



# Improve your inspections with an **unparalleled** underwater view

## Monitor assets and conditions like never before with High Resolution Sonar System

Underwater inspections are essential to safely operating and maintaining the health of power generating stations. ClearSight's High Resolution Sonar System (HRSS) solution provides valuable sub-surface insights for silt depth measurements and underwater diving activities, giving you an unparalleled live view of conditions—even in the most turbulent waters and poorest visibility.

### Safety should always be the guide

To improve the safety of underwater diving operations, the Association of Diving Contractors International (ADCI) and the U.S. Federal Occupational Health and Safety Administration (OSHA) established a task force to develop oversight guidelines. For missions utilizing divers, ClearSight HRSS meets ADCI and OSHA guidelines for required visual monitoring and verification of assets without placing additional personnel in the water.

### You can expect:

- » Accurate silt depth classification and mapping of intake structures for trending purposes, such as planned and coordinated silt removal
- » Real-time high resolution sonar images detailing asset condition during inspection
- » Improved safety by monitoring the location of divers during underwater missions
- » Real-time visual Lock-Out/Tag-Out (LOTO) verification of underwater assets

## HRSS Inspection benefits



**Reduces the number of routine diver missions** to determine silt conditions and aid facility owners in proper forecasting work schedules and ongoing O&M costs



**Enables inspection for deleterious biologic blockages** collecting at intake trash racks and rakes (Condition monitoring inspections)



**Supports observation and monitoring** of environmental aquatic life



**Facilitates inspection of station equipment** and proper placement such as gates, crab fences, and more

## A complete solution

Coupled with our ROV Submersible Solution, utilizing HRSS during underwater inspections and dive operations provides multiple layers of safety and asset evaluation while reporting efficiently and cost effectively.

## The Clearsight difference

Constellation Clearsight consistently delivers a comprehensive range of data-driven inspections that leverage the latest technologies and exceed traditional methodologies. We provide the insights you need to effectively monitor your electrical assets, prioritize any work to be done, and improve system reliability. It's the proven solution to streamlining your operating budget and avoiding unnecessary expenses.

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# Elevate your inspections to better discoveries

## Experience the unparalleled performance of this groundbreaking drone

Clearsight's Drone Deployable Non-Destructive Examination (NDE) Solution improves inspections and leads to better discoveries. With the expertise of our team, this drone can fly a 360-degree range of inspection and maintain altitude at any angle. The drone performs thickness measurements using Ultrasonic Testing (UT), Electro Magnetic Acoustic Transducer (EMAT) obtained thickness, and Dry-Film Thickness (DFT) in accordance with most NDE industry standards.

### Technical details

- Clearsight's drone operators and NDE inspection professionals are certified in accordance with industry standards; experts obtain continuing training specific to our technologies and products as well as site specific job orientation.
- Clearsight's Drone NDE solution can be conducted both inside and outside facilities across most commercial and industrial applications.
- The drone can fly a 360-degree orbit and maintain altitude at any angle.
- Many drones fail to operate when too close to structures because they rely on GPS data for navigation; this drone utilizes multiple onboard sensors which help avoid obstacles and navigate challenging environments.
- Inspections can be completed using Ultrasonic Testing (UT), Electro Magnetic Acoustic Transducer (EMAT), and Dry-Film Thickness (DFT) sensors to obtain measurements in accordance with most industry NDE standard methods.

Drone dimensions	31" x 31" x 12"
Max flight height	350 ft
Max wind speed	22 mph
Flight battery life	13 minutes 1 minute to swap batteries
Accuracy of sensors	Accurate to +/- .002" of actual material thickness
Max temp restrictions	EMAT — 200°F UT — 200°F DFT — 200°F
Compatibility with materials	EMAT — all ferrous materials UT — all metals DFT — all metals
Surface prep requirements	EMAT — no surface prep required UT — paint/rust removed down to bear metal DFT — no surface prep required
DFT thickness range	0 – 30 mils
Codes and standards adherence	<ul style="list-style-type: none"> <li>• ASME Boiler and Pressure Vessel Code, Sections III, V, VIII, XI</li> <li>• API 510</li> <li>• API 570</li> <li>• API 653</li> <li>• ANSI / ASME B31.1</li> <li>• ASTM E1774-17</li> </ul>
Is Clearsight's Drone Deployed NDE approved for (BVLOS) beyond visual line of sight flying?	Not currently
Can Drone Deployable NDE be performed in the rain?	No

## You can expect:

- » Minimal pre-mission, on-site preparation; most inspections can be completed without any surface preparation
- » An expert team to coordinate collection and provide a detailed drone deployment plan for your approval
- » Final exam reports documenting the wall thickness reading obtained, all generated and compiled within a comprehensive report providing prioritized insights

## The Clearsight difference

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An underwater scene featuring a yellow ROV with the word "DEFENDER" on its side. The ROV is equipped with various sensors and lights, and is positioned near a vertical structure. The background is a deep blue-green, suggesting an underwater environment.

# Underwater inspections are now safer, faster, and more cost-effective

## Access improved visibility with our ROV submersible inspection solution

Periodic underwater inspections are critical to safely operating and maintaining a power generating station's health. ClearSight's ROV Submersible Inspection Solution and industry expertise dramatically improve safety, efficiency, and lower the cost of underwater inspections. Using U.S. Navy approved ROV submersibles, combined with high resolution sonar sensor technologies, we provide real-time performance monitoring and recordings of as-found asset conditions that otherwise may be inaccessible.

## Planning is paramount in underwater inspections

Underwater diving has inherent risks and is resource intensive. On average, each inspection requires a large crew supporting each underwater diver. Pre-inspection dive planning is extensive, and the inspections performed often require the system to be taken out of service.

Our ROV Submersible Inspection Solution is the right solution for facilities ready to take the next step in reliability, innovation, and safety.



## You can expect:

- » High-quality, safe underwater inspections using high resolution sonar
- » Reduced overall time, resource, and outage/O&M costs by reducing the need for large dive teams and coordination
- » Quick and easy access to previously difficult-to-reach inspection areas
- » Real-time performance metrics and the ability to observe underwater operations previously left unmonitored
- » Minimized impact of expensive system outages by keeping personnel out of the water
- » Final reports documenting the conditions observed and support for maintenance and future trending of observed conditions
- » Cost-effective, ongoing inspections at a fraction of the cost of traditional inspection methods

## The Clearsight difference

Constellation Clearsight consistently delivers a comprehensive range of data-driven inspections that leverage the latest technologies and exceed traditional methodologies. We provide the insights you need to effectively monitor your electrical assets, prioritize any work to be done, and improve system reliability. It's the proven solution to streamlining your operating budget and avoiding unnecessary expenses.

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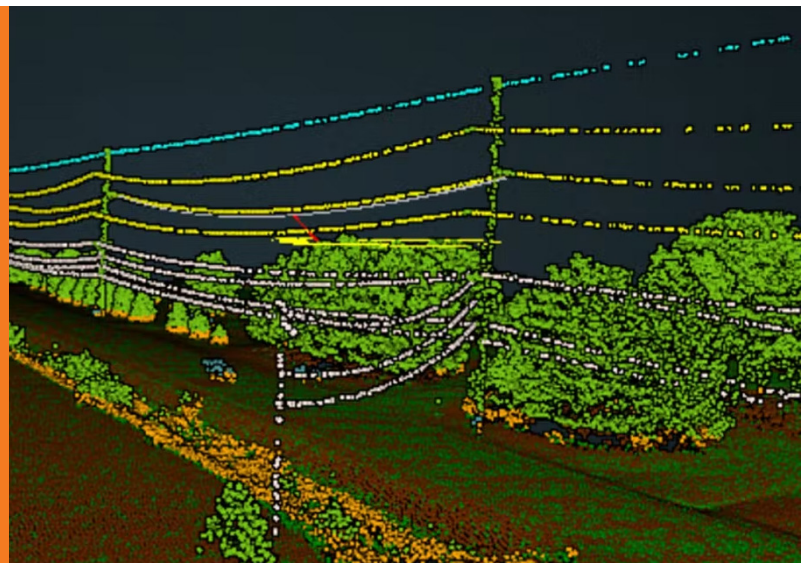
# Comprehensive inspections maximize the **efficiency** of your vegetation management plan

## Drones provide the ultimate visual record

Clearsight's visual vegetation inspection solution is perfect for utilities ready for a comprehensive vegetation inspection plan. Our solution provides a permanent span-by-span visual record of vegetation conditions. By utilizing drones, we capture close-to-wire, high-resolution images without exposing inspection workers to leading causes of safety incidents such as traffic-caused accidents and rear lot safety patrolling concerns.

## Traditional visual vegetation inspections are limited

Inspections are usually conducted by driving or walking. Other vegetation management solutions—such as satellite inspections or LiDAR surveys—each play a role but lack some of the major benefits of a comprehensive visual vegetation inspection.



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## The total solution

» Use your client portal to quickly and easily view the span-by-span location and density of vegetation conditions such as:

- **danger trees**
- **hazard trees**
- **under-wire volunteer trees**
- **over-wire canopy trees**
- **vines**

All conditions will be assessed and prioritized with expert insights.

» You can easily combine our visual vegetation inspection with a visual pole and equipment inspection, providing corrected GPS locations for all assets.

» Our inspections are easily customizable, meaning you can focus on tree type, focus on an area, or get a global view of your entire corridor. With our insights, you'll be able to make informed financial and practical decisions by knowing what work to do and when.

## You can expect:

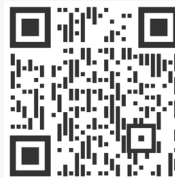
- » A visual inspection of your entire system from the convenience of your desk with the use of our client portal
- » Maximized inspection effectiveness by using drone/aerial information to pinpoint prioritized defects and maximize ground tree crew effectiveness
- » Reduced exposure to safety hazards inherent to traditional inspection methods, such as roadside hazards, or injuries sustained while walking through rights-of-way or rear property lots
- » A better assessment of otherwise inaccessible locations by foot, and actionable/accurate data
- » Easily customizable inspections resulting in detailed span-by-span high-resolution imagery that our dedicated SME team reviews and prioritizes any found conditions
- » A view of historical inspections that quickly identify key changes across all electrical assets

## The Clearsight difference

Constellation Clearsight consistently delivers a comprehensive range of data-driven inspections that leverage the latest technologies and exceed traditional methodologies. We provide the insights you need to effectively monitor your electrical assets, prioritize any work to be done, and improve system reliability. It's the proven solution to streamlining your operating budget and avoiding unnecessary expenses.

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# Innovative Circuit Patrol+ inspections rise above the rest

## A cost-effective alternative to broad inspections

Each year, utilities inspect millions of miles of lines using circuit patrols. And while experienced crews know what to look for, ground-based inspections leave inevitable gaps in the completeness of inspections. Constellation Clearsight's advanced Circuit Patrol+ inspections employ drones with high-resolution cameras and virtually unlimited mobility, which allows us to capture the best angles and see your energy assets in complete detail. As a result, our inspections yield an average of 50% more findings on overhead components than what could be observed from the ground alone.

### A clear view of your assets

Clearsight Circuit Patrol+ inspections eliminate the risks and visibility limits of traditional ground-based inspections, including:



Glare



Obstructions



Trees



Vision acuity



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## Advantages of a Clearsight Circuit Patrol+ inspection

What's included	Clearsight Circuit Patrol+	Traditional circuit patrol
Cutting-edge drone technology & experienced operators	Yes	No
Views from above and around overhead components	Yes	No
All-inclusive service that collects the most data in the fewest trips	Yes	No
The best angles captured from a safe distance	Yes	No
Better image definition from high-megapixel cameras above the lines	Yes	No
Secure customer portal & instantaneous inspection reports	Yes	Maybe
National Electrical Safety Code (NESC) compliance checks	Yes	Yes

### You can expect:

- » Thorough digital datasets for every facility we inspect
- » Prioritized conditions to streamline maintenance work plan and budgets
- » Reduced safety hazards inherent to traditional inspection methods
- » Customizable inspections with the ability to add on thermography, vegetation encroachment, facility inventories, and many other services
- » Customer portal for quick recall of past inspections and reports

### The Clearsight difference

Constellation Clearsight consistently delivers a comprehensive range of data-driven inspections that leverage the latest technologies and exceed traditional methodologies. We provide the insights you need to effectively monitor your electrical assets, prioritize any work to be done, and improve system reliability. It's the proven solution to streamlining your operating budget and avoiding unnecessary expenses.

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# Get the clear **advantage** for your trouble circuits

## Comprehensive Visual Inspections improve the reliability of your system

Critical energy infrastructure demands the most complete, accurate, and detailed inspection data and analysis. Constellation Clearsight delivers the total package, from the most advanced inspection technology to electrical utility system experts who provide valuable, actionable insights. Our drone-based inspection process not only collects higher quality data than traditional methods, but also eliminates inefficiencies, inaccuracies, and most importantly the safety risks associated with common inspection methods. The result? Empowering insights to improve your asset performance and a system that's easier to effectively maintain.

### Why Clearsight is your total inspection solution



#### **Drone technology**

State-of-the-art drones and experienced pilots provide blanket coverage of your assets.



#### **Secure customer portal**

You can provide your personnel, contractors, and vendors with instantaneous inspection reports.



#### **Expert analysis**

We remotely inspect each facility and assign priority ranking to each discovered issue.



#### **Turnkey service**

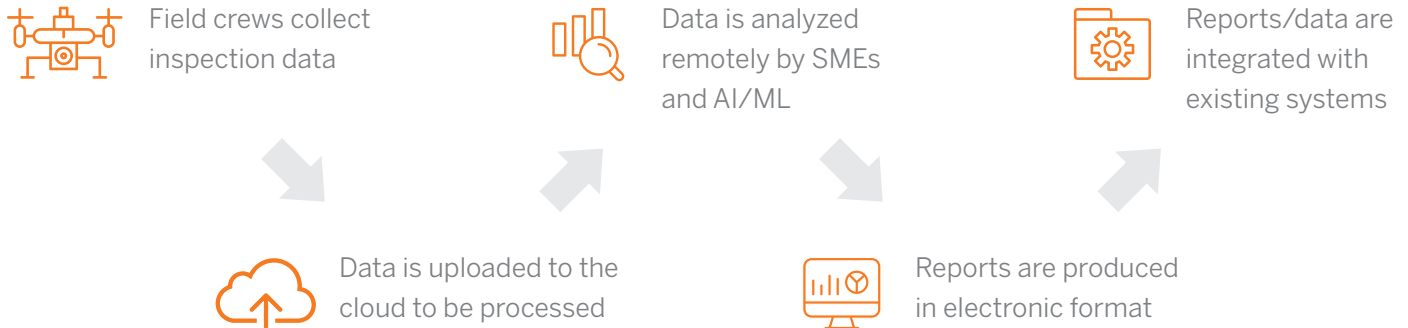
We capture the best in imagery, data, and insights—vital when the reliability of your high priority assets is on the line.



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## The Clearsight process

Clearsight provides a superior value by consistently delivering digital inspection solutions that exceed traditional, subjective methodologies. We achieve that with a complete end-to-end process:



### You can expect:

- » Thorough digital datasets for every facility we inspect, including GPS coordinates
- » Prioritized conditions to streamline maintenance work plan and budgets
- » Reduced safety hazards inherent to traditional walking or driving inspection methods
- » Customizable inspections with the ability to add on thermography, vegetation encroachment, facility inventories, and many other services
- » All-inclusive service that captures the most data in the fewest trips
- » Quick recall of past inspections and reports on customer portal

### The Clearsight difference

Constellation Clearsight consistently delivers a comprehensive range of data-driven inspections that leverage the latest technologies and exceed the standards set by traditional methodologies. We provide the insights you need to effectively monitor your electrical assets, prioritize any work to be done, and improve system reliability. It's the proven solution to streamlining your operating budget and avoiding unnecessary expenses.

**Contact Constellation Clearsight today** to tailor an inspection solution to meet your program needs.

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# Elevate your oversight with 360° clarity

## Visualize your facility's assets like never before

The landscape near your facility is constantly changing, sometimes in dramatic ways. This makes it hard to keep track of your facility's conditions. Constellation Clearsight's **Panoramic Viewer** uses cutting-edge drones with high-resolution cameras to capture a 360° view of your facility from 20 to 400 feet in elevation. Clearsight's **Panoramic Viewer** gives you the detailed and tailored view of your infrastructure that you want.

### How we help:

Our **Panoramic Viewer** helps you make informed decisions remotely and efficiently. By saving you unnecessary travel time, you can easily access high-quality imagery, including hard-to-see asset points, through our user-friendly mapping platform.

### The 360° solution:

Remote data collection that provides you complete visibility right from your computer:

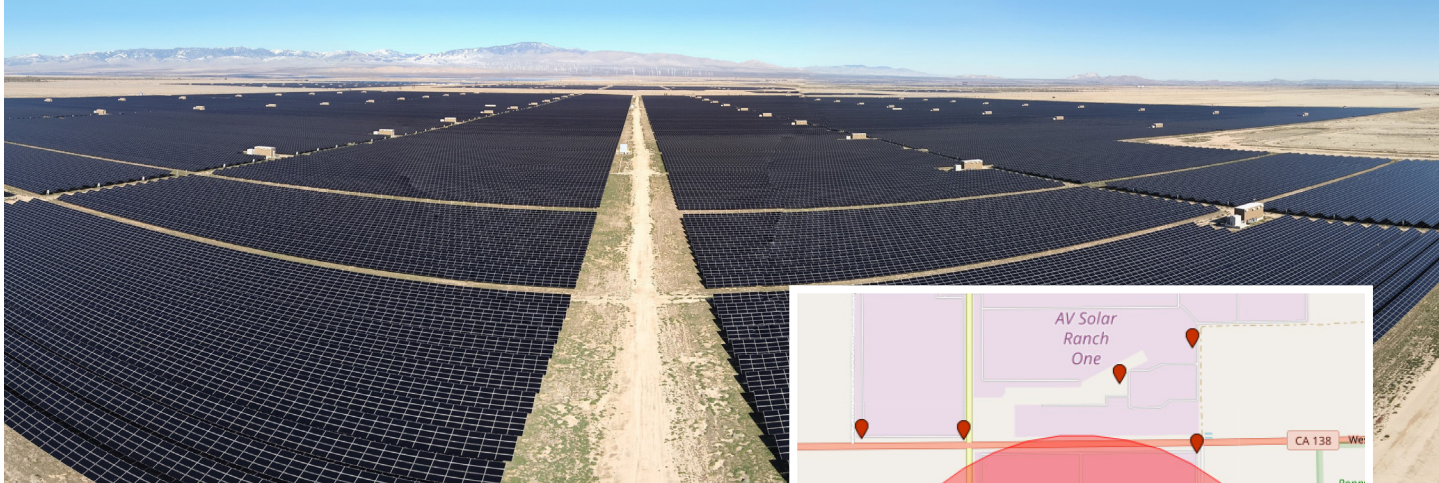
- » Ultra-clear, 8K imagery with a panoramic view
- » 10x zoom-in capability from multiple angles
- » Up to 50 viewpoints captured in one day
- » Customized and unique views from 20 feet to 400 feet height above your highest asset



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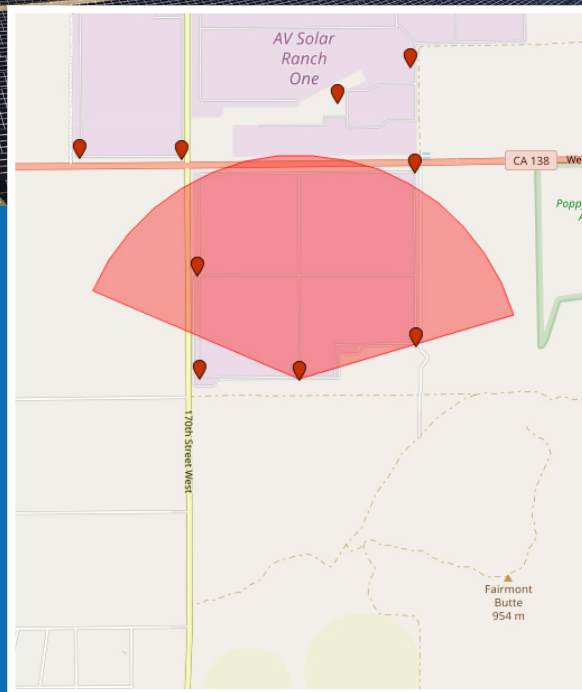
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## You can expect:

- » A complete visual of your infrastructure from multiple heights and viewpoints.
- » A detailed view of your infrastructure that satellite viewers cannot match.
- » A thorough map view of your facility accessible 24/7 on Clearsight's secure, cloud-based portal; maps can easily be integrated into your existing system.



## The Clearsight difference

Constellation Clearsight consistently delivers a comprehensive range of data-driven inspections that leverage the latest technologies and exceed the standards set by traditional methodologies. We provide the insights you need to effectively monitor your facility assets, prioritize any work to be done, and improve system reliability. It's the proven solution to streamlining your operating budget and avoiding unnecessary expenses.

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# Your customizable solution to help **mitigate wildfire** risks

## Uncover wildfire risks through advanced digital inspections

There are several risk factors associated with wildfires: geography, climate, and infrastructure. Traditional inspections provide limited view and lack the ability to find other critical issues such as aged, defective, or overheating equipment. Drones are a cost-effective way to collect the high-quality data utilities need to support a wildfire mitigation plan. ClearSight's drone inspections use high-resolution and infrared (IR) imagery to provide insights into potential ignition points and vegetation risk. Enhance your wildfire mitigation plan with our add-ons: vegetation management or LiDAR survey.

### Traditional

✗ ground-based inspection

✗ limited ground view

✗

✗ excessive or incomplete  
data collection

✗

#### Add-ons:

✗ manual vegetation management

### ClearSight

✓ aerial overhead line inspection

✓ complete aerial, high-resolution  
imagery

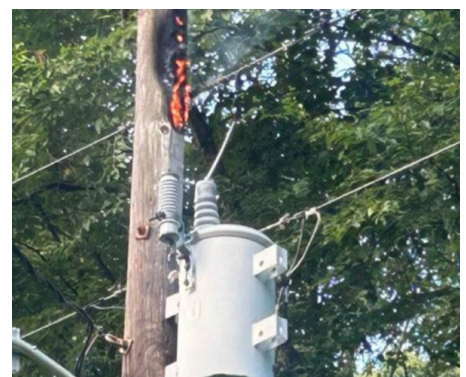
✓ advanced IR imagery to identify  
ignition points

✓ prioritized and customizable  
digital reports

✓ secure, online portal to view your  
system and conditions

#### Add-ons:

✓ comprehensive vegetation  
management or LiDAR survey



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Clearsight UAS/Drone  
Pilot Team has an average  
experience level of

**550 hours**  
per operator

+

**80 hours**  
of extensive thermography  
certification training

An average of

**50%**  
more issues  
uncovered

than ground-based  
inspections

using small drones for  
an unprecedented  
bird's eye perspective



## You can expect:

- » Reduced safety hazards inherent to ground-based inspection methods
- » Comprehensive, digital datasets featuring accurate and updated GPS coordinates, as well as infrared and thermal imagery to pinpoint ignition risks
- » Secure, online inspection portal that allows you to visualize your system, prioritize conditions to streamline maintenance planning and budgets, and access past inspection data
- » Customizable inspections with the ability to add on thermography, facility inventories, and many other services
- » Turnkey service captures all the data you need in the fewest trips

## The Clearsight difference

Constellation Clearsight consistently delivers a comprehensive range of data-driven inspections that deploy the latest technologies and exceed the standards set by traditional methodologies. We provide the insights you need to effectively monitor your electrical assets, prioritize any work to be done, and improve system reliability. It's the proven solution to streamlining your operating budget and avoiding lost revenue.

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# Simplify stack inspections with non-destructive examinations

## Improve safety and efficiency with our innovative drone inspection solution

Industrial stacks play a vital role in a facility's operations and require periodic inspections. Traditional stack inspections are time-consuming, labor intensive, and have inherent safety risks. Constellation Clearsight's stack inspection solution uses a cutting-edge Non-Destructive Examination (NDE) drone to improve safety, efficiency, and lower costs while providing the insights you need to improve decision making and drive operational excellence.

### Why Clearsight is your total inspection solution

The combination of our industry-leading inspection experts and proven, cutting-edge NDE technologies means safer, faster, and cost-effective inspections.



» Discovery of conditions in hard-to-reach places



» Ability to maintain any angle and inspect components in any direction



» Groundbreaking thickness measurement using Ultrasonic Testing (UT), Electromagnetic Acoustic Transducer (EMAT) and Dry-Film Thickness (DFT) in accordance with most industry NDE standard methods



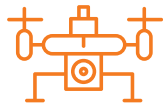
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## You can expect:

- » An expert team to coordinate collection and provide a detailed drone deployment plan for your approval
- » Minimal on-site preparation; our inspections can be done without surface preparation or scaffolding
- » Eliminate personnel “working at heights” reducing safety hazards inherent to traditional access methods
- » Final reports documenting data collected and generated and compiled within a comprehensive report providing prioritized insights

## The Clearsight process



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Expert Clearsight field crew safely completes NDE inspection



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Data is securely uploaded to Clearsight databases



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Data is analyzed by subject matter experts



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Reports are electronically produced, complete with prioritized findings

## The Clearsight difference

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