

Communicating on nuclear waste : feedback of the Visiatome experience - 10524

Cedric Garnier
CEA, Nuclear Energy Division, Marcoule – France

ABSTRACT

Public body in charge of the nuclear research in France, the CEA has launched in 2005 an information center named “The Visiatome”, located at the gate of Marcoule research center, 700 kilometers south of Paris. Next to a research center focused on nuclear fuel cycle research including waste concern, the Visiatome is a unique place in Europe. Both an information center and, in a way, a scientific museum, or even a touristic attraction, it has faced a permanent growth of its audience since its opening. This paper aims at summarizing the main information feedback regarding the Visiatome project by itself (ie museography, informative content,...) but also the attendance by the audience (perception of the place and of the subject, efficiency of the communication,...).

INTRODUCTION

The creation of the Visiatome by the CEA, next to Marcoule research center main gate, finds its origin in the framework of a French national Act on nuclear waste, voted by the French parliament. In 1991, the “Bataille Act” gave 15 years to the French public research bodies to conduct R&D focused on waste management, especially regarding High Level and Long-Lived radioactive waste. This official Act also included the possibility of a national public debate procedure, to get the citizen’s appreciation of the subject. In 2002-2003, as the period allowed for R&D was about to expiry, it became obvious that a place where accurate and pedagogical information could be given to the public, was needed. This was based on the fact that nuclear waste had been for a long time a sensitive issue in France, and that such a place did not exist yet in a country where electricity production is produced at 76% from nuclear.

By creating the Visiatome, the CEA also expected to fulfill the recommendations of the “National Evaluation Commission”, an independent body of experts working in the framework of the “Bataille Act”. This commission urged the CEA to build a place where the progression of public funded research on nuclear waste could easily be explained to the public.

In less than two years, the Visiatome project came to reality, after an investment of about 5 millions Euros (partly sponsored by the European Union and the local government of the Region Languedoc Roussillon). In April 2005, the information center was inaugurated and welcomed its very first visitors. Only four years later, the Visiatome reached a yearly audience of 20 000 visitors, meaning it probably found its cruising speed.

CONTENT OF THE INFORMATIVE OFFER

The Visiatome was built at the immediate proximity of Marcoule research center. The local environment is still very rural, and apart of nuclear, its economy consists mostly of vineyards. The

main closest urban centers are Avignon (population: 95,000, 30 min. by car), Montpellier (population: 250,000, 75 min. by car), and Marseille (population: 850.000, 90 min. by car). In this geographic area called “The great Rhône river Delta”, the Visiatome is in a way quite geographically secluded. However, it is close (15 min. drive) to a major motorway which, on a north/south direction, is a very important crossing point for touristic population streams between Northern and Southern Europe (the Mediterranean area). Furthermore, the Visiatome is not that far from a worldly known touristic location, the Provence region, and it can easily be reached from the closest airports (Montpellier and Marseille) and from the high speed train (TGV) station in Avignon. Despite these transportation “hubs”, a huge majority (80%) of the Visiatome visitors are mainly locals, coming from the Gard local department, in an area limited to a one to two hours drive from Marcoule. Considering the fact that its mission is dedicated to information on a national matter, one of the feedbacks is that the Visiatome probably can improve its attendance, geographically speaking.

An important input data is that access to the Visiatome information center is possible without any clearance procedure. Neither ID, nor any security control is required since it is built outside of the nuclear center itself. The building is a simple construction on the ground level, and its architecture gives importance to environmental integration (use of wood and natural stone). The permanent exhibition consists of a main hall dedicated to radioactivity, nuclear concerns, radioactive waste and the energies. It welcomes visitors on a total surface of 600 sq. meters. An additional hall hosts temporary exhibitions (3 to 4 exhibitions each year) on various topics (ex: climate changes, solar energy, journey in the centre of galaxy, from alchemy to chemistry, etc.). This additional exhibition capacity is required since it offers the public a reason to come again to the Visiatome after a first visit. Unfortunately, with a surface of less than 100 sq. meters, this second hall is by far too small a place, restricting the possibility for the operating team to host large temporary exhibitions.

Pedagogical workshops are organized every day for the young audience. The Visiatome train pupils from grammar school and up to high school. This is organized in partnership with the French minister of national education. A teacher in sciences comes to the Visiatome half a day each week, mainly to check that the workshops contents fit with the school programs. The Visiatome has created a wide array of workshops (about a dozen considering the different level of contents) on topics such as : climate change, atoms and molecules, geology, the states of the matter, etc. Two classrooms are equipped in a dedicated part of the building.

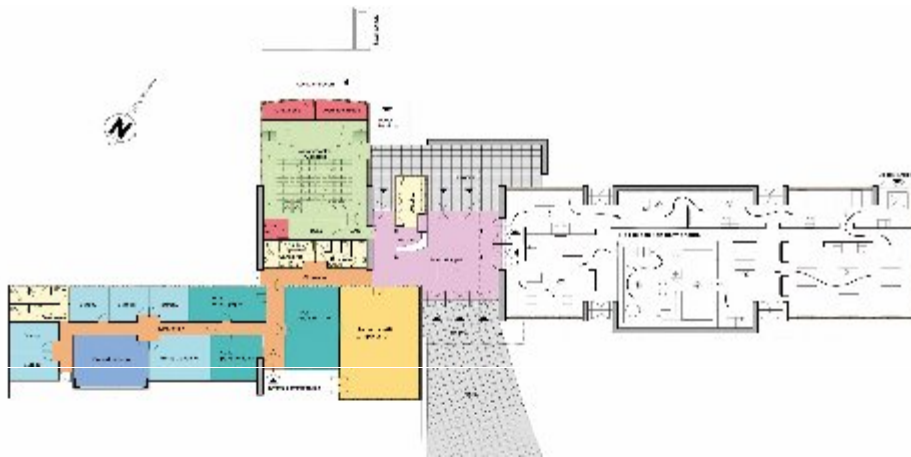
Furthermore, the Visiatome promotes the sharing of scientific knowledge through a comprehensive yearly program of public lectures and conference, in an auditorium of 80 seats (which can be completed by a 250 seats auditorium located in a walking distance). It also welcomes big events, 3 to 4 times a year, that are either local adaptations of some European or national concepts (like the French science festival, or the European researchers night) or local actions (like a “sky night” organized in July 2008. These special events usually drain a very large audience, up to four hundreds visitors in the evening of a regular working day, which is quite a satisfaction considering the seclusion of the place. During these events, the Visiatome building, with its total space of 1500 sq. meters, is sometime too small and the events require the use of tents or other outside non-permanent structures.

After a four-year operating period, the content of the permanent exhibition shows interesting conclusions. In order to clearly understand them, it is necessary to have in mind some key figures. The exhibition is displayed on a 600 sq. m. surface, and consists of 5 main areas : a “welcome zone” where various waste (house waste, industrial waste, and of course nuclear...) are suggested under the scope of

a giant original artwork, a “radioactivity” zone with the objective to familiarize the audience with basic concepts, a large zone focused on “nuclear waste” (typology, management), a zone explaining how a nuclear reactor works, and an area named “the tunnel of energies”, giving visitors hints on the energy issue (fossil fuels, renewable, nuclear...) with a focus on climate change concerns.

The figure 1 shows the general layout of the Exhibition. Note that the visit can be made on a self/individual basis, or with the help of a tour guide. Prerecorded comments are also available on many points of the exhibition. Everywhere in the building, information is available both in French and in English. Access to the Visiatome is possible for disabled visitors, with a special label “handicap” people centers and dedicated tours.

Figure 1 - General layout of the Visiatome Building



The Visiatome is opened from Monday to Friday (10.00 AM – 06.00 PM) and during the weekend (01.00 PM – 06.00 PM). It is interesting to note that access to the exhibition is not free. There is a 4 € general admission fee, with discounted or free admissions for some audiences: families, pupils, seniors. Asking people to pay for the visit of an exhibition on nuclear activities, managed by a nuclear operator, may sound strange. It is, although, very simple to explain and reflects precautions taken by the CEA. First, it delivers a message to visitors: the information available at the Visiatome is valuable. The Visiatome is a place where the citizen can get information and improve his personal understanding of a public issue and obviously not a propaganda center. The second reason to request visitors to pay for the Visiatome visit is even more basic: doing so, people do have respect for the content they pay for. In other words, asking for some entrance fee prevents from degradation risks by the audience.

The entrance fees incoming hardly cover the Visiatome operating costs. The Visiatome yearly budget is about 500.000 €. It is supported by the CEA Marcoule Communications Service. A team of 10 to 12 people are in charge of the annual planning, welcoming visitors, exhibition guiding and everyday operating. These people either are from the CEA Marcoule communication staff, or are employed by the operating subcontractor's staff.

GENERAL APPRECIATION BY VISITORS

To assess the efficiency of information or communication is not easy. Fortunately, in the case of an

information center, probing the audience is a possibility. At the end of their visit, the visitors are invited, on a random basis, to fill-in a satisfaction form. Every month, dozens of forms are statistically analyzed. The results show a global satisfaction rate of 55 to 65 %. The main positive scores emphasise on the general quality of the exhibition, as well as the pedagogical effort made through the communication tools presented. According to the audience, the overall quality of the exhibition is directly linked to the quality of its scenography and museography. The average initial cost for the exhibition is of 1200.00 € per sq. meter. At this level of investment, the Visiatome surprises its visitors since people do not expect such quality, except maybe in scientific museums to be found in much bigger capital cities. Furthermore, people do plebiscite the tour guides. This can be explained by the need, for the visitor, to be guided by some mediator, when immersing in the nuclear waste topic, a so called complex issue. Thus, the tour guides stand as a key piece of the information process.

The typology of the exhibition's issues, as seen through the audience probing procedure, shows that “radioactivity”, “waste” and “energy” stand at the highest levels in the appreciation of the visitors. This confirms that the Visiatome fully reached its objectives in terms of communicating on its core-messages. Although, some more specific issues such as “the fuel cycle”, “nuclear transports”, “man and ionizing rays”,... yet useful to a global understanding, do not meet large satisfaction or interest in the mind of the visitors. They might be considered as secondary issues.

Paradoxically, and despite the fact that the global quality is acknowledged by the audience, the main negative appreciations and criticisms to be encountered are mainly focused on the global amount of information available in the exhibition. These criticisms put the stress on the amount of information shown in the place, frequently considered as too important. In other words, the problem is not quality...but quantity. This is obvious when considering the written information, which is widely available in the exhibition: posters, boards, additional tablets... Improving the visit could be possible by creating some kind of simplified path, to put the stress only on the main messages.

EVOLUTION OF THE ATTENDANCE

The progression of the Visiatome’s attendance during 4 year of operation, shows a continuous increase, which seems to stabilize right above the symbolic level of 20.000 visitors per year (level reached in 2008). Year after year, some clues get confirmed. The peaks of attendance are spring/summer and fall. Winter remains very calm. A daily-based study, shows that individual visitors go to the Visiatome mainly in the afternoon, while groups attendance (pupils, professionals, associations) is more balanced between mornings and afternoons. Some special events, such as the “Science festival” planed every year in October or November, do drain lots of visitors. During only one week, up to 15 % of the yearly attendance is reached.

Table 1. The 2008 attendance: typology of visitors and overall attendance

	General/Individuals	Pupils	Professionals	Total
Visitors	6,723	6,584	6,946	20,253

The Visiatome audience can be identified in 3 different categories: the general audience (individuals, families, i.e. the individual voting citizens!), pupils (pupils and their teachers), and professionals (in link with nuclear activities, energy, scientific research,...). A few years operating the Visiatome shows

an almost perfect balance between these groups, each of them standing more or less for one third of the total audience. The 2008 figures are: 33% general audience, 32,5% pupils, 34,5% professionals. This balance, quite attractive at the first sight, shows a real difficulty to drain the real general audience, meaning the general audience. In 2009, the Visiatome reached 23.000 visitors per year. If the quantity of the visitors cannot be increased dramatically over the 20.000-25.000 visitors per year, the Visiatome can improve in a way to boost the general audience, its main target.

THE STRATEGY: INFORMATION OR COMMUNICATION CENTER ?

What makes the originality of the Visiatome, in its cognitive approach, lies in the “broad-minded” strategy that characterizes its informative content. This opening is real both on the nature of the fields to be explained to the visitor, but also how these fields are explained. If nuclear waste – and nuclear activity in the broadest sense of the term stand as the core of the information given to the audience, the informative content goes far beyond. It includes the issue of waste in general, (i.e. understood as the inevitable production of any consumption society). So is nuclear waste presented as only one group among many others, produced by modern societies. Furthermore, the permanent exhibition tells people that it is possible to inform easily on the different energies to be considered to meet the needs of the future decades.

In France, where nuclear stands as the very first electricity source, the Visiatome made a very wise choice : it took in consideration the current wondering of the public opinion, regarding a possible much more balanced energy mix for the future. By taking that reality into account, and integrating it as far as possible in the exhibition, the Visiatome found its credibility, allowing people to make their own opinion and choice. In this place, the strategy is to inform about nuclear, but in a global scope in which fossil fuel, renewable (windmills, geothermal, solar energy, etc.) are not considered in opposition. It belongs to everyone to choose, and this is precisely what the visitor can do at the end of the visit, with a tool showing a synthesis of both pros and cons of each energy. This informative attitude is the result of a special attention decided by the CEA at the very beginning of the Visiatome project. In the definition and checking of the content, the project team worked in close relationship with the Center for expertise on Conditioning and storage of radioactive waste (CECER): a small group of nuclear scientists from Marcoule, gathered as an expertise committee. But it also worked in relationship with a Council of non CEA experts, coming from various countries of Europe and gathering not only hard sciences specialists, but also experts in the sciences of information and communication. Today, this council still acts as the Visiatome scientific advisory board. To sum up : the CEA wanted to define an informative content that would be accurate and scientifically irrefutable when it came to facts and figures... but it also wanted the content to be open to the citizen's discussion. The feedback is clear: this “information center” approach, rather than the “communication” one, was the wisest choice to be made. The value and the credibility given to the Visiatome by its audience remain, so far, uncontested.

A proof of the accuracy of this choice can be noted when considering the case of the local nuclear opponents associations. Most of them were skeptical and even very hostile after the official announcement of the project. These associations were invited to discover the Visiatome when it opened to public. That is what they did in 2005 in order to make their own opinion. So far, they did not consider the Visiatome as a polemical issue, any longer.

PERCEPTION BY LOCAL COMMUNITIES

As soon as the Visiatome opened, it tremendously helped to change in a positive way, the image of Marcoule nuclear research center. As a research center created in the 1950's for the production of materials for nuclear deterrence needs, Marcoule inherited of the traditional, yet true, image that characterize more or less any nuclear research center in the world: the secret beyond the barbed wire fence.

By creating this unique information place at the gate of Marcoule, the CEA probably improved the perception of openness, frequently admitted by local communities. And this is a paradox since the Visiatome presents very few information focused namely on Marcoule center itself... But it does explain the issues, the people and their work in a way. Obviously, this helps a lot in creating a climate based on confidence towards the scientists in charge of the issue. For the CEA, there is no doubt that the Visiatome is a tool, among others, available in order to strengthen the image and the public acceptance of Marcoule, including its activities regarding the fuel cycle studies for Gen IV nuclear systems.

At the immediate proximity of the Visiatome, a brand new building was constructed in 2008-2009. The Marcoule Institute for Separation Chemistry (ICSM) is a unique fundamental research structure in Europe. It aims to boost the basic science required to face the many challenges of future fuel cycle. Special events, opened to the public are now jointly scheduled by the Visiatome and the ICSM, and this reinforces the image of an open area where public can both find the information and meet the scientists outside of the barbed wire fence... In this open area, a technological park is due to open to shelter start-ups and training centers, in the coming years. There is no doubt that this third launching of an "open" structure in the same area will be as positive as the first two ones.

Because the Visiatome and its close environment bring science readily available to the public, the local communities quickly took the habit to come to the lectures/conferences, as well as the special events all along a year. It is noticeable that pedagogical conferences drain a faithful audience. Depending on the subject of the lecture, the audience figure can vary between 50 to... 600 persons. The feedback about the lectures is easy : in order to drain large audiences, it is necessary to broaden the matters to be discussed during these conferences. If a conference on fuel cycle issues only gathers a few dozens people, a lecture on the scientific police, or about the chemistry of Coca Cola will make the auditorium become to small a place... The so far unbeaten result for a conference on a regular weekday schedule is kept by a speech about the mystery of the Kheops Pyramid construction. This is far far away from nuclear fields, but it does attract general audience interest in science.

Local politicians are also interested in the Visiatome activities. They frequently describe the information center as an example to follow in order to provide people with better information about nuclear. The most frequent appreciation by this very specific group is that the Visiatome is seen as a place where anyone can come and make his own opinion about nuclear. And this is a precious feeling... Moreover, it is important to note that the Visiatome auditorium frequently welcomes meetings organized by the official Local Information Commission, a structure created by the French law around each nuclear site. The Commission, which gathers politicians, representatives of local employers and of the Marcoule Staff, professional and environmental associations, representatives of the safety authorities..., has made the Visiatome become a much appreciated place and a symbol of an information facility open to everybody.

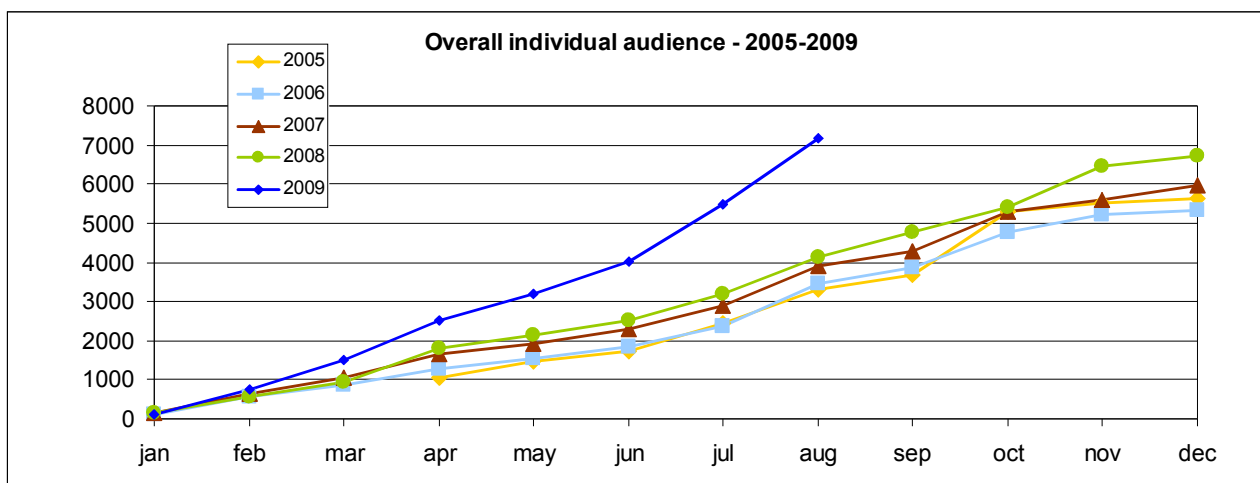
The press is also aware of the highly-ranked global appreciation of the Visiatome. The local press

reports very often on the Visiatome news and activities: conferences, temporary exhibitions, and more. The local press clearly published numerous papers about the pedagogical workshops for the kids, bringing the Visiatome image at the pinnacle. And the Visiatome also welcomes from time to time national and international journalists: they come to the place both in order to make some reports about this unique facility... and also to familiarize themselves with nuclear issues.

FUTURE PERSPECTIVES

In only 5 year, the Visiatome has succeeded in its first challenge: to provide the public with a reliable information about an issue that still remains commonly polemical in the public opinion. Tomorrow, the Visiatome will probably not increase audience to higher levels than the 20,000 – 25,000 visitors that he already reached in 2008 and 2009. But efforts can still be made in order to drain more individuals and families who stand as the real target in terms of public choice processes. Efforts can consist in adapted marketing, especially throughout a much more developed online strategy (a more attractive dynamic website for instance, an e-marketing yearly campaign,...). During spring 2009, marketing actions were tested especially towards tourists (advertising on large billboards, advertising on motorways) and close urban people (radio advertising) and this clearly turned out to be a success, with a really specific growth of the general audience during the last 6 months. However, the cost per new visitor drained to the Visiatome must then be accurately appreciated, since commercial expenses can not be expanded to unreasonable levels.

Table 2 : the general audience specific increase in 2009.



As a conclusion, it is possible to note that the success of the Visiatome is confirmed when considering the high interest of other nuclear operators and scientific communities all over the world. Contacts have been taken at the request of people from South Africa, Brazil, South Korea, Russia, Poland, Japan, Thailand,.. In some of these countries, the construction of information centers that will use some of the Visiatome concepts has already begun. This is clearly a sign of the pertinence of the Marcoule information center.