Arizona Public Service Company is the largest electric utility in the state of Arizona. APS provides service to 1.1 million customers in eleven Arizona counties and a service territory of 34,645 square miles. The facilities required to serve this area includes 54 generation units, 411 substations and encompasses 28,022 miles of distribution lines and 5,234 miles of transmission lines.

Arizona Public Service’s PDM group has evolved over the last ten years to a full service predictive maintenance department. APS made a manpower commitment of nine techs and an administrative technician. An aggressive training budget allows every team member opportunities to improve and grow in all areas. In 2012 the PDM team embraced the LEAN concept and is currently participating individually in an Auburn University sponsored program to further strive for continuous improvement. The APS PDM department is strategic in managing to inspect their facilities according to its maintenance basis with a realistic and efficient approach to working smarter.

After only three years since its expansion, the team is performing at a superior level. There is a great sense of ownership in the technician’s individual responsibilities. Each team member embraces the opportunity to rotate into various positions in the department. This allows them to strengthen their overall value and contribution to the team while becoming well rounded and knowledgeable in all aspects of the department’s goals and vision.

Technologies include: Visual Inspections, Infrared Thermography, Partial Discharge Detection, Corona Detection Cameras, Vibration Acoustical Emissions, Gas Detection Systems, Boroscope Inspections, Airborne Acoustical Emissions and Dissolved Gas Analysis. APS employs a Condition Status Program that allows all gathered information to be input. This provides management and maintenance departments a “dashboard” view of all equipment, assets and locations in our system including current and historical status indicators.

In the last ten years, four of which were exclusively infrared, APS has had a total cost benefit exceeding 16 million dollars. In 2012 alone, the cost benefit is over 2.2 million dollars.

**Hardware and Software**

**Hardware**
- 8 – FLIR P-Series Infrared Cameras
- 1 – FLIR SC660 Infrared Camera (Truck Mounted)
- 2 – FLIR I-Series Infrared Cameras
- 2 – Triple Five Industries FD50
- 1 – Triple Five Industries AMS-8
- 2 – FLIR GasfindIR LW (SF6 Detection)
- 1 – LIS Laser Leak Detector
- 1 – Olympus Boroscope
- 1 – Transport X Portable DGA Tester
- 3 – Ofil DayCor Cameras (Daytime Corona Detection)

**Software**
- Grid Sense – Ground Fault Detection System
- Maximo
- PDQ
- FLIR ThermaCam Reporter
- FLIR Examine IR
- Commtest VB Software
- UE Systems Spectrum
- In-House DayCor Criteria Program
- In-House IR Criteria Program
- Wes/GM Grid Sense Software
- Elimpus PD Software
- Picasa Image Software
- Google Earth Pro