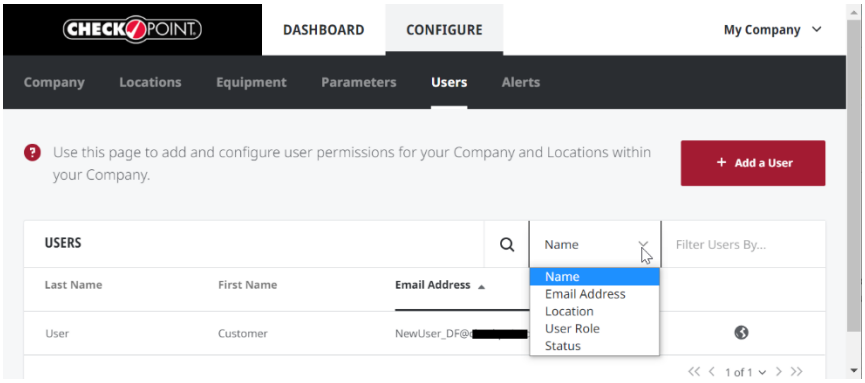


Figure 3.24 Filtering User Accounts

Alerts

The *Alerts* screen on the **Configure** tab allows the *Company Administrator* to set up users with account-specific Alert subscriptions to any Locations in the system, and the *Location Administrator* to set up users with Alert subscriptions for a specific Location in the system. Alerts are email messages generated from system data and then sent to users as notifications.

Alert Types

There are several types of Alerts that may be selected from a drop-down list of available alerts on the right of the screen: Disconnected, Downtime, Power On, System Event, Weld Profile Limit Exceeded, and Wire Package Warning. Refer to Figure 3.25. For definitions of these *Alert Types*, refer to Table 3.3.

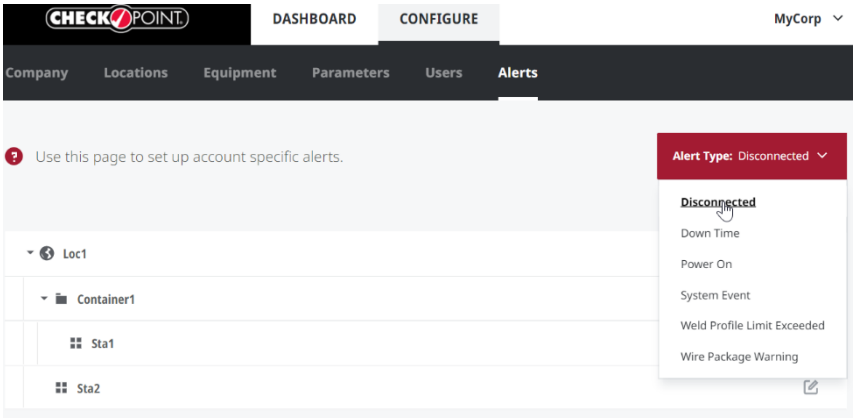


Figure 3.25 Configuring Alerts

Table 3.3 Alert Types Definitions

Alert	Activate this alert to receive notification when…
Disconnected	A Welding Power Source assigned to the selected Production Station stops communicating with the Data Server for the CheckPoint system.
Downtime	A Welding Power Source assigned to an Equipment Role associated with a Production Station enters Unplanned Downtime. Examples of this are a lapsed Idle Time Threshold or entering a Faulted State.
Power On	A Welding Power Source assigned to an Equipment Role for a specific Production Station is powered off.
System Event	A System Event occurs on a Welding Power Source assigned to an Equipment Role for the specific Production Station. System Events include faults and other abnormal conditions, which may occur on power up or after a change has been made to the configuration of the Welding Power Source.
Weld Profile Limit Exceeded	A completed weld is outside the configured weld profile limits on the selected Production Station. Refer to *How to Configure Weld Profiles* in the *Power Wave® Manager Operators Manual* for more information.
Wire Package Warning	The Current Weight on a Welding Power Source assigned to the selected Production Station reaches the threshold set in the Warning Weight field in Power Wave Manager software. For more information, refer to the *Power Wave® Manager Operators Manual*.

Subscribe Users to Alerts

After you have selected a type of alert to which one or more users should be subscribed, click the edit (pencil) icon to the right of the Production Station that the alert subscription is for. Then the Alert Subscription screen appears with a list of users who may be subscribed. Select one or more of the users for that type of alert, and when you are done with your selection(s), click the **Save** button to create the subscription(s). Refer to Figure 3.26.

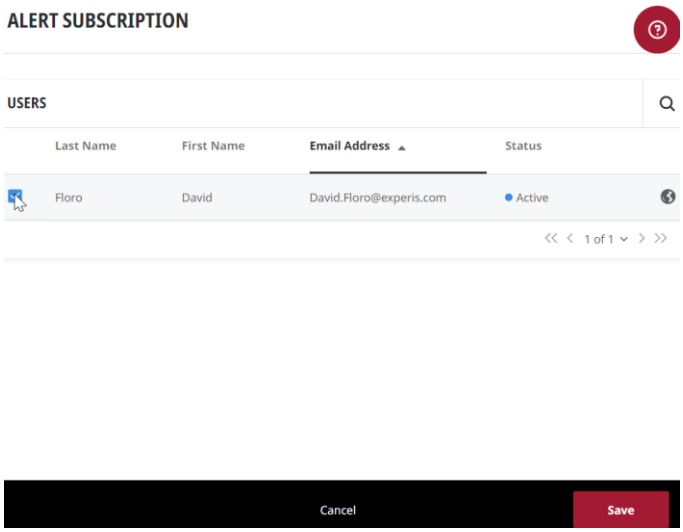


Figure 3.26 Subscribing to Alerts

Managing Your User Account

The Company drop-down menu on the upper right of the screen provides access to your CheckPoint user account. Click the *My Account link* at the top to change your own user information, alert subscriptions, and password on the **My Account** tab. Refer to Figure 4.1.

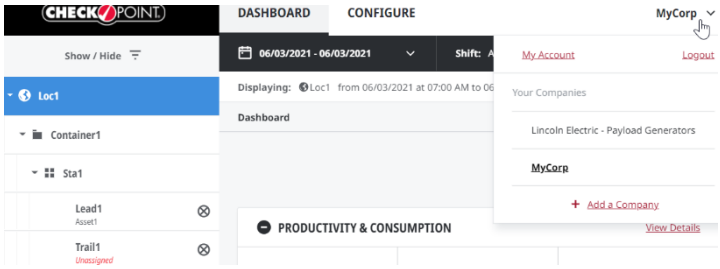


Figure 4.1 Accessing the My Account page

User Information

The User Information section on the **My Account** tab allows you to view personal account information or to click the **Change Password** button. The default values for your *Display Preferences* also can be changed on this screen. While your User Permissions/Roles are shown on the screen, you cannot change them. When you are done making any changes, click the **Save** button on the lower left. Refer to Figure 4.2.

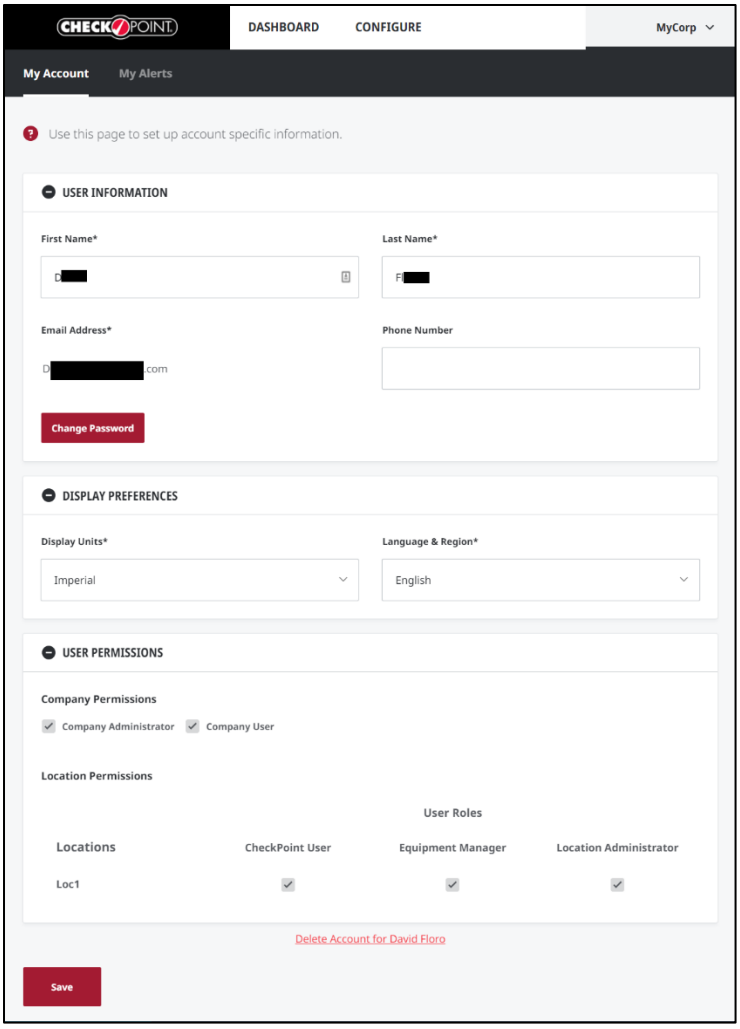


Figure 4.2 My Account tab

Change Password

When you click the **Change Password** button on the **My Account** tab, you are asked for your current (old) password, a new password, and to confirm the new password. Click the **Continue** button at the bottom of the screen to save this changed password. Refer to Figure 4.3. You are then returned to your **Dashboard**.

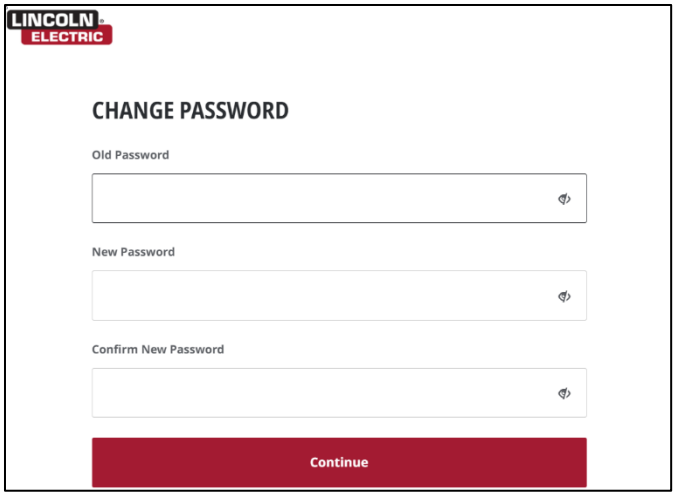


Figure 4.3 Change Password screen

Delete Your User Account

At the bottom of the *My Account* screen above the **Save** button is a link to *Delete Account for [Your Username]*. Refer to Figure 4.4.

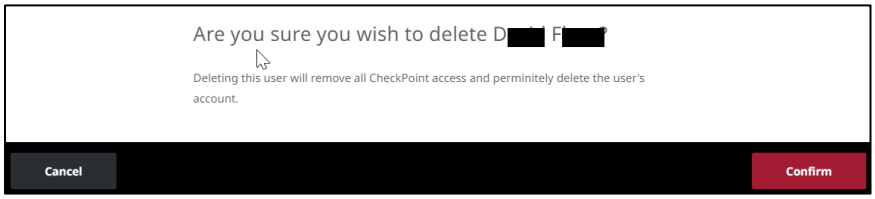


Figure 4.4 Confirm User Deletion

After you click the link to delete your User Account in CheckPoint, a confirmation message screen appears. To retain your account information click the **Cancel** button, or to verify that you really want to delete your User Account, click the **Confirm** button.

> **STOP | If you delete your own user account, it is a "destructive deletion," causing you to lose all your settings including your User Roles and all your access privileges. After deletion, your account no longer exists, and therefore you will no longer be able to use it to log on to CheckPoint.**

My Alerts

Alert notifications are generated based on the data provided by the Power Source assigned to an Equipment Role. Click the **My Alerts** tab to the right of *My Account* if you want to receive email

notifications of when certain events happen on Production Stations you select. The drop-down menu on the right of the screen allows you to choose from available *Alert Types*. Refer to Figure 4.5. For definitions of the available *Alert Types*, refer to the *Alert Types* subsection earlier in this manual.

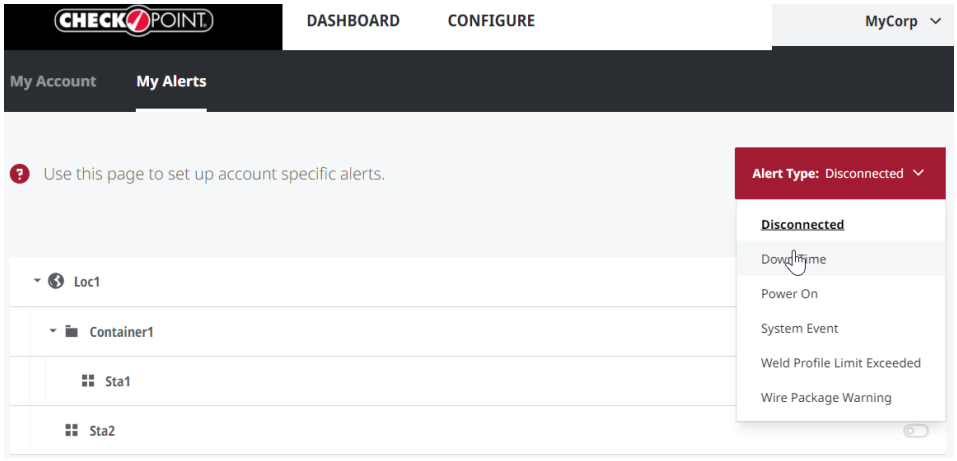


Figure 4.5 My Alerts tab

Add an Alert

Select the Production Station with the Equipment Role to which that Power Source is assigned by using the small toggle switch to the right of the station name. Refer to Figure 4.6.

> **NOTE | You can only add one alert type at a time. Save changes after adding each alert type.**

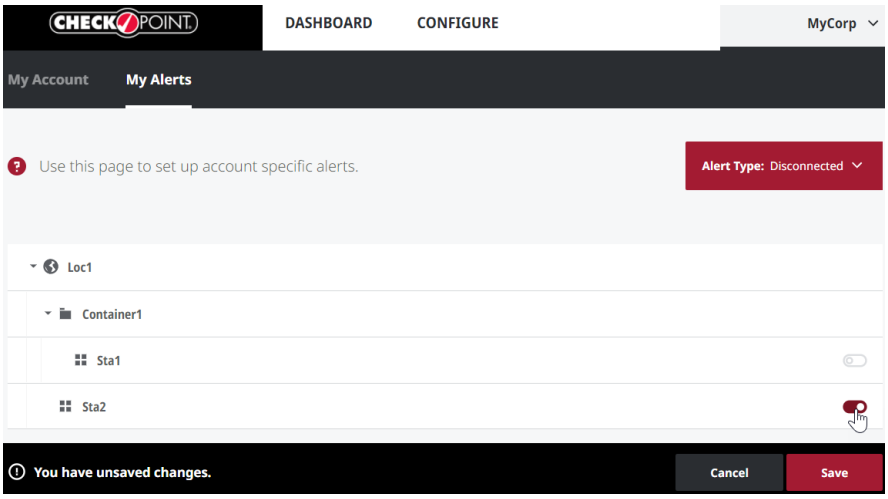


Figure 4.6 Select Station(s) for Alert

To add an alert for a Production Station, first select your desired *Alert Type* from the drop-down list of available alerts. Then choose a Production Station to monitor for the Alert (refer to Figure 4.5). A warning appears on the lower left of the screen to inform you that you have not yet saved these changes. When you are satisfied with your selection(s), click the **Save** button on the lower right of the screen. Repeat these selection steps for each *Alert Type* that you want enabled for one or more Production Station(s).

Remove an Alert

To deselect the Production Station with the Equipment Role to which that Power Source is assigned, click the enabled toggle to the right of the station name to disable the current alert for that station. When you are done disabling alert(s) for Production Station(s), click the **Save** button on the lower right of the screen.

Using Reports

The **Dashboard** is the first screen that appears when you log in to CheckPoint. Available reports show data and metrics for the asset selected in the hierarchical asset tree on the left. Refer to Figure 5.1. Clicking a different item in the tree will filter the report data differently. You can select a Location, a Container, Production Stations, or Equipment Roles in the tree.

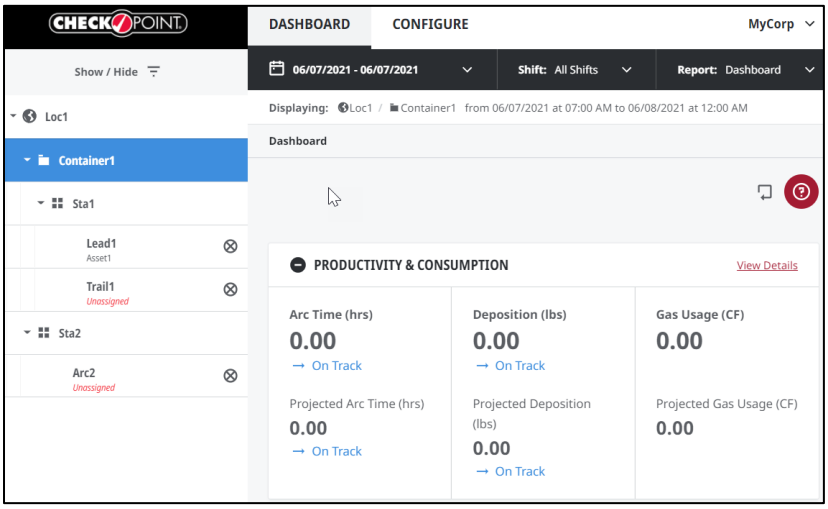


Figure 5.1 CheckPoint Dashboard screen

To get started using reports, you must first choose one by clicking its name in the *Report:* drop-down list. The following are examples of available reports:

Table 5.1 Available Reports

Report	Description
Dashboard	This provides high-level Key Performance Indicators for Productivity, OEE, and Operating Factor.
Productivity & Consumption	This provides detailed time series data for Arc Time, Deposition, and Gas Usage.
Overview	This provides aggregated values based on Production Stations.
Overall Equipment Effectiveness (OEE)	This provides detailed time series data for OEE.
Operating Factor	This provides detailed time series data for Operating Factor.
Quality	This provides a listing of welds that contains Weld Limits.

Report	Description
Personnel	This provides aggregated values based on Operator ID.
Weld Listing	This provides a listing of welds.
Assembly Listing	This provides a listing of assemblies.
Connection Status	This provides connection information for Equipment Roles.

Click on an entry in the drop-down list to choose a report. Refer to Figure 5.2.

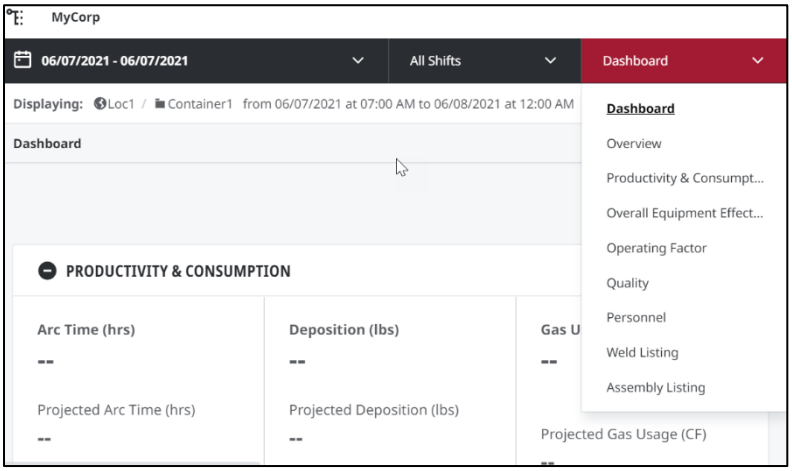


Figure 5.2 Report: Drop-Down list

Asset Tree

The Assets for a Company include the Locations, any Containers that may have been created, the Production Stations, and associated Equipment Roles. For configuration information, refer to the *Equipment Layout* section in *Chapter 3*. The example in Figure 5.3 shows Container1 selected in the asset tree.

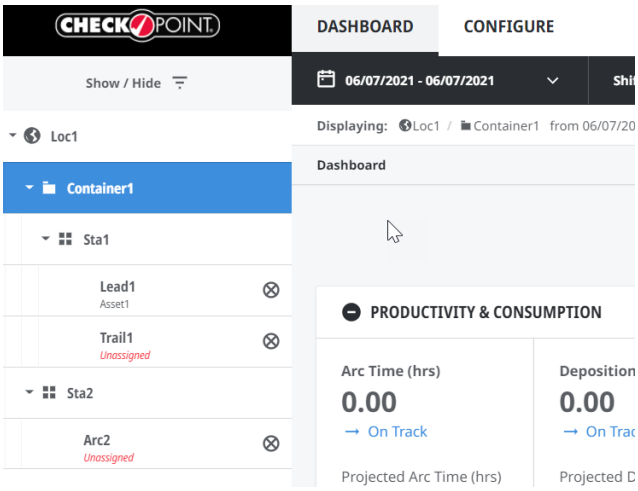


Figure 5.3 CheckPoint Asset Tree

Report Options

The drop-down menus across the top of the screen include the options for generating a report. For example, reports can be run for a specific date range selected on the calendar drop-down and to include shift data specified on the *Shift:* drop-down. Refer to Figure 5.4 and Figure 5.5.

When you have selected your desired report options, a line below the drop-down options menus, starting with the word *Displaying:*, shows the data that you have specified you want to show on the report.

Based on the date range and shift(s) options that you selected, a range of Production Days are created. Refer to *Shift Schedules and a Production Day* in *Chapter 3* of this manual. For more examples of how data is displayed based on these Production Days, refer to *Appendix C: Shift Schedule Examples* in this manual.

Table 5.1 Options for Reports

Field	Options
Date Range Drop-down Selector	Production Day, Last 7 Days, Last 30 Days, Last 90 Days, Custom. The selector shows both a Start Date and an End Date you can choose. Refer to Table 5.2.
Shift Data Drop-down Selector	Select All Shifts, All Data, or Select an Active Shift by Name. Refer to Table 5.3.

Table 5.2 Date Range Options

Date Range/Date	Option
Current Production Day	The Production Day time period displays hourly information for the selected Shift Schedule. This is the default date shown on the report. See Figure 5.4.
Last 7 Days	This is a shortcut to select the date range of the last 7 Days.

Date Range/Date	Option
Last 30 Days	This is a shortcut to select the date range of the last 30 Days.
Last 90 Days	This is a shortcut to select the date range of the last 90 Days.
Calendar Selection	Clicking on the calendar and selecting a range of dates allows data from any time period within the last 90 days to be displayed.

Table 5.3 Shift Data Options

Time Period	Option
All Shifts	Data within the selected date range in any shift. This is the default choice.
All Data	Data is reported from the beginning of the first shift that starts within that Date Range to the beginning of the first shift on the next date after the range.
Active Shift Name	Data within the selected date range in the active shift that you select. Refer to Figure 5.5.

For any range of dates shorter than 7 days duration, hourly information will be displayed. If a duration longer than or equal to 7 days is selected, then daily information for this period will be displayed.

> **NOTE | Production Data is stored for 90 days. The date range must be within this period. Refer to Data Retention in Chapter 1.**

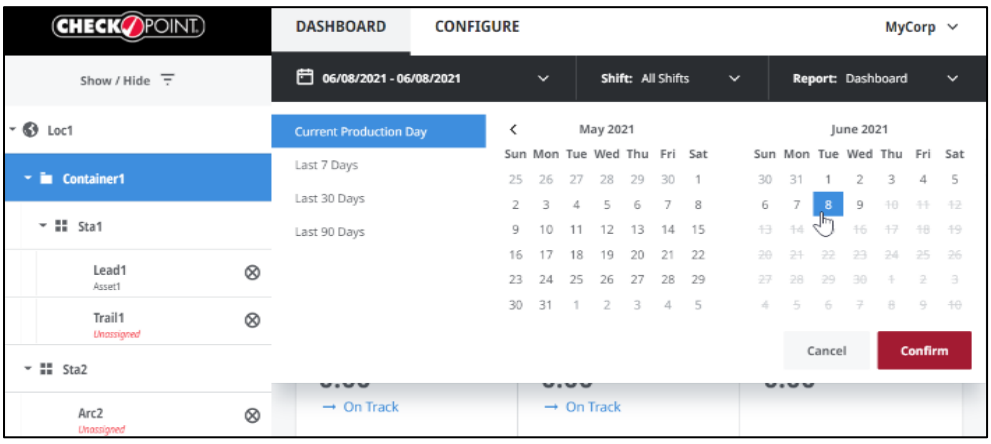


Figure 5.4 Report Options: Date Range

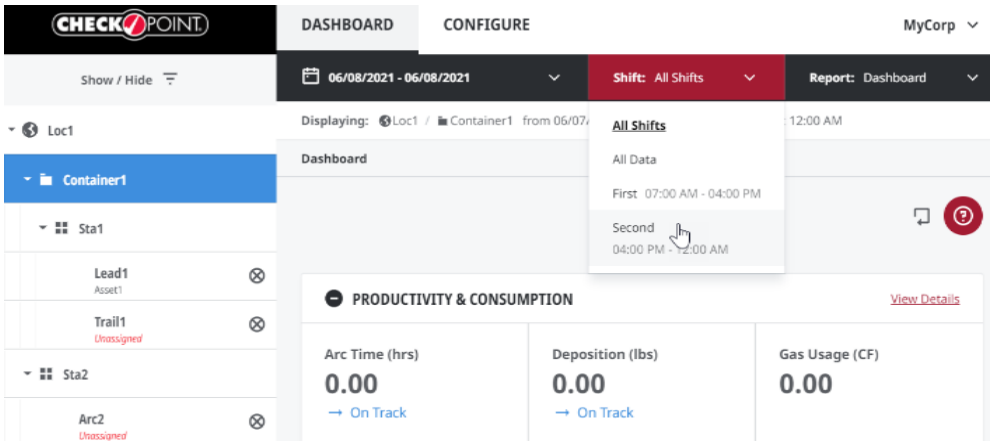


Figure 5.5 Report Options: Shift(s)

Sorting by Columns

Report Data in columns is sorted in alphanumeric order. If more than one number appears in one single column and row of data, sorting is performed on the first number listed; the second number is ignored. To view the data sorted in a different order, click the column header. Refer to Figure 5.6.

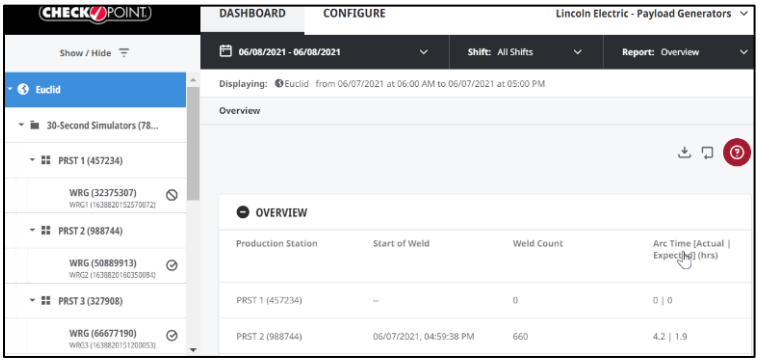


Figure 5.6 Column Sort

Exporting Report Data

Click on the Export icon to download data to a Microsoft® Excel file (XLS). Refer to Figure 5.7. Downloads are saved in your browser download directory.

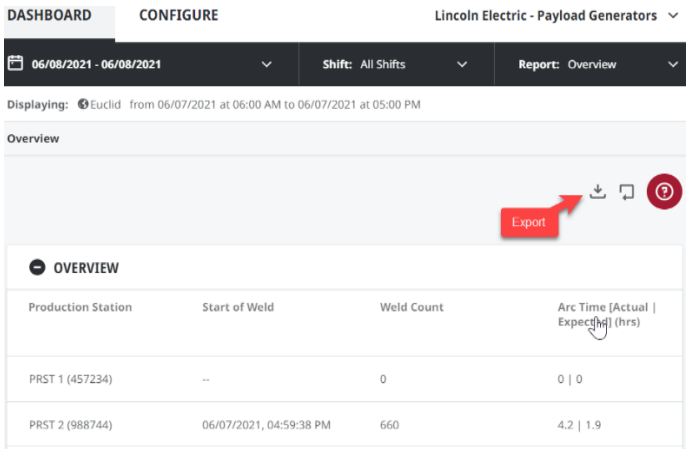


Figure 5.7 Exporting Data from a Report

Refreshing Report Data

Click on the **Refresh** icon on the upper right of the screen to update the report to more current data. Refreshing Report Data is available on all reports. Refreshing may not change results depending on the delivery frequency of incoming data. Refer to the *Network Capacity* subsection in *Chapter 1*. Refer to Figure 5.8.

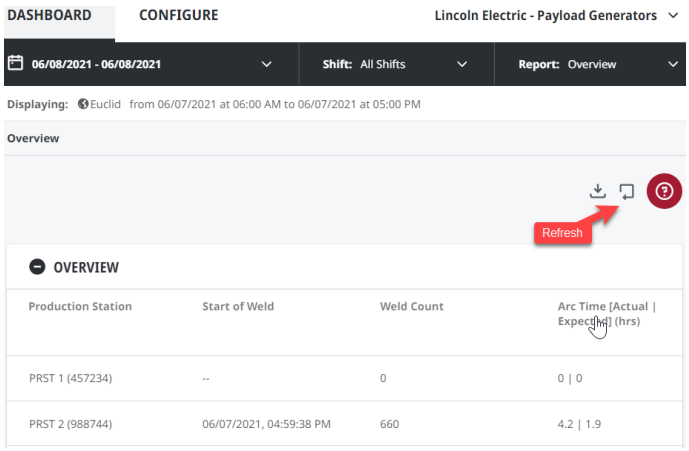


Figure 5.8 Refreshing Data on a Report

Help Icons

The Help Icon (question mark) provides details about the selected report. Help Icons are available for all reports.

No Data Available

If a report displays the message “No data is available for the selected asset,” as shown in Figure 5.9, then refer to *Appendix A: Troubleshooting* later in this manual.

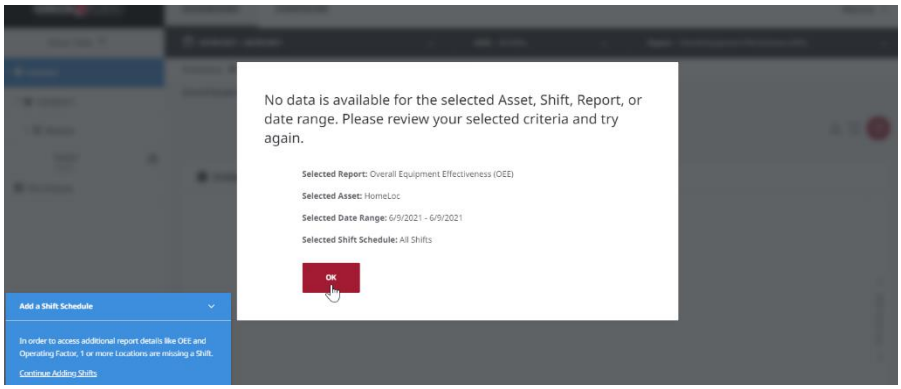


Figure 5.9 No Data Available popup

A common case for why a report may have no data is a missing Shift Schedule when the option for data from *All Shifts* has been selected. After you click the **OK** button to acknowledge the popup window, a yellow footer is displayed at the bottom of an empty report screen, warning that no data existed for the selected options (asset, date range or shift), and to “please review your selected criteria and try again.”

Data Drill-In

Some reports have one or more link(s) in certain columns/rows of data in the grid. Clicking one of these links will display more detailed information. For example, the *Weld Listing* report as shown in Figure 5.10 may display dozens, hundreds, or thousands of rows of weld data. The left-most column lists the names of the Production Stations that you had selected from the asset tree, formatted as links that, when clicked, display formatted tables of the stations’ weld details. Refer to Figure 5.11.

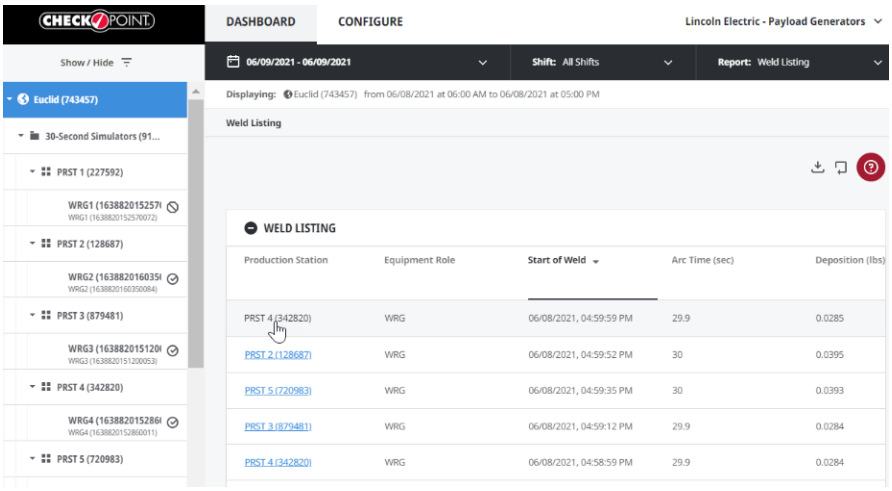


Figure 5.10 Weld Listing report

After you have clicked a link to show more detailed data, there will be a set of "bread crumbs" under the row showing what data this CheckPoint report is displaying. The series of links show the click path that you followed to reach the report's current display of data. If you have drilled in, then you can click a bread-crumb link to navigate back out to a less detailed display of data.

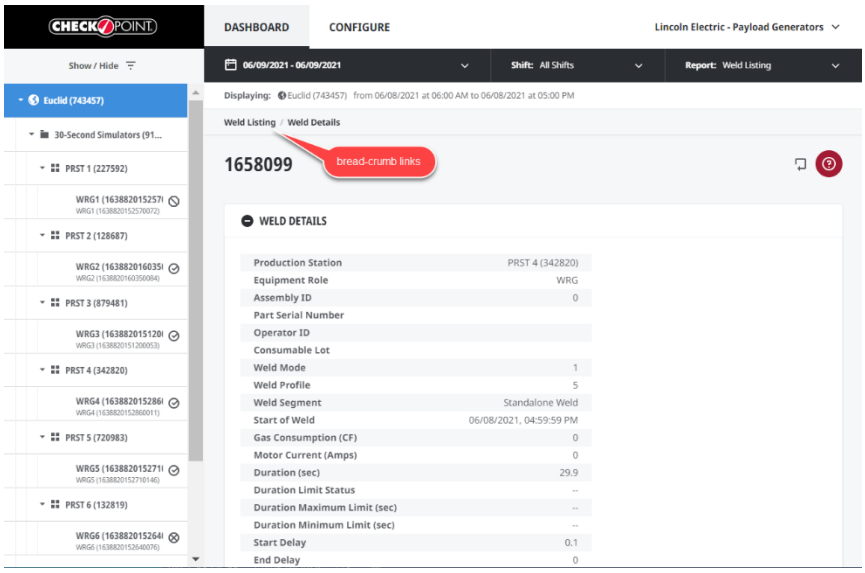


Figure 5.11 Weld Listing data details report

Report Formats

Grid Data

Some reports, such as the *Overview* or *Personnel* reports, show data in a tabular or grid-like format, similar to a spreadsheet. The Weld Listing report shown in Figure 5.10 was an example of this data display format.

Time Series Data

Some reports, for example, the *Operating Factor* report as shown in Figure 5.12, show time-series data in a graphical format instead of a spreadsheet-like grid. If you have selected a report option to show less than 7 days of production, then data will be displayed aggregated by the hour (as in the example shown). If you have selected a report option to show 7 production days or more, then the data will be displayed aggregated by the day.

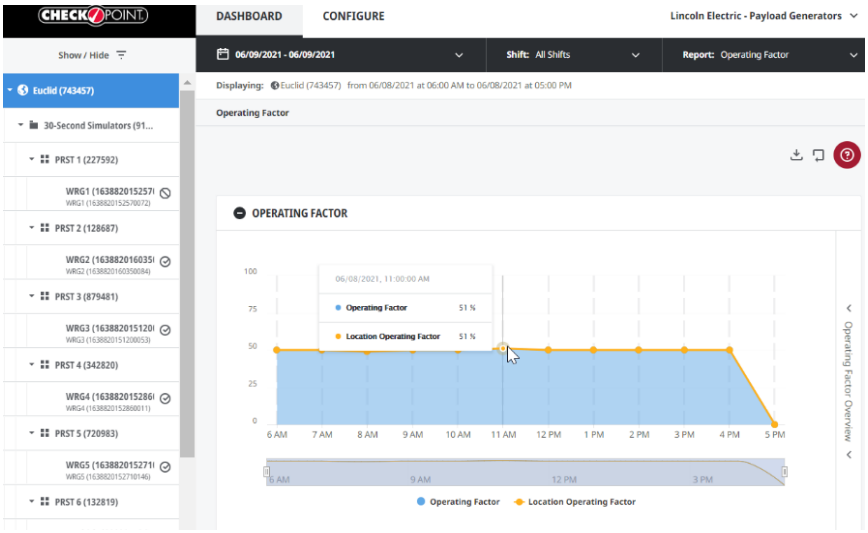


Figure 5.12 Time Series data report

Data on Reports

This section describes the report data which may appear on different CheckPoint reports.

Report Data

Every column/row of data on any report is described in the following table. Refer to Table 6.1.

Table 6.1 Report Column Descriptions

Column	Description
Arc Time	The total amount of time that welding occurred, as reported by the Welding Power Source.
Arc Time Average	The average time reported welding between all reported rows.
Assembly Errors	The number of extra welds for the displayed assembly.
Assembly ID	This column displays the Assembly ID associated with this weld.
Assembly Name	This column displays the assembly name associated with this weld.
Availability	Operating Time as compared to Planned Production Time.
Avg Current	Hundreds of time per second, the Welding Power Source takes a measurement of the arc current while the welder is active for this weld. When the weld is complete, the Welding Power Source averages those measurements together. The column displays that average arc current for this weld.
Avg Voltage	Hundreds of time per second, the Welding Power Source takes a measurement of the arc voltage while the welder is active for this weld. When the weld is complete, the Welding Power Source averages those measurements together. The column displays that average arc voltage for this weld.
Avg WFS	Hundreds of time per second, the Welding Power Source takes a measurement of the speed at which the wire is put into the weld. When the weld is complete, the Welding Power Source averages those measurements together. This column displays that average wire feed speed for this weld.
Consumable Density	The density of the wire being used.
Consumable Lot	The lot code or serial number for the wire used.
Current Error Limits	This column displays the Over and Under Limits for the Current for the weld.
Cycle Start Time	The start time of the weld sequence for the assembly.

Column	Description
Cycle Time Average	Average Cycle Time is the average cycle time for all the Assemblies produced.
Deposition	The amount of wire deposited by the Welding Power Source for the welds made.
Deposition Average	The average amount of wire used for a given period of time.
Device ID	The Installation Key file number for the Welding Power Source.
Duration Limits	This column displays the Over Limit for the Arc Time for the weld.
Elapsed Production Time	The amount of Production Time that has elapsed.
End Delay	The number of seconds at the end of the weld that is excluded.
Equipment ID	The name of the Welding Power Source.
Expected Arc Time	The expected total of Arc Time for the shift. Based on the asset configuration.
Expected Deposition	The expected total Deposition for the shift. Based on the asset configuration.
Expected Welds	The number of welds expected to be completed for this assembly.
Extra Welds	The number of Extra Welds made in addition to those in the sequence.
Gas Consumption	Total amount of gas used or estimated. In the absence of weld sensor data, Gas Consumption is computed for each weld based on Estimated Gas Flow Rate configured for that Power Source.
Gas to Wire Ratio	This value is the total Gas Consumption divided by the total Wire Consumption.
Gas Usage Average	The average amount of gas consumed for all Assemblies produced.
Machine on Time	The amount of time the Welding Power Source has been powered up. It includes the Unplanned Downtime and the Actual Production Time.
Missed Arc Time	The difference between Expected Arc Time and Arc Time for the elapsed production period.
Missing Welds	The number of welds missed for this assembly.
Model	The model of the Welding Power Source.
OEE	This column displays the Overall Equipment Efficiency (OEE) calculation.
Operating Factor	The amount of time the asset has been working. The Arc Time divided by the Elapsed Production Time.

Column	Description
Operator ID	When an Operator begins welding with a Welding Power Source, his or her ID or badge number is entered through Power Wave Manager or another method. This column displays the operator's ID.
Part SN	The Part Serial Number is the number assigned to this weld.
Performance	Arc Time as compared to Planned Arc Time.
Planned Production Time	The amount of the time you expect the machine or asset to be working.
Projected Arc Time	The Arc Time if all of the Equipment Roles selected give full production time for the specified time period. Disconnected and Unassigned Equipment Roles may provide larger than expected results.
Projected Deposition	The Deposition if all of the Equipment Roles selected give full production time for the specified time period. Disconnected and Unassigned Equipment Roles may provide larger than expected results.
Software	The firmware installed on the Welding Power Source.
Start Delay	The number of seconds at the beginning of the weld that is excluded.
Start of Weld	This column displays the date and time the Welding Power Source began performing the weld in the Location's time zone.
Time of Last Weld	The last time a Welding Power Source in the Production Station started welding in the Location's time zone.
True Energy™ (kJ)	This column displays the True Energy™ calculated for this weld using the following equation: $$True\ Energy\ [J] = \frac{1}{n}\sum_{i=1}^{n}(v_i * i_i * t_i)$$ If the Welding Power Source that made the weld had older firmware and did not support the True Energy™ calculation, this column displays a 0.
Unplanned Downtime	The amount of time the Welding Power Source stopped Planned Production.
Voltage Error Limits	This column displays the Over and Under Limits for the Voltage for the weld.
Weld Count	The total number welds performed. This displays the total number of welds made by the Operator on Personnel reports.

Column	Description
Weld Mode	A process that is selected in the Welding Power Source. The Welding Power Source has a weld table that contains a variety of processes the system can use to define welding procedures. Each process is listed as a Weld Mode.
Weld Profile	A configurable set of limits that the Welding Power Source compares to welding data it collects as it welds.
Weld Segment	Weld Segments are used, when the weld mode changes during the weld. The initial segment is labeled as First. The following segments are labeled Inner, and last segment is labeled Last. This column is blank by default.
Welds Monitored	The number of welds with configured weld profile limits.
Welds In-Limits	The number of monitored welds within the configured weld profile limits.
Welds In-Limits (%)	The number of in-limit welds divided by the number of welds monitored. The value will be blank if no welds are monitored.
WeldScore®	This column displays the WeldScore for the weld if WeldScore is enabled. If the weld does not have WeldScore enabled, the column is empty.
Wire Consumption	The amount of wire that was deposited for all Assemblies produced on the Production Station.
Wire Diameter	The diameter of the wire being used.
Wire Feed Speed Error Limits	This column displays the Over and Under Limits for the Wire Feed Speed for the weld.

Preventative Maintenance

Preventative Maintenance is a licensed sub-module of CheckPoint that utilizes welding and activity information in order to provide when to service a machine. This helps prevent long amounts of downtime and machine failures.

Retention

Preventative Maintenance data including Maintenance Records will be available for 365 days. You will need to export and store a backup copy of all Preventative Maintenance data that you require beyond the 365 day limit.

Configure

Preventative Maintenance configuration is in the **Configure** tab. When licensed for the Preventative Maintenance sub-module, **Preventative Maintenance** will be available as an option in the **Configure** sub-menu.

Software Management

Software Management allows users to select a specific package version to upload and assign to Equipment Roles. Software versions are a defined version of firmware applied to a device. Package versions are a grouping of software versions for a variety of device types (such as wire drives and Power Sources). The Software Management configuration page allows module software versions to be maintained with a desired package version for each Equipment Role. *Company Administrators*, *Location Administrators*, or *Equipment Managers* can access and modify the Software Management configuration page.

Upload a new Package Version

Using **+ Upload Package**, package versions can be uploaded and assigned to the selected Company. These packages are usually executables (.exe) or zip files (.zip).

> **NOTE | Due to the size of these files, it can take additional time to complete the upload process.**

Editing Package Versions

Modification of a package version for multiple Equipment Roles is done by clicking **Edit Packages**. This will allow a preferred package version to be set for the selected Equipment Roles to compare module versions via the Software Management Report. Preferred package versions can be an uploaded package version for the Company, or the latest version available from powerwavesoftware.com.

Maintenance Schedules

The creation of Maintenance Schedules is for all assets available in the Asset Tree (Locations, Container, Production Stations, Equipment Roles, and Power Sources). The **Maintenance Schedule** tab is available for *Company Administrators*, *Location Administrators*, and *Equipment Managers*. Maintenance Schedules

notify users of thresholds to keep their machines running at top performance. There are two types of Maintenance Schedules:

- Data driven Maintenance Schedules occur on the ingestion of welding and activity information. This includes maintenance based on data such as number of machine on time, arc starts, total arc time, and total deposition.
- Calendar driven Maintenance Schedules occur based on the number of days since the last maintenance was processed. This allows maintenance based on Days, Weeks (7 Day increments), Months (30 Day increments), or Years (365 Day increments).

Add a Maintenance Schedule

To create a Maintenance Schedule click **+ Add Maintenance Schedule**. First, choose a Location to add the Maintenance Schedule. The next step is to select a predefined template to help identify common Schedule Thresholds. If there is not a need for a predefined template, utilize the **Custom – Create My Own** template option to fill in your own information. Then, enter data such as the Asset Type, Name, Instructions, and Schedule Thresholds. Finally, select the available assets for the selected Asset Type.

Copy Maintenance Schedule

To copy an existing Maintenance Schedule to additional assets of the selected Asset Type, click the Edit icon for the selected Asset in the Asset Tree. This will open a list of all Maintenance Schedules for the selected Asset. Click on the Copy icon for the Maintenance Schedule. This will allow the Maintenance Schedule to copy to other Assets. After the preferred Assets are selected, click the **Save** button to apply changes.

Edit Maintenance Schedule

To edit the details and thresholds of a Maintenance Schedule, click on the Edit icon for the selected Asset in the Asset Tree. This will open a list of all the Maintenance Schedules assigned to the selected Asset. Click on the Edit icon to edit the Maintenance Schedule.

After clicking **Save** on the Edit Maintenance Schedule screen, a new popup will appear asking you to choose to apply changes to the selected Asset or all Assets assigned to the Maintenance Schedule. Confirm your choice on the screen.

When editing a Maintenance Schedule, the Asset Type is not an option. In this case, the recommendation is to create a new Maintenance Schedule. Changes to thresholds will not affect Maintenance Records already completed, but will change the threshold for Maintenance Records that are currently pending.

Delete Maintenance Schedule

To delete a Maintenance Schedule from CheckPoint, enter the Edit Maintenance Schedule workflow. Click on the link *Delete Maintenance Schedule*. Similar to the edit confirmation window, you will can choose to delete the Maintenance Schedule for the selected Asset or for all Assets for the Maintenance Schedule.

When a Maintenance Schedule is deleted, historic Maintenance Records for the Asset will still be accessible for Retention. Pending Maintenance Records will be deleted immediately.

My Account

Within My Account, when licensed for Preventative Maintenance, a Preventative Maintenance option will be available for the logged in user. CheckPoint will provide a number of notifications via email and SMS (text messages). These notifications can vary from Maintenance Records that are Due Soon and Due Now, to misconfigurations on specific Asset Types. Subscribing to Email and SMS notifications are available for the logged in user under the Preventative Maintenance My Account section.

Notifications

Notifications allow a user to subscribe to Email and SMS notifications. Select the Assets that you would like to subscribe to, and click on the **Save** button at the bottom of the page indicating unsaved changes. The following are notifications available when subscribed.

Table 7.1 Notification Descriptions

Notification	Description
Maintenance Due Soon	A Maintenance Record on the subscribed Asset has a Threshold that has exceeded 90%.
Maintenance Due Now	A Maintenance Record on the subscribed Asset has a Threshold that has exceeded 100%. This notification will repeat for every 10% increase until the Maintenance Record is completed.
Zero Deposition Welds	This notification is only available on Power Sources. The subscribed Power Source has a Deposition of 0 for a Weld Mode where Deposition is expected.
Time Sync	The subscribed Power Source has a timestamp from over a year ago. This indicates a Time Sync error from the Power Source configuration.
Missing Weld Data	The subscribed Power Source is missing sequential welds based on the Weld ID property.
Long Term Disconnection	The subscribed Equipment Role has been offline and has entered the Long Term Disconnection status.

Digest

Digest will behave very similar to other areas of CheckPoint that allow a user to subscribe to an email notification. The Digest email is sent at the end of the Production Day for the Location. Refer to Shift Schedules and a Production Day for more information. The Digest email will contain an export of the Preventative Maintenance *Audit* and *Workload* Reports for the previous Production Day.

Using Preventative Maintenance Reports

When opening the **Preventative Maintenance** sub-module of CheckPoint, new Preventative Maintenance specific reporting will be available from the reporting dropdown. By Default, the *Dashboard* Report will be displayed. Preventative Maintenance reporting will function very similar to CheckPoint reports utilizing Key Performance Indicators and Grids to display data.

The following Reports are available in Preventative Maintenance:

Table 7.2 Available Reports

Report	Description
Dashboard	This provides high-level Key Performance Indicators for open and completed Maintenance Records.
Audit	This provides a listing of Maintenance Records that are complete.
Workload	This provides a listing of Maintenance Records that are still open.
Software Management	This provides a listing of Modules that are outdated and need an update.

Asset Tree

When opening the Preventative Maintenance sub-module, the Asset Tree selection will have some changes. Notably, Power Source Assets will be available as a selection. On each asset, there will be an indication of how many Maintenance Records are Due Soon, Due Now, or Not Due. For each Location, an icon will indicate if the Preventative Maintenance sub-module licensing status for that Location in CheckPoint.

Report Options

Preventative Maintenance queries data similar to CheckPoint reports. For the Date Range Options, Preventative Maintenance will allow querying for the Last Year (365 days). Refer to Chapter 5: Report Options for more information on how to query for data in CheckPoint reports.

Completing a Maintenance Record

From the *Workload* Report, pending Maintenance Records are available. For each record, a **Complete** button will mark the Maintenance Record as done, moving the Maintenance Record from a *Pending* status in the *Workload* Report to a *Completed* status in the *Audit* Report. The Maintenance Record will have the current date and user assigned when complete.

Downloading an Update Package

The Software Management report will display a list of modules board with preferred Software Versions. You can select the modules that are outdated on an Equipment Role. This will enable the **Create Update Package** button. When clicked, this will download needed files and utilities to update the selected modules to the preferred software version.

NOTE | It is recommended to update boards during non-peak, non-business hours.

Troubleshooting

This Appendix provides basic troubleshooting tips for Checkpoint. If you continue to have trouble, please contact your local IT department or CheckPoint™ support. For CheckPoint support in the USA or Canada, dial toll-free 1.800.691.5797. The direct dial number is 1.727.786.0121. You can also email CheckPoint™ support at: softwaresupport@lincolnelectric.com. The email address to provide feedback on CheckPoint software to Lincoln Electric is powerwaveinfo@lincolnelectric.com.

Cannot Connect to a Welding Power Source

There are multiple reasons why you may not be able to connect to the IP address of a Welding Power Source or why the IP address may not show up in the list of addresses. Confirm the following:

- If the computer is running security software or a firewall, then this may block the IP address from being shown.
- If multiple Ethernet adapters have been enabled.
- You should be able to connect directly to the Welding Power Source through a hardline. Disable any wireless communication on the computer.

Cannot Apply Options

When you attempt to enable CheckPoint for a Welding Power Source, and you select Report Options from the drop-down menus, then the following are common reasons why applying the options could fail:

- A firewall could be blocking messages. You need to open the following information on your server to grant the Welding Power Sources access to the Internet: http://ws.lincolncheckpoint.com at IP address 207.89.49.2 (subject to change) using port 80 to send out TCP/IP and HTTP messages.
- Web security software may be installed and interfering with this activity. Disable this security software until the installation is complete.
- There could be invalid Ethernet adapter settings in the Welding Power Source. Ensure that the Welding Power Source has a valid subnet mask and gateway address.
- If using a proxy server, then the proxy may require authentication. In this instance, you will have to allow the Welding Power Source to bypass the Proxy Server to access the Internet.

Missing Data

There is a connectivity problem if the *Overview* report shows the Connection Issue icon,  above. Check for possible networking connectivity issues between Welding Power Source(s) and the CheckPoint application. For more information, refer to *No Data Available* in *Chapter 5* of this manual.

Overall Equipment Efficiency Examples

The following examples provide some sample data you can plug into the equations. All data is for illustration only.

OEE Calculations in CheckPoint®

The following sections explain the OEE percentage, and each OEE factor in detail. Refer to Table B.1 for the *Variables Used in the Availability Example*. Refer to Table B.2 and Table B.3 for additional examples of calculating OEE. All times are listed in minutes.

OEE Percentage

The OEE percentage includes three production factors: Availability, Performance, and Quality. The CheckPoint application uses the following formula to calculate OEE:

$$OEE = Availability \times Performance \times Quality$$

Example: $$OEE = (.90 \times .95 \times .99) \times 100 = 85.0\%$$

Availability

The Availability compares an asset's Operating Time to the Planned Production Time for that asset. The OEE calculation is represented by the following formula.

$$Availability = \frac{Operating\ Time}{Planned\ Production\ Time}$$

Further, break this equation down into the following:

$$Availability = \frac{\big((Asset\ Scheduled\ Time - Planned\ Downtime\ ) - Unplanned\ Downtime - Disconnected\ Time\big)}{(Asset\ Scheduled\ Time - Planned\ Downtime)}$$

Table B.1 Variables Used in the Availability Example

Variable	Description
Asset Scheduled Time	The Asset Scheduled Time in CheckPoint is any time within a shift, not including Planned Downtime.
Operating Time	Operating Time is the amount of time the machine or asset is working. Subtract Unplanned Downtime from the expected asset operating time. Operating Time =Planned Production Time – Unplanned Down Time – Offline Time – Disconnected Time
Planned Downtime	Planned Downtime is the amount of time to be excluded from efficiency calculations because there was no intention of running production.

Variable	Description
Planned Production Time	Planned Production Time is the amount of time the asset is expected to be working. There are two components to Planned Production Time: Asset Scheduled Time and Planned Downtime. $$Planned\ Production\ Time = Asset\ Scheduled\ Time - Planned\ Downtime$$
Unplanned Downtime	Unplanned Downtime is the amount of time that stops Planned Production. Unplanned Downtime may be equipment failures, material shortages, or changeover times. CheckPoint determines Unplanned Downtime using the *Idle* and *Faulted* Welding Power Source status: ▪ *Idle*: When the Idle time of the Welding Power Source exceeds the set Idle Time Threshold, CheckPoint flags this as Unplanned Downtime. ▪ *Faulted*: The Faulted state of a machine is automatically Unplanned Downtime, and CheckPoint uses this in the Availability Calculation.
Disconnected Time	Disconnected Time is the amount of time data is not available in CheckPoint.

Table B.2 Date Used in the Availability Example

Asset Scheduled Time	Planned Downtime	Planned Production Time	Unplanned Downtime	Disconnected Time	Operating Time	Availability
29	31	0	31	1	30	3%
30	30	0	30	10	5	50%
2	45	10	35	5	28	80%

> **NOTE | If the Planned Production Time is zero, the Asset Scheduled Time equals the Planned Downtime, and the Availability factor is 0%.**

Performance

CheckPoint calculates the Performance as the ratio of Arc Time to the Planned Arc Time. The Planned Arc Time can be configured for each Welding Power Source. Refer to *Production Stations* in *Chapter 3*.

$$Performance = \frac{Arc\ Time}{Planned\ Arc\ Time}$$

NOTE | If Planned Arc Time is zero, the Performance is 0%.

Quality

Quality helps monitor welds and flag those considered unacceptable within limits set in the Weld Profiles and welds you train for WeldScore™. Refer to the *Power Wave® Manager Operators Manual* for more information on setting limits. CheckPoint calculates the Quality factor for OEE using the following formula:

$$Quality = \frac{Limits\ Passed}{Total\ Limits\ Enabled}$$

The Sum of Limits is the number of limits that were enabled and where the limit for the weld was within the acceptable range for that weld. Each limit that meets these conditions is counted as 1. If the limit was enabled, but the weld was outside those parameters, the number is 0. A single weld could have five limits enabled. Refer to Table B.3 for Example Welds.

NOTE | WeldScore uses the actual WeldScore value from the weld as a decimal (0.96 for 96%).

Table B.3 Example Welds

Weld	WeldScore	Weld Duration	Amperage	Voltage	Wire Feed Speed	Quality
Weld 1	Enabled 0.96	Disabled	Disabled	Disabled	Disabled	96%
Weld 2	Disabled	Enabled 0	Enabled 0	Enabled 1	Enabled 1	50%
Weld 3	Disabled	Enabled 1	Enabled 1	Enabled 1	Disabled	100%

The over-all Quality value for Table B.3 is 82%.

Shift Schedule Examples

If the selected report displays the text No Data Available or the report values are not accurate, then some of the required weld data may be outside of the selected Shift Schedule. Refer to *Shift Schedules and a Production Day* in Chapter 3 of this manual for more information.

Shift Data Collection

Refer to Figure C.1 through Figure C.4 for examples of a Production Day for a Dashboard report. Refer to Figure C.5 through Figure C.8 for examples of a Last 7 Days Dashboard report.

> **NOTE | Shift Data and All Data are search options on all reports.**

Production Day Report

The Production Day report in Figure C.1 shows three reports from the same data. The differences are listed below. Examples of drop-down report options menus are shown in Chapter 5 of this manual; the selection of a date range and shift data are described under Report Options in Chapter 5.

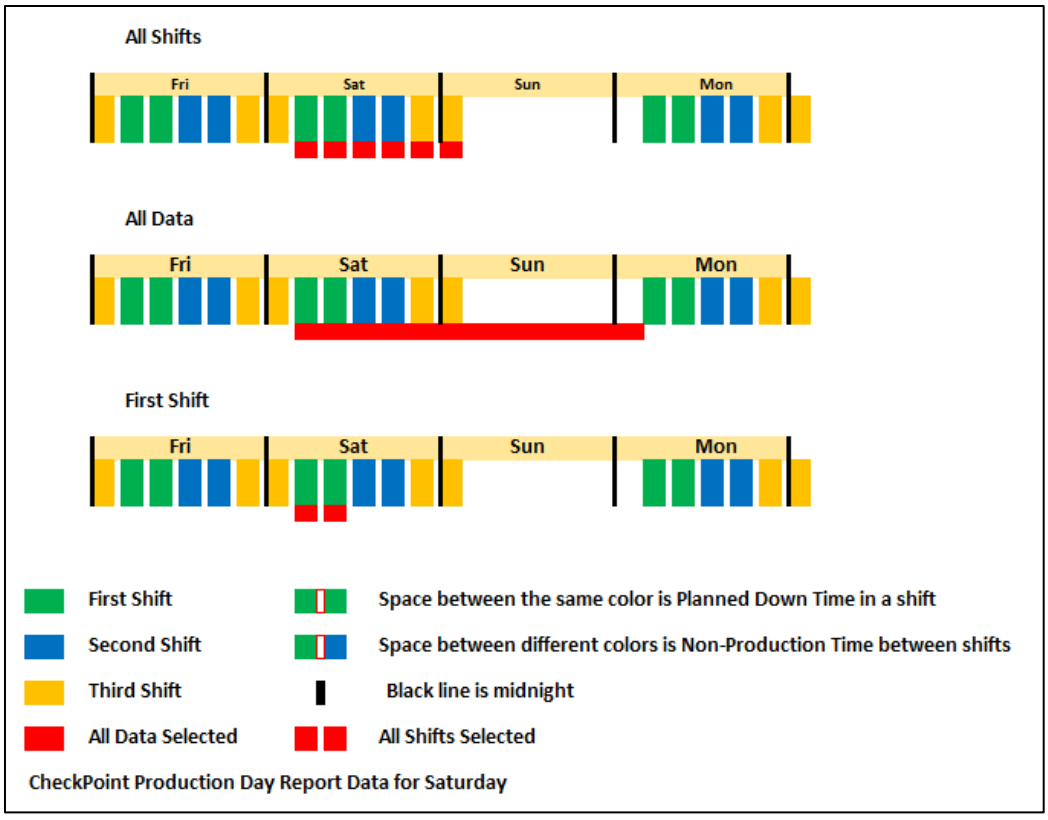


Figure C.1 Production Day Report Data

The parameters used for the example shown in Figure C.1 are:

- Production Day report period.
- 7-hour duration shifts.
- ½ hour between shifts.
- ½ hour planned down time within each shift.

Production Day All Shifts

The All Shifts option collects production data for the First, Second, and Third Shifts. The report returns data to the end of the shift for the last day selected. Downtime and between-shifts data are excluded.

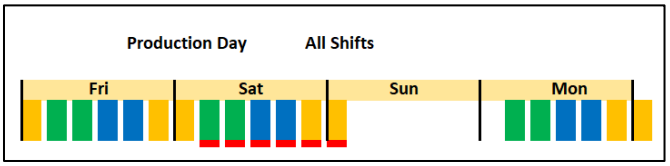


Figure C.2 Production Day All Shifts

Production Day All Data

The All Data option collects production data for the First, Second, and Third Shifts. The report returns downtime data and between-shifts data up to the start of the First Shift of the next production day.

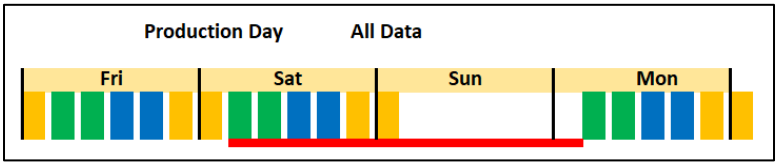


Figure C.3 Production Day All Data

Production Day First Shift

The First Shift option collects production data for that shift only. The report returns data for the entire shift that was selected from the drop-down menu, but excludes any downtime or between-shifts data.

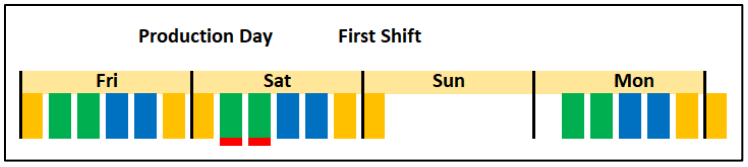


Figure C.4 Production Day First Shift

Last Seven Days Report

The Last Seven Days report in Figure C.5 shows three reports (one each for the All Shifts, All Data, and First Shift selections in the drop-down Shift menu) from the same data. The differences are listed below.

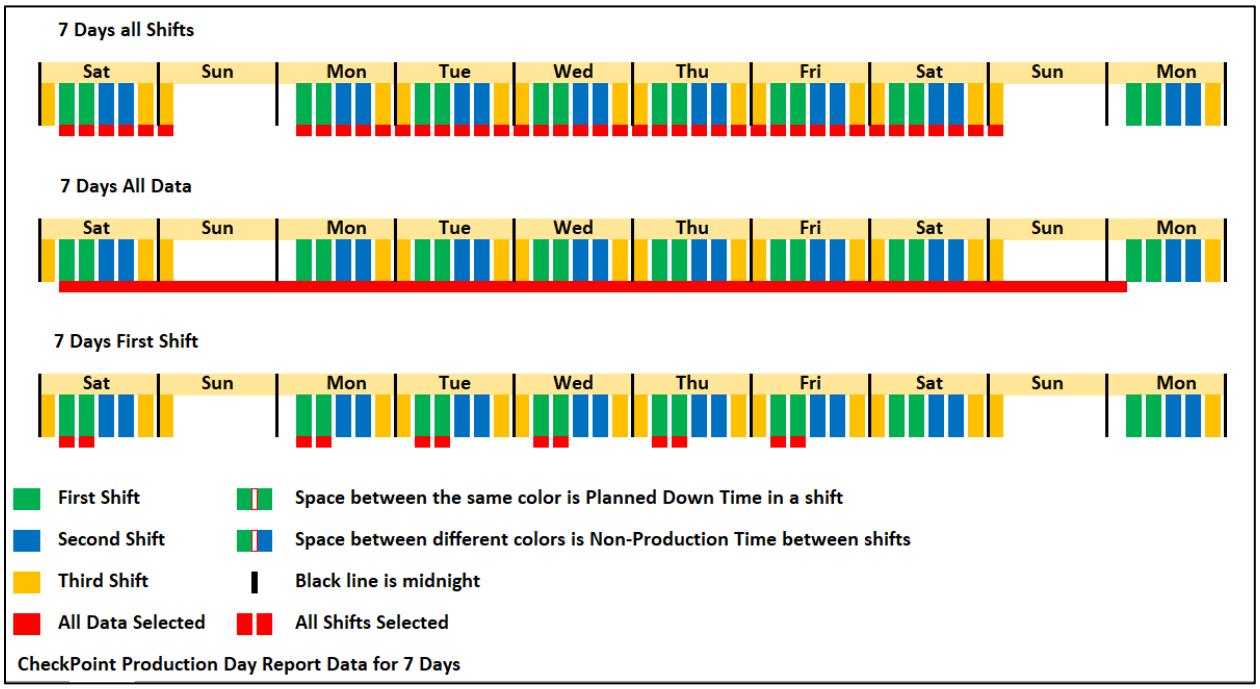


Figure C.5 Last Seven Days Report

Figure C.5 shows a seven-day report for a six-day workweek. The example parameters are:

- Last 7-day report period.
- 7-hour duration shifts.
- ½ hour between shifts.
- ½ hour planned down time within each shift.

Last Seven Days All Shifts

The All Shifts option collects the data for the First, Second, and Third Shifts. The report returns data to the end of the shift for the last day selected. Downtime and between-shifts data are excluded.

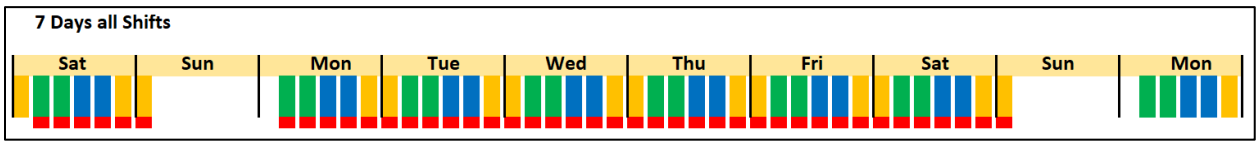


Figure C.6 Last Seven Days All Shifts Data

Last Seven Days All Data

The All Data option collects data for the First, Second, and Third Shifts. The report returns downtime data and between-shifts data up to the start of the First Shift of the next (eighth) production day.

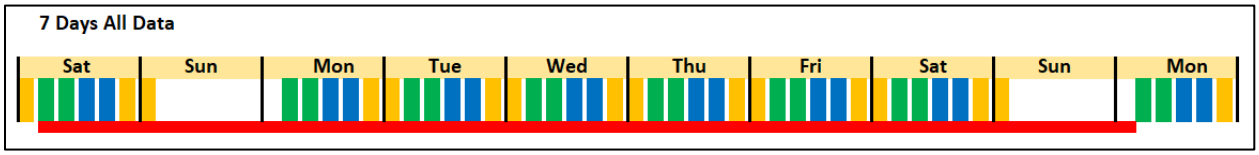


Figure C.7 Last Seven Days All Data

Last Seven Days First Shift

The First Shift option collects production data for that shift only. The report returns data to the end of the shift for the last day in the selected Date Range. Downtime and between-shifts data are excluded.

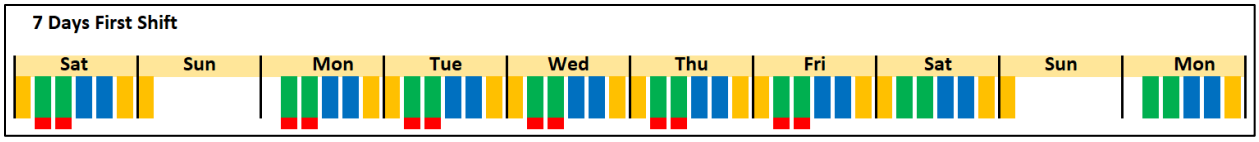
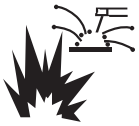


Figure C.8 Last Seven Days First Shift Data

			
WARNING	● Do not touch electrically live parts or electrode with skin or wet clothing. ● Insulate yourself from work and ground.	● Keep flammable materials away.	● Wear eye, ear and body protection.
Spanish **AVISO DE PRECAUCION**	● No toque las partes o los electrodos bajo carga con la piel o ropa mojada. ● Aislese del trabajo y de la tierra.	● Mantenga el material combustible fuera del área de trabajo.	● Protéjase los ojos, los oídos y el cuerpo.
French **ATTENTION**	● Ne laissez ni la peau ni des vêtements mouillés entrer en contact avec des pièces sous tension. ● Isolez-vous du travail et de la terre.	● Gardez à l'écart de tout matériel inflammable.	● Protégez vos yeux, vos oreilles et votre corps.
German **WARNUNG**	● Berühren Sie keine stromführenden Teile oder Elektroden mit Ihrem Körper oder feuchter Kleidung! ● Isolieren Sie sich von den Elektroden und dem Erdboden!	● Entfernen Sie brennbarres Material!	● Tragen Sie Augen-, Ohren- und Körperschutz!
Portuguese **ATENÇÃO**	● Não toque partes elétricas e electrodos com a pele ou roupa molhada. ● Isole-se da peça e terra.	● Mantenha inflamáveis bem guardados.	● Use proteção para a vista, ouvido e corpo.
Japanese **注意事項**	● 通電中の電気部品、又は溶材にヒフやぬれた布で触れないこと。 ● 施工物やアースから身体が絶縁されている様にして下さい。	● 燃えやすいものの側での溶接作業は絶対にしてはなりません。	● 目、耳及び身体に保護具をして下さい。
Chinese **警 告**	● 皮肤或濕衣物切勿接觸帶電部件及銲條。 ● 使你自己與地面和工件絕緣。	● 把一切易燃物品移離工作場所。	● 佩戴眼、耳及身體勞動保護用具。
Korean **위 험**	● 전도체나 용접봉을 젖은 헝겁 또는 피부로 절대 접촉치 마십시요. ● 모재와 접지를 접촉치 마십시요.	● 인화성 물질을 접근 시키지 마시요.	● 눈, 귀와 몸에 보호장구를 착용하십시요.
Arabic **تحذير**	● لا تلمس الاجزاء التي يسري فيها التيار الكهربائي أو الالكترود بجلد الجسم أو بالملابس المبللة بالماء. ● ضع عازلا على جسمك خلال العمل.	● ضع المواد القابلة للاشتعال في مكان بعيد.	● ضع أدوات وملابس واقية على عينيك وأذنيك وجسمك.

READ AND UNDERSTAND THE MANUFACTURER'S INSTRUCTION FOR THIS EQUIPMENT AND THE CONSUMABLES TO BE USED AND FOLLOW YOUR EMPLOYER'S SAFETY PRACTICES.

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LISEZ ET COMPRENEZ LES INSTRUCTIONS DU FABRICANT EN CE QUI REGARDE CET EQUIPMENT ET LES PRODUITS A ETRE EMPLOYES ET SUIVEZ LES PROCEDURES DE SECURITE DE VOTRE EMPLOYEUR.

LESEN SIE UND BEFOLGEN SIE DIE BETRIEBSANLEITUNG DER ANLAGE UND DEN ELEKTRODENEINSATZ DES HERSTELLERS. DIE UNFALLVERHÜTUNGSVORSCHRIFTEN DES ARBEITGEBERS SIND EBENFALLS ZU BEACHTEN.

			
● Keep your head out of fumes. ● Use ventilation or exhaust to remove fumes from breathing zone.	● Turn power off before servicing.	● Do not operate with panel open or guards off.	**WARNING**
● Los humos fuera de la zona de respiración. ● Mantenga la cabeza fuera de los humos. Utilice ventilación o aspiración para gases.	● Desconectar el cable de alimentación de poder de la máquina antes de iniciar cualquier servicio.	● No operar con panel abierto o guardas quitadas.	Spanish **AVISO DE PRECAUCION**
● Gardez la tête à l'écart des fumées. ● Utilisez un ventilateur ou un aspirateur pour ôter les fumées des zones de travail.	● Débranchez le courant avant l'entretien.	● N'opérez pas avec les panneaux ouverts ou avec les dispositifs de protection enlevés.	French **ATTENTION**
● Vermeiden Sie das Einatmen von Schweibrauch! ● Sorgen Sie für gute Be- und Entlüftung des Arbeitsplatzes!	● Strom vor Wartungsarbeiten abschalten! (Netzstrom völlig öffnen; Maschine anhalten!)	● Anlage nie ohne Schutzgehäuse oder Innenschutzverkleidung in Betrieb setzen!	German **WARNUNG**
● Mantenha seu rosto da fumaça. ● Use ventilação e exhaustão para remover fumo da zona respiratória.	● Não opere com as tampas removidas. ● Desligue a corrente antes de fazer serviço. ● Não toque as partes elétricas nuas.	● Mantenha-se afastado das partes moventes. ● Não opere com os paineis abertos ou guardas removidas.	Portuguese **ATENÇÃO**
● ヒュームから頭を離すようにして下さい。 ● 換気や排煙に十分留意して下さい。	● メンテナンス・サービスに取りかかる際には、まず電源スイッチを必ず切って下さい。	● パネルやカバーを取り外したままで機械操作をしないで下さい。	Japanese **注意事項**
●頭部遠離煙霧。 ●在呼吸區使用通風或排風器除煙。	●維修前切斷電源。	●儀表板打開或沒有安全罩時不準作業。	Chinese **警 告**
● 얼굴로부터 용접가스를 멀리하십시요. ● 호흡지역으로부터 용접가스를 제거하기 위해 가스제거기나 통풍기를 사용하십시요.	● 보수전에 전원을 차단하십시요.	● 판넬이 열린 상태로 작동치 마십시요.	Korean **위 험**
● ابعد رأسك بعيداً عن الدخان. ● استعمل التهوية أو جهاز ضغط الدخان للخارج لكي تبعد الدخان عن المنطقة التي تتنفس فيها.	● اقطع التيار الكهربائي قبل القيام بأية صيانة.	● لا تشغل هذا الجهاز اذا كانت الاغطية الحديدية الواقية ليست عليه.	Arabic **تحذير**

LEIA E COMPREENDA AS INSTRUÇÕES DO FABRICANTE PARA ESTE EQUIPAMENTO E AS PARTES DE USO, E SIGA AS PRÁTICAS DE SEGURANÇA DO EMPREGADOR.

使う機械や溶材のメーカーの指示書をよく読み、まず理解して下さい。そして貴社の安全規定に従って下さい。

請詳細閱讀並理解製造廠提供的説明以及應該使用的銀捍材料，並請遵守貴方的有関勞動保護規定。

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اقرأ بتمعن وافهم تعليمات المصنع المنتج لهذه المعدات والمواد قبل استعمالها واتبع تعليمات الوقاية لصاحب العمل.

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WELD FUME CONTROL EQUIPMENT

The operation of welding fume control equipment is affected by various factors including proper use and positioning of the equipment, maintenance of the equipment and the specific welding procedure and application involved. Worker exposure level should be checked upon installation and periodically thereafter to be certain it is within applicable OSHA PEL and ACGIH TLV limits.

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