SPANISH NUCLEAR SOCIETY
EUROPEAN NUCLEAR SOCIETY

MANUEL ACERO
VICE-CHAIRMAN OF THE EUROPEAN NUCLEAR SOCIETY (ENS)

The ENS membership includes 25 associations from 22 countries. Europe is represented almost in full, including the recently constuted countries as well as the traditional eastern ones. If to this we add the international section and collaborating countries, it can be affirmed that its scope is worldwide.

Its more than twenty thousand professional members are the best exponent of a capability devoted to the scientific and technical exchange of experiences, which entails an enormous flow of information on an international scale. On the other hand, much is being done directly in the area of public opinion; a series of initiatives have been taken that are growing into specific actions that in turn are receiving significant support from the nuclear areas of numerous countries. Along with these two main lines of activity, the development of nuclear power for pacific purposes is being actively promoted.

After this introduction to the ENS and its executive bodies (see attached table), Manuel Acero tells us about the society's activities. He begins with the magazine, which "has a circulation of more than twenty-two thousand copies, of which twenty thousand are sent free to all professional members and the other two thousand are distributed to organizations, societies and firms around the world. It is in good financial standing at this time thanks to the conduct of advertising affairs."

"The magazine is managed by an editorial committee that includes a board management and an editorial advisory committee. In the three annual board meetings, budgets, trends and the general state of affairs of the magazine are reviewed."

"As for publications, the ENS also partipates with the Elsevier Publishing House in the Nuclear Engineering & Design magazine, the scientific quality of which is well known. A representative of ours, currently José María Aragonés, sits on this publication's board."

Another important topic discussed by Manuel Acero is "the growing presence of Spanish industry and engineering with the publication of their experiences in the ENS magazine, to the extent that the January issue will be devoted to Spain and its contents will consist of papers submitted by Spanish professionals, which will undoubtedly secure a favorable place for our country within the European framework."

According to its Vice-Chairman, in the area of periodic meetings "the ENS has assumed an increasingly active role. At first, the basic aim was to organize a meeting every four years, the accredited European Nuclear Conference (ENC), which brings together manufacturers, engineers and professionals. The last meeting was held in Lyon in 1990, and the next one will be held in the same city in 1994. As we cannot be silent for four years, we have found the solution in Topical Meetings, which are intended to be held two or three times every two years depending on the information needs of the sector. For this purpose, we have defined five specific areas of activity as follows: safety, plant operation, waste management, new generation reactors, and fuel. We organize these meetings in collaboration with the Nuclear Society of the country in which it is held. Different objectives are pursued: increase available capacity and interact more frequently and actively with the different member societies."

"Along these lines, we recently held the TOP FORM in Prague which, although the first, was a resounding success judging by the approximately four hundred attendees. The next one to be held will be TOPNUX in The Hague (April 25 to 28) in collaboration with the Dutch Nuclear Society, and its topic will be new generation reactors (see issues 9/10 of the ENS magazine)."

"An important piece of news regarding Spanish collaboration is that the meeting that the Spanish Nuclear Society has been organizing for the last several years on nuclear power plant operation is going to be internationalized. In this respect, we have the full support of the ENS to hold the first meetings of this sort in Madrid in February 1995, which will be of very special interest not only to Spain but also to all countries with nuclear plants. Spain has also been authorized to organize the Topical Meeting on safety 1997."

Technically speaking, there are important tasks to be performed. There is no specific committee for this purpose. To date, this work has been addressed from the Steering Committee by creating ad hoc committees that work on specific activities and disappear once the work is completed. For example, one of these committees is currently working on a document regarding functions that the breeder reactor could perform as a waste incinerator.

"In this field, the ENS is considering the possibility of increasing the scope of technical jobs, as they comprise an area of great importance to which special attention must be paid. I personally intend to work to the utmost along these lines, because I believe that either a specific technical commission with a suitable job program or subcommissions of the same characteristics as those operating in the Spanish Nuclear Society are indispensable."

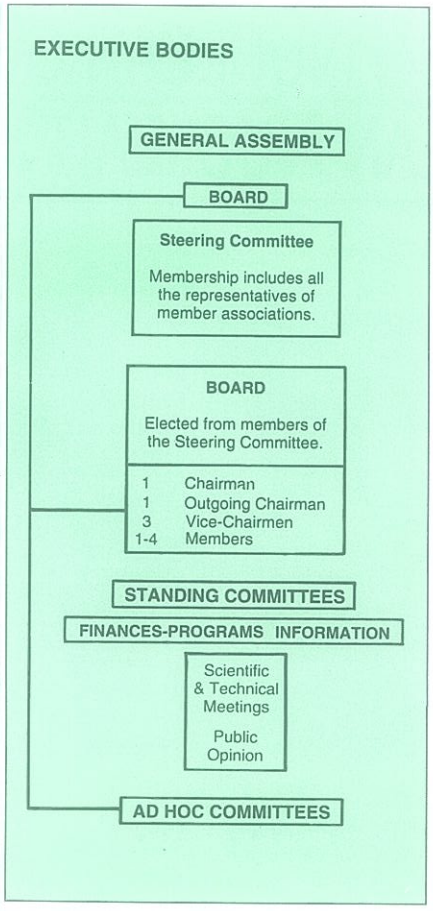
Another area in which Spain has collaborated is student exchange. "There have been difficulties here, but we have relaunched the program by considering a figure of around three students per country, and furthermore we are working on the proposal for training places, which is an activity that is basically intended to benefit the East European countries, because ENS has responsibly assumed its supporting role of the professionals working in these plants insofar as it is possible, and channels are being established to help a series of engineers spend time in companies in the

West to accumulate new experiences and improve their training."

ENS pays particular attention to the area of public opinion. The Information Committee is in charge of these functions. According to Manuel Acero, this committee "is very active, functions very well, and its prime responsibility is organizing the Public Information Meeting (PIME), which was originally held every two years but because of its success is now held yearly. It has a high rate of attendance and this year will be held in Czechoslovakia from January 31 to February 3. The most direct results of these meetings is that policies and positions are being formulated to take advantage of the quality of documentation, management mechanisms, training and experiences presented for transferring it, and improved application by all European countries. It is not only an exchange; direct applications are achieved, to the extent that the possibility has been raised of organizing a sort of club with the idea of formalizing even more the specification of general-purpose products."

"In addition, documents are being generated in this field that define for the public the ENS position regarding varying topics. Papers have been received regarding quality of plant operating equipment, costs, CO2 safety, etc. About two documents a year are being published and they are presented to the public in the general assemblies. I am convinced that we will go a long way in the field of information."

Finally, Manuel Acero emphasizes the fact that "it is very important to realize that in the future the participation of member societies in the ENS will be increasingly important. International relations should be encouraged. We must cover these needs because we are on the road to a single market, there is no turning back, and as long as the ENS does not perceive or receive pressure - this said in the most constructive sense of the word - from its member organizations, it will not suitably fulfill its objectives. In the same way, each association must take Europe into account, because to ignore it would entail the loss of a fundamental dimension."



The XVIII Annual Meeting of the SNE was attended by numerous professionals from the nuclear sectors of various countries. During their stay in our country, we had the opportunity to exchange ideas with some of them about the meeting they were attending, the current state of affairs of nuclear power in Spain and the world, their work in particular, and several topics that we believe are of interest to our readers.

CHONG CHIU

Dr. Chong Chiu graduated from MIT in 1977 with an MS Degree in Nuclear Engineering and a PhD in Nuclear and Mechanical Engineering. His years of experience in Combustion Engineering and Southern California Edison, which he fundamentally devoted to analysis of the root causes of events in nuclear power plants, lead him to establish "Failure Prevention Inc." with Edison's approval. This firm has analyzed more than 300 events in the last three years.

During our conversation with Mr. Chiu, he commented that he organized a meeting of the American Nuclear Society some seven years ago and that he has chaired several annual meetings, and thus is very familiar with this type of meeting. Specifically, referring to this year's meeting, he affirmed that "the panel has been very good. I think that a fundamental difference is that in Spain you are very close to each other, you know each other well, and for this reason this type of meeting can address specific, up-to-date topics and all the professionals have the opportunity to expound their ideas and express their points of view; furthermore, there is a lot

of respect for everyone and the organization is very good. This has all impressed me very much. In addition, I think your magazine is very good, with many photographs and lots of color, which is something we do not have in the ANS magazine."

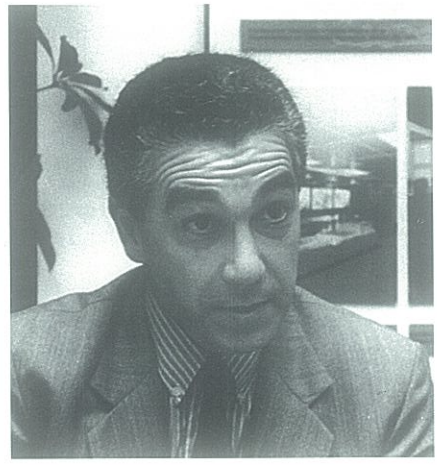
Mr. Chiu applies a statistical analysis methodology to nuclear power plants in the United States to analyze failures, compare them to failures in other plants, and establish the degree of importance in order to decide, among other things, how much should be spent on solving or studying them. He states that "in the past we have spent a lot of money on studying situations that perhaps were not very important; what is necessary is to spend money on solving problems that are really related to safety. In this respect, I have contacted Iberdrola to try to apply the knowhow that we already have, on the basis of statistics from 120 plants, so that the same errors are not made here and more suitable investments can be made. In fact, 60% of the nuclear plants in the United States are using these statistics to centralize their resources, which are scarce as they are everywhere for the most important matters. The NRC is helping to perform this work."

With his knowledge of the operations of so many nuclear power plants, it is very satisfying to hear him say that "the Spanish nuclear sector is well known in the United States for its high capacity factor. Ten years ago, this factor was very similar in the two countries; today, your factor is 10% higher than in U.S. plants, and this is a known fact. On the other hand, Spanish plant shutdowns are very short, thirty days on average, while the shutdowns in North American plants usually last longer than sixty days; we are not capable of doing it as fast as you and we are very interested in learning from your experience. These circumstances cannot be attributed to less stringent requirements, since your regulatory standards are similar to the North American ones."

"In my opinion, the fact that jobs in Spain are more stable is the reason that professionals are well known, as I said previously, and this has a very postive influence. In the United States, job change every two years, and thus professional relationships are lost. On the other hand, the country's size has a considerable influence. There are 120 reactors in the United States; logically, with such a high figure, many errors are made; however, in Spain, the same error rate results in a much lower number, and therefore it is much easier to learn from these failures. One thing has caught my attention, which is that many U.S. professionals come to Spain to learn your plants' operating methods."

Dr. Pieroni is nuclear physician and doctorated in Karlsruhe, Germany. He is currently Scientific Secretary of Quality Assurance in the International Atomic Energy Agency. He is responsible for activities dealing with Quality Assurance for NPPs.

NESTOR PIERONI



"The Agency works through meetings with professionals from different countries, and in fact this is the only place where representatives from regulatory bodies, suppliers and owner utilities sit down together without the interference of sectorial or politic interests. Furthermore, it participates and cooperates in external meetings, where it receives and provides information. This is one of the ways to promote exchange and a common search for good practices that we should all enforce and to comment on problems that we should be aware of so as not to repeat them."

Quality assurance is the topic that directly concerns our interviewee, and he is directly involved with the topic of the first round table: the so-called safety culture and quality culture.

"In this field, the Agency's activities are intended in the first place aim to include in our standards this current trend to emphasize the attainment of results as the objective to be fulfilled over the actual procedures and documentation, which are necessary but are merely tools that serve to obtain results. Everybody in the plant should understand that they are responsible for what they are doing and not only for properly implementing the procedures, since these, together with the training they have received and the disciplined continuation of their tasks, are what will make it possible to attain the required quality."

"One of our current tasks, to which we have devoted a large part of our efforts, is to revise quality assurance standards in order to make them clearer as regards assignment of responsibilities to everyone who works in a nuclear plant on the basis of performance. We began this task in 1990 and know that it will take several years since our standards require a consensus, but we hope to complete it around 1994-95. The standards are complemented by other documents that try to offer good practices, for which we have used the results of the OSART, ASSET, IRS (Incident Report System), and PRIS (Power Reactor Information System). We have various international data sources that help us select good practices to include in manuals and technical books that provide practical examples tested elsewhere and that can be analyzed by the organizations for application thereof."

"Furthermore, we are carrying out the so-called technical assistance projects, in which we analyze certain topics at the request of member countries and in accordance with their needs. For this, there are courses, workshops, training, discussions with experts and technical personnel, and scholarships. In this respect, Spain is a country the we frequently use to support our technical cooperation tasks, with Spanish experts who go to other countries to offer consulting services within the framework of our assistance program."

Specifically, we are working on equipment for nondestructive tests for the Eastern European countries, since the quality culture as we understand it in the West does not exist there. Some Spanish companies also have an important participation there. The operating methods are completely different and the responsibilities very diluted; in short, it is another way of doing things, which does not mean that it is better or worse but simply different. In accordance with our experience, we tell them that there should be more emphasis on defining who is responsible and what the limits of this responsibility are so that it is not diluted within a macro-organization where in the end no-one is specifically in charge. We try to be careful to acknowledge that this is not the only way of doing things and that we should take local conditions into account when adapting so as to prevent incongruities."

"When referring to various situations, the Near Eastern countries heed the suggestions; as for Korea, it is influenced significantly by North America and thus there are no big differences. As for China, we have been conveying our quality message to them from the Western point of view for some years now and they are very interested. In general, communication has been established with most of the countries on all the continents. It is very encouraging to see that all of them want to improve and accept a uniform safety level. It is undoubtedly a very important effort that we should continue."

Mr. Shomer is Mechanical Engineer from Darmstadt University (Germany). He joined Siemens AG in 1966 and is currently Director of Nuclear Energy Generation of Siemens, and responsible for Nuclear Operating Plant Services.

EBERHARD SCHOMER

"Germany has a group similar to the Spanish Nuclear Society that is also integrated into Europe and that organizes 2-day long annual meetings, usually in May. These meetings have less of a social emphasis and are more technology-oriented. However this is not necessarily better, because the nuclear industry currently has no large plant construction projects underway and we often end up merely reporting on results, and thus it is not easy to find subjects of interest. I think that the SNE has managed to obtain new ideas for this meeting and that furthermore it has found a good approach to new trends in that there are many more people involved, combining social events and making the meeting much more international. In Germany, we prefer to speak to each other using German as the only language, and thus it is not easy to submit papers. I believe this internationalization is important, because the nuclear community is not only Spanish, German or American, but rather it is international and the problems are very similar. The sector professionals should work and discuss things together, and it is a good idea to promote this type of encounter in which speeches, technical sessions and the

social program encourage this exchange."

Regarding possible safety problems and the condition of reactors in countries of the East, Mr. Schomer comments that "many international organizations are trying to find a way to solve these problems and fundamentally a way of obtaining the necessary financing, since the critical point at this time is the lack of economic resources. In this specific case, the Community has assumed the responsibility of obtaining this financing and and we have to provide a quick technical response and recommendations on how to solve these problems. At this point, we should act together and as quickly as possible, because if we do not find a good solution in two years we will enter a critical phase."

Regarding current events in the nuclear sector, we asked Mr. Schomer about the Siemens-Framatome agreement, which has materialized in the firm NPI whose fundamental goal is to create a new product. "NPI is entering the different markets of each of its partners; there are proyects submitted to Taiwan and Finland, which will reach a decision soon. The reactors for these plants are based on the partners' traditional designs (the German Convoy and the French N4), for which there are many references. For future developments, both companies are seeking acceptance by both countries' owner utilities, as it is important to have this acceptance from the very first. This agreement is not easy, not because of political reasons but because in France there is only one owner utility, EDF, while in Germany there are many more and they all had to reach a consensus before broaching the subject with their French colleague. An agreement has now been reached and we expect that the main project characteristics will have been defined by next spring so as to market it by the middle of the decade."

"In the former Eastern European countries, a project with Convoy type reactors was submitted at the end of 1991 but it was paralyzed for political reasons. At the present time, an attempt is being made to reach a political agreement, since the electric utilities cannot invest large sums of money without assurances that the plants will obtain an operating license. Furthermore, it must be borne in mind that the construction period is six years whereas the Parliament is in power for only four years; therefore a project cannot be started now without the groundwork of a nuclear power law that eliminates these risks."

One of the most difficult matters faced by the nuclear sector is public opinion. "The first thing that we should have in our favor is good availabilitiy and correct plant operation, in order to instill a sense of security in public opinion. Secondly, in Germany in particular, we have different energy sources, 30% of which are nuclear powered and that include coal, gas and some oil. We cannot be internationally competitive unless the price is fixed on the basis of a suitable mixture of these.

At present, national coal is highly subsidized, there is very little imported coal, and this amount is restricted by law. These are not the competitive conditions that the European Community expects of its member countries. There is increasing pressure by the EC and other European countries to eliminate these subsidies."

"As for the environmental problem, it was analyzed in depth in the Congress of the World Energy Council held in Madrid. For example, Germany has set a goal of reducing CO2 production by 25% by the year 2005; this will not be possible without putting new nuclear power plants into operation. Public opinion is becoming aware of the CO2 problem and it is being carefully considered."

At the end of our conversation, Mr. Schomer insisted on saying that he was left with a very good impression of the Annual Meeting, "as I have seen a very lively nuclear community working together; I believe that we need meetings like this in Europe to revitalize our nuclear sector."

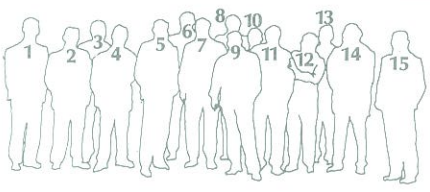
SNE BOARD OF DIRECTORS IN EL CABRIL

In reply to the invitation of ENRESA (Empresa Nacional de Residuos Radiactivos), the Board of Directors of the Spanish Nuclear Society visited the site in El Cabril last December 4.

These low and medium level radioactive waste treatment and storage installations that ENRESA has built in Sierra Albarrana (province of Córdoba) are the culmination of a five-year project. Final inspection was performed by the Nuclear Safety Council (Spanish regulatory agency) in August, 1992.

During its visit to the center, the SNE's Board of Directors was received by Alberto López (General Director of ENRESA), Valentín González (Communications and International Relations Director), Jorge Lang Lenton (Operations Director), Aurelio Ulibarri (Engineering Director), Andrés Guerra (Director of El Cabril), and Alejandro Ugarte (Subdirector of El Cabril).

The board members expressed their satisfaction with the trip, praised the installations, and proposed periodic trips by SNE members to visit the installations, in view of their importance. The Management of ENRESA accepted the proposal, which will be put into practice this spring.



1. Adolfo Martínez-Flórez, 2. José Fernández-Mesa, 3. Jaime Segarra, 4. Manuel Casanova, 5. Enrique Valero, 6. Jorge Lang-Lenton, 7. Alberto López, 8. Antonio Herrero, 9. Alejandro Ugarte, 10. Fernando Martínez, 11. Andrés Guerra, 12. Francisco Vighi, 13. Aurelio Ulibarri, 14. José María Aragonés and 15. Valentín González.