

# The source of ENERGY

With 95% of hydroelectric generation, Cemig worries with the management of the waters and the preservation of the flora and fauna of the basins of Minas. At the Water's Week, the highlights are to projects, activities and researches developed for the protection of rivers and springs of Minas. **Page 6 and 7**

## Expansion

Cemig takes another step towards Chile and searches for partnerships in Argentina. **Page 3**

## Filling up fish

Company releases fish and fills up the rivers of Minas with life. **Pages 8 and 9**

**C E M I G NEWS** YEAR XXXI – No. 4

May 2007

## SERVICE

# New PAS inaugurated

### In Guanhães

On March 13<sup>th</sup> the *Simplified Service Post – PAS* in Guanhães that will benefit more than 20 thousand residents of the county located in the East of Minas, was inaugurated.

Politicians, representatives of Guanhães' Commercial and Industrial Association, the Brazilian Bar Association – *OAB* and *Banco do Brasil*, besides the manager of the Management of Commercial Relations and Services of João Molevade – *DUIJM* - Hernani Oliveira Santiago that pointed out the importance of the initiative - were present at *PAS*' inauguration - installed at the old Guanhães Club, property given by the city hall. "Besides of making easier the Company's relationship with the consumers, *PAS* is also a source of commercial exchange value for the country", he said.

### In Indianópolis

Indianópolis' *PAS* that will work at the City Hall's headquarters, at Praça Urias José da Silva, was inaugurated on March 20<sup>th</sup> with the presence of the coordinator of commercial relations of the Management of Commercial Relations and Services of Urbelândia – *DD/UL*, Edson Ney Nogueira de Andrade, and of the mayor Renes José Borges Pereira, among other representatives of the county, that celebrate the initiative.

*DD/UL*'s representative, the mayor and local authorities at the inauguration of Indianapolis' *PAS*.

# Self-employed electricians

On March 23<sup>rd</sup>, during a solemnity held at Cemig's auditorium in Belo Horizonte, 82 self-employed electricians got a diploma in technical norms of electrical installations against the waste of energy and in energy efficiency. The professionals received training and qualification during the course promoted by Housewife and Consumers' Movement of Minas Gerais – *MDC-MG*.

*MDC-MG* represents the consumer of residential class at the Cemig's Consumers Committee. The entity has kept for 12 years a free register of professionals of several areas to provide housing services that benefits also plumbers, and painters, among other categories. The trained professionals are electricians that make part of this register. The updating course had a 30 hours load and the approved ones reached an achievement of 60% minimum. For several of them it is their first certificate in all their years of professional work.

This opportunity that the electricians had is part of the project against the waste of electrical energy, done in partnership with *MDC-MG* and *Eletrobrás*, in the scope of the *National Program of Electric Energy Conservation – Procel*.

Graduands will fight against the waste of energy

President: Djalma Bastos de Morais      Planning, Projects and  
Commercialization Director: José Maria de Macedo      Finance, Participations and Relationships with Investors: Luiz Fernando Rolla  
Enterprise Management Director: Marco Antonio Rodrigues da Cunha  
Generation and Transmission Director: Ferando Henrique Schuffner Neto

## CEMIG NEWS

Monthly Publishing of CEMIG      Published by Enterprise Communication      Superintendence (EC)  
Av. Barbacena, 1200 – 19o. andar, Phone: (31)3299.4949/3299.4087/ 3299.4089, Fax: (31)3299.3705, Caixa Postal: 992 – Belo Horizonte/MG  
e-mail: [imprensa@cemig.com.br](mailto:imprensa@cemig.com.br), website: <http://www.cemig.com.br>

Editor in chief: Luiz Henrique Michalick, Reg. no. 2211 SJPMG      Final Edition: João Batista Pereira  
Editorial Staff: João Batista Pereira, Carlos Henrique Santiago, Tatiana Rezende, Ana Paula Morais, Karina Castro, Rodrigo Borges, Lydenvan Santos, Rita Miranda

Photos: Eugênio Paccelli, Ronaldo Guimarães      Graphic Design: *C&T Design* – Cláudia Tartágua, Reg. Prof. 3511/MG  
Printing and Photolyt: *Formato*      Issuing: 21.500 issues      Associated with  
Cemig's Mission: To act on the energy's sector with profitability, quality and social responsibility.

## EXPANSION

### In search of partners in Argentina

To guarantee Cemig's materials' quality and the maintenance of the underground transmission lines isolated with oil, was the objective of the visit held last February 13<sup>th</sup>, by representatives of the Management of Material Quality and Suppliers – *MS/QL* and of the Management of Distribution Center's Maintenance – *DC/MC* to *LADF Cables Y Lineas* company in Argentina, that runs assembly and maintenance services of lines with oily and dry cable in Argentina, in Venezuela and in Colombia.

The main objective of this visit that can result into a new partnership to Cemig was due to the shortage of labor in Brazil for the specific work. Nowadays, there is only one company that runs this kind of work for Cemig disabling a better price negotiation of the services provided and materials offer.

Within Cemig's aim of searching new partners and autonomy in relation to the companies that provide services and supply materials for the Company, a *MS/QL* and *DC/MC* confirmed *LADF*'s technical know-how in maintenance and assembly of underground lines. According to the Material's supervision technician of *MS/QL*, Geraldo César da Silveira, the new partnership can bring lots of benefits to Cemig, mainly, the price reduction and the decrease of service delivery period. And in accordance with the *DC/MC*'s engineer, Romeu Fuscaldi Fonseca, the supply's feasibility by other specialized companies, such as *LADF*, have been fulfilling the plan of action elaborated at the Seminar of Maintenance of Underground Lines held in 1999 by Cemig.

Assembly and maintenance equipment of underground lines

### Another step towards Chile

Cemig's president, Djalma Bastos de Moraes, and the director of Finance, Participations and Relations with Investors, Luiz Fernando Rolla, were in Chile, in March, to search for new opportunities of dealings in the sector of electrical energy's generation and distribution. They met the superintendent of Electricity and Fuel of Chile, Patrícia Chotzen, and expressed a formal interest in continuing investing on that country.

The Company already works in Chile in the area of transmission in partnership with Alusa, in the construction of Charrúa-Temuco's Transmission Line – *LT*. Cemig demonstrated also interest in analyzing the purchase, in association with Alusa, of the Emel distribution group, that the American PPL put on sale. The Company's president expressed also interest in investing on other projects of transmission and generation.

"We will search for opportunities of doing some hydroelectric projects. We want to start with projects of small hydroelectric power stations, and, after that, we can grow a little faster", said Luiz Fernando Rolla.

Cemig's plan is to find local partners for the enterprises. For that, the Company's directors got together with executives of Chile's electrical companies.

#### Charrúa-Temuco

In 2005, Cemig invested on the partnership TransChile for *LT* Charrúa-Temuco's construction and operation. *LT* should have its works started as soon as the environmental licenses have been obtained. The partnership TransChile won *LT*'s tender by R\$59 million, and the operation is foreseen to start in July next year.

## TECHNOLOGY

Equipment identify irregularities in the measurement

### **New equipment improves measurement**

To create conditions to identify and characterize faults or irregularities in the measurements done at the consuming units. With this objective, the Management of Coordination of Income Protection and Energy Use – *RC/PR* acquired 138 digital cameras, 25 devices of internal view conduit (a depth gauge) and 36 simplified triphase electronic gauges of kWh.

The equipment, tools of the field services' teams, will allow a bigger productive, quality, efficiency and security to the performance of the activities.

According to the engineer of *RC/PR*'s Electro-electronic Maintenance of Distribution, Leandro Rodrigues, the cameras and depth gauges have showed to be essential to identify and characterize, accurately, the irregularities and to enable the negotiation of the amounts verified. It also provides subsidies to restrain judicial actions from the customers by evidence of irregularity.

He explains that the depth gauge provides significant enhancement in productive and safety by favoring the visualization and inspection of eventual illegal connections in the interior of a conduit. The use of this equipment relieves the installation of fiscal measurement, the unnecessary breaking of wall, the handling of energized conduits and the supply interruption.

As for the simplified electronic gauges, the engineer informs that they are a pilot-lot of equipment destined to inspection of measurement in the field.

### **Mega jumper guarantees success in operation**

On March 20<sup>th</sup>, employees of the managements of South Operation and Maintenance – *DL/MS* and of Commercial relations of Pouso Alegre – *DL/PA* accomplished in Poço Fundo, in the South of Minas, a delicate service of cabling of a new circuit to service the Farming Cooperative Society of Poço Fundo de Café, one of the main customers of the Company in the county.

To accomplish the operation on a fast and safe way without any inconvenience to the local residents, Cemig's teams used the mega jumper, equipment that besides speeding up the entire process of maintenance and of expansion of the aerial distribution network, allows that the intervention be done without the need of switching off the customers.

Without the use of the mega jumper in Poço Fundo, 1.673 consumers of the region would have been out of energy for a period of four and half hours. "With the tool we accomplished the service quickly and we guaranteed the consumers satisfaction what is a good way to control the indicator that measures the Interruption Time Period Equivalent per Consumer – *DEC* determined by the National Agency of Energy – *Aneel*. This shows the Company's commitment to guarantee the quality of its services", says the engineer of *DL/MS*' Electro-electronic Maintenance, Beneditiro Márcio Cipriano.

#### **Understand what is a mega jumper**

The mega jumper is a group of equipment composed of three isolated cables with 40.80 and 120 meters of length, being still possible to be interconnected by terminals and connectors. The equipment are assembled on a tow truck especially projected for the maintenance on medium tension circuit, with clearance of the area to be worked and maintaining the rest of the network energized, reducing this way, the average time of energy reestablishment and, in many cases, avoiding the switching off of it.

Mega jumper speeds up the maintenance process

## TECHNOLOGY

### Forum explores application of new technologies

“To stop a little and breathe technology”. This is how the engineer of Technology and Standardization of the Management of Transmission and Sub-transmission Lines Engineering – *ER/LT*, Carlos Alexandre Meireles do Nascimento, defines the objective of ER Forum of Technology held by the Superintendence of Expansion of the Transmission and Sub-transmission Networks – *ER*. The idea is to explore the opportunities of application of new technologies on Cemig’s enterprises and guide the captation process of projects of Research and Development – *P&D*.

For Carlos Alexandre, the forum’s technical coordinator, this is a way of oxygenating the work’s routine. “Daily, we destined 100% of our time to the operational activities and to make the production team to stop to reflect about technology is essential for the processes’ improvement”, he affirms.

ER Forum of Technology is an annual event that has been held since 2000 and it presupposes a monthly meeting in average. The opening of 2007 cycle took place on March 23<sup>rd</sup> at the headquarters’ auditorium, with the participation of the Engineering School and the Course of MA in Electrical Engineering – *CPDEE*, both of *Universidade Federal of Minas Gerais – UFMG*. The coordinator points out that the university is the biggest ER’s partner in development of *P&D*’s projects.

#### Forum

At each meeting ER invites employees and representatives of other institutions to present technological researches and projects. The modern engineering professional’s profile to deal with new technologies was the theme of the opening lecture, given by *CPDEE*’s coordinator, Hani Camille Yehia. The director of the Engineering School, Fernando Amorim de Paula, talked about *UFMG*’s strategic vision towards the technological development.

According to Carlos Alexandre, the forum shares the Company’s vision with the invited institution’s what helps to consolidate ER’s strategic objective in its field of operation. “Cemig contributed with the operational part and *UFMG* with the research. They interact and converge interests to find a better way”, he explains.

In 2006, five of the ten presentations resulted in *P&D*’s projects. Two of these are in phase of approval by the National Agency of Energy – *Aneel*. Next meeting, foreseen for the end of April, it will be ER’s turn to present the theme *The new challenges of Cemig’s underground sub-transmission engineering*.

In accordance with Carlos Alexandre, the Forum, besides of promoting a technological updating of ER’s collaborators, is a tool of maintenance of the technology. “The event makes the employees to prioritize their technological activities together with the production teams’ daily activities”, he points out.

Forum celebrates 7<sup>th</sup> edition

## INFOVIAS COLUMNM

### Cable TV is under test

On March’s 27<sup>th</sup>, Infovias Company started to test the modern Digital Transmission Cable TV System installed at Jatobá’s Warehouse, organ that belongs to Cemig. The assembly was accomplished in partnership with Qualicable, a company that lent the power station’s equipment, and Conax, the company that supplied an anti-piracy of conditional access system with the subscribers’ control.

The tests are being done together with Way TV that has released seven spots on the cable TV network of Belo Horizonte to measure the transmission speed and to test the transmission quality of the digital image. “We are experimenting modulations of 64.128 and 256 QAM (Amplitude Modulation in Quadrature), with transmission ratios from 27 to 38 Mbs by RF’s (radio frequency) carrier, from 3 to 6 Mbs per channel, without having checkered or frozen image”, say the manager of Infovias Company’s Operation and Maintenance, Ricardo Pedrosa, satisfied with the results so far.

The period of tests finishes on April 27<sup>th</sup> and, if it is approved, Infovias Company will begin the process for the implementation of the Digital Transmission System in the 12 cities where it has cable TV network what, according to Ricardo Pedrosa, should demand a certain time, but that will be compensatory due to the service quality.

The system is tested by a Company’s team

## ENVIRONMENT

### Water's week shows the situation of rivers and springs

Brazil shelters 12% of the entire planet's fresh water. Besides of being essential to life, water is the main raw material of Cemig's business: energy. With approximately 95% of hydroelectric generation, the Company worries about the rivers' and springs' situation and develops actions, projects and researches towards the sustainable development of its activities.

In the week prior to the Worldwide Water Day, March 22<sup>nd</sup>, the Company took part in activities and lectures in several cities of the Estate and pointed out its actions and projects in the hydrographic basins where it operates. In the South of Minas, the Company is recovering springs in Alto Rio Grande's Hydrographic Basin, in partnership with *Universidade Federal de Lavras – Ufla* and the Sponsorship Foundation towards Education, Research and Extension – *Faepe*.

The work is being developed through a project of Research and development – *P&D* – “Integrated Study of the ciliary vegetation in the surroundings of springs, rivers and reservoirs”. Nowadays, the project includes 50 springs in process of recovering in Alto Rio Grande's Basin.

The springs have been visited and isolated as Permanent Preservation Areas – *APPs*, with areas of 50 meters of range from the spring, after the owner's permission, as required by law.

The springs looked after by the project are monitored in relation to growth of planted seedling, the dynamics of the natural healing, the discharge, the rain occurrence and the parameters of the water's quality.

The research is also doing a flora survey that goes along on the water's springs of different biomes of Alto Rio Grande's Basin. Besides that, it is monitoring the influence of re-vegetation in the springs' water quantity, with the objective of developing a methodology of re-vegetation in the surroundings of springs, rivers and reservoirs.

### Management of waters on the agenda

The Company, aware of the importance of the hydric resources, sponsors its management, acting institutionally through the participation in the Estate Committee of Hydric Resources – *CERHMG* and in the majority of the Estate's hydrographic basins' committees.

The water shortage, the silting up provoked by the disorientating use of soil and the throwing of non-treated sewerage in the water that flow to its reservoirs endanger the production of hydroelectric energy. According to the engineer of Operation Planning of the Management of Hydro-energetic Planning – *GT/PH*, Marcelo de Deus Melo, “the good management of the waters is of essential importance for the good flow of the Company's businesses today as well as in the future”.

### *Expo-Water*

The *I Expo-Water* took place between March 18<sup>th</sup> and 24<sup>th</sup> in Montes Claros. Cemig took part in the event's organization in partnership with the Municipal Environment Secretariat, the Minas Gerais Institute of Water Management – *Igam* and several other institutions.

The objective was to dedicate a special attention to the school public at the Water's Week. Cemig ran two workshops with the theme Water and Energy on the 19<sup>th</sup> and 20<sup>th</sup>, for university students and teachers. The technician on Quality Systems of the Management of Environmental Evaluation and Licensing – *GR/AL*, Andréa Cássia Pinto Pires, the Hydro-energetic Planning engineer of the Management of Hydro-energetic Planning – *GT/PH*, Marcelo de Deus Melo, and the commercial agent of the Management of Commercial Relations and Services of Montes Claros – *DO/MC*, Maria de Lourdes Lima da Fonseca, ran the workshops.

They approached issues such as global warming, energy demand, alternatives sources, hydroelectric power stations, actions to reduce the environmental impacts from the power stations and the efficient use of electrical energy.

Children received booklets about water

## Events in the countryside make the date

### Ipatinga

Between March 28<sup>th</sup> and 31<sup>st</sup>, Cemig took part in the 3<sup>rd</sup> Rio Doce Forum of Waters, in Ipatinga, with the mobile unit Energy for Life. The Company distributed, with the collaboration of the Management of Environmental Actions and Programs – GA/PA, booklets of springs' conservation, recovering of ciliary forests, reservoirs' operation and prevention of fire. At the Mobile Unit, institutional videos about the sensible use of energy, reservoirs' operation and prevention of accidents with third parts involved were presented.

Energy for Life is success at 3rd Forum

### São Simão's Power Station

São Simão's Hydroelectric Power Station and GA/PA, in partnership with the Municipal Superintendence of Environment (GO), promoted, from March 19<sup>th</sup> to 22<sup>nd</sup>, the Water's Week with the theme *Our Daily Water*. The event took part in the Worldwide Water Day and had as objective to make the community aware of the importance of the water and its sensible use.

The event had the participation of the communities of Paraniguara, Itaguaçu, Quirinópolis and Caçu, next to the power station, involving a total of 1.200 residents. Between the 20<sup>th</sup> and the 22<sup>nd</sup>, the student public looked after the event with participation of 3.500 students and teachers.

Students get to know the water cycle

### Uberaba

On Worldwide Water Day, March 22<sup>nd</sup>, Cemig took part in an event at the Events Center of the Brazilian Association of Zebu's Breeders – ABCZ, in Uberaba, with lectures about the importance of this resource and of the ciliary forests on the preservation of rivers. During the event, the game *The Environmental Million Show*, coordinated by Ga/PA's biologist, João de Magalhães Lopes, took place. 500 seedlings of different species of trees were distributed to students of the participatory schools. The event, promoted by Uberaba's City Hall, had the presence of 4.500 people.

The ciliary forest is a distinction in Uberaba.

## Reservoirs help with the control of the floods

Cemig monitors the water volume at several spots of the basins where its main reservoirs are. Nowadays, there are 150 stations proper or measurement of the rivers' and reservoirs' water level and the rain ratios, spread throughout the Estate.

The gathered information is necessary to the reservoirs' operation and also they are re-passed to the basins' committees by its importance to the researches and to the development of recovering plans of the basins.

Cemig's reservoirs' operation takes into account the criteria of the hydric resources management. The Company has also tried to give more visibility and transparency to the actions that involve the reservoirs. In the beginning of each rainy season, a communication plan is run, especially elaborated to give information to the population about the reservoirs' operation.

## ENVIRONMENT

### Cemig release 200 thousand of fish

The Management of Environmental Actions and Programs – GA/PA released, in March, 200 thousand *alevins* of the species *pacu*, *piracanjuba*, *dourado*, *curimba* and *piarapa*, in the rivers that form the basin of river Grande where the reservoirs of Camargos' and Itutinga's power stations are installed. The native fish bred at Cemig's Pisciculture stations were distributed in the rivers Mortes, Machado, Lambari, Ingaí, Airuoca, Carandaí, Mogi, Ribeirão, Piranguçu, Lourenço Velho, Sapucaí, Cervo and Verde.

At this time, the cities of Barbacena, Coronel Xavier Chaves, Itutinga, Prados e São João Del-Rei (Mantiqueira); Bom Jardim de Minas, Campanha, Cruzília, Itajubá, Jacutinga, Lambari, Piranguçu, Poço Fundo, São Vicente de Minas, Soledade de Minas and Três Corações (South); Sacramento, São Simão and Uberaba (Triângulo), were contemplated by the Fish Re-colonization and Marking Program. "In order to receive the filling up fish, the county should be inside of river Grande's basin and has a river with volume, length and depth that justify the release of the species", points out the Environment analyst, Marcela David de Carvalho.

According to the analyst, the work has as a fundamental part the fish marking by sticking a small plastic label on the posterior fin for the supervision, before and after the release in the rivers. "With this information we can verify the fish's migratory route and evaluate the efficiency of the filling up fish", she affirms.

Approximately in April, 50 thousand *alevins* will be also released in River Grande's basin. Re-colonization in rivers and the São Francisco River's basin's reservoirs are foreseen for the North region About 80 thousand *alevins* of the species such as *matrixã*, *curimba* and *piapara*, will be released in the river of Velhas, Paraopeba and Pará.

With the fish re-colonization, Cemig hopes to provoke the population into a culture change in favor of nature preservation that results a bigger effort in the rearrangement and maintenance of the water life in the fluvial basins.

### Filling up fish re-colonize rivers

#### Bom Jardim de Minas:

The River Grande, in Bom Jardim de Minas, was benefited by filling up fish on March 7<sup>th</sup>. More than 500 fish of the species of *piracanjuba*, *pacu*, *curimba* and *dourado* were distributed in the city.

#### Campanha:

March 2<sup>nd</sup> was the turn of the city of Campanha to be contemplated with the release of 735 fish of the species of *piracanjuba*, *pacu* and *curimba*. On the whole, 55 people, among local school's students, county's residents and representatives of public organs took part in the event.

#### Uberaba:

Uberaba, in *Triângulo Mineiro*, received the filling up fish on March 19: more than a thousand fish were release in River Uberaba. A distinction for the species of *piracanjuba*, *piapara* and *curimba*, with more than 300 fish distributed of each species.

#### Poço Fundo:

The River Machado, in the county of Poço Fundo, received on March 1<sup>st</sup>, 122 *alevins* of the species *curimba* and *piracanjuba*. The event had the participation of 55 people, among them students of local schools and rural producers.

#### Prados:

In the county of Prados 437 fish were released on March 14<sup>th</sup>. Species such as *piracanjuba*, *pacu* and *dourado* were distributed in River Carandaí.

## ENVIRONMENT

### in rivers of Minas

#### Coronel Xavier Chaves:

In Mantiqueira's region, the county of Coronel Xavier Chaves was served by the fish re-colonization on March 15th. In River Carandaí, 421 fish of the species of *piracanjuba*, *pacu* and *curimba* were released.

#### Cruzília:

Located in the South of the Estate, the city of Cruzília received on March 6<sup>th</sup> 686 alevins of the species of *piracanjuba*, *pacu* and *curimba*. About 60 people, among local schools students and representatives of Emater, of the Estate Institute of Forests – IEF, of the City hall and House of Councilors, took part in the event.

#### Sacramento:

The county of Sacramento exceeded the limit of two thousand fish released in the Hydroelectric Power Station of Jaguará on March 22nd. Only of the species *piapara* 940 alevins were distributed, besides over than 700 alevins of *piracanjuba* and *curimba* distributed each.

#### São Simão:

Almost two thousand fish were released in the Rio Paranaíba on March 20th, in São Simão. 1.100 alevins of the species of *piapara* and *curimba* were distributed, besides 700 fish of the species of *piracanjuba*.

#### Barbacena:

In Barbacena more than 500 fish were release on March 13<sup>th</sup>. Distinction for the *piracanjuba* species with 371 alevins distributed in River das Mortes.

## Pigeons jeopardize the performance of energy network

Cemig identified last year a great quantity of switching-off provoked by pigeons that land on the electrical energy networks. Only in the South of Minas, 8.500 complaints were registered which services cost R\$1.7 million to the Company.

As the region is great producer of grains, mainly, corn and sorghum, the act becomes more evident, by the occasion of planting and harvesting. At these periods, the birds come in group, feed themselves fully and accommodate themselves on the medium tension cables.

On the observation of the Maintenance Control's technician of the Management of South Operation and Maintenance – DL/MS, Luiz Kennedy Fernandes, "the pigeons arrive little by little, landing one at a time, on the electrical energy network, mainly, on the superior cables. In short time, there are hundreds of them. In sequence, the lines bend because of the birds' weight and touch on the inferior cable provoking short-circuit and leaving a great number of consumers without electricity".

He continues saying that the majority of the complaints has a scheduled time. They happen about 7 a.m. and soon after 5 p.m.. He explains that these times are registered because the controls indicate that the protection devices installed on the networks are operating with a bigger frequency because of "the birds". The consequence for the birds is eventual, just one or another death is registered.

Luiz Kennedy explains that Cemig is searching for solutions for the problem. Besides of doing internal studies, installing removers of the neuter and medium tension cables and increase the distance between the conduits, the Company has also done a partnership with the *Pontificia Universidade Católica de Minas Gerais – PUC Minas* to find more efficient solutions.

On March 15<sup>th</sup> and 16<sup>th</sup>, the biologist and teacher of *PUC Minas*, Bruno Garzon, met with the Company's technicians in Pouso Alegre, in the South of Minas. At that time he learnt about the complaints, visited the local where they are more frequent and began the studies for the identification of the species of pigeons and their habits. The expectations are that he can present alternatives that promote a good relationship among these birds and Cemig's networks, helping the Company as well as the birds and the ecosystem.

## **EQUIPMENT**

### **Two transformers run by vegetable oil start operating**

With the positive results of the first transformer run by 100% vegetable oil of the world, developed in partnership between Cemig and *ABB*, more two equipment are ready to be installed within the next days enabling that the experience with its operation can be disseminated to the Company's other areas of work. According to the manager of Engineering and Coordination Maintenance – *OM/EM*, Jonas Antunes da Costa, the sub-station of Itabirito will receive within the next days a transformer with 12.5 MVA power. Another transformer with 25 MVA power should be installed in Uberlândia.

#### **Sub-station**

“The challenge now is the creation of a green sub-station, an ecologically appropriate unit, without the use of none equipment that can provoke impacts to the environment”, says the engineer José Aloise Ragone Filho, superintendent of the Engineering and Coordination of the Distribution's Operation and Maintenance – *OM*. Up to the second semester, another important step will be given towards this, with the delivery of the first mobile sub-station that will run with vegetable oil. Re-powered from 7.5 MVA to 15 MVA with a possibility to take an overload of 20 MVA for four consecutive hours, this substation will serve to accomplish maintenances at distant places of the Estate, reducing the risks of environmental accidents during its transport.

The first transformer run with a 100% vegetable oil is operating since last August at a sub-station in Contagem, in the Metropolitan Region of Belo Horizonte. This transformer is responsible for that the transmitted energy along the high tension lines, that come out from the power stations, can reach 37.2 thousand consumers of low and medium tension, located in the county. Among the customers, there are the local City Hall, industries of electronic components, such as *SID*, *GE* and *Toshiba*, and a hospital.

The two main functions of the oil are to cool again and isolate the transformer's energy conduits that are packed, in most part, in a tank in which there is the transformer's core. However, Cemig's developed transformer in partnership with the manufacturer of electro-electronic equipment *ABB* uses the vegetable oil also for the of high tension bushing that isolate externally the device's controllers of energizing, as well as the energy input cables with high tension. The same isolating vegetable oil is used on the change-over switch, responsible for regulating the tension levels delivered by the equipment to the consumers.

Two new transformers run by vegetable oil start to work

## **EFFICIENTIA BRIEFING**

### **Efficientia selects projects of energy sensible use**

Efficientia is selecting, until May 18<sup>th</sup>, projects of conservation, sensible energy use and energetic solutions, elaborated by medium and great size companies, for its feasibility and installation. The objective is to encourage measurements that promote the fight against the waste of energy and the reduction of operational costs of the companies of several segments.

Projects of conservation or replacement of diversified energetic sources, including gas, petrol, fuel and other alternatives besides electrical energy, can be submitted.

The selected projects will be installed from December this year by Efficientia that will also follow the results' management and supervision. Efficientia will be reimbursed by the companies that had the projects installed, from the costs' savings with the energy.

The submissions will be open until May 18<sup>th</sup> and should be done by the web site [www.efficientia.com.br](http://www.efficientia.com.br). The rules of the selection and sample for sending the projects are at the website address. Companies of medium and great size with headquarters in Minas Gerais can participate. The approved projects will be known on August 13<sup>th</sup>.

Efficientia develops programs of conservation and efficient energy use through consultancy and training at industrial, commercial and services companies of the Estate.

## MAINTENANCE

### Teams use new methodology to fix cables

The teams of Aerial Lines and Networks of the Management of South Operation and Maintenance – *DL/MS* identified on their periodic inspections that all spirals of the conduit cable of the central phase of the Transmission Line of Santana da Vargem – Três Pontas, were broken inside of the suspension clamp of structure number 66.

Aware of the problem, it was run a planning to fix the cable through an innovating method for this type of service. After the repair by the method of access chair to the potential, that takes up the electrician to the energized conduit cable, the supply of energy to the urban and rural consumers of the counties of Santana da Vargem, Coqueiral, Ilícinea e Guapé was set right.

Nowadays, the team of *DI/M's* Management and the teams of Aerial Lines and Networks Maintenance of Varginha and Caxambu are elaborating a specific Instruction of Maintenance for the method. The objective is that the instruction helps other teams to use the same method with success.

[Access chair to the potential method.](#)

### Improvements in the Park

Cemig accomplished on March 18th, Works on maintenance and improvements of the medium tension network that border *Parque das Águas* in São Lourenço, in the South of Minas. *Parque das Águas* is supplied by isolated network, with 320 meters length, that performs an important role in the distribution network's operation of the city.

The maintenance was done of an emergency nature by Cemig after having being detected, during a preventing inspection, a fault that could jeopardize the reliability of the electrical system.

The analyst of Relations with Customers of the Management of Commercial Relations and Services of Pouso Alegre – *DL/PA*, João Carlos Sacramento, points out the importance of the periodic inspections: "Cemig is always alert to the operational conditions of its energy network. These inspections done periodically are important to indicate the need of intervention or reinforcement of the electrical system, guaranteeing the energy supply's quality and continuity."

The service was done on an emergency basis to guarantee the energy supply at the weekend when the great number of tourists increases the consumption of energy.

## GASMIG COLUMN

Since March 5th Gasmig has a new headquarters, it is at 6.594 *Avenida do Contorno*, Savassi, in Belo Horizonte. The company had to leave its old premises at Lucas Lopes Building, expropriated by the Govern of Minas Gerais to be use by the Estate Prosecuting Council.

Gasmig is occupying half of 8th floor and from the 9<sup>th</sup> to the 11<sup>th</sup> floor of Amadeus Business Tower, a total area of 1.800 m<sup>2</sup>, against rental settlement. Gasmig's new general telephone number is 3265.1000.

The building, one of the most recent constructions of Caparaó Builder, offers top technological resources, contributing for the company's work rationalization.

Amadeus has also an auditorium for 170 people, that was inaugurated by Gasmig on April 13<sup>th</sup>, when the director of Gerdau Açominas' Planning and HR, Omar de Oliveira Fantoni, talked about the tool of management Balanced Scorecard – BSC to the company's directors and employees.

The BSC tool, that at Gasmig has receive the name of Management and Growth in Actions – *GCA*, is a methodology of the company's management with a great focus on the strategy and worry with its performance.

Building offers top technological resources

## CULTURE

### Artists propose a reflection of concepts

Bruno Zenóbio and Sebastião Miguel have created an environment composed by paintings, drawings, photographs and poetry at Cemig's Art Gallery. Held in April, the exhibition *The Tempest* promoted a reflection about concepts and human relationships. At the opening, the Artist's Book, with photos poems and replicas of the duo's authorship, was distributed free of charge.

According to the poet Bruno Zenóbio, tempest, word that on its artistic sense is related to the German expression *Sturm un Drang* (literally, tempest and impetus or tempest and passion), refers to the German romantic literature movement that had its climax on the second half of century XVIII and that was against the "disillusion" provoked by Illuminism in the European cultural society.

With the exhibition, the authors proposed a reflection about science, rationalism, technology and progress of today's world. "It is on the human being's relationship with himself and with the others, through an inner tempest, that the world could become more vital", affirms Sebastião Miguel.

To develop this concept, the duo search for inspiration on songs lyrics by Renato Russo that are part of the album *The Tempest*, as well as the readings of the poetesses Henriqueta Lisboa and Cecília Meireles.

The show was a continuation of the exhibition *Excuses*, an experiment about the limits between the verbal and the non-verbal and an analysis of the language expansion. The event, that took place in 2001 at *Palácio das Artes*, marked the beginning of the partnership between the poet Bruno Zenóbio, a doctor of Linguistics by the *Universidade Federal de Minas Gerais – UFMG* and author of books such as *Fragmentalismo e Des-Equação (Fragment and Dis-Equation)*, and the plastic artist Sebastião Miguel, teacher and master of Visual Arts by *UFMG*.

#### **"Um outro eu (An another me)"**

"A different exhibition with imaginary and non documental photography", this is how the photographer-painter André Burian defined the exhibition "*Um outro eu (An another me)*", appreciated by the public between March 2<sup>nd</sup> and 21<sup>st</sup>, at Cemig's Art Gallery. The show was done with photographs reproduced on a surface compose by several materials.

On the exhibition, Burian used 25 images in big dimensions that make part of a vast file compose by photos of people and landscape of Brazil, France, Spain, Italy and Check Republic.

## CEMIGNEWS

Av. Barbacena 1.200 | 19º andar  
(31) 3299.4087 / 3299.4089  
Telex: (31) 1124.1168  
Fax (31) 3299.4691 / 3299.3706  
CAIXA POSTAL: 992 | CEP: 30123-970  
Belo Horizonte | MG