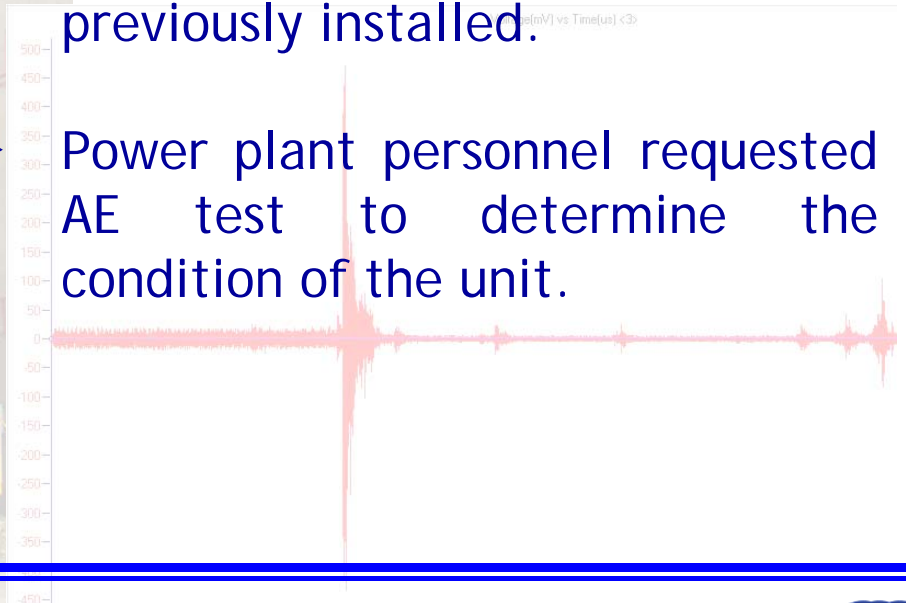
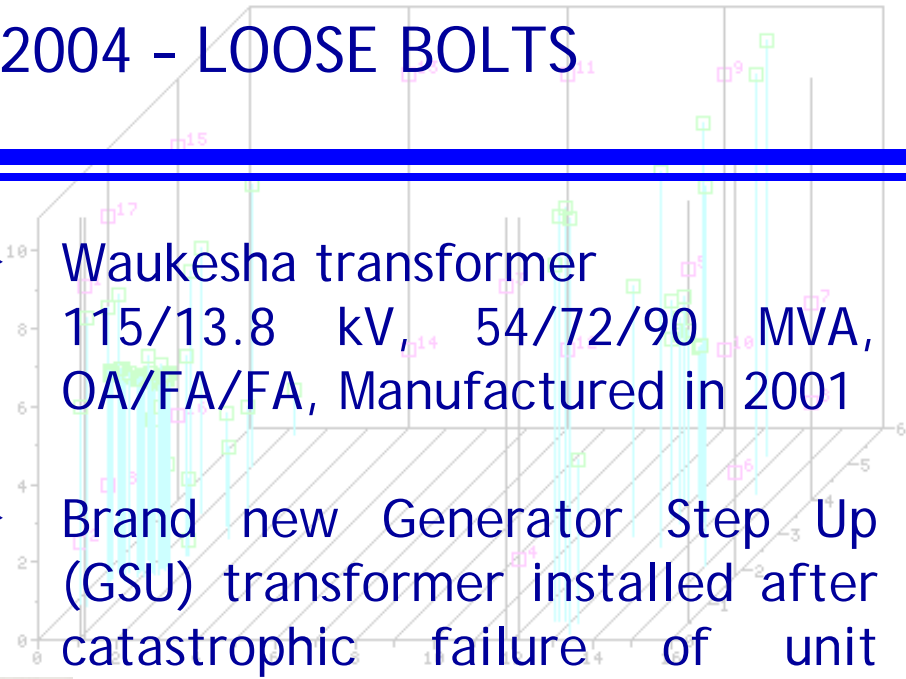


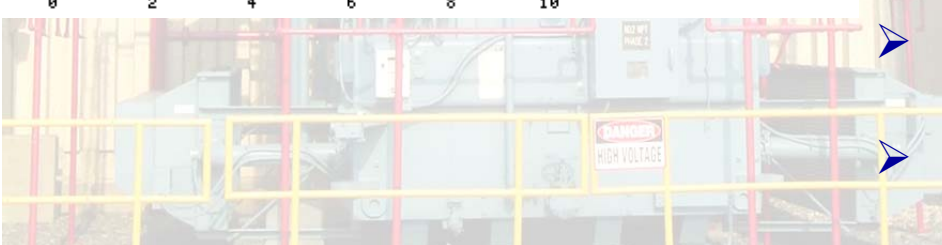
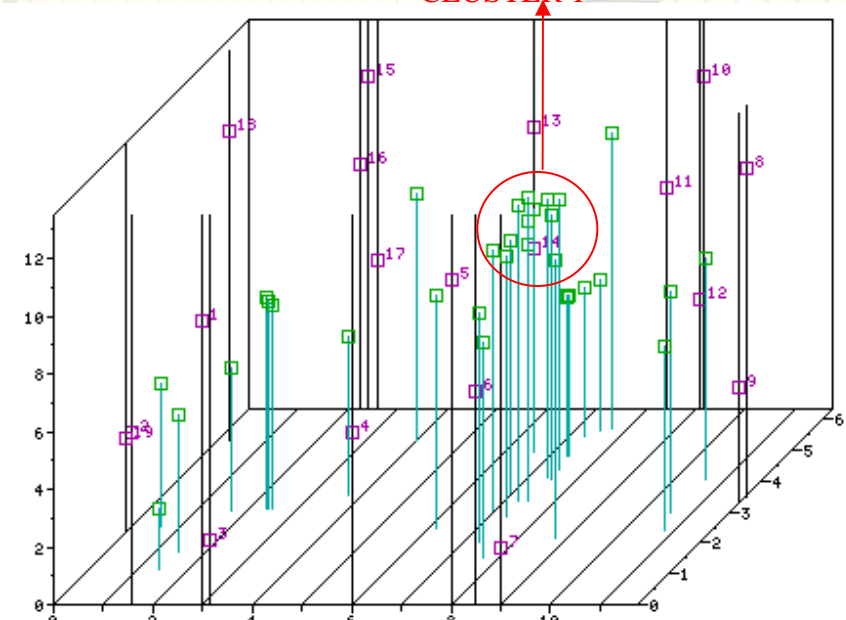
# CASE STUDY 8032004 - LOOSE BOLTS



- Waukesha transformer  
115/13.8 kV, 54/72/90 MVA,  
OA/FA/FA, Manufactured in 2001
- Brand new Generator Step Up  
(GSU) transformer installed after  
catastrophic failure of unit  
previously installed.
- Power plant personnel requested  
AE test to determine the  
condition of the unit.



# CASE STUDY 8032004 - LOOSE BOLTS



- Dissolved Gas Analysis sample before the AE test indicated a positive trend in CH<sub>4</sub> & C<sub>2</sub>H<sub>6</sub> gases.
- An infrared scan did not find any hot spots/overheating.
- 1 Cluster of events obtained in lower part of LV bushings X1 or X2
- Internal inspection revealed a few loose bolts on one of the low voltage bushings.
- Bolts were tightened.
- Unit is in service. No increase on Gas Concentrations has been observed.

