IEEE/PES Transformers Committee
Spring 2004 Meeting, March 7-11, 2004
San Diego, California, USA

Transportation Issues of Power Transformers

-- Panel Presentation, Monday, March 8, 4:45 p.m. --

**by Willy Hoffmann, Tom Lundquist,
Ewald Schweiger, and Manuel Silvestre**

1. Abstract

Once a transformer is properly manufactured to the owner's specifications and industry standards, the job is not complete. An essential task in procuring a quality transformer is to transport it safely to the site. Transportation is no longer an afterthought. It is an important to ensure that a well-manufactured transformer is delivered promptly, in the same condition that it left the factory.

This presentation is intended as a "teaser" to initiate a forum of discussion and resources for a potential upcoming standards activity by the Committee. The West Coast Working Group (under the Power Transformers Subcommittee) is considering starting work on a "Guide for the Transport of Power Transformers".

2. Learning Objectives

The transportation of transformers is a broad subject - much larger than can be adequately covered in this brief presentation. This presentation will "scratch the surface" by covering a few items of interest:

- Alternate design solutions to overcome transport restrictions
- Field tests to help determine hidden internal damage
- Types of potential impacts that can occur during transport
- How to specify and discover impact limitations
- Impact recorder issues
- Additional worthwhile transport bracing
- Choosing a good rigging contractor
- Manufacturers obligations
- Airborne transports ("flying transformers")
- Applying power transformers to wind power projects

3. Learning Outcomes

Attendees at this presentation will gain a better understanding of the importance of specifying preferences and requirements that will help ensure a prompt and safe transport of power transformers. They will also discover a couple of unique solutions to overcome barriers that may exist when moving a large transformer to a difficult location.

It is desired that the presentation will also initiate excitement in the anticipation of an upcoming guide document. Furthermore, this presentation is an opportunity to identify individuals who have experience in transportation & rigging issues and is an opportunity to solicit their involvement in standards work.

4. Presenter's Biographies

Willy Hoffman: Mr. Hoffman is Senior Vice-president of J. H. Bachmann, Inc. North America. He is responsible for all heavy and oversized transport in the United States and is a member of the Railway Industrial Clearance Association as well as the Federal Maritime appointed qualifying officer for J. H. Bachmann. Mr. Hoffmann began his career in the forwarding industry in 1971 and has worked for many years in the Middle East and Asia before coming to the United States in 1986. He holds a degree in international business from the Dr. Ruessler Business School in Düsseldorf/ Germany.

Thomas G. Lundquist: Mr. Lundquist is an Executive Engineer, in the Electric System Engineering Department at Salt River Project in Phoenix, Arizona. Work assignments include special projects involving EHV equipment, consulting for system grounding and shielding, and transformer applications in utility facilities. Tom worked for Westinghouse Electric Corporation as a district engineer and as a service center manager. He is Chairman of ASTM International D27 Electrical Insulating Liquids and Gases Committee and a senior member of IEEE, Transformer Committee. Tom received a BS degree in Electrical Engineering from the University of Arizona and an MBA -Technology Management from the University of Phoenix. He is a registered Professional Engineer in Arizona and Colorado.

Ewald Schweiger: Mr. Schweiger is Sales Manager of VA TECH ELIN Transformatoren. He is part of the Marketing and Sales Team of VA TECH Transformers, Austria. Within this team he is responsible for sales efforts and the strategy for Large Power Transformers within the South East of the States. Mr. Schweiger is also responsible for the acquisition and execution of transformer and shunt reactor contracts. He joined VA TECH ELIN Transformatoren in 1997. From the beginning, he worked in the Marketing and Sales department for the US market. He is a member of IEEE/PES Transformers Committee. Ewald received a Dipl.-Ing. Degree from the Technical University in Graz in 1997.

Manuel Silvestre da Silva Barbosa: Mr. Silvestre is R&D Director of Power Transformers at EFACEC Energia, S.A., located in Portugal. Previously, he was Manager of Quality Assurance and was also General Manager of the EFACEC Factory in China. Manuel began his career at EFACEC as a shell-form and core-form design engineer. His Electrical Engineer Degree was awarded by the University of Porto in 1971.