Pacific Northwest
NATIONAL LABORATORY

PNNL-32992

Vision 0.3.2 Users Guide

Revision 0

June 2022

DT Keller
RE Wilson
R Suarez

U.S. DEPARTMENT OF ENERGY

Prepared for the U.S. Department of Energy
under Contract DE-AC05-76RL01830

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Richland, Washington 99352

Revision Log

Vision 0.3 User Guide

Rev. No.	Date	Describe Changes	Pages Changed
0	6/29/2022	Original Issued	NA

Acronyms and Abbreviations

2-D	Two-dimensional
ARR	Automatic Radionuclide Report
CSV	comma-separated value
FWHM	full width at half maximum
ID	identification
IMS	International Monitoring System
MDA	minimum detectable activity
MDC	minimum detectable concentration
PHD	pulse height data
PNNL	Pacific Northwest National Laboratory
QC	quality control
RN	radionuclide
ROI	region-of-interest
RRR	Reviewed Radionuclide Report
SAUNA	Swedish Automatic Unit for Noble gas Acquisition
SOH	state of health
sccm	standard cubic centimeters

Contents

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Tables

1.0 Vision

Vision is a research software application developed by Pacific Northwest National Laboratory (PNNL) that incorporates the scientific and operational expertise for reviewing data from treaty monitoring radionuclide stations. These stations are part of a worldwide network to monitor for nuclear explosions, and the data they produce are critical to make the determination of whether a sample is from a nuclear explosion or some other source (i.e., nuclear reactor or medical isotope production facility). Stations deliver their measurements and system status to the International Monitoring System (IMS), which forwards it via email to all subscribers. Vision provides tools for viewing and analyzing these stations' state of health data.

The term Vision is used generically throughout this document to refer to any of the various components in the software application. The user interface that is viewed with a web browser is the primary focus of this user guide. Other components include a database to store measurements and state of health (SOH) data; and the automated analysis manager (Daemon) performs analysis, and stores data for review.

1.1 Product Functions

The Vision software is a toolset for monitoring station state of health for diagnosing system problems. It also provides basic screening of radioxenon measurements. In support of this goal, the software is equipped with tools for monitoring SOH data.

The primary functions of the software are:

- Graphical display of radionuclide measurements
- Data analysis to calculate estimated concentrations and minimum-detectable-concentrations (MDCs) for radionuclides
- Ability to facilitate a review process for radionuclide measurements, including the ability to escalate
- Ability to override the station-provided energy gain calibration as part of data quality review processes for cases when the energy calibration is suspect
- SOH functionality, including ability to monitor specific status indicators of any station's health.

2.0 Viewer

2.1 Menu

Along the top of the screen is a menu, giving quick access to each of the primary views provided for utilizing and configuring the Vision ecosystem.

Figure 2-1 Top Menu Strip

2.1.1 Server LEDs

The server LEDs provide feedback to all users as to the status of the Vision ecosystem. Green LEDs are for healthy servers, orange for those that are running, but are not fully functioning, and red for those the user interface can't communicate with.

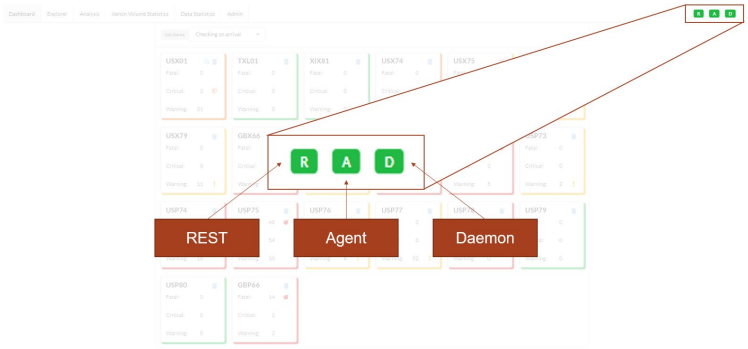


Figure 2-2 Server LEDs

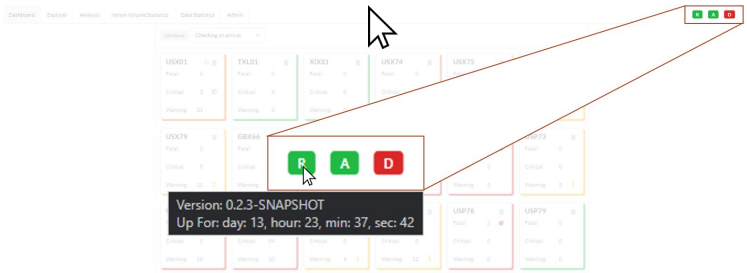


Figure 2-3 Server LED Tooltip: Health

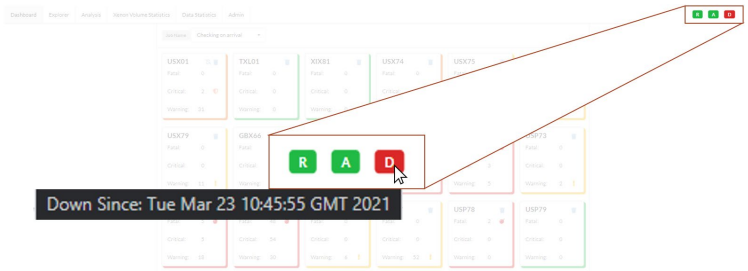


Figure 2-4 Server LED Tooltip: Unreachable

2.1.2 Settings

The settings dialog can be accessed by clicking the cog in the upper right of the menu strip.

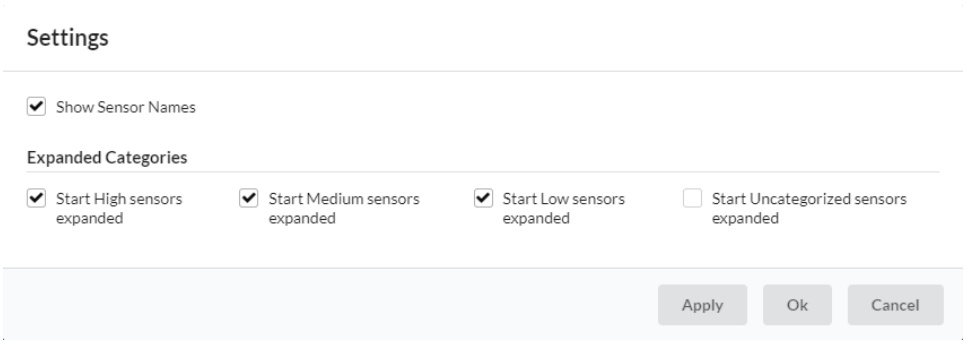


Figure 2-5 Settings Dialog

Selecting the “Show Sensor Names” allows users to change how sensors are displayed. Expand Categories checkboxes allow users to specify if category group boxes are collapsed or expanded on the Analysis page[1].

2.2 Dashboard

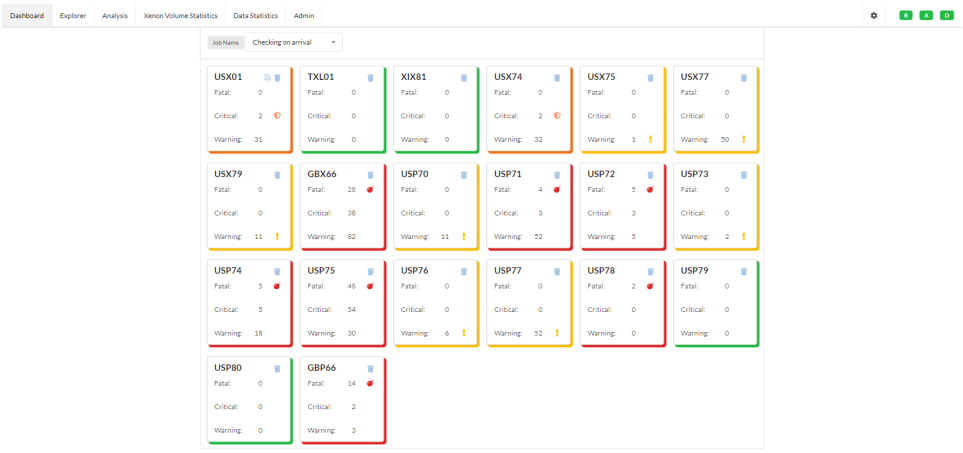


Figure 2-6 Stations displayed on Dashboard

The first screen you will see is the dashboard which gives summary of the automated analysis results for the systems of interest.

2.2.1 Stale Results

If the results are stale a colored stopwatch will be displayed giving an indication of how old the displayed results are. Yellow is longer than a single update period[2], orange is longer than two, and red is longer than three.

[1] This feature is not available on the Explorer page

[2] A yellow stale state will occasionally be shown while the Daemon is running the current job because this doesn’t take into account the time it takes for the newest job to run.

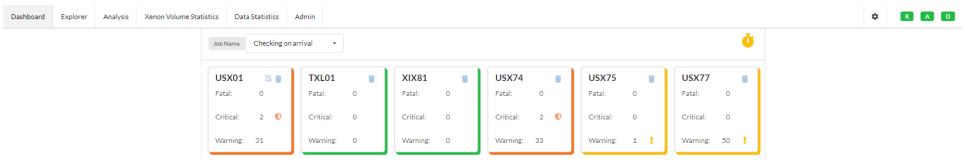


Figure 2-7 Yellow stale stopwatch indicator

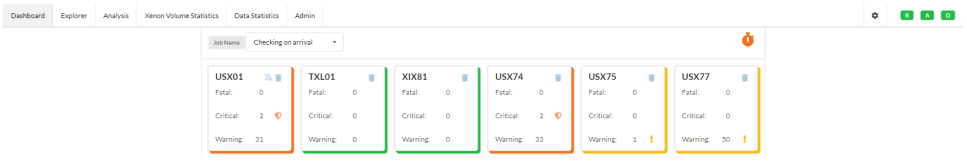


Figure 2-8 Orange stale stopwatch indicator

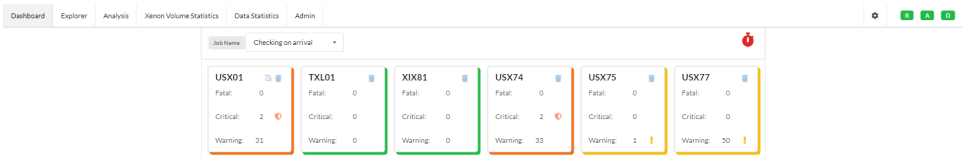


Figure 2-9 Red stale stopwatch indicator

2.2.2 Cards

Colors and icons are used to signal a station's status. Colored borders indicate the presence and severity of alerts. If no alerts are present, a station's card border will be green. If the highest alert for a station is warning, it's border will be yellow. Similarly, for critical or fatal alerts, their border will be orange or red, respectively. If any sensors for a station are squelched[3], and silent bell icon is added to the upper right corner of the card. If a trend is present, and plot icon is added to the upper right corner of the card. This card paradigm is also used in the Explorer view for individual sensor cards.

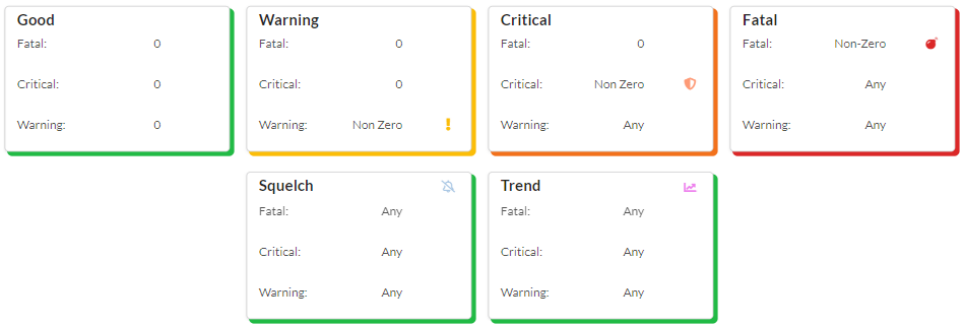


Figure 2-10 Card colors and icons

2.2.3 Dashboard Sensor List

By clicking on a station's card, a list of alerting sensors that contribute to a station's health status are populated below the cards. By clicking on the plot icon next to the station's site code, a new tab will open to the Explorer tab, with this station's tab in focus. By clicking on the plot icon in the graph column, a new tab will open to the Explorer tab, with the station's tab in focus, and the sensor plotted.

[3] see 2.2.3 for details about squelching sensors

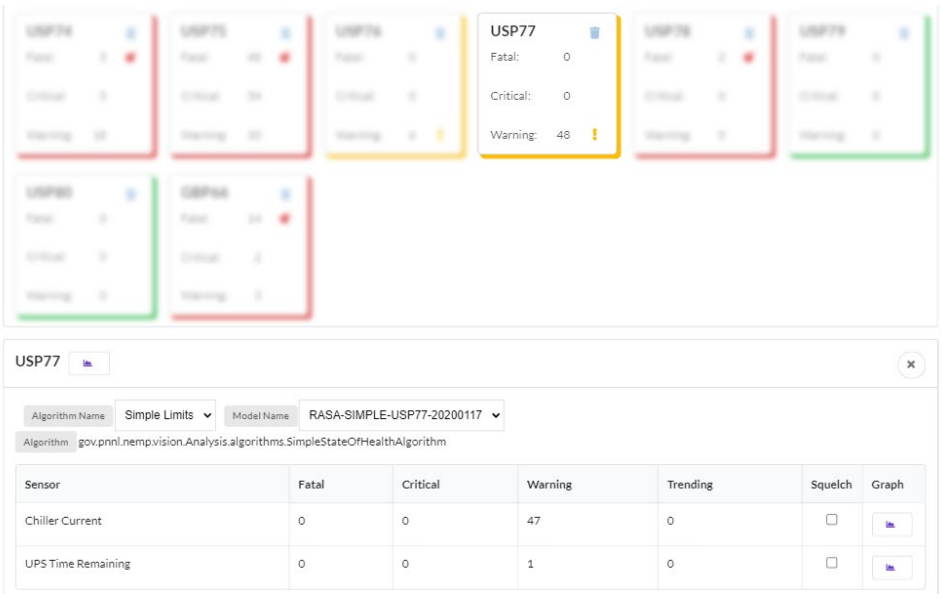


Figure 2-11 Station selected from Dashboard

2.2.3.1 Filtering Results

Sensors listed are organized by 1) the model collection and 2) the algorithm used to generate the alerts. Each column has a sum of the alerts for the previous two weeks. Alerts are stored by sensor name, start/stop times, and severity level. Start and stop times bound contiguous alerts. E.G. if a sensor alerts for 2 hours contiguously, it'll be counted as a single alert rather than 12 alerts (one for each 10 minute data point that alerted).

2.2.3.2 Squelching sensors

Squelching a sensor affects the station's status. Alerts will still be recorded and reported, but if a sensor is generating Fatal alerts, while the remaining alerting sensors are generating no greater than Warning alerts, then the station's status will be set to Warning.

2.3 Explorer

The purpose of the Explorer page is to present greater detail into the results of the automated analysis for each station. Only the sensors for the currently selected Station, Job, Model, and Algorithm are displayed, by category. Sensor's categories can be adjusted on the Sensor Profile page[1].

The cards on this page are for each sensor, where the color denotes that sensor's status for the selected time-period (page defaults to the last two weeks from today). If the station isn't assigned to a job, no sensors will be offered.

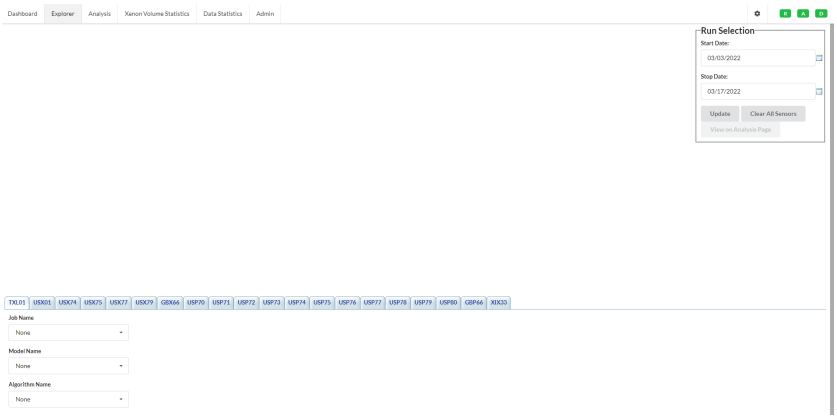
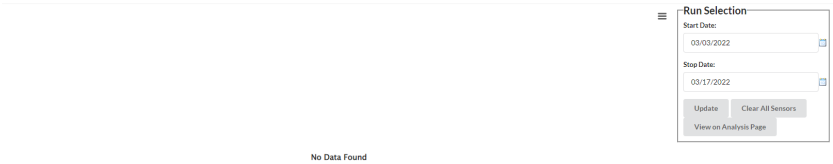


Figure 2-12 Explorer page where station has not been assigned to job analysis

Clicking the tabs with the desired station's code will load that station's sensor list, displaying the number of alerts, by severity, and the overall sensor status per the current job's results.



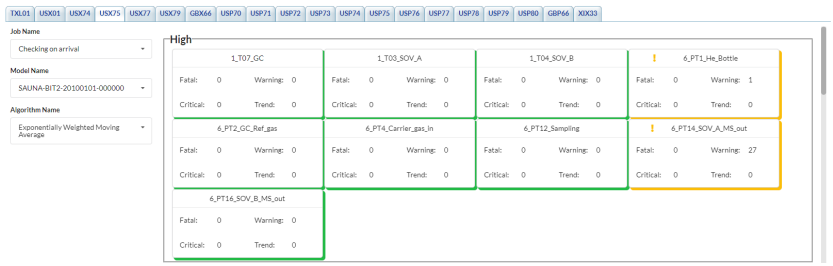


Figure 2-13 Selecting alternate station assigned to job analysis

[1] See section 7.6 for details on assigned category and adjusting sort order of sensors

To plot a sensor, click anywhere on the sensor's card. The station's name will be concatenated with an underscore (`_`) to the sensor's name in the plot legend. On the Explorer page, when a singular sensor is selected, the legend will also contain Warning, Critical and Fatal Alert Region entries. These will initially be hidden (as noted by the text being greyed out).

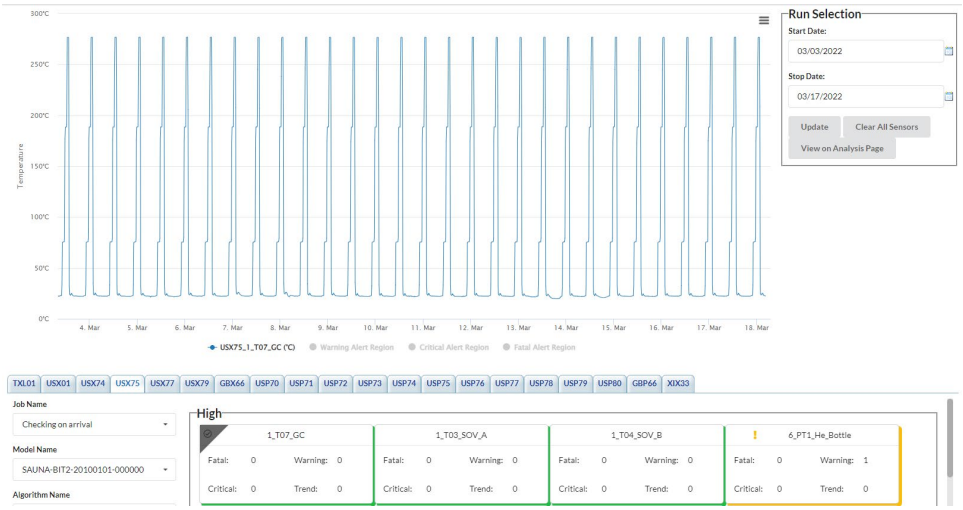


Figure 2-14 Plot of a single sensor on the Explorer page

To show the alert regions, click on the region names in the legend. Each region will have an upper and lower limit. The displayed limits denoted what values the sensor's value at each point was evaluated against at that time. This distinction is important as some limits may change if using an evolving model.[2]

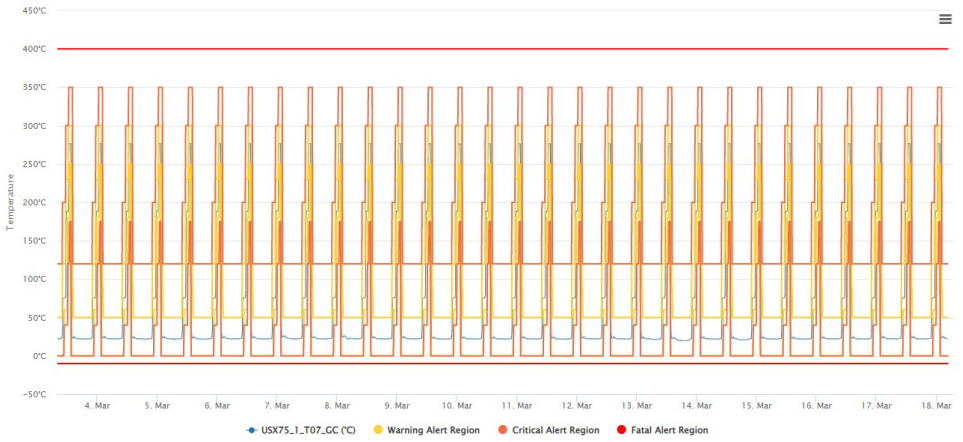


Figure 2-15 Plot of a sensor with alert regions on the Explorer page

It's helpful to capture plots for documents or presentations. Rather than having to take a screenshot, click the dialog button in the upper right of the image, and select the download the desired image format.

[2] For more details on alert regions, see section 2.7.4.

From this menu, spreadsheets may also be downloaded. This is applicable to every chart in Vision, not just those on the Explorer page.

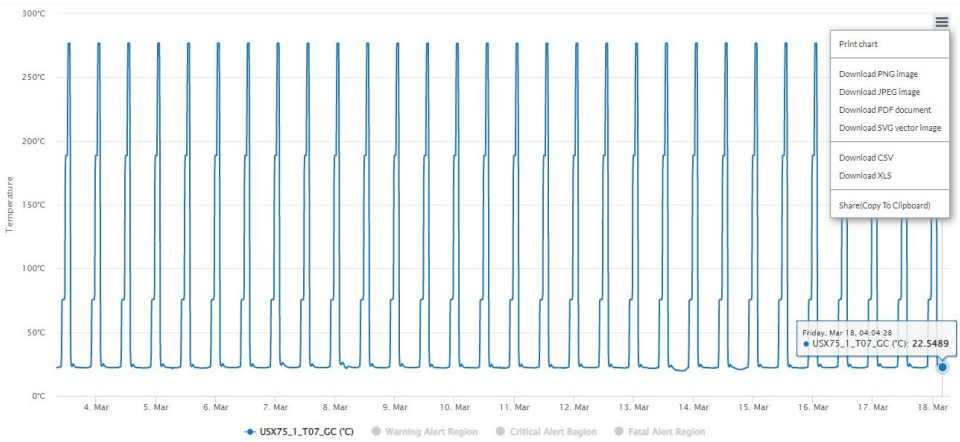


Figure 2-16 Chart download and share dialog

Additionally, there is a “Share (Copy to Clipboard)” option that will generate a URL that can be shared with other users that have access to the instance of Vision. For all pages, at the minimum it will load the same page with the same timeframe. For pages like the Explorer and Analysis pages, the URL will also include the current sensors being plotted, as well as the current stations tab in focus.

Example URL: http(s)://host.name/viewer/explorer?station=USX75&startDate=20220303&
stopDate=20220317&sensor=USX75;;1_T07_GC&sohModel=2&sensorModel=34

Table 1 Explorer Share URL Breakdown

Query	Description
station=USX75	Station tab in focus (if omitted, first tab will be in focus)
startDate=20220303	Start date for plotting sensor data. At minimum, this will set the start date in the Run Selection form group.
stopDate=20220317	Stop date for plotting sensor data. At minimum, this will set the stop date in the Run Selection form group.
sensor=USX75;;1_T07_GC	List of sensors to be selected, and then plotted. Each sensor to be plotted with specify the station code and sensor name concatenated using two semi-colons. If this is omitted, then no data will be plotted upon arriving on the page. Multiple sensors are appended using the `+` character
sohModel=2	SOH Model index stored in database. This is safer than using the SOH Model name, because that can be changed
sensorModel=34	Sensor Model index stored in database. This is safer than using the Sensor Model name, because that can be changed

When multiple sensors are plotted on the Explorer page, the alert limits are removed because the plot would become overly complicated.

Figure 2-17 Plot of a multiple sensors on the Explorer page

As not all sensors may be visible from the Explorer page (as no sensors are required to be included in jobs for analysis), if the user clicks the “View Analysis Page” button, a new tab is opened to the Analysis page with the same selected sensors and timeframe.

Figure 2-18 Plot of a multiple sensors after utilizing the “View Analysis Page” button

After the new tab is loaded, inspecting the address bar will show a similar query to what is generated when using the upper right dialog menu to obtain a sharable URL.

Example URL: http(s)://host.name /viewer/analysis?station=USX75&startDate=20220303&
stopDate=20220317&sensor=USX75;;1_T07_GC+USX75;;1_T03_SOV_A

Table 2 Analysis Share URL Breakdown

Query	Description
station=USX75	Station tab in focus (if omitted, first tab will be in focus)
startDate=20220303	Start date for plotting sensor data. At minimum, this will set the start date in the Run Selection form group.
stopDate=20220317	Stop date for plotting sensor data. At minimum, this will set the stop date in the Run Selection form group.
sensor=USX75;;1_T07_GC +USX75;;1_T03_SOV_A	List of sensors to be selected, and then plotted. Each sensor to be plotted with specify the station code and sensor name concatenated using two semi-colons. If this is omitted, then no data will be plotted upon arriving on the page. Multiple sensors are appended using the `+` character

It is not required that the sensor list be limited to be source from a single station. Similarly, there is no requirement that the station tab in focus be associated with any of the plotted sensors.

2.3.1 Analysis Alerts

An alert is created once a sensor has exceeded a region's limit for 3[3] contiguous data points. The alert's quality is based on the maximum limit exceeded (Warning, Critical or Failure in ascending order). The alert's span begins from the 3rd point[4] and extends util the data points no longer exceed the region's limits. As seen in Figure 2-19, the Warning alert spans 3 data points (indicated by the yellow highlight and Warning label in the upper margin), but the tooltip from two data points prior to the alert shows that it's the first data point below the Warning region.

[3] This number will be configurable in a future release
[4] Not the first data point which exceeded the limit

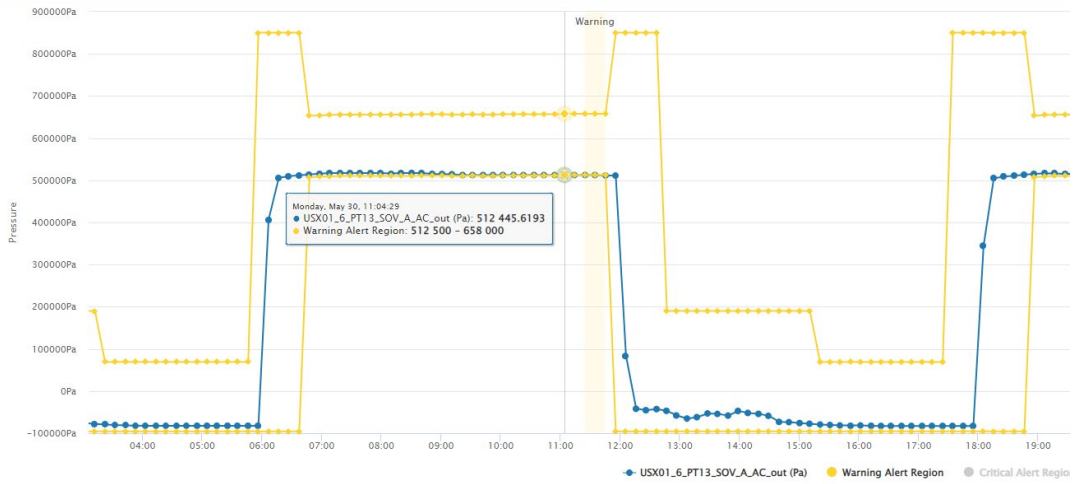


Figure 2-19 Asserting a warning alert

For the count of alerts, each contiguous set of alert points of a given severity. Above a single alert consists of three contiguous points. Below, there are two alerts, each consisting of a few dozen points each.

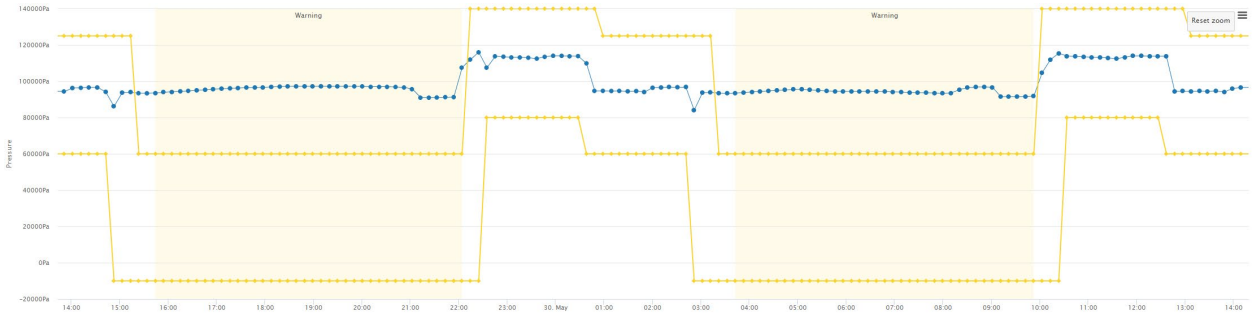


Figure 2-20 Varied alert region sizes highlighted in yellow and Warning label along upper margin

2.4 Analysis

General usage of the Analysis page is the same as the Explorer page. The biggest difference is that the Explorer show results from predefined analysis, while the analysis page allows for interactive analysis utilizing predefined models. Based on user settings, the sensor groups may initially be expanded or collapsed (see section 2.1.2).

Figure 2-21 Initial Analysis page with collapsed Uncategorized

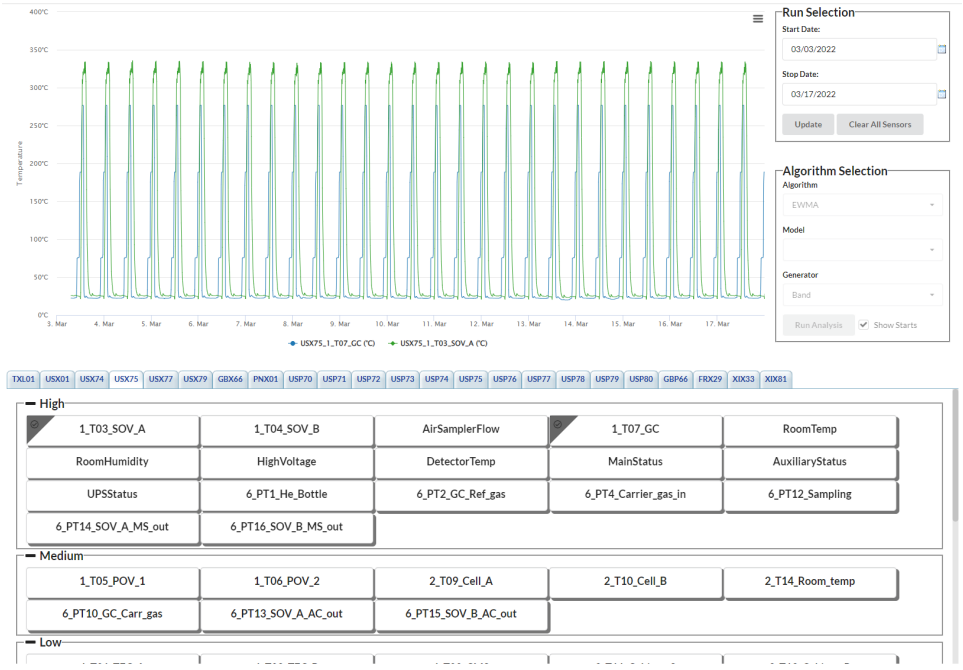


Figure 2-22 Plot of a multiple sensors on the Analysis page

Cards simply list a sensor's name (see section 2.1.2) on this page because it isn't referring to pre-run analysis results with alert counts or statuses for the sensors therein.

2.4.1 Manual Analysis

To perform analysis on a sensor, make sure only a single sensor is selected (else controls will be disabled, as can be seen in Figure 2-20 where two sensors have been selected/plotted). Select the desired algorithm to be used for model generation (algorithms are alphabetized by their simple name). Below we have selected the Simple algorithm, which will "simply" see if the data lies between the defined limits.[1]

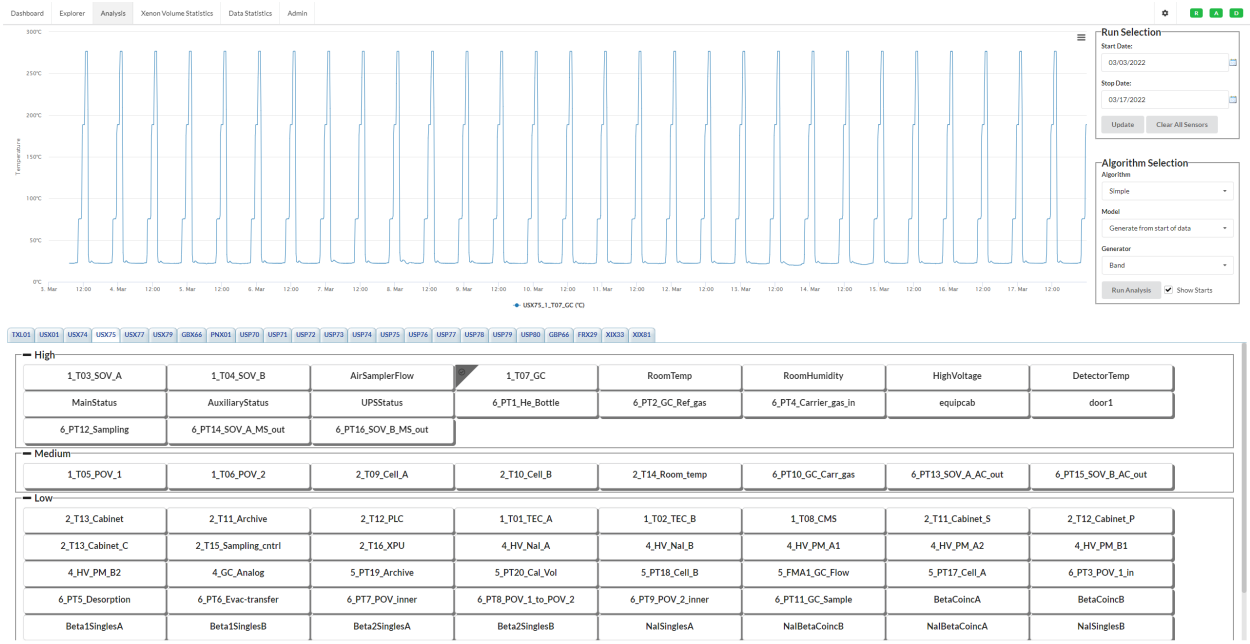


Figure 2-23 Simple Algorithm Selected

Next select the desired model. The default selection is "Generate from start of data." This option 1) takes the first complete cycle's worth of data as the initial model's value and 2) ensure that a sensor may be analyzed despite a formal model having been created or not. To create alert regions, select the desired model generator. The provided alert generator plugins are "Band" and "Bound/Tunnel." The "Band" generator is intended for sensor's whose value is generally flat (e.g., high voltage, power input, etc.). It takes the median value of all the data points and creates a constant region that increases the upper and lower limits by 10%, 20% and 30% of the data's range span.

[1] For more details on alert regions, see section 2.7.4.

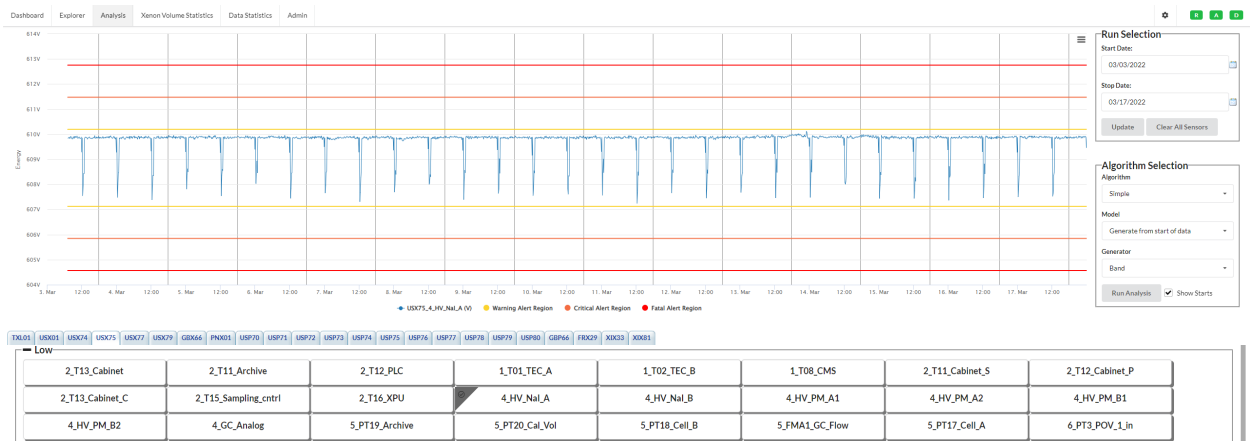


Figure 2-24 Analysis of stable sensor using Band generated model

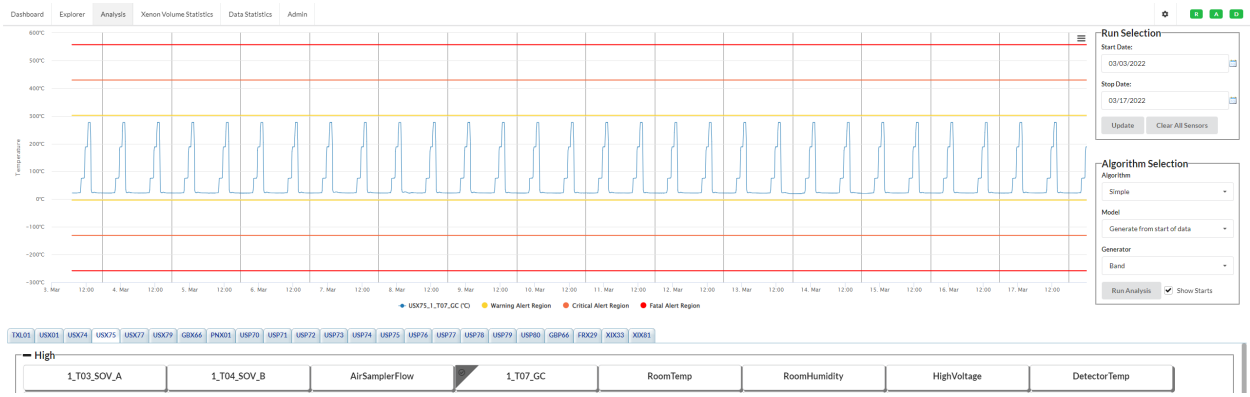


Figure 2-25 Analysis of variable sensor using Band generated model

The “Bound/Tunnel” generator is intended for sensor’s whose value may fluctuate throughout the cycle, but generally remains “constant” at the same point during each cycle. It takes the span of all the data points, and creates a region that is ±10%, ±20% and ±30% of that span from each data point, thus creating a “tunnel” around the model’s center.

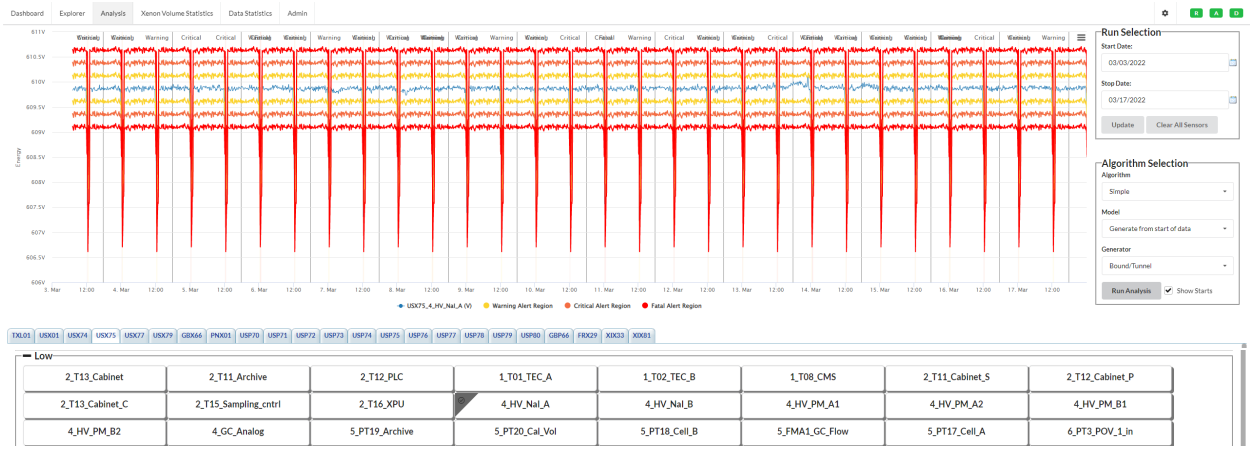


Figure 2-26 Analysis of stable sensor using Bound/Tunnel generated model

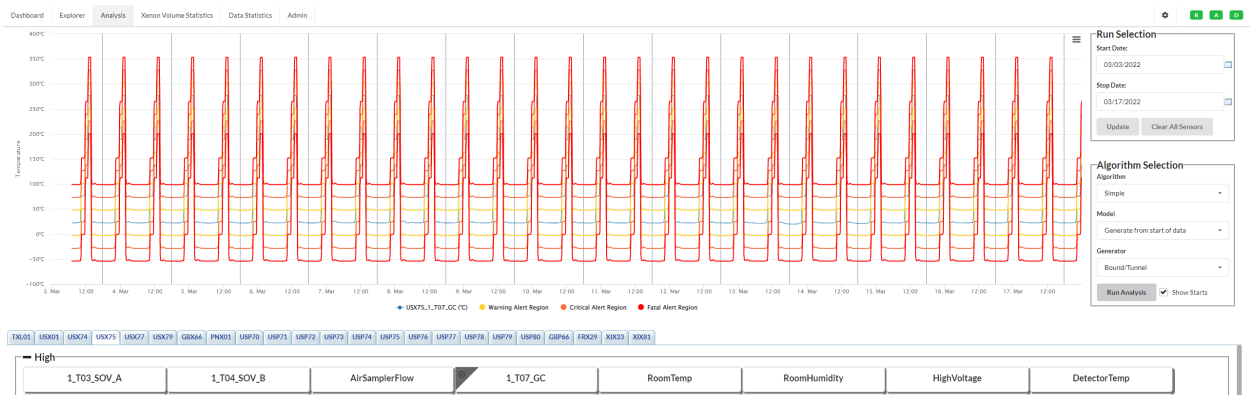


Figure 2-27 Analysis of variable sensor using Bound/Tunnel generated model

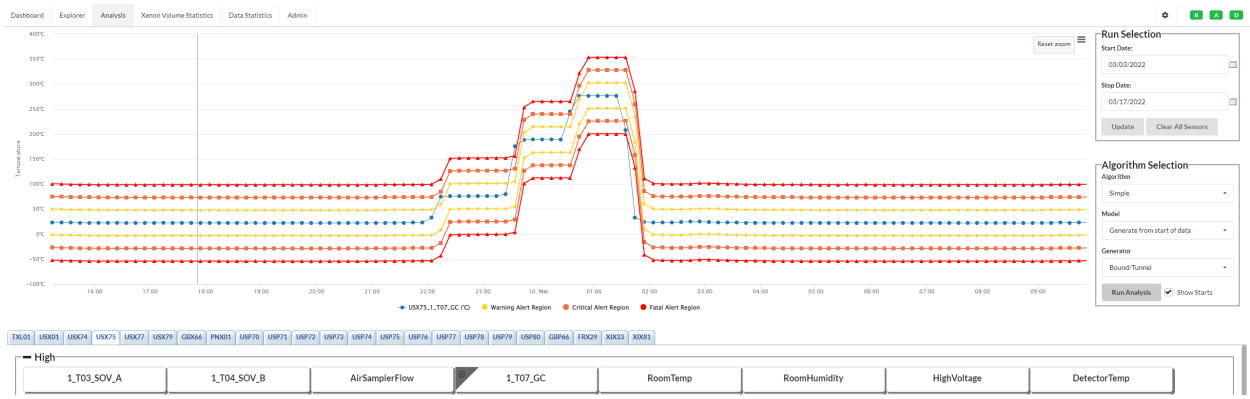


Figure 2-28 Analysis of variable sensor using Bound/Tunnel generated model (zoomed in)

2.5 Xenon Volume Statistics

Though some systems report in their RMSSOH data the volume of xenon, this page pulls the reported Xenon volume from the SAMPLEPHD in the database.[1] Each data point represent the volume for a single detector.

Like the other tabs, the default period is two weeks. There are buttons in the upper right that allow the user to quickly toggle between two weeks, one month or three months. To explicitly set the date, clicking the 'Custom Range' button will open a dialog to set the start and stop dates.

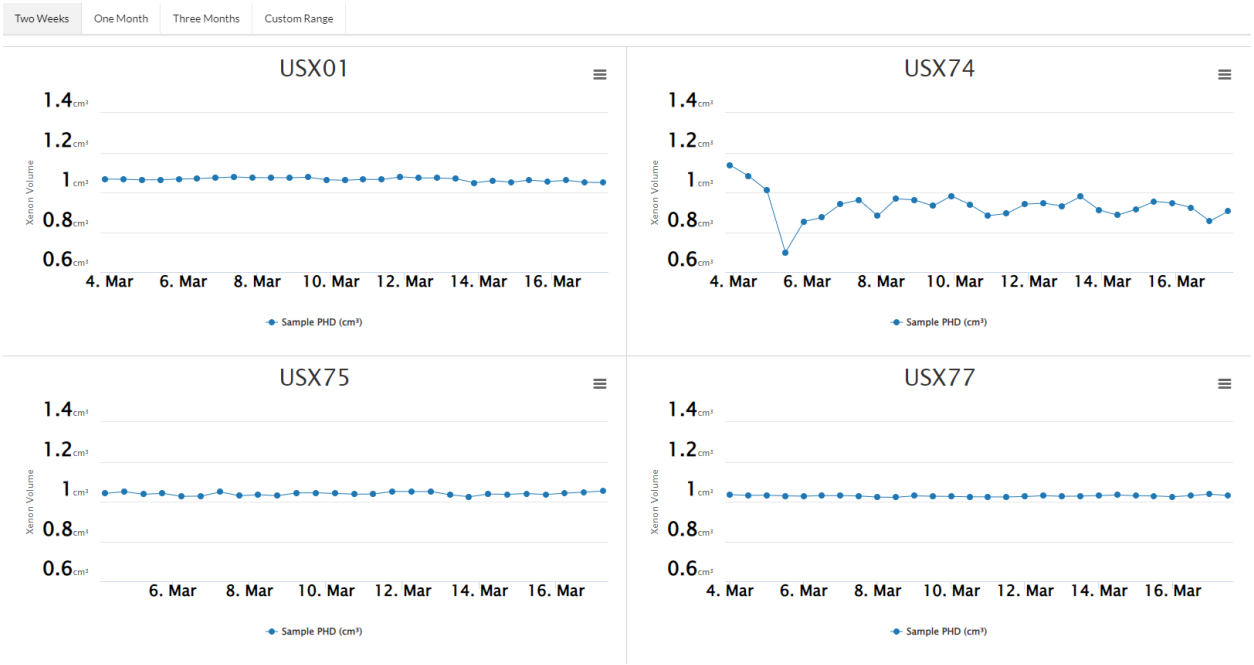


Figure 2-29 Xenon Volume Statistics Plots

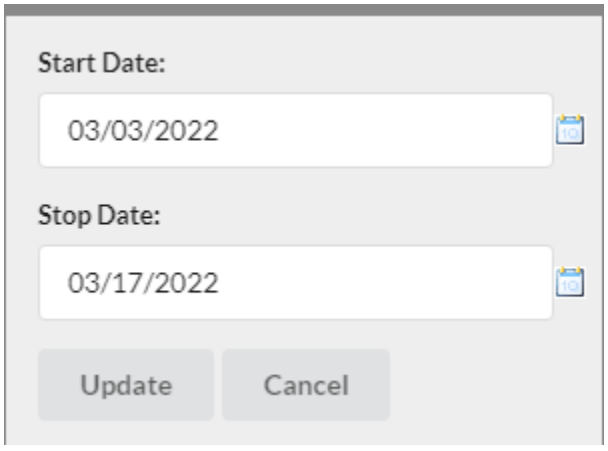


Figure 2-30 Date Picker

[1] The values reported in SAMPLEPHD's often isn't the same value as what is reported in RMSSOH

2.6 Data Statistics

Data Statistics page is used to communicate for what period does the database contain RMSSOH data for a system. It utilizes the sampling start and stop times from the RMSSOH header. If there are time gaps greater than 15 minutes between files, then a new segment is created.

Like the Xenon Volume Statistics page, there are buttons in the upper right that allow the user to quickly toggle between two weeks, one month or three months. To explicitly set the date, clicking the 'Custom Range' button will open a dialog to set the start and stop dates.

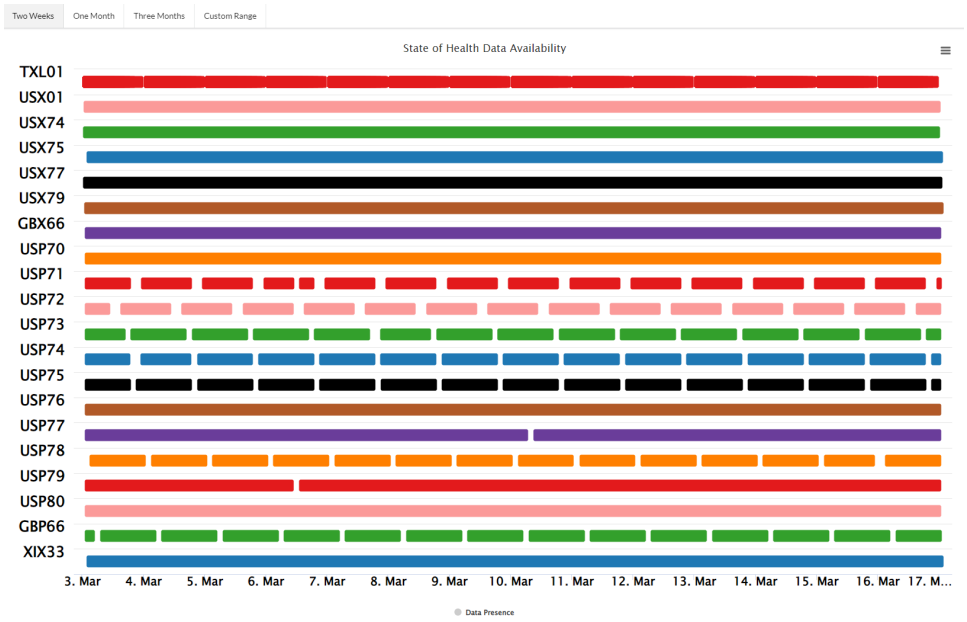


Figure 2-31 Data Statistics Bar Graph

2.7 Admin

The admin pages are for configuring page content, auto analysis configuration, and creating analysis models. Until authentication is implemented, this page is accessible to all users. The default subpage for the ‘Admin’ tab is the Daemon Job Setup.

2.7.1 Daemon Job Setup

This page is for setting up a schedule for auto analysis to be performed. Currently the only supported schedule type is ‘periodic’ or cyclical.[1] Periods are defined in minutes. After selection a job, the list of assigned ‘Daemon System Setup’ is displayed in the table below.

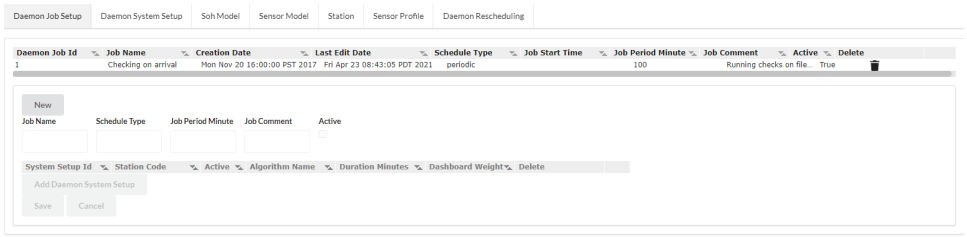


Figure 2-32 Daemon Job Setup Page

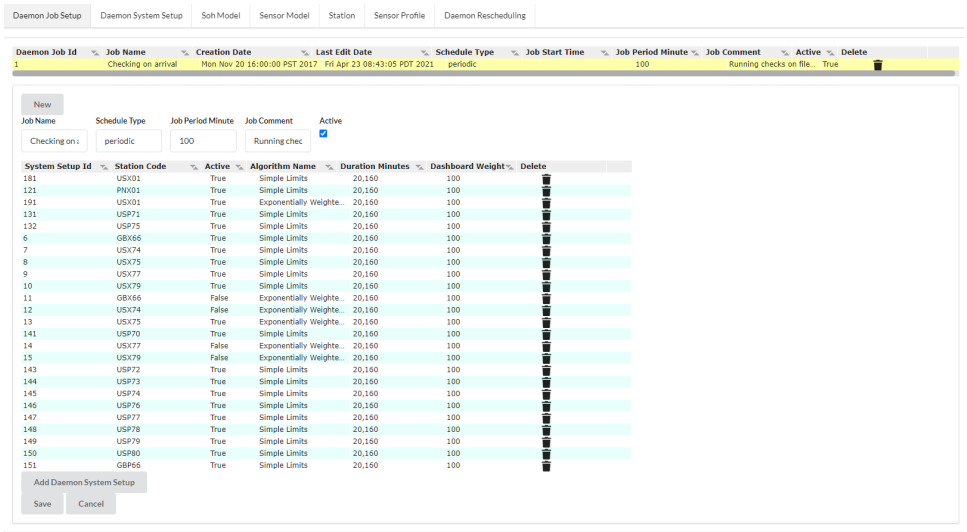


Figure 2-33 Daemon System Setup Assigned to Job

A ‘Daemon System Setup’ can be assigned from the modal dialog after clicking the ‘Add Daemon System Setup’ button. Select the desired entry and click ‘Ok’ to add. The ‘Daemon System Setup’ list for the job will be automatically reloaded.

[1] Intent is to add weekly, bi-weekly and monthly for jobs

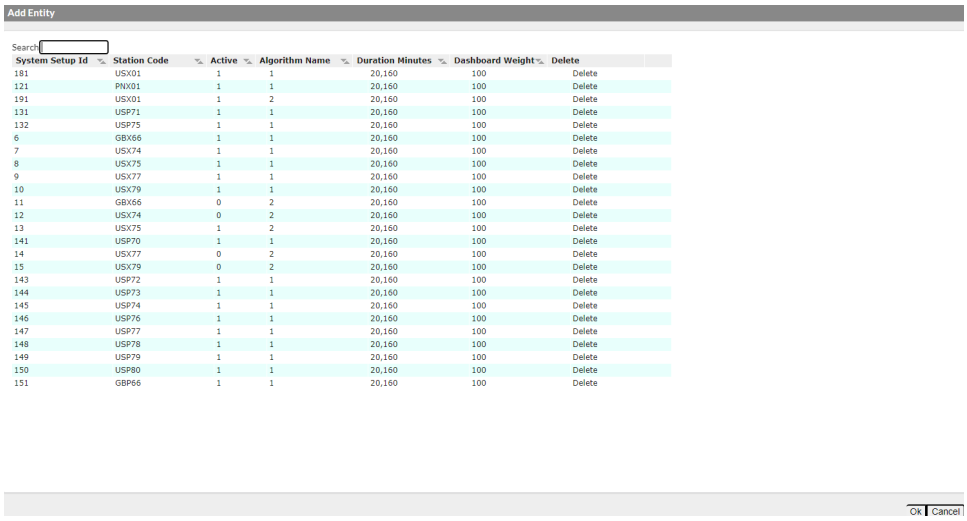


Figure 2-34 Daemon System Setup Modal

2.7.2 Daemon System Setup

The Daemon System Setup page allows the user to assign an SOH Model collection to be used with a specified algorithm to analyze a specific station's (system's) sensors. The system can be set inactive apart from a job. The duration in minutes is the amount of data before now which should be pulled from the database for analysis (20160 minutes = 2 weeks).

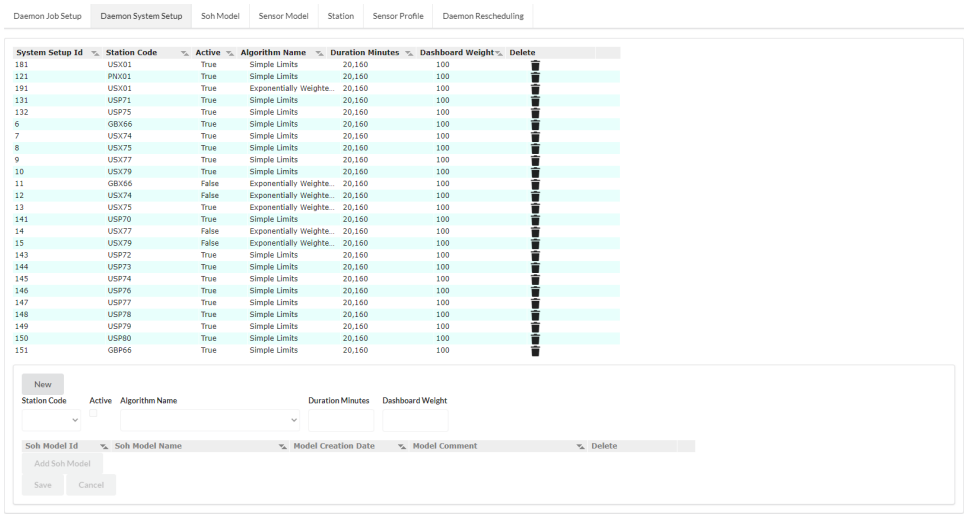


Figure 2-35 Daemon System Setup

After selection a daemon system setup, the list of assigned 'SOH Model' is displayed in the table below. A 'SOH Model' can be assigned from the modal dialog after clicking the 'Add SOH Model' button. Select the desired entry and click 'Ok' to add. The 'SOH Model' list for the 'Daemon System Setup' will be automatically reloaded.

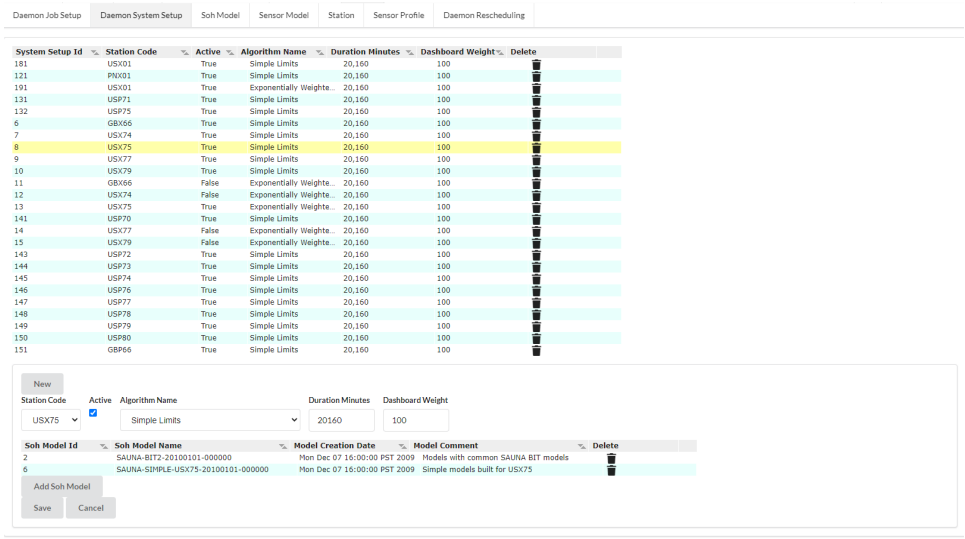


Figure 2-36 Assigning SOH Model Collections

2.7.3 Soh Model

An ‘SOH Model’ collection defines a group of sensor models to be used together to evaluate a system. This is extremely helpful when sensors across multiple systems can utilize the same models. The name of an SOH Model is only utilized for identification by the user and may be changed at any time.

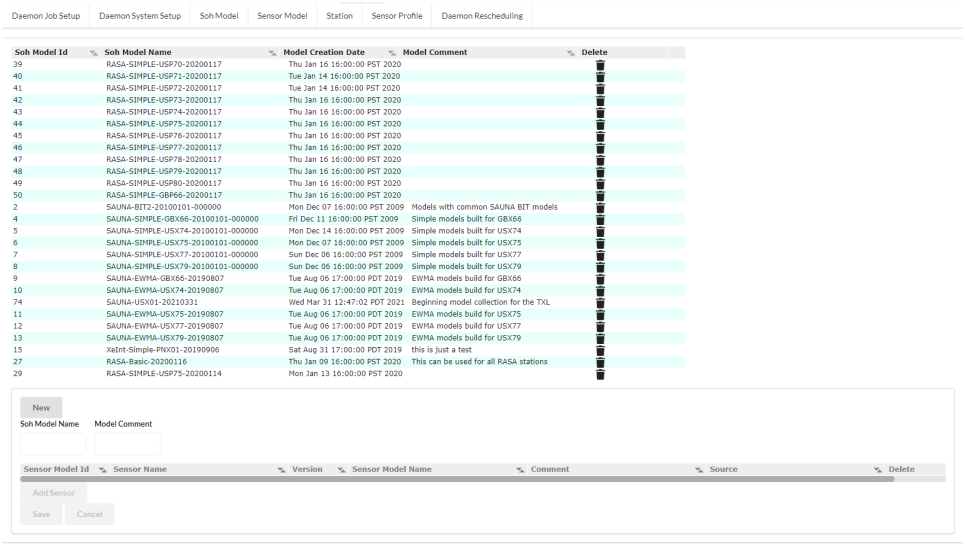


Figure 2-37 SOH Model Collections

After selection a SOH Model, the list of assigned ‘Sensor Model’ is displayed in the table below. A ‘Sensor Model’ can be assigned from the modal dialog after clicking the ‘Add Sensor’ button. Select the desired entry and click ‘Ok’ to add. The ‘Sensor Model’ list for the ‘SOH Model’ collection will be automatically reloaded.

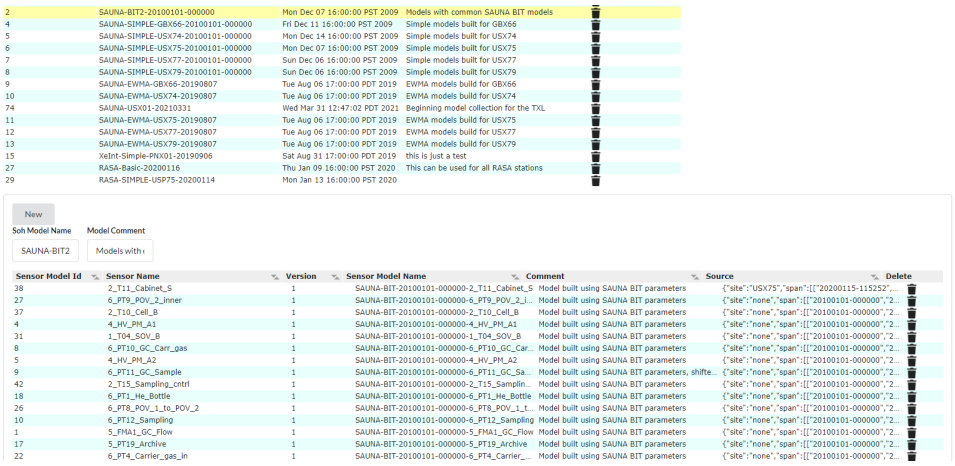


Figure 2-38 Assigning Sensor Models

2.7.4 Sensor Model

Sensor models are utilized to describe the alert regions for a specific sensor. This page allows the user to create sensor model limit, utilizing actual system data to verify its validity/effectiveness (assuming that the system utilized to generate the model is functioning in a known good state). Use the system and dates fields in the upper left margin to select station and duration of time to gather data (start and stop dates). Once start and stop dates are determined, the application will find the cycle start times for plotting data. In a two-week period, there should be approximately 14 cycle starts.

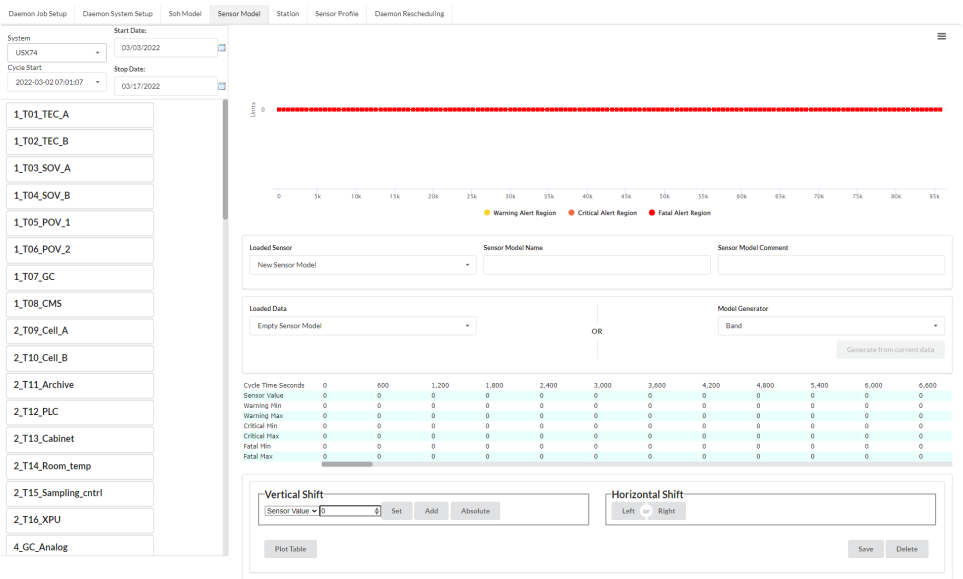


Figure 2-39 Sensor Model page

To create a model, select a sensor. System data for that sensor will be plotted for the cycle which began at the time specified in Cycle State. At any time during this process, the user can change the reference data by changing the start/stop dates and/or the cycle start time. This is helpful to determine if/how the waveforms shift in time or magnitude during the cycle.

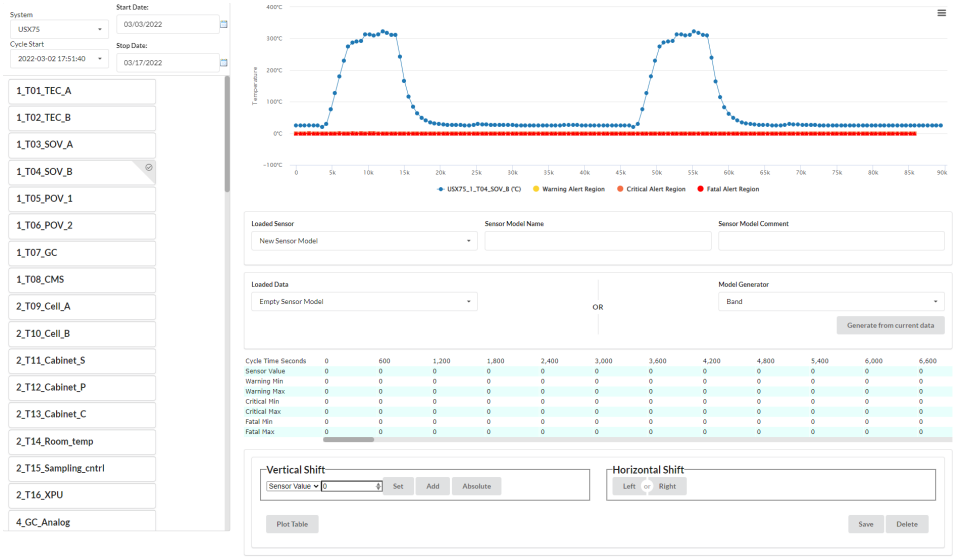


Figure 2-40 Reference Sensor Data Loaded

It is assumed that the system cycle is 24 hours. IMS RMSSOH is on a 10-minute interval, therefore there should be 144 datapoints per cycle. The sensor models will utilize 145 bins, with bins 0 and 145 being identical, allowing an algorithm to choose to utilize the bins in inclusive low or inclusive high. To make initial model generation easier, a model generator may be utilized initially. As mentioned previously in section 2.4.1, the alert generator plugins “Band” and “Bound/Tunnel” are provided with Vision.

The “Band” generator is intended for sensors whose value is generally flat (e.g., high voltage, power input, etc.). It takes the median value of all the data points and creates a constant region that increases the upper and lower limits by 10%, 20% and 30% of the data’s range span. As demonstrated in the figure below, the “Band” generator isn’t appropriate for our current waveform.

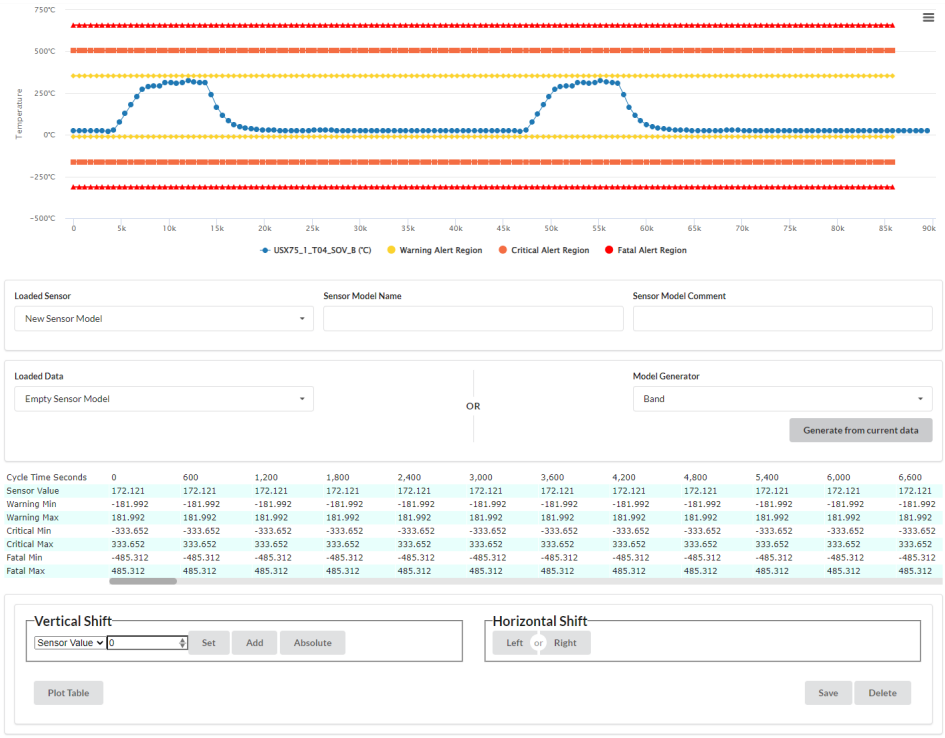


Figure 2-41 Reference Data with Band Generated Model

Looking at the striped table, we’ll discuss how the model is stored. The sensor value is the desired value. Note that for the ‘Band’ generator, this value is the average of the waveform, and is constant across the entire period. Then there are pairs of limits, min and max, for each alert region, Warning, Critical and Fatal. These regions are defined by how much the value of the sensor may vary from the sensor model’s value. In the case the Warning max, the plotted value is 172.121 °C + 181.992 °C = 354.113 °C. Note, that for the ‘Band’ generator, the magnitude of the min/max pairs are equal. Because both the sensor values and region limits are constant, the limits themselves are constant.

The “Bound/Tunnel” generator is a slight variation of the ‘Band’ generator, intended for sensors whose value may fluctuate throughout the cycle, but generally remains “constant” at the same point during each cycle. It takes the span of all the data points, and creates a region that is ±10%, ±20% and ±30% of that span from each data point, thus creating a “tunnel” around the model’s center. Looking at the striped table the sensor value varies with the source sensor’s data, but the magnitude of the min/max pairs are still equal, thus each region limit is a transposed version of the original source’s waveform.

Cycle Time Seconds	0	600	1,200	1,800	2,400	3,000	3,600	4,200	4,800	5,400	6,000	6,600
Sensor Value	25.505	25.347	25.347	25.347	25.347	24.916	20.485	30.541	75.873	127.543	180.313	230.467
Warning Min	-30.332	-30.332	-30.332	-30.332	-30.332	-30.332	-30.332	-30.332	-30.332	-30.332	-30.332	-30.332
Warning Max	30.332	30.332	30.332	30.332	30.332	30.332	30.332	30.332	30.332	30.332	30.332	30.332
Critical Min	-60.664	-60.664	-60.664	-60.664	-60.664	-60.664	-60.664	-60.664	-60.664	-60.664	-60.664	-60.664
Critical Max	60.664	60.664	60.664	60.664	60.664	60.664	60.664	60.664	60.664	60.664	60.664	60.664
Fatal Min	-90.996	-90.996	-90.996	-90.996	-90.996	-90.996	-90.996	-90.996	-90.996	-90.996	-90.996	-90.996
Fatal Max	90.996	90.996	90.996	90.996	90.996	90.996	90.996	90.996	90.996	90.996	90.996	90.996

Figure 2-42 Reference Data with Bound/Tunnel Generated Model

Another way to jump start the creation of a model is to start from an existing sensor model. This can be done by selecting the sensor model from the ‘Loaded Data’ drop down. Rather than having to scroll through the complete list of sensor models, the user can search the list of sensor model names.

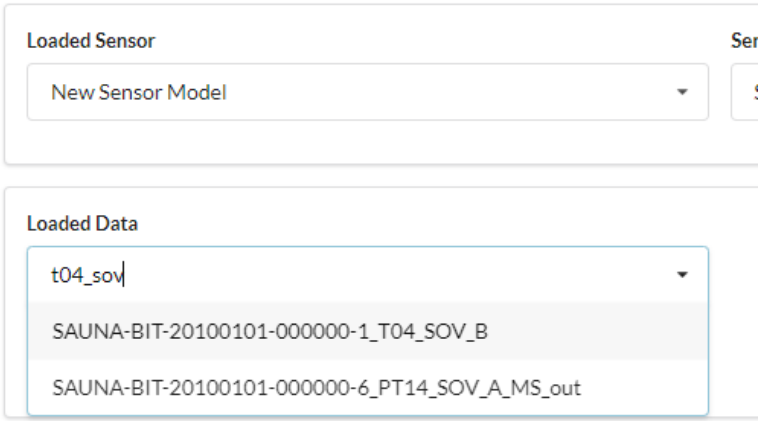


Figure 2-43 Loading an Existing Sensor Model with Current Data

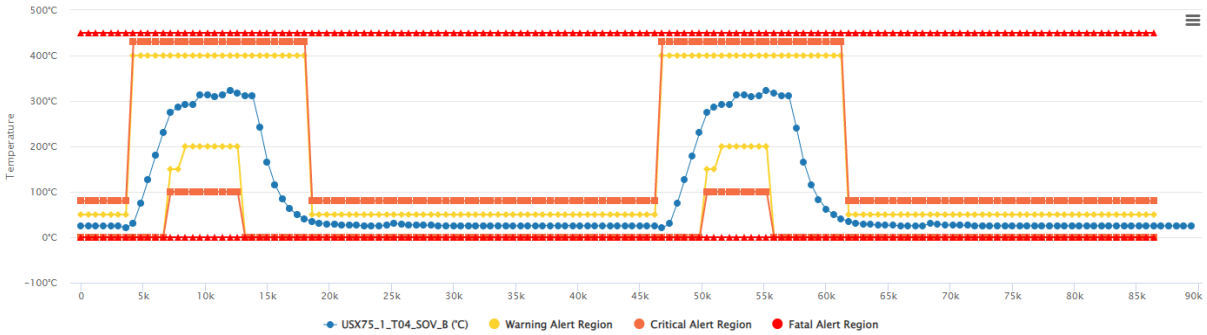


Figure 2-44 Loaded Existing Model Data

This behavior is non-destructive. The user can also make changes to the value directly in the striped table. Once all the desired modifications have been applied to the table, clicking 'Plot Table' will apply the changes to the plot. This allows the user to preview their changes before saving.

If the user, instead, were to select the sensor model from the 'Loaded Sensor' list, this would load the sensor data from the system that was utilized to generate the model. Once the model was loaded, then any changes made and subsequently saved would be applied to this model, and not to the new model previously under development. If a 'Loaded Sensor' model is loaded, and previously model information is lost.

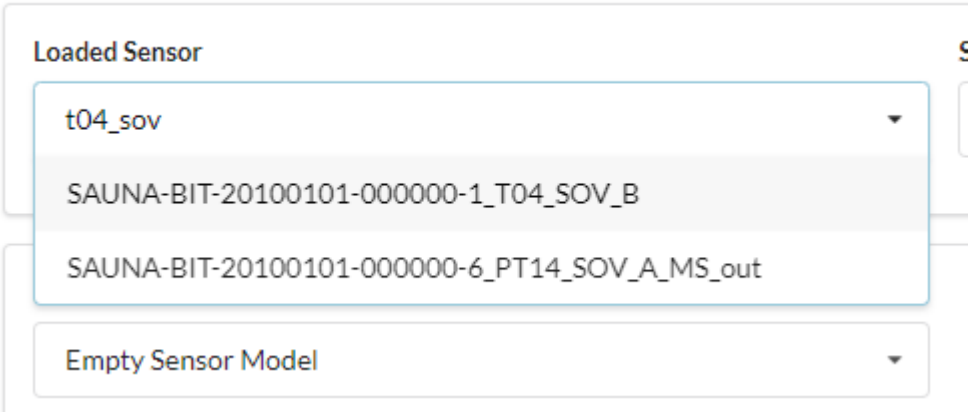


Figure 2-45 Loading Sensor Model and Source System Data

Using the Horizontal Shift Left or Right buttons, we can adjust the model data to align with this system's oven cycle. Below we've shifted the model to the left several times to show it out of time sync with the sensor's waveform.

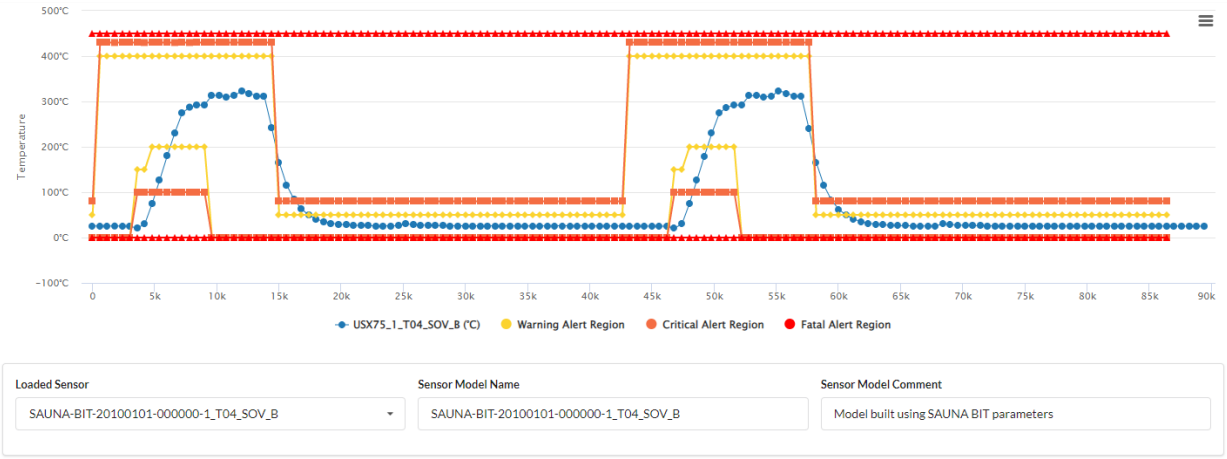
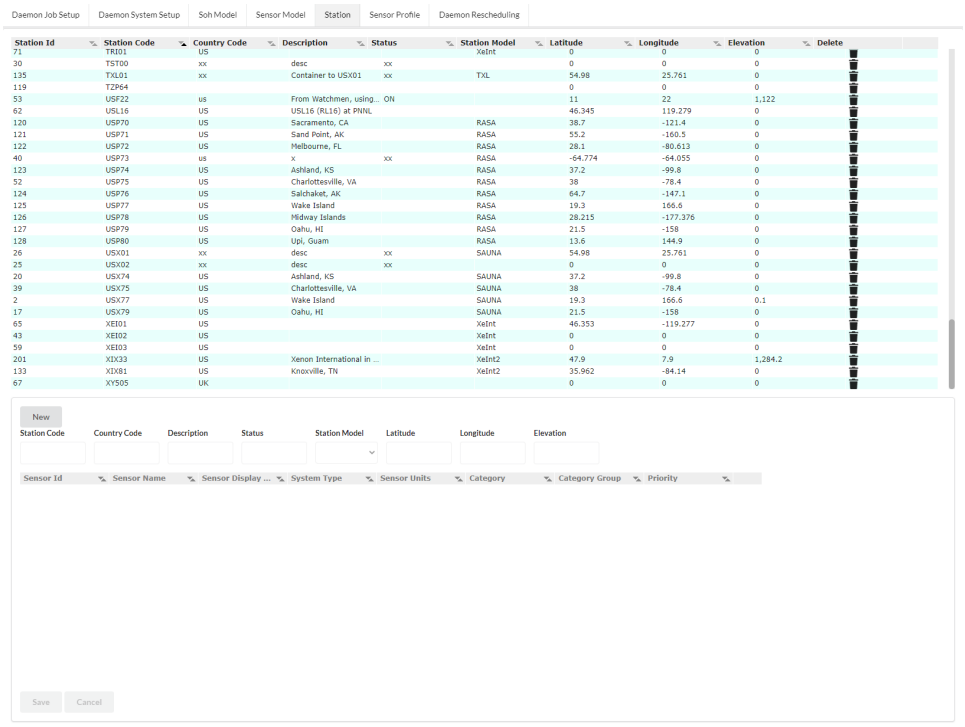


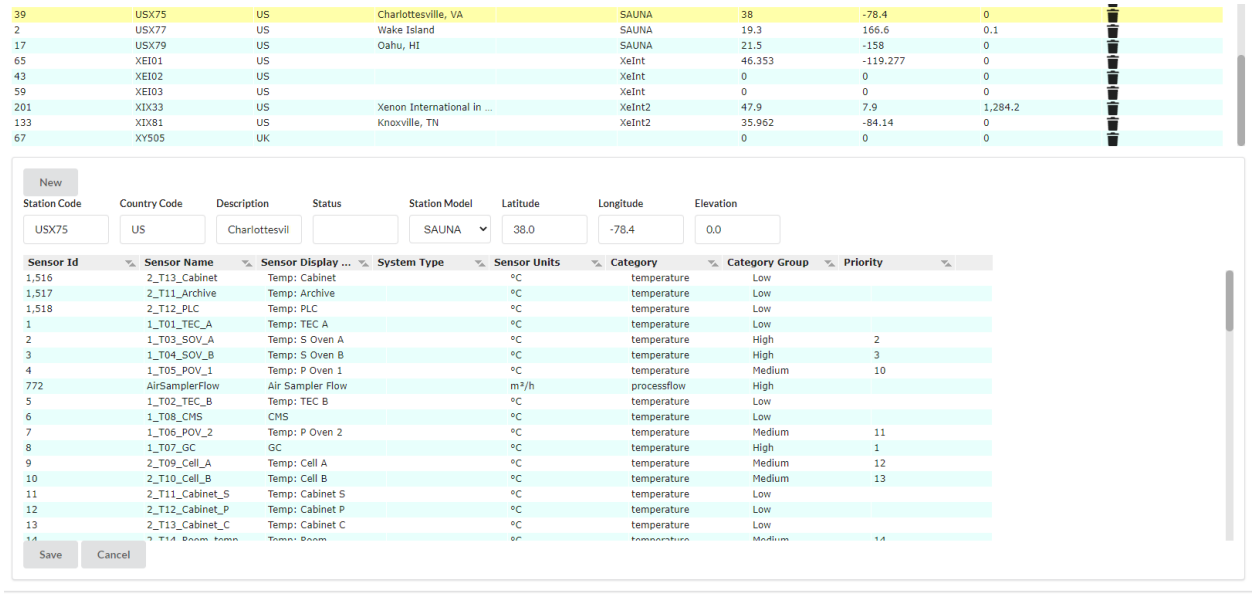
Figure 2-46 Sensor Model with Horizontal Shift Applied

2.7.5 Station

The station page allows the user to associate a station with system model. The system model (RASA, SAUNA, etc.) must be identified so an appropriate schema may be utilized to determine where the cycle t_0 is likely to have been, since this value isn't part of the IMS formats and protocols.



After selection a Station, the list of associated (not assigned) ‘Sensors’ are displayed in the table below. ‘Sensors’ are associated with a system via the Sensor Profile page. Additionally a station’s country code, description, status and location may be updated from this dialog.



2.7.6 Sensor Profile

This page allows the user to create profiles for a specific sensor to aid in query times, unit association, grouping and ordering of sensors on the analysis page. Adherence to IMS Formats and Protocols implies use of specific units for specific sensor categories, but not all systems are compliant and/or some systems include categories not defined in the protocol.

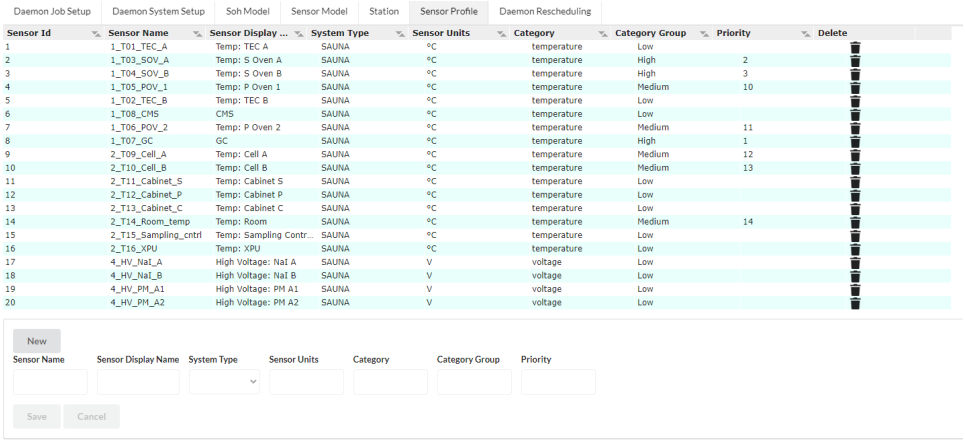


Figure 2-47 Sensor Profile Page

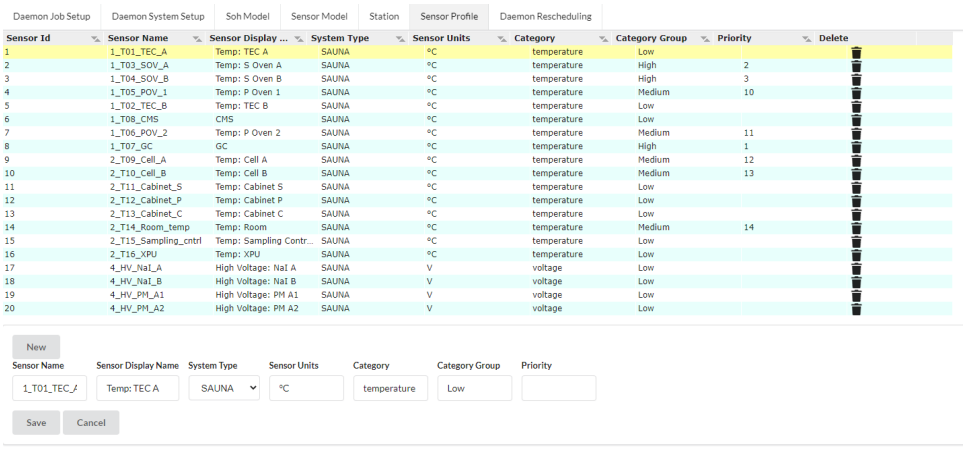


Figure 2-48 Editing Sensor Profile

2.7.7 Daemon Rescheduling

This page provides two functions, 1) showing the status of a Daemon job and 2) allowing the jobs to be rescheduled. Each job has two status blocks, ‘Last Run’ and ‘Last Successful Run’. If these time stamps don’t match, then the ‘Last Run’ row will be colored red to indicate that the last run initialized did not complete.

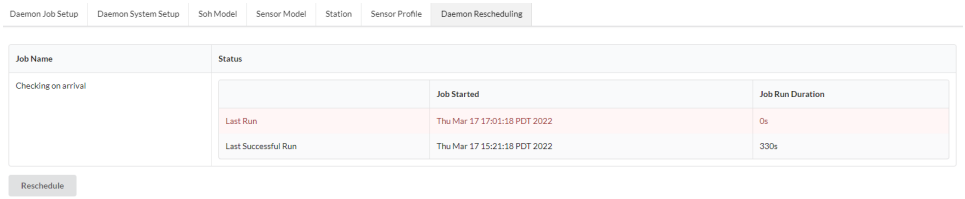


Figure 2-49 Last Run Triggered Doesn't Match Last Successful Run

This may be transitory, because during a run, the job duration remains at 0 seconds. Once the job completes, the run entry will be updated with the actual job run duration, at which point this entry become the ‘Last Successful Run’ and then the row with return to the default background color.

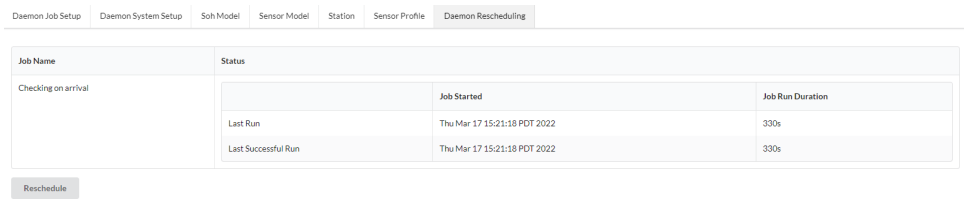
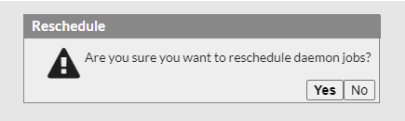


Figure 2-50 Last Run Triggered Matches Last Successful Run

Occasionally, changes to the setup will require a reschedule. This need should be prompted, but if a user finds that their changes seem to not have taken effect, they should manually come to this page and trigger a reschedule. Before rescheduling, the user will be prompted to verify that they indeed want to reschedule.



3.0 Rest

Rest application description will be provided in a future release.

4.0 Analysis Agent

Analysis Agent application description will be provided in a future release.

5.0 Daemon

Daemon application description will be provided in a future release.

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