

Monitoring and Diagnostic Center

Dominion Energy Nuclear



How We Started



Where We Are



Where We're Going



WHO WE ARE

Dominion Energy

- Headquartered in Richmond, VA
- Operate in 16 states
- Nearly 7 million customers
- 27,000 megawatts generation
 - Natural Gas
 - Nuclear
 - Coal
 - Pump Storage
 - Hydro
 - Biomass
 - Solar
 - Offshore Wind



How We Started



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INSPIRATION

“There is no alternative to digital transformation. Visionary companies will carve out new strategic options for themselves — those that don’t adapt, will fail.”

— Jeff Bezos, Amazon

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THE SOFTWARE

Software Selection Criteria

- Advanced Pattern Recognition (APR) software
- Variety of assets to be monitored
- Data integration
- Real-time monitoring
- Case management
- Future updates



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THE SOFTWARE

Expert Microsystems: Sure Sense

- Statistical Correlation
- Standard Deviation controls alarms
- Data Needed (Plant computer data initially)
 - Performance Parameters (press, flow, lvl, etc.)
 - Current & Voltage
 - Bearing Temperatures
 - Stator Temperatures
 - Vibration



How We Started



Where We Are

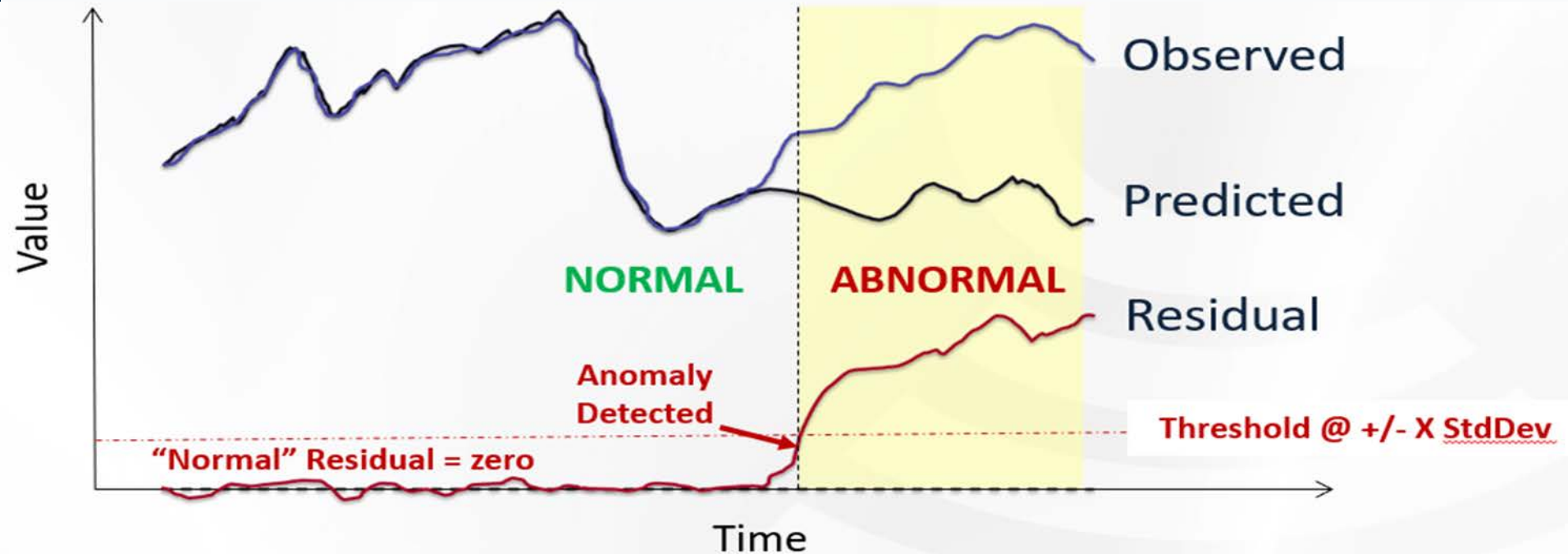


Where We're Going

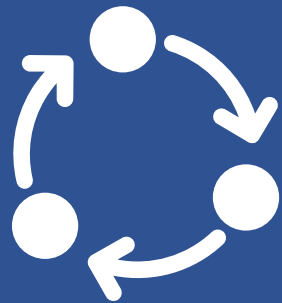


THE SOFTWARE

Expert Microsystems: Sure Sense Theory



Where We Are



How We Started



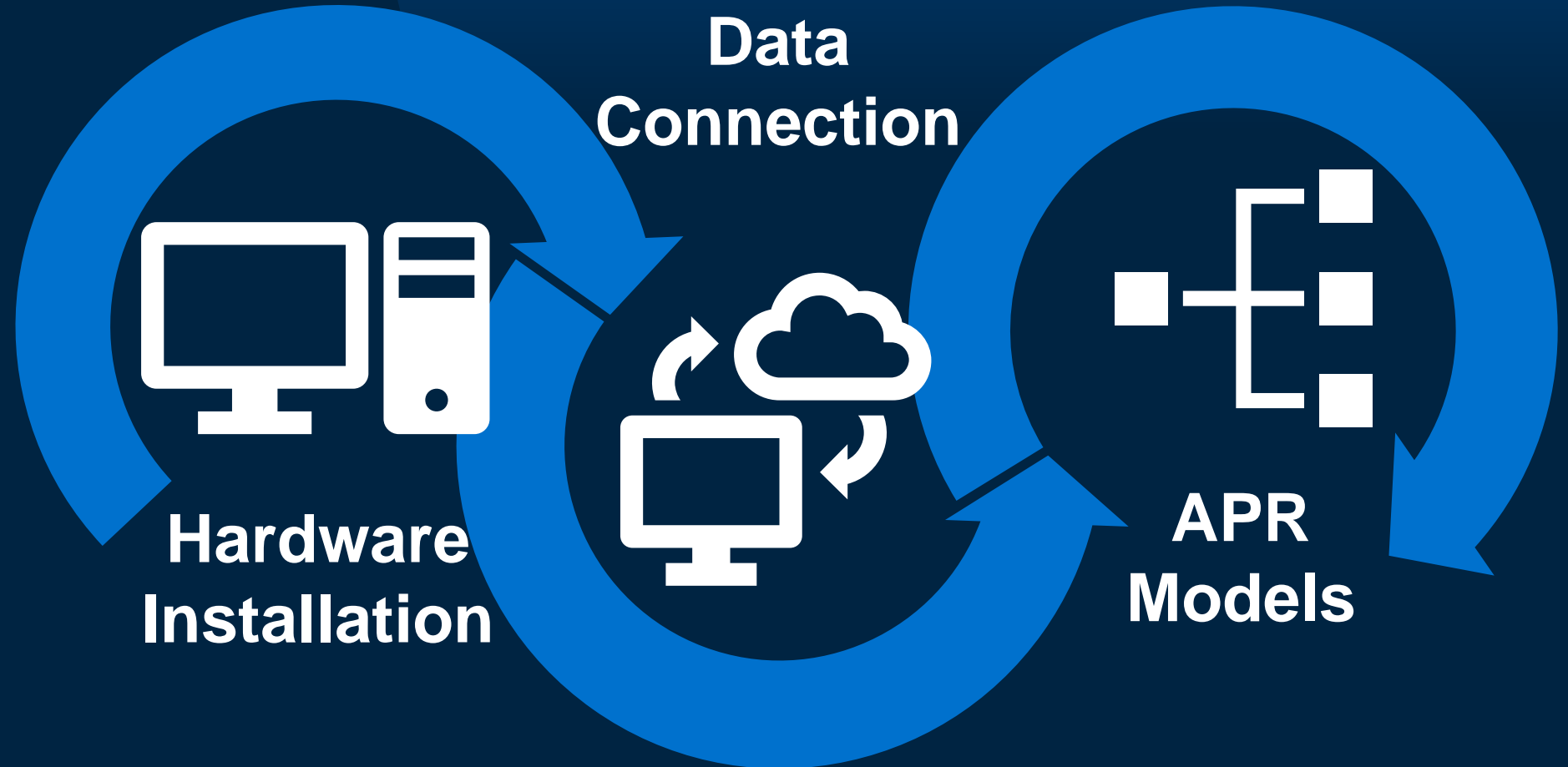
Where We Are



Where We're Going



INITIAL ROLE OUT



How We
Started



Where We
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Where We're
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INITIAL ROLE OUT



Surry Power Station
M&D Live Spring 2021

How We
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Where We
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Where We're
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CHALLENGES

IT Infrastructure Development

- Plant hardware
- Corporate hardware

Data Access

- IT firewall
- Historian translation

Data Availability

- Data stream integration
- Plant historian SMEs

Where We're Going



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COST REDUCTION

Reduce Correction Cost

- Identifies degradation far enough in advance to plan repair activities

Reduce Preventative Maintenance

- Extend preventative maintenance cycles
- Shift to predictive maintenance

System Engineering

- Eliminate manual data trending
- Work is focused on equipment improvement

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FLEET EXPANSION



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FUTURE EXPANSION

Wireless Data Communication

- Expanded wireless at all stations
- Facilitates sensors and other opportunities

Expanded Data Availability

- Current data only provides ~66% M&D value
- Integration of Manual Data
- Data lake

Sensor Coverage Expansion

- Vibration, motor current, other sensors
- Integrate sensors into the data historian

How We Started



V/R &
A/R

OTHER INNOVATIONS

Where We Are



eWP
eProcedures



Drone
Inspections



Where We're Going





**Dominion
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**Nuclear
Innovation**