The Condition Monitoring program at TransAlta consists of three parts.
1. Excellence in knowledge and skill.
2. Communication of the knowledge and equipment and production losses prevented.
3. Communication of equipment and production losses prevented.

The group started in 2002 with just two people, and has now grown to eight full-time team members. The Condition Monitoring team is responsible for doing the vibration testing and analysis on approximately 1,700 pieces of equipment at the Sundance and Keephills coal fired power plants, as well as the rotating equipment at a 6,800 gpm Water Treatment facility and a Fly Ash sales facility which sells in excess of 350,000 tons of ash annually.

The program also includes taking an average of 2,200 oil samples per year from our rotating equipment to determine dirt particle count, wear metals and water content. Thermography on 2,000 pieces of electrical and rotating equipment. Electric motor on and off line testing of approximately 300 motors to determine stator or rotor issues. Transformer oil analysis on critical transformers. Ultrasound testing to assist operations or maintenance in determining air leaks or lack of lubrication in bearings.

Our motto is still the same as it was back in 2002 and has withstood the test of time. We may lack enough evidence to predict an equipment failure but we will never predict an equipment failure because of lack of evidence.

It is attention to being right all of the time that has helped to drive the growth of the Condition Monitoring group. Very seldom do we make an equipment call without using at least one other technology to verify the concern.

The 2nd part of our program is just as important as the 1st. How we communicate with each other, maintenance people, maintenance supervisors, maintenance planners, long range outage planners and with managers is just as important as knowledge of the equipment. Knowledge is good but if the knowledge does not get to the right people at the right time it is useless.

The 3rd part is showing people what you have done for them. This is important because often they don’t know and it is important that they see how Condition Monitoring has and can save them money. This is also the driving force to make any program grow. It’s all about the bottom line.

The TransAlta, Alberta Coal Condition Monitoring program is a very integral part of the Alberta Coal power plants maintenance processes. This is because the people who need the information are confident that the information they are provided is accurate and also current. It’s hard to imagine TransAlta without a Condition Monitoring program.

What the Alberta Coal Condition Monitoring team has done is something that any company can do in whole or in part. I absolutely believe that anyone who has a new or struggling program can gain something from this presentation.

The TransAlta, Alberta Thermal Power Plants

Condition Monitoring, Management and Communication

From left to right: Mark Kumar (Vibration Analyst), Dwaine Thomsen (Electrical, Thermographer), Dale Rosewell (Vibration Analyst), Gilles Martin (Vibration Analyst), Rocky Engeling (Vibration Analyst), Harvey Herbst (Lube Oil Analyst & Supervisor), Darren Hunt (Vibration Analyst), Don Beisel (Electrical, Motor Specialist)

![Image of power plants and team members]

**Tools and Software:**
- FLIR P20 Infrared Camera
- FLIR E25 Infrared Camera
- FLIR P640 Infrared Camera
- FLIR GF320 Gas Finder Camera
- FLIR Reporter (8.3 software)
- CSI 2130 Vibration Monitors
- CSI Machinery Health Manager (5.50 software)
- CSI Balancing Equipment
- Smart Signal ECM (early warning DAS software)
- Megger, model S1-5010
- ALL-TEST Pro IV, Motor test unit
- PdMa, MCEmax Motor Test Unit
- Optalign Laser Alignment Tools
- Pruftechnik Alignment Explorer (software)
- Monarch Strobe Light
- SDT 270 Ultrasound Equipment
- WinRoast (oil analysis software)
- TOA delta (Transformer Oil Analysis Software)
- Motor Report Card, motor life expectancy (developed in house)
- Equipment Health Report (developed in house)
- Risk Weighted $$$ Saves Report (developed in house)