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AREVA: Staffing up to support front-end revival

I Introduction

A few years ago, the question was whether there would be a nuclear renaissance. This is no longer an issue. Instead the question has become what the pace of this renaissance will be and whether the industry will keep the pace? As a matter of fact growth is expected to be sharp:

- In the United-States, as much as 20 GW of new capacity is planned, knowing that the demand has already increased as a consequence of lifetime extensions and capacity upgrade programs implemented throughout the country.
- In China, the latest government announcements indicate that a total of 40 GW is to be constructed over the next fifteen years.
- Eight reactors are currently planned in India.
- Russia has announced a plan to build 2 reactors per year from 2010 to add 40 GW by 2030.
- In Europe, an EPR is being built in Finland while one is planned in France. The UK, Switzerland, Lithuania and many others are also considering building new reactors.

Overall, more than 30 countries, representing about two thirds of the world population, support nuclear energy. In this very optimistic context, our industry is gearing up and investing to meet the future demand. Still, many issues need to be addressed in order to meet the challenge of new reactor build. Among these, are many Human Resources issues, which the whole nuclear industry is facing and which can be summarized in one basic question: how can we manage the transition from a twenty-year minimal growth period to a rapidly expanding market? AREVA, for its part, has anticipated these questions and launched several actions to adapt to the new market conditions.

2 The HR issues in the nuclear industry

2.1 ISSUE #1: RECRUITING AND KEEPING NEW EMPLOYEES

More reactors mean more nuclear fuel requirements for a long period of time, especially as new reactors are expected to have lifetime of at least 60 years. This, in turn, will require not only new reliable production facilities, but also a dynamic, qualified workforce to search for uranium all over the world, design, build and operate facilities and provide customers with the right products and services at the right time. As more production is required by the utilities, front-end suppliers will need to increase their workforce.

Here, it is important to note that the staffing effort is required not only by the suppliers, but also by the utilities, the equipment manufacturers and, of course, the safety authorities and other regulatory bodies. That is essential if we want to avoid any bottlenecks in the processes which will lead the nuclear industry to its renaissance.

Increasing our workforce would not be much of an issue if we were alone in the market. Unfortunately, we are not. Not speaking of the competition between suppliers, we face fierce competition from major energy companies including utilities, oil and gas companies, chemistry companies, etc. Often these companies are much bigger, much wealthier than us, which means the nuclear industry must be attractive to young talents to prevent any shortage of hands and brains.

In this respect, the World Nuclear University is a very good initiative to attract young graduates and should therefore be supported by all industry actors. The WNU also contributes greatly to improving the image of nuclear industry which remains an issue in some key countries.

Besides, the nuclear industry is facing a problem of its own, the attractiveness of its jobs in terms of location and working conditions. It is a fact that nuclear facilities are often located far from large cities. The problem is especially acute in big countries like the USA or Canada. As new workers tend to have higher expectations for their work environment and for their family, it has become difficult for the industry to keep them durably, especially as an average of 60% of new graduates are thinking of leaving their employer within 2 years¹. It is a problem uranium suppliers are facing for their exploration and mining projects which are located in remote areas and where, despite great technological achievements in the last 20 years, means of communication can still be perceived as limited.

2.2 ISSUE #2: MANAGING THE RETIREMENT OF BABY BOOMERS

In addition to efforts required to staff new projects and cover additional activity, the nuclear sector has to manage the looming retirement of the baby boomers who have built and successfully run our industry until now. These experienced people will have to be replaced, regardless of how fast the pace of the nuclear renaissance will prove to be. However, there is another issue tied to this expected massive retirement wave: before our senior experts leave the industry, we must make sure their knowledge, their experience, their “nuclear culture” are transferred to younger generations. Knowledge management is maybe the most challenging of the HR issues our industry is facing today.

¹ Source : Hewitt & Associates

2.3 ISSUE #3: A HOLE IN THE POPULATION PYRAMID

At last, as a result of the twenty year minimal growth period our industry has gone through, most if not all nuclear suppliers have a deficit of personnel in the 30-45 age range. As a matter of fact, the 20 year old engineers who did not join the nuclear industry in the mid-eighties would be 40 today. The industry must therefore recruit qualified people in this age category, keep its employees aged 30-40 and prepare them to replace the executives who are about to retire.

2.4 TACKLING THE PROBLEM NOW!

One may argue that we are fortunate in our industry to have very long cycles that give us some time to adapt. Basically the reactors that are ordered today will be connected to the grid about seven years from now. However, the corresponding front-end requirements must be covered one to two years before that. In addition, part of the corresponding supplies will come from new facilities that remain to be designed and built. So actually we have no "time cushion".

What is happening in the uranium sector right now should be a warning for all of us, customers and suppliers: for twenty years the market has been flooded with materials accumulated after the cancellation of nuclear projects back in 80s. As a result, uranium producers have curtailed when they have not stopped their operations, and the exploration expenditures and the exploration staff have been cut drastically. At AREVA for instance, the exploration staff was reduced by almost 70% between 1980 and 2002. For many years the producers have warned the market about the risk associated with a situation where almost no money was spent in mine development and uranium exploration. What is the result? Today, because there is no ready-to-produce project on the shelf, the production is not increasing at a great pace despite the rising demand. As a result, in three years the uranium price has been multiplied by four. There is no doubt the production will catch up with the demand, but this example shows that reactivity is just not enough in our industry. To support the renaissance, the industry needs to ANTICIPATE.

3 AREVA is staffing up to the nuclear revival

Due to the new market situation described above, and because we grasp fully the demand through our reactor business (AREVA has several orders for EPR reactors), ANTICIPATION has become the cornerstone of the company's growth strategy: anticipation in our building new industrial capacities; anticipation in our HR management as well.

3.1 RECRUITING TALENTS IN ALL AGE CATEGORIES... AND KEEPING THEM!

Because AREVA wants to remain the world reference supplier in the nuclear industry, the company has launched an ambitious recruitment campaign. For instance, in the uranium sector, 500 new employees will be recruited in 2006 alone ... and it is just a beginning. The population of managers and workers in the business unit Mines is expected to increase by about 50% in just five years. In the conversion and enrichment sectors, AREVA plans to build two new plants, Comurhex 2 and Georges Besse II, that will replace the existing plants. Under the transition plan, part of the personnel is to be transferred to the new generation plants. Even if these new plants require less staffing, there is room for new, dynamic employees who can help move the projects forward and bring some new skills and know-how.

To attract new talents, AREVA makes broad efforts to promote its activities and its values throughout the education community and in the public at large: in addition to the public communication campaigns, AREVA takes part in student forums, organizes visits of its industrial sites for students involved in activities close to our core business, etc. As a result, and despite the fact that the company is very young, AREVA is perceived as a company really worth working for by a significant share of students both in France and abroad.

To anticipate the integration of new employees - and that applies also to the workers - AREVA is making partnerships with schools, universities and higher education institutes in France and abroad, to adapt when possible their degree courses, so that the new employees have as much critical knowledge as possible when they join AREVA and become fully operational much more rapidly. In some cases, we even have to create new courses because very few nuclear-specific courses have survived to the 20 year limited growth period we have just gone through. AREVA is also involved in a French government initiative, the "Observatoire des métiers²", whose objective is to anticipate the evolution of jobs and the future recruitment needs based on three year business forecasts established by major national companies and updated every year.

Of course, recruiting new talents is not enough. AREVA is implementing various measures aimed at facilitating the integration of the newly recruited managers and making them feel that they are part of a large group with challenging job opportunities, so that they stay in the company and contribute more every day to its growth. Actually, the HR department helps these new employees through their first job and creates the conditions of their successful integration by designating senior managers to mentor them for a year and by organizing regular team building seminars. In addition to the traditional recruiting schemes, AREVA is hiring young

² " Jobs Research Institute "

people with interesting backgrounds, personalities and/or experience that may not fit to a given job at a given time, but that are thought to be able to contribute to the development of the company as well. With such processes, AREVA will have a reservoir of young skilful managers, with a good knowledge of the company, and it is now building career opportunities for them.

Meanwhile AREVA does not lapse into a cult of youth, by relying exclusively on young specialists who have just graduated. Of course AREVA cares for its current employees who have been working in the company for several years. These workers will have a key role in the company's growth strategy. In particular, some of the high potential managers in the 30-40 range will be appointed to challenging positions in the group, with support however both from strong technical teams and experienced executives. The company is also recruiting "seniors" over 30 that do not necessarily have experience in the nuclear field. They can have backgrounds in such fields as oil and gas, marketing, finance, chemistry, etc. By integrating such profiles, we can learn, acquire best practices, have new ideas and innovate instead of doing just what we have been doing for years. In this respect, these experienced employees are a key element of our continuous improvement policy.

Because AREVA recruiting policy is driven by openness, the company recruits young graduates as well as experienced employees, but it also maintains gender parity whenever it is possible, and it opens up to non-engineers and to foreign talents. In short, everybody has a role to play in AREVA growth strategy!

3.2 TRAINING THE EMPLOYEES AND TRANSFERRING THE KNOWLEDGE OF BABY BOOMERS

Professional training for both the new employees and the personnel in place is essential to sustain AREVA group adaptation to changing markets, new activities, new technologies and/or new regulatory frameworks. It is also the backbone of the company's knowledge management programs that have been developed to cope with the future retirement of baby boomers who represent a significant part of our current workforce. To take up these challenges, AREVA has recently signed a framework agreement which involves all employees in a continuous improvement approach and provides the company's management with operational tools, including training courses and coaching by experienced employees.

Many of the training courses are organized internally, building on the huge knowledge accumulated in the company over 60 years of activity in the nuclear field. Here the AREVA University plays an important role by proposing top class standardized training on core topics and by helping to share AREVA values within the company. Engineering or business schools and universities provide complementary

programs that are designed jointly with AREVA. As important as training courses to retain the company's critical knowledge and experience is the coaching of newcomers by experienced personnel: in the exploration field, in our mines, at our industrial plants, young workers are working hand in hand with older colleagues in order to integrate as quickly as possible the best practices, the know-how, the "technical tricks" and more generally the values that make nuclear industry so special (safety, environment, public acceptance issues, etc.). Actually, making a new employee fully independent can be a very long process. According to most specialists it takes, for instance, around 10 years for a young geologist to be able to work in the exploration field without any support, which is more time than that which is required to build a reactor.

Let us focus on the uranium activity. In this sector, AREVA has established cartography of the critical competencies required to remain a reference uranium producer and become the world leading uranium supplier. We then made an inventory of the know-how and knowledge available within the group in order to identify what competencies had to be replaced or developed. Based on these data, and in parallel to the recruiting campaign, the recently created AREVA Mining College is drafting and implementing specific training and mentoring programs for each employee joining the business unit. Every year, about 40 managers are expected to go through the AREVA Mining College, while several hundreds of supervisors and workers will go through dedicated training designed jointly with universities and specialized schools.

3.3 ACQUIRING NEW KNOWLEDGE

That is for areas where AREVA has most of the necessary knowledge among its personnel. Now the group is facing an exciting challenge with one of its biggest industrial project, the Georges Besse II enrichment plant. The Georges Besse II plant will be based on the centrifuge technology developed by the Enrichment Technology Company (ETC). AREVA has launched a comprehensive plan to make sure that the personnel of the future plant can master the ETC technology in a very short timeframe to ensure the quickest production ramp-up possible. Five heads of shift have already been designated. After having gone through an intensive English learning program, they will now be trained internally before working for several months at the UEC enrichment facility in Capenhurst, UK, where the same technology is implemented. There, together with some managers of GBII, they will learn how to operate the plant and manage the maintenance activities. In addition, a simulator will be built at the Georges Besse II site to allow for the training of the other operators. When the first centrifuges are installed at Georges Besse II plant, some ETC personnel will come to the site to provide both operational and technical support to the plant's staff during the test, start-up and full operation phases. This comprehensive program will allow the plant

operators to acquire the necessary know-how and experience. In the end, AREVA will fully master the centrifugation technology.

3.4 GROW AND “THINK INTERNATIONAL”

The last challenge we face in AREVA is to have the right staff at the right location. This will depend on two important factors:

- Our resources: In the case of uranium, the localization is more or less determined by the geology of our planet. Uranium producers try to be present in countries with significant resources. As far as AREVA is concerned, we have personnel working in more than eight uranium producing countries, developing new mines or searching for new deposits. For the rest, our resources are located at our industrial facilities. Unlike uranium and fuel, our conversion and enrichment facilities are located in France. However, this may change in the future as suppliers try to get closer to the demand.
- Demand is the second important factor impacting our organization. For a supplier, being closer to the demand provides the opportunity to be more reactive and more reliable.

At the same time we listen to our customers. In 2005 AREVA carried out a worldwide customer satisfaction survey. It came out of this survey that our customers ask us to be closer to them, to better respond to their needs and to better share with them our strategy and its implementation. To do so, we are reinforcing our international presence by carrying on the implementation of local offices in most major nuclear countries: new offices are being created (that is the case for instance in Canada) and the existing ones are given a greater role in our marketing and sales strategy. In addition, our sales teams from AREVA headquarters in Paris are spending more and more time abroad, exchanging with customers. Beyond having an international presence, AREVA wants to “think international”. That is why we are encouraging the mobility of non-French experts and managers within the group. These moves contribute to bringing an international culture to the company in order to better understand and anticipate our customers’ expectations.

4 Conclusion

For twenty years the front-end suppliers have been asked “cost nothing”, “make no noise”. Today, the messages sent by the market is rather “get moving”, “produce more”, “innovate”, almost regardless of the cost. Managing the transition to this aggressive approach requires a new organization and a new HR policy.

AREVA has launched several initiatives:

- AREVA is recruiting massively to operate its existing and future industrial facilities and to secure its resources in order to remain a reference reliable nuclear supplier in the long-term,
- AREVA is caring about its employees by recognizing their performance and talent and by building career opportunities for them,
- AREVA is ensuring that the valuable knowledge held within the company is transferred to younger generations,
- and AREVA is adapting its organization to continue to meet and even anticipate customers’ expectations.

In this approach, everybody has their role to play; everybody contributes to the company’s growth strategy. The younger ones bring dynamism, enthusiasm and new approaches, while the seniors share their experience, their knowledge, and their know-how in nuclear energy and beyond.

By bridging the generation gap and shifting toward an international, customer-oriented organization, AREVA is getting prepared for the exciting challenges of a worldwide nuclear renaissance.