iqonY

PiT Navigator Waste

Stabilize the Steam Output of Your Plant

Reliable turbine operation, lower consumption of additives, and higher waste throughput owing to AI-based steam prognosis

Benefits of the PiT Navigator Waste

The PiT Navigator Waste is a powerful furnace capacity control system for thermal waste treatment plants. The modular system concept of Iqony is based on the unique combination of advanced prognosis of important process values by means of neural networks, Advanced Process Control, intelligent data processing and fully adaptive controllers. At the same time, the open operating approach allows you to manually influence the process at all times.

Thus you achieve:

- lower fluctuations of the steam output
- better burnout
- a lower consumption of additives
- decreased emission peaks for CO and NOx emissions

The optionally available furnace camera allows to visualize the combustion zone in the control room and detects the burnout line by means of calibrated temperature measuring equipment. It represents genuine added value for you as you prevent hot spots in the burnout area and thus have a significantly better burnout quality.

Advanced Process Control

This closed-loop control allows to control processes in the best possible way and optimally in terms of economic efficiency. Thus several target variables to be controlled that influence each other like e.g. steam output and combustion temperature can be set simultaneously by several influencing variables like air quantity, air temperature or grate speed. Here an integrated optimizer allows to make these settings in such a way that they are implemented with optimal parameters, at the same time taking into account all technical boundary conditions. All controllers are fully adaptive and are retrained and optimized at regular intervals, fully automatically.

Artificial intelligence

Depending on the objective of the control and the design of the waste incineration plant, prognosis models are created for important target variables. These prognosis models use neural networks trained on the process data of the plant in order to predict the value of the target variable ca. two to five minutes in advance. Such a prognosis e.g. of the steam output allows downstream controllers to react to a steam peak with the actuating variables and thus to minimize the deviation of the generated steam quantity from the reference value already before the steam peak occurs.

Experience of the plant operator

The PiT Navigator Waste allows the user to adjust the behavior of the Navigator and important parameters of the system to his/her requirements. Here particularly important and frequently used target variables like e.g. the steam reference value are directly taken over from the process control system of the plant. The other important target variables like grate trimming, air distribution of primary/secondary air, fuel properties etc. can be influenced manually by the plant operator at all times. There is a dedicated input screen for more complex system parameters. Here the limit values for actuating variables can be modified and target values can be adjusted.

Economic efficiency

You will profit from using the PiT Navigator Waste!
The stabilization of the steam output enables a higher
waste throughput by means of a plant operation at or
close to the design output. The environmental parame-
ters improve significantly as well. The typical effects
of the optimization are:

• a control deviation for steam of less than 3%
• 40% less CO peaks
• 10% less NOx standard deviation
• 3% more waste throughput
• ROI < 1 year

System structure

The PiT Navigator Waste is based on a hardware of its
own and communicates with the process control system
by means of a standard interface. This way, the process
control system is not burdened with the computationally
intensive AI tasks and is at the same time shielded from
possible cyberattacks from the outside. If the process
control system is replaced some time in the future,
only the interface will have to be adjusted. The furnace
capacity control remains unchanged and ensures the
immediate, reliable operation.

Depending on the customer's wishes, the human-
machine interface of the PiT Navigator Waste can be
programmed either on a separate monitor screen or as
an additional input screen in the process control system.
This way, you can keep an eye on everything.

Switching over between manual and automatic operation
works without interruption; the system takes over the
current settings and systematically leads the plant to the
optimal operating point.

Contact

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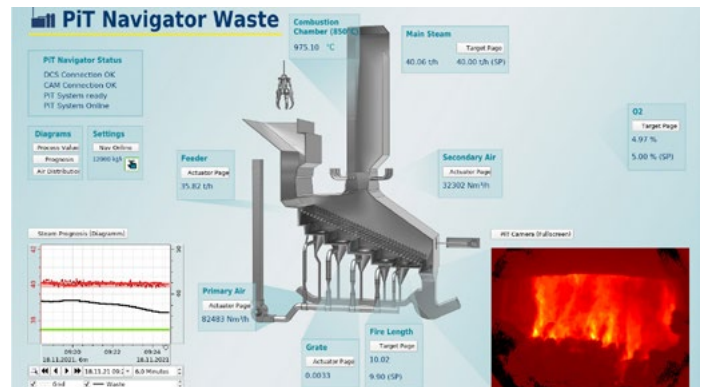
Human-machine interface of the PiT Navigator Waste

Advantages you benefit from:

• valid prognosis of the steam output
• higher, guaranteed steam stability
• integrated fi re length control (camera required)
• lasting increase in plant availability and throughput
• comprehensive service

Your next steps:

1. Please contact us!

2. By analyzing historical process data prior to proposal
   preparation, our consultant reliably defines the tech-
   nical guarantee for the steam output stability of your
   plant for you.

3. After your approval, the implementation takes
   place. The hardware is supplied and installed, the
   PiT Navigator Waste is configured and the interfaces
   are set up. Our experienced engineers support the
   process on site.

4. In the following test phase, the system is finetuned
   and the plant operators are trained. Our experienced
   engineers are available at all times.

5. During the subsequent site acceptance test of several
   days' duration, the technical guarantees are confirmed.

6. With a service contract you will receive continuous
   technical support and the latest updates.