

Judicial Investigation in Electricity Distribution Networks: Difficult and Uncertainty

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Abstract: One of the tools in order to solve legal problems and pendency for the Brazilian court is to perform technical judicial investigations, which performed by CREA (Regional Council of Engineering and Architecture) legal professionals acknowledged by the judiciary. The professional (expert) is responsible for the procedures and results of a judicial investigation, thus, during the investigation, the expert answers for all the dues “veracity”. The path of a judicial investigation can be difficult due to the lack of either relevant information or cooperation from people involved in the process, who somehow wants to benefit from its end. This paper describes a series of difficulties lived during almost 20 years of judicial investigation in Brazil where expert’s decision making was shaped in order to preserve the veracity of the facts even with the noncooperation from the parties involved in the system. At the end, the paper suggests how young engineers who wants to be one experts in judicial investigations can surround themselves with legal techniques, which will guarantee their performance during the job with no losses for the state, the parties concerned, or the court.

Key words: non-technical losses, judicial investigations, technical report, electricity distribution networks, energy theft

1. Introduction

This paper came from the need to point out used methodologies in judicial demands, for technical evaluations, concerning frauds in power consumption, under the responsibility of an electric power provider in Brazil, in this case *Companhia Energética de Minas Gerais-CEMIG*. This study shall evaluate situations in which reports and technical opinions are issued, in order to determine an irregular situation in measuring systems, of consumer units, noticed by CEMIG’s inspection teams.

After unsuccessful talks in administrative area, where power provider intends to receive payment for consumed but not invoiced power, due to a fraud in measuring system of a specific consumer unit, the demand runs from administrative sphere to judicial sphere, where a judge shall deliberate about concerning

issues to this demand. In other words, from this moment, all administrative actions cease, allowing judicial actions, which continue to keep running to other formalities, whatsoever, legal ones.

In administrative sphere, power providers follow rules regulated by Brazilian electric energy sector. The agency responsible for electric energy sector in Brazil is National Electric Energy Agency (ANEEL), an autarchy in special regime, linked to the Ministry of Mining and Energy (MME), created by Law 9.427. ANEEL’s mission being: to regulate and supervise generation, transmission, distribution and trading of electric energy and also to define procedures for financial recovery associated to deflected power, in other words, power not consumed, however not duly invoiced, due to a fraud. Yet, in judicial sphere, demands follow rules of Civil Process Code (CPC), which was regulated by Federal Law 13.105 of march, 16, 2015.

After acknowledgment of a specific irregularity in measuring system, power provider opens an

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administrative file in order to try to recover, financially, power consumed and not invoiced. Significant number of these administrative files are not effective, where administrative demand becomes a judicial demand, that begins to follow rules regulated by CPC.

CPC defines all rules of procedure, indicating rules to be followed, allowing parties concerned, that is, power provider and consumer having its measuring system frauded, with the ample right of defense and conflicting, defining all means of proofs, whether documentary, testimonial and yet technical proofs, which are a responsibility of skilled and legally entitled professional, being nominated by judge or CPC [2] definition as follows:

Art. 464. Expert evidence consists in examination, inspection or evaluation.

§1° Judge will refuse expertise when:

I - The proof of fact does not depend of technician's special knowledge;

II - It is not necessary considering other proofs created;

III - Validation is not possible.

§2° Judge may, from a letter or requirement of parties, in substitution of expertise, determine creating a simplified technical proof, when the controversial point is of minor complexity.

§3° Simplified Technical proof shall consist in examination of an expert, appointed by judge, about controversial point of cause demanding special scientific or technical knowledge.

§4° During the claim, the expert, who should have specific academic background on concerned area of his testimony, will be able to use any technological tool for transmission of sound and images aiming to clarify controversial points of the cause.

Art. 465. The judge will nominate a skilled expert for the expertise and will immediately establish a delay for delivery of report.

§1° Parties are charged, within 15 (fifteen) days, counted from summons of expert nomination sheet:

I – Hindrance or suspicion of expert, if applicable;

II – To indicate technical assistant;

III – To present areas.

§ 2° Aware of nomination, the expert will present, in 5 (five) days

I – Fees proposal;

II – Curriculum should prove expertise;

III – Professional contacts especially e-mail address, where personal summons will be addressed.

§3° Parties shall be informed of fees proposal, and if they wish, are able to express within 5 (five) days, when judge will establish a value, summoning parties for purpose of art. 95.

§4° Judge may authorize payment up to fifty per cent of arbitrated fees in favor of expert at the beginning of tasks, balance amount should be paid at the end only, after delivery of report and all necessary explanations provided.

§5° When expertise is inconclusive or insufficient, the judge will be able to reduce initially arbitrated fees for the work.

§6° When it has to be made by letter, nomination of expert and appointment of technical assistants in trial in which expertise is required.

Art. 466. Expert will accomplish the committed task scrupulously, independent of engagement term.

§1° Technical assistants are of parties' confidence and are not subject to impeachment or suspicion.

§2° Expert should ensure to parties' assistants, access and follow-up of steps and achieved examinations, without previous communication, proved in notices, with 5 (five) days in advance.

Art. 467. The expert may excuse or being refused for impeachment or suspicion.

Single paragraph. Judge will nominate another expert when accepting the excuse or whenever judging the challenge well founded.

2. Justification

Several actions adopted by power provider to ascertain frauds, however they meet precepts regulated by ANEEL's rules, and that meet demands in administrative sphere, when they become judicial

demands, they finally do not meet precepts regulated by CPC, regarding clarity and constituted documentation, in facing a detected fraud. As far as analysis of judicial technical demands goes further, this become more evident, acting as Official Expert in several Courts of Law. This situation is due to the fact that mainly, actions adopted in administrative sphere do not obey to basic principles of fraud ascertainment, according to which is required by CPC. The absence of documentation or precarious ascertainment of a specific irregularity, ends up incurring in complementary losses to non-technical loss of consumed but not invoiced power, in other words, ascertained fraud in power consumption measuring. Expenses associated to trial costs, lawyers, technical assistance and finally judicial expertise itself, are losses of power provider's responsibility and cannot be reimbursed, when actions of their employees do not observe basic principles of fraud ascertainment and aim to meet ANEEL's demands only (administrative sphere).

It is worth mentioning that, during procedural acts, specifically regarding establishment of expertise, expert will use tools, documents and inspections, in order to ascertain the real condition in which the supposed fraud was appointed and if it happened for real, as it was defined in CPC:

Art. 473. Technical report should include:

I – Exposition of expertise object;

II – Technical or scientific analysis performed by expert;

III – Indication of used method, clarifying it or demonstrating to be mainly accepted by specialists of knowledge area from which it was originated.

IV – Conclusive answer to all areas presented by judge by parties and by Public Ministry agency.

§1º Expert should present in report, foundation in a simple language and with logical coherence, indicating how he reached its conclusions.

§2º Expert is not allowed to surpass limits of his designation or issue personal opinions exceeding

technical or scientific examination object of the expertise.

§ 3º For performing in his function, the expert and technical assistants are able to use all necessary means, listening to witnesses, obtaining information, requiring documents being with the party, of thirds or in public offices, or to instruct the report with charts, maps, lay outs, drawings, photos or other elements necessary to clarification of expertise object.

It is noticed as common situation, in most of judicial demands, that the main object of expert evaluation, frauded power meter, is not at judicial expert proof, due to premature discard, in garbage (scrapping) or by "convenience of both parties" of not having the object to be evaluated anymore. In this moment, it is clear that the only proof of judicial demand, becomes a unique document issued by power provider, which is the report denominated "TOI" — Term of Irregularity Occurrence or Term of Occurrence and Inspection. It is worth mentioning that, mainly, this report is issued in unilateral manner (by power provider) without the presence of final consumer. It is clear that this document meets administrative issues only, in other words, those covered by ANEEL's resolutions 414, of September 9, 2010 [3] and 45/2000 [4] and not requirements covered in CPC.

3. Results and Discussion

In consumer units where a possible fraud is detected, ANEEL requires inspections to be performed by power provider agents, which at the moment of irregularity ascertainment, in measuring system or in its seals, power providers should issue a document named "TOI" Term of Irregularity Occurrence or Term of Occurrence and Inspection. In this moment, situations associated to measuring system and meter installed in that consumer unit, are:

- Status of seals found in the cover of measuring box;
- Status of seals found in the cover of meter terminals block;

- Status of calibration/measurement seals found in the cover of meter;
- Reading found at the moment of inspection;
- Identification of meter substitution requirement with corresponding indication of substituting model;
- Identification of user or consumer at the moment of inspection;
- Irregularities found should be reported.

Irregularities and situations described in this “TOI” should clearly state that they indicate technically, that this power measuring system is vulnerable to external action (non-authorized people of power provider) and yet if they caused or not, wrong operation of power meter. Experience shows that it is common that these “TOIs” are issued in a wrong manner, fulfilled with lack of data, without photographic reports and even without the presence of a responsible employee of consumer unit or final user. In other words, they tend to disable a documental proof, which could be used in a judicial process.

Figs. 1 and 2 show an inspection performed by an agent of power provider, duly monitored by a judicial expert, with a consumer unit.

It is clear that TOI issue, substantiated with a photographic report and duly monitored by parties, guarantee an isonomy of collected information and data, during an action of inspection, concerning frauds.

In the moment of irregularity ascertainment, if there is demand for substitution of meter, ANEEL states that meter must be sent to a laboratory accredited by INMETRO, for calibration/measuring tests to be performed in removed meter. When removed, meter should be packed in wrapping, duly sealed, in the presence of user or final consumer and yet should be preceded by invitation to monitor calibration/measuring by interested party. Absence of final consumer and lack of photographic reports turns the action of power provider in a unilateral act to justice understanding.



Fig. 1 Inspection in Consumer Unit. Source: Judicial Inspection performed by Pedro Alberto Brasil Vieira dos Santos Process n.º: 0024.13.314.051-7 – October 2010).



Fig. 2 Inspection in Consumer Unit. Source: Judicial Inspection performed by Pedro Alberto Brasil Vieira dos Santos (Process n.º: 0024.14.093.026-4 – July 2017).

Fig. 3 presents packing of a meter removed from a consumer unit, during an inspection process, which meet precepts regulated by ANEEL and CPC. Removal of power meter, when TOI is issued, together with a photographic report and duly monitored by parties, guarantee, once more, an isonomy of collected information and data, during an inspection action, concerning frauds.

Carrying out ascertainment of irregularities and/or non-conformity of evaluated meter, this runs to next step, that is, meter will be verified by a laboratory accredited by INMETRO, where Power Provider should indicate technically, if performed reading gauge regarding power consumption compatible or non-compatible with real consumed power. For this, irregularities described in TOI, which led meter to laboratory for analysis, must be considered.

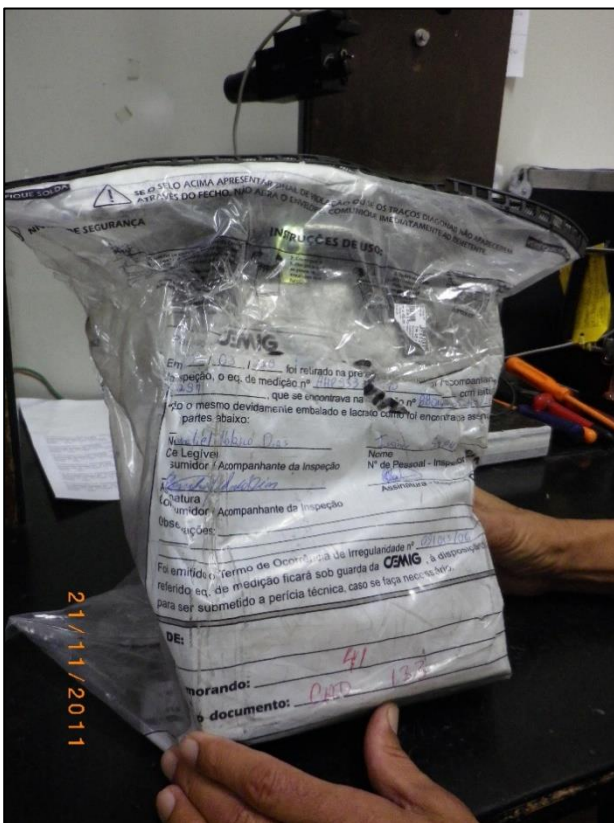


Fig. 3 Collection of meter. Source: Judicial Inspection performed by Pedro Alberto Brasil Vieira dos Santos (Process n.º: 0024.09.483.768-9 – November 2011).

This indicates that TOI should present a previous evaluation, pointing out manipulation suffered by meter which prevents its correct operation. In this moment, as regulated by ANEEL, some points should be noticed by power provider as follows:

- Check upon arrival, if meter was packed in the same material used when removed;
- Check if packing is not violated;
- Check if meter is the same described in TOI;
- Check if meter has its calibration seals unviolated (access inside allowed?);
- Check if meter has manipulation signs;
- Check if mobile element of meter rotates with no friction;
- Evaluate terminals block of the gauge;
- Examine free current;
- Examine meter recorder;
- Check if reading found is the same indicated in “TOI”;
- Identify if power meter was checked in laboratory as prescriptions in INMETRO current
- rules, identifying error found, with admissible error limits for tested conditions;
- Indicate if there was manipulation in internal components of power meter;
- Indicate if manipulation turned impossible the proper operation of meter;
- Irregularities found should be reported.

Figs. 4 and 5 present the correct form to check a meter removed from a consumer unit, during the process of calibration in laboratory, meeting precepts regulated by ANEEL and CPC.

The report issued in laboratory should include photographic reports, in order to demonstrate irregularities ascertained in meter, showing clearly technical interferences which causes wrong operation of power measuring system. These should point out and record, very clearly, that the power meter/register is not measuring the real power consumed (lower). Although previous instructions, it is still common to

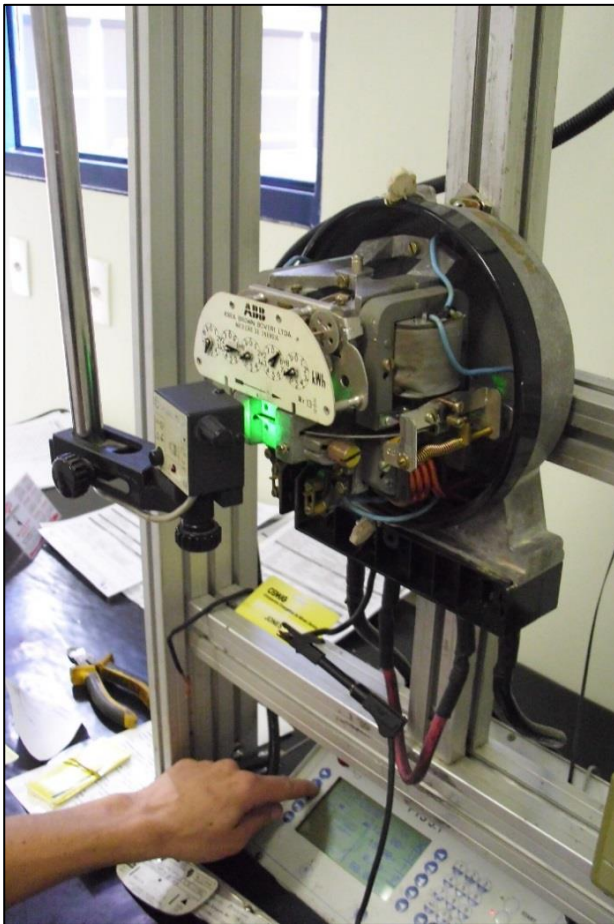


Fig. 4 Calibration of meter in laboratory. Source: Judicial Inspection performed by Pedro Alberto Brasil Vieira dos Santos (Process n°: 0024.09.587.173- 7 – September 2011).

find technical reports issued, in laboratory, without an indication of “error” found in calibration process and without photographic reports. This strongly damages progress of processes in Brazilian justice and yet in collection of inspection proofs, making these technical surveys actions to be considered as precarious.

Fig. 6 presents the correct form to show the error found during calibration process of a power meter in laboratory.

If power provider does not develop clear and duly registered actions, when a fraud is ascertained, these procedures become subject of impugnation demand from the other party involved in dispute, that is, by final consumer.

In addition, to this fact, it is usual to discard de main proof, which could be used in judicial demand, in other

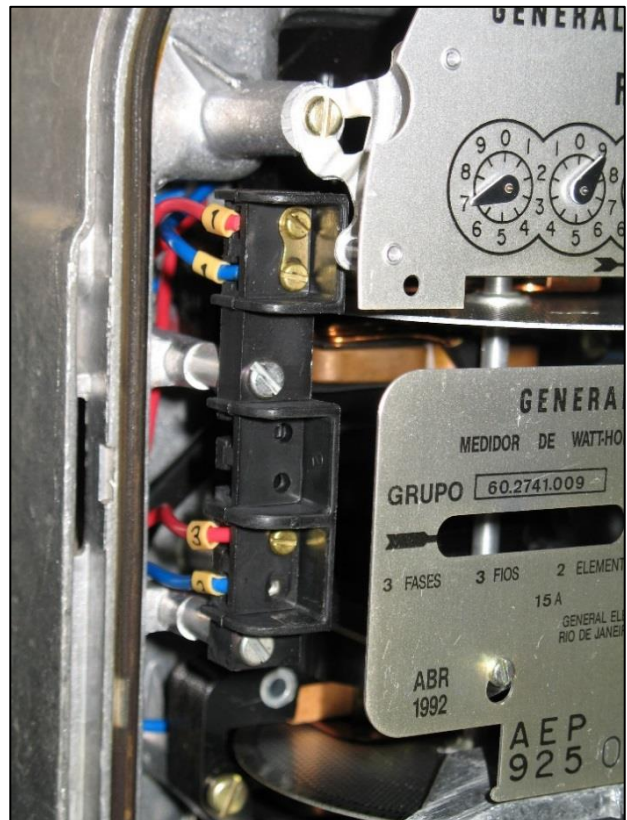


Fig. 5 Irregularity in meter – cut circuit. Source: Judicial Inspection performed by Pedro Alberto Brasil Vieira dos Santos (Process n°: 0024.08.243.189-1– November 2010)

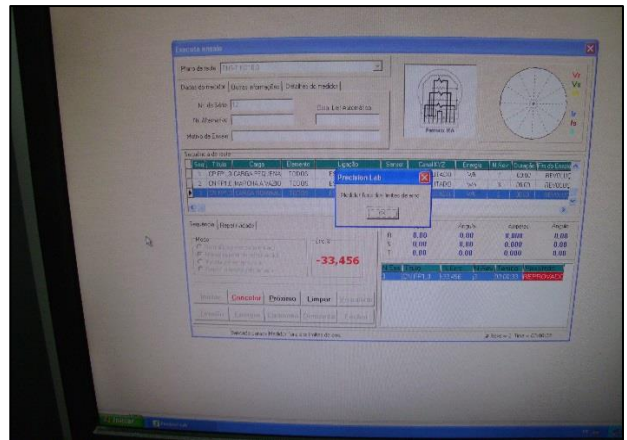


Fig. 6 Error found in meter at laboratory. Source: Judicial Inspection performed by Pedro Alberto Brasil Vieira dos Santos (Process n°: 0024.11.335.060-7 – March, 2018).

words, the discard of meter after being evaluated in laboratory. Thus, this proof obtained in laboratory, becomes a proof elaborated in unilateral manner by power provider and damage the analysis of the unique physical proof of this process. That is, in the moment to

proof or not a fraud in meter during a judicial inspection, power provider simply has not the main proof anymore, due to its premature discard.

Following with the process of fraud ascertainment, power provider develops calculation of power invoicing loss (non-technical loss), substantiated in ANEEL's resolutions 456/2000 [4] and 414/2010 [3]. Inexistence of a detailed report, including invoicing loss, refers the matter to another step of judicial process. This makes that this calculation suffers external influences, as parties try to lead the expert to an error, when pointing out periods that were not effectively computed during the fraud in power invoicing. In these cases, power provider tries to make valid the historical of consumption, as established by ANEEL, meanwhile the final consumer claims, normally, that there was saving or reduction of its power consumption, whose period could not be computed as the period of a supposed fraud.

Even if power provider complies the effective previous note — administrative (TOI and report of calibration in laboratory), it may have such documents denied such in its demand, in judicial sphere, facing basic errors during its ascertainment processes in administrative sphere. That is, power provider provides technical proofs that meet the administrative sphere (ANEEL), however do not meet basic precepts in judicial sphere (CPC).

4. Conclusion

Taking as a basis the volume of deviated power, ascertained by judicial experts of Minas Gerais state in a hundred of judicial inspections, it is estimated that 2/3 of power provider CEMIG's demands, to recover deviated power, has its judicial processes denied, due to fault in administrative processes. That is, they do not meet precepts regulated by CPC.

It is clear that it is about substantial losses, as recovering deviated power tends to reduce non-technical losses of power distribution. As power providers, which have accurate information about their

number of actions and claim applications on consumed and not invoiced power, it could estimate how much it has loosed per year, with this non-technical losses, without computing other non-technical losses not mentioned in this paper, as for example, the called "gatos" which are power deviations of power distribution conductors, very common in Minas Gerais state slums. These losses become irreversible and are maximized when included expenses with lawyers, procedural costs, technical assistances and judicial inspection. These problems are mainly due to faults of power provider which only meet precepts regulated by ANEEL and do not consider articles of CPC, which are crucial to recover part of deviated power, when these are normally covered in courts of law.

Judicial experts should be attentive and follow all regulation set in his regional board (CREA) and in technical legal rules (ANEEL and CPC), which substantiate all process in survey and ascertainment of constituted proofs in judicial process, paying attention to possible appeals of proofs constitution led in processes.

5. Final Considerations

Considering losses resulting from non-technical losses (frauds in measuring system), it is recommended to carry out a training program, guidance and reviewing of administrative processes, collected by technical team in field assignment of power providers, not only concerning ANEEL's regulated precepts, but also concerning CPC regulated precepts. If field assignment teams are not duly trained and aware of their acts, power provider takes the risk of losing efficient mechanisms in avoiding frauds, since it cannot have proofs technically correct, and non-substantiated in legal precepts to support billing of irregular power consumption, in judicial sphere.

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