Developing a Condition Monitoring Strategy for Transformers
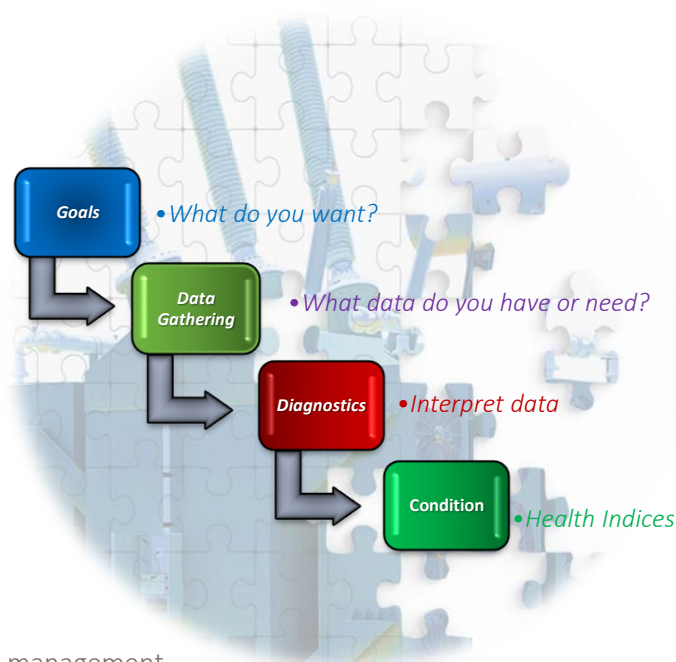## (by using a Health/Risk Indices Approach)

Course Overview

This is a unique course that navigates attendees through the daunting task of establishing an assessment Indices and the ranking of individual transformers in a fleet. This strategy of using health indices allows asset managers to easily identify transformers which most urgently need attention or intervention. The course follows a basic model that includes goals setting, data gathering, diagnostics and finally arriving at the condition. These are the fundamental building blocks for a successful strategy. Data gathering and handling is essential and is made up of In-service Survey Techniques, Offline Electrical Testing and Continuous Online Monitoring. The strategy is to perform the transformer assessment online which prevents unnecessary outage of the transformer. This online assessment will identify transformers with poor health indices and these units may require onsite interventions and/or offline testing to assess the severity and location of the fault. Finally, the focus is on the culmination of these diagnostic tests to development Health/Risk Indices to ensure effective transformer fleet management.

Course Outline

- **Fundamentals of Condition Assessment**
  - Condition vs Time Model
  - Building blocks of condition assessment
  - Transformer stress models
  - Transformer failure mode evaluation
  - Deriving condition indicators
- **Goals and Data Gathering**
  - Creating realistic goals
  - Transformer's life management data
- **Diagnostics**
  - In-service Survey testing
  - Offline Testing
  - Continuous Online Monitoring
- **Condition Assessment**
  - Understanding assessment indices
  - Scoring array
  - Application of Health/Risk Indices for transformers fleet management
  - Limitations of Health/Risk Indices

Goals •*What do you want?*

Data Gathering •*What data do you have or need?*

Diagnostics •*Interpret data*

Condition •*Health Indices*

Leaning Outputs

- Understand the building blocks in developing a condition assessment strategy
- Understand the importance of handling and managing transformer life data
- Learn the essential role that diagnostics and analysis plays in a condition assessment strategy
- Gain insight into developing a scoring array to ensure consistency in asset scoring
- Understand the use of health indices in the effective management of a transformers fleet
- Understanding the shortcomings in Health/Risk Indices

Target Audience

Electrical Engineers, Technicians, Technologists, Maintenance Electricians, Managers, Supervisors, and other technical staff involved in testing and condition assessment of transformers.

Duration: 1 Day   **Venue:** Pretoria and Durban

Presenters: Luwendran Moodley *(BSc Eng) Pr Eng* and Kamendren Govender *(BSc Eng) Pr Eng*
The presenters have spearheaded the development of bespoke condition assessment strategies for customers across the energy sector in Africa. They have honed their skills for the past 20 years and have established an impressive track record. Over these years they have established a database of thousands of transformers. This has proven to be effective tool in understanding transformer failure modes within local conditions and providing the optimum solution to customers.

Interested in this course, then contact us:

Luwendran Moodley   lmoodley@congru.co.za   +27 (0) 79 515 5164
Kamendren Govender   kgovender@congru.co.za   +27 (0) 79 501 6887