

I. **Project (phase) name**

Laboratory for tracking and erosion tests on composite insulators

Project class / Phase name

P-CONFORM / Drawing up the technical project for functional model

Phase no: II

Planned objectives:

- Project of functional model for mechanical equipment
- Project of functional model for electric equipment
- Equipment purchase

II. **Description of activity** (performed within the phase, using key words and DESCRIPTORS):

Activity II.1 Design of the functional model of the mechanical equipment for tracking and erosion test on composite insulators

The functional model of the mechanical equipment for tracking and erosion tests on composite insulators was designed according to EN 62217:2006 and SF ICMET MI No. 14/2006. The following equipment was designed:

- Assembly of insulator rotating system, drawing no. MP1-7990
- Assembly of mechanism support, drawing no. MP1-8008
- Assembly of laboratory enclosure, drawing no. LIUE MP0-8017

Got results (the quantifiable results/technical, economic, social indicators etc. should be indicated - economic effects recorded at the RD institution):

Technical documentation of the functional model of the mechanical equipment for tracking and erosion test on composite insulators.

Stage of planned objective achievement/completion form (of the activity within the phase):

The planned objective was achieved and finalized as: Technical documentation of the functional model of the mechanical equipment for tracking and erosion test on composite insulators.

Activity II.2 Design of the functional model of the electric equipment for tracking and erosion test on composite insulators

The functional model of the electric equipment for tracking and erosion test on composite insulators was designed according to EN 62217:2006 and SF ICMET MI No. 14/2006. The following equipment was designed:

- Voltage divider assembly, drawing no. 444-IT4-19867
- Voltage transformer, drawing no MP2-7922

Got results (the quantifiable results/technical, economic, social indicators etc. should be indicated - economic effects recorded at the RD institution):

Technical documentation of the functional model of the electric equipment for tracking and erosion test on composite insulators

Stage of planned objective achievement/completion form (of the activity within the phase):

The planned objective was achieved and finalized as: Technical documentation of the functional model of the electric equipment for tracking and erosion test on composite insulators

Activity II.3 Equipment purchase

The following equipment was purchased:

1. **Personal computer, license software**

The computer was purchased for running the software related to the laboratory for tracking and erosion tests on composite insulators and for issuing the tests reports.

2. **Megohmmeter**

The megohmmeter was purchased for verifying the composite insulators, after the tracking and erosion tests provided in EN 62217:2006.

3. **Single phase autotransformer with control system**

The single phase autotransformer with control system was purchased for controlling and maintaining the testing voltage, depending on the creepage distance of composite insulators.

4. **Apparatus for determining the salinity**

The apparatus for determining the salinity was purchased for measuring the saline concentration, according to EN 62217:2006.

Got results (the quantifiable results/technical, economic, social indicators etc. should be indicated - economic effects recorded at the RD institution):

The above described equipment was purchased.

Stage of planned objective achievement/completion form (of the activity within the phase):

The planned objective was achieved and finalized as: Equipment purchase, in accordance with those described above.

NOVELTY ELEMENTS

Patent

Scientific paper

Scientific communication

(novelty elements should be described, specifying the patent, paper or scientific communication title , as the case may be)

METHOD FOR CAPITALIZING ON THE RESULT APPLICATION AND ECONOMIC EFFICIENCY

(field, customer and/or specific activity, economic effects got by the economic agent which benefits from the results should be described)

The main objective of the project is getting the accreditation certificate of the laboratory for tracking and erosion tests on composite insulators and completing the list of accredited tests with a view to assuring the composite insulator assessment according to the new European Norm EN 62217.

Composite insulators have the advantage of a weight lower than the classical insulators - the ceramic or glass ones; this fact made them easily mountable and cost-effective in achieving the circuits from the National Power Grid. Besides, they become not easily polluted and, consequently, the number of breakdowns is much decreased. They have the drawback of a more elaborated manufacturing technology, which should be verified by design tests including also the tracking and erosion test.

The economic efficiency of project result application is determined by:

- possibility of performing in Romania the tracking and erosion tests on composite insulators;
- capability of ICMET Craiova laboratories to broaden the testing range, simultaneously with setting up the laboratory for the above mentioned test;
- alignment of the laboratories in Romania to the highest research, development and testing EU level

OUTLOOKS

(possibilities of broadening the result application to many customers and/or in other fields should be emphasized)

By finalizing the laboratory for tracking and erosion tests on composite insulators, the testing infrastructure necessary in Romania for carrying out in the country all the tests required by European Norms for composite insulators is assured.

Throughout the world, there is a trend for replacing the ceramic and glass insulators by composite insulators. This trend is dictated by technical and economic reasons. In Romania, the replacement process began by using imported composite insulators; since the last years, companies such as: SC IPROEB SA Bistrita, SC EXIMPROD GRUP SA Buzau, SC RECOMPLAST SA Buzau, MAIRA MONTAJ Bucharest have been active on the market. These companies need to be technically supported by the assurance of the testing infrastructure.

III. Records

(documents to be annexed for supporting RD:, execution documentation, measurement/test/analysis reports, business plans, diagnoses, assessments, prognoses etc. should be specified)

The following documents are annexed:

- Execution documentation of the functional model of the mechanical equipment for tracking and erosion tests on composite insulators;
- Execution documentation of the functional model of the electric equipment for tracking and erosion tests on composite insulators;