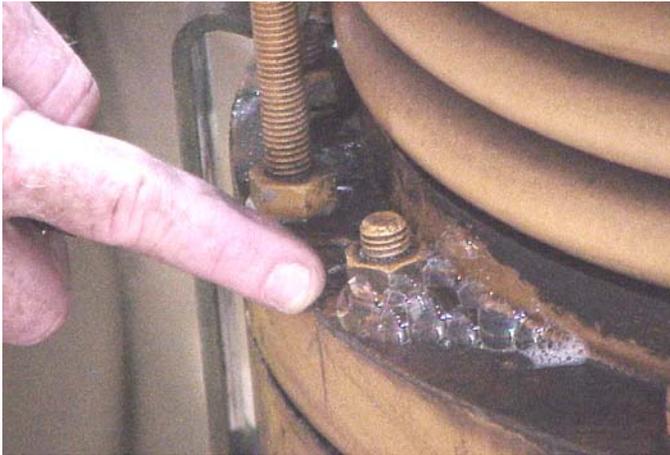


SF₆ Leak Sealing – Tailored Collaboration Opportunity



The Tailored Collaboration will provide an Application Guide and a laboratory demonstration of SF₆ leak sealing techniques - to repair SF₆ leaks effectively on-site, with minimal disruption. Participants will each have their own worst-performing seal configuration evaluated in the program.

INTRODUCTION

Utilities face a common problem when it comes to SF₆ leaks – how to seal them efficiently on-site until it is cost-effective to refurbish the device. EPRI has developed effective techniques for location of leaks. The next vital step is to provide customers with the tools to effectively seal these leaks for 5-10 years without dismantling the equipment.

This TC (Tailored Collaboration) is aimed at providing participants with guidelines on the most effective leak sealing materials and techniques. Present commercial products are not optimal for utility needs and are often time-consuming to implement, difficult to remove and short-lived. To address this need, this TC will conduct extensive testing and accelerated aging of a wide range of promising materials and techniques - on typical leak configurations found in the field. Participants will be able to tailor the research to their specific needs by specifying leaking configurations of largest concern to their utility (perhaps a specific flange design, problematic pipework, expansion bellows etc.). These will each be addressed specifically in the investigation.

Participants will thus obtain both generic solutions to SF₆ leak sealing – and focused solutions on their worst-leaking

EPRI is offering an opportunity for utilities to effectively seal SF₆ leaks. Past EPRI Research provided tools for effective leak location. This next step provides participants with an Application Guide for rapidly and effectively sealing leaks without dismantling. In addition to the general Application Guide, the opportunity will allow participants to submit details of sealing configurations of particular concern to their utility. The techniques will be demonstrated on a full-scale circuit breaker in the laboratory.

configurations. At the conclusion of the project a demonstration on a full-scale circuit breaker will be conducted in the laboratories. The EPRI SF₆ Camera will be used to locate the leaks and verify the effectiveness of the sealing technique.

PROJECT SUMMARY

To produce the SF₆ Leak Sealing Application Guide, Research in 2002 and 2003 would focus on optimal materials and techniques for sealing SF₆ leaks on-site, with minimal disruption to the equipment. Materials and techniques would be subject to rigorous testing and accelerated aging. Each participant would be entitled to put forward configurations of greatest concern for SF₆ leaks in their utility. The project would address the best techniques for sealing each participant's configuration. The development will be documented and each participant would receive the report covering the sealing materials development, plus the sealing results from all the participants.

DELIVERABLES

The project is expected to run over 2002/2003.

- An Application Guide to SF₆ Leak sealing - summarizing the research findings on optimal materials and techniques.
- Tailored Guide on sealing materials and techniques for each participant's specific configuration.
- Full scale demonstration in a laboratory on an actual breaker, with verification using the EPRI SF₆ Camera.

BENEFITS OF PARTICIPATION

- Effective temporary (3-5yrs) sealing of SF₆ leaks – applied in a timely and cost effective manner.
- Improved equipment availability through reduced leak-sealing times.
- Reduced SF₆ losses – and hence reduced maintenance costs.
- Reduced impact on Global Warming and improved compliance with voluntary environmental measures.

PRICE OF PROJECT

The price per participant will be \$20,000 (EPRI matches this amount to total \$40,000) per year for two years.

The project requires 4 participants to start the work. If more participants sign up, the price per participant will be re-assessed.

PROJECT STATUS AND SCHEDULE

Approaching potential participants.

WHO SHOULD JOIN

Transmission and Distribution utilities with an interest in reducing maintenance costs, improving overall system availability and reducing the impact of SF₆ on the environment.

CONTACT INFORMATION

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