WORKING PAPER
ALFRED P. SLOAN SCHOOL OF MANAGEMENT

Staff Development
at Electricité de France

Anthony J. DiBella

February, 1993

MASSACHUSETTS
INSTITUTE OF TECHNOLOGY
50 MEMORIAL DRIVE
CAMBRIDGE, MASSACHUSETTS 02139
Staff Development at Electricité de France

Anthony J. DiBella

February, 1993

Working Paper in:

International Program for Enhanced Nuclear Power Plant Safety

Anthony J. DiBella
Organizational Learning Center
Sloan School of Management
One Amherst Street
Cambridge, MA 02139
(617) 253-8799
A study, conducted by the Department of Employment and Industrial Relations, examined the job rotation of workers in various industries. The study found that job rotation is effective in improving worker satisfaction and productivity. A new classification system was developed to categorize job levels, and it was found that job levels were determined by the worker's skills, responsibilities, and wages.

1. Table 1: Classification of Jobs

The table below classifies different types of jobs based on the level of skill required and the associated pay levels. This classification system helps in determining the appropriate job level for each worker, ensuring fair compensation and recognition.

<table>
<thead>
<tr>
<th>Skill Level</th>
<th>Job Title</th>
<th>Pay Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginner</td>
<td>Mail Clerk</td>
<td>Low</td>
</tr>
<tr>
<td>Intermediate</td>
<td>Sales Rep.</td>
<td>Medium</td>
</tr>
<tr>
<td>Advanced</td>
<td>Manager</td>
<td>High</td>
</tr>
</tbody>
</table>

In conclusion, the study concluded that job rotation is a valuable tool in improving worker satisfaction and productivity. The new classification system provides a clear and fair method for determining job levels, ensuring that workers are compensated according to their skills and responsibilities.
Among an organization's most valuable resources are its employees. A critical personnel task is to ensure the continued development of employees through training and work assignments that enhance skills and motivation. This task must be achieved while meeting the need to fill positions with competent professionals.

This essay examines selected aspects of career development at EDF. EDF's employee classification system is first explained, followed by a description of how staff training is organized. Job rotation at EDF ("mutation") is then described and illuminated through the career progression of five employees. A final section looks at the implications of this personnel system on management styles and organizational change.

I. EDF'S STAFF CLASSIFICATION SYSTEM

EDF's employees are classified in several ways: by type of work performed, by functional group, by pay level and within pay level by step. These classifications are a vertical ranking of staff according to level of responsibility and remuneration. Appendix A is a copy of an EDF handout that shows the matrixed relationship between type of work performed, functional group
("GF"), and pay level ("niveau"). The bottom of the matrix shows the rules for "avancements/promotions" where employees progress up a pay level or two and either stay in the same GF or move to a higher one.

All EDF employees belong to one of four groups that reflect type of work and level of work responsibility. The lowest level group is "execution" or general laborers. They are hired directly at plant sites and are expected to work there for their entire career with EDF. The second group is "maitrise" or craftsmen. These skilled workers may be hired at plants or through EDF headquarters and then assigned to plants. Maitrise personnel may transfer between sites but rarely do unless they are being promoted.

The third employee group consists of professional or executive staff who are named "cadres." Cadres, who are usually engineers by training, have historically been selected by EDF headquarters. Entry-level cadres are hired once a year on the basis of a national examination. Cadres are expected to participate in EDF's job rotation system and be assigned to different plant sites and functional areas during their careers.

As shown in Appendix 1, execution staff are graded as GF 1-6, maitrise staff are graded GF 7-11, and cadre staff are graded GF 12-19. There is a direct relationship between GF grade and pay.
level ("niveau"). (There are also ten steps [echelons] within each pay group, although this is not shown on Appendix A). At plant sites, the placement of staff persons is shown by department on an "organigramme" which also indicates each employee's date of birth, year first employed at EDF, pay level, and functional group. For example, the organigramme for Alpha site indicates that the superintendent is a GF 19 at pay level 31, the director of work services (maintenance) is a GF 15 at pay level 24, and the fifteen principal "rondiers" (watchmen in plant operations) are GF 6 or 7 and are at pay levels 7, 8, or 9 (1). Most positions are not designated at a set GF grade or salary level but are usually rated for a range of grades and levels. For example, the head of work services could be a GF 14, 15, or 16 depending on the person's experience and the characteristics of the site.

The last employee group consists of members of EDF's senior management team who supervise divisions or hold high-level advisory positions. These employees are considered "hors classe" which literally means outside class. Yet they are also ranked, beginning at U1 and moving up to U2, U3, and HC. For example, the director of DPN (Direction de Parc Nucleaire) is HC and his technical advisor is U2.

This melange of classifications can confuse someone unfamiliar with EDF's staffing structure. The purpose of this overview has
not been to confuse but to reveal the complexity of EDF's personnel system. The formality of the system suggests that employee status is an important organizational value and that career development depends on how well an employee can progress through the rankings. EDF staff may be promoted from one employee status to another: in 1990, 11.8% of execution were promoted to maitrise and 1.5% of maitrise were promoted to cadre. Further research is necessary to determine the extent to which EDF's classification system is typical of other French enterprises, either publicly or privately owned.

II. TRAINING AT EDF

The primary responsibility for training at EDF rests with the "Departement de la Formation Professionnelle" (DFP). DFP operates three regional training offices and, in coordination with DPN, three training centers where simulators for all series of plants are located. Staff require training in order to be certified or re-certified in a craft or skill and to advance to higher GF or salary levels.

Every EDF employee is expected to have a training plan consisting of two parts. One part is general training associated with being certified in a technical area. To be certified for a type of position, an EDF employee must follow a prescribed series of training modules that cover basic, advanced, and specialized
knowledge and skills. Site employees possess a qualification sheet which lists all the areas in which the employee is certified. Certifications are valid for a limited time but can be renewed.

An employee's training plan must also cover the demands of the specific job that the employee currently holds. Consider, for example, the training plan for a rondier at Alpha site. First, the employee must be certified to work as a rondier. Then, he must be trained to work as a particular type of rondier at a particular plant, i.e. a rondier for the turbine building at plant two of Alpha site.

After an employee is hired, he/she prepares, in consultation with a superior, a "plan individuel de formation" that includes a list and timeframe for the training modules the employee will take. The training program is updated annually. Some training modules are used throughout EDF on a national basis and may be taken locally or off-site. Local training modules are tailored to plant conditions. For example, Beta site has five plants and over 1,400 employees. In an interview, the deputy director who supervises the training function claimed that Beta has approximately 300 local training modules and that at any time there are approximately 100 employees in training.

Additional evidence about the scope of EDF's training activities
was provided in an interview with DPN's head of human resources. He claimed that at EDF staff training occupies 7% of work hours and as an aggregate expense covers 22% of gross salaries. New employees are in training an average of 15 weeks per year during their first two years at EDF, while established employees average two weeks of training per year. The breadth of training activities at EDF reflects the diversity of its work, the complexity of its job classification system, and an effort to meet the increasing demands on human resources for work quality and safety.

A recent addition to the training capabilities of EDF was the creation in 1991 of the Institut du Management. This joint venture of EDF and GDF (Gaz de France) is intended to develop the skills of EDF managers as they meet the new challenges of a changing organizational environment. The institut has four missions: (1) to develop managerial thought adapted to EDF/GDF, (2) to promote the image and managerial competence of EDF and GDF, (3) to propose and coordinate training policies for managers, and (4) to operate training for executives.

The Institut has initiated ten work programs that collectively focus on these four missions. Typical of EDF management style, each program is guided by a staff committee in which all segments and professions of the company are represented. It is too early to say much else about the Institut, but its creation clearly
signals the increasing importance being given to management issues in contrast with purely technical ones.

III. CAREER DEVELOPMENT AND JOB ROTATION

In an interview, the head of human resources at DPN stated that there is no set career path for EDF staff, although young engineers most often begin as cadres at GF 12. Promotion and career development is based on: "the value of the employee, his performance, and his competence." Once an employee has reached a GF grade, he keeps that regardless of any position he might move to.

According to the head of human resources at Alpha, a general policy at DPN has been to avoid promoting staff in the area in which they are working. A maitrise who becomes a foreman or a cadre who becomes a director in the same area may be too friendly with subordinates and thus unable to manage properly. To be promoted, staff, especially cadres, must not only move between functional areas but must move geographically as well.

In an interview, the head of human resources at Alpha stated that:

"The simple policy is that cadres will move every four to five years. You're expected to move, but you're not obligated to. Of course, if you don't, the consequences may be uncomfortable - no further promotions, and the supervisor may reduce the employee's workload or involvement in
decision-making. Fortunately, within EDF there are many metiers (occupations) and many directions (functional areas) so there is a variety of choices."

The perception reflected in this quote is that there is such a diversity of positions within EDF and DPN that the expectation that cadres will transfer is not an overly demanding one. Cadres should be able to find something that suits them as they progress through their careers and transfer between positions and plant sites. Maitrise and execution staff do not participate in the job rotation system since as unionized employees their promotions and placements are regulated according to union procedures.

There are two critical times when decisions are made about job rotation. The first involves job openings that come up unexpectedly, the other involves openings known in advance. Among the permanent work committees at DPN/SA is a "career committee" which is composed of nine senior level staff. This committee meets weekly to discuss the transfer of cadre staff, primarily those at GF 17 and above. When an job opening comes up at a plant, the committee identifies possible candidates and recommends them to the site superintendent. According to a member of this committee, recommendations are made on what committee members know personally about the available cadres. Such knowledge is acquired from personal contact in the field or through participation in DPN/MC work groups. While the site superintendent is supposed to have the final say about the staff
appointment, which may involve a promotion, senior management of EDF has been known to override the superintendent.

The other occasion when decisions are reached about staff transfers occurs at an annual meeting of site superintendents. (Among EDF cadres, the meeting is mockingly referred to as the "foire aux anes," which literally translated means "fair of donkeys.") At this meeting, the superintendents discuss all the openings they expect to have at their sites and the cadre staff who are interested in being transferred. The intent of the meeting is to match up the employee needs of sites with the interests and availability of cadres. However, personal knowledge is again a basis for making appointments.

One EDF staff person told me that: "Pour avoir un carriere a EDF, il faut etre mobile." To have a career at EDF, it is necessary to be mobile and be ready to serve where needed. Otherwise, a passed up transfer may mean a promotion later denied.
The following outlines show the job movement of five cadres:

**Monsieur Coratti**
1963 - hired as operating engineer and assigned to fossil fuel plant.

1967 - promoted to site manager at Gamma graphite gas plant.

1970 - transferred to EDF's design division and involved in conception work for pressurized water reactor systems.

1974 - department director in SPT/SC.

1984 - site superintendent at Gamma.

1988 - site superintendent at Epsilon plant.

1990 - director of technical support at SPT/SC.

1991 - zone supervisor at DPN/MC.

**Monsieur Herve**
1970 - hired with engineering degree with concentration in the nuclear field, assigned to fossil fuel plant in operations area.

1972 - transferred to management position at another fossil fuel plant.

1975 - promoted to operations manager at Beta 1 plant.

1980 - site superintendent at Delta.

1986 - director of operations department at SPT/SC.

1991 - transferred to management position at Kappa.

**Monsieur Roy**
1975 - hired in transmission and transport division as technical engineer.

1985 - deputy department director at Lambda.

1989 - director of operations analyst.
Monsieur Carbon
1980 - hired at SPT/SC in the Department of Calcul Nucleaire.
1984 - transferred to Alpha as an operations engineer.
1987 - transferred to technical service engineer.
1990 - promoted to director of safety and quality.

Monsieur LeBoeuf
1981 - joined EDF as an engineer and worked at the training center at Beta.
1986 - became liaison officer between SPT and Thompson Inc., the builder of simulators.
1988 - promoted to director of training services at EDF's regional office in Lyon.
1989 - transferred to Alpha and directed the installation of new software systems.
1990 - promoted to director of maintenance resources.
1991 - transferred to director of production logistics.

These five cases do not represent any formal sample of the career progression of EDF employees. Rather they are intended to illustrate how employees transfer between functional and geographical areas and in the process advance in supervisory responsibility. It is interesting to note how the two, older employees started their careers in fossil plants and were then transferred to nuclear plants. In contrast, the two most recently hired employees have always worked in the nuclear area.

There is a growing concern at EDF that the system of job rotation will have to be revised due to changing internal and external conditions. As one staff person stated:
"With the construction phase slowing down and more outages planned, it will become more difficult to move staff around and ensure promotion."

As new plants come on-line, EDF has to fill new positions, thus providing opportunities for cadres to transfer. That will no longer be the case as the stage of building EDF's nuclear power capacity comes to an end.

Yet the reduction in transfer possibilities may be fortuitous since it appears to coincide with the interests of a new generation of employees more resistant to job rotation. Unlike the generation of EDF employees who transferred from fossil to nuclear plants, cadres are now more apt to belong to dual career households. The career interests of spouses may restrict the extent to which cadres will be willing to relocate.

The hesitancy of cadres to move geographically or transfer positions has become a concern to DPN's senior management. Sites are now required to monitor a newly developed indicator: the number of staff who have been at the site for ten or more years. It is not clear to site staff how this information will be interpreted or used but suggests that job rotation is still valued at headquarters, though perhaps less utilized in the field.
IV. IMPLICATIONS

Three implications stand out in reviewing EDF's system of staff development: the use of personal knowledge in decision-making, the affect of short-term assignments on performance and management style, and the adjustment to changing circumstances.

The use of personal knowledge in staffing decisions

To operate a system of nuclear power plants requires that senior staff be completely confident about their staff in the field who are supervising plant sites. At EDF, this confidence derives from the personal knowledge that staff have about one another. Personal knowledge is built up over many years from working together at a site or at DPN/MC or from what one hears within one's own social network. EDF's system of mutation ensures that staff move around so they get exposed to different functional and geographical areas. However, it seems equally important as a mechanism to establish social networks and allegiances that are required for cadres to advance.

According to one DPN/MC manager, "eighty percent (80%) of staff appraisal is based on qualitative judgments and twenty percent (20%) is based on fixed criteria." "Qualitative judgement" to me means whether the person is known, what is his reputation, and how much he is liked. If this is so, then one must question whether EDF is good at matching employee competencies to job
requirements.

Effects of short-term assignments

When assigned to a position for a short-time, EDF employees may not yet be completely trained or knowledgeable about their function before moving to the next one. It can be difficult to inspire confidence among co-workers or subordinates thereby limiting impact. Also, since EDF's nuclear system has been based historically on standardization rather than innovation, it has been necessary for site staff to follow the safe and sure path rather than to try something new. Since the employee may have little long term interest in the assigned functional area or the plant site itself, there is little incentive to act assertively and thereby risk alienating staff. Instead, there is a tendency to go along with the status quo, not overstep one's position or power, and, in effect, to act as caretakers for their positions rather than active doers.

Meanwhile, although cadre staff are regularly moving (either up in rank, over to another functional area, or around to a different part of France) and thus unable to solidify their standing in a given position, maitrise staff remain in place. The result is that maitrise staff have greater control over what happens in the plant than senior level staff. Most of the staff I interviewed at EDF were very encouraged by the changes being considered among senior staff to increase site staff autonomy.
However, there was a prevailing fear that change will not filter down to affect lower level plant staff because it will be blocked at the foreman (maitrise) level. Recognizing that cadre staff are assigned only for short periods, maitrise staff have little incentive to implement permanent change that only a cadre wants to make. They need only wait for the cadre's assignment to end before reverting to how tasks were performed in the past.

The impact of change

Change that is both internal and external to EDF will impact staff development in several ways. First, as plant construction decreases and the pool of cadres becomes more stable, the opportunity of job transfer will be less frequent. Career development will proceed at a slower pace than was the case previously, unless the basis for promotion among both cadre and maitrise personnel is reconsidered. Less job rotation will mean a reduction in shared personal knowledge about employees. However, it should also result in the development of cadres who act on the basis of increased responsibility and accountability because they will have greater long-term interest in the positions they hold.

A second impact of change has to do with how EDF, like other nuclear power systems, is being called upon to adapt to changing economic and political conditions. That means operating plants that are both safer and more efficient. There will be pressure
to find and appoint staff on the basis of individual performance that is seen to make a real difference. However, how can this be achieved given the tendency at EDF to overlook fixed performance criteria? Also, at EDF, corporate performance is not considered a reflection of individual activity but is a shared responsibility.

The dilemma is that staff development pertains to individuals while EDF performance is appraised on an aggregate group, or corporate level. If accountability rests with the group, then it is groups not individuals that must be developed. In that case, the job classification system may be an anachronism and needing of extensive modification.

NOTES

1. The names of plant sites visited and staff interviewed have been altered to ensure confidentiality.