CONNECT AND PROTECT

nVent RAYCHEM Pipeline Supervisor

nVent

RAYCHEM

Value of Pipeline Monitoring

Pipeline temperature monitoring on an operating pipeline is very helpful, but often severely underutilized due to operator inattention or lack of data interpretation skills. This is why customized algorithms and machine learning, when combined with fibre-optic Distributed Temperature Sensing (DTS), can bridge the gap between "data" and actionable "information".

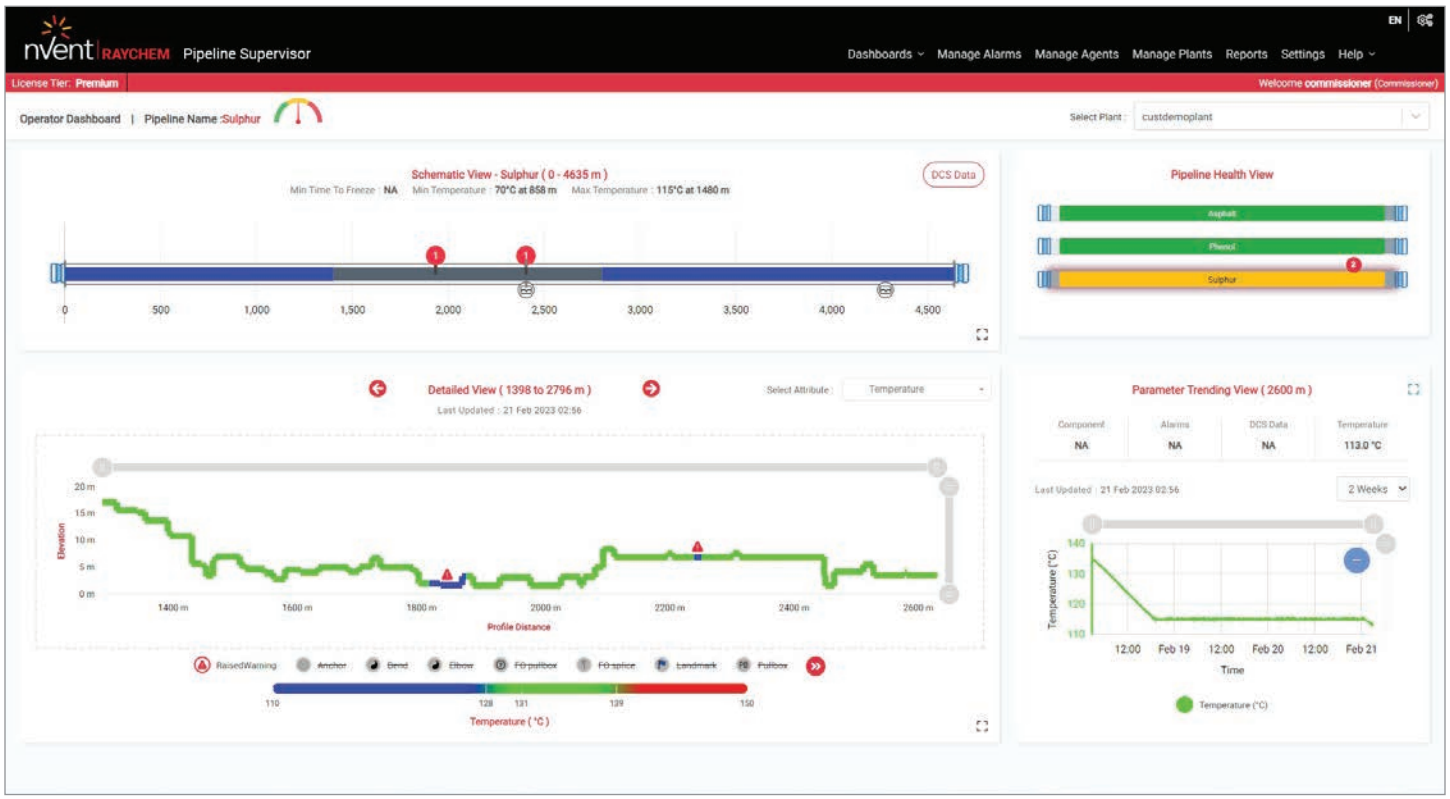
WHY DO WE NEED PIPELINE MONITORING?

- **Enhanced Risk Avoidance** – Operators need to visualize all the risks to keep the pipeline in a safe operating zone. Catastrophic pipeline ruptures lead to significant financial, environmental, and reputational damage to any company. The implementation of pipeline predictive analytics provides your organization with an additional level of protection to help lower the risk profile of critical pipeline assets.
- **Critical Situational Response** – When you lose power or need to ensure uniform re-melt, critical monitoring and analytics minimize the risk state. Real-time data combined with targeted algorithms can help in significantly reducing hazards that are associated with unwanted operational situations or outcomes.
- **Operational Optimization** – Advanced alarm notifications of concerning trends or events are provided when an abnormality is detected, minimizing full-time operator engagement. A real time Health Gauge in the dashboard provides a high level status indicator of your pipeline.
- **Flow Assurance** – Ensuring that the fluid in your pipeline is flowing (or ready to flow) by monitoring for a Uniform Thermal Profile is key. Remove the guesswork to verifying this critical prerequisite to starting your pumps.

NVENT RAYCHEM PIPELINE SUPERVISOR (RPS) INTRODUCTION

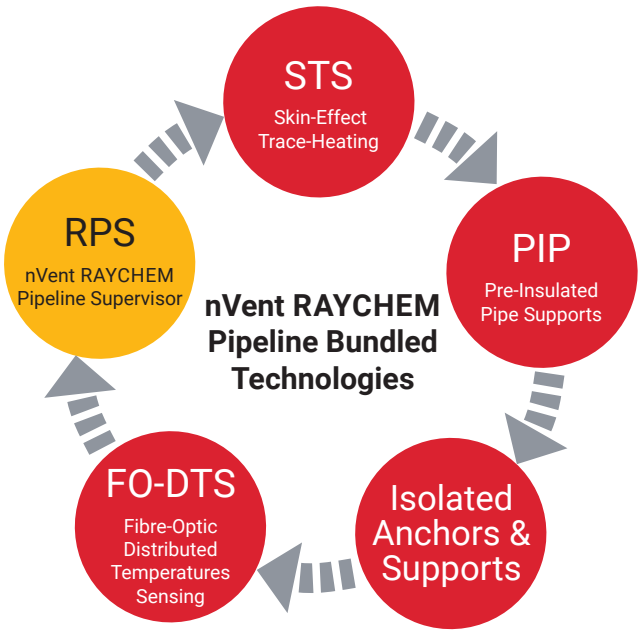
nVent RAYCHEM Pipeline Supervisor (RPS) is a culmination of nVent's 40+ years of experience troubleshooting, optimizing and maintaining our clientele's temperature-critical Sulphur pipeline applications. We combined the power of distributed temperature data from DTS with specially customized algorithms that create a wealth of useful analytics, on a real-time basis. These analytics are configured to your specific pipeline geometry and use time trending to create warnings/alarms of predicted conditions along your pipeline, while also providing the time and location where problems are occurring (or may be about to occur), along your pipeline asset.

- nVent RAYCHEM Pipeline Supervisor takes the DTS (Distributed Temperature Sensing) data from a fibre-optic sensor on a pipeline and analyzes it using complex algorithms
- nVent RAYCHEM Pipeline Supervisor essentially creates a "stethoscope" on the pipeline to see what is happening in real-time, (e.g., temperature, phase change status, re-melted zones, rupture detection)
- Creates "actionable" tasks and "alerts" for operations & maintenance personnel that are data driven
- Provides advance warning of heater performance degradation, or pipeline operations outside of normal parameters
- Allows access to critical pipeline heating and temperature status remotely via Tablet, iPad, Smartphone, remote PC, etc.
- Fully configured GUI for your specific pipeline service and operational design parameters



Pipeline Monitoring Bundled Technologies

NVENT RAYCHEM PIPELINE BUNDLED TECHNOLOGIES



FEATURES BY TIERED GROUPING

	nVent RAYCHEM Pipeline Supervisor	Select	Premium
1	Monitor Multiple Pipelines	√	√
2	Pipeline Temperature Profile	√	√
3	DTS Sensing Fibre Attenuation Graph	√	√
4	Time vs Temperature Trending Analysis	√	√
5	Basic Temperature Alarm Management	√	√
6	Advanced Alarm Management - algorithm based	√	√
7	Customized 3D Pre-Configured GUI - for easy DTS visualization	√	√
8	Asset Landmarks Mapped to Physical Pipeline - anchors, bends, etc.	√	√
9	DTS System Health - fibre break, attenuation, communications	√	√
10	Configurable Alarm Settings - priority, types, latching/non-latching	√	√
11	Operator Role-based Permissions/Access to Software	√	√
12	Remote Delivery Platforms (Tablet & Mobile Phone Access) *	√	√
13	Email or Text Alerts / Notifications *	√	√
14	“One Click” Export of Temperature Data	√	√
15	Real-time Pipeline Health Gauge (based on key alarm algorithms)		√
16	Insulation Health Monitoring - excessive heat loss, material damage		√
17	RTD vs DTS 2-way Validation - continual heating system check		√
18	Shift Summary Report - downloads of previous day’s activity		√
19	“Time to Freeze” Prediction - for proactive intervention		√

The above offering is illustrative and may be modified by nVent from time to time with prior notification to Client.

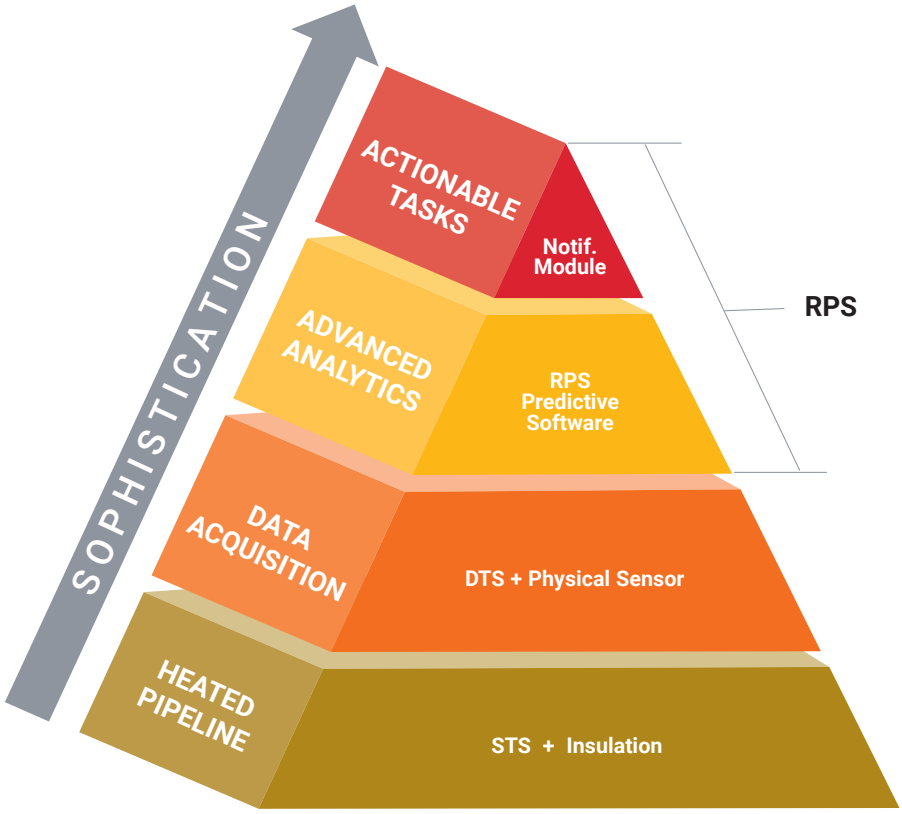
New functionalities, features and/or modules developed by nVent may be assigned by nVent, in its sole discretion, to the Select Offer, the Premium Offer, or to a new Offer category, which nVent reserves the right to create.

* Internet access required

NVENT RAYCHEM PIPELINE SUPERVISOR BENEFITS

- Enhanced operational insights and confidence
- Deeper understanding of actionable tasks
- Historical trending analysis for increased operational transparency
- Analytics can help to create a safer facility for both employees and society
- Controlled login access and software permissions for each team member
- nVent end-to-end services support framework for seamless software integration and performance

NVENT RAYCHEM PIPELINE MANAGEMENT SYSTEM - THERE IS NO EQUAL



Pipeline Monitoring Offering Framework

THE RPS PROCESS . . . FROM END TO END

Hardware Assembly

- Cabinet / 19" Rack
- GUI Monitor
- Keyboard
- DTS Unit
- RPS Appliance Server
- Industrial PC with:
  - Operating System
  - Chrome Browser
- Interconnecting Cabling

Install RPS Software

- Complete DTS Set up
- Establish Comms with DTS
- Install nVent RAYCHEM Pipeline Supervisor
- Set up Plants, Pipelines, Agents
- Diagnostics Check
- Performance Check

Configure Customer Assets in RPS

- Install X, Y, Z geometry
- Incorporate Pipeline Features– elbows, valves, anchors, etc.
- Verify Default Temp. Parameters – alarms
- Functionality Check
- Factory Acceptance Testing

Factory

Site Installation & Calibration

- Calibrate RPS w/ Physical Pipeline
- Set up RPS Plant Communication
- Set Up User Roles/ User Access
- Review Set Up with End User:
  - Default Settings
  - Alarm Settings
  - Alarm Priorities

Commissioning, SAT & Training

- Commission on Empty Pipeline
- Site Acceptance Test
- End User Training
- Oversee Product Line Fill

Site

Rack Assembly and Hardware

- **For Indoor Installation**
- **Locking Glass Front Door**
- **Industry Standard 19" Rack**
- **2 Cooling Fans**
- **Bottom Feed Glands for Power/Data**
- **Custom Graphic User Interface Dashboard**
- **Fully Configured to Customer's Asset(s)**
- **Factory Tested**

nVent RAYCHEM Pipeline Supervisor

We protect your data against unauthorized access, use or disclosure, using security technologies and procedures, such as encryption and access controls and limitations.

SOFTWARE SERVICES FRAMEWORK MODEL

nVent delivers a comprehensive support services package including the following:

- Software configuration to your specific pipeline geometry including site asset landmark mapping and unique user access parameters
- Installation, commissioning and operator training
- Multi-level technical IT support framework
- Updates and upgrades using multiple delivery options to meet customer requirements and ensure latest versions are installed

SOFTWARE DATA PROTECTION

- At nVent, we believe that safer systems ensure a more secure world. The security of your data is important to us. nVent follows current industry standards and has put in place technical and organizational safeguards to protect the confidentiality, integrity, and availability of your data. We protect your data against unauthorized access, use or disclosure, using security technologies and procedures, such as encryption and access controls and limitations.
- Measurement and alarm data is permanently backed up on a removable hard drive, and the most recent 2 weeks of data is available for viewing in the software dashboard.
- nVent applies processes and technologies to help prevent nVent RAYCHEM Pipeline Supervisor (RPS) from containing viruses or any other contaminants that access (without authorization) or shut down computer systems, networks, software or other data or property (“Malware”).

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Our powerful portfolio of brands:

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