



Auction 103 Clock Phase Bidding System User Guide

October 31, 2019

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1. Introduction

This guide describes the features of the web-based FCC auction bidding system that bidders will use to bid in the clock phase of Auction 103, Spectrum Frontiers – Upper 37 GHz, 39 GHz, and 47 GHz bands.

Additional information for this auction can be found on the FCC Auction 103 website:

www.fcc.gov/auction/103.

During the Auction 103 clock phase, applicants that have been qualified by the FCC to participate may bid for generic blocks of spectrum.

1.1. Conventions

In this guide screen names are Capitalized. Internet addresses are highlighted in blue, links in the bidding system are underlined, and the following text represents a Button.

Text boxes are used to indicate points where care is needed:



Most of the examples are for “Reliable Access, Inc.”, a non-incumbent bidder that is eligible to bid for all Partial Economic Areas (“PEAs”) and does not have a bidding credit. Representative examples are also given for an incumbent bidder with a small business bidding credit and for a non-incumbent bidder with a rural service provider bidding credit.

In this guide, the term “bidder” refers to an applicant that has been identified by the FCC as qualified to bid in Auction 103 based on review of its FCC Form 175 application and receipt of a timely upfront payment. The terms “user,” “you,” and “authorized bidder” refer interchangeably to an individual authorized bidder identified on a qualified bidder’s Form 175 as an individual authorized to access the bidding system and to submit bids on behalf of the qualified bidder.

1.2. Guide Structure

After this introduction, the guide is set out as follows:

- Section 2, Introduction to the Auction 103 Clock Phase, provides an overview of the clock phase process.
- Section 3, System Requirements and Access, describes the requirements for accessing the bidding system and how to log in.
- Section 4, System Navigation and Overview, explains how to navigate the bidding system, and it provides a summary of the screens available to bidders.
- Section 5, Viewing Product Information, describes the products available in the auction.
- Section 6, Auction Schedule and Messages, describes communications with the FCC.
- Section 7, Bidding Functions, explains how to bid in the clock phase.

- Section 8, Verifying Bids, describes ways to verify bids submitted in a round.
- Section 9, Viewing Results, describes how to access results of the clock phase.

There are also five appendices:

- Appendix 1, System Troubleshooting, provides troubleshooting tips for a number of different scenarios.
- Appendix 2, RSA SecurID® Token Information.
- Appendix 3, Glossary of Terms.
- Appendix 4, Examples of Bid Types.
- Appendix 5, Bid Processing.

2. Introduction to the Auction 103 Clock Phase

The clock phase of Auction 103 is conducted in a series of timed bidding rounds. During a bidding round, users can place bids for generic license blocks of a “product” — a category of blocks in a PEA. Each bid will specify a requested quantity of blocks of a product and a price. Bids can be submitted in one of two ways: via the bidding screen or via a bid upload file.

After a round closes, the bidding system processes the bids and posts the results. For each product, users can see their “processed demand” — the number of blocks the bidder holds after bid processing — and the prices associated with those demands. Users can see the aggregate demand for each product as well as the price at the end of the last completed round (the “posted price”) and the price for the next round (the “clock price”). If the net revenue from bids at the end of the clock phase is sufficient to cover incentive payments to incumbents, bidders will win the number of generic blocks they hold at that point. The auction then progresses to the assignment phase, in which a bidder that won generic blocks in the clock phase can optionally bid for frequency-specific licenses corresponding to its clock phase winnings.

If the net revenue requirement has not been satisfied at the time bidding stops in the clock phase, the auction will end, and no new licenses will be assigned. Incumbents in the 39 GHz band will retain their original licenses pending further decisions by the Commission.

3. System Requirements and Access

This section explains the bidding system requirements for accessing the bidding system, how to log in, and other matters related to access.

3.1. Minimum System Requirements

At the minimum, the following is required to access the bidding system:

- Microsoft® Windows® 8.1 or Windows® 10, or Apple® Mac® OS X® 10.13
- A recent version of Google Chrome™ (preferred)¹ or Microsoft® Edge² (the browser must be configured to accept cookies and JavaScript).³
- Access to the internet
- 1920 x 1080 screen resolution⁴

Smartphones and tablets are not supported. The bidding system may run on different computer configurations, including browsers not listed above. It is the responsibility of the user to test any alternative configurations with the bidding system in advance of the auction — for example during the mock auction — and to ensure that they have access to one of the supported browsers should they experience problems. Any user attempting to access the bidding system with a computer configuration or device that does not meet the requirements listed above is solely responsible for any resulting failure to access the bidding system, failure to do so in a timely manner, or failure of the bidding system to process the user's attempted bidding or other actions (even if it appears that such actions were completed properly).

Users are discouraged from using web browsers containing third-party toolbars or other extensions. Third-party browser extensions potentially may cause problems for users of interactive websites, including the auction bidding system, and may make users' computers more vulnerable to hacker attacks. If in doubt, you should consult your internal information technology departments in order to

¹ Google Chrome is referred to elsewhere in this document as "Chrome." Google and the Google logo are registered trademarks of Google Inc.

² Microsoft Edge is referred to elsewhere in this document as "Edge." It is available with Windows 10. Although the bidding screens support Microsoft Internet Explorer 11 ("Internet Explorer"), the older rendering engine has difficulties displaying the large amount of data associated with this auction. Therefore, Internet Explorer is not recommended. Google Chrome is preferred because its rendering engine may yield the best experience for users.

³ Appendix 1 explains how to check and/or reset browser settings.

⁴ The system has been optimized to display all of the information without horizontal scrolling on a 1920 x 1080 screen with medium font size. If all of the information from the bidding system cannot fit on your display when your browser is maximized (taking up the entire screen), you can either zoom out using your internet browser or scroll right and left using the scroll bars. To adjust the zoom, hold down the control ("ctrl") key and use the "+" and "-" keys to zoom in and out.

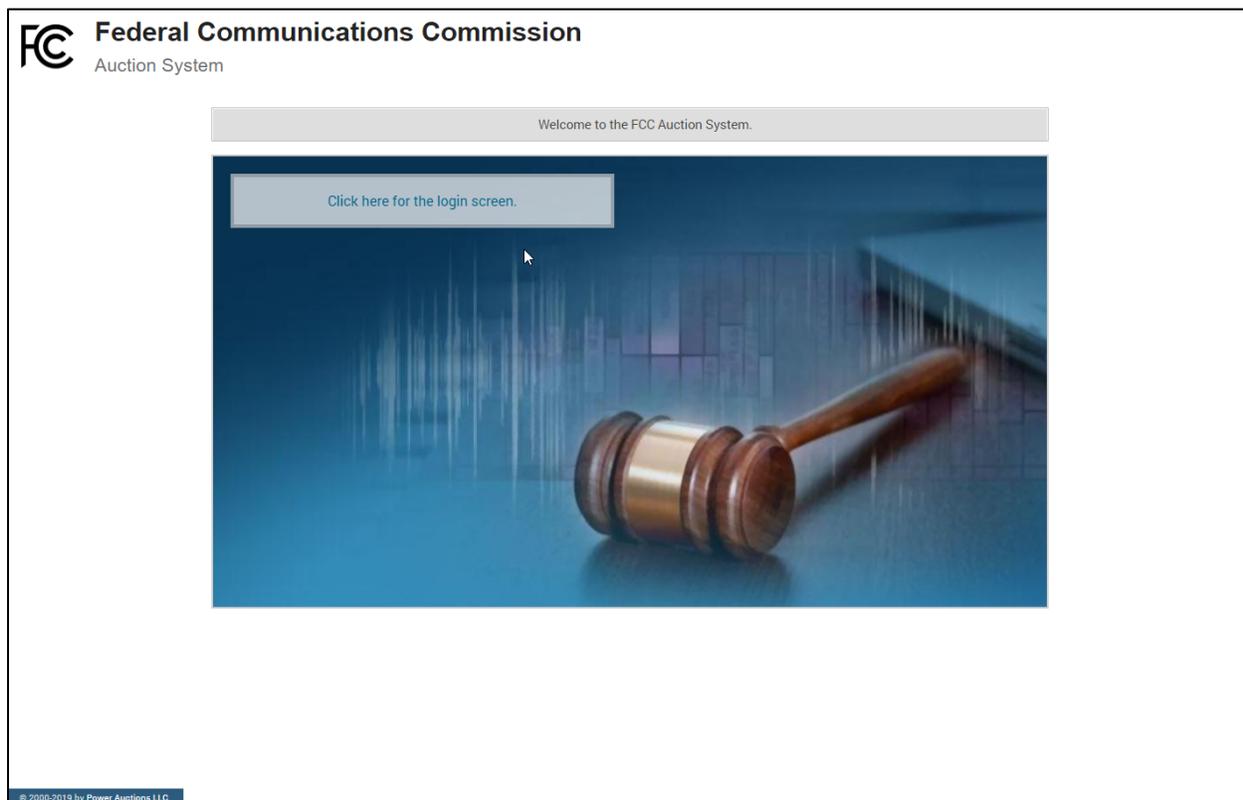
disable third-party browser extensions or, if necessary, obtain a clean installation of a supported web browser.

To maximize protection against potential security vulnerabilities, users are advised to ensure the latest service pack (if applicable), security patches for their operating system (including Edge browser), and the most recent version of Google Chrome (where relevant), have been installed.

3.2. Logging In

Once the bidding system becomes available, you can log in at a URL provided only to qualified bidders in the registration materials. When available, the link to the Login screen, as shown in Figure 1, will be visible. When the Login screen is not available, there will be a message on the screen, and the link to access the Login screen will not be visible.

Figure 1: Bidding system homepage



Click on the [Click here for the login screen](#) link in order to get to the Login screen shown in Figure 6 on page 9.

This guide provides two sets of login instructions: Section 3.2.1, initial login, where an authorized bidder creates a personal identification number (“PIN”) and logs in for the first time; and Section 3.2.2, the standard login used after the PIN is created.

Each authorized bidder listed on the qualified bidder's FCC Form 175 will have a unique username (user ID) provided by the Commission. All authorized bidders for a qualified bidder will use the same password, which is the password associated with the FRN (FCC Registration Number) used on the Bidder's FCC Form 175.⁵

Each username will be associated with a specific RSA SecurID® token (RSA token) assigned to the authorized bidder for the auction. The RSA token generates a time-sensitive 6-digit tokencode that changes every 60 seconds. This tokencode is required as part of the login process along with the authorized bidder's username and password. The username and RSA token should only be used by the authorized bidder to whom it was assigned. The bidding system logs all actions taken by a user based on the username entered when logging in.

RSA tokens will be sent by overnight delivery to the contact person identified in the FCC Form 175 for each qualified bidder, and the contact person must distribute an RSA token to each of the specified authorized bidders. Each authorized bidder will need to set a private PIN for his or her token.

Figure 2: An RSA SecurID® token



Please note that each RSA token is tailored to a specific auction. Therefore, RSA tokens issued for other auctions or obtained from a source other than the FCC will not work for this auction. Likewise, authorized bidders for 39 GHz incumbents cannot use the RSA tokens that were used for the Initial Commitment filing window.

After the conclusion of bidding in Auction 103, the Commission will send each bidder a pre-addressed, stamped envelope in which to return its RSA tokens.



Take care not to lose your RSA token! Replacing or reassigning an RSA token can be time-consuming, which in some cases could result in missing a bidding round and losing bidding eligibility.

⁵ Passwords associated with user names that are linked to the FRN within CORES can also be used.

3.2.1. First Time Login Procedures

The first time you log in to the bidding system, you must create an RSA PIN. Each authorized bidder for a qualified bidder will create an RSA PIN once — unless the authorized bidder gets a replacement RSA token (e.g., because an RSA token has been lost or broken). After the RSA PIN has been created, you must follow the standard login procedures.

You will need the following login credentials to access the bidding system for the first time:

- Username (user ID): FCC assigned
- Password: FRN password associated with your FCC username account⁶
- RSA tokencode: A six-digit code generated by the RSA SecurID® token

In the bidding system login area, type in the username, password and the current tokencode on the individually assigned RSA token as shown in Figure 3. Leave the PIN field blank and click **Login »**.

If you forget your password, you can contact the FCC Support Center at (877) 480-3201 Option 4 (Mon–Fri 8:00 a.m.–6:00 p.m. Eastern Time (ET)).

 *Token codes change every 60 seconds. Avoid using a code that is about to expire, as indicated on the token screen, by waiting for a new code to appear.*

Figure 3: First time login procedure



The screenshot shows a login form with the following fields and content:

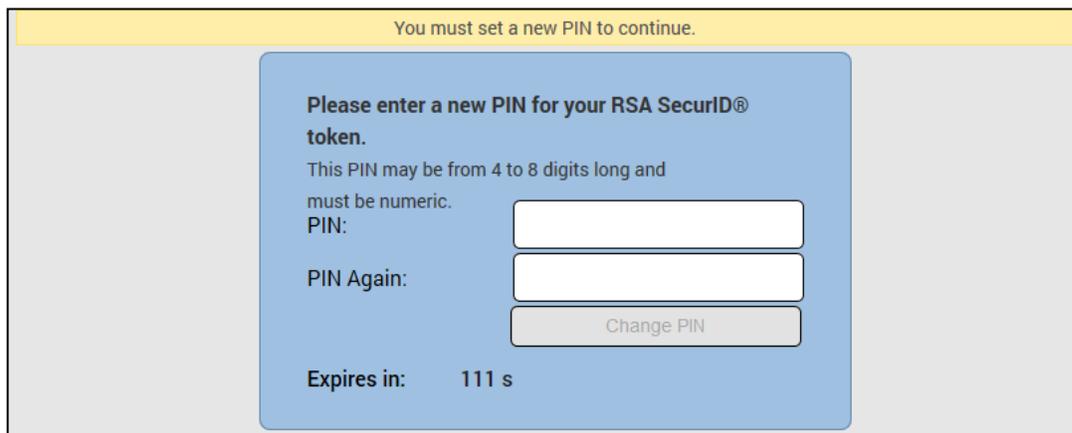
- Please log in.**
- Username:** 0000000000A
- Password:** (masked with 8 dots)
- PIN:** (empty field)
- RSA Token:** 456456 (with an RSA SecurID token icon to the left)
- TIP:** if you have not set an RSA PIN, please leave the PIN field blank.
- Login »** button

The RSA tokencode will be generated by your RSA SecurID® token and will not be the same as the code shown in Figure 3.

After you click **Login »** the system displays a screen to create a private PIN, as shown in Figure 4.

⁶ You may also log in with the FRN password associated with the qualified bidder's FRN.

Figure 4: Set PIN screen

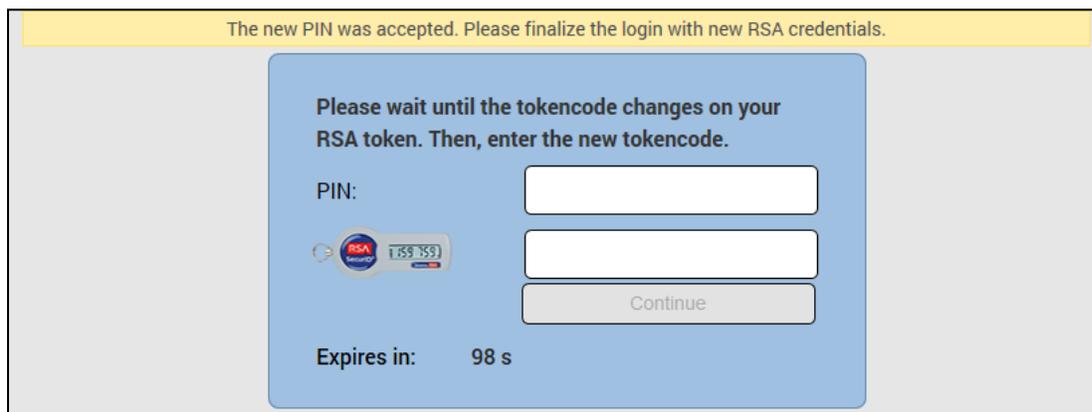


Type a 4–8 digit numeric PIN of your choice in the PIN field. Enter it twice as requested to ensure accuracy. Then click **Change PIN**. Be sure to memorize this PIN. There is a limited amount of time to set a new PIN and confirm your credentials, as shown by the expiration time on the screen.

A message will display in a yellow box above the blue PIN and tokencode fields to indicate that the new PIN was accepted, as shown in Figure 5.

Type in the PIN you just created and a **new** tokencode. Make sure that the number on the RSA token’s display has changed, type this new number into the tokencode field, then click **Continue**.

Figure 5: Confirm RSA credentials screen



After completing the set-up procedure, you will be able to access the bidding system and see the navigation bar on the left-hand side. Thereafter, the standard log in procedure applies.

3.2.2. Standard Login Procedure

To log in to the bidding system, you will need the following login credentials:

- Username (user ID): FCC assigned

- Password: FRN password associated with your FCC username account⁷
- PIN: Numeric PIN created during the initial login (see Section 3.2.1)
- RSA tokencode: A six-digit code generated by the RSA SecurID® token

Enter the information on the Login screen (see Figure 6) and click **Login »**.

If you forget your FRN password, contact the FCC Support Center at (877) 480-3201, option 4 (Mon–Fri 8:00 a.m.–6:00 p.m. ET).

Figure 6: Login screen

3.2.3. Login Errors

During an auction, the system keeps track of the success or failure of each login attempt. In case of incorrect entry of data into any of the four required fields during login, you will receive an error message with an error code. For assistance, call the Auction Bidder Line at the number provided with your registration materials.

3.3. Multiple Users for the Same Bidder

It is possible for more than one authorized bidder for the same qualified bidder to log in and access the bidding system at the same time, each using his or her assigned username and credentials. Any updates

⁷ You may also log in with the FRN password associated with the qualified bidder's FRN.

made by one such authorized bidder will be displayed on the screen of the other users for the same bidder after the screen is refreshed.

However, **only one such authorized bidder should bid at any given time** to avoid a potential conflict in data that may produce a bid, or set of bids, that was not intended.



To avoid a potential conflict that may produce unintended results, only one authorized bidder should bid at any given time.

3.4. Automatic and Manual Logout

A single user cannot be logged into the bidding system using two computers at the same time.

If a user tries to use the same username to access the bidding system from multiple computers, the bidding system will automatically log the user out from the first session and will display a logout notification. This is a protective feature for users because it allows a user to log in to the bidding system using a second computer if the first computer crashes before the user could log out of the system.

A user that is inactive for more than 30 minutes will automatically be logged out of the system completely and will need to log in again to access the site.

You may manually log out of the bidding system at any time using the **Logout** button, located at the bottom of the navigation bar on every screen, as shown in Figure 7. Logging out of the bidding system will not cause submitted bids to be lost. Logging out will not cause bids that were saved (but not submitted) to be lost; however, you will need to log back in to submit these bids.

3.5. Auction Bidder Line

The Auction Bidder Line is available to assist bidders with first time login procedures, bidding actions, reviewing round results, announcements and auction-related questions. The telephone number for the Auction Bidder Line is provided with your registration materials.

Bidders need to provide the telephonic bid assistant with the appropriate login information (discussed in Section 3.2.2) to access the bidding system. Telephonic bid assistants are required to follow a script, and the length of calls to place bids will vary depending upon the complexity and the number of bids. Bidders are therefore reminded to allow sufficient time to bid by placing their calls well in advance of the close of a round.

3.6. Additional Information

Appendix 1: System Troubleshooting provides additional information about common errors that you may encounter accessing the bidding system.

Appendix 2: RSA SecurID® Token Information provides additional information about RSA tokens. It explains what to do if a bidder wishes to change or replace an authorized bidder/user and what to do in the event of lost or damaged RSA tokens.

4. System Navigation and Overview

The bidding system provides bidding information in two ways: on screens, accessed through the navigation bar; and through downloadable files, generally accessed via the Downloads screen. In addition, a link to the sample bids upload file is available on the Place Bids screen when a round is announced or active (See Section 7.6.1).

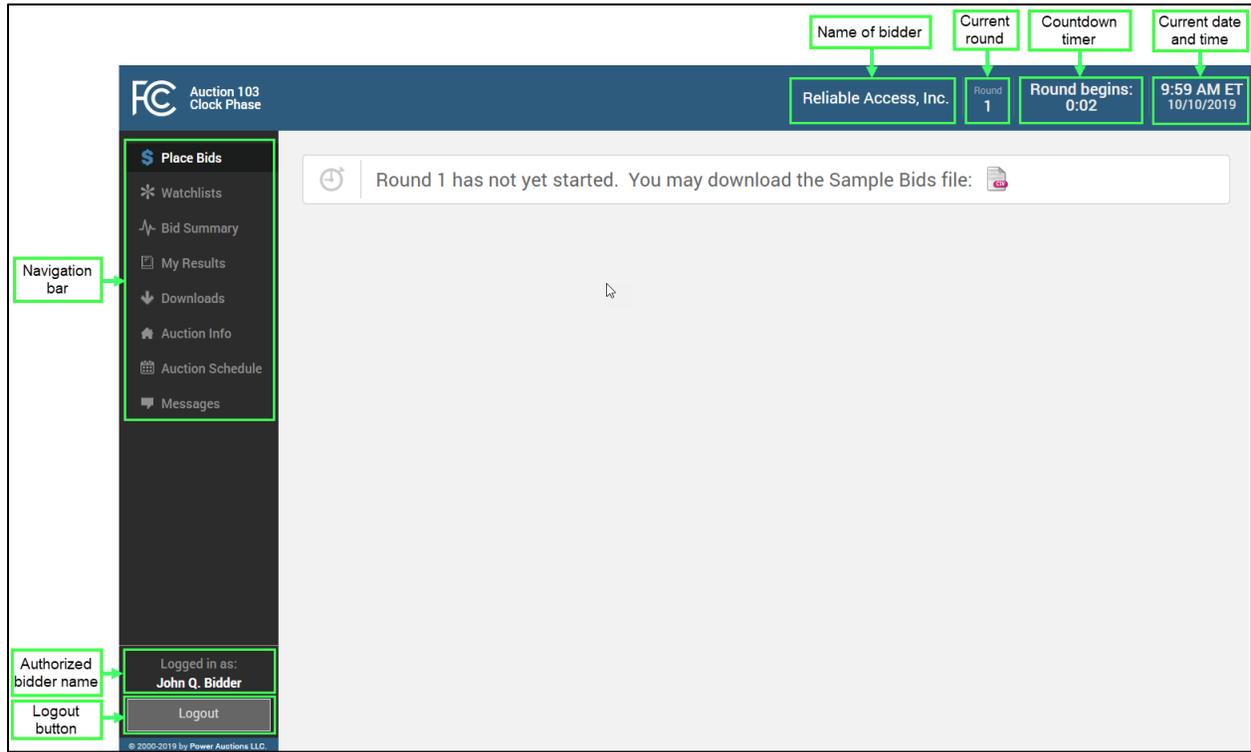
This section describes how to access and navigate through these screens.

4.1. Navigation Bar and Features Common to All Screens

All screens in the bidding system have a navigation bar on the left side, which provides links to the other available screens. Beneath the navigation bar is your name (the name of the authorized bidder who has logged in) and the [Logout](#) button, as described in Section 3.4.

The blue bar at the top of each screen is also common to all screens. It displays status and timing information. It shows the name of the qualified bidder, the current round, a countdown timer showing the time to the beginning or the end of a round and the current date and time in Eastern Time. An illustration of the navigation bar and common screen features is shown in Figure 7.

Figure 7: Navigation bar and features common to all screens



4.2. Summary of Bidding System Screens

The navigation bar gives access to eight screens. Their functions are summarized in Table 1 below in the order in which they appear on the navigation bar.

Table 1: Summary of screens reached from the navigation bar

Screen	Description
Place Bids	Allows you to place bids in a round either on the screen or by uploading a bid file
Watchlists	Allows you to create custom watchlists of products
Bid Summary	Allows you to view a summary of all bids submitted on behalf of the bidder during a particular round
My Results	Allows you to view the results of bid processing for the bidder in a given round for all products in which the bidder bid in the round or has processed demand for the previous round
Downloads	Allows you to download files about the bidder’s bids and results
Auction Info	Allows you to view information about the net revenue requirement and all available products
Auction Schedule	Allows you to view the schedule for upcoming bidding rounds

Screen	Description
Messages	Allows you to view announcements and messages from the FCC, and to send messages to the FCC

4.3. Summary of Downloads

The following table provides a summary of downloads available in the bidding system, and how to access these downloads.

Table 2: Summary of downloads available in the bidding system

Download File	Where to access	Description
Sample Bids File	Place Bids	This file is a template for placing bids via uploads during a round and includes a record for each product in each PEA the bidder selected on its Form 175. It is available when the round is announced and during an active round when no bids have yet been placed.
My Bids	Downloads	During an active round, this file contains all bids the bidder submitted during the round. Once a round closes, it will also contain any missing bids placed by the system.
My Results	Downloads	The results of bid processing for each of the bids
My Product Status	Downloads	The status of all products corresponding to the PEAs the bidder selected on its Form 175
My Bidder Status	Downloads	A summary of bidder activity and financial totals for that bidder
My Bidder Markets	Downloads	A list of all PEAs in the auction with a flag indicating whether the bidder selected each PEA on its Form 175
My Relinquished Credit	Downloads	A list of all PEAs where an incumbent bidder relinquished its licenses in the Initial Commitment period, and the adjusted weighted MHz-pops of the relinquished licenses. Once round's results are posted, it also contains round's posted prices.

5. Viewing Product Information

The Auction Info screen indicates whether the net revenue requirement is met at the end of a round and provides basic information about all of the products available in Auction 103 (Figure 8).⁸ You may

⁸ The products listed on the Auction Info screen are not limited to the PEAs that a bidder selected on its Form 175.

access the Auction Info screen once the bidding system becomes available prior to the start of the clock phase of Auction 103.

After results for round 1 have been posted, the Auction Info screen provides an indication of whether the net revenue requirement has been met, as shown in Figure 8. If the net revenue requirement is not met as of the last posted round, an estimate of the current shortfall for meeting the net revenue requirement, rounded up to the nearest \$1 million, is displayed to bidders on the Auction Info screen. If the net revenue requirement is met as of the last posted round, the Auction Info screen will indicate that the requirement has been met, as shown in Figure 9.

The product information displayed on the Auction Info screen does not change during the clock phase of the auction.

Figure 8: Auction Info screen before net revenue requirement is met

The screenshot shows the Auction Info screen for Auction 103. At the top right, it displays 'Reliable Access, Inc.', 'Round 2', 'Round ends: 1:59:55', and '2:00 PM ET 10/10/2019'. A message box states: 'The net revenue requirement has not been met. The shortfall rounded up to the nearest \$1,000,000 is \$38,000,000.' Below this is a table with the following data:

Market Number	Market Name	Category	Supply	Population	Bidding Units	Minimum Opening Bid
PEA001	New York, NY	MN	24	25,237,061	2,524,000	\$5,047,000
PEA001	New York, NY	P	10	25,237,061	2,524,000	\$5,047,000
PEA002	Los Angeles, CA	MN	24	19,410,169	1,941,000	\$3,882,000
PEA002	Los Angeles, CA	P	10	19,410,169	1,941,000	\$3,882,000
PEA003	Chicago, IL	MN	24	9,366,713	937,000	\$1,873,000
PEA003	Chicago, IL	P	10	9,366,713	937,000	\$1,873,000
PEA004	San Francisco, CA	MN	24	9,027,937	903,000	\$1,806,000
PEA004	San Francisco, CA	P	10	9,027,937	903,000	\$1,806,000
PEA005	Baltimore, MD-Washington, DC	MN	24	7,842,134	784,000	\$1,568,000
PEA005	Baltimore, MD-Washington, DC	P	10	7,842,134	784,000	\$1,568,000
PEA006	Philadelphia, PA	MN	24	7,587,252	759,000	\$1,517,000

At the bottom left, it shows 'Logged in as: John Q. Bidder' and a 'Logout' button. The footer contains '© 2000-2019 by Power Auctions LLC.'

Figure 9: Auction Info screen after net revenue requirement is met

Market Number	Market Name	Category	Supply	Population	Bidding Units	Minimum Opening Bid
PEA001	New York, NY	MN	24	25,237,061	2,524,000	\$5,047,000
PEA001	New York, NY	P	10	25,237,061	2,524,000	\$5,047,000
PEA002	Los Angeles, CA	MN	24	19,410,169	1,941,000	\$3,882,000
PEA002	Los Angeles, CA	P	10	19,410,169	1,941,000	\$3,882,000
PEA003	Chicago, IL	MN	24	9,366,713	937,000	\$1,873,000
PEA003	Chicago, IL	P	10	9,366,713	937,000	\$1,873,000
PEA004	San Francisco, CA	MN	24	9,027,937	903,000	\$1,806,000
PEA004	San Francisco, CA	P	10	9,027,937	903,000	\$1,806,000
PEA005	Baltimore, MD- Washington, DC	MN	24	7,842,134	784,000	\$1,568,000
PEA005	Baltimore, MD- Washington, DC	P	10	7,842,134	784,000	\$1,568,000
PEA006	Philadelphia, PA	MN	24	7,587,252	759,000	\$1,517,000

As shown in Figure 8 and Figure 9, the Auction Info screen provides the market number, market name, license category, total supply, population, number of bidding units, and minimum opening bid prices for each product.⁹ The supply of Category MN and Category P licenses in Auction 103 is 24 blocks¹⁰ and 10 blocks, respectively, in all PEAs.

⁹ You can also see product information on the Public Reporting System (PRS), which displays round-by-round information about the aggregate demand, current price, and next round price for each product. The PRS is available at auctiondata.fcc.gov.

¹⁰ The supply of Category MN licenses depended upon the decisions made by existing 39 GHz incumbents to either accept modified licenses reconfigured to conform with the new band plan and service areas, or to relinquish all their existing spectrum usage rights in exchange for a share of the auction proceeds and the opportunity to bid on new licenses in Auction 103. During the Initial Commitment filing window, which closed on August 15, 2019, all 39 GHz incumbents committed to relinquish their 39 GHz licenses.

6. Auction Schedule and Messages

6.1. Auction Schedule

The Auction Schedule screen shows the current schedule for upcoming rounds in Eastern Time (ET), as illustrated in Figure 10. The schedule shows the date, duration, start time and end time for each round. The time of the next start or end of a round is displayed in red bold text – in this example, the start of Round 1.

The FCC may adjust the number of rounds per day as the auction proceeds. Additional rounds will be displayed as the clock phase progresses. The schedule displayed in the example does not indicate the expected number of rounds in the auction. Similarly, the number of rounds displayed during the auction does not imply an expected number of rounds left in the auction; the Auction Schedule screen will show the next several rounds assuming the auction continues for that duration or longer.

Figure 10: Auction Schedule screen

The screenshot shows the Auction Schedule screen for Auction 103 Clock Phase. The header includes the FCC logo, "Auction 103 Clock Phase", "Reliable Access, Inc.", "Round 1", "Round begins: 0:02", and "9:59 AM ET 10/10/2019". The sidebar on the left contains navigation options: Place Bids, Watchlists, Bid Summary, My Results, Downloads, Auction Info, Auction Schedule (selected), and Messages. The main content area is titled "Auction Schedule" and displays a table of rounds for Thursday, Oct 10, 2019 and Friday, Oct 11, 2019. The table has columns for Round, Duration, Start, and End. Round 1 is highlighted with a red start time of 10:00 AM ET. A note at the bottom explains that red figures indicate the time of the next event and that green highlights indicate active rounds.

Thursday - Oct 10, 2019			
	Duration	Start	End
Round 1	2 hours	10:00 AM ET	12:00 PM ET
Round 2	2 hours	2:00 PM ET	4:00 PM ET
Friday - Oct 11, 2019			
	Duration	Start	End
Round 3	2 hours	10:00 AM ET	12:00 PM ET
Round 4	2 hours	2:00 PM ET	4:00 PM ET

Note:

- All start and end times are in ET. Red figures indicate the time of the next event.
- All future rounds are tentative and subject to change.
- indicates the round is active.

Logged in as: John Q. Bidder
Logout

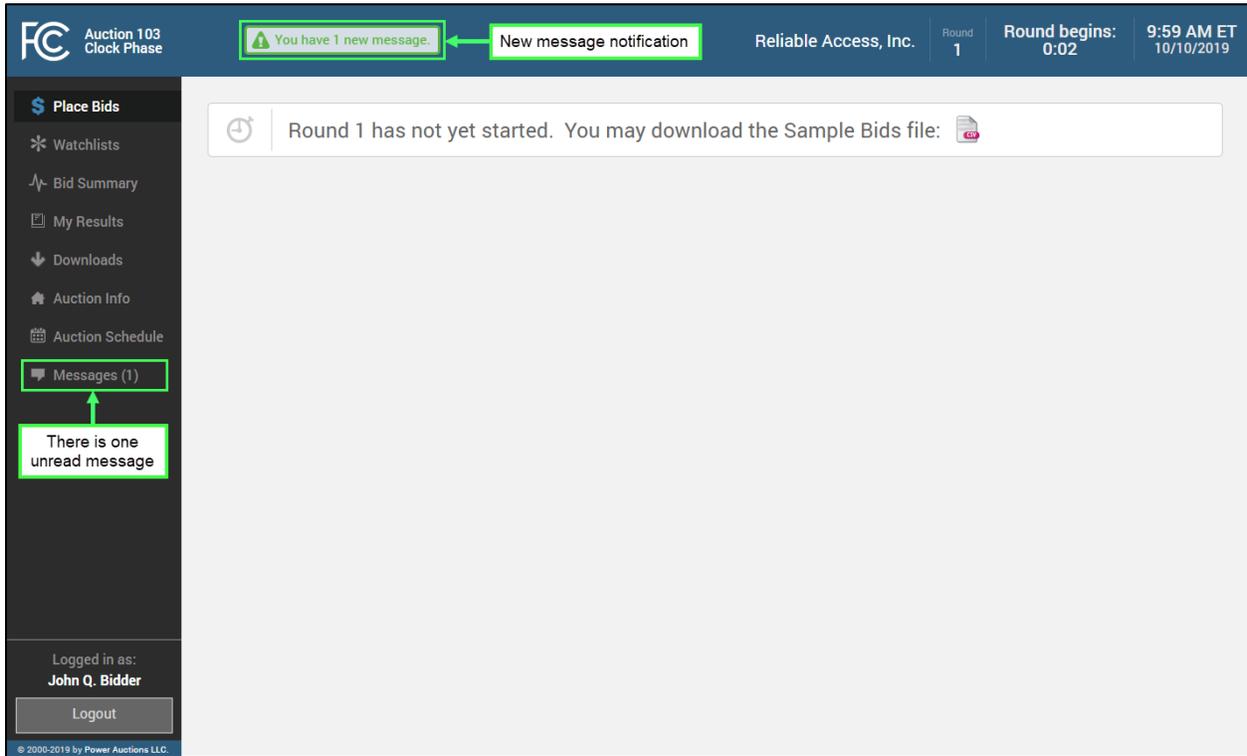
© 2000-2019 by Power Auctions LLC.

6.2. Messages: Announcements and Conversations

On the Messages screen you can see announcements made by the FCC. You can also communicate with the FCC by sending messages to and receiving responses from the FCC that are visible only to you and the other authorized bidders for the same qualified bidder. If you have any unread announcements or conversations, a notification will appear in the blue bar at the top of the screen. The number of unread

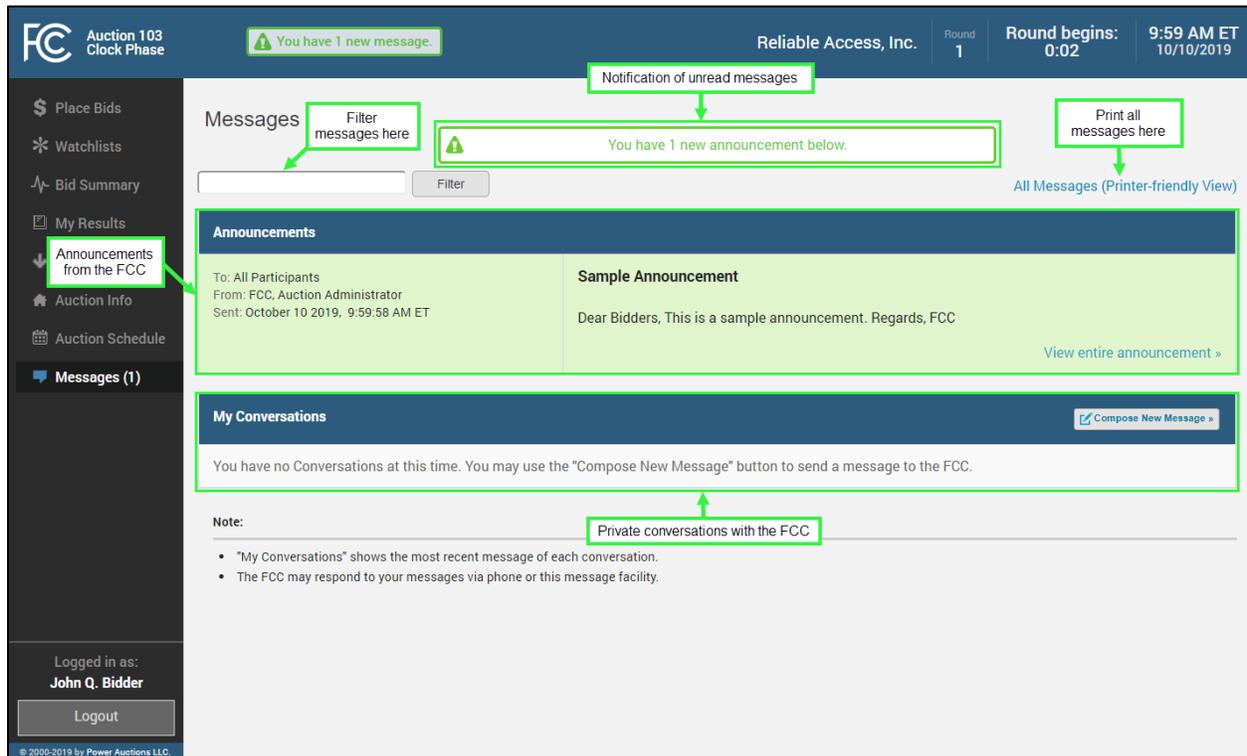
messages is shown in this notification and in parenthesis next to the [Messages](#) link in the navigation bar as shown in Figure 11.

Figure 11: New message indicator



To read announcements, or to send a message to or read a response from the FCC, click on the [Messages](#) link in the navigation bar on the left side, or on the notification in the blue bar. The Messages screen will open, displaying all announcements and conversations in reverse chronological order, showing the first line (or part of the first line) of the announcement or message. You must click on the [View entire announcement »](#) or [View entire conversation / Respond »](#) link to open and read an announcement or message in its entirety.

Figure 12: Messages screen



As shown in Figure 12 and Figure 16, if any message on the screen has not been read, a green notification box displayed at the top of the screen will indicate the number of unread announcements or messages. Any unread message is highlighted in green. After an unread announcement or message has been opened, the number in the parentheses by the [Messages](#) link on your screen will decrease accordingly. The number will not decrease until the [View entire announcement »](#) or [View entire conversation / Respond »](#) link has been clicked for the unread message.

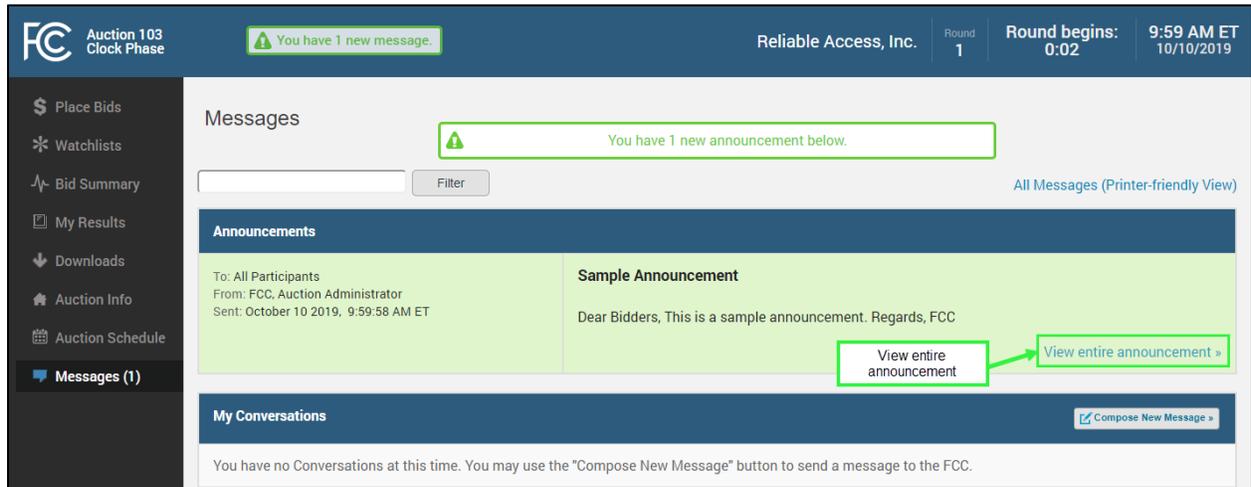
 Whenever you see an indication that a message is unread, go to the Messages screen and click on the relevant [View entire announcement »](#) or [View entire conversation / Respond »](#) link.

At the top right-hand side of the screen, a filter allows you to find messages containing particular words. You can view all of the bidder's messages by clicking on the [All Messages \(Printer-friendly View\)](#) link at the top right-hand side of the screen. This page can then be printed using the browser's print function.

6.2.1. Receiving and Reviewing Announcements

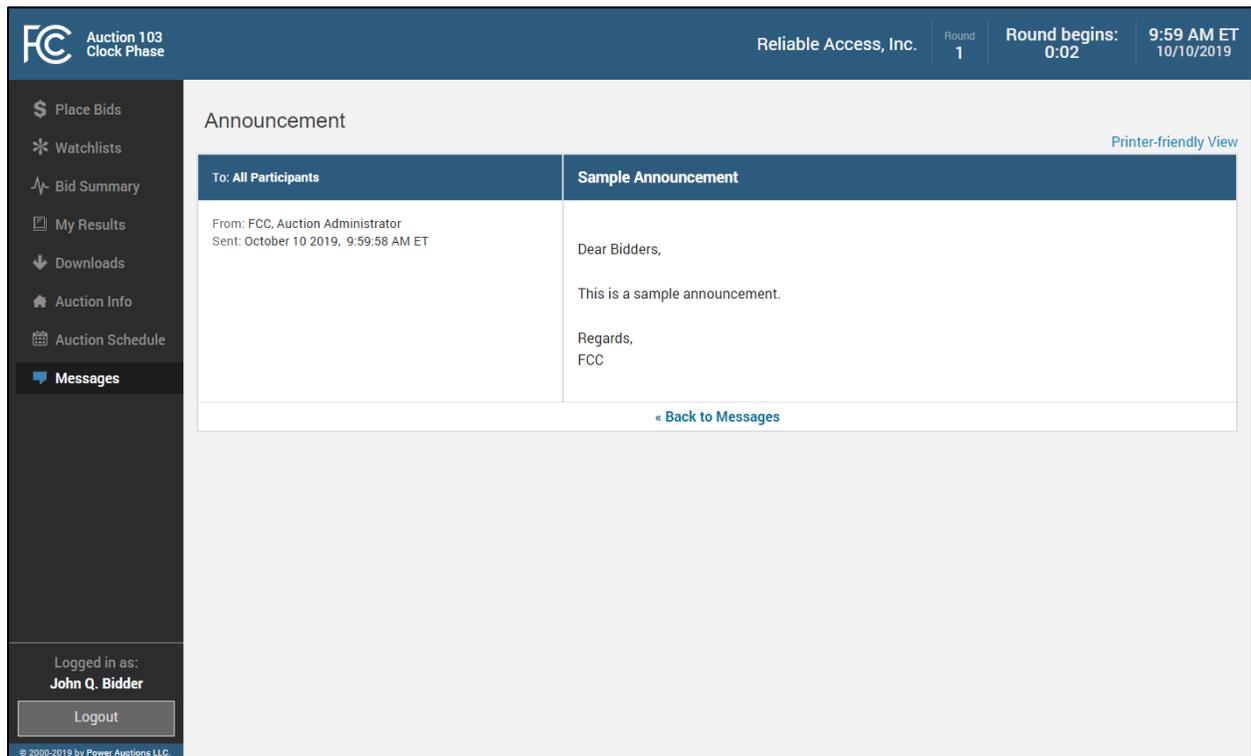
The FCC may send announcements to all bidders. Announcements contain important information, such as changes in the number of rounds per day or the suspension of bidding due to unforeseen circumstances. The Message screen will only show the first line or part of the first line of an announcement. As mentioned above, to view the entire text of an announcement you must click on the [View entire announcement »](#) link for the announcement you wish to read, as shown in Figure 13.

Figure 13: View entire announcement link



Clicking on the [View entire announcement »](#) link loads an Announcement screen which displays the full text of the announcement as shown in Figure 14. To close the announcement and return to the Messages screen, click the [« Back to Messages](#) link.

Figure 14: An open announcement



6.2.2. Conversations with the FCC

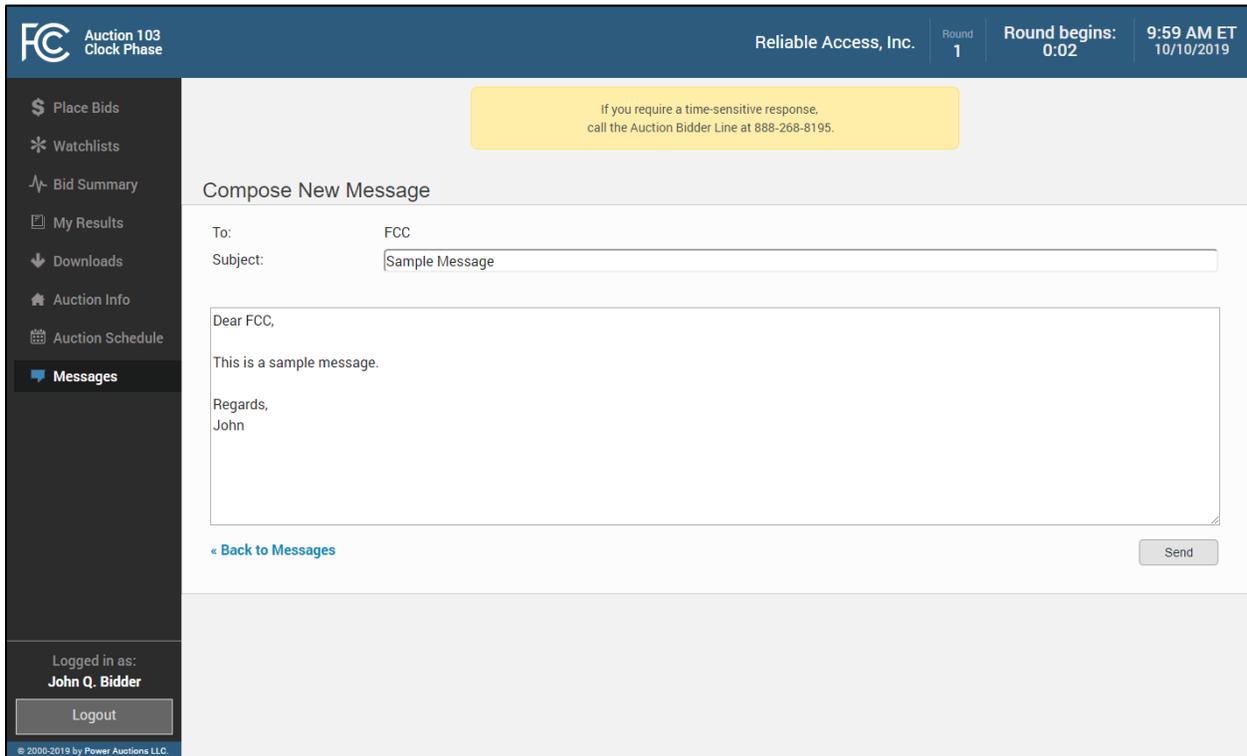
You can communicate with the FCC through the bidding system. A message from a user is associated with a bidder's FRN and the authorized bidder who sent the message. Only authorized bidders for a bidder can see such messages.

 For time-sensitive issues, users should call the Auction Bidder Line phone number which is provided to qualified bidders.

To compose a new message to the FCC, click on the **Compose New Message >>** button in the My Conversations section of the Messages screen, as shown in Figure 12 above. Next, enter the subject and content of the message in the relevant fields as shown in Figure 15 below. Click **Send** to send the message. To cancel an unsent message, click on the **« Back to Messages** link and return to the Messages screen. Navigating away from the Compose New Message screen will delete any unsent message.

Note that if the system prompts you to refresh your screen (e.g., because a round has just opened) while you are typing a message, your message will be lost if you refresh at that time. Instead, cancel the refresh notification, finish typing and send your message, and then refresh the screen.

Figure 15: Compose a new message



The screenshot displays the 'Compose New Message' screen. At the top, a yellow warning box states: 'If you require a time-sensitive response, call the Auction Bidder Line at 888-268-8195.' The form includes fields for 'To:' (pre-filled with 'FCC') and 'Subject:' (pre-filled with 'Sample Message'). The message body contains the text: 'Dear FCC, This is a sample message. Regards, John'. At the bottom left of the form is a link for '« Back to Messages' and at the bottom right is a 'Send' button. The sidebar on the left lists navigation options: Place Bids, Watchlists, Bid Summary, My Results, Downloads, Auction Info, Auction Schedule, and Messages (highlighted). The top header shows 'Auction 103 Clock Phase', 'Reliable Access, Inc.', 'Round 1', 'Round begins: 0:02', and '9:59 AM ET 10/10/2019'. The bottom left shows the user is logged in as 'John Q. Bidder' with a 'Logout' button.

A sent message will appear as a new conversation in the 'My Conversations' section of the Messages screen. The FCC may reply by sending an electronic message or by calling the contact person on the phone. If there is an electronic reply from the FCC, the reply will be added to that conversation.

As with announcements, new messages are highlighted in green on the Messages screen until they are read. Only the most recent message of a conversation is shown on the Messages screen, as illustrated in Figure 16. To view the complete message and all messages in a conversation, click on the [View entire conversation / Respond »](#) link for that conversation.

Figure 16: A response to a conversation initiated by an authorized bidder

The screenshot displays the 'Messages' interface for Auction 103 Clock Phase. At the top, a notification states 'You have 1 new message.' The page is for 'Reliable Access, Inc.' in 'Round 1', with the round beginning at 9:59 AM ET on 10/10/2019. The left sidebar contains navigation links: Place Bids, Watchlists, Bid Summary, My Results, Downloads, Auction Info, Auction Schedule, and Messages (1). The main area shows a search filter and a link to 'All Messages (Printer-friendly View)'. Under 'Announcements', a sample message from the FCC Auction Administrator is shown, dated October 10, 2019, with a 'View entire announcement »' link. Under 'My Conversations', a sample message from the FCC Auction Administrator is shown, also dated October 10, 2019, with a 'View entire conversation / Respond »' link. A 'Compose New Message »' button is located in the top right of the My Conversations section. A 'Note' section at the bottom explains that 'My Conversations' shows the most recent message of each conversation and that the FCC may respond via phone or this message facility. The user is logged in as 'John Q. Bidder' and a 'Logout' button is present. The footer indicates copyright by Power Auctions LLC.

Clicking on the link to view an entire conversation opens all of the messages in that conversation on the screen, as seen in Figure 17. Click on the [« Back to Messages](#) link to return to the messages, or click on the [Respond To This Conversation](#) button as shown in Figure 17 to add a further message to the same conversation. Type the message in the box that opens and click [Send](#) to send it to the FCC.

Figure 17: Viewing a conversation

Auction 103
Clock Phase

Reliable Access, Inc. Round 1 Round begins: 0:02 9:59 AM ET 10/10/2019

- [Place Bids](#)
- [Watchlists](#)
- [Bid Summary](#)
- [My Results](#)
- [Downloads](#)
- [Auction Info](#)
- [Auction Schedule](#)
- Messages**

Logged in as:
John Q. Bidder

Logout

© 2000-2019 by Power Auctions LLC.

Conversation Printer-friendly View

With: FCC	Sample Message
<p>From: John Q. Bidder, Reliable Access, Inc. (2000000004) Sent: October 10 2019, 9:59:58 AM ET</p>	<p>Dear FCC,</p> <p>This is a sample message.</p> <p>Regards, John</p>
<p>From: FCC, Auction Administrator Sent: October 10 2019, 9:59:58 AM ET</p>	<p>Dear John,</p> <p>This is a sample response.</p> <p>Regards, FCC</p>

[← Back to Messages](#)
Respond To This Conversation

7. Bidding Functions

7.1. Layout and Actions of the Place Bids Screen

Users conduct all bidding activities through the Place Bids screen, which is accessed through a link on the navigation bar on the left. Figure 18, shown below, illustrates the layout of the Place Bids screen after round 1.

Figure 18: Layout of the Place Bids screen after initial round

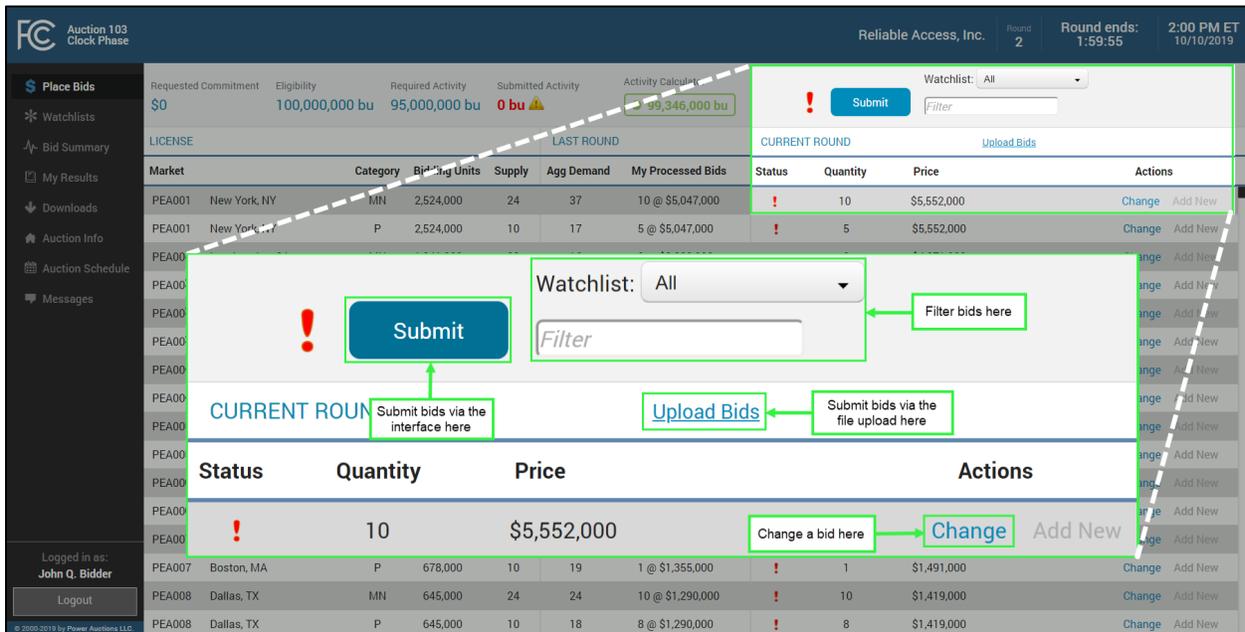
LICENSE					LAST ROUND		CURRENT ROUND			Upload Bids
Market	Category	Bidding Units	Supply	Agg Demand	My Processed Bids	Status	Quantity	Price	Actions	
PEA001	New York, NY	MN	2,524,000	24	37	10 @ \$5,047,000	!	10	\$5,552,000	Change Add New
PEA001	New York, NY	P	2,524,000	10	17	5 @ \$5,047,000	!	5	\$5,552,000	Change Add New
PEA002	Los Angeles, CA	MN	1,941,000	24	16	0 @ \$3,882,000	=	0	\$4,271,000	Change Add New
PEA002	Los Angeles, CA	P	1,941,000	10	3	2 @ \$3,882,000	!	2	\$4,271,000	Change Add New
PEA003	Chicago, IL	MN	937,000	24	45	14 @ \$1,873,000	!	14	\$2,061,000	Change Add New
PEA003	Chicago, IL	P	937,000	10	25	8 @ \$1,873,000	!	8	\$2,061,000	Change Add New
PEA004	San Francisco, CA	MN	903,000	24	30	2 @ \$1,806,000	!	2	\$1,987,000	Change Add New
PEA004	San Francisco, CA	P	903,000	10	15	4 @ \$1,806,000	!	4	\$1,987,000	Change Add New
PEA005	Baltimore, MD-Washingto...	MN	784,000	24	27	1 @ \$1,568,000	!	1	\$1,725,000	Change Add New
PEA005	Baltimore, MD-Washingto...	P	784,000	10	15	0 @ \$1,568,000	=	0	\$1,725,000	Change Add New
PEA006	Philadelphia, PA	MN	759,000	24	25	2 @ \$1,517,000	!	2	\$1,669,000	Change Add New
PEA006	Philadelphia, PA	P	759,000	10	15	5 @ \$1,517,000	!	5	\$1,669,000	Change Add New
PEA007	Boston, MA	MN	678,000	24	32	2 @ \$1,355,000	!	2	\$1,491,000	Change Add New
PEA007	Boston, MA	P	678,000	10	19	1 @ \$1,355,000	!	1	\$1,491,000	Change Add New
PEA008	Dallas, TX	MN	645,000	24	24	10 @ \$1,290,000	!	10	\$1,419,000	Change Add New
PEA008	Dallas, TX	P	645,000	10	18	8 @ \$1,290,000	!	8	\$1,419,000	Change Add New

The main portion of the screen consists of a table that lists products (e.g., PEA001 Category MN blocks). The Place Bids screen by default displays all the products on which you may bid based on the PEAs selected on the bidder’s Form 175.

The first five columns provide information about each product — specifically, its market number and name, license category, bidding units, and supply. The next two columns, which appear only after round 1, provide bid information for each product from the last round — specifically, the product’s aggregate demand, the bidder’s processed demand for the product, and the product’s posted price. The next three columns provide bid information for each product in the current round — specifically, the bidder’s bidding status for each product, the quantity of blocks the bidder is demanding, and the associated bid price. The bidding status indicator icons are discussed below. Also, in order to allow bidders to quickly differentiate between products in the same market, the background color of each row is color coded by product category.

The actions you can take on the Place Bids screen are highlighted in Figure 19 below.

Figure 19 : Actions on the Place Bids screen



The **Submit** button allows you to submit the bids you entered through the user interface. You can filter the displayed list of products by selecting a watchlist from the Watchlist drop-down or by entering criteria in the filter box. The Upload Bids link opens a dialogue box that allows you to upload a bid file rather than entering and submitting bids through the user interface (see Section 7.6). In the Actions column, you can click on the Change link to change a saved or submitted bid.

The top left portion of the Place Bids screen, the summary bar, shows summary information about the bidder’s submitted activity in the round, as well as its current eligibility and required activity (see Figure 20). Whenever you successfully submit bids, the bidding system updates the bidder’s requested commitment and submitted activity numbers on the screen.

If a bidder has an incentive payment and/or has claimed eligibility for a bidding credit, the bidding system, by default, shows the net requested commitment rather than the gross requested commitment. Additional information (including the bidder’s maximum incentive payment¹¹ and bidding credit discount) can be displayed by clicking on the magnifying glass icon (🔍) next to the net requested commitment amount (for more information, see Section 7.4, Figure 33 and Figure 34).

¹¹ Before the bids for a round have been processed, the maximum incentive payment is an estimate of the incentive payment calculated at the clock prices. The posted prices for the round may be lower.

Figure 20: Bidding summary information

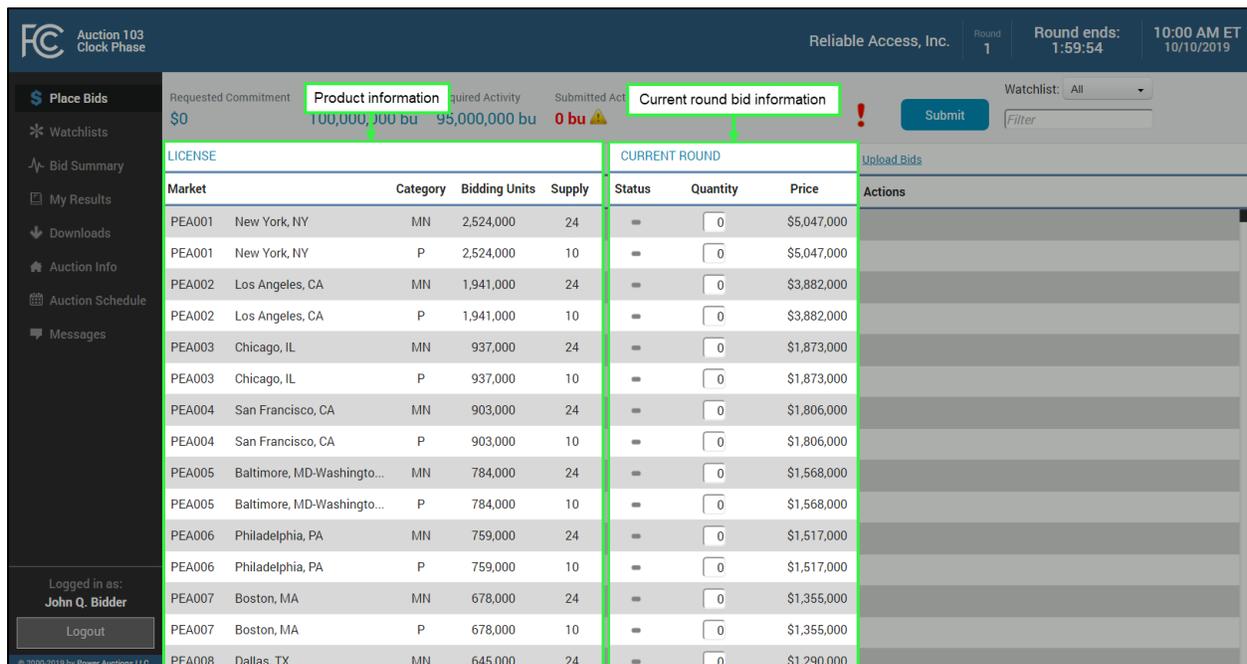


7.2. Placing Bids in the Initial Round via the User Interface

In the initial round of Auction 103, each bidder establishes its initial demand for products it wishes to bid on at the opening prices by entering a quantity for those products. You will only be able to bid for products in PEAs the bidder selected on its Form 175. The bidding screen for the initial round is slightly different than that for subsequent rounds, since no information about previous rounds is yet available.

For the initial round, the first five columns provide information about each product — specifically, its market number and name, license category, bidding units, and supply. The next three columns provide bid information for each product in the current round — specifically, the bidder's bidding status for each product, the quantity of blocks the bidder is demanding, and the associated bid price (see Figure 21).

Figure 21: Place Bids screen during initial round



7.2.1. Setting Initial Demands

In the initial round, you can set your initial demand for a quantity of blocks in a category in a PEA by entering a quantity of blocks, up to the supply of the product, in an input field on the Place Bids screen (see Figure 22). This value indicates the number of blocks the bidder demands at the opening price.

Figure 22: Entering demand in the initial round of the auction

The screenshot shows the 'Place Bids' screen for Auction 103 Clock Phase. At the top, it displays 'Reliable Access, Inc.', 'Round 1', 'Round ends: 1:59:54', and '10:00 AM ET 10/10/2019'. Below this, there are summary statistics: 'Requested Commitment \$0', 'Eligibility 100,000,000 bu', 'Required Activity 95,000,000 bu', and 'Submitted Activity 0 bu'. A 'Submit' button is visible. The main table is titled 'CURRENT ROUND' and has columns: Market, Category, Bidding Units, Supply, Status, Quantity, Price, and Actions. A callout box highlights the 'Status', 'Quantity', and 'Price' columns for a specific bid.

Market	Category	Bidding Units	Supply	Status	Quantity	Price	Actions
PEA001	New York, NY	MN	2,524,000	!	10	\$5,047,000	
PEA001	New York, NY	P	2,524,000	-	0	\$5,047,000	
PEA002	Los Angeles, CA	MN					
PEA002	Los Angeles, CA	P					
PEA003	Chicago, IL	MN					
PEA003	Chicago, IL	P					
PEA004	San Francisco, CA	MN	903,000		0	\$1,806,000	
PEA004	San Francisco, CA	P	903,000		0	\$1,806,000	

Only bids that have been submitted will be processed by the bidding system. Once you have entered quantities for all products on which you wish to bid, you must click **Submit** to submit all of the bids. After you enter a quantity and before you click **Submit**, the bidding system will display a red exclamation mark (!) in the status column to indicate an unsubmitted bid. After you click **Submit**, the bidding system will display a green checkmark (✓) in the status column to indicate that the bid has been successfully submitted (see Figure 23). For each product for which a bid has not been entered or submitted, the bidding system displays a gray dash (-) in the status column.

After submitting your bids, the bidding system also updates the requested commitment and submitted activity values displayed at the top of the screen to reflect the prices and bidding units associated with the bidder's total demand.

Figure 23: Summary of the submitted bids

FC Auction 103 Clock Phase		Reliable Access, Inc.		Round 1	Round ends: 1:59:54	10:00 AM ET 10/10/2019	
Requested Commitment	\$198,645,000	Eligibility	100,000,000 bu	Required Activity	95,000,000 bu	Submitted Activity	99,346,000 bu
<div style="float: right;"> Watchlist: All <input type="text" value="Filter"/> </div> <div style="text-align: center;"> <input type="button" value="Submit"/> </div>							
LICENSE				CURRENT ROUND			Unsubmit All
Market	Category	Bidding Units	Supply	Status	Quantity	Price	Actions
PEA001 New York, NY	MN	2,524,000	24	✓	10	\$5,047,000	Change
PEA001 New York, NY	P	2,524,000	10	✓	5	\$5,047,000	Change
PEA002 Los Angeles, CA	MN	1,941,000	24	—	<input type="text" value="0"/>	\$3,882,000	
PEA002 Los Angeles, CA	P	1,941,000	10	✓	2	\$3,882,000	Change
PEA003 Chicago, IL	MN	937,000	24	✓	14	\$1,873,000	Change
PEA003 Chicago, IL	P	937,000	10	✓	8	\$1,873,000	Change
PEA004 San Francisco, CA	MN	903,000	24	✓	2	\$1,806,000	Change
PEA004 San Francisco, CA	P	903,000	10	✓	4	\$1,806,000	Change
PEA005 Baltimore, MD-Washingto...	MN	784,000	24	✓	1	\$1,568,000	Change
PEA005 Baltimore, MD-Washingto...	P	784,000	10	—	<input type="text" value="0"/>	\$1,568,000	
PEA006 Philadelphia, PA	MN	759,000	24	✓	2	\$1,517,000	Change
PEA006 Philadelphia, PA	P	759,000	10	✓	5	\$1,517,000	Change
PEA007 Boston, MA	MN	678,000	24	✓	2	\$1,355,000	Change
PEA007 Boston, MA	P	678,000	10	✓	1	\$1,355,000	Change
PEA008 Dallas, TX	MN	645,000	24	✓	10	\$1,290,000	Change

The bidding system requires bids to meet certain bidding requirements during bid entry in order to be successfully submitted. For example, the bidding system will display an error message if you attempt to enter bids that exceed the bidder’s eligibility, or to enter a quantity that exceeds a product’s supply. You may click [Unsubmit All](#) above the Actions column to quickly remove all submitted bids, returning the Place Bids screen to its state at the beginning of the round.

7.2.2. Changing Submitted Bids

As long as the initial round remains open, you may modify any submitted bids by clicking [Change](#) in the Actions column for a product. After you click [Change](#), the quantity input field can be edited, and the bidding system will remove the green checkmark (✓) next to the bid to indicate that any modified quantity has not yet been submitted. You can then enter a new quantity for the product. If you would like to delete a bid, change the requested quantity to 0.

Once you have finished making changes, you must click to submit all new bids. Otherwise, the previously submitted bids will remain unchanged in the bidding system.

7.2.3. Unsubmitted Bids

During a round, the bidding system will display a warning popup message if you try to navigate away from the Place Bids screen after entering a quantity for a product without submitting the bid. If you then choose to leave the screen, any bids that you entered but did not submit will be lost.¹²

7.3. Placing Bids after the Initial Round via the User Interface

At the start of each round after the initial round, the Place Bids screen will display a default set of saved simple bids corresponding to the bidder’s previous processed demands at the new round’s clock price. The bidder can quickly bid to maintain its demand by submitting its default bids. Alternatively, a bidder can change its bids before submitting to increase or decrease demand for a product. A bidder may also place switch bids and enter intra-round bid amounts.

7.3.1. Default Bids

At the start of a round, the set of default bids shown on the Place Bids screen are saved by the bidding system but not submitted (see Figure 24). Accordingly, for each saved bid, the bidding system displays a red exclamation mark (!) in the status column to indicate that a bid has been saved but not yet submitted. For each product for which no bid is submitted and the bidder does not have processed demand, the bidding system displays a gray dash (-) in the status column.

Figure 24: Place Bids screen with unsubmitted default bids

Market		Category	Bidding Units	Supply	Agg Demand	My Processed Bids	Status	Quantity	Price	Actions
PEA001	New York, NY	MN	2,524,000	24	37	10 @ \$5,047,000	!	10	\$5,552,000	Change Add New
PEA001	New York, NY	P	2,524,000	10	17	5 @ \$5,047,000	!	5	\$5,552,000	Change Add New
PEA002	Los Angeles, CA	MN	1,941,000	24	16	0 @ \$3,882,000	-	0	\$4,271,000	Change Add New
PEA002	Los Angeles, CA	P	1,941,000	10	3	2 @ \$3,882,000	!	2	\$4,271,000	Change Add New
PEA003	Chicago, IL	MN	937,000	24	45	14 @ \$1,873,000	!	14	\$2,061,000	Change Add New
PEA003	Chicago, IL	P	937,000	10	25	8 @ \$1,873,000	!	8	\$2,061,000	Change Add New
PEA004	San Francisco, CA	MN	903,000	24	30	2 @ \$1,806,000	!	2	\$1,987,000	Change Add New
PEA004	San Francisco, CA	P	903,000	10	15	4 @ \$1,806,000	!	4	\$1,987,000	Change Add New
PEA005	Baltimore, MD-Washingto...	MN	784,000	24	27	1 @ \$1,568,000	!	1	\$1,725,000	Change Add New
PEA005	Baltimore, MD-Washingto...	P	784,000	10	15	0 @ \$1,568,000	-	0	\$1,725,000	Change Add New
PEA006	Philadelphia, PA	MN	759,000	24	25	2 @ \$1,517,000	!	2	\$1,669,000	Change Add New
PEA006	Philadelphia, PA	P	759,000	10	15	5 @ \$1,517,000	!	5	\$1,669,000	Change Add New
PEA007	Boston, MA	MN	678,000	24	32	2 @ \$1,355,000	!	2	\$1,491,000	Change Add New
PEA007	Boston, MA	P	678,000	10	19	1 @ \$1,355,000	!	1	\$1,491,000	Change Add New
PEA008	Dallas, TX	MN	645,000	24	24	10 @ \$1,290,000	!	10	\$1,419,000	Change Add New
PEA008	Dallas, TX	P	645,000	10	18	8 @ \$1,290,000	!	8	\$1,419,000	Change Add New

¹² If you have selected a watchlist other than the default “All” watchlist (see Section 7.5) before submitting your bids, clicking on the **Submit** button only submits bids that are part of that watchlist. If you have saved bids that are not part of that watchlist, the bidding system will display a red exclamation mark next to the **Submit** button.

7.3.2. Submitting Saved Bids

If you find the default bids acceptable, you can click on the **Submit** button to submit bids to maintain the bidder’s previous round’s processed demand for each product at the new clock prices. Alternatively, you can change and save new bids (see Section 7.3.3 below), and once finished, click on the **Submit** button to submit your saved bids to the bidding system.

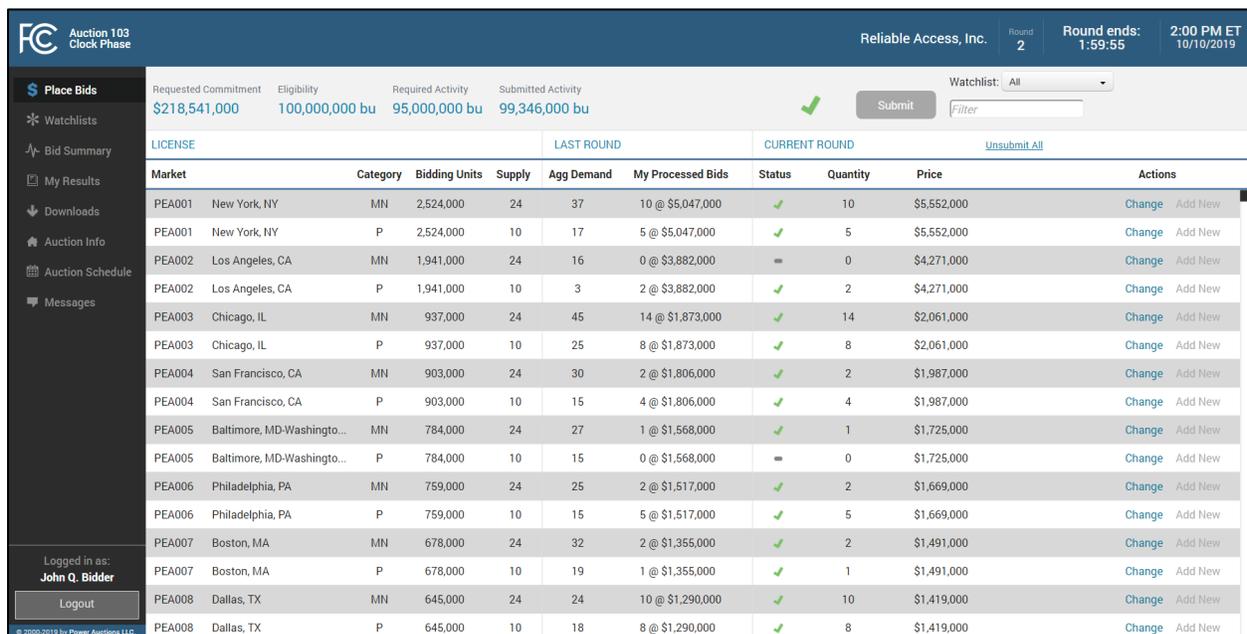
If you have selected a watchlist other than the default “All” watchlist (see Section 7.5), clicking on the **Submit** button submits only saved bids that are part of that watchlist. If you have saved bids that are not part of that watchlist, those bids will remain unsubmitted.

 Clicking on the **Submit** button submits all saved bids for the selected watchlist at once, even if you have filtered the watchlist to display only a subset of the products in the watchlist. Please make sure to review all of your saved bids before submitting.

As in the initial round, once you have submitted a bid for a product, the bidding system will display a green checkmark (✓) in the status column to indicate that you have successfully submitted the bid (see Figure 25). After submitting your bids, the bidding system also updates the requested commitment and submitted activity values displayed at the top of the screen to reflect the prices and bidding units associated with the bidder’s total demand.

Additionally, if you have submitted all of your saved bids, the bidding system displays a large green checkmark (✓) next to the **Submit** button to indicate that all bids have been submitted.

Figure 25: Place Bids screen with submitted default bids



Requested Commitment		Eligibility	Required Activity	Submitted Activity			Watchlist: All			
\$218,541,000		100,000,000 bu	95,000,000 bu	99,346,000 bu	✓		Submit <input type="text" value="Filter"/>			
LICENSE				LAST ROUND	CURRENT ROUND					
Market	Category	Bidding Units	Supply	Agg Demand	My Processed Bids	Status	Quantity	Price	Actions	
PEA001	New York, NY	MN	2,524,000	24	37	10 @ \$5,047,000	✓	10	\$5,552,000	Change Add New
PEA001	New York, NY	P	2,524,000	10	17	5 @ \$5,047,000	✓	5	\$5,552,000	Change Add New
PEA002	Los Angeles, CA	MN	1,941,000	24	16	0 @ \$3,882,000	—	0	\$4,271,000	Change Add New
PEA002	Los Angeles, CA	P	1,941,000	10	3	2 @ \$3,882,000	✓	2	\$4,271,000	Change Add New
PEA003	Chicago, IL	MN	937,000	24	45	14 @ \$1,873,000	✓	14	\$2,061,000	Change Add New
PEA003	Chicago, IL	P	937,000	10	25	8 @ \$1,873,000	✓	8	\$2,061,000	Change Add New
PEA004	San Francisco, CA	MN	903,000	24	30	2 @ \$1,806,000	✓	2	\$1,987,000	Change Add New
PEA004	San Francisco, CA	P	903,000	10	15	4 @ \$1,806,000	✓	4	\$1,987,000	Change Add New
PEA005	Baltimore, MD-Washingto...	MN	784,000	24	27	1 @ \$1,568,000	✓	1	\$1,725,000	Change Add New
PEA005	Baltimore, MD-Washingto...	P	784,000	10	15	0 @ \$1,568,000	—	0	\$1,725,000	Change Add New
PEA006	Philadelphia, PA	MN	759,000	24	25	2 @ \$1,517,000	✓	2	\$1,669,000	Change Add New
PEA006	Philadelphia, PA	P	759,000	10	15	5 @ \$1,517,000	✓	5	\$1,669,000	Change Add New
PEA007	Boston, MA	MN	678,000	24	32	2 @ \$1,355,000	✓	2	\$1,491,000	Change Add New
PEA007	Boston, MA	P	678,000	10	19	1 @ \$1,355,000	✓	1	\$1,491,000	Change Add New
PEA008	Dallas, TX	MN	645,000	24	24	10 @ \$1,290,000	✓	10	\$1,419,000	Change Add New
PEA008	Dallas, TX	P	645,000	10	18	8 @ \$1,290,000	✓	8	\$1,419,000	Change Add New

Some checks to validate your bids are not performed until you press the **Submit** button. If the system finds any errors after you press the **Submit** button, you will need to fix them.

7.3.3. Changing Saved or Submitted Bids

As long as the round remains open, you may modify any saved or submitted bids by clicking Change in the Actions column for a product. While editing a bid, the **Submit** button is disabled until you either click Save to save the bid or Cancel to discard your changes.

You may click Unsubmit All above the Actions column to remove all submitted bids at once, returning the Place Bids screen to its state at the beginning of the round.

7.3.3.1. Simple Bids

You will be able to edit the quantity and price fields after you click Change to edit a saved bid. While editing the bid, you can specify a new quantity and, if desired, an intra-round price (see Figure 26).

An intra-round bid price may be any price that is greater than or equal to the posted price from the previous round and less than or equal to the clock price for the current round. A bid at an intra-round price indicates that the bidder's demand for that product changes at that price. The bidding system will display the valid range of prices for a product when you hover the cursor over the price field.

Figure 26: Changing a simple bid

The screenshot shows the Auction 103 Clock Phase interface. At the top, it displays 'Reliable Access, Inc.', 'Round 2', 'Round ends: 1:59:55', and '2:00 PM ET 10/10/2019'. Below this is a summary bar with 'Requested Commitment \$218,541,000', 'Eligibility 100,000,000 bu', 'Required Activity 95,000,000 bu', and 'Submitted Activity 99,346,000 bu'. A 'Submit' button and a 'Filter' input are also present. The main table has columns for 'Market', 'Category', 'Bidding Units', 'Supply', 'Agg Demand', 'My Processed Bids', 'Status', 'Quantity', 'Price', and 'Actions'. A bid for 'PEA001 New York, NY' is highlighted, and a pop-up form is open over it, allowing the user to edit the 'Quantity' (set to 10) and 'Price' (set to 5,552,000). The 'Actions' column for this bid includes 'Advanced Options', 'Save', and 'Cancel'.

Market	Category	Bidding Units	Supply	Agg Demand	My Processed Bids	Status	Quantity	Price	Actions
PEA001	New York, NY	MN	2,524,000	24	37	10 @ \$5,552,000	10	5,552,000	Advanced Options Save Cancel Add New
PEA001	New York, NY	P	2,524,000	10	17	5 @ \$5,047,000	5	\$5,552,000	Change Add New
PEA002	Los Angeles, CA	MN	1,941,000	24	28	0 @ \$3,882,000	0	\$4,271,000	Change Add New
PEA002	Los Angeles, CA	P	1,941,000	24	28	0 @ \$3,882,000	0	\$4,271,000	Change Add New
PEA003	Chicago, IL	MN	937,000	10	15	4 @ \$1,806,000	4	\$1,987,000	Change Add New
PEA003	Chicago, IL	P	937,000	10	15	4 @ \$1,806,000	4	\$1,987,000	Change Add New
PEA004	San Francisco, CA	MN	903,000	10	15	4 @ \$1,806,000	4	\$1,987,000	Change Add New
PEA004	San Francisco, CA	P	903,000	10	15	4 @ \$1,806,000	4	\$1,987,000	Change Add New

In order to replace a simple bid with a switch bid, you can click on Advanced Options. The switch option will be grayed out if it is not available based on the product's supply and your demand for it (for more information, see Section 7.3.3.2 below).

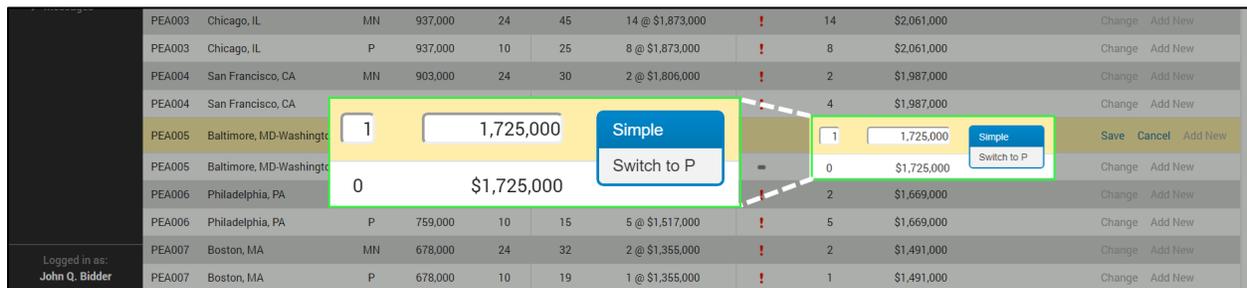
When you have finished, you must click Save to save the bid, or you may click Cancel to discard your changes. After you save the bid, the bidding system will display a red exclamation mark (!) in the status column to indicate that a bid has been saved but not yet submitted.

 Saving a bid does not submit the bid. You must click **Submit** to submit any saved bids.

7.3.3.2. Switch Bids

A switch bid is a request to move demand for a given number of blocks in a given PEA from one category to another category. The switch bid option is displayed when you click Advanced Options after you click Change to edit a saved or submitted bid. The switch bid option may be selected when a switch bid is allowed based on your existing bids; it will be grayed out when it is not available.

Figure 27: Selecting bid types from the advanced bid options menu



PEA003	Chicago, IL	MN	937,000	24	45	14 @ \$1,873,000	!	14	\$2,061,000	Change	Add New	
PEA003	Chicago, IL	P	937,000	10	25	8 @ \$1,873,000	!	8	\$2,061,000	Change	Add New	
PEA004	San Francisco, CA	MN	903,000	24	30	2 @ \$1,806,000	!	2	\$1,987,000	Change	Add New	
PEA004	San Francisco, CA							4	\$1,987,000	Change	Add New	
PEA005	Baltimore, MD-Washingt					1		1,725,000	Simple	Save	Cancel	Add New
PEA005	Baltimore, MD-Washingt					0		\$1,725,000	Switch to P			
PEA006	Philadelphia, PA							2	\$1,669,000	Change	Add New	
PEA006	Philadelphia, PA	P	759,000	10	15	5 @ \$1,517,000	!	5	\$1,669,000	Change	Add New	
PEA007	Boston, MA	MN	678,000	24	32	2 @ \$1,355,000	!	2	\$1,491,000	Change	Add New	
PEA007	Boston, MA	P	678,000	10	19	1 @ \$1,355,000	!	1	\$1,491,000	Change	Add New	

 Switch bid options may not be available for a particular product depending on its supply and your demand.

After selecting “Switch to MN” or “Switch to P” from Advanced Options, the quantity input field becomes a quantity drop-down menu for the “switch from” category, which includes only valid quantities, and the “switch to” category is displayed with the resulting quantity (see Figure 28).

To enter a switch bid, select a new quantity for the product you are switching from and a price at which you would like the switch to occur. The price may be an intra-round price. The quantity that you select for the “switch from” product indicates the quantity that you would like to have of that product after bid processing, not the number of blocks you wish to move to the “switch to” category. The quantity drop-down displays the valid quantities from which you can select. Once you have specified the price and quantity, the screen shows the price (intra-round or clock) at which you would like the switch to occur.

bids must either all decrease or all increase in quantity as the price increases, must be of the same bid type (i.e., simple or switch), and must be for different quantities at different prices.¹³

For a simple bid, after you click [Add New](#), you can specify a new quantity and price for the additional bid (see Figure 30).

Figure 30: Enter new bids as intra-round simple bids

The screenshot shows the Auction 103 Clock Phase bidding interface. The top navigation bar includes the logo, auction name, and user information. The main area displays a table of bids with columns for Market, Category, Bidding Units, Supply, Agg Demand, My Processed Bids, Status, Quantity, Price, and Actions. A modal form is open for editing a bid, showing fields for quantity (2) and price (\$1,655,000). The form includes 'Save', 'Cancel', and 'Delete' buttons. A dashed white line indicates the flow from the 'Add New' link in the table to the modal form.

Market	Category	Bidding Units	Supply	Agg Demand	My Processed Bids	Status	Quantity	Price	Actions	
PEA001	New York, NY	MN	2,524,000	24	37	10 @ \$5,047,000	!	10	\$5,552,000	Change Add New
PEA001	New York, NY	P	2,524,000	10	17	5 @ \$5,047,000	!	5	\$5,552,000	Change Add New
PEA001	New York, NY	MN	2,524,000	24	37	1 @ \$1,568,000	!	1	\$1,568,000	Change Add New
PEA001	New York, NY	MN	2,524,000	24	37	2 @ \$1,655,000	!	2	\$1,655,000	Change Add New
PEA004	San Francisco, CA	MN	903,000	24	30	2 @ \$1,806,000	!	2	\$1,987,000	Change Add New
PEA004	San Francisco, CA	P	903,000	10	15	4 @ \$1,806,000	!	2	\$1,987,000	Change Add New
PEA005	Baltimore, MD-Washingto...	MN	784,000	24	27	1 @ \$1,568,000	!	2	\$1,655,000	Change Add New
PEA005	Baltimore, MD-Washingto...	MN	784,000	24	27	2 @ \$1,655,000	!	2	\$1,655,000	Change Add New
PEA005	Baltimore, MD-Washingto...	P	784,000	10	15	0 @ \$1,568,000	!	0	\$1,725,000	Change Add New
PEA006	Philadelphia, PA	MN	759,000	24	25	2 @ \$1,517,000	!	2	\$1,669,000	Change Add New
PEA006	Philadelphia, PA	P	759,000	10	15	5 @ \$1,517,000	!	5	\$1,669,000	Change Add New
PEA007	Boston, MA	MN	678,000	24	32	2 @ \$1,355,000	!	2	\$1,491,000	Change Add New
PEA007	Boston, MA	P	678,000	10	19	1 @ \$1,355,000	!	1	\$1,491,000	Change Add New

For a switch bid, after you click [Add New](#), you may specify a new switch bid in the same way you entered the initial switch bid (see Section 7.3.3.2).

Once you have finished entering the quantity and price for your intra-round bid, you must click [Save](#) in order to save the new bid, or you may alternatively click [Cancel](#) to remove the intra-round bid without saving.

You may repeat these steps to enter and save additional intra-round bids. When multiple intra-round bids exist for a product, you may delete an intra-round bid by clicking [Delete](#) in the Actions column (see Figure 31). After clicking [Delete](#), you may then undelete that intra-round bid by clicking on [Undelete](#) in the Actions column.

¹³ The [Add New](#) link is disabled if the user cannot submit a bid for that product — e.g., if the bidder already has an intra-round bid requesting a reduction from the previous round's processed demand of 1 block to 0 blocks.

Figure 31: Delete additional intra-round bids

Market	Category	Bidding Units	Supply	Agg Demand	My Processed Bids	Status	Quantity	Price	Actions	
PEA004	San Francisco, CA	MN	903,000	24	30	2 @ \$1,806,000	!	2	\$1,987,000	Change Add New
PEA004	San Francisco, CA	P	903,000	10	15	4 @ \$1,806,000	!	2	\$1,987,000	Change Add New
PEA005	Baltimore, MD-Washingto...	MN	784,000	24	27	1 @ \$1,568,000	!	2	\$1,655,000	Change Add New
PEA005	Baltimore, MD-Washingto...	MN	784,000	24	27	3 @ \$1,725,000	!	3	\$1,725,000	Change Delete
PEA005	Baltimore, MD-Washingto...	P	784,000	10	15	0 @ \$1,568,000	!	0	\$1,725,000	Change Add New
PEA006	Philadelphia, PA	MN	759,000	24	25	2 @ \$1,517,000	!	2	\$1,669,000	Change Add New
PEA006	Philadelphia, PA	P	759,000	10	15	5 @ \$1,517,000	!	5	\$1,669,000	Change Add New
PEA006	Philadelphia, PA	P	759,000	10	15	1 @ \$1,568,000	!	2	\$1,655,000	Change Add New
PEA006	Philadelphia, PA	P	759,000	10	15	3 @ \$1,725,000	!	3	\$1,725,000	Change Delete
PEA008	Dallas, TX	P	645,000	10	18	8 @ \$1,290,000	!	8	\$1,419,000	Change Add New
PEA009	Miami, FL	MN	629,000	24	22	6 @ \$1,258,000	!	6	\$1,384,000	Change Add New
PEA009	Miami, FL	P	629,000	10	27	10 @ \$1,258,000	!	10	\$1,384,000	Change Add New
PEA010	Houston, TX	MN	589,000	24	13	2 @ \$1,178,000	!	2	\$1,296,000	Change Add New
PEA010	Houston, TX	P	589,000	10	19	1 @ \$1,178,000	!	1	\$1,296,000	Change Add New

After you save a new intra-round bid, the bidding system will display a red exclamation mark (!) in the status column to indicate that the bid has been saved but not yet submitted.

 Saving a bid does not submit the bid. You must click **Submit** to submit any saved bids.

7.3.5. Unsubmitted Bids

If you try to navigate away from the Place Bids screen with bids that have been saved but have not yet been submitted, the bidding system displays a large red exclamation mark (!) next to the **Submit** button to indicate that at least one bid has been saved but not submitted.

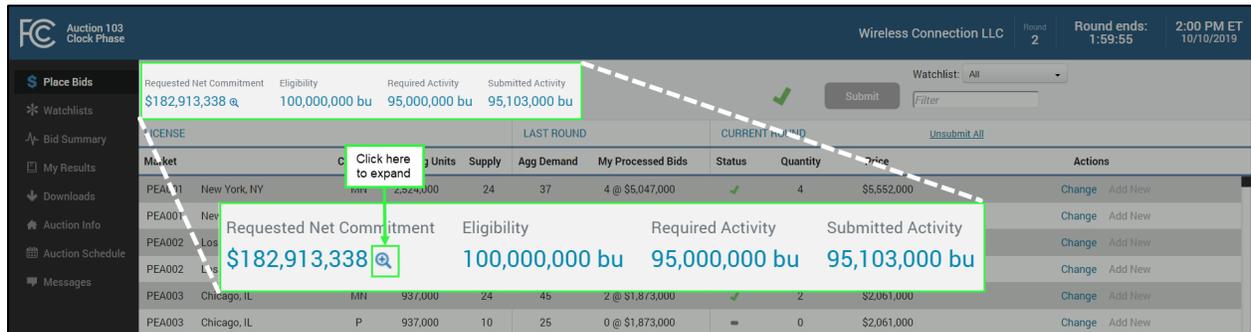
If a bidder fails to submit a bid for a product for which it has processed demand, the bidding system will consider that to be a “missing bid,” which will be processed as a simple bid request for a quantity of zero at the previous round’s posted price. A missing bid will not necessarily reduce the bidder’s processed demand to zero for the product after the round, however. The bidding system will apply as much of the missing bid reduction request as it can, subject to the overall restriction that aggregate demand cannot fall below supply of a given product.

7.4. Monitoring Commitment and Activity

For each round, the bidding system calculates a bidder’s eligibility and required activity based upon its processed activity from the previous round (or, for the initial round, based upon its upfront payments) and the activity requirement for that round. The bidding system displays these values in addition to the financial commitment and activity associated with the bidder’s submitted bids. Every time you submit bids, the bidding system updates your requested commitment and submitted activity (see Figure 32).

Once you have submitted bids in a round (and before the round has closed), the values shown in the summary bar assume that your submitted bids will be applied by the bidding system during bid processing after the round. Your processed activity for the round may be less or more than your submitted activity if the bidding system cannot apply all of your bids in full.

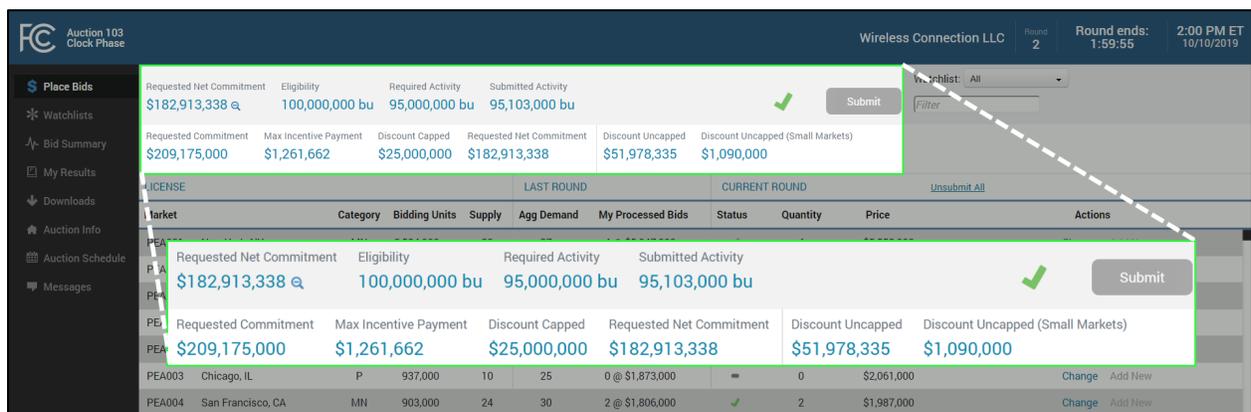
Figure 32: Summary bar for bidders



If a bidder has an incentive payment and/or has claimed eligibility for a bidding credit, the bidding system, by default, displays the requested net commitment (the requested commitment less any incentive payment and any bidding credit discount) associated with your submitted bids.

If you have a small business bidding credit, you may also view the gross requested commitment, the small business bidding credit discount (capped and uncapped), and the uncapped discount for small markets by clicking on the magnifying glass icon (🔍) next to the requested net commitment. If you have an incentive payment, you will also see your maximum incentive payment, as seen in Figure 33.

Figure 33: Expanded summary bar for incumbent bidder with small business bidding credit



If you have a rural service provider bidding credit, then clicking on the magnifying glass icon (🔍) next to the requested net commitment will show your gross requested commitment and your rural service provider bidding credit discount (capped and uncapped), as seen in Figure 34.

Figure 34: Expanded summary bar for bidder with rural service provider bidding credit

Requested Net Commitment		Eligibility	Required Activity	Submitted Activity
\$202,438,000		100,000,000 bu	95,000,000 bu	96,572,000 bu
Requested Commitment		Discount Capped	Requested Net Commitment	Discount Uncapped
\$212,438,000		\$10,000,000	\$202,438,000	\$31,865,700

Market	Category	Bidding Units	Supply	Aqg Demand	My Processed Bids	Status	Quantity	Price	Actions
PEA001	New York, NY	Requested Net Commitment	Eligibility	Required Activity	Submitted Activity				Change Add New
PEA001	New York, NY	\$202,438,000	100,000,000 bu	95,000,000 bu	96,572,000 bu				Change Add New
PEA003	Chicago, IL	Requested Commitment	Discount Capped	Requested Net Commitment	Discount Uncapped				Change Add New
PEA003	Chicago, IL	\$212,438,000	\$10,000,000	\$202,438,000	\$31,865,700				Change Add New
PEA004	San Francisco, CA	P	903,000	10	15	8 @ \$1,806,000	8	\$1,987,000	Change Add New

If the bidder’s eligibility is reduced to zero after bid processing, you cannot place bids in subsequent rounds, and the bidding system will display a message indicating that while you may not bid again, you may still continue to access the bidding system for the clock phase.

7.4.1. Activity Calculator

In all rounds after the initial round of the auction, the bidding system displays an activity calculator that reflects the activity that would correspond to your saved bids and any submitted bids for which you have not saved any changes (see Figure 35). This calculator allows you to determine, before you submit your saved bids, whether your saved bids would satisfy the activity requirement if they were fully applied by the bidding system or whether they would exceed your eligibility. The activity calculator is red when your activity is less than the required activity or greater than your eligibility to alert you that you may need to adjust your bids, and it turns green when your activity is between those values.

As you modify bids, the calculator updates to reflect the sum of your saved but not yet submitted bids and your submitted bids. This is in contrast to the submitted activity value that is displayed in the summary bar, which only reflects bids actually submitted to the bidding system. The activity calculator is shown only if you have saved but not submitted bids.

The activity calculator value reflects your activity as if all saved and submitted bids were to be fully applied during bid processing.

Figure 35: Activity calculator

The screenshot shows the 'Activity Calculator' section of the bidding system. At the top, it displays 'Requested Commitment: \$0', 'Eligibility: 100,000,000 bu', 'Required Activity: 95,000,000 bu', and 'Submitted Activity: 0 bu'. The 'Activity Calculator' itself shows a value of 89,976,000 bu. Below this is a table with columns for Market, Category, Bidding Units, Supply, Agg. Demand, My Processed Bids, Status, Quantity, Price, and Actions. The table lists several entries for markets like New York, NY, Los Angeles, CA, and Chicago, IL.

Market	Category	Bidding Units	Supply	Agg. Demand	My Processed Bids	Status	Quantity	Price	Actions
PEA001	New York, NY	MN	2,524,000	24			10	\$5,552,000	Change Add New
PEA001	New York, NY	P	2,524,000	10			5	\$5,552,000	Change Add New
PEA002	Los Angeles, CA	MN	1,941,000	24			0	\$4,271,000	Change Add New
PEA002	Los Angeles, CA	P	1,941,000	10	3	2 @ \$3,882,000	2	\$4,271,000	Change Add New
PEA003	Chicago, IL	MN	937,000	24	45	14 @ \$1,873,000	4	\$2,061,000	Change Add New
PEA003	Chicago, IL	P	937,000	10	25	8 @ \$1,873,000	8	\$2,061,000	Change Add New



Your processed activity may be less than that indicated during the round in the summary bar and the activity calculator if all of your bids cannot be applied in full by the bidding system.

7.5. Watchlists and Filtering

Watchlists and filters make it easier to bid for a subset of products through the user interface. In addition to the watchlist of “All” of the bidder’s products, the bidding system provides a number of smaller system-created watchlists, and bidders may create up to ten additional custom watchlists. Only the products in the selected watchlist are displayed on the Place Bids screen. When bids are submitted when a watchlist other than the set of “All” products is selected, only saved bids for products in that watchlist are submitted — other saved bids for products not included in the watchlist are not submitted.

In addition to watchlists, you can further limit the products displayed on the Place Bids screen by entering display criteria into the filter on the Place Bids screen. Filtering, however, only limits the display of products; filtering does not affect the submission of bids. If bids are submitted when a filter is applied, all saved bids in the selected watchlist are submitted, not just those that are displayed with the filter.

7.5.1. Selecting and Submitting Bids Using Watchlists

By default, the bidding system displays the bidding system-defined “All” watchlist on the Place Bids screen. If you want to select a different watchlist, you may select it from the Watchlist drop-down menu (see Figure 36).

Figure 36: Watchlist drop-down menu

The screenshot shows the Auction 103 Clock Phase Bidding System interface. At the top, it displays 'Reliable Access, Inc.', 'Round 2', and 'Round ends: 1:59:55' on '10/10/2019' at '2:00 PM ET'. The main table lists various markets with columns for Market, Category, Bidding Units, Supply, Agg Demand, My Processed Bids, Price, and Actions. A watchlist drop-down menu is open, showing options: All, MN, P, Excess Demand, No Excess Demand, Non-zero Bids, Unsubmitted, California, and High demand P. The user is logged in as 'John Q. Bidder'.

Market	Category	Bidding Units	Supply	Agg Demand	My Processed Bids	Price	Actions
PEA001	New York, NY	MN	2,524,000	24	37	10 @ \$5,047,000	Change Add New
PEA001	New York, NY	P	2,524,000	10	17	5 @ \$5,047,000	Change Add New
PEA002	Los Angeles, CA	MN	1,941,000	24	16	0 @ \$3,882,000	Change Add New
PEA002	Los Angeles, CA	P	1,941,000	10	3	2 @ \$3,882,000	Change Add New
PEA003	Chicago, IL	MN	937,000	24	45	14 @ \$1,873,000	Change Add New
PEA003	Chicago, IL	P	937,000	10	25	8 @ \$1,873,000	Change Add New
PEA004	San Francisco, CA	MN	903,000	24	30	2 @ \$1,806,000	Change Add New
PEA004	San Francisco, CA	P	903,000	10	15	4 @ \$1,806,000	Change Add New
PEA005	Baltimore, MD-Washingto...	MN	784,000	24	27	1 @ \$1,568,000	Change Add New
PEA005	Baltimore, MD-Washingto...	P	784,000	10	15	0 @ \$1,568,000	Change Add New
PEA006	Philadelphia, PA	MN	759,000	24	25	2 @ \$1,517,000	Change Add New
PEA006	Philadelphia, PA	P	759,000	10	15	5 @ \$1,517,000	Change Add New
PEA007	Boston, MA	MN	678,000	24	32	2 @ \$1,355,000	Change Add New
PEA007	Boston, MA	P	678,000	10	19	1 @ \$1,355,000	Change Add New
PEA008	Dallas, TX	MN	645,000	24	24	10 @ \$1,290,000	Change Add New
PEA008	Dallas, TX	P	645,000	10	18	8 @ \$1,290,000	Change Add New

The bidding system displays all of your available watchlists in the watchlist drop-down menu, with system-defined watchlists at the top, followed by custom watchlists below the dotted line.

To display only the products corresponding to a watchlist, select the watchlist name from the watchlist drop-down menu. When using a watchlist to bid, the **Submit** button only submits saved bids for the products that are included in that watchlist. If a bid has been previously saved but not submitted for a product that is not part of the selected watchlist, the saved bid will not be submitted.

If you have an unsubmitted bid, the bidding system will display a red exclamation mark (!) next to the **Submit** button to indicate that at least one bid has been saved but not submitted (see Figure 37).

Figure 37: Bid for watchlist products

The screenshot shows the 'Place Bids' interface for Auction 103. At the top, it displays 'Reliable Access, Inc.', 'Round 2', and 'Round ends: 1:59:55 2:00 PM ET 10/10/2019'. Below this, there are summary statistics: Requested Commitment (\$218,541,000), Eligibility (100,000,000 bu), Required Activity (95,000,000 bu), Submitted Activity (99,346,000 bu), and Activity Calculator (94,514,000 bu). A 'Submit' button is visible next to a red exclamation mark icon. A dropdown menu for 'Watchlist' is set to 'No Excess Demand'. Below these elements is a table with columns: Market, License, Category, Bidding Units, Supply, Agg Demand, My Processed Bids, Status, Quantity, Price, and Actions. The table lists 16 products (PEA117 to PEA124) with various details. Each product's 'Status' column contains a red exclamation mark (!), indicating that the bidder has not submitted a bid for that product. The 'Actions' column for each product includes 'Change' and 'Add New' links.

In the example above, the bidder has unsubmitted bids for all products in the “No Excess Demand” watchlist, as indicated by the red exclamation mark (!) displayed in the Status column for each product and next to the **Submit** button.

7.5.2. System-Defined Watchlists

The bidding system includes a number of pre-defined watchlists, some of which are only available after the initial round (see Table 3).

Table 3: System-defined watchlists

Watchlists	Descriptions	Availability
All	All products the bidder is eligible to bid on based on the PEAs it selected on its Form 175	Always
MN	All of the bidder’s MN products across all its eligible PEAs	Always
P	All of the bidder’s P products across all its eligible PEAs	Always
Excess Demand	All of the bidder’s products for which aggregate demand in the previous round was greater than the supply of the product	After the initial round
No Excess Demand	All of the bidder’s products for which aggregate demand in the previous round was less than or equal to the supply of the product	After the initial round
Non-zero Bids	All of the bidder’s products for which the bidder has placed a bid for a quantity greater than zero in the current round and products with a quantity greater than 0 in the My Processed Bids column	After the initial round

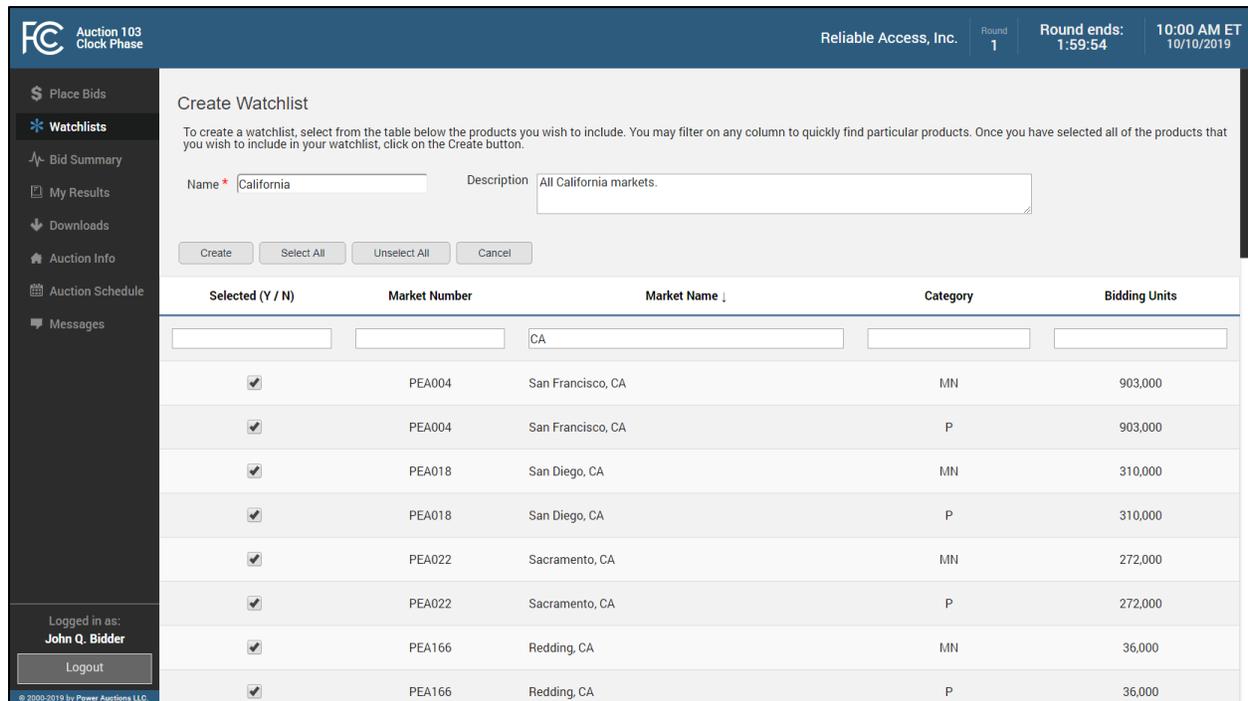
Watchlists	Descriptions	Availability
Unsubmitted	All of the bidder’s products with saved bids that have not been submitted	Always

7.5.3. Creating Custom Watchlists

You may create and view custom watchlists via the Watchlists screen as soon as the bidding system is available. While each authorized bidder may create a watchlist, all watchlists are shared among the authorized bidders for a bidder. Additionally, there is a limit of ten custom watchlists at one time for a bidder.

From the Watchlists screen, you may create a new custom watchlist by clicking on the **Create** button to access the Create Watchlist screen (see Figure 38). On this screen, you can define a watchlist by entering a name and an optional description in the respective input fields, then selecting the checkbox next to the products that you would like to include in the custom watchlist.¹⁴ Once you have finished selecting products, click on the **Create** button to finish creating the custom watchlist. Each custom watchlist must have a unique name and at least one product selected. At any point, you may click on the **Cancel** button to return to the Watchlists screen without creating a new custom watchlist.

Figure 38: Create Watchlist screen



¹⁴ The system-defined watchlists are named “All”, “MN”, “P”, “Excess Demand”, “No Excess Demand”, “Non-zero Bids”, and “Unsubmitted”. You cannot use any of these names for a custom watchlist.

In order to more quickly select products, you may enter filter criteria in the input field at the top of each column to filter your results. While filtered, you may click the **Select All** or the **Unselect All** buttons to select or unselect the checkbox for all products that meet the filter criteria.

For example, to quickly create a custom watchlist of all P products in the Top 20 PEAs (PEA001 through PEA020), first enter “P” in the Category filter to display only P products. Next, in the Market Number filter, enter “PEA00” to show only PEA001 through PEA009, then click on the **Select All** button to select these 9 products (see Figure 39). Next, change the Market Number filter to “PEA01” to show PEA010 through PEA019, then click on the **Select All** button. Finally, change the Market Number filter to “PEA02” to show PEA020 through PEA029, but instead of selecting all products, select the checkbox next to PEA020, then click on the **Create** button to create the custom watchlist.

Figure 39: Using filters to create custom watchlist of category P products

The screenshot shows the 'Create Watchlist' screen. At the top, there's a navigation bar with 'Auction 103 Clock Phase' and 'Reliable Access, Inc. Round 1 Round ends: 1:59:54 10/10/2019 10:00 AM ET'. On the left is a sidebar with options like 'Place Bids', 'Watchlists', 'Bid Summary', etc. The main area is titled 'Create Watchlist' and contains a form with 'Name *' (High demand P) and 'Description' (A list of all category P products in high demand PEAs (PEA001 - PEA020)). Below the form are buttons for 'Create', 'Select All', 'Unselect All', and 'Cancel'. A table below shows a list of products with columns: Selected (Y/N), Market Number, Market Name, Category, and Bidding Units. The 'Category' filter is set to 'P' and the 'Market Number' filter is set to 'PEA00'. The table lists products from PEA001 to PEA008, all with 'P' in the Category column and various bidding units. The 'Create' button is highlighted.

Selected (Y / N)	Market Number	Market Name	Category	Bidding Units
<input type="checkbox"/>	PEA00		P	
<input checked="" type="checkbox"/>	PEA001	New York, NY	P	2,524,000
<input checked="" type="checkbox"/>	PEA002	Los Angeles, CA	P	1,941,000
<input checked="" type="checkbox"/>	PEA003	Chicago, IL	P	937,000
<input checked="" type="checkbox"/>	PEA004	San Francisco, CA	P	903,000
<input checked="" type="checkbox"/>	PEA005	Baltimore, MD-Washington, DC	P	784,000
<input checked="" type="checkbox"/>	PEA006	Philadelphia, PA	P	759,000
<input checked="" type="checkbox"/>	PEA007	Boston, MA	P	678,000
<input checked="" type="checkbox"/>	PEA008	Dallas, TX	P	645,000

Clicking on the **Create** button will create a new custom watchlist that includes every product that you selected, irrespective of any filters that you currently have in place. After you have clicked to create the custom watchlist, the bidding system returns you to the Watchlists screen, where you may view the list of custom watchlists (see Figure 40).

Figure 40: Watchlists screen

FC Auction 103 Clock Phase

Reliable Access, Inc. Round 1 Round ends: 1:59:54 10:00 AM ET 10/10/2019

Watchlist created successfully

Watchlists

Create

Name	Description	Count	Actions
California	All California markets.	16 products selected	Edit Delete
High demand P	A list of all category P products in hig...	20 products selected	Edit Delete

You may create a maximum of 10 watchlists.

Logged in as: John Q. Bidder

Logout

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On the Watchlists screen, you may modify any custom watchlists by clicking on the watchlist name or the [Edit](#) link in the Actions column to access the Edit Watchlist screen. From the Edit Watchlist screen, you may select or unselect the checkboxes next to products that you wish to add to or remove from the custom watchlist, change the watchlist name, and change the watchlist description. Once you finish making modifications, click on the [Update](#) button to save your changes, or click on the [Cancel](#) button to return to the Watchlists screen without modifying your custom watchlist.

Finally, you may delete a custom watchlist by selecting [Delete](#) in the Actions column of the Watchlists screen. There is no prompt to confirm deleting the watchlist, and this action permanently removes the custom watchlist.

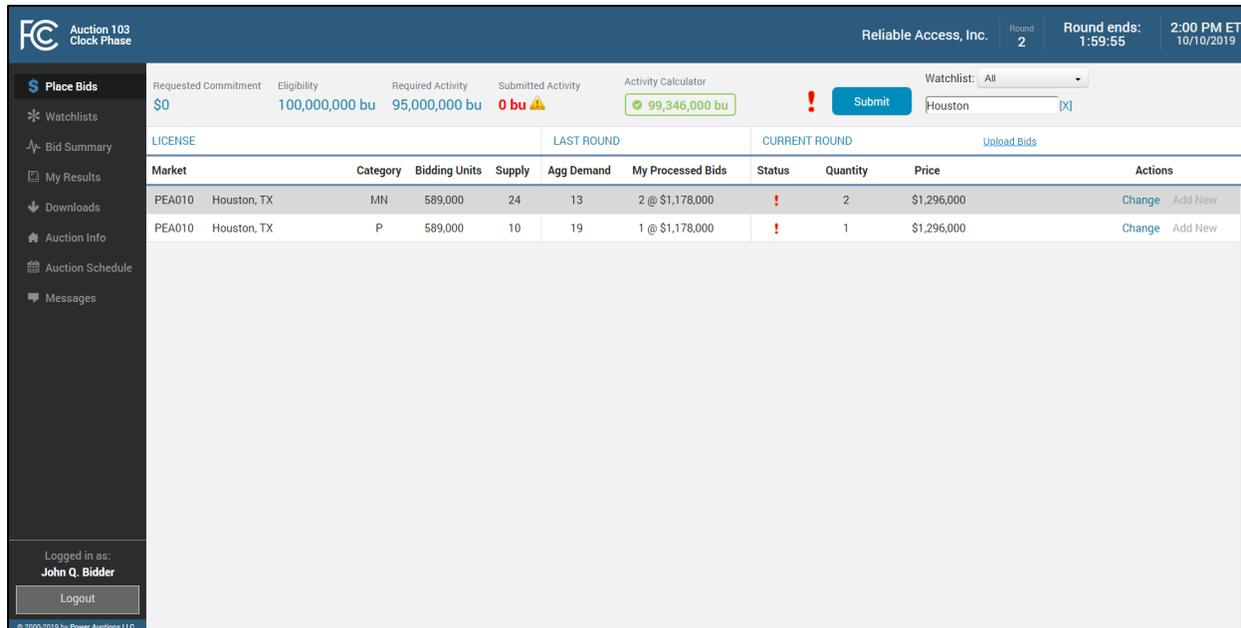
7.5.4. Selecting Bids Using Filters

On the Place Bids screen, you may filter the products displayed in a selected watchlist by entering filter criteria in the Filter input field to the right of the [Submit](#) button (see Figure 41). Filtering hides all products in the selected watchlist that do not match the filter criteria, which may be any value in the Market, Category, Bidding Units, or Price columns. For example, if you have the default “All” watchlist selected and you enter “Houston” in the Filter field, the bidding system will hide all of your products that do not have that word as part of the Market.

Filtering simply hides products within a watchlist that do not match the filter criteria. Filtering does not affect which saved bids are submitted when you click on the [Submit](#) button. If you click to submit while a filter is applied, all saved bids that are part of the selected watchlist are submitted, regardless of

whether they match the filter criteria and are displayed on the Place Bids screen. For example in the filtered list below, clicking the **Submit** button would submit all saved bids in the “All” watchlist, not only the bids matching the filter.

Figure 41: Filtering on the Place Bids screen



7.6. Submitting Bids via File Upload

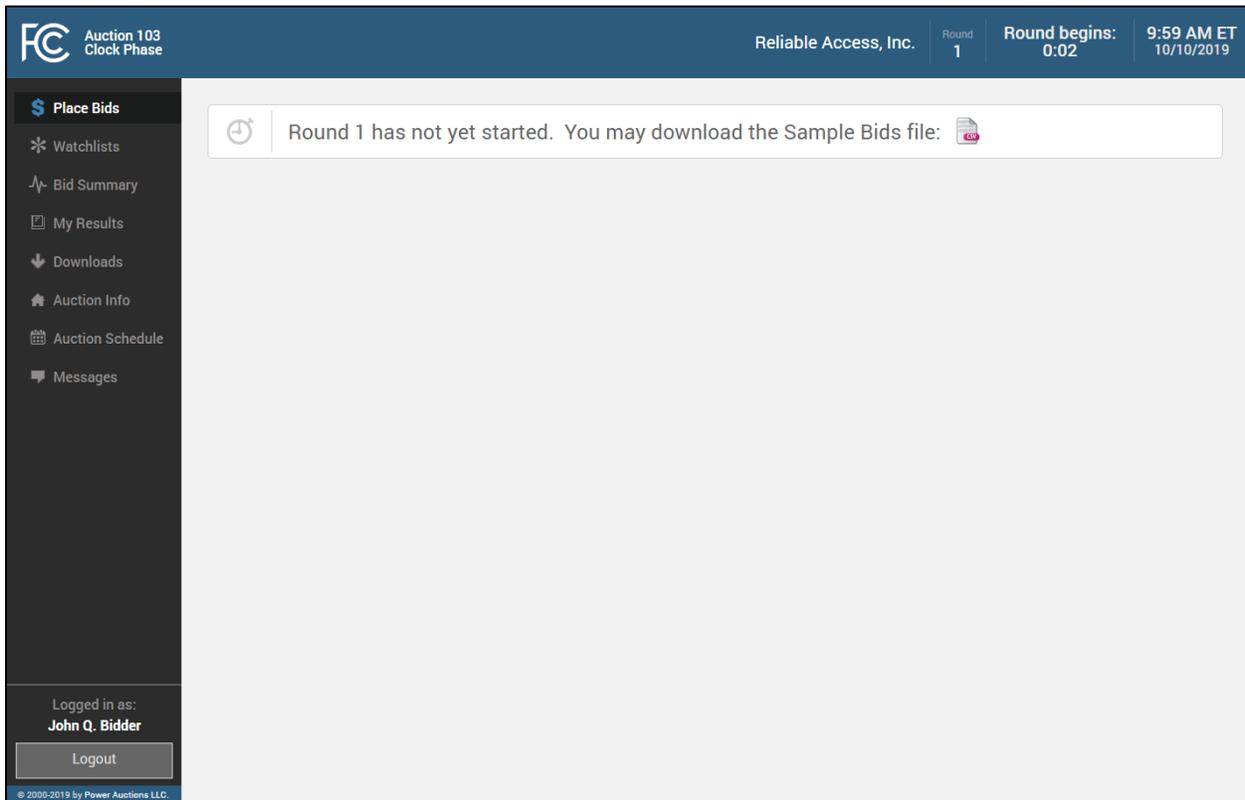
In each round, a bidder may submit its bids by uploading a properly formatted comma-separated values (CSV) bid file. Full details about the specifications for bid upload files can be found in the Auction 103 clock phase file formats document located on the Auction 103 website in the Education section (available at www.fcc.gov/auction/103).

7.6.1. Downloading Sample Bids File

For each round, you may download a Sample Bids file, which includes entries for all of the bidder’s eligible products and, in rounds after the initial round, the default saved bids.

Prior to the opening of a round but after prices have been announced for the round, you may download the Sample Bids file for that round on the Place Bids screen by clicking on the CSV file icon (see Figure 42).

Figure 42: Download Sample Bids file before start of round



After prices for a round have been announced, you may download the Sample Bids file for that round by clicking on the [Upload Bids](#) link beneath the Filter input field (see Figure 19). After you click [Upload Bids](#), the bidding system displays a popup window containing a link to the Sample Bids file (see Figure 43) and bid upload instructions. To download your Sample Bids file, click on the CSV file icon.¹⁵

 *Microsoft Edge users: When you click on the bid template, make sure you **SAVE** the file in a known directory. If you **OPEN** the file and **SAVE** it without specifying a folder, the file is saved into the temporary Edge download directory. When you later try to upload the file from this temporary directory, the system may not be able to read it and will treat it as an empty file.*

¹⁵ If you have previously submitted bids in the round, you must first unsubmit those bids before accessing the Sample Bids file.

Figure 43: Upload Bids popup with instructions

The screenshot displays the 'Upload Bids' popup in the center of the bidding system interface. The popup contains the following instructions:

1. Download the Sample Bids file.
2. Make any desired changes to the default bids in the file.
3. Upload the modified file in comma-separated-values (CSV) format.

A note below the instructions states: "Note: after uploading, the system will submit bids if the upload was successful, or report any errors if the upload fails." Below the note are two buttons: "Choose File" (disabled) and "Upload & Submit Bids" (active).

The background interface shows a table with columns for Market, Category, Bid, and Activity. The table lists various markets such as New York, NY, Los Angeles, CA, Chicago, IL, San Francisco, CA, Baltimore, MD-Washingto..., Philadelphia, PA, Boston, MA, and Dallas, TX. The table also includes columns for quantity and price.

The specification for the Sample Bids file differs for the initial round and later rounds. Details about the specifications for sample files may be found in the Auction 103 clock phase file formats document located on the Auction 103 website in the Education section (available at www.fcc.gov/auction/103).

7.6.2. Uploading a Bid File

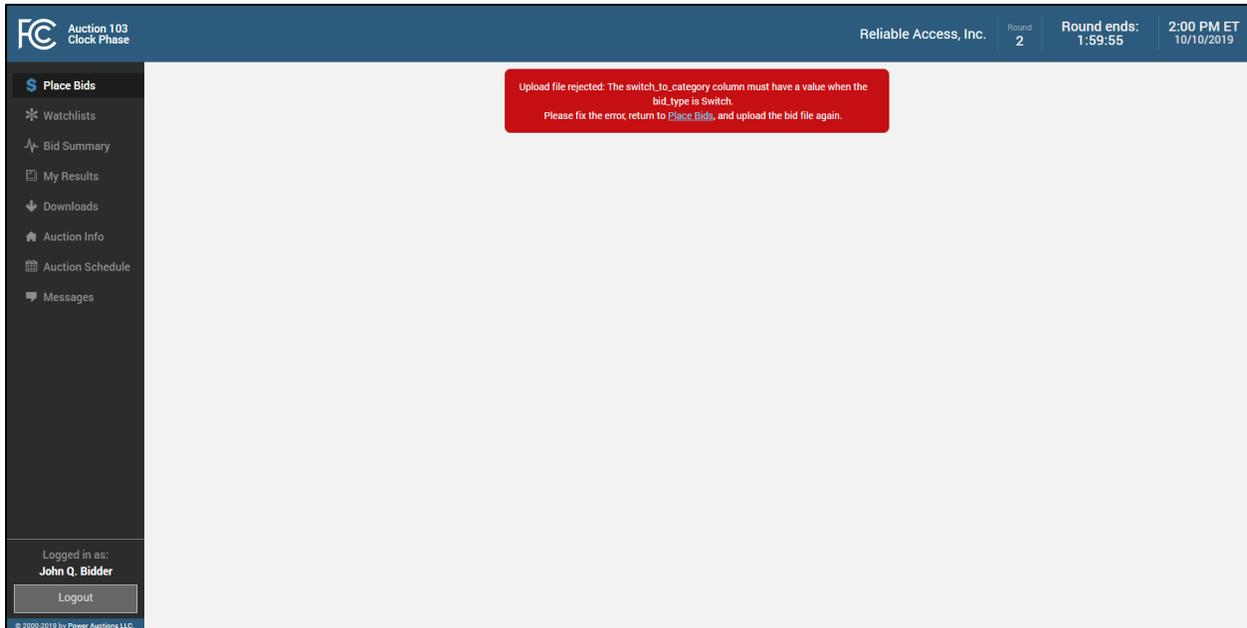
You can upload a bid file while a bidding round is open via the Upload Bids popup on the Place Bids screen. You can access the Upload Bids popup by clicking Upload Bids beneath the Filter input field (see Figure 19).

If you have already submitted bids in the round, the Upload Bids link does not appear, and instead is replaced with the Unsubmit All link. In order to upload a bid file, you must first click Unsubmit All to remove all submitted bids.

From the Upload Bids popup, choose your bid file and click on the **Upload & Submit Bids** button (see Figure 43). If there are no errors, the bids defined in your bid file will be submitted and you will be redirected to the Place Bids screen, where your submitted bids will be shown. The bidding system will display a green checkmark (✓) in the status column to indicate that each bid has been successfully submitted to the bidding system. Once you have successfully submitted bids via a bid upload, you may make changes to the bids through the user interface if you choose.

If there are one or more errors in the bid file, the bidding system will reject the entire upload and display a message on the Place Bids screen with an explanation of why the upload was unsuccessful (see Figure 44).¹⁶ After you fix the errors in your file, you may then upload your bid file again.

Figure 44: Place Bids screen with errors after bid upload rejected



¹⁶ Only the first error condition found for the file or for each bid is shown. If the file cannot be analyzed, the Place Bids screen will only display an error message over a blank page.

8. Verifying Bids

Only submitted bids are processed by the bidding system. The bidding system provides bidders with two ways to verify that their bids were submitted properly. You should verify your bids in each round of the auction before the round closes.

8.1. Bid Summary

Once the initial round opens and throughout the clock phase, you may verify the bids that have been submitted in a round (and in past rounds) on the Bid Summary screen. This screen displays all bids submitted in a round with the associated submitted activity and requested commitment.¹⁷

The layout of the Bid Summary screen is shown in Figure 45. The first five highlighted columns display product information. For rounds after the initial round of the auction, the next two columns show previous round bid information. The next column displays the clock price for the selected round, and the last six columns display information about the bid in the selected round — specifically, the quantity, bid amount, price point percentage, bid type, the name of the authorized bidder that submitted the bid, and the time of bid submission.

For each column, you may filter the table by entering a value in the input field at the top of the column. You may also re-sort the table by clicking on a column header to sort by the values in that column in ascending order. Clicking on the column header a second time re-sorts by the values in that column in descending order.

¹⁷ A bid may have been submitted by you, by another authorized bidder for the bidder, by a telephonic bid assistant entering bids at the behest of an authorized bidder, or by the system when the round closes if the bidder had missing bids.

Figure 45: Layout of the Bid Summary screen

The screenshot displays the Bid Summary screen for Auction 103 Clock Phase. At the top, it shows the auction details: Auction 103 Clock Phase, Reliable Access, Inc., Round 2, Round ends: 1:59:55, 2:00 PM ET 10/10/2019. Below this, there is a summary section with the following data:

- Requested Commitment: \$218,017,000
- Required Activity: 95,000,000 bu
- Product information: 1 @ 100,000,000 bu
- Previous round information: 99,108,000 bu
- Selected round clock price: \$5,552,000
- Selected round bid information: \$5,552,000

The main table lists the following bids:

Market Number	Market Name	Cat	Bidding Units	Supply	Agg Demand	My Processed Bids	Clock Price	Qty	Bid Amount	Price Point %	Bid Type	Placed By	Timestamp (ET)
PEA001	New York, NY	MN	2,524,000	24	37	10 @ \$5,047,000	\$5,552,000	10	\$5,552,000	100.00	Simple	John Q. Bidder	2019-10-10 14:00:05
PEA001	New York, NY	P	2,524,000	10	17	5 @ \$5,047,000	\$5,552,000	5	\$5,552,000	100.00	Simple	John Q. Bidder	2019-10-10 14:00:05
PEA002	Los Angeles, CA	P	1,941,000	10	3	2 @ \$3,882,000	\$4,271,000	2	\$4,271,000	100.00	Simple	John Q. Bidder	2019-10-10 14:00:05
PEA003	Chicago, IL	MN	937,000	24	45	14 @ \$1,873,000	\$2,061,000	14	\$2,061,000	100.00	Simple	John Q. Bidder	2019-10-10 14:00:05
PEA003	Chicago, IL	P	937,000	10	25	8 @ \$1,873,000	\$2,061,000	8	\$2,061,000	100.00	Simple	John Q. Bidder	2019-10-10 14:00:05
PEA004	San Francisco, CA	MN	903,000	24	30	2 @ \$1,806,000	\$1,987,000	2	\$1,987,000	100.00	Simple	John Q. Bidder	2019-10-10 14:00:05
PEA004	San Francisco, CA	P	903,000	10	15	4 @ \$1,806,000	\$1,987,000	2	\$1,987,000	100.00	Simple	John Q. Bidder	2019-10-10 14:00:05
PEA005	Baltimore, MD-Washington, DC	MN	784,000	24	27	1 @ \$1,568,000	\$1,725,000	2	\$1,655,000	55.41	Simple	John Q. Bidder	2019-10-10 14:00:05

At the bottom left, it shows the user is logged in as John Q. Bidder with a Logout button. The footer indicates © 2009-2019 by Power Auctions LLC.

At the top of the Bid Summary screen is information regarding the requested commitment, eligibility, and submitted activity for the bidder in that round, similar to the information on the Place Bids screen (see Figure 46). Unlike the Place Bids screen, however, you may select a previous round to display values relating to that round.

If a bidder has an incentive payment and/or has claimed eligibility for a bidding credit, the bidding system will display by default the requested net commitment, taking into account the maximum incentive payment and/or any bidding credit discounts and bidding credit discount caps. You may also view the gross requested commitment, the maximum incentive payment, the bidding credit discount (capped and uncapped), and the uncapped discount for small markets, if applicable, by clicking on the magnifying glass icon (🔍) next to the requested net commitment (for more information see Section 7.4, Figure 33 and Figure 34).

Figure 46: Additional information and actions on Bid Summary screen

The screenshot shows the Bid Summary screen for Round 2. At the top, it indicates the round number and generation time. Below this, a summary box provides key metrics: Requested Commitment (\$218,017,000), Eligibility (100,000,000 bu), Required Activity (95,000,000 bu), and Activity (99,108,000 bu). A table of bid entries follows, with columns for Market Number, Market Name, Cat, Bidding Units, Supply, Agg Demand, My Processed Bids, Clock Price, Qty, Bid Amount, Price Point %, Bid Type, Placed By, and Timestamp (ET). Annotations point to the Round selector, Bidding summary information, and Print screen here button.

Market Number	Market Name	Cat	Bidding Units	Supply	Agg Demand	My Processed Bids	Clock Price	Qty	Bid Amount	Price Point %	Bid Type	Placed By	Timestamp (ET)
PEA001	New York											John Q. Bidder	2019-10-10 14:00:05
PEA001	New York											John Q. Bidder	2019-10-10 14:00:05
PEA002	Los Angeles, CA											John Q. Bidder	2019-10-10 14:00:05
PEA003	Chicago, IL	MN	937,000	24	45	14 @ \$1,873,000	\$2,061,000	14	\$2,061,000	100.00	Simple	John Q. Bidder	2019-10-10 14:00:05
PEA003	Chicago, IL	P	937,000	10	25	8 @ \$1,873,000	\$2,061,000	8	\$2,061,000	100.00	Simple	John Q. Bidder	2019-10-10 14:00:05
PEA004	San Francisco, CA	MN	903,000	24	30	2 @ \$1,806,000	\$1,987,000	2	\$1,987,000	100.00	Simple	John Q. Bidder	2019-10-10 14:00:05
PEA004	San Francisco, CA	P	903,000	10	15	4 @ \$1,806,000	\$1,987,000	2	\$1,987,000	100.00	Simple	John Q. Bidder	2019-10-10 14:00:05
PEA005	Baltimore, MD-Washington, DC	MN	784,000	24	27	1 @ \$1,568,000	\$1,725,000	2	\$1,655,000	55.41	Simple	John Q. Bidder	2019-10-10 14:00:05

You may select previous rounds on the Bid Summary screen by selecting the round number from the round drop-down menu, located at the top of the screen.

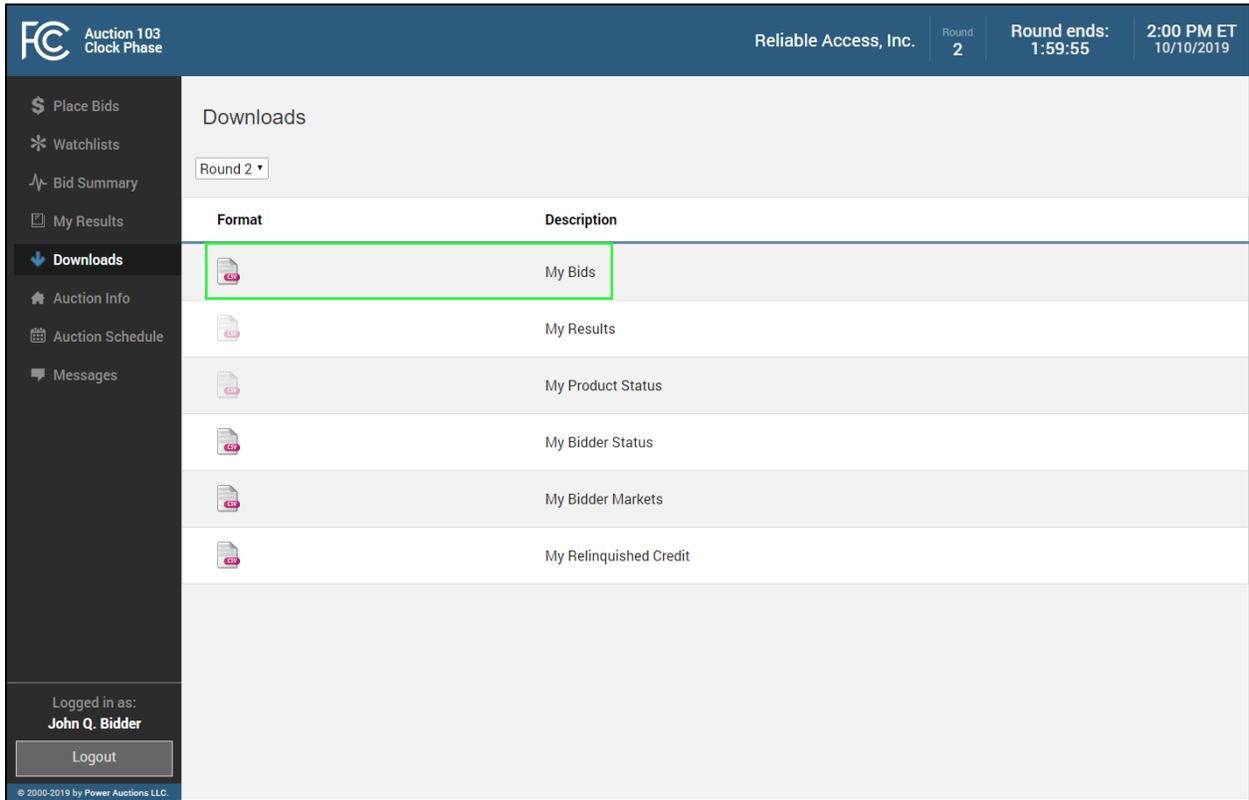
For the current round, if you have bids that are saved but not submitted, the bidding system displays a warning message about your missing bids at the top of the Bid Summary screen. If you had saved bids that were not submitted in a previous round, the bidding system displays only the summary of submitted bids with a warning that there were saved bids that were not submitted in the previous round.

At all times you may print a record of submitted bids in a round by clicking on the printer icon on the Bid Summary screen.

8.2. My Bids

You may also verify the bids that have been submitted via the My Bids download file, which can be accessed from the Downloads screen. The My Bids download provides up-to-date information about bids submitted during the round and can be accessed at any time after the initial round opens (see Figure 47). Details about the specifications for downloadable files may be found in the Auction 103 clock phase file formats document located on the Auction 103 website in the Education section (available at www.fcc.gov/auction/103).

Figure 47: My Bids download



The screenshot shows the 'Downloads' section of the Auction 103 Clock Phase interface. The header includes the logo 'FC Auction 103 Clock Phase', the company name 'Reliable Access, Inc.', 'Round 2', and 'Round ends: 1:59:55 10/10/2019 2:00 PM ET'. A sidebar on the left contains navigation options: Place Bids, Watchlists, Bid Summary, My Results, Downloads (highlighted), Auction Info, Auction Schedule, and Messages. The main content area shows a table of downloads for 'Round 2'. The 'My Bids' file is highlighted with a green border.

Format	Description
	My Bids
	My Results
	My Product Status
	My Bidder Status
	My Bidder Markets
	My Relinquished Credit

Logged in as:
John Q. Bidder
Logout

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The My Bids file provides the bidder's submitted bids that will be processed after the round. The My Bids file does not contain bids that were submitted earlier in a round but subsequently changed. The My Bids file contains information identical to that shown on the Bid Summary screen (see Section 8.1).



It is strongly recommended that, before the round ends, you print or save the Bid Summary screen and/or download the My Bids file for a record of your bidding actions.

9. Viewing Results

You can view information about results in several places: overall auction results are available in the Public Reporting System (PRS), and results specific to a bidder are available on the bidder's My Results screen and are downloadable from the bidder's Downloads screen.

9.1. Auction Results

Information about the overall results of Auction 103 are available to bidders and to the general public on the PRS. The PRS can be accessed by the public at auctiondata.fcc.gov or from a link on the Auction 103 website (www.fcc.gov/auction/103) in the Results section.

9.2. Bidder Results

You may view the results of bid processing for your bidder via the My Results screen. Only products for which a bid was submitted in the round and/or for which the bidder had processed demand in the previous round are displayed on the My Results screen. You may also download information about these results from the Downloads screen. For details on bid processing, see Appendix 5: Bid Processing.

9.2.1. My Results screen

After results for a round have been posted, you may view the results of bid processing for bids that were submitted in the round on the My Results screen, including results from past rounds. You may also view the results of bid processing for past rounds. This screen displays information for all products for which the bidder had processed demand in the round, as well as products for which the bidder had processed demand greater than zero in the previous round.

The layout of this screen is similar to that of the Bid Summary screen and is shown in Figure 48 below. The first four columns provide information about each product — specifically, the product's market number and name, license category, and supply. The next three columns provide information about the product's aggregate demand, the bidder's processed demand, and the posted price of the product. Clock prices for the next round are displayed in the last column once the information for the next round has been updated in the bidding system (usually at the same time or very soon after the round results have been posted).

Figure 48: Layout of the My Results screen

My Results [Round 2 ▼]

Commitment: \$215,001,000 Activity: 99,480,000 bu Product information: 100,000,000 bu Required Activity: 95,000,000 bu

Market Number	Market Name	Category	Supply	Round 2 Agg Demand	My Processed Demand	Round 2 Posted Price	Round 3 Clock Price
PEA001	New York, NY	MN	24	37	10	\$5,552,000	\$6,108,000
PEA001	New York, NY	P	10	17	5	\$5,552,000	\$6,108,000
PEA002	Los Angeles, CA	P	10	5	4	\$3,882,000	\$4,271,000
PEA003	Chicago, IL	MN	24	41	10	\$2,061,000	\$2,268,000
PEA003	Chicago, IL	P	10	25	8	\$2,061,000	\$2,268,000
PEA004	San Francisco, CA	MN	24	30	2	\$1,987,000	\$2,186,000
PEA004	San Francisco, CA	P	10	15	4	\$1,987,000	\$2,186,000
PEA005	Baltimore, MD-Washington, DC	MN	24	27	1	\$1,725,000	\$1,898,000
PEA006	Philadelphia, PA	MN	24	25	2	\$1,669,000	\$1,836,000
PEA006	Philadelphia, PA	P	10	21	5	\$1,669,000	\$1,836,000
PEA007	Boston, MA	MN	24	32	2	\$1,491,000	\$1,641,000
PEA007	Boston, MA	P	10	19	1	\$1,491,000	\$1,641,000
PEA008	Dallas, TX	MN	24	24	10	\$1,290,000	\$1,419,000
PEA008	Dallas, TX	P	10	18	8	\$1,419,000	\$1,561,000
PEA009	Miami, FL	MN	24	22	6	\$1,258,000	\$1,384,000
PEA009	Miami, FL	P	10	27	10	\$1,384,000	\$1,523,000
PEA010	Houston, TX	MN	24	13	2	\$1,178,000	\$1,296,000

You may filter the data shown in the table by entering a value in the input field at the top of each column. You may sort the table by clicking on a column header to sort the values in that column in ascending order. Clicking on the column header a second time re-sorts the values in that column in descending order.

The top of the My Results screen shows the bidder’s processed commitment and processed activity for the round, and the bidder’s eligibility and activity requirement in the next round (see Figure 49).

If a bidder has an incentive payment and/or has claimed eligibility for a bidding credit, the bidding system will display by default the net commitment, taking into account any incentive payment and/or any bidding credit discounts and bidding credit discount caps. You may also view the gross commitment, the incentive payment, the bidding credit discount (capped and uncapped), and the uncapped discount for small markets, if applicable, by clicking on the magnifying glass icon (🔍) next to the net commitment.

You may select previous rounds on the My Results screen by selecting the round number from the round drop-down menu, located at the top of the screen. If you have selected a previous round, the My Results screen will display values for the selected round.

You may print a record of the bid results for a round by clicking on the printer icon on the My Results screen.

Figure 49: Summary bar for bidders

My Results Round 2 ▾

Commitment: \$215,001,000 Activity: 99,480,000 bu Round 3 Eligibility: 100,000,000 bu Round 3 Required Activity: 95,000,000 bu

Market Number	Market Name	Category	Supply	Round 2 Agg Demand	My Processed Demand	Round 2 Posted Price	Round 3 Clock Price
PEA001	New York, NY		24	37	10	\$5,552,000	\$6,108,000
PEA001	New York, NY		10	17	5	\$5,552,000	\$6,108,000
PEA002	Los Angeles, CA	P	10	5	4	\$3,882,000	\$4,271,000
PEA002	Los Angeles, CA					\$1,000	\$2,268,000
PEA002	Los Angeles, CA					\$1,000	\$2,268,000
PEA002	Los Angeles, CA					\$7,000	\$2,186,000
PEA002	Los Angeles, CA					\$7,000	\$2,186,000
PEA007	Boston, MA	MN	24	32	2	\$1,491,000	\$1,641,000
PEA007	Boston, MA	P	10	19	1	\$1,491,000	\$1,641,000
PEA008	Dallas, TX	MN	24	24	10	\$1,290,000	\$1,419,000
PEA008	Dallas, TX	P	10	18	8	\$1,419,000	\$1,561,000
PEA009	Miami, FL	MN	24	22	6	\$1,258,000	\$1,384,000
PEA009	Miami, FL	P	10	27	10	\$1,384,000	\$1,523,000
PEA010	Houston, TX	MN	24	13	2	\$1,178,000	\$1,296,000

Logged in as: John Q. Bidder

9.2.1.1. Messages and Details

If a bidder has one or more bids that were not fully applied, the My Results screen contains a message at the top of the page, and a Details column appears with a Details link you may click to obtain more information about any bid for a product that was not applied in full (see Figure 50).

Figure 50: Details message for partially applied bids on the My Results screen

My Results Round 2 ▾

Net Commitment: \$187,275,186 Activity: 99,657,000 bu Round 3 Eligibility: 100,000,000 bu Round 3 Required Activity: 95,000,000 bu

⚠ At least one of your bids was not applied in full. See the Details link(s) below for further information.

Market Number	Market Name	Category	Supply	Round 2 Agg Demand	My Processed Demand	Round 2 Posted Price	Round 3 Clock Price	Details
PEA001	New York, NY	MN	24	37	4	\$5,552,000	\$6,108,000	
PEA001	New York, NY	P	10	17	2	\$5,552,000	\$6,108,000	
PEA002	Los Angeles, CA	MN	24	16	6	\$3,882,000	\$4,271,000	Close
Simple bid to reduce demand to 4 @ \$4,025,000: 2 blocks were not applied due to insufficient aggregate demand.								
PEA002	Los Angeles, CA	P	10	5	1	\$3,882,000	\$4,271,000	
PEA003	Chicago, IL	MN	24	41	2	\$2,061,000	\$2,268,000	
PEA004	San Francisco, CA	MN	24	30	2	\$1,987,000	\$2,186,000	Details
PEA004	San Francisco, CA	P	10	15	3	\$1,987,000	\$2,186,000	
PEA005	Baltimore, MD-Washington, DC	MN	24	27	1	\$1,725,000	\$1,898,000	
PEA005	Baltimore, MD-Washington, DC	P	10	15	5	\$1,725,000	\$1,898,000	
PEA006	Philadelphia, PA	MN	24	25	7	\$1,669,000	\$1,836,000	
PEA006	Philadelphia, PA	P	10	21	10	\$1,669,000	\$1,836,000	
PEA007	Boston, MA	MN	24	32	10	\$1,491,000	\$1,641,000	
PEA007	Boston, MA	P	10	19	10	\$1,491,000	\$1,641,000	

Logged in as: Jane Bidder

9.2.2. Downloadable Results

You can also download a number of different files containing results on the Downloads screen. Full details about the specifications for downloadable files may be found in the Auction 103 clock phase file formats document located on the Auction 103 website in the Education section (available at www.fcc.gov/auction/103).

You may view the results of a round via several files, which can be downloaded from the Downloads screen: My Results, My Products Status, My Bidder Status, and My Relinquished Credit, described below. If a file is not yet available for the round, it will be grayed out and cannot be downloaded (see Figure 51).

Further, you can download additional auction information through the My Bids and My Bidder Markets downloads, as described below.

Figure 51: Downloads screen

The screenshot displays the 'Downloads' section of the Auction 103 Clock Phase interface. At the top, it shows 'Reliable Access, Inc.', 'Round 2', and 'Round ends: 1:59:55' on '10/10/2019'. A dropdown menu is set to 'Round 2'. Below this is a table with two columns: 'Format' and 'Description'. The table lists six downloadable files, each with a document icon and a red 'EX' label. The files are: My Bids, My Results, My Product Status, My Bidder Status, My Bidder Markets, and My Relinquished Credit. A sidebar on the left contains navigation links, with 'Downloads' highlighted. At the bottom left, it shows 'Logged in as: John Q. Bidder' and a 'Logout' button. The footer contains the copyright notice '© 2000-2019 by Power Auctions LLC.'

Format	Description
	My Bids
	My Results
	My Product Status
	My Bidder Status
	My Bidder Markets
	My Relinquished Credit

The My Bids file is discussed earlier in Section 8.2.

The My Results file provides the results of bid processing for a bidder in a given round for all products for which the bidder had processed demand in the previous round and for all products for which a bid was submitted in the round. For each product, the file gives the processed demand, posted price, and the aggregate demand. If a bid was not fully applied, the file provides an indication of such and details

about why one or more bids for the product were not applied. The information contained in the My Results file mirrors the information contained on the My Results screen (see Section 9.2.1 for details about the My Results screen).

The My Product Status file provides the status of each product selected on Form 175 after bid processing in a round. For each product, the file gives the posted price, aggregate demand and the clock price in the next round. The file also provides supporting information about each product such as the round opening price, clock price, supply, bidding units, and population.

The My Bidder Status file lists the bidder's eligibility, required activity, and submitted activity in the round, as well as the bidder's processed activity and its eligibility and required activity for the next round. The file also includes financial information: the bidder's requested commitments and its processed commitments.

The My Bidder Markets file lists all PEAs available in the auction with their market numbers and market names. It also indicates which PEAs the bidder has selected on its Form 175.

The My Relinquished Credit file lists all PEAs in which the bidder has a credit for relinquishing its holdings in the Initial Commitment period, including, for each PEA, the weighted MHz-pops of the bidder's relinquishments and the posted price for a block in license category MN in a given round.

Appendix 1: System Troubleshooting

If you continue to experience problems after following the troubleshooting instructions, please call the FCC Auctions Technical Support at (877) 480-3201, option nine; (202) 414-1250; or (202) 414-1255 (TTY) (8:00 a.m.–6:00 p.m. ET on business days).

Situation 1: Page cannot be displayed error message on first access

Figure 52: Edge connection error message

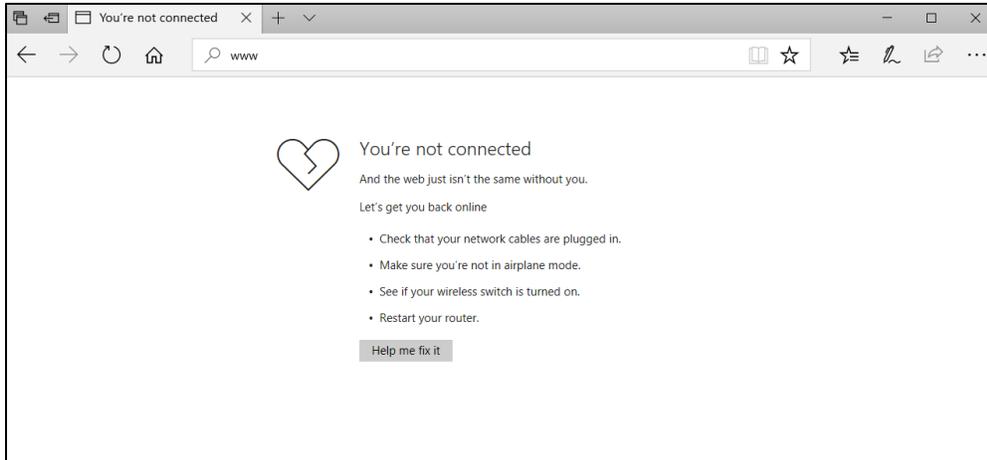
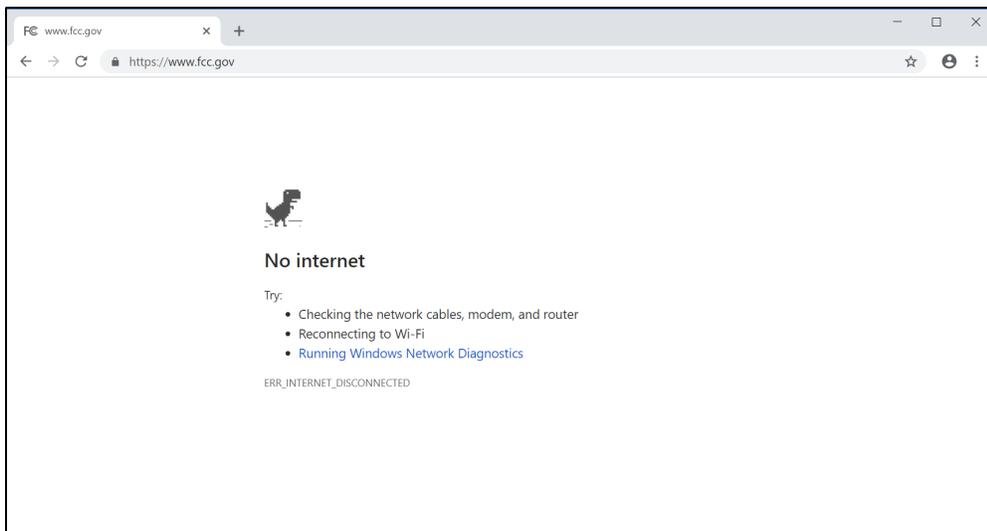


Figure 53: Google Chrome connection error message



If any of the screens shown above appear, complete the following steps:

- Confirm that the computer has external internet access. Try to access a common site on the internet such as www.google.com. If this is unsuccessful, the computer does not have external internet access.

- Confirm that you are using the correct URL for the bidding system.
- Confirm that your organization has not blocked access to the site. Your organization may only allow you to access certain external web sites. Check with your IT department.
- You may not have selected the “OK” button when the message appeared stating that you are about to enter a secure site. Re-start the browser and try again ensuring you click on the “OK” button.
- Confirm that you are using the correct browser version (see bidding system requirements in Section 3.1) by performing the following steps:
 - Edge: First, click on the tools icon  (which can be found in the top right-hand corner of your browser). Then click "Settings" and scroll down to "About this app." Make note of the version number.
 - Chrome: First, click on the tools icon  (which can be found in the top right-hand corner of your browser). Then click "Help" followed by "About Google Chrome." Make note of the version number.

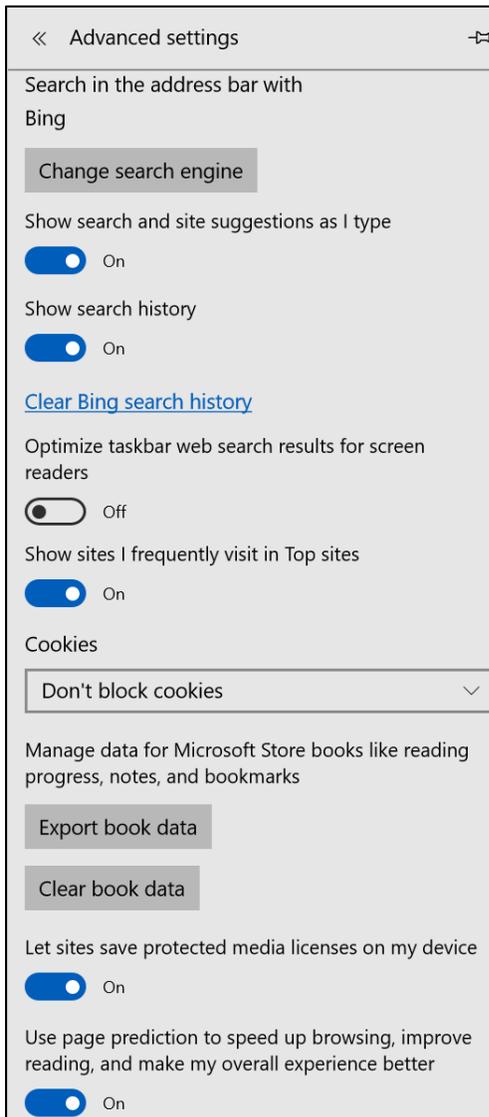
Situation 2: Cookies must be enabled error message

The bidding system requires that cookies are enabled on your browser. If cookies are disabled, you will see a message stating that cookies should be enabled.

To enable cookies in Edge, complete the following steps:

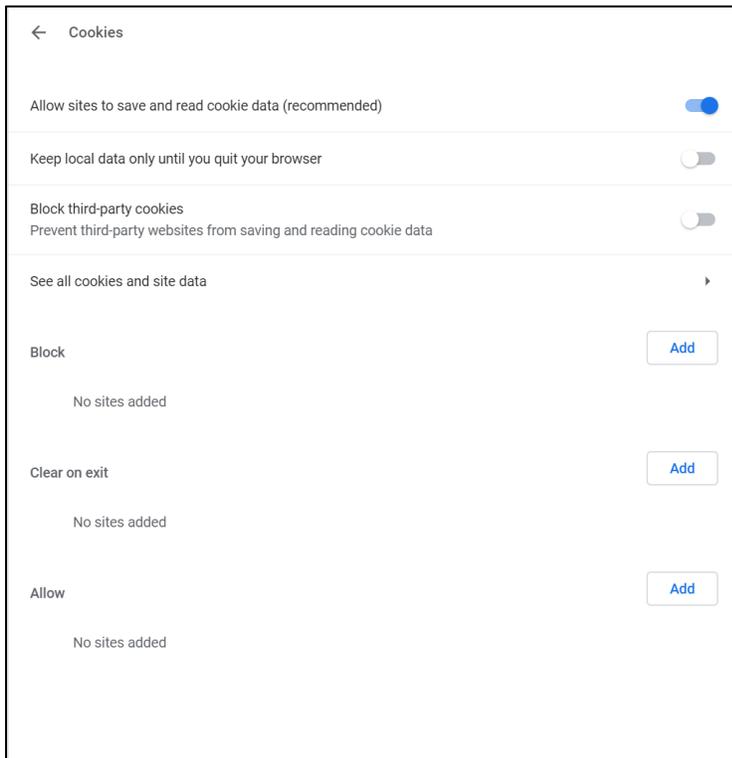
- Click on the tools icon  in the top right-hand corner of your browser.
 - Click on “Settings” and “View advanced settings”.
 - Under “Cookies” choose “Don’t block cookies” as shown in Figure 54.
 - Restart your browser.

Figure 54: Enabling cookies in Edge



To enable cookies in Chrome, complete the following steps:

- Click on the tools icon  in the top right-hand corner of your browser.
 - Click on “Settings”. At the bottom of the page, click on “Advanced”.
 - In the “Privacy and security” section, click on the “Content settings” area, and then click on the “Cookies” area to display a screen similar to that shown in Figure 55.
 - Slide the circle to the right next to the words “Allow sites to save and read cookie data (recommended)”.
 - Then close the “Settings” tab.

Figure 55: Enabling cookies in Chrome**Situation 3: JavaScript must be enabled error message**

The bidding system requires that JavaScript is enabled on the browser used. If JavaScript is disabled, there will be a message stating that “JavaScript in this browser is not enabled or is not working.”

Troubleshooting instructions are given below only for Chrome because JavaScript is enabled by default in Edge and cannot be changed.

To enable JavaScript in Chrome, carry out the following steps:

- Click on the tools icon  in the top right-hand corner of your browser, then “Settings,” then at the bottom of the page, click on “Advanced”.
- In the “Privacy and security” section, click on the “Content settings” area, and then click on the “JavaScript” area to display a screen similar to that shown in Figure 56.
- Slide the circle to the right next to the words “Allowed (recommended)”.
- Then close the “Settings” tab.

Figure 56: Enabling JavaScript in Chrome**Situation 4: Page cannot be displayed error message when navigating to new screen**

If you have been using the bidding system successfully and “page cannot be displayed” appears when you click on a link or a button, then complete the following steps:

- Click on the Refresh/Reload button to reload the page.
 - If that is successful, please verify any actions that you were taking when the message was displayed. If you were in the middle of placing a bid, those changes will have been lost, and you will need to select and resubmit that bid. All submitted bids that had the green check mark will remain unaffected.
- Re-navigate to the bidding system URL and, if prompted, log in again.
- If that is successful, please verify any actions that you were taking, as discussed above.
- Your internet connection may have gone down. Confirm that your computer has external internet access. Try to access a common site on the internet such as www.google.com. If this is unsuccessful, the computer does not have external internet access.
- The bidding system may be down. To confirm whether the bidding system is down, first confirm that you have internet access and then attempt to access the home page (see Section 3.2). If you are unable to view this page, or the page states that the bidding system is unavailable, then the bidding system may be down.

Situation 5: Page has expired error message when back button is clicked

Do not use the browser’s back button to access a previous screen. To move between screens, use the links and buttons in the bidding system.

Situation 6: Computer or web browser crashes

If the browser crashes or the computer freezes, it is recommended that you reboot the machine (or use a different machine) to access the bidding system.

Please review any actions that you were taking when the computer crashed. If you were in the middle of submitting a bid, those changes will have been lost, and you will need to select and resubmit that bid. All submitted bids that had the green check mark will remain unaffected.

If the computer crashes while you are using the bidding system, you may access the bidding system using a different computer. When a user logs in to a second computer, whether the user has logged out of the first computer or not, the second login will automatically cause the user to be logged out of the first computer.

Situation 7: Certificate error message

If you access the bidding system and see a security message similar to that shown in Figure 57 (for Edge) or Figure 58 (for Google Chrome), you should not proceed. Please call FCC Technical Support at (877) 480-3201, option nine; (202) 414-1250; or (202) 414-1255 (TTY).

Figure 57: Certificate security error message in Edge

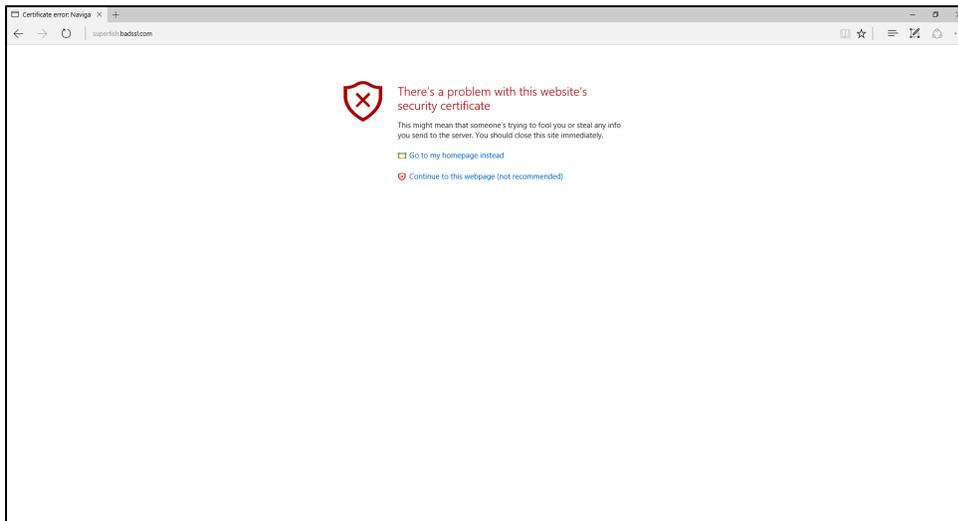
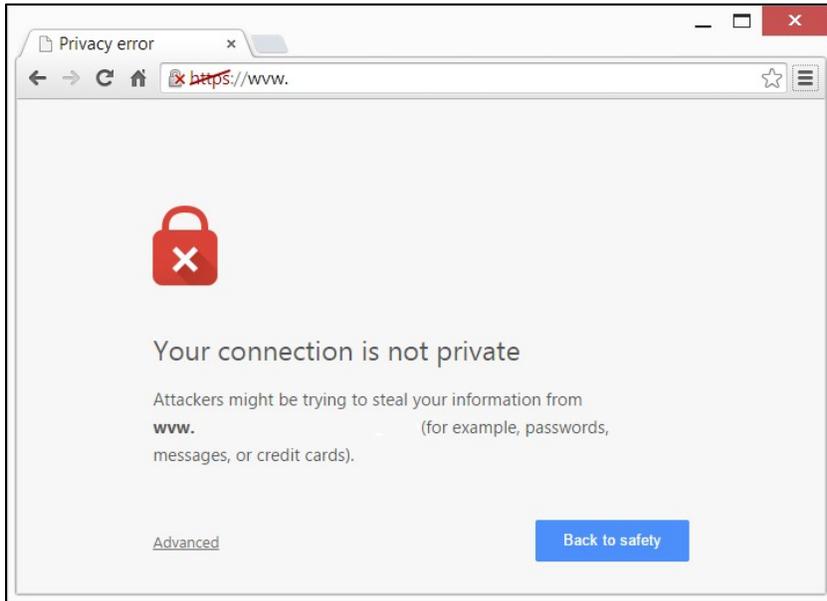


Figure 58: Certificate security error message in Chrome



Appendix 2: RSA SecurID® Token Information

For additional assistance with lost or damaged RSA tokens and for questions about changing a user (i.e. authorized bidder), the person who has been designated as the contact person, or the certifying official on the bidder's FCC Form 175 application (designated person), should call the Auction Bidder Line telephone number provided with your registration materials.

1. Number of RSA Tokens Issued and Extra RSA Tokens

Each qualified bidder is issued either two or three RSA tokens depending upon the number of authorized bidders it identified on its Form 175. A bidder with three authorized bidders is issued three RSA tokens. A bidder with two authorized bidders is issued two RSA tokens for its authorized bidders plus one extra RSA token. A bidder with one authorized bidder is issued one RSA token for its authorized bidder plus one extra RSA token. Each bidder is permitted to identify up to three authorized bidders on its Form 175.



Bidders cannot use the extra RSA token unless they contact the FCC to activate the extra RSA token for a specific user.

Each RSA token is associated with a specific authorized bidder. RSA tokens are not interchangeable among authorized bidders. The FCC must reassign the token in the RSA server for the token to become functional.

2. Replacing Lost or Damaged RSA Tokens

In the event that an RSA token is lost or damaged, the person who has been designated as the authorized bidder, contact person, or certifying official listed on the bidder's FCC Form 175 should call the Auction Bidder Line telephone number provided with their registration materials to request activation of a replacement token.

3. Change of User (Authorized Bidder)

A qualified bidder may change or replace its authorized bidders. For more information on changing the authorized bidder assigned to an RSA token, the person who has been designated as the contact person or certifying official on the bidder's FCC Form 175 application should call the Auction Bidder Line telephone number provided with the registration materials.

Appendix 3: Glossary of Terms

Term	Definition/Notes
Activity	<p>Bidding activity is the total number of bidding units associated with a bidder's demands. During a bidding round, and before the bids from the round are processed, the submitted activity on the Place Bids screen and the activity on the Bid Summary screen show an estimate of activity that assumes all the bids submitted so far in the round are applied during bid processing.</p> <p>After the bids of a round have been processed, activity in My Results shows the total number of bidding units associated with the bidder's processed demands for the round ("processed activity").</p>
Activity requirement	A requirement that the activity associated with a bidder's processed demand (in bidding units) be at least a certain percentage (e.g., 95%) of its bidding eligibility for the round.
Aggregate demand	The sum of processed demands by all bidders for a given product.
Bidding credit	A discount on a bidder's total net cash payment for new licenses. Bidders that qualify for a rural service provider bidding credit receive a 15% discount. Bidders that qualify for a small business bidding credit receive either a 15% or 25% discount. The total amounts of bidding credit discounts on new licenses are capped as described below.
Bidding credit discount caps	<p>The total amount of an eligible bidder's rural service provider bidding credit discount will be capped at \$10 million.</p> <p>The total amount of an eligible bidder's small business bidding credit discount will be capped at \$25 million. Of that, the small business bidding credit discount will be capped at \$10 million for bids on blocks in small markets.</p>
Bidding unit	Unit used for measuring activity and eligibility during the clock phase. All products in a PEA are assigned the same number of bidding units. This number does not change during the auction.
Category MN	A bidding category of generic blocks in the clock phase of Auction 103, consisting of the available blocks in 37.6–40 GHz band in all PEAs. Also referred to as Category M/N.

Term	Definition/Notes
Category P	A bidding category of generic blocks in the clock phase of Auction 103, consisting of the blocks in 47.2–48.2 GHz band in all PEAs.
Clock price	The maximum price at which a bidder can place a bid in the round.
Clock round	A time period during which bidders may submit bids for products in the clock phase of the auction.
Commitment	The sum, over all products, of the bidder's processed demand for a product multiplied by the product's posted price, for the round.
Eligibility	The maximum number of bidding units that a bidder may bid for in the round. For the first round, this depends on a bidder's upfront payment. For every other round, a bidder's eligibility depends on the activity associated with its processed demand after bid processing of the previous round and the activity requirement.
Incentive Payment	The payment for an incumbent 39 GHz licensee that made an Initial Commitment to relinquish either a partial block or all its licenses.
Incumbent	Existing 39 GHz licensee(s), individual, or commonly controlled entity, or another entity that is not an existing 39 GHz licensee, but that is commonly controlled with existing 39 GHz licensee(s) and serves as an FCC Form 175-A applicant for those licensees listed in the FCC Form 175-A.
Initial round	Round 1 — the time period during which bidders may submit bids for products at the minimum opening bid prices.
Intra-round bid	A bid that indicates a change in demand from the bidder's processed demand at a price greater than or equal to the last round's posted price and less than the current round's clock price. Intra-round bids are processed in ascending order of price points, but they are entered and displayed in dollars.
Maximum incentive payment	An estimated maximum incentive payment amount for an incumbent 39 GHz licensee during a clock round calculated at the round's clock prices, given the quantities that the incumbent is relinquishing in each market.
Minimum opening bids	The opening prices for products in Auction 103. In the initial round, a bidder bids for a quantity of blocks at these prices.

Term	Definition/Notes
Missing bid	If a bidder fails to submit a bid for a product for which it has processed demand, the bidding system will consider that to be a missing bid, which will be processed as a simple bid request for a quantity of zero at the previous round's posted price. A missing bid will not necessarily reduce the bidder's processed demand to zero after the round. The bidding system will apply as much of the missing bid request as it can, subject to the overall restriction that aggregate demand cannot fall below supply of a given product.
Net revenue requirement	The requirement that ensures that auction proceeds based on clock phase bids are sufficient to cover all incentive payments owed. If the net revenue requirement has been met when the clock phase concludes, then the auction will proceed with the assignment phase. Otherwise, the auction will end, and no new licenses will be assigned.
Phase	There are two phases in Auction 103: the clock phase and the assignment phase. The clock phase will be followed by the assignment phase.
Posted price	The price for a product after the bids for a round are processed. The posted price for a round becomes the lowest price that can be bid in the next round.
Price point	The price point indicates, as a percentage, the distance of the bid price between the posted price of the previous round and the clock price of the current round. For example, the 0 percent price point refers to the last round's posted price, the 100 percent price point refers to the clock price, and the 50 percent price point refers to the average of the last round's posted price and the clock price of this round. For bid processing, the bidding system converts prices into price points in order to determine the order of processing across all products.
Processed activity	The total number of bidding units associated with the bidder's processed demand after bid processing of the round.
Processed demand	The bidder's demand for the product after bid processing of the round.
Product	The pairing of a PEA and a license category — for example, "PEA001-MN" and "PEA001-P".
Regular clock round	A time period during which bidders may submit bids for products, after the initial round.

Term	Definition/Notes
Requested commitment	<p>The total gross bid amount calculated at the clock price given all bids that the bidder has submitted so far in the round, assuming that all bids are applied during bid processing. During the round, bids for the round have not yet been processed, so the requested commitment, which is updated as bids are submitted, is an estimate of a bidder's commitment.</p> <p>This number is calculated and shown to the bidder while the round is open on the Place Bids and Bid Summary screens. After the round closes, the bidder's requested commitment based on all the bids that the bidder submitted during the round continues to be available on the Bid Summary screen.</p>
Required activity	<p>The minimum total number of bidding units associated with the bidder's processed demand required to maintain the same bidding eligibility for the next round. This number is calculated before the round starts based on bid processing from the previous round and is shown to the bidder on the My Results screen (before the round starts) and on the Place Bids screen (while the round is open for bidding).</p>
Round opening price	<p>This is the minimum price at which a bidder can place a bid in the round. For any round after the initial round, the minimum price is the posted price of the previous round.</p>
Simple bid	<p>The basic bid type used in Auction 103, which specifies a quantity of blocks demanded and a price (by default the clock price). A simple bid to change demand is treated as a request, and if it is not possible to apply the simple bid in its entirety, it may be applied partially. However, with a simple bid to reduce demand, the bidder will never pay more than its specified price for an unreduced quantity.</p>
Small markets	<p>All PEAs with a population of 500,000 or less (PEAs 118-416, excluding PEA412). Winning bids in these markets are subject to the small market bidding credit discount cap.</p>
Submitted activity	<p>The total number of bidding units associated with all bids submitted at that point in the round, assuming that all are applied during bid processing.</p>
Supply	<p>The number of blocks of a product offered in Auction 103.</p>

Term	Definition/Notes
Switch bid	A request to switch demand for a specified number of blocks from one product (the “from” product) to another (the “to” product) within the same PEA. Switch bids may be applied partially, but the increase in demand in the “to” product will always match in quantity the reduction in the “from” product.

Appendix 4: Examples of Bid Types

This appendix provides an explanation of the different bid types.

In the initial round, bidders indicate their initial demands for products at the minimum opening bid price for each product. In subsequent rounds, there is a range of possible bid prices for each product for the round. The lowest price in the range, the round opening price, is the posted price from the previous round. The highest price is the clock price.

During the rounds that follow the initial round, the bidder will either maintain its demand for a given product or request to change its demand. The bidder will be able to use one of two bid types to indicate its demands. If the bidder wishes to:

1. Maintain its processed demand at all prices up to and including the clock price, it will use a simple bid at the clock price;
2. Specify a different demand *starting at a price* in that product's price range for the round, it may use a simple bid; or
3. Switch blocks from one category in the PEA to a different category in the PEA, it may use a switch bid.

The following examples focus on product PEA003-MN, which has a supply of 24 blocks, a bidder with processed demand of 3 blocks, and a price range for the current round of \$5,000 - \$6,000. The second product in the table, PEA003-P, will only be used for the switch bid example.

Product	Supply	Bidder's Processed Demand	Posted Price of previous round	Clock Price of this round
PEA003-MN	24	3	\$5,000	\$6,000
PEA003-P	10	0	\$4,000	\$4,800

1. Maintain the same demand as the processed demand — for all prices in the round

If the bidder wants to maintain the same quantity as its processed demand at any price in the current round's price range, then the user must submit a *simple bid for that quantity at the current round's clock price*. In the scenario above, if the bidder wants to maintain its demand of 3 blocks for PEA003-MN for all prices between \$5,000 and \$6,000, then the user should submit a *simple bid* for 3 blocks at \$6,000. This indicates that the bidder is willing to accept 3 blocks at any price for the round up to and including the clock price of \$6,000.

2. Specify a different demand starting at a price in that product's price range for the round

If, *starting at a price* in that product's price range for the round, the bidder demands a different quantity of PEA003-MN blocks, the user may choose to:

- Enter a *simple bid* for the desired quantity at that price. The desired quantity can be either larger or smaller than the processed demand, but it cannot exceed supply.
- Enter a *switch bid* to move demand from category MN in a PEA to category P (or vice versa) of the same PEA.

Bid processing will treat simple and switch bids differently in determining processed demand and the posted price for PEA003-MN.

Example 1: Simple bid to reduce demand for PEA003-MN from 3 blocks to 1 block at \$5,500

Suppose that after the bids of the previous round are processed, the bidder's processed demand for PEA003-MN is 3 blocks and the posted price is \$5,000. In the current round, the clock price is \$6,000, and the bidder places a single simple bid requesting a reduction in its demand to 1 block at price \$5,500.

To the auction bidding system, this bid means the following:

- At a price below \$5,500, the bidder is willing to purchase 3 blocks.
- At a price of exactly \$5,500, the bidder is willing to purchase 1, 2, or 3 blocks.
- At a price above \$5,500, the bidder is willing to purchase only 1 block.

When the bidding system processes the bids at price \$5,500, the simple bid will be applied fully, partially, or not at all depending on the level of excess demand for PEA003-MN at that point in the bid processing.

- If aggregate demand exceeds supply by more than 2 blocks, the bid is fully applied. The bidder will hold 1 block.
- If aggregate demand exceeds supply by exactly 2 blocks, the bid is also fully applied. The bidder will hold 1 block.
- If aggregate demand exceeds supply by only 1 block, the bid is partially applied. The bidder will hold 2 blocks.
- If aggregate demand does not exceed supply, the bid is not applied. The bidder will continue to hold 3 blocks.

If no other bidder has submitted a bid requesting to change its demand for PEA003-MN, then:

- In case (a), the posted price will be equal to \$6,000.
- In cases (b) and (c), the posted price will be equal to \$5,500.
- In case (d), the posted price will be equal to \$5,000.

Example 2: Simple Bid to increase demand for PEA003-MN from 3 blocks to 5 blocks at \$5,500

Suppose again that after the bids of the previous round are processed, the bidder's processed demand for PEA003-MN is 3 blocks and the posted price is \$5,000. In the current round, the clock price is

\$6,000. By placing a single simple bid for 5 blocks for the product at price \$5,500, the bidder is indicating that it is willing to buy a quantity between 3 and 5 blocks at any price associated with this round. Increases in demand are always applied, provided that the increase would not result in processed activity that exceeds the bidder's eligibility.

To the bidding system, this bid means the following:

- The bid (for the purpose of processing order) is processed when the price is \$5,500.
- The bidder is willing to purchase 3, 4, or 5 blocks at any price between \$5,000 and \$6,000.

When the bidding system processes the bid at price \$5,500, the simple bid will be applied fully, partially, or not at all depending on whether the increase would cause the bidder's processed activity to exceed its eligibility at that point in the bid processing.

- (a) If the bidder has sufficient eligibility to add 2 blocks, the bid is fully applied. The bidder will hold 5 blocks.
- (b) If the bidder has sufficient eligibility to add only 1 block, the bid is partially applied. The bidder will hold 4 blocks.
- (c) If the bidder does not have sufficient eligibility to add any blocks, the bid is not applied. The bidder will continue to hold 3 blocks.

If no other bidder has submitted a bid requesting to change its demand for PEA003-MN during the round, and after applying this bid fully, partially, or not at all:

- If the aggregate demand exceeds supply, then posted price will be equal to \$6,000.
- If the aggregate demand equals supply, then posted price will be equal to \$5,000.
- If the aggregate demand is less than supply, then posted price will be equal to \$5,000.

If at least one (additional) bid was applied that reduced demand for PEA003-MN, then:

- If the aggregate demand exceeds supply after processing all bids, the posted price will be equal to \$6,000.
- If the aggregate demand equals supply after processing all bids, the posted price will be equal to the price of the highest priced bid that involved a reduction in demand that was applied in full or in part.¹⁸
- Note that it is not possible for the aggregate demand to be less than supply in this scenario, as the reduction would not have been applied.

¹⁸ The bidding system maintains a queue of unapplied bids and their associated price points. Bids are processed in order of price point and whenever a bid is applied, the queue of unapplied bids is revisited in order of priority. In this case, if there is a bid by another bidder to reduce demand in the queue at \$5,200, for example, applying the increase at \$5,500 may make it possible for the requested reduction by the other bidder to be applied. If aggregate demand becomes equal to supply at the lower price point, the posted price may be \$5,200. For further details, see Appendix 5: Bid Processing.

Example 3: Switch blocks from category MN in the PEA to category P in the PEA starting at a price in that product's price range for the "from" product

A bidder has the option of switching demand from category MN in a PEA to category P in the same PEA (or vice versa) using a *switch bid*. The switch bid is applied in full or in part to the extent that there is excess demand for the "from" product.

Suppose that after the bids of the previous round are processed, the bidder's processed demand is 3 blocks for PEA003-MN and 0 blocks for PEA003-P and the posted price of PEA003-MN is \$5,000. In the current round, the clock price for PEA003-MN is \$6,000, and the bidder wants to switch its demand by 2 blocks from MN to P at price \$5,500. To do so, the bidder places a switch bid indicating a new demand of 1 (its processed demand of 3, minus 2 blocks) for PEA003-MN at \$5,500.

To the auction bidding system, this bid means the following:

- If the price of PEA003-MN is below \$5,500, the bidder is willing to purchase 3 MN blocks and no P blocks.
- If the price of PEA003-MN is equal to \$5,500, the bidder wishes to switch demand from MN to P by up to 2 blocks.
- If the price of PEA003-MN is above \$5,500, the bidder is willing to purchase 1 MN block and 2 P blocks.

Note that the bidder does not specify a quantity or a price for P blocks in its bid. By placing the switch bid, the bidder indicates a willingness to increase its demand for P by up to 2 blocks at all prices up to the current clock price for P. The processing order for the switch bid is based on the price of the "from" product (the MN product in this example).

When the bidding system processes the bid at price \$5,500, this switch bid will be applied fully, partially, or not at all depending on the level of excess demand for MN:

- (a) If aggregate demand exceeds supply by more than 2 blocks in MN, the bid is fully applied. The bidder will then hold 1 block of PEA003-MN and 2 blocks of PEA003-P.¹⁹
- (b) If aggregate demand exceeds supply by 2 blocks in MN, the bid is fully applied. The bidder will then hold 1 block of PEA003-MN and 2 blocks of PEA003-P.
- (c) If aggregate demand exceeds supply by only 1 block in MN, the bid is partially applied. The bidder then will hold 2 blocks of PEA003-MN and 1 block of PEA003-P.
- (d) If aggregate demand does not exceed supply in MN, the bid is not applied at all. The bidder will continue to hold 3 blocks of PEA003-MN and 0 blocks of PEA003-P.

¹⁹ In this example, the bidder started the round with 0 blocks of processed demand for P. If, alternatively, it had started with processed demand for P of 1 block, then the bidding system would increase its demand for P by the amount that is switched. That is, if 1 block was switched from MN to P, then the bidder would have processed demand for 2 blocks of P after the switch bid is applied.

Continuing the same example, if no other bidder has submitted a bid requesting to change its demand for PEA003-MN, then:

- In case (a), the posted price for PEA003-MN will be \$6,000.
- In cases (b) and (c), the posted price for PEA003-MN will be \$5,500.
- In case (d), the posted price for PEA003-MN will be \$5,000.

The posted price for PEA003-P depends on whether aggregate demand is greater than, equal to, or less than supply and on whether any bids to reduce demand for that product were applied during bid processing.

In all cases, the bidder's total processed demand across the categories is still 3 blocks. However, the number of blocks that are switched from one category to the other category may be smaller than the maximum number of blocks that the bidder is willing to switch, depending upon whether it is possible to reduce the bidder's demand for blocks in the "from" category.

Appendix 5: Bid Processing

Bid processing determines, at the conclusion of a round of bidding, the processed demands for all bidders and the posted prices for all the products. Bids are processed differently in the initial round and regular clock rounds. This appendix provides an overview of bid processing in both types of rounds.

1. Initial Round

In the initial round, each bidder specifies the quantities it wants of each product, not exceeding the supply of each product, at the minimum opening bid prices. All initial round bids are applied during bid processing, so a bidder's processed demand for a product is equal to the quantity specified in its bid. The posted prices for the initial round are the minimum opening bid prices.

2. Clock Round

For regular clock rounds, bids to maintain processed demands at the clock price will always be applied. Bids to change demands are treated as requests and are applied to the extent possible.

To determine *processed demands*, bids are ordered by price point (from lowest to highest) across all bids (all products in all PEAs), and then by a bid-specific pseudorandom number (from lowest to highest). They are then considered in that order.²⁰

Reductions in demand will only be applied during bid processing if there is excess demand for the product at the point at which the bid is considered. An increase in demand will only be applied during bid processing if, at the time the bid is considered, the resulting processed activity would not exceed the bidder's eligibility for the round.

If a bid cannot be applied at the price point at which it is considered, it is placed in a queue where it maintains its bid processing order. Every time a bid is applied, the auction system reconsiders the bids in the queue in order, applying any that can then be applied.

After the processed demands have been determined, the *posted price* of a product for the round is set as follows:

- If aggregate demand (evaluated using the processed demands) exceeds supply, the posted price will be set equal to the clock price for the round.
- If aggregate demand (evaluated using the processed demands) is equal to supply and at least one bid to reduce demand for that product was applied (either entirely or partially), the posted price will be the highest price at which a reduction for the product was applied. That is, the posted price will be the price at which a reduction caused aggregate demand to equal supply.

²⁰ The price for the "from" product in a switch bid determines when the switch bid is considered during bid processing. Thus, if the switch bid is applied at the 50.00% price point for the "from" product, both sides of the switch bid are considered at that time.

- Otherwise, the posted price will be the same as in the previous round.

The posted price will become the opening price for the next round. The bid increment percentage will be added to the posted price to determine the next round's clock price.

3. Example of Bid Processing for a Regular Clock Round

Consider a product, PEA166-P, with a supply of 10 blocks. The Round 3 opening price for PEA166-P is \$100,000 and the clock price is \$110,000. The second column of the following table shows the bidders' Round 3 processed demands:

Bidder	Round 3	Round 4		
		Bid: quantity @ price (all simple bids)	Price Point	Order for Processing
Bidder 1	2 blocks	1 @ \$111,000	0.0909090909	1
Bidder 2	4 blocks	2 @ \$115,500	0.5000000000	3
Bidder 3	2 blocks	0 @ \$119,000	0.8181818182	5
Bidder 4	4 blocks	0 @ \$115,000	0.4545454545	2
Bidder 5	0 blocks	2 @ \$118,000	0.7272727273	4
Bidder 6	2 blocks	2 @ \$121,000	1.0000000000	6
Total	14			

The aggregate demand for Round 3 is 14 blocks. Since aggregate demand exceeds supply, the posted price of Round 3 is set to be equal to the clock price of Round 3, that is, \$110,000. Suppose that the clock price of Round 4 is \$121,000. Round 4 bids must be between \$110,000 and \$121,000.

The third column of the table shows the bids in Round 4. Five of the six bidders submitted simple bids for quantities that are different than their Round 3 processed demands. Bidder 6 submitted a simple bid to maintain its Round 3 processed demand at the Round 4 clock price.

The fourth column shows the price points associated with the bids. The price points are used to determine the order in which bids are considered during processing (shown in the last column). Bids at lower prices are processed first. The bid processing proceeds as follows:

- The bid of Bidder 1 is considered first. This bid is a request to reduce demand from 2 blocks to 1 block starting at \$111,000. Since there is sufficient excess demand at \$111,000, it is applied, bringing aggregate demand for PEA166-P down to 13.

Bidder	Round 3	Round 4			
	Processed Demand	Bid: quantity @ price (all simple)	Applied?	Processed Demand	Aggregate Demand
Bidder 1	2 blocks	1 @ \$111,000	Yes	1 block	13

- The bid of Bidder 4 is considered next. The bid is a request to reduce demand from 4 blocks to 0 blocks starting at \$115,000. The bid cannot be applied in full at this time because there is only excess demand of 3 blocks. It is applied partially, bringing the demand of Bidder 4 down to 1 block and aggregate demand down to 10. Now aggregate demand is equal to supply and Bidder 4's partially applied bid is placed in a queue.

Bidder	Round 3	Round 4			
	Processed Demand	Bid: quantity @ price (all simple)	Applied?	Processed Demand	Aggregate Demand
Bidder 1	2 blocks	1 @ \$111,000	Yes	1 block	13
Bidder 4	4 blocks	0 @ \$115,000	Partially	1 block	10

Queue			
Bidder	Processed Demand	Bid: quantity @ price (all simple)	Order for Processing
Bidder 4	1 block	0 @ \$115,000	2

- The bid of Bidder 2 is considered next. This is a request to reduce its demand from 4 blocks to 2 blocks. It is not applied at this time because there is no excess demand so the bid is added to the queue.

Bidder	Round 3	Round 4			
	Processed Demand	Bid: quantity @ price (all simple)	Applied?	Processed Demand	Aggregate Demand
Bidder 1	2 blocks	1 @ \$111,000	Yes	1 block	13
Bidder 4	4 blocks	0 @ \$115,000	Partially	1 block	10
Bidder 2	4 blocks	2 @ \$115,500	No	4 blocks	10

Queue			
Bidder	Processed Demand	Bid: quantity @ price (all simple)	Order for Processing
Bidder 4	1 block	0 @ \$115,000	2
Bidder 2	4 blocks	0 @ \$115,500	3

- The bid of Bidder 5 is considered next. This is a request to increase demand from zero blocks to 4 blocks. Assuming that Bidder 5 has sufficient eligibility, its bid is applied. As a result, aggregate demand for the product increases to 14.

Bidder	Round 3	Round 4			
	Processed Demand	Bid: quantity @ price (all simple)	Applied?	Processed Demand	Aggregate Demand
Bidder 1	2 blocks	1 @ \$111,000	Yes	1 block	13
Bidder 4	4 blocks	0 @ \$115,000	Partially	1 block	10
Bidder 2	4 blocks	2 @ \$115,500	No	4 blocks	10
Bidder 5	0 blocks	2 @ \$118,000	Yes	2 blocks	12

Queue			
Bidder	Processed Demand	Bid: quantity @ price (all simple)	Order for Processing
Bidder 4	1 block	0 @ \$115,000	2
Bidder 2	4 blocks	0 @ \$115,500	3

- Since the bid request of Bidder 5 was applied, the bid requests in the queue are now reconsidered. Bidder 4’s remaining request to reduce from 1 block to 0 blocks is considered first since it is the bid with the lowest price point in the queue. This bid was applied partially before and now it can be applied in full and removed from the queue. The demand of Bidder 4 is changed from 1 block to 0 blocks, bringing aggregate demand down to 11.

Bidder	Round 3	Round 4			
	Processed Demand	Bid: quantity @ price (all simple)	Applied?	Processed Demand	Aggregate Demand
Bidder 1	2 blocks	1 @ \$111,000	Yes	1 block	13
Bidder 4	4 blocks	0 @ \$115,000	Partially	1 block	10
Bidder 2	4 blocks	2 @ \$115,500	No	4 blocks	10
Bidder 5	0 blocks	2 @ \$118,000	Yes	2 blocks	12
Bidder 4	1 block	0 @ \$115,000	Yes	0 blocks	11

Queue			
Bidder	Processed Demand	Bid: quantity @ price (all simple)	Order for Processing
Bidder 2	4 blocks	2 @ \$115,500	3

- The bid of Bidder 2 to reduce demand from 4 blocks to 2 blocks remains in the queue and is considered next. It is partially applied, bringing the demand of Bidder 2 from 4 blocks to 3 blocks and aggregate demand down to 10. Bidder 2’s bid remains in the queue, because it has not been fully applied.

Bidder	Round 3	Round 4			
	Processed Demand	Bid: quantity @ price (all simple)	Applied?	Processed Demand	Aggregate Demand
Bidder 1	2 blocks	1 @ \$111,000	Yes	1 block	13
Bidder 4	4 blocks	0 @ \$115,000	Partially	1 block	10
Bidder 2	4 blocks	2 @ \$115,500	No	4 blocks	10
Bidder 5	0 blocks	2 @ \$118,000	Yes	2 blocks	12
Bidder 4	1 block	0 @ \$115,000	Yes	0 blocks	11
Bidder 2	4 blocks	2 @ \$115,500	Partially	3 blocks	10

Queue			
Bidder	Processed Demand	Bid: quantity @ price (all simple)	Order for Processing
Bidder 2	3 blocks	2 @ \$115,500	3

- The bid of Bidder 3 is considered next. It is not applied due to insufficient aggregate demand and it is placed in the queue.
- The bid of Bidder 6 is trivially applied, because the bidder did not request to change its quantity.

Bidder	Round 3	Round 4			
	Processed Demand	Bid: quantity @ price (all simple)	Applied?	Processed Demand	Aggregate Demand
Bidder 1	2 blocks	1 @ \$111,000	Yes	1 block	13
Bidder 4	4 blocks	0 @ \$115,000	Partially	1 block	10
Bidder 2	4 blocks	2 @ \$115,500	No	4 blocks	10
Bidder 5	0 blocks	2 @ \$118,000	Yes	2 blocks	12
Bidder 4	1 block	0 @ \$115,000	Yes	0 blocks	11
Bidder 2	4 blocks	2 @ \$115,500	Partially	3 blocks	10
Bidder 3	2 blocks	0 @ \$119,000	No	2 blocks	10
Bidder 6	2 blocks	2 @ \$121,000	Yes	2 blocks	10

Queue			
Bidder	Processed Demand	Bid: quantity @ price (all simple)	Order for Processing
Bidder 2	3 blocks	2 @ \$115,500	3
Bidder 3	2 blocks	0 @ \$119,000	5

The processed demands of the round have now been determined. In this example, aggregate demand is now equal to supply. The posted price of the product for Round 3 is set to \$115,500, the maximum price associated with a reduction bid that was applied in the round (in this case, the bid was applied partially).

The bid increment percentage will be added to the posted price from Round 4 to determine the clock price for Round 5. The Round 4 bids that were not applied during bid processing do not carry over to Round 5.