Visualization of Field Equipment

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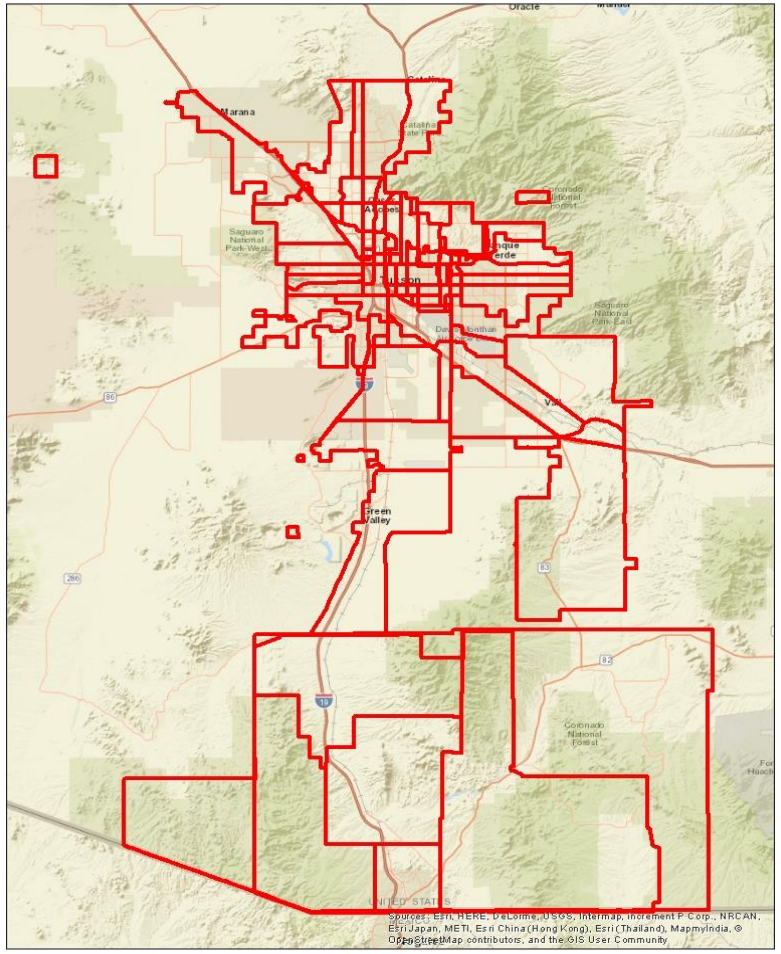
Tucson Electric Power

- Located in Tucson, AZ
- Over 420,000 customers
- Over 450 distribution circuits
- Transmission Voltages: 500kV, 345kV, and 138kV
- Distribution Voltages: 13.8kV and 4.2kV



Why should you visualize your data?

It’s easier to see what is going on!

Our Initial Problem

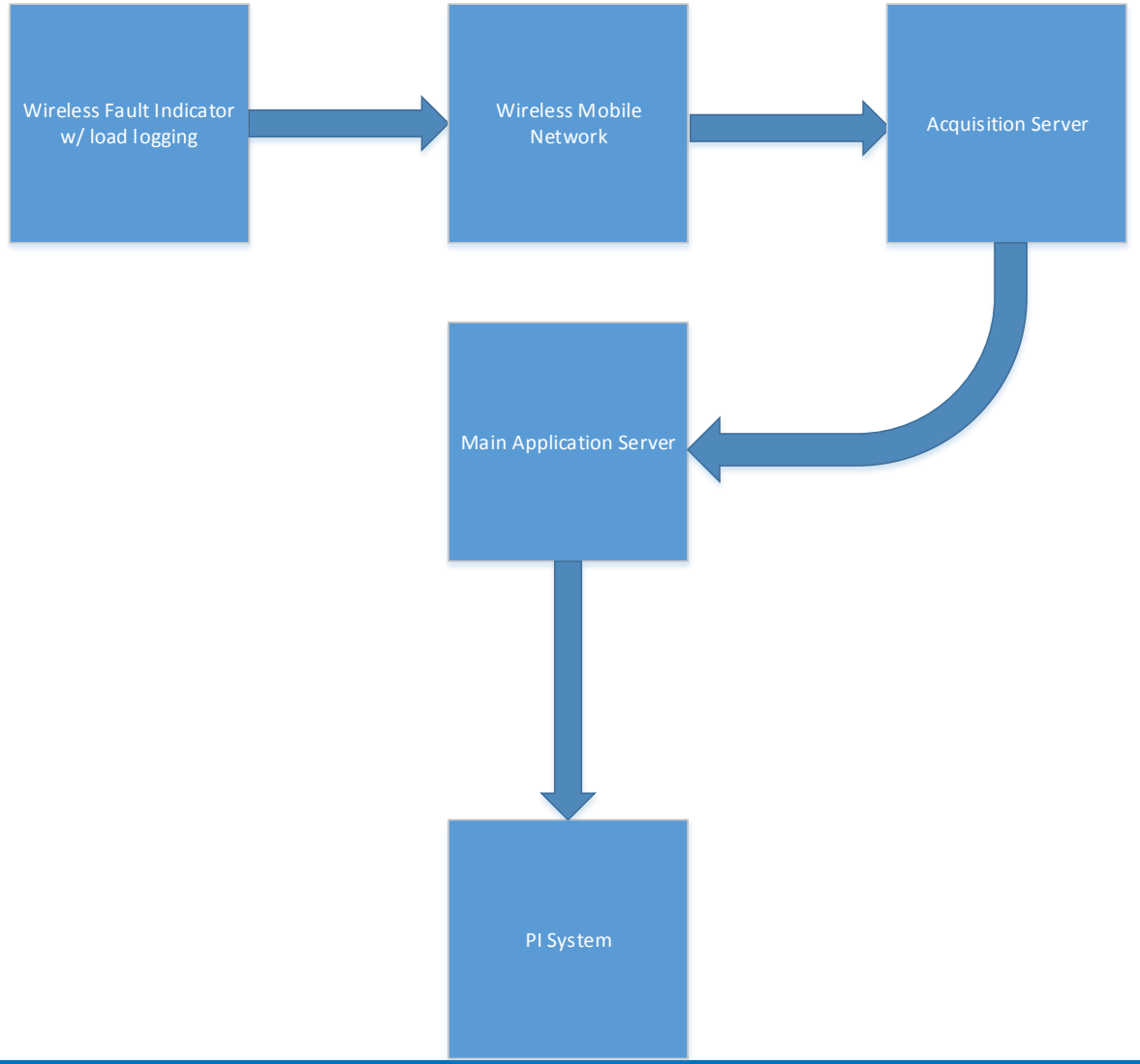
- Lack of visibility on the distribution system
- Lack of landscape on system operators desk
- Lack of situational awareness

Implementation

- Procured wireless fault indicators with load logging capability

- First of its kind at Tucson Electric Power
  - No IT/IS roadmap on how to implement

Data Flow



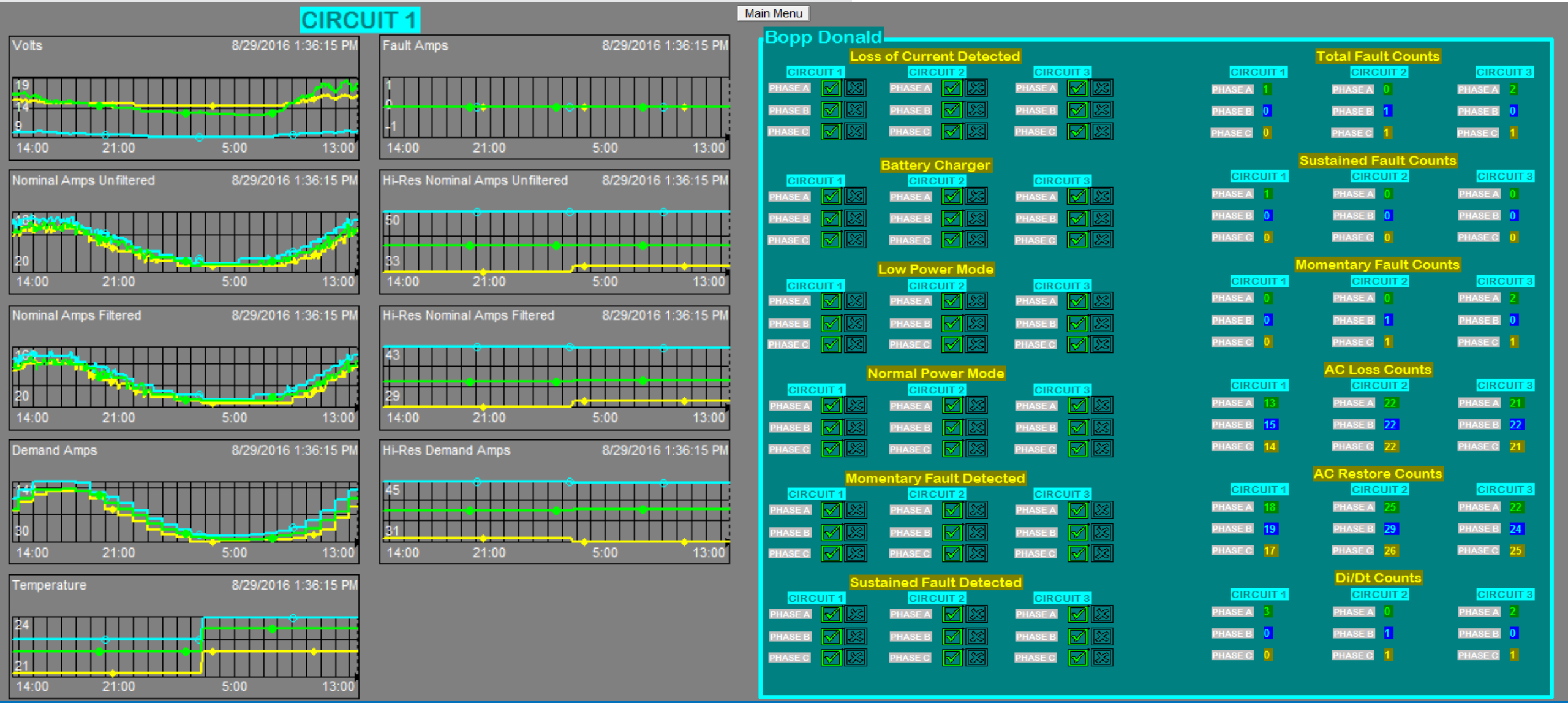
Problem Solved? Nope.

- We have equipment deployed, but how do we solve our data problems?
  - Lack of visibility on the distribution system
  - Lack of landscape on system operators desk
  - Lack of situational awareness

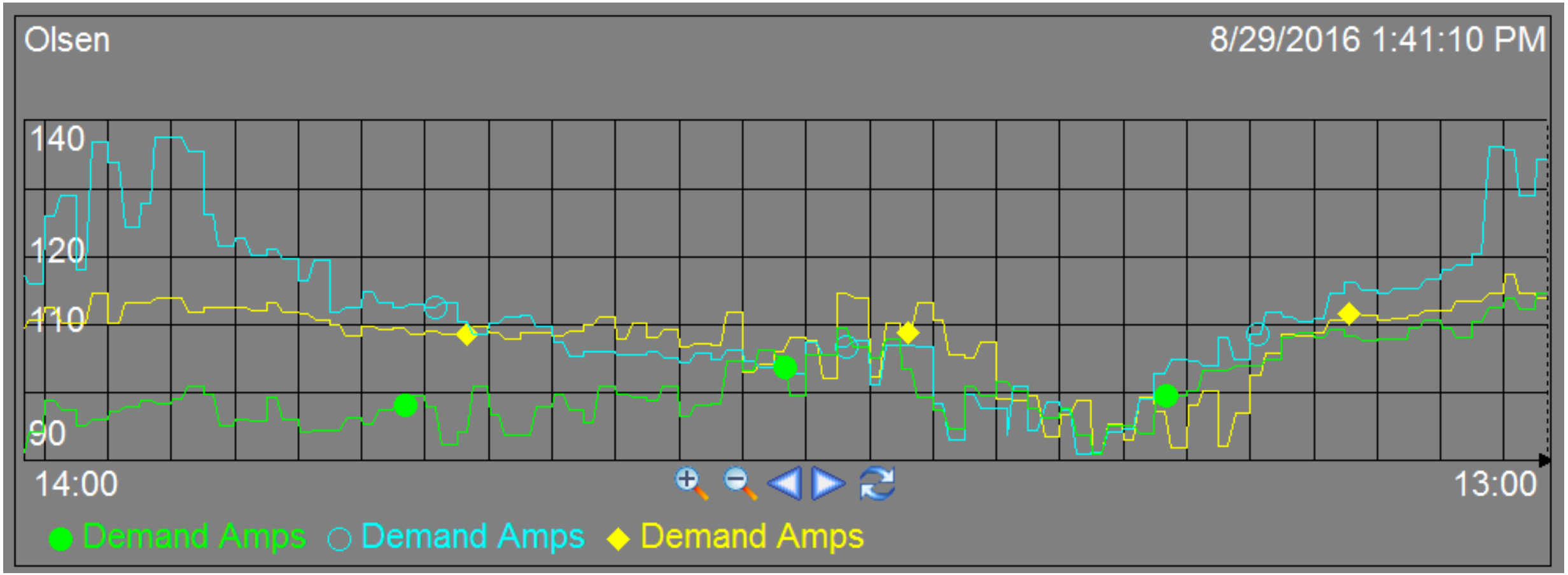
PI To Save The Day!

- Leverage existing system to increase distribution system visibility
- System Operators don't have to learn something new
- The PI system manages the data, so situational awareness in increased to users
    - Ability to **VISUALIZE** with PI Coresight and PI Processbook!

PI Processbook



PI Processbook



PI Coresight

Enhancing Data Visualization from Field Equipment

"There is a magic in graphs. The profile of a curve reveals in a flash a whole situation — the life history of an epidemic, a panic, or an era of prosperity. The curve informs the mind, awakens the imagination, convinces." – Henry D. Hubbard

Doug Hood, Tucson Electric Power

CHALLENGES

TEP had a lack of visibility on our 4kV system. The lack of visibility on utility systems lead to the lack of situational awareness which impacts system operations, short and long term planning. Though with the addition of systems to fill gaps, system operators can be inundated with the lack of computer landscape.

SOLUTION

Leverage the existing PI System via DNP connections to store the data flowing into our system. Since data is being stored in the PI System, we can now visualize and monitor using PI Processbook and PI Coresight. System Operators and Planners now have a robust tool for system operation.

RESULTS

Improved system planning and monitoring of distribution system.

Improved data analysis as visualization improves the understanding of situational awareness.

Improved quality of life for System Operators.

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Thank You

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